

SECTION 14. 6

SPECIAL VALVES - PILOT BLOCKS

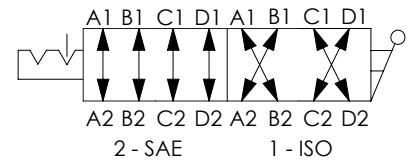
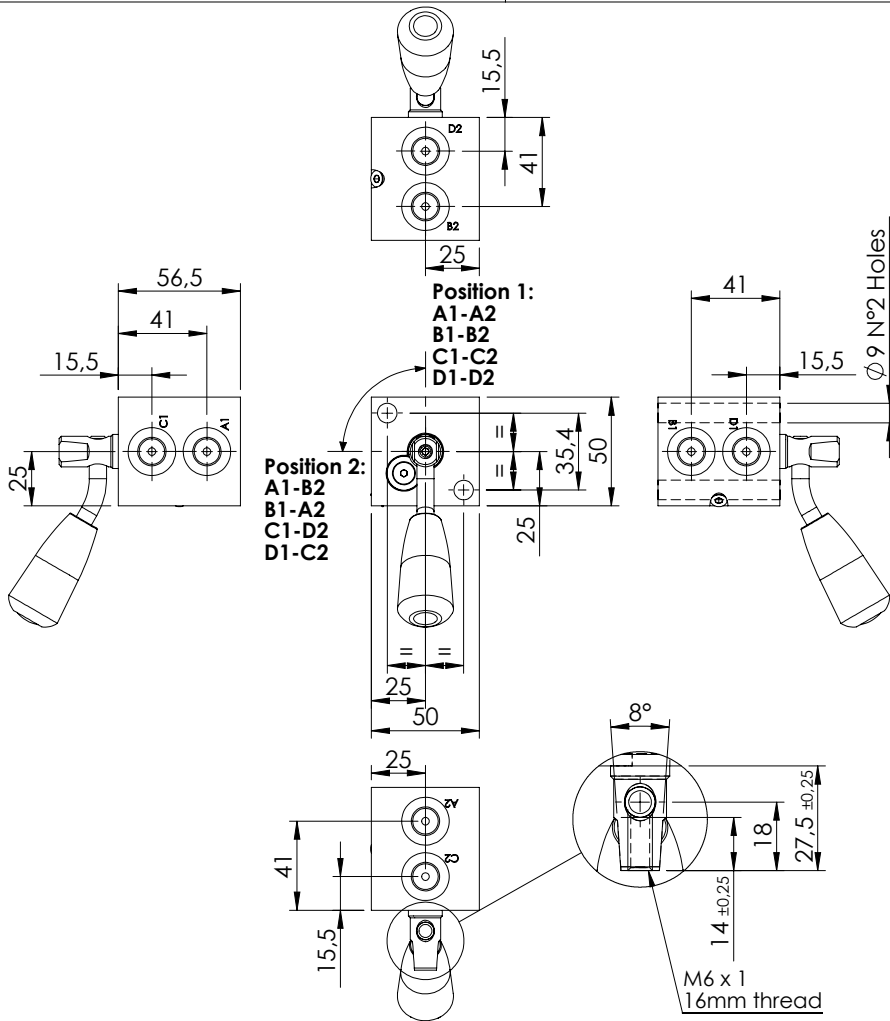
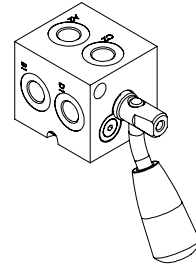


Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	BNND-015-AER	ISO-SAE, Changeover valve	15	210/350	In line	G 1/2"	14.06.010
	MDRD-020-SLN	Pilot manifold	20	50	In line	G 1/4"	14.06.020
	BNND-010-LRE	Joystick safety stop	10	210	In line	G 3/8"	14.06.030
	BNND-003-LNQ-02	Proportional pressure reducing, pilot manifold	3	50	In line	G 1/4"	14.06.040
	BNND-003-LNQ-06	Proportional pressure reducing, pilot manifold	3	50	In line	G 1/4"	14.06.050
	BNND-003-LNQ-08	Proportional pressure reducing, pilot manifold	3	50	In line	G 1/4"	14.06.060
	BNND-003-LNQ-14	Proportional pressure reducing, pilot manifold	3	50	In line	G 1/4"	14.06.070

PILOT BLOCK

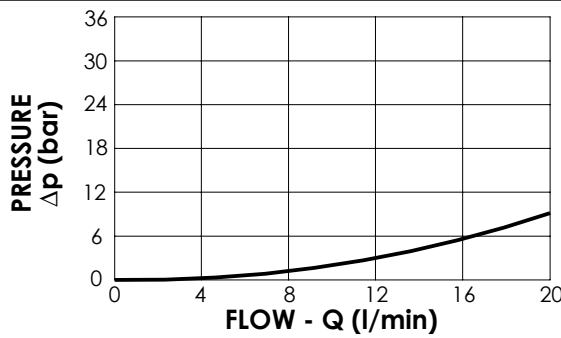
MDRD-020-SLN

ISO-SAE
CHANGEOVER VALVE



SPECIFICATIONS

Max. operating pressure:	50 bar
Rated flow:	20 l/min
Body:	Steel
Weight:	1 kg
Position shown:	1 - ISO position



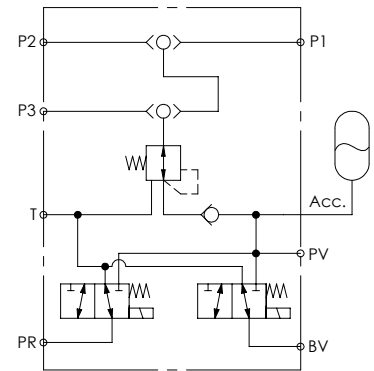
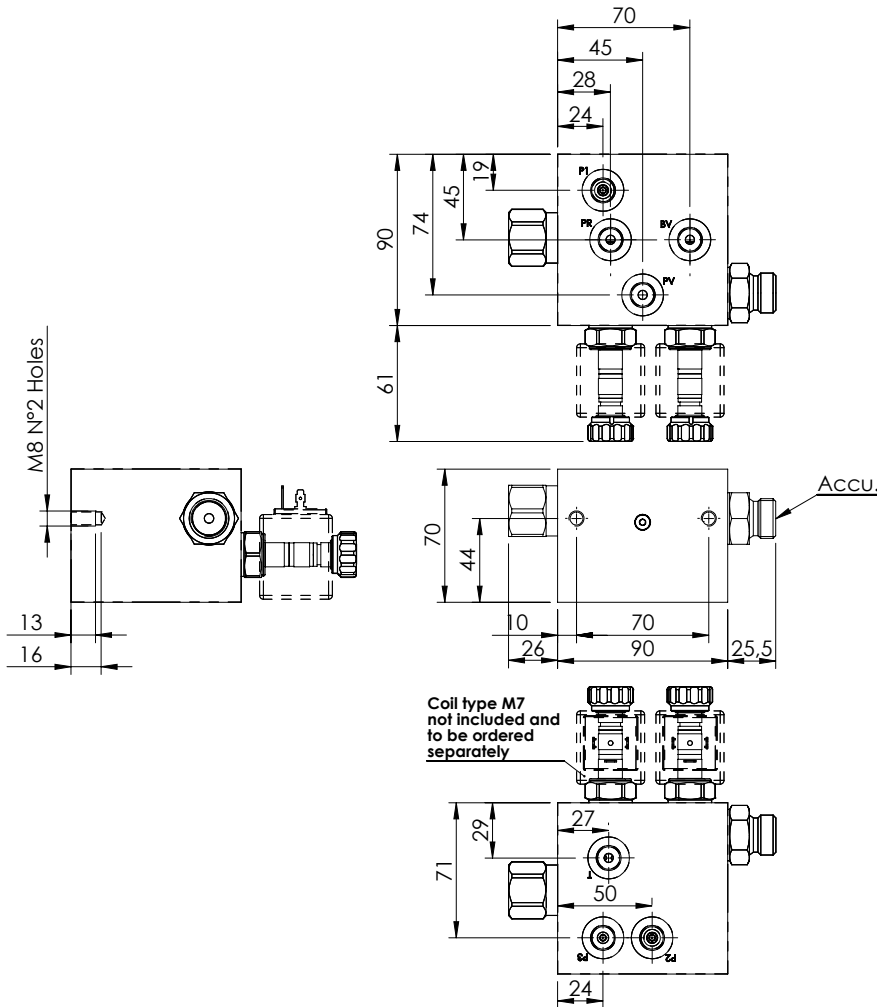
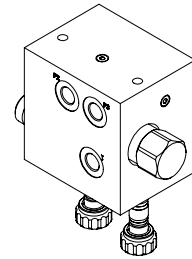
ORDERING CODES

Quick code	Description	Ports size	
MD000071	MDRD-020-SLN-NP-G14-N350	G 1/4"	

PILOT BLOCK

BNND-015-AER

PILOT MANIFOLD

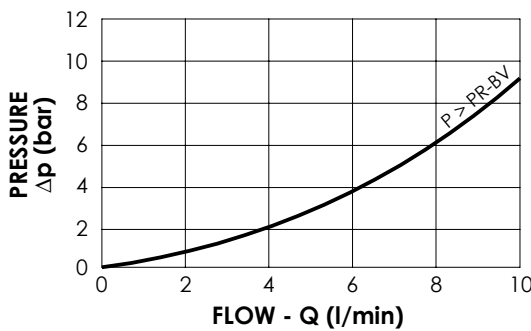


SPECIFICATIONS

Max. operating pressure:	350/210 bar
Rated flow:	15 l/min
Weight:	Steel 4,5 kg; Aluminium 1,9 kg
Coil type:	M7

NOTES

Rated flow in inlet: 15 l/min
 Rated flow from accumulator: 45 l/min
 Pressure reducing valve with stabilization system
 Othercoil/voltage available on request
 See chapter 18.00.000 for coil.



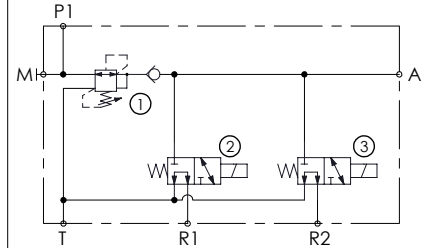
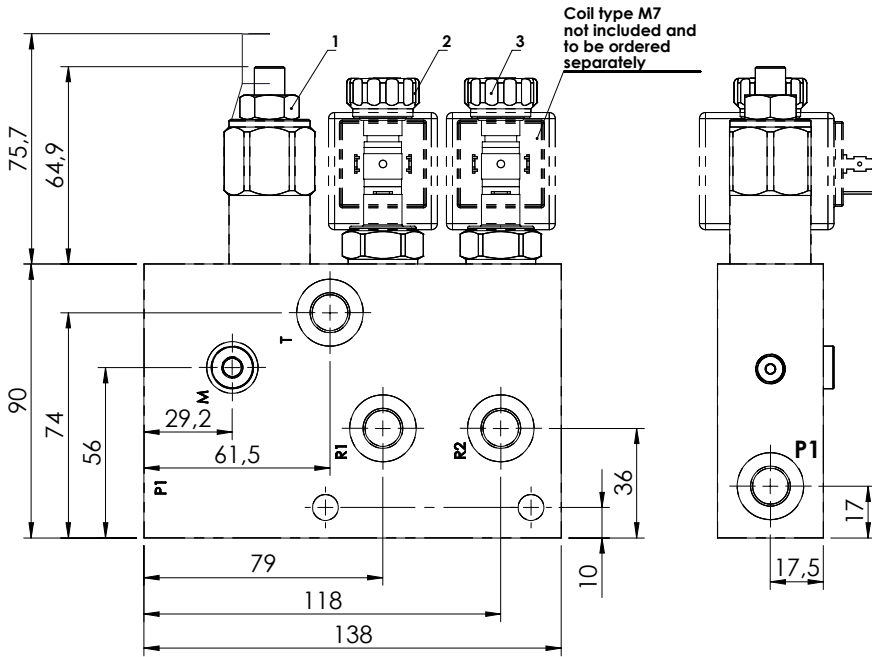
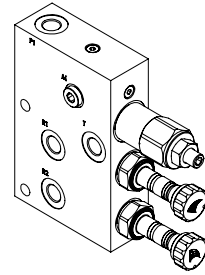
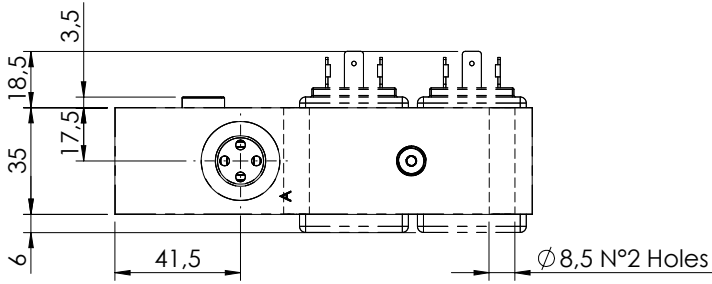
ORDERING CODES

Quick code	Description	Port size	Manifold material	Standard setting (bar)	
BD000205	BNND-015-AER-G14-N350	P1, P2, P3, PR, PV,BV, T: G 1/4" Acc: G 1/2"	Steel	35	
BD000087	BNND-015-LER-G14-N210	P1, P2, P3, PR, PV,BV, T: G 1/4" Acc: G 1/2"	Aluminium	35	

PILOT BLOCK

BNND-010-LRE

**JOYSTICK SAFETY STOP
SOLENOID OPERATED**

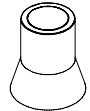


SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Manifold:	Steel
Weight:	3,2 kg
Coil type:	M7

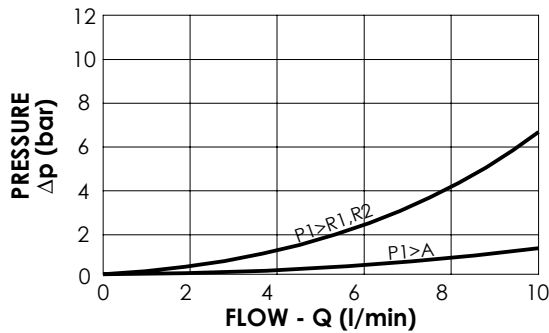
SEALING CAP

Ordering code:
AT000021



NOTES

-See chapter 18.00.000 for coil.



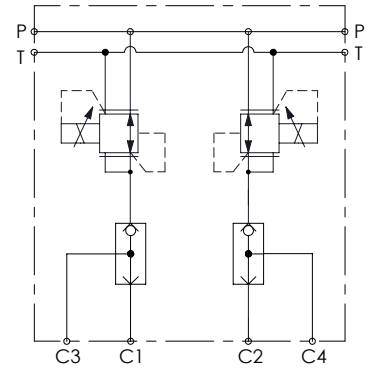
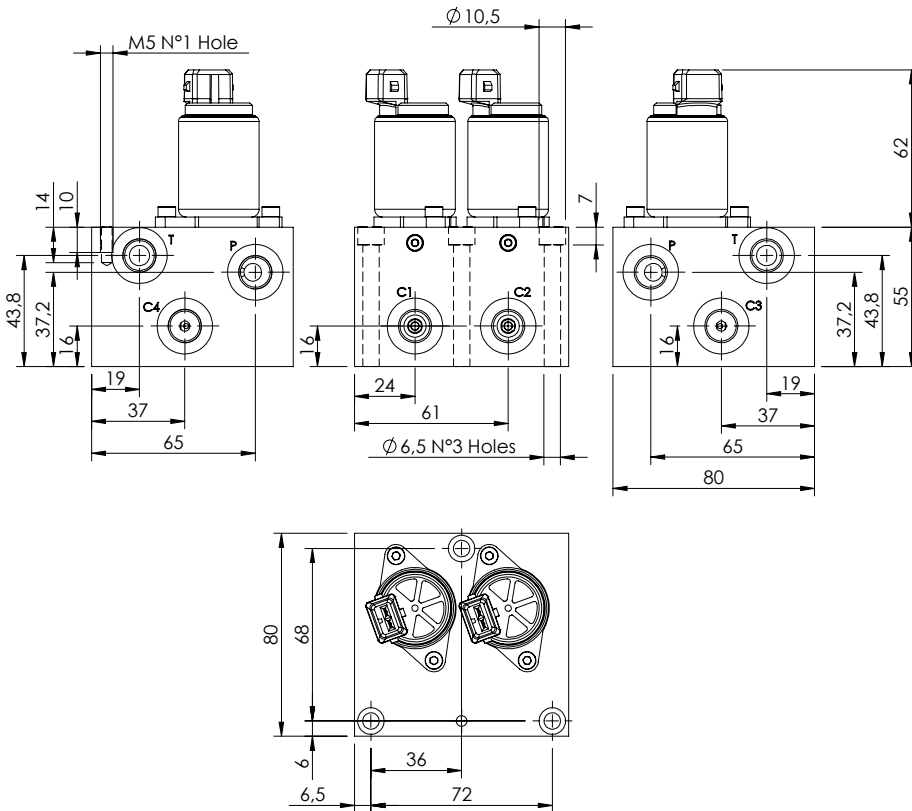
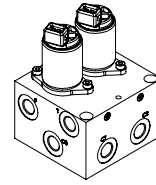
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar)	Adjustm. range (bar)	Pressure increase (bar/turn)
BD000197	BNND-010-LRE-NP-G38-N210	R1,R2,T,P1: G1/4" A: G3/8" M: G1/8"	35	10-50	7

PILOT BLOCK

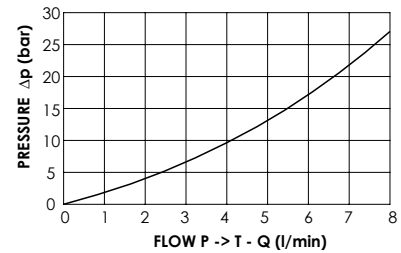
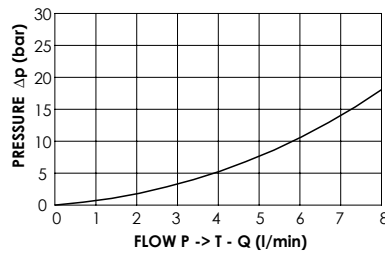
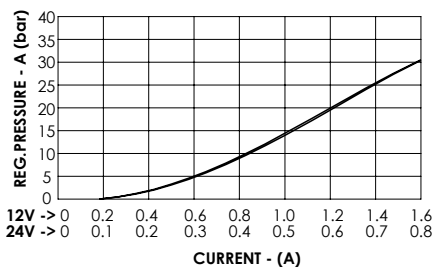
BNND-003-LNQ

**PROPORTIONAL
PRESSURE REDUCING
PILOT MANIFOLD**



SPECIFICATIONS

Max. operating pressure:	50 bar
Rated flow:	3 l/min
Manifold:	Aluminium
Weight:	0,9 kg



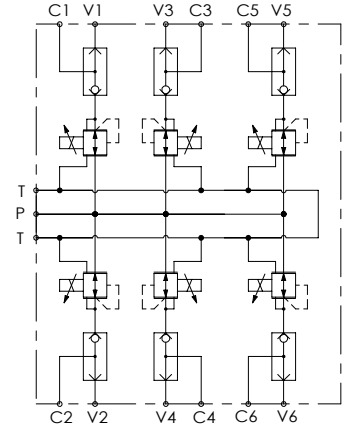
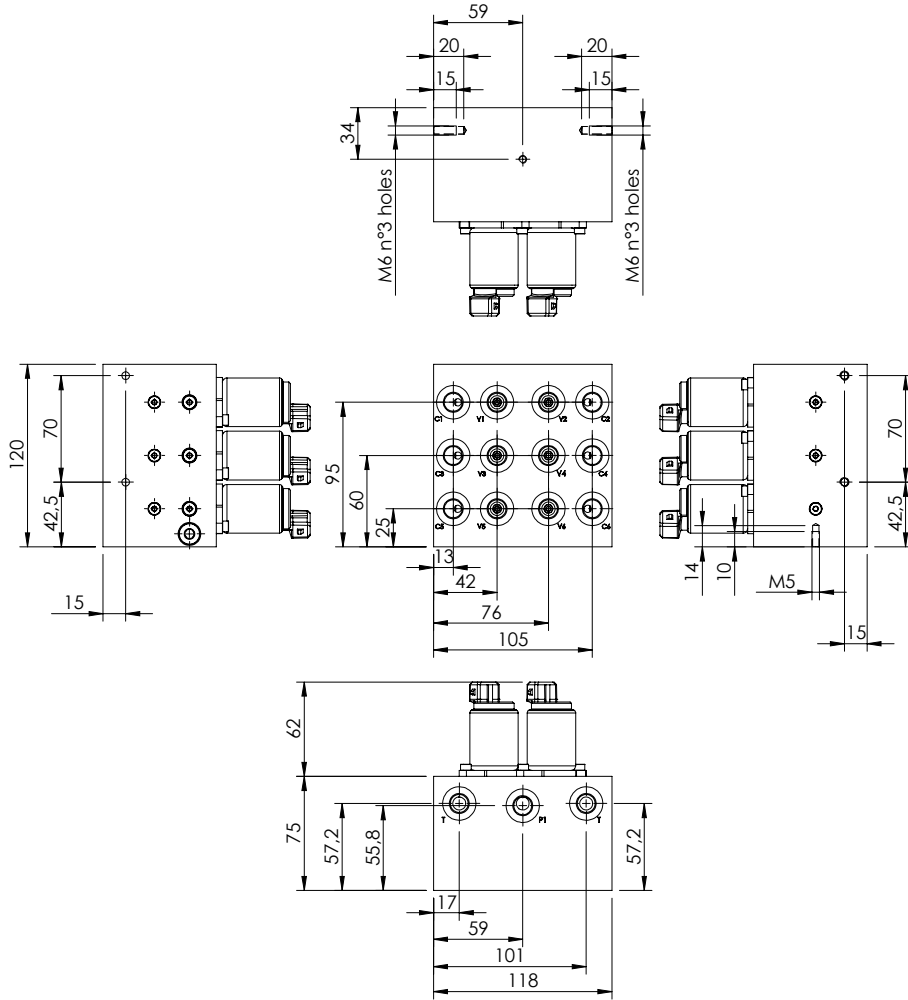
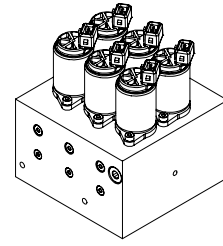
ORDERING CODES

Quick code	Description	Main ports size	Regulated pressure range (bar)	Voltage (V)	Connector type
BD000142	BNND-003-LNQ-02-G14-NBAJ	G 1/4"	0-25	24 DC	AMP JUNIOR
BD000127	BNND-003-LNQ-02-G14-NAAJ	G 1/4"	0-25	12 DC	AMP JUNIOR

PILOT BLOCK

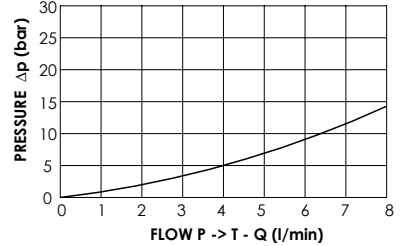
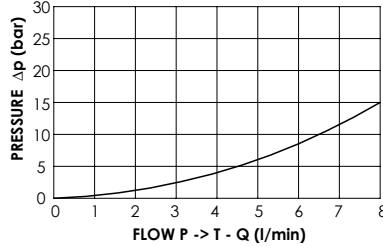
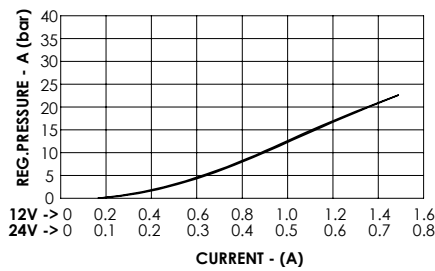
BNND-003-LNQ

**PROPORTIONAL
PRESSURE REDUCING
PILOT MANIFOLD**



SPECIFICATIONS

Max. operating pressure:	50 bar
Rated flow:	3 l/min
Manifold:	Aluminium
Weight:	2,6 kg



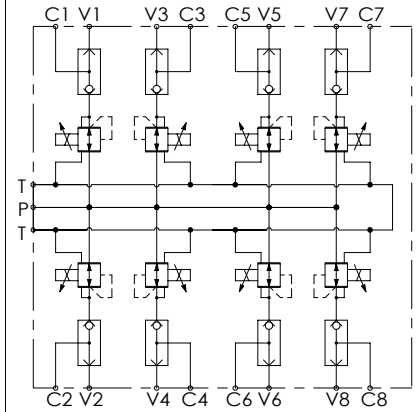
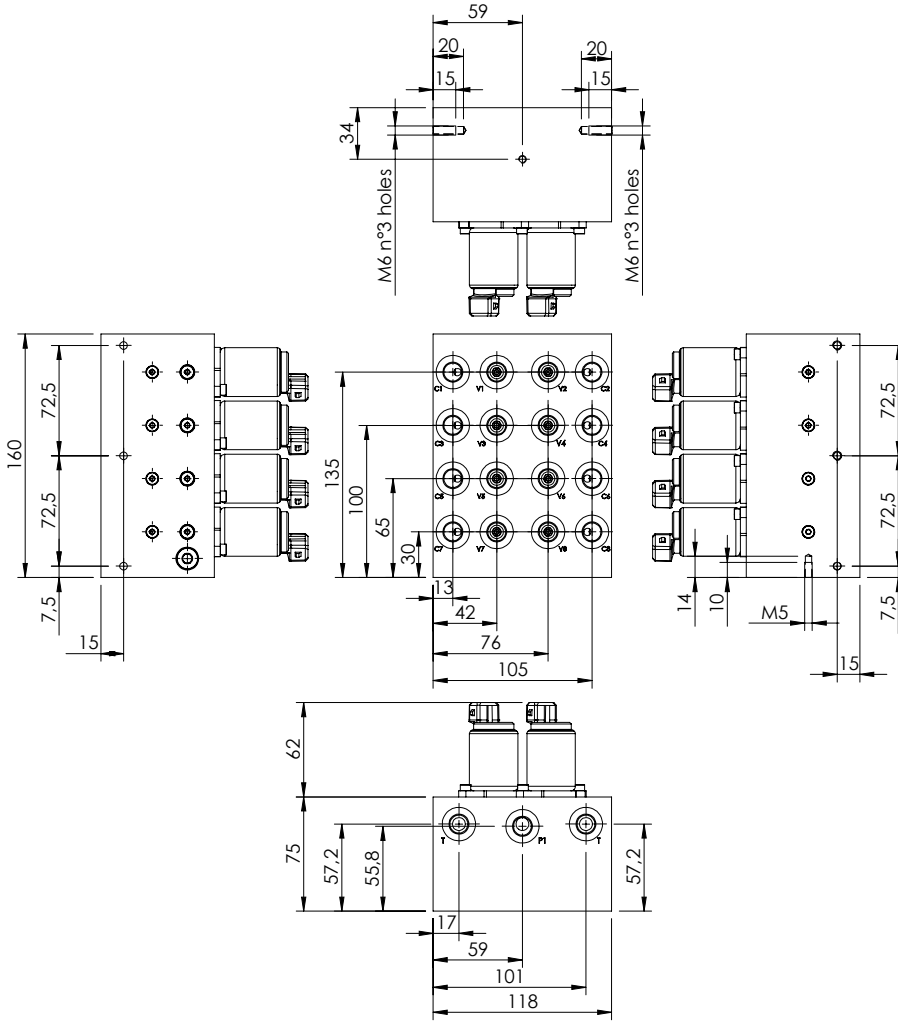
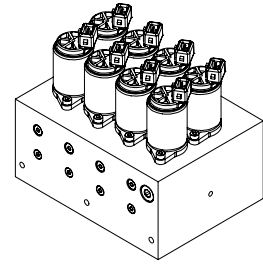
ORDERING CODES

Quick code	Description	Main ports size	Regulated pressure range (bar)	Voltage (V)	Connector type
BD000084	BNND-003-LNQ-06-G14-NBAJ	G 1/4"	0-20	24 DC	AMP JUNIOR
BD000202	BNND-003-LNQ-06-G14-NAAJ	G 1/4"	0-20	12 DC	AMP JUNIOR

PILOT BLOCK

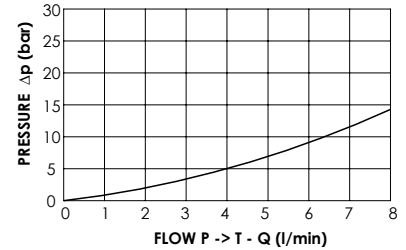
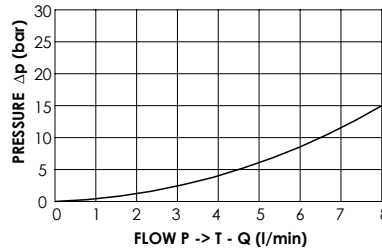
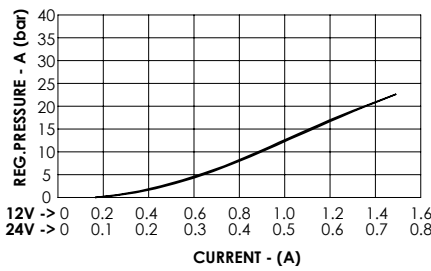
BNND-003-LNQ

**PROPORTIONAL
PRESSURE REDUCING
PILOT MANIFOLD**



SPECIFICATIONS

Max. operating pressure:	50 bar
Rated flow:	3 l/min
Manifold:	Aluminium
Weight:	3,6 kg



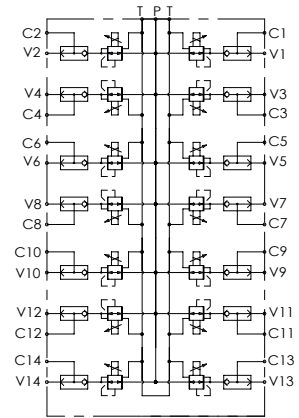
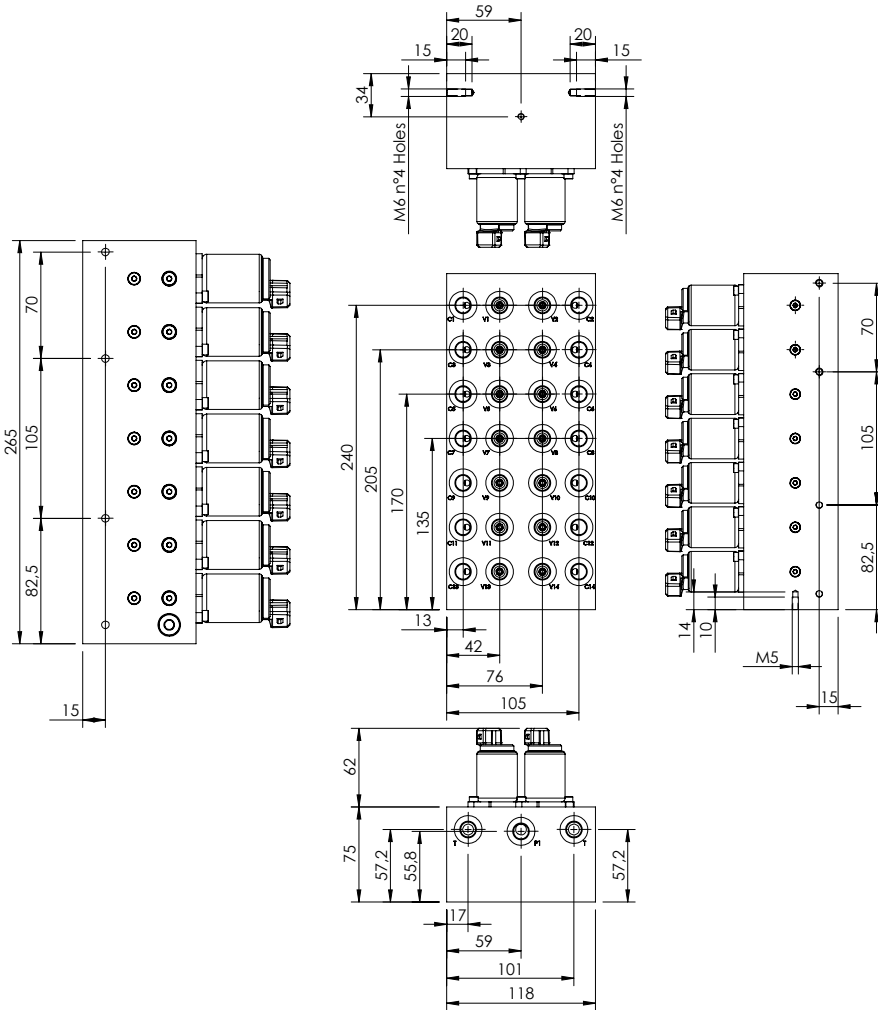
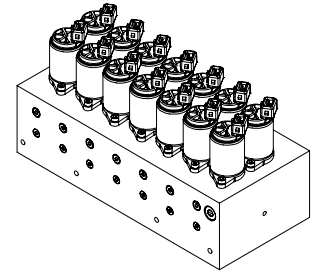
ORDERING CODES

Quick code	Description	Main ports size	Regulated pressure range (bar)	Voltage (V)	Connector type
BD000088	BNND-003-LNQ-08-G14-NBAJ	G 1/4"	0-20	24 DC	AMP JUNIOR
BD000201	BNND-003-LNQ-08-G14-NAAJ	G 1/4"	0-20	12 DC	AMP JUNIOR

PILOT BLOCK

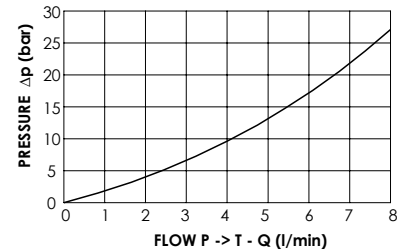
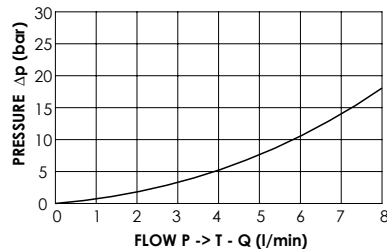
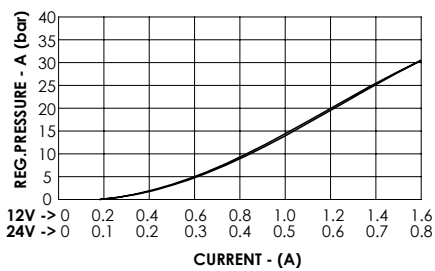
BNND-003-LNQ

**PROPORTIONAL
PRESSURE REDUCING
PILOT MANIFOLD**



SPECIFICATIONS

Max. operating pressure:	50 bar
Rated flow:	3 l/min
Manifold:	Aluminium
Weight:	5,8 kg



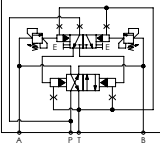
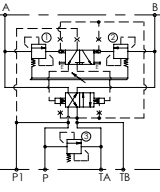
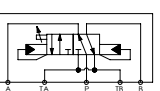
ORDERING CODES

Quick code	Description	Main ports size	Regulated pressure range (bar)	Voltage (V)	Connector type
BD000203	BNND-003-LNQ-14-G14-NBAJ	G 1/4"	0-25	24 DC	AMP JUNIOR
BD000204	BNND-003-LNQ-14-G14-NAAJ	G 1/4"	0-25	12 DC	AMP JUNIOR

SECTION 14. 7

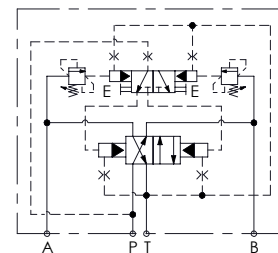
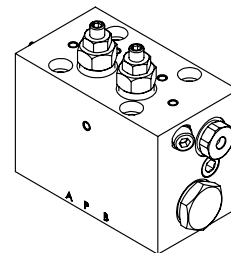
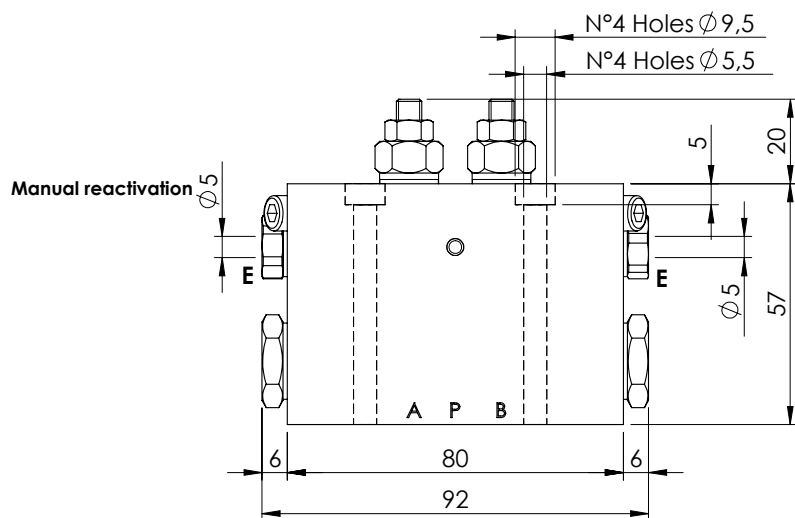
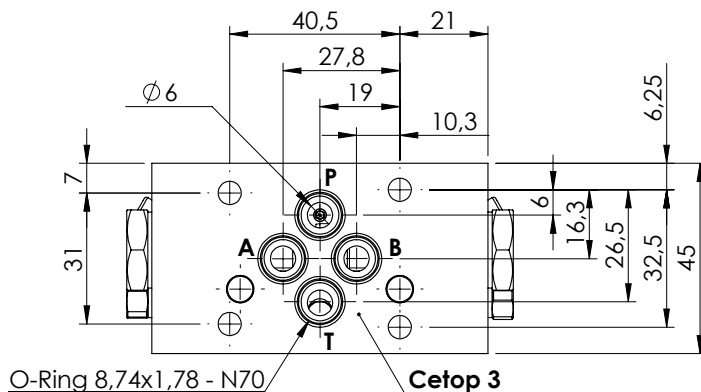
SPECIAL VALVES - AUTOMATIC SWITCHING VALVES



Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	MDAP-040-NNNR MDAP-090-NNNR	Spool type, pressure switching Spool type, pressure switching	40 90	350 350	Flanged Flanged	Cetop 3 Cetop 5	14.07.010 14.07.020
	MDAP-090-NNNR	Spool type, pressure switching	90	250	Flanged	Cetop 5	14.07.030
	MDAF-080-ANNR	Spool type, flow switching, P in A start	80	350	Flanged	Cetop 5	14.07.040

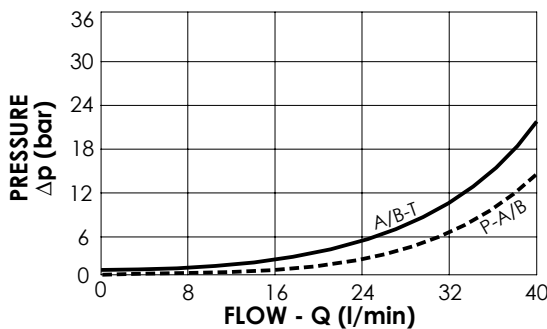
AUTOMATIC DIRECTIONAL VALVE

MDAP-040-NNNR PRESSURE SWITCHING



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	40 l/min
Manifold:	Black galvanized cast iron
Weight:	1,48 kg



NOTES

- Minimum required flow: 3 l/min
- Actuator working pressure should always be lower than the automatic switching valve relief setting.
- Automatic switching valve relief setting should always be lower than pump relief valve setting.

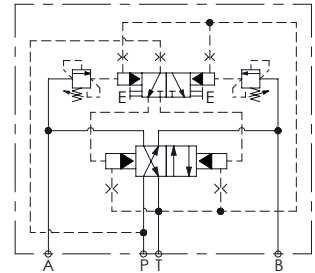
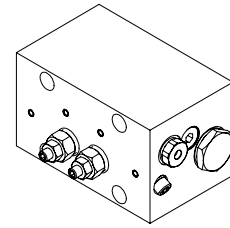
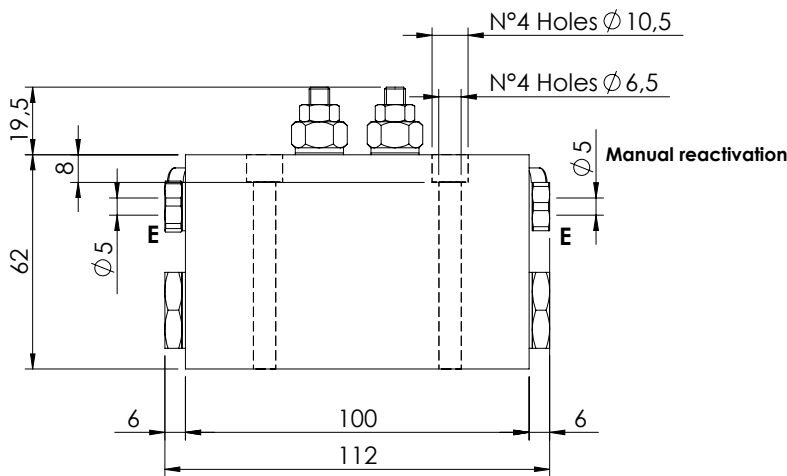
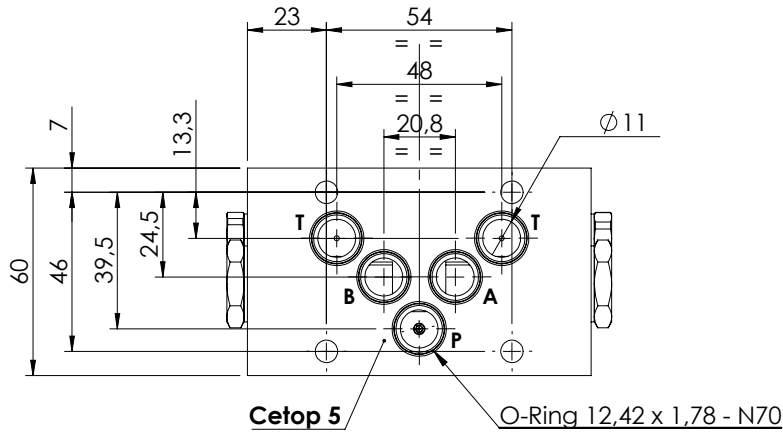
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MD000027	MDAP-040-NNNR-NP-N06-N350	A,B,P,T : CETOP 3	350	100-350	95
MD000026	MDAP-040-NNNR-NP-N06-N200	A,B,P,T : CETOP 3	200	50-210	51
MD000025	MDAP-040-NNNR-NP-N06-N100	A,B,P,T : CETOP 3	100	15-100	26

AUTOMATIC DIRECTIONAL VALVE

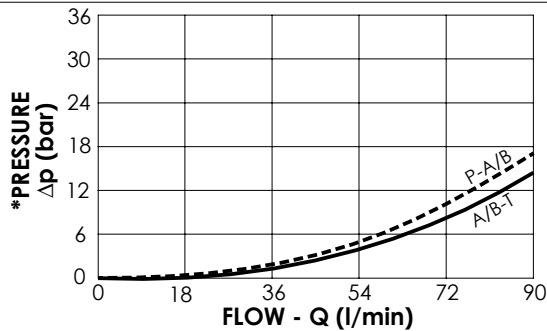
MDAP-090-NNNR

PRESSURE SWITCHING



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	90 l/min
Manifold:	Cast iron
Weight:	2,64 kg



NOTES

Minimum required flow: 3 l/min

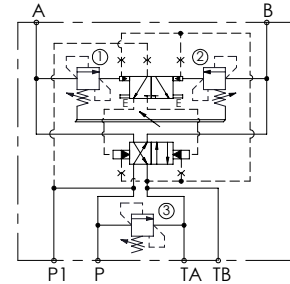
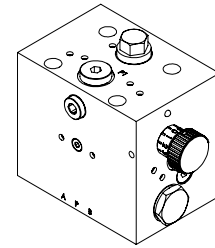
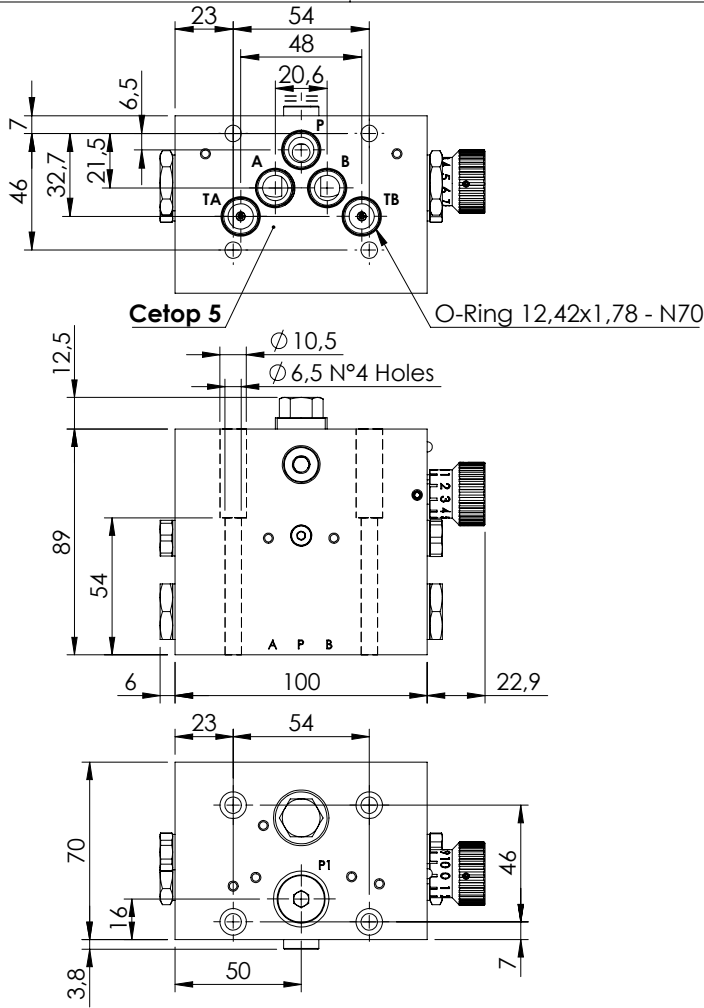
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MD000030	MDAP-090-NNNR-NP-N10-N350	A,B,P,T: CETOP 5	350	100-350	95
MD000029	MDAP-090-NNNR-NP-N10-N200	A,B,P,T: CETOP 5	200	50-210	51
MD000028	MDAP-090-NNNR-NP-N10-N100	A,B,P,T: CETOP 5	100	15-100	26

AUTOMATIC DIRECTIONAL VALVE

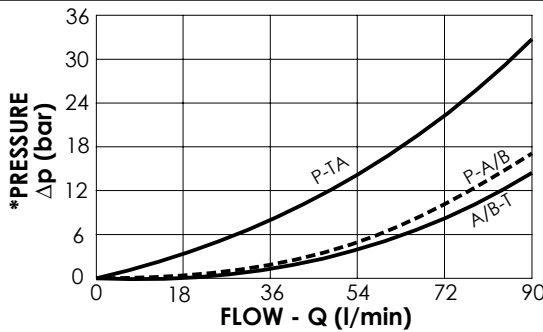
MDAP-090-NNNR

PRESSURE SWITCHING



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	90 l/min
Manifold:	Cast Iron
Weight:	4,44 kg



NOTES

Minimum required flow: 3 l/min

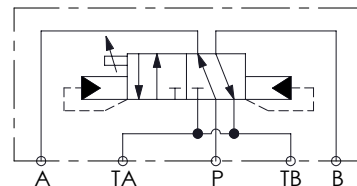
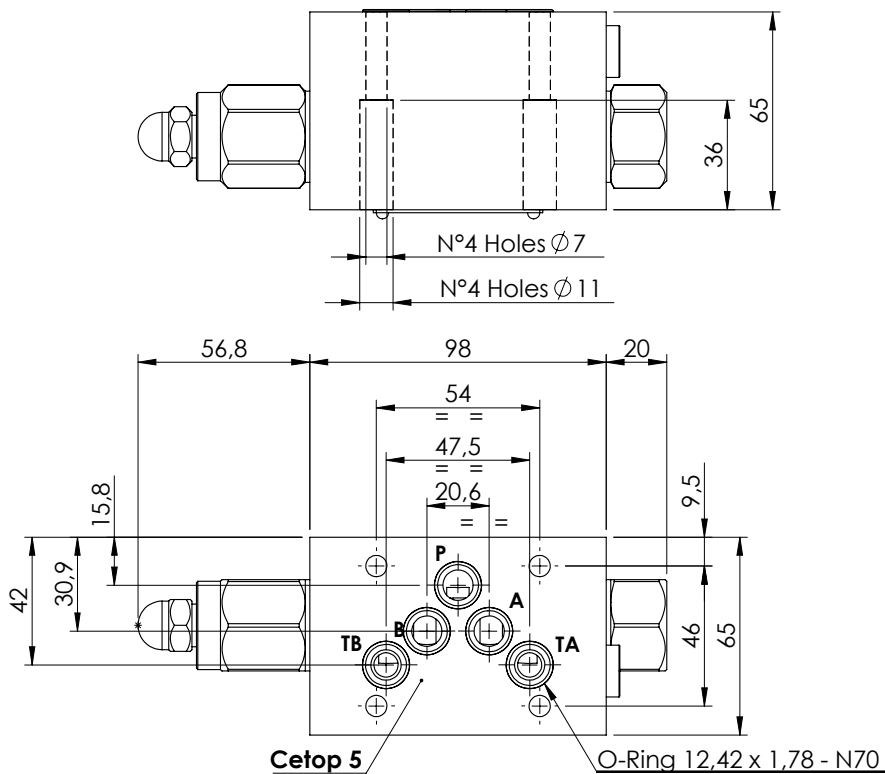
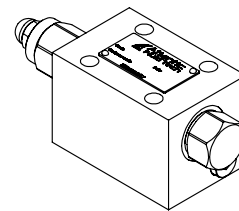
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MD000119	MDAP-090-NNNR-NP-N10-N350	A,B,P,TA,TB: CETOP 5 P1: G 1/4"	① ② 180 ③ 200	① ② 140-350	① ② 146
				Fix setting	

AUTOMATIC DIRECTIONAL VALVE

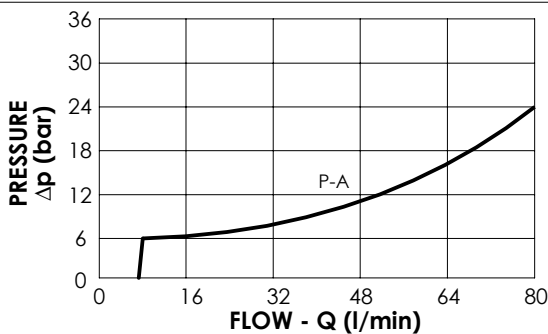
MDAF-080-ANNR

FLOW SWITCHING



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	80 l/min
Manifold:	Cast iron
Weight:	3,12 kg



NOTES

- Minimum required flow: 6 l/min
- Flexible pipe should be placed between valve and cylinder rod side
- No suitable motor

ORDERING CODES

Quick code	Description	Main ports size
MD000034	MDAF-080-ANNR-NP-N10-N350	A,P,B,TA,TB : CETOP 5

SECTION 14. 8

SPECIAL VALVES - LOAD LIMITING DEVICE VALVES

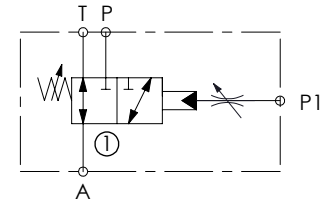
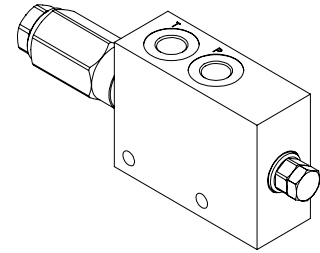
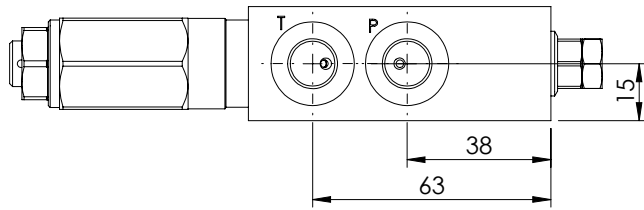
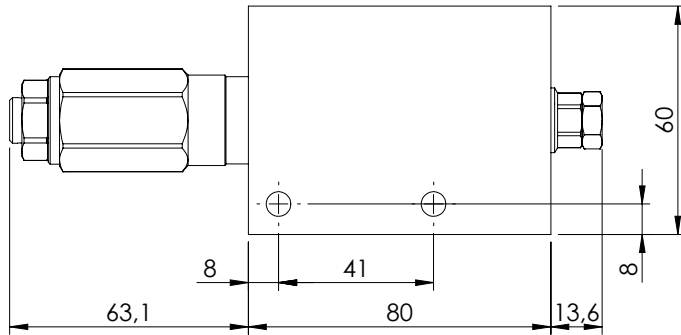
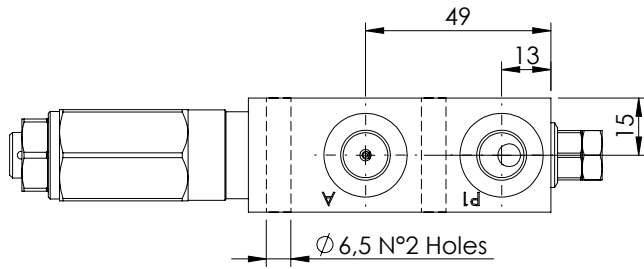


Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	MDAP-040-NNNR	Hydraulic pressure, unloading, 2 ways	10	210	In line	G 1/4"	14.08.010
	MTP-003-TLSN	Hydraulic pressure, unloading, 3 ways	3	350	In line	G 1/4"	14.08.020
	MTL-003-TLSN	Hydraulic pressure, unloading, kick down system	3	350	In line	G 1/4"	14.08.030
	MTLN-005-TLNR	Pilot pressure, unloading	5	350	In line	G 1/4"	14.08.040
	MTLN-005-TLNR	Pilot pressure, unloading, flange for pressure switch	5	350	In line	G 1/4"	14.08.050

LOAD LIMITING DEVICE

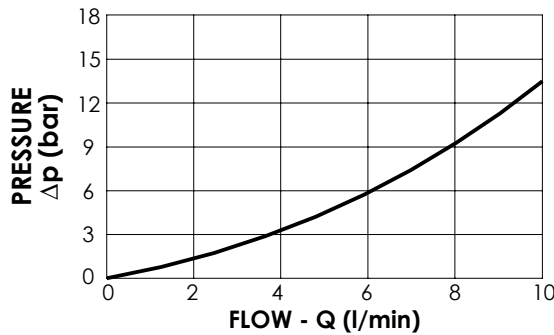
MTP-010-TLSN

HYDRAULIC PRESSURE
UNLOADING
3 WAYS



SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Manifold:	Aluminium
Weight:	0,6 kg



NOTES

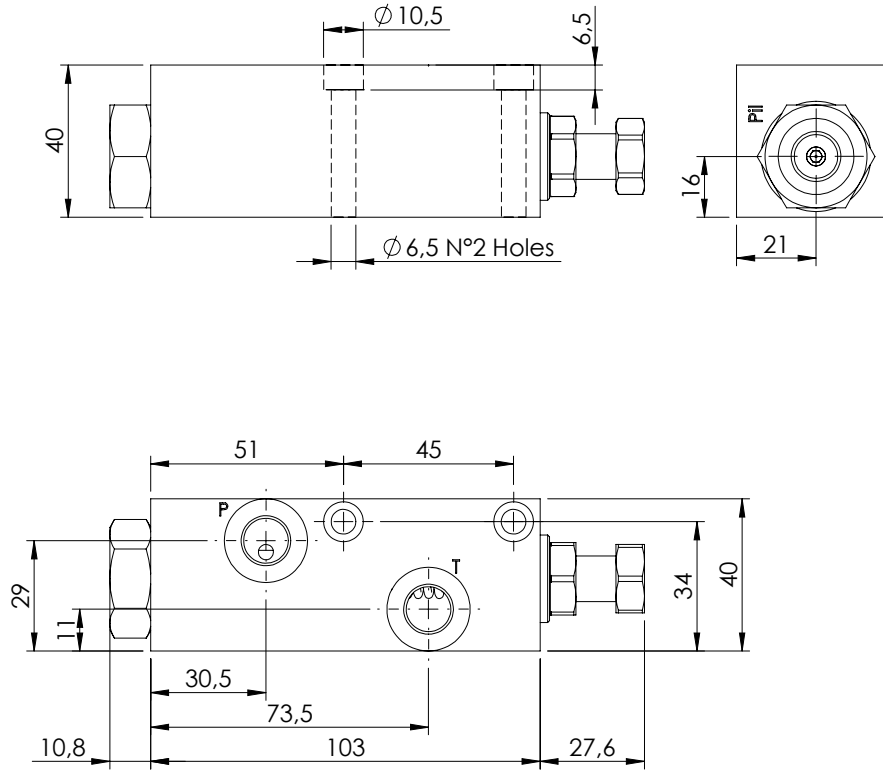
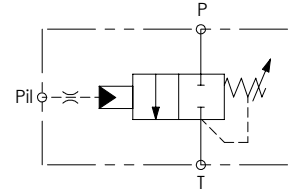
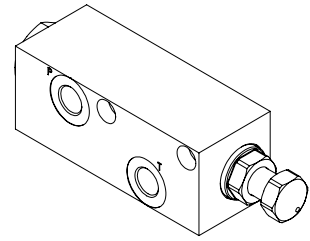
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MT000032	MTP-010-TLSN-NP-G14-N210	T,P,P1,A:G 1/4"	25	3-50	3

LOAD LIMITING DEVICE

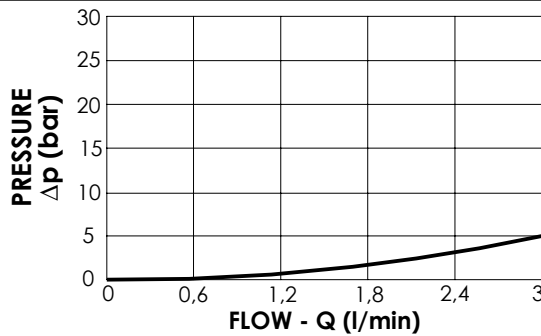
MTTP-003-TLSN

**HYDRAULIC PRESSURE UNLOADING
2 WAYS**



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	3 l/min
Manifold:	Aluminium
Weight:	0,55 kg



NOTES

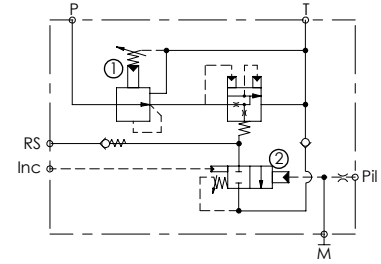
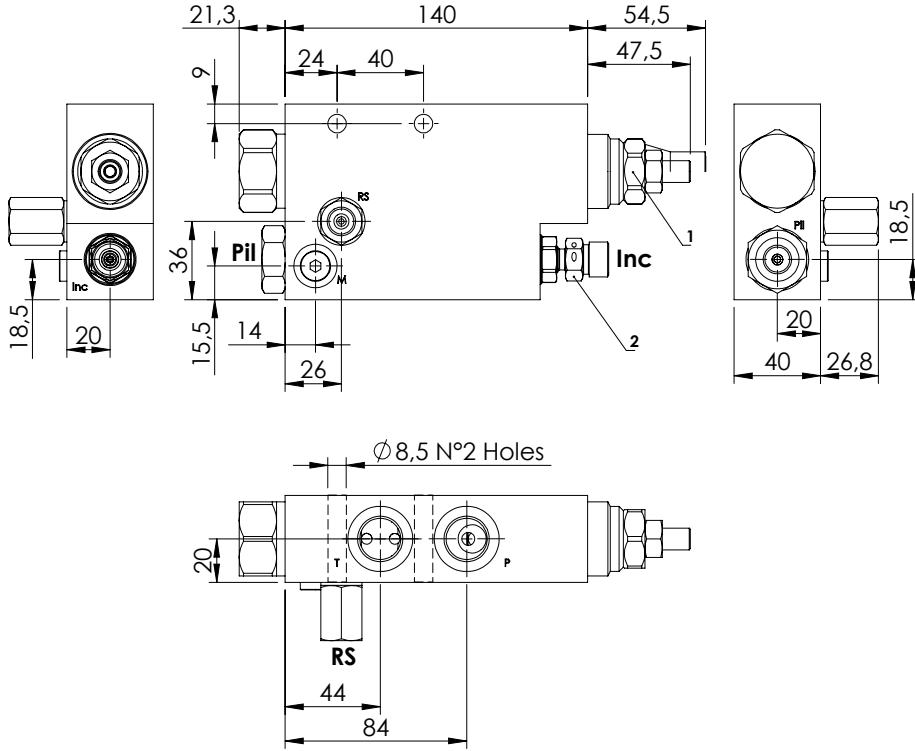
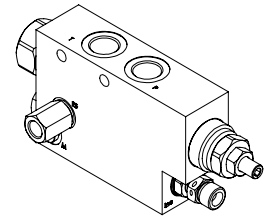
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MT000011	MTTP-003-TLSN-01-G14-N006	P, Pi, T: G1/4"	6	6-55	12

LOAD LIMITING DEVICE

MTSN-120-TLNR

**HYDRAULIC PRESSURE
UNLOADING
KICK DOWN SYSTEM**

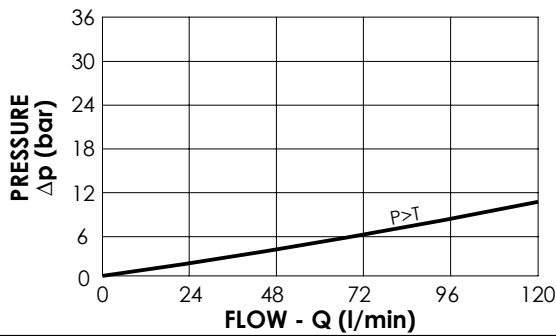
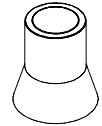


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	120 l/min
Manifold:	Aluminium
Weight:	1,91 kg

SEALING CAP

Ordering cose:
AT000021



NOTES

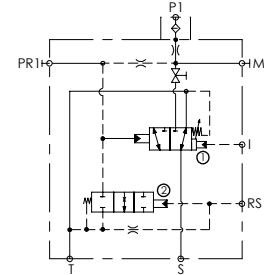
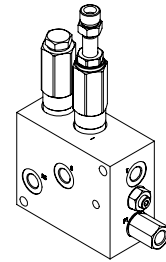
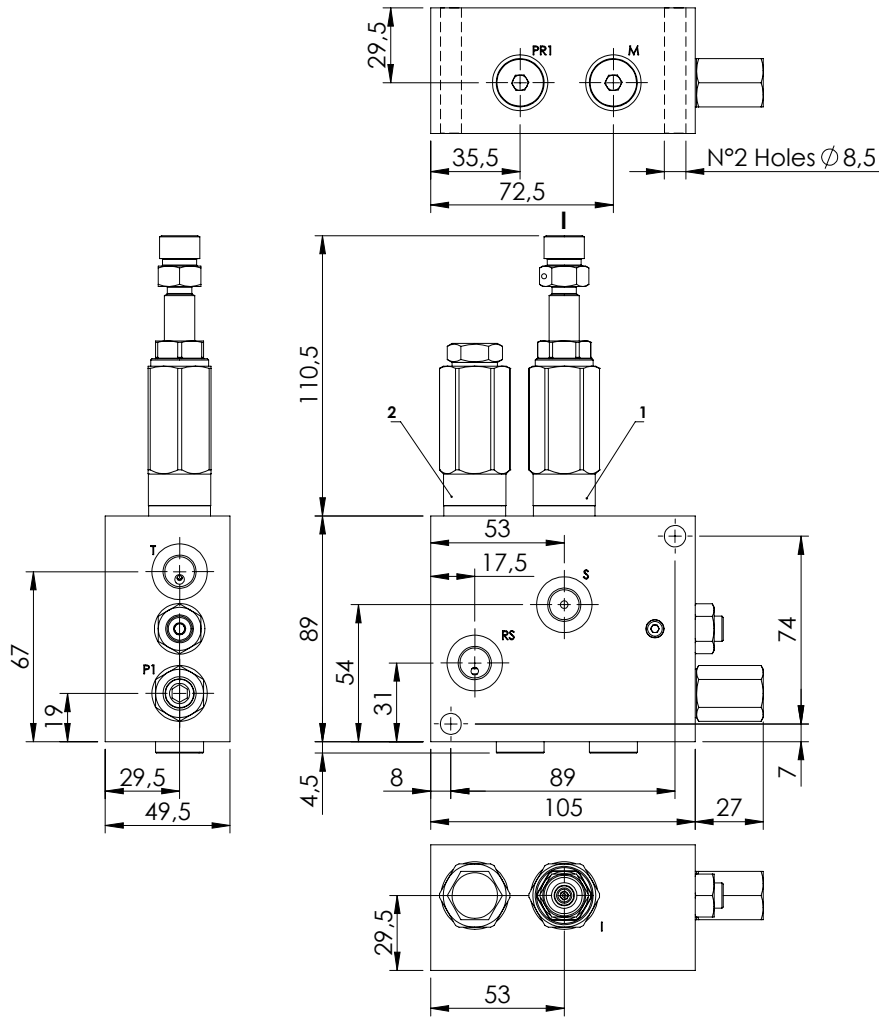
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MT000010	MTSN-120-TLNR-NP-G12-N350	P,T:G 1/2" RS,Pii:G 1/4" I:M16x1,5 M:M10x1	① 35 ② 350	① 10-120 ② 70-210	① 37 ② 92

LOAD LIMITING DEVICE

MTTL-005-TLSN

PILOT PRESSURE UNLOADING



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	5 l/min
Manifold:	Aluminium
Weight:	1,86 kg

NOTES

For info or special versions contact AFT sales network.

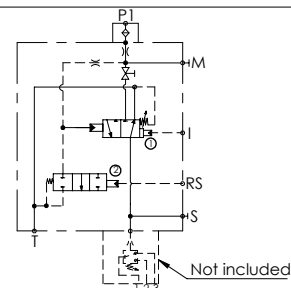
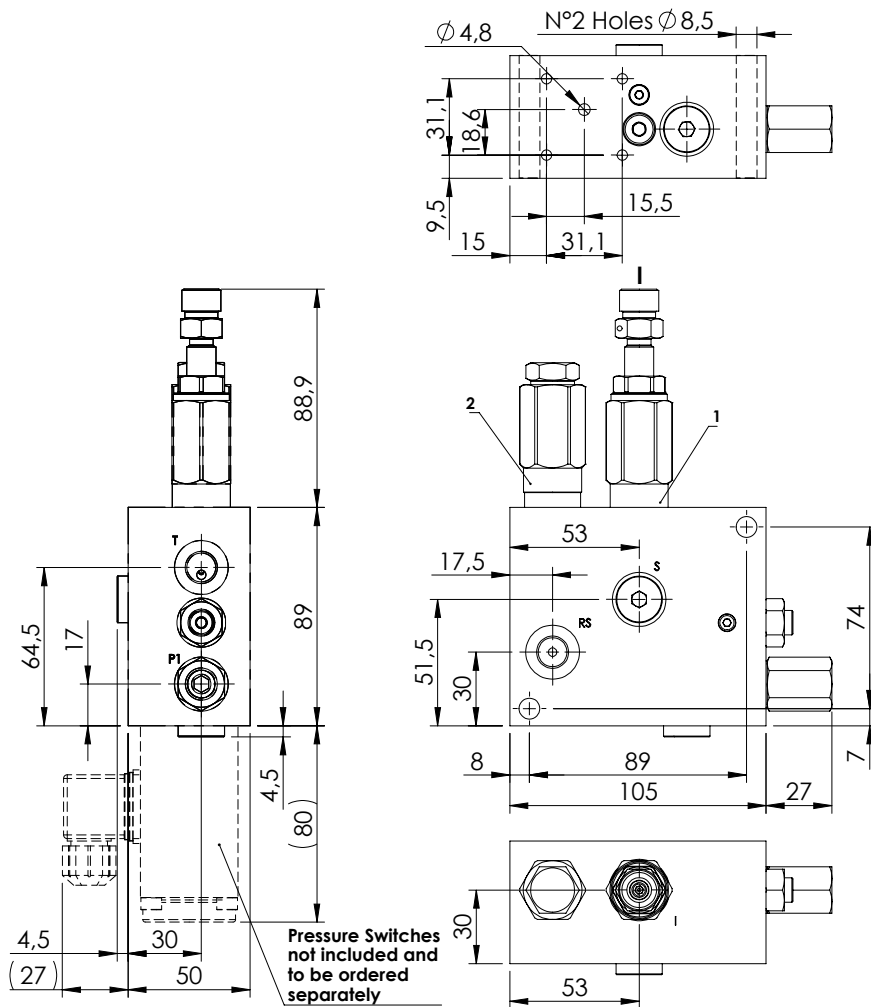
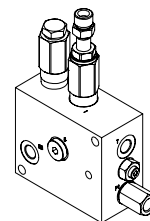
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MT000026	MTTL-005-TLSN-NP-G14-N350	P1,M,PR1,RS,T,S:G 1/4" l:M16x1,5	200	50-300	23

LOAD LIMITING DEVICE

MTR-005-TLSN

PILOT PRESSURE UNLOADING FLANGE FOR PRESSURE SWITCH



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	5 l/min
Manifold:	Aluminium
Weight:	1,78 kg

NOTES

For info or special versions contact AFT sales network.

ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MT000031	MTR-005-TLSN-NP-G14-N350	P1,M,PR1,RS,T,S:G 1/4" I:M16x1,5	280	100-350	109

SECTION 15

SOLENOID CARTRIDGES



Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	CEBN-001-NCFN-15	Direct acting, poppet type	1,5	350/500	Cartridge	SAE-08-2N	15.01.010
	CEBD-001-NCFN-15	Direct acting, poppet type	1	350	Cartridge	VP000445	15.01.020
	CEBN-001-NCFN-16	Direct acting, poppet type	1,5	350/500	Cartridge	SAE-08-2N	15.02.030
	CEBD-001-NCFN-16	Direct acting, poppet type	1	350	Cartridge	VP000445	15.02.040
	CEBN-001-NAFN-13	Direct acting, poppet type	1,5	350/500	Cartridge	SAE-08-2N	15.03.050
	CEBD-001-NAFN-13	Direct acting, poppet type	1	350	Cartridge	VP000445	15.03.060
	CEBN-001-NAFN-14	Direct acting, poppet type	1,5	350/500	Cartridge	SAE-08-2N	15.04.070
	CEBD-001-NAFN-14	Direct acting, poppet type	1	350	Cartridge	VP000445	15.04.080
	CEBS-010-NCFN-22	Direct acting, spool type	10	210	Cartridge	SAE-08-2N	15.05.090
	CEBS-010-NAFN-23	Direct acting, spool type	10	210	Cartridge	SAE-08-2N	15.06.100
	CEBD-015-NCFN-21	Direct acting, poppet type	15	210	Cartridge	SAE-08-2N	15.07.110
	CEBP-020-NCFN-01	Pilot operated, poppet type, cable operated	20	250	Cartridge	SAE-08-2N	15.08.120
	CEBN-030-NCFN-01	Pilot operated, poppet type	30	350	Cartridge	SAE-08-2N	15.08.130
	CEBN-040-NCFN-01	Pilot operated, poppet type	40	350/500	Cartridge	SAE-08-2N	15.08.140
	CEBN-070-NCFN-01	Pilot operated, poppet type	70	350/500	Cartridge	SAE-10-2N	15.08.150
	CEBN-100-NCFN-01	Pilot operated, poppet type	100	350/500	Cartridge	VP000057	15.08.160
	CEBN-180-NCFN-01	Pilot operated, poppet type	180	350/500	Cartridge	SAE-12-2N	15.08.170
	CEBN-200-NCFN-01	Pilot operated, poppet type	200	350/500	Cartridge	VP000013	15.08.180
	CEBN-300-NCFN-01	Pilot operated, poppet type	300	350/500	Cartridge	SAE-16-2N	15.08.190
	CEBN-030-NCFN-05	Pilot operated, poppet type	30	350	Cartridge	SAE-08-2N	15.09.200
	CEBN-040-NCFN-05	Pilot operated, poppet type	40	350/500	Cartridge	SAE-08-2N	15.09.210
	CEBN-070-NCFN-05	Pilot operated, poppet type	70	350/500	Cartridge	SAE-10-2N	15.09.220
	CEBN-100-NCFN-05	Pilot operated, poppet type	100	350/500	Cartridge	VP000057	15.09.230
	CEBN-180-NCFN-05	Pilot operated, poppet type	180	350/500	Cartridge	SAE-12-2N	15.09.240
	CEBN-200-NCFN-05	Pilot operated, poppet type	200	350/500	Cartridge	VP000013	15.09.250
	CEBN-300-NCFN-05	Pilot operated, poppet type	300	350/500	Cartridge	SAE-16-2N	15.09.260
	CEBN-040-NCFN-03	Pilot operated, poppet type	40	350/500	Cartridge	SAE-08-2N	15.10.270
	CEBN-070-NCFN-03	Pilot operated, poppet type	70	350/500	Cartridge	SAE-10-2N	15.10.280
	CEBN-100-NCFN-03	Pilot operated, poppet type	100	350/500	Cartridge	VP000057	15.10.290
	CEBN-200-NCFN-03	Pilot operated, poppet type	200	350/500	Cartridge	VP000013	15.10.300
	CEBN-030-NAFN-02	Pilot operated, poppet type	30	350	Cartridge	SAE-08-2N	15.11.310
	CEBN-040-NAFN-02	Pilot operated, poppet type	40	350/500	Cartridge	SAE-08-2N	15.11.320
CEBN-070-NAFN-02	Pilot operated, poppet type	70	350/500	Cartridge	SAE-10-2N	15.11.330	
	CEBN-100-NAFN-02	Pilot operated, poppet type	100	350/500	Cartridge	VP000057	15.11.340
	CEBN-180-NAFN-02	Pilot operated, poppet type	180	350/500	Cartridge	SAE-12-2N	15.11.350
	CEBN-200-NAFN-02	Pilot operated, poppet type	200	350/500	Cartridge	VP000013	15.11.360
	CEBN-300-NAFN-02	Pilot operated, poppet type	300	350/500	Cartridge	SAE-16-2N	15.11.370
	CEBN-030-NAFN-06	Pilot operated, poppet type	30	350	Cartridge	SAE-08-2N	15.12.380
	CEBN-040-NAFN-06	Pilot operated, poppet type	40	350/500	Cartridge	SAE-08-2N	15.12.390
	CEBN-070-NAFN-06	Pilot operated, poppet type	70	350/500	Cartridge	SAE-10-2N	15.12.400
	CEBN-100-NAFN-06	Pilot operated, poppet type	100	350/500	Cartridge	VP000057	15.12.410
	CEBN-180-NAFN-06	Pilot operated, poppet type	180	350/500	Cartridge	SAE-12-2N	15.12.420
	CEBN-200-NAFN-06	Pilot operated, poppet type	200	350/500	Cartridge	VP000013	15.12.430
	CEBN-300-NAFN-06	Pilot operated, poppet type	300	350/500	Cartridge	SAE-16-2N	15.12.440
	CEBN-040-NAFN-04	Pilot operated, poppet type	40	350/500	Cartridge	SAE-08-2N	15.13.450
	CEBN-070-NAFN-04	Pilot operated, poppet type	70	350/500	Cartridge	SAE-10-2N	15.13.460
	CEBN-100-NAFN-04	Pilot operated, poppet type	100	350/500	Cartridge	VP000057	15.13.470
CEBN-200-NAFN-04	Pilot operated, poppet type	200	350/500	Cartridge	VP000013	15.13.480	

SECTION 15



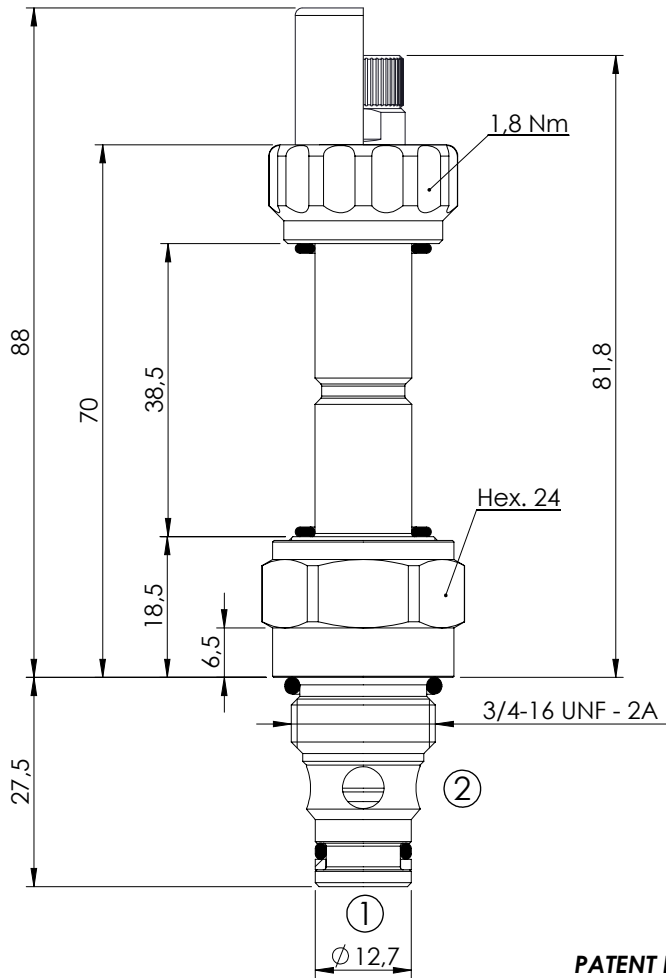
SOLENOID CARTRIDGES

Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	CEBN-040-NCFN-31	Pilot operated, poppet type	40	350/500	Cartridge	SAE-08-2N	15.14.490
	CEBN-070-NCFN-31	Pilot operated, poppet type	70	350/500	Cartridge	SAE-10-2N	15.14.500
	CEBN-100-NCFN-31	Pilot operated, poppet type	100	350/500	Cartridge	VP000057	15.14.510
	CEBN-180-NCFN-31	Pilot operated, poppet type	180	350/500	Cartridge	SAE-12-2N	15.14.520
	CEBN-200-NCFN-31	Pilot operated, poppet type	200	350/500	Cartridge	VP000013	15.14.530
	CEBN-300-NCFN-31	Pilot operated, poppet type	300	350/500	Cartridge	SAE-16-2N	15.14.540
	CEBN-040-NAFN-32	Pilot operated, poppet type	40	350/500	Cartridge	SAE-08-2N	15.15.550
	CEBN-070-NAFN-32	Pilot operated, poppet type	70	350/500	Cartridge	SAE-10-2N	15.15.560
	CEBN-100-NAFN-32	Pilot operated, poppet type	100	350/500	Cartridge	VP000057	15.15.570
	CEBN-180-NAFN-32	Pilot operated, poppet type	180	350/500	Cartridge	SAE-12-2N	15.15.580
	CEBN-200-NAFN-32	Pilot operated, poppet type	200	350/500	Cartridge	VP000013	15.15.590
	CEBN-300-NAFN-32	Pilot operated, poppet type	300	350/500	Cartridge	SAE-16-2N	15.15.600
	CEBD-040-NAMV CEBD-040-NACV	Direct acting, poppet type	40	350	Cartridge	VP000338	15.16.610
	CEBT-500-NCFN-01	Piloted operated, spool type	500	350	Cartridge	SAE-20-2N	15.17.620
	CEBT-500-NAFN-02	Piloted operated, spool type	500	350	Cartridge	SAE-20-2N	15.18.630
	CECS-010-SEFN-64	Direct acting, spool type	10	210	Cartridge	SAE-08-3N	15.19.640
	CEDS-010-SEFN-40	Direct acting, spool type	10	210	Cartridge	SAE-08-4N	15.20.650
	CEDS-010-SEFN-41	Direct acting, spool type	10	210	Cartridge	SAE-08-4N	15.21.660
	CEDS-010-SEFN-43	Direct acting, spool type	10	210	Cartridge	SAE-08-4N	15.22.670
	CEES-010-SEFN-51	Direct acting, spool type	10	210	Cartridge	SAE-08-4N	15.23.680
	CEES-010-SEFN-52	Direct acting, spool type	10	210	Cartridge	SAE-08-4N	15.24.690
	CEES-010-SEFN-53	Direct acting, spool type	10	210	Cartridge	SAE-08-4N	15.25.700
	CEES-010-SEFN-54	Direct acting, spool type	10	210	Cartridge	SAE-08-4N	15.26.710
	CECS-010-SEFN-61	Direct acting, spool type	10	210	Cartridge	SAE-08-3N	15.27.720
	CECS-010-SEFN-62	Direct acting, spool type	10	210	Cartridge	SAE-08-3N	15.28.730
	CECS-010-SEFN-63	Direct acting, spool type	10	210	Cartridge	SAE-08-3N	15.29.740

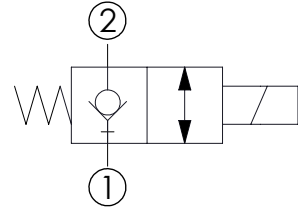
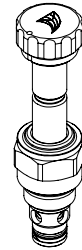
SOLENOID OPERATED CARTRIDGE

CEBD-001-NCFN

**DIRECT OPERATED
POPPET TYPE**



PATENT PENDING

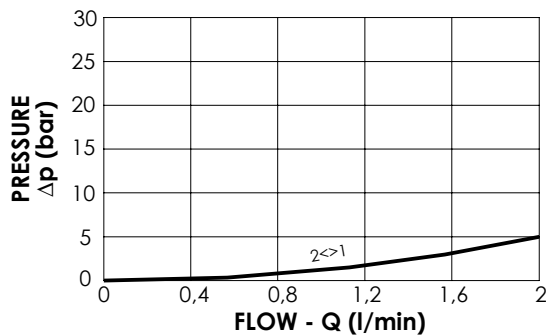


SPECIFICATIONS

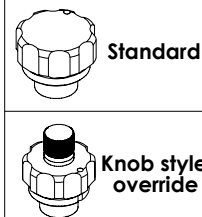
Max. operating pressure:	350/500 bar
Rated flow:	1,5 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

NOTES

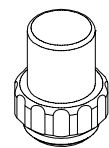
Installation torque: 45 - 50 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000200	CEBD-001-NCFN-15-S08-N350	Standard	350
CE000201	CEBD-001-NCFK-15-S08-N350	Knob style override	350
CE000500	CEBD-001-NCFN-15-S08-N500	Standard	500
CE000501	CEBD-001-NCFK-15-S08-N500	Knob style override	500

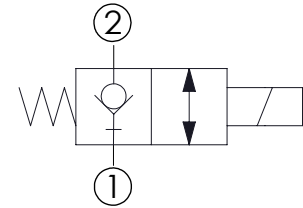
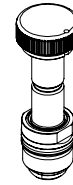
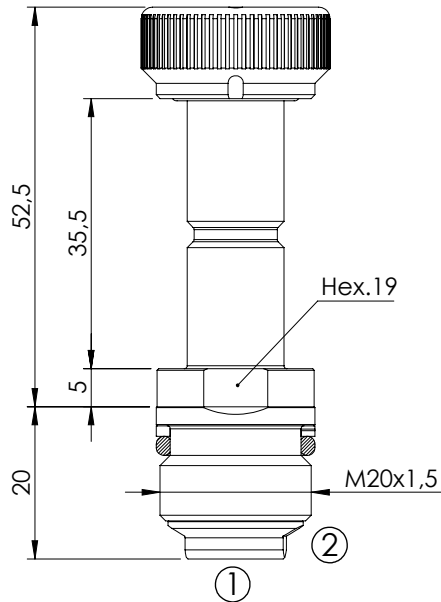
SOLENOID OPERATED CARTRIDGE

CEBN-001-NCFN

DIRECT OPERATED
POPPET TYPE

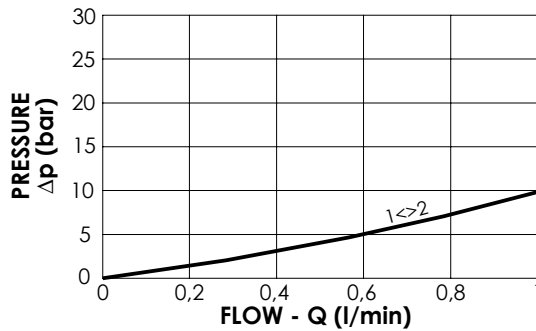


NEW



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	1 l/min
Cavity:	VP000445
Weight:	0,1 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC700445



NOTES

Installation torque: 40 - 45 Nm

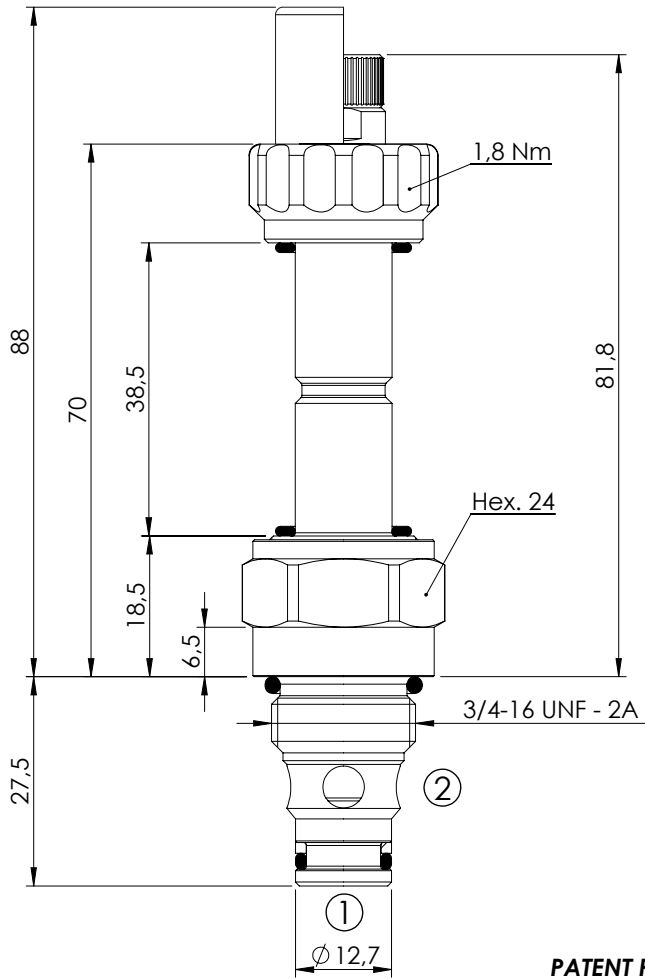
ORDERING CODES

Quick code	Description	Max operating pressure (bar)	
CE000870	CEBN-001-NCFN-15-445-N350	350	

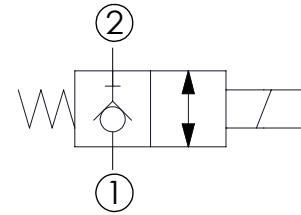
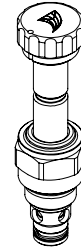
SOLENOID OPERATED CARTRIDGE

CEBD-001-NCFN

**DIRECT OPERATED
POPPET TYPE**



PATENT PENDING

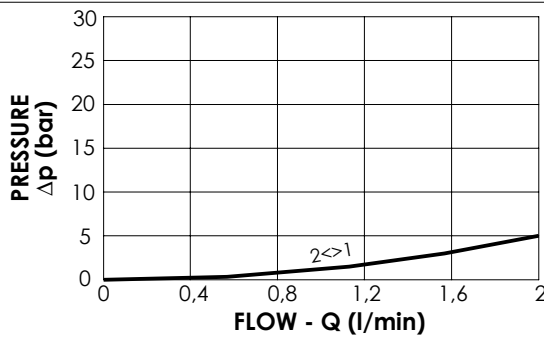


SPECIFICATIONS

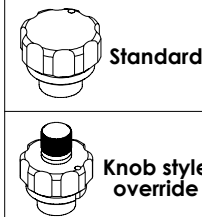
Max. operating pressure:	350/500 bar
Rated flow:	1,5 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

NOTES

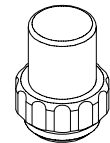
Installation torque: **45 - 50 Nm**



OPTIONS



SEALING CAP



Ordering code:
AT000113

ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000202	CEBD-001-NCFN-16-S08-N350	Standard	350
CE000203	CEBD-001-NCFK-16-S08-N350	Knob style override	350
CE000502	CEBD-001-NCFN-16-S08-N500	Standard	500
CE000503	CEBD-001-NCFK-16-S08-N500	Knob style override	500

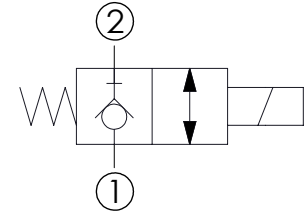
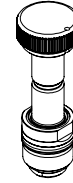
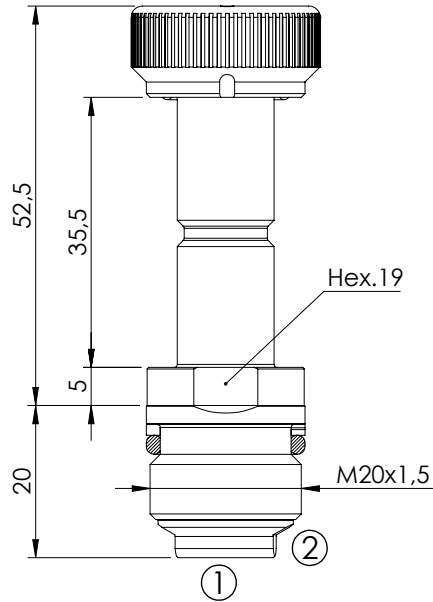
SOLENOID OPERATED CARTRIDGE

CEBN-001-NCFN

DIRECT OPERATED
POPPET TYPE

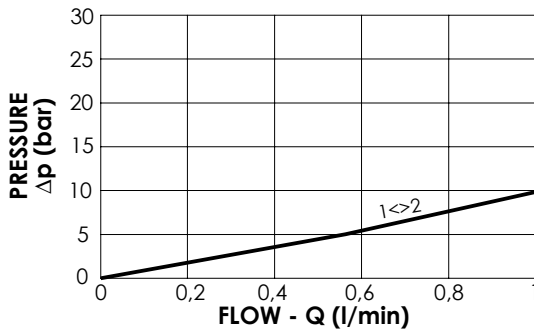


NEW



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	1 l/min
Cavity:	VP000445
Weight:	0,1 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC700445



NOTES

Installation torque: 40 - 45 Nm

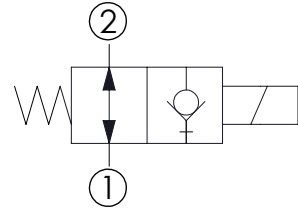
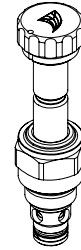
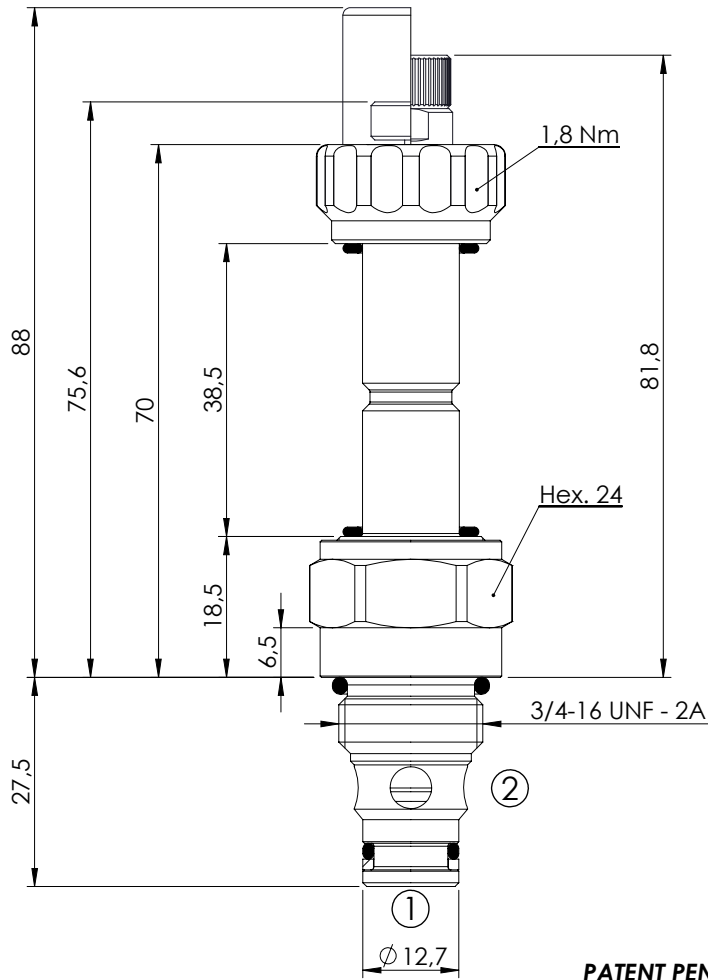
ORDERING CODES

Quick code	Description	Max operating pressure (bar)	
CE000871	CEBN-001-NCFN-16-445-N350	350	

SOLENOID OPERATED CARTRIDGE

CEBD-001-NAFN

**DIRECT OPERATED
POPPET TYPE**

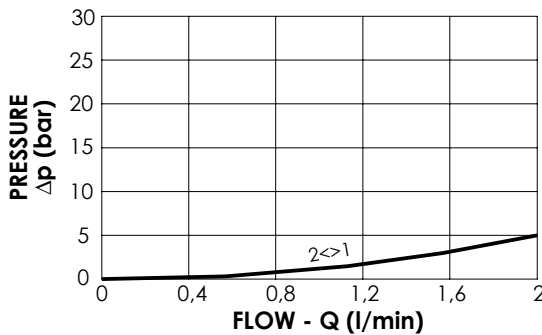


SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	1,5 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

NOTES

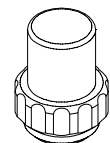
Installation torque: 45 - 50 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)	
CE000204	CEBD-001-NAFN-13-S08-N350	Standard	350	
CE000205	CEBD-001-NAFP-13-S08-N350	Push style override	350	
CE000206	CEBD-001-NAFK-13-S08-N350	Knob style override	350	
CE000504	CEBD-001-NAFN-13-S08-N500	Standard	500	
CE000505	CEBD-001-NAFP-13-S08-N500	Push style override	500	
CE000506	CEBD-001-NAFK-13-S08-N500	Knob style override	500	

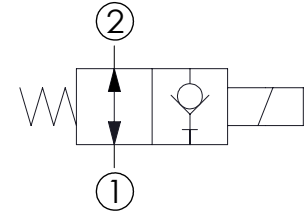
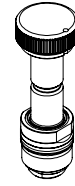
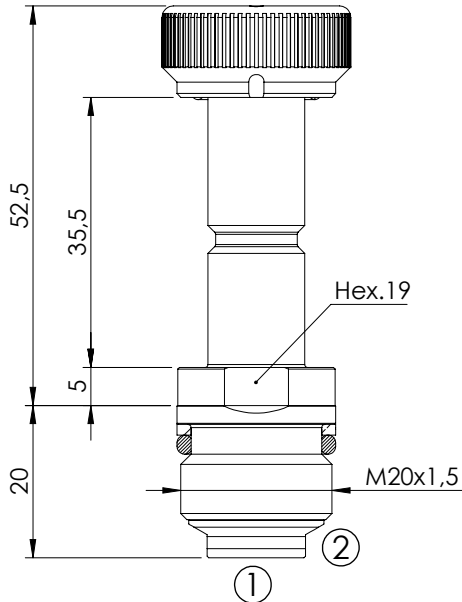
SOLENOID OPERATED CARTRIDGE

CEBN-001-NAFN

DIRECT OPERATED
POPPET TYPE

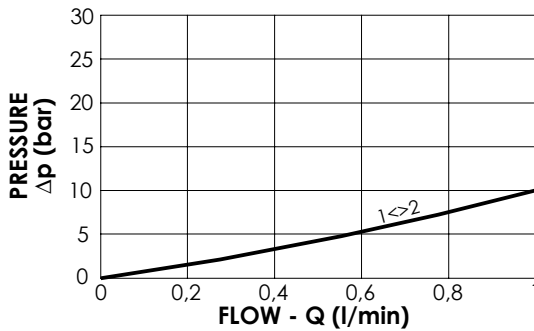


NEW



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	1 l/min
Cavity:	VP000445
Weight:	0,1 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC700445



NOTES

Installation torque:	40 - 45 Nm
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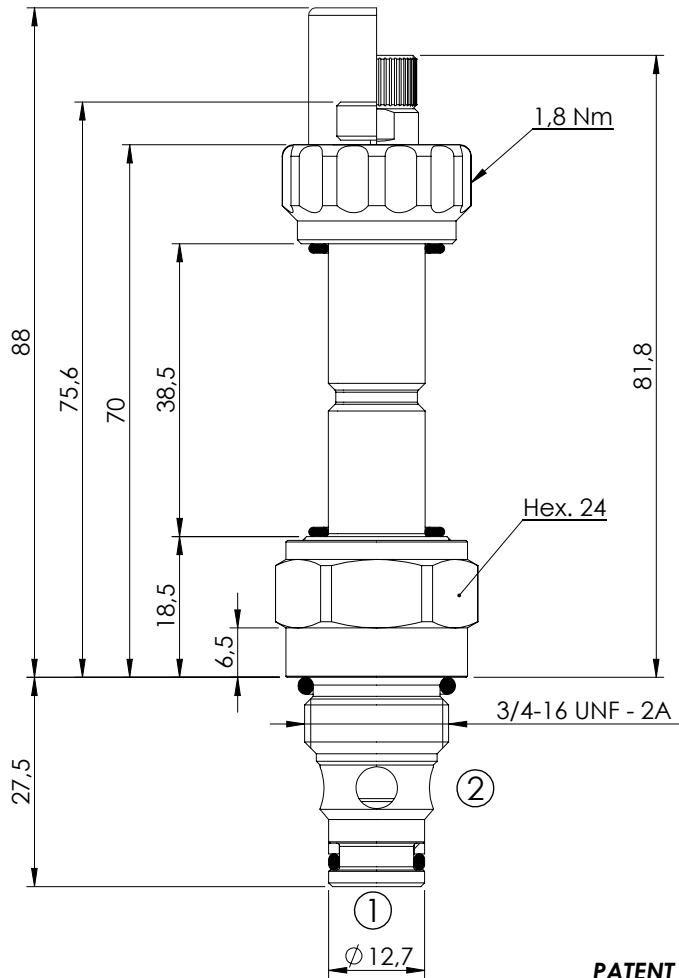
ORDERING CODES

Quick code	Description	Max operating pressure (bar)	
CE000872	CEBN-001-NAFN-13-445-N350	350	

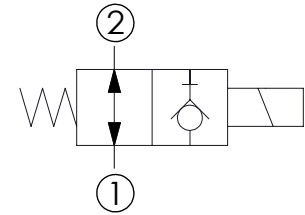
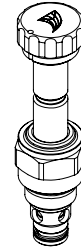
SOLENOID OPERATED CARTRIDGE

CEBD-001-NAFN

**DIRECT OPERATED
POPPET TYPE**



PATENT PENDING

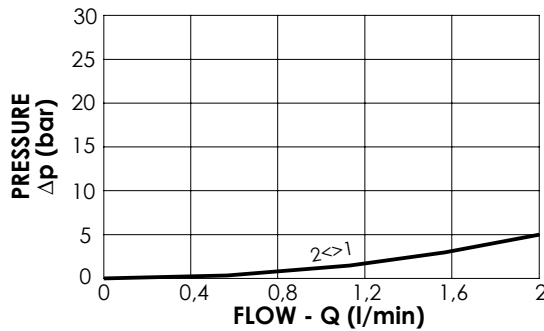


SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	1,5 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

NOTES

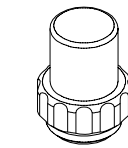
Installation torque: 45 - 50 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000207	CEBD-001-NAFN-14-S08-N350	Standard	350
CE000208	CEBD-001-NAFP-14-S08-N350	Push style override	350
CE000209	CEBD-001-NAFK-14-S08-N350	Knob style override	350
CE000507	CEBD-001-NAFN-14-S08-N500	Standard	500
CE000508	CEBD-001-NAFP-14-S08-N500	Push style override	500
CE000509	CEBD-001-NAFK-14-S08-N500	Knob style override	500

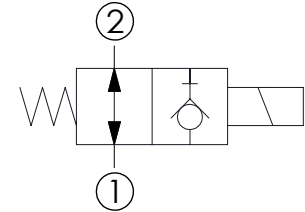
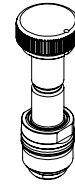
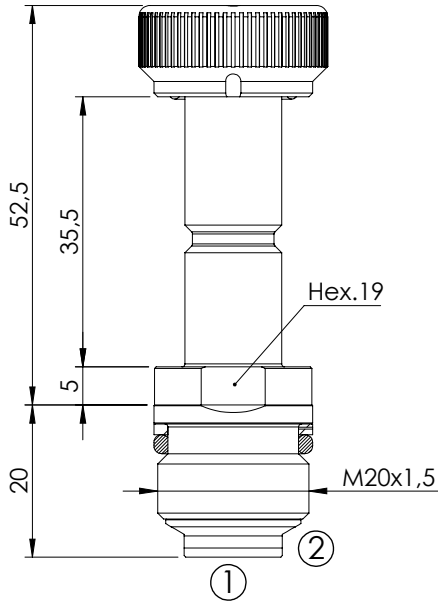
SOLENOID OPERATED CARTRIDGE

CEBN-001-NAFN

DIRECT OPERATED
POPPET TYPE

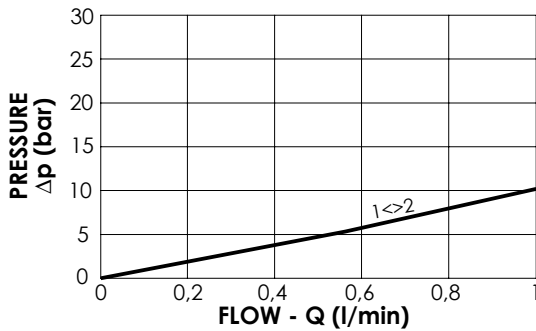


NEW



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	1 l/min
Cavity:	VP000445
Weight:	0,1 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC700445



NOTES

Installation torque:	40 - 45 Nm
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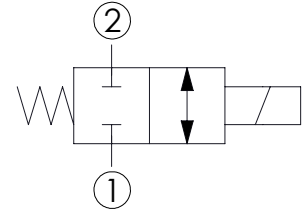
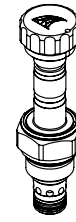
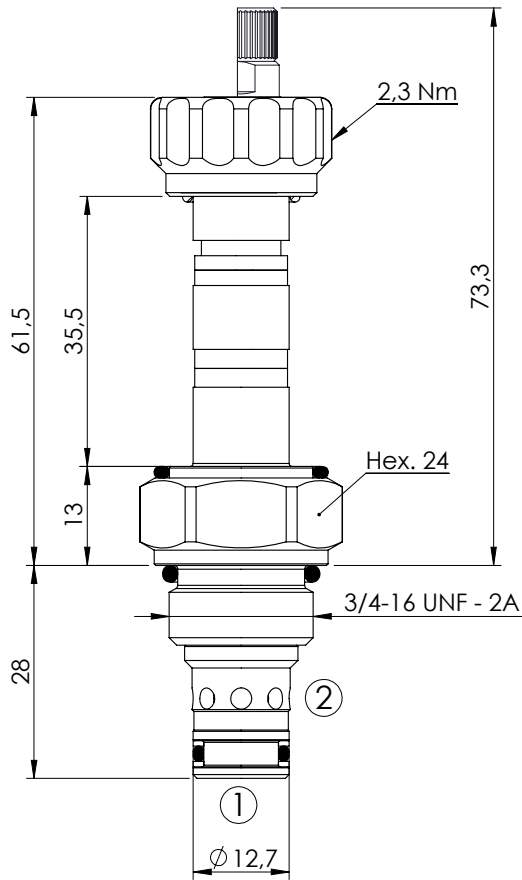
ORDERING CODES

Quick code	Description	Max operating pressure (bar)	
CE000873	CEBN-001-NAFN-14-445-N350	350	

SOLENOID OPERATED CARTRIDGE

CEBS-010-NCFN

**DIRECT OPERATED
SPOOL TYPE**



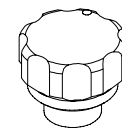
SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-2N
Weight:	0,12 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB700081

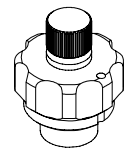
NOTES

Installation torque: 45 - 50 Nm

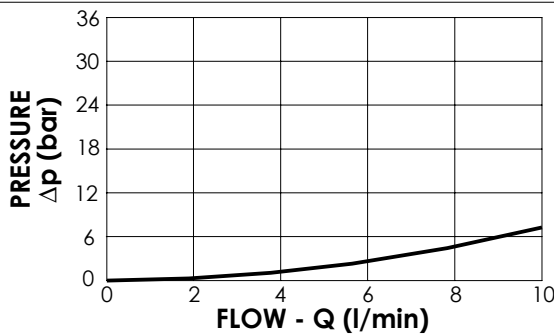
OPTIONS



Standard



Knob style
override



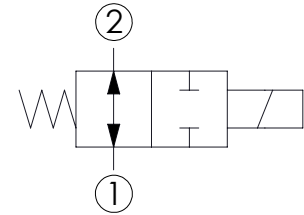
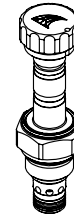
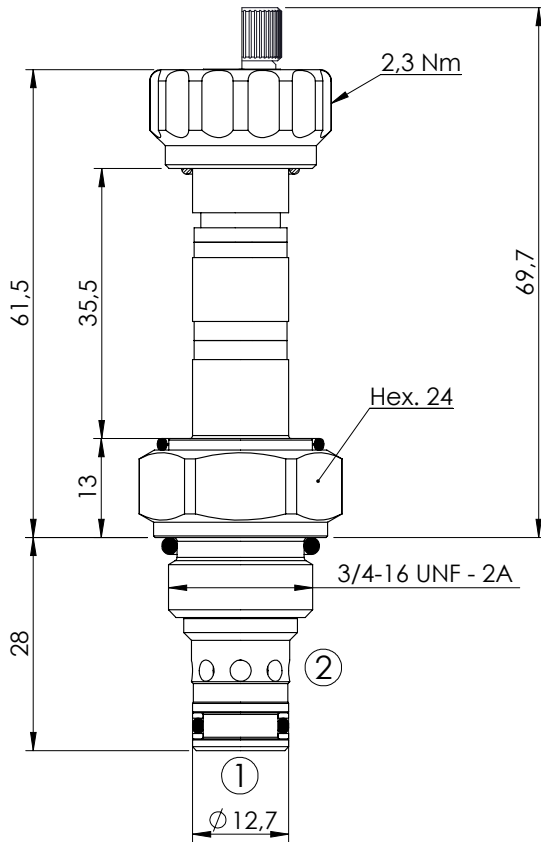
ORDERING CODES

Quick code	Description	Options	
CE000092	CEBS-010-NCFN-22-S08-N210	Standard	
CE000093	CEBS-010-NCFE-22-S08-N210	Knob style override	

SOLENOID OPERATED CARTRIDGE

CEBS-010-NAFN

**DIRECT OPERATED
SPOOL TYPE**



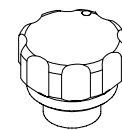
SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-2N
Weight:	0,12 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB700081

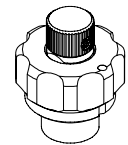
NOTES

Installation torque: 45 - 50 Nm

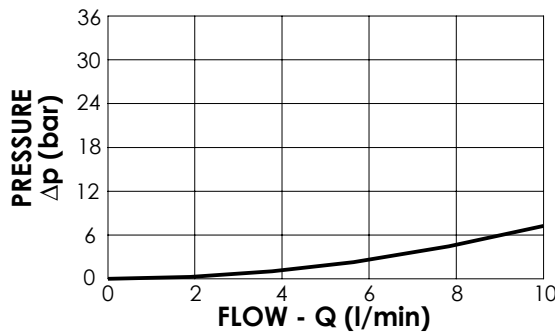
OPTIONS



Standard



Knob style
override



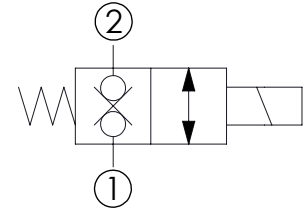
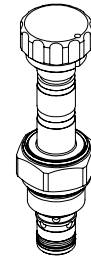
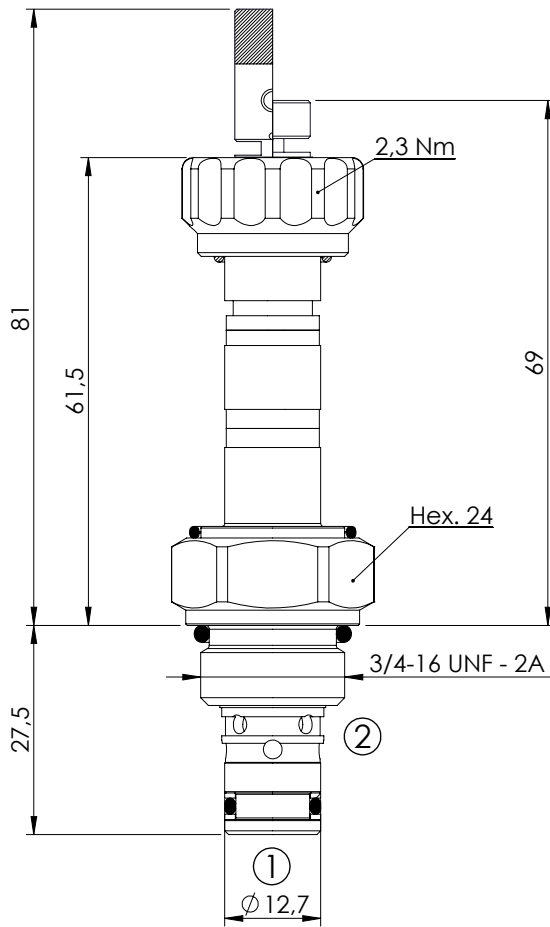
ORDERING CODES

Quick code	Description	Options	
CE000090	CEBS-010-NAFN-23-S08-N210	Standard	
CE000091	CEBS-010-NAFE-23-S08-N210	Knob style override	

SOLENOID OPERATED CARTRIDGE

CEBD-015-NCFN

**DIRECT OPERATED
POPPET TYPE**



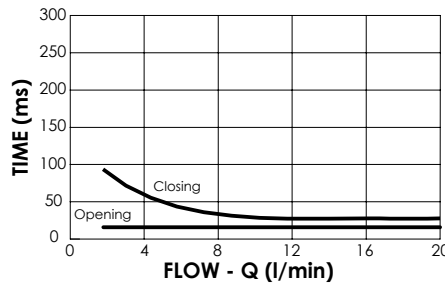
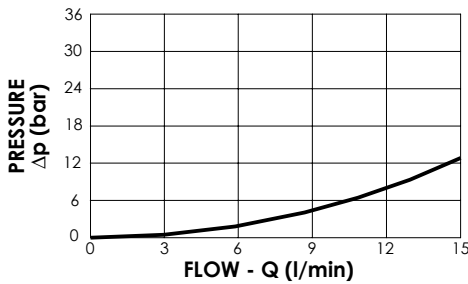
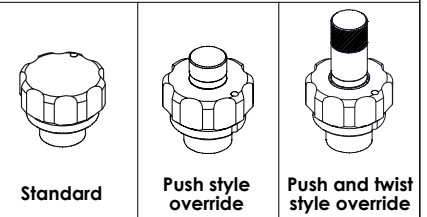
SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	15 l/min
Cavity:	SAE-08-2N
Weight:	0,11 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB700081

NOTES

Installation torque: 45 - 50 Nm

OPTIONS



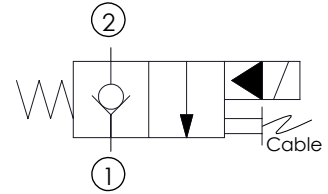
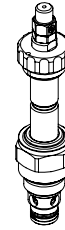
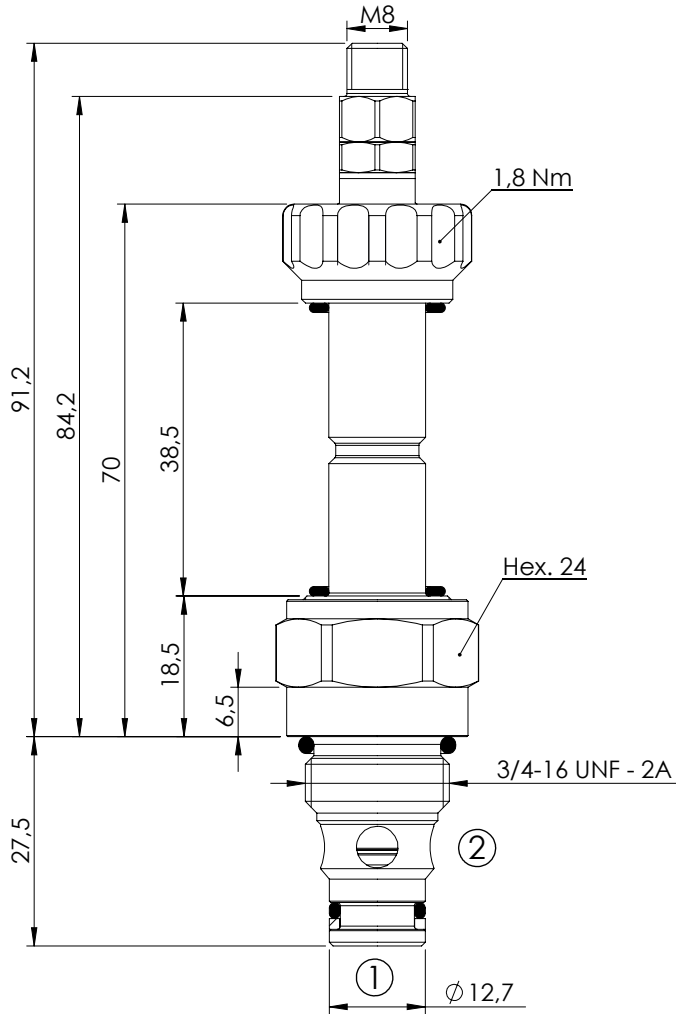
ORDERING CODES

Quick code	Description	Options	
CE000062	CEBD-015-NCFN-21-S08-N210	Standard	
CE000063	CEBD-015-NCFE-21-S08-N210	Push style override	
CE000905	CEBD-015-NCFE-21-S08-N210-T	Push and twist style override	

SOLENOID OPERATED CARTRIDGE

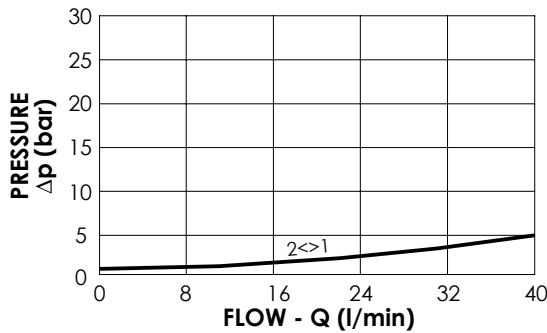
CEBN-040-NCFF

**PILOT OPERATED
POPPET TYPE**



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	40 l/min
Cavity:	SAE-08-2N
Weight:	0,16 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081



NOTES

Installation torque: 45 - 50 Nm

ORDERING CODES

Quick code	Description	Options		
CE000470	CEBN-040-NCFF-01-S08-N350	Cable override		

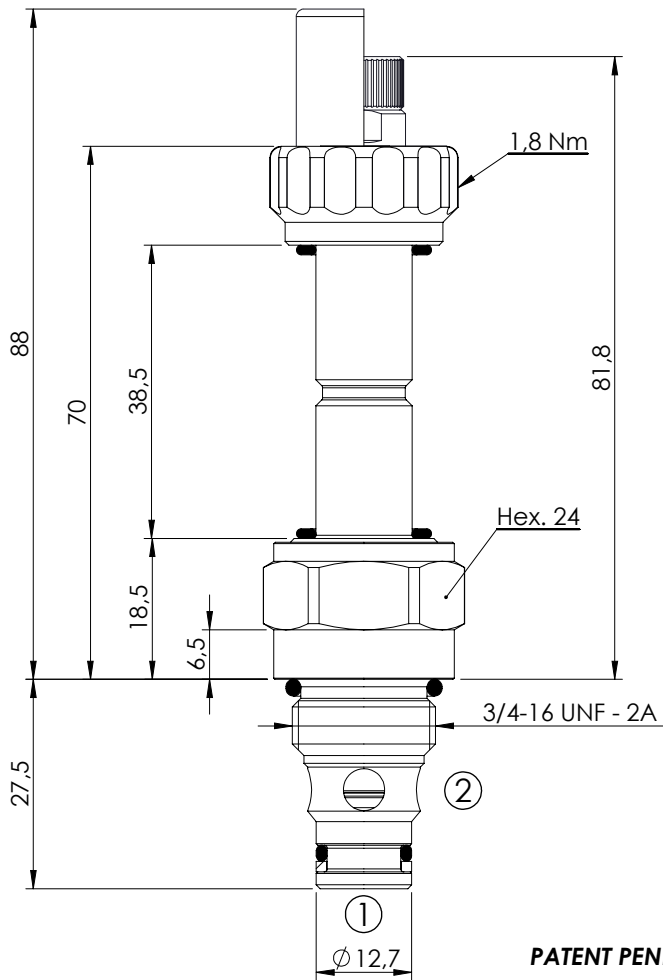
SOLENOID OPERATED CARTRIDGE

CEBN-030-NCFN

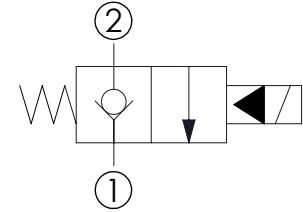
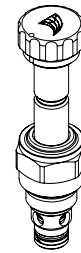
PILOT OPERATED
POPPET TYPE



NEW



PATENT PENDING



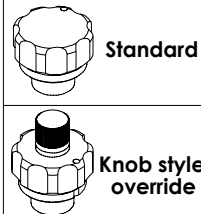
SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	30 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

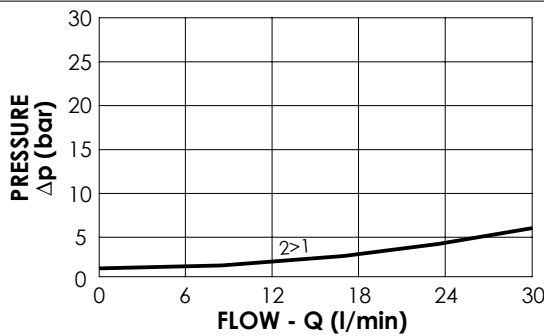
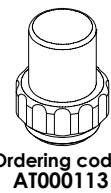
NOTES

Installation torque: 45 - 50 Nm

OPTIONS



SEALING CAP



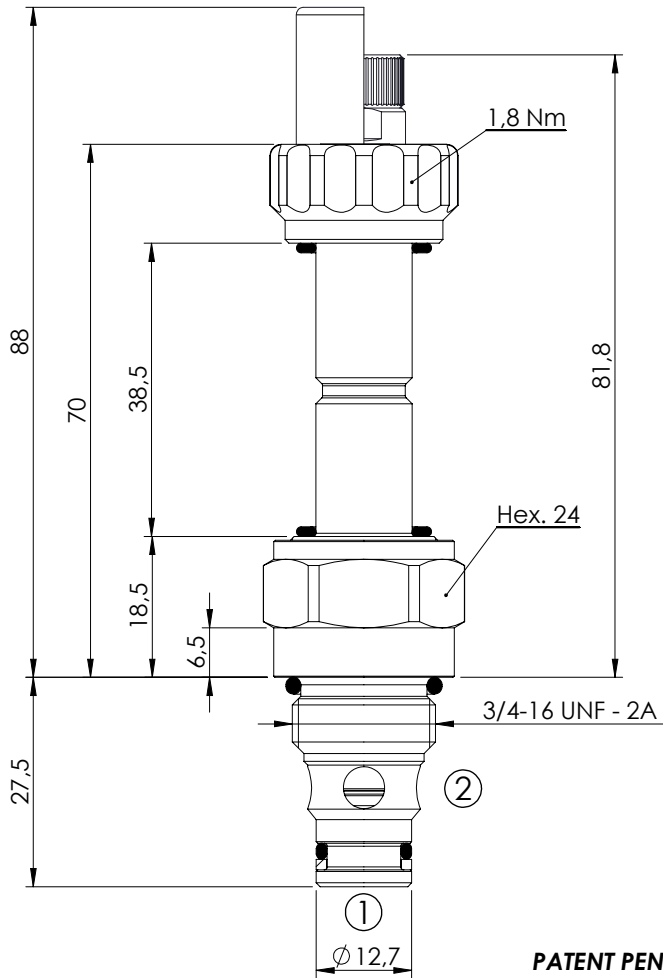
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000455	CEBN-030-NCFN-01-S08-N350	Standard	350
CE000456	CEBN-030-NCFK-01-S08-N350	Knob style override	350

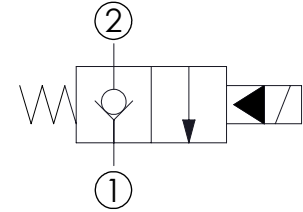
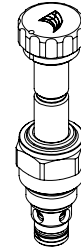
SOLENOID OPERATED CARTRIDGE

CEBN-040-NCFN

**PILOT OPERATED
POPPET TYPE**



PATENT PENDING



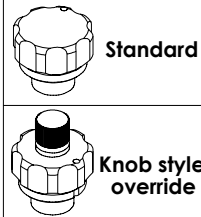
SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	40 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

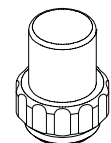
NOTES

Installation torque: 45 - 50 Nm

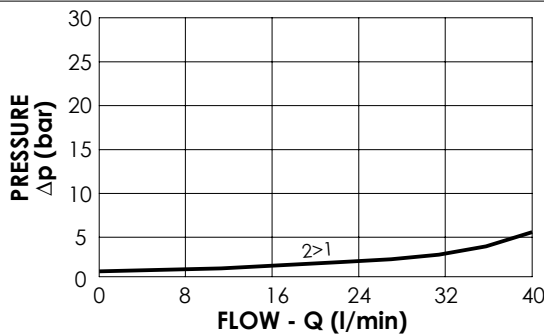
OPTIONS



SEALING CAP



Ordering code:
AT000113



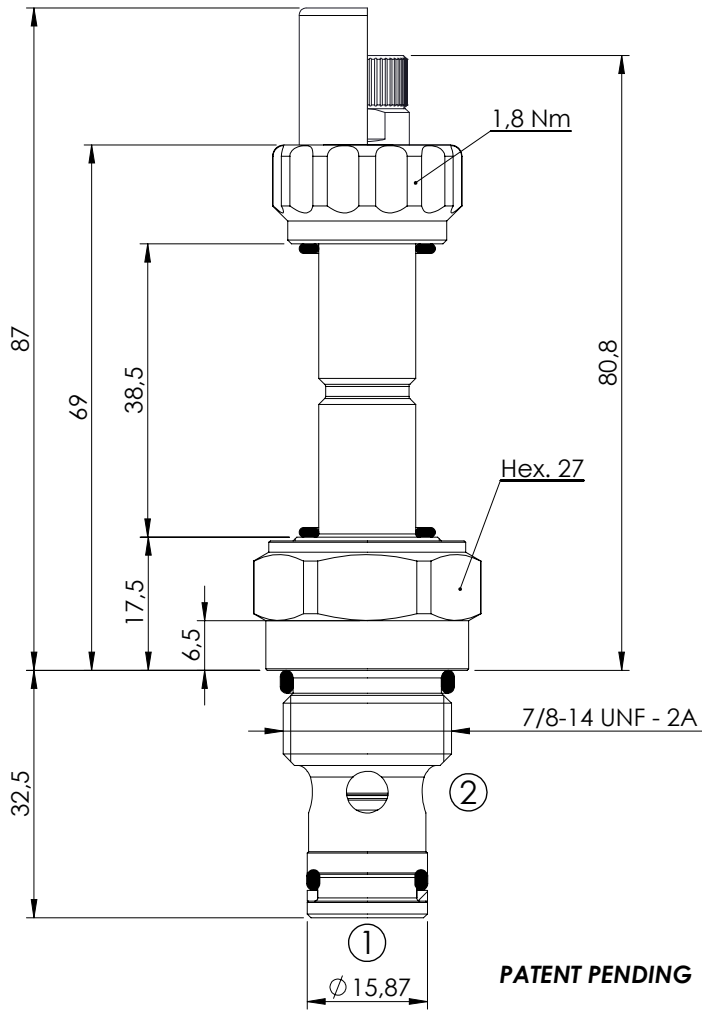
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000210	CEBN-040-NCFN-01-S08-N350	Standard	350
CE000212	CEBN-040-NCFK-01-S08-N350	Knob style override	350
CE000510	CEBN-040-NCFN-01-S08-N500	Standard	500
CE000512	CEBN-040-NCFK-01-S08-N500	Knob style override	500

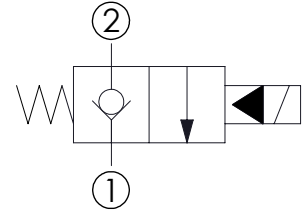
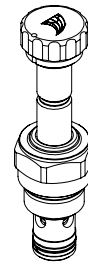
SOLENOID OPERATED CARTRIDGE

CEBN-070-NCFN

**PILOT OPERATED
POPPET TYPE**



PATENT PENDING

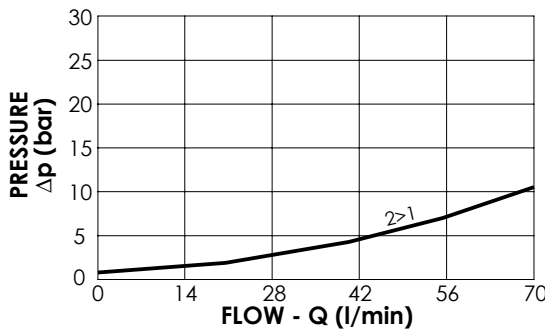


SPECIFICATIONS

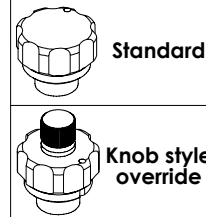
Max. operating pressure:	350/500 bar
Rated flow:	70 l/min
Cavity:	SAE-10-2N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900082

NOTES

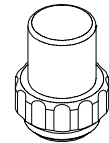
Installation torque: 55 - 62 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

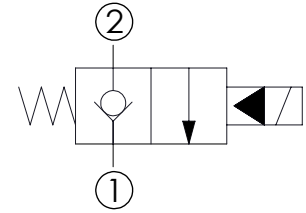
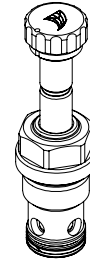
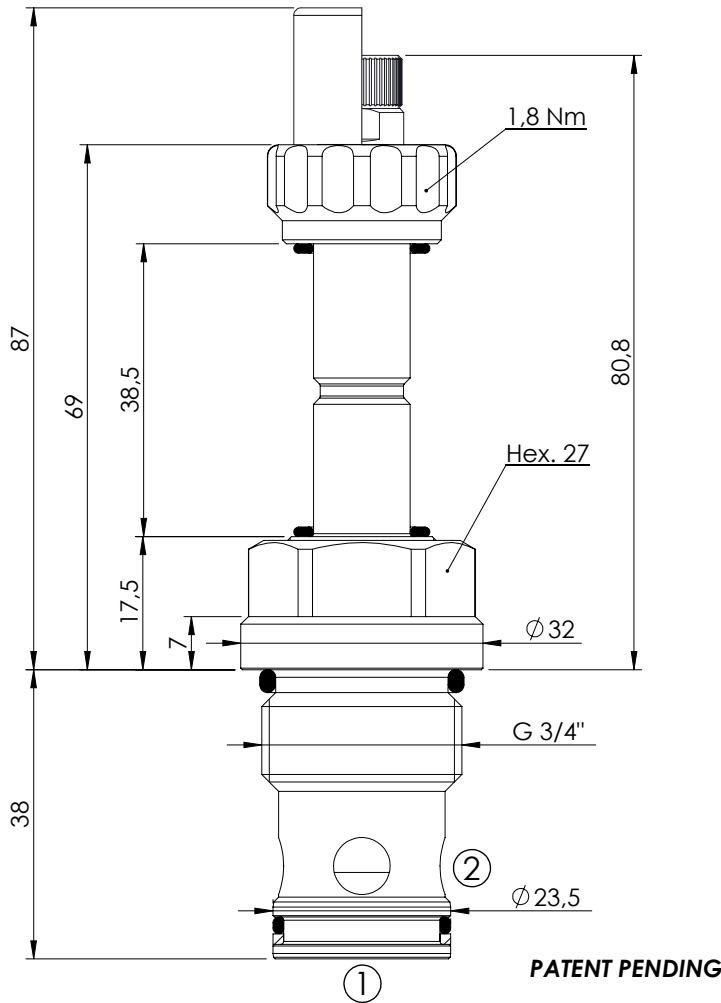
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000245	CEBN-070-NCFN-01-S10-N350	Standard	350
CE000247	CEBN-070-NCFK-01-S10-N350	Knob style override	350
CE000545	CEBN-070-NCFN-01-S10-N500	Standard	500
CE000547	CEBN-070-NCFK-01-S10-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-100-NCFN

**PILOT OPERATED
POPPET TYPE**



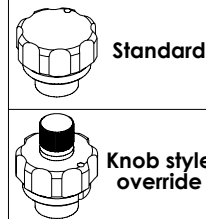
SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	100 l/min
Cavity:	VP000057
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900057

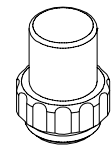
NOTES

Installation torque: 110 - 130 Nm

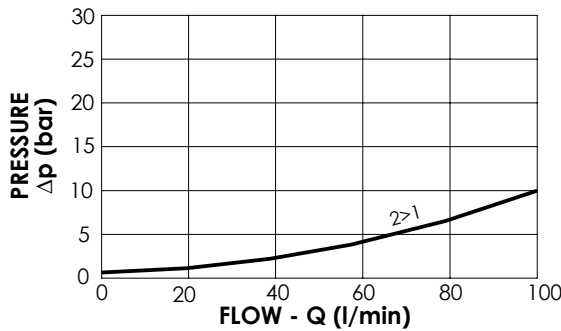
OPTIONS



SEALING CAP



Ordering code:
AT000113



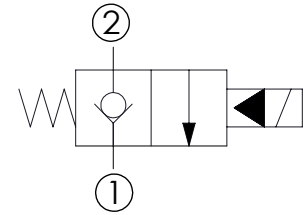
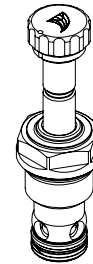
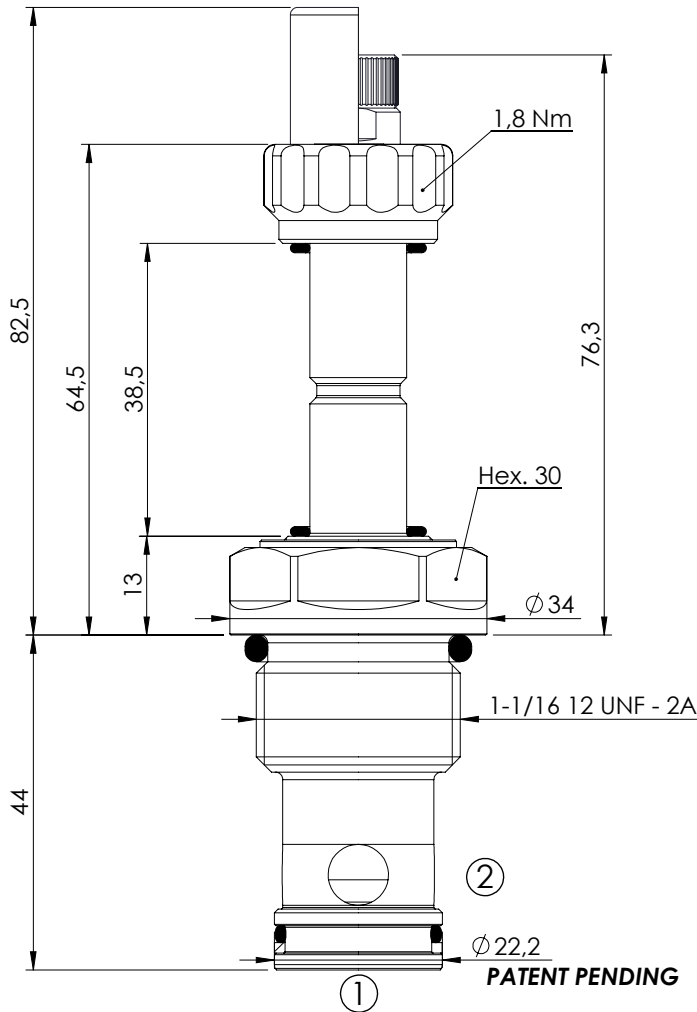
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000280	CEBN-100-NCFN-01-057-N350	Standard	350
CE000282	CEBN-100-NCFK-01-057-N350	Knob style override	350
CE000580	CEBN-100-NCFN-01-057-N500	Standard	500
CE000582	CEBN-100-NCFK-01-057-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-180-NCFN

**PILOT OPERATED
POPPET TYPE**



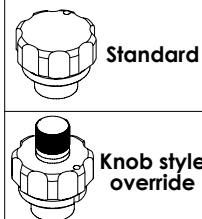
SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	180 l/min
Cavity:	SAE-12-2N
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900083

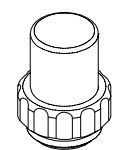
NOTES

Installation torque: 135 - 150 Nm

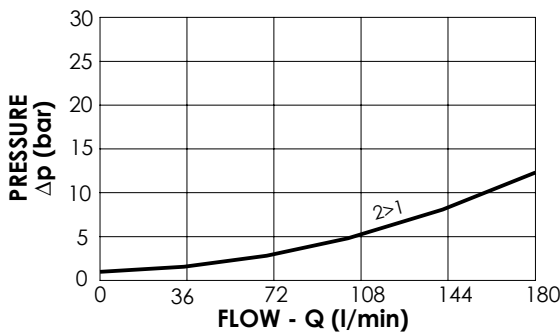
OPTIONS



SEALING CAP



Ordering code:
AT000113



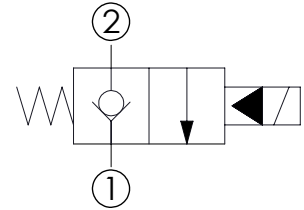
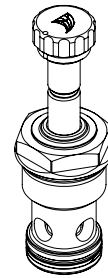
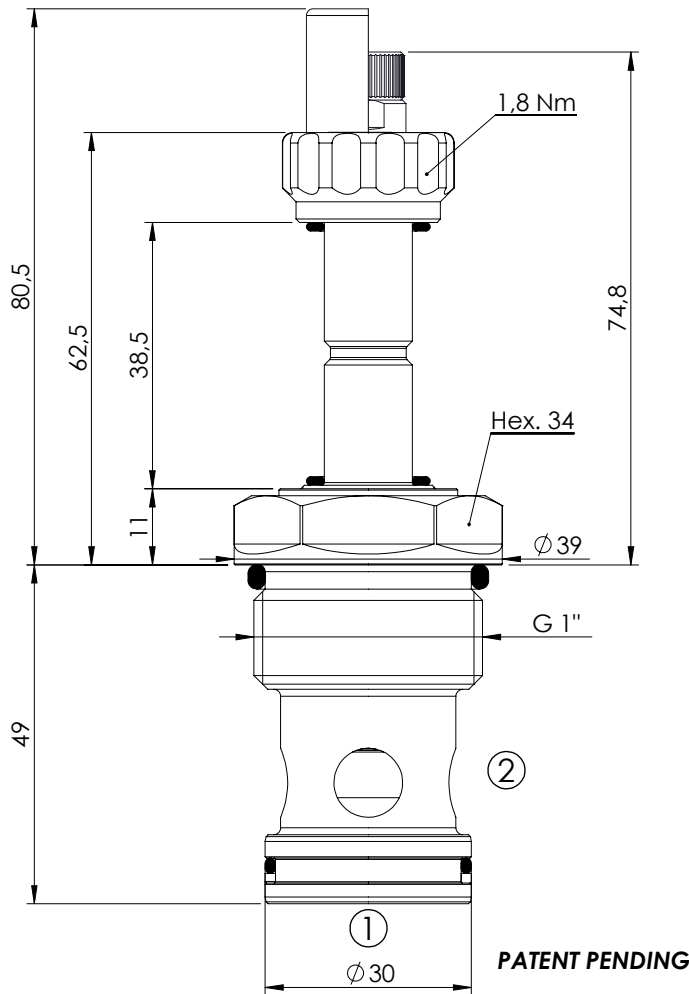
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000315	CEBN-180-NCFN-01-S12-N350	Standard	350
CE000317	CEBN-180-NCFK-01-S12-N350	Knob style override	350
CE000615	CEBN-180-NCFN-01-S12-N500	Standard	500
CE000617	CEBN-180-NCFK-01-S12-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-200-NCFN

**PILOT OPERATED
POPPET TYPE**



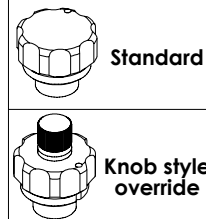
SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	200 l/min
Cavity:	VP000013
Weight:	0,35 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900013

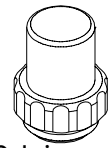
NOTES

Installation torque: 135 - 150 Nm

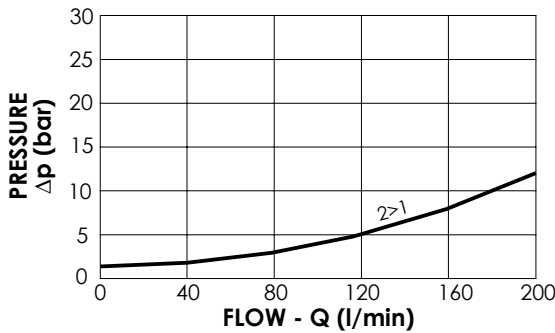
OPTIONS



SEALING CAP



Ordering code:
AT000113



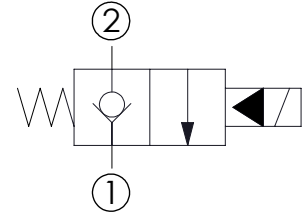
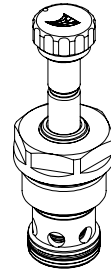
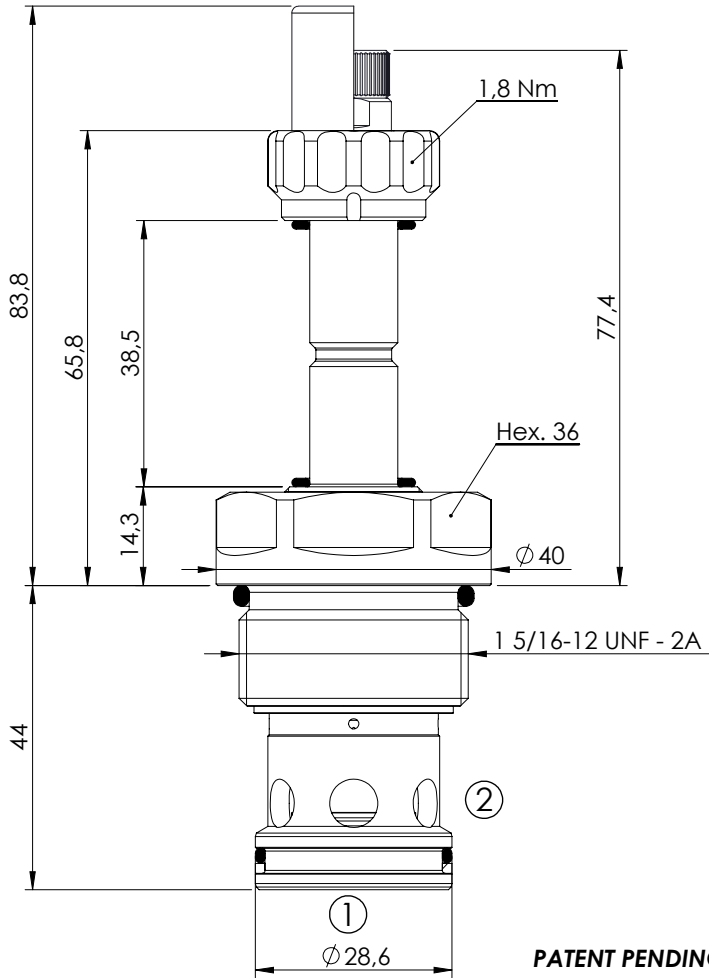
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000350	CEBN-200-NCFN-01-013-N350	Standard	350
CE000352	CEBN-200-NCFK-01-013-N350	Knob style override	350
CE000650	CEBN-200-NCFN-01-013-N500	Standard	500
CE000652	CEBN-200-NCFK-01-013-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-300-NCFN

**PILOT OPERATED
POPPET TYPE**



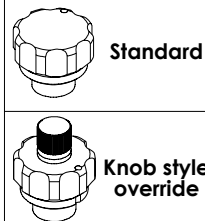
SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	300 l/min
Cavity:	SAE-16-2N
Weight:	0,36 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900084

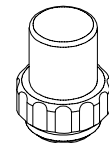
NOTES

Installation torque: 118 - 132 Nm

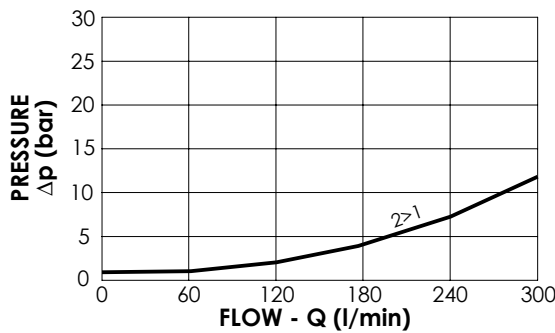
OPTIONS



SEALING CAP



Ordering code:
AT000113



ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)	
CE000385	CEBN-300-NCFN-01-S16-N350	Standard	350	
CE000387	CEBN-300-NCFK-01-S16-N350	Knob style override	350	
CE000685	CEBN-300-NCFN-01-S16-N500	Standard	500	
CE000687	CEBN-300-NCFK-01-S16-N500	Knob style override	500	

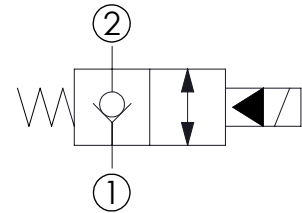
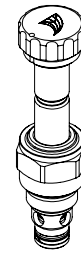
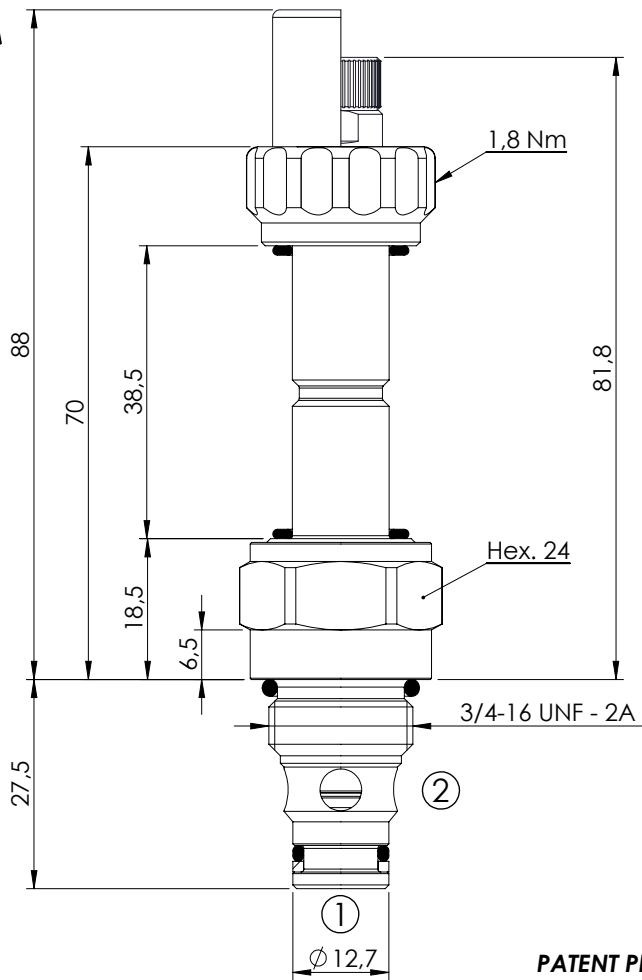
SOLENOID OPERATED CARTRIDGE

CEBN-030-NCFN

PILOT OPERATED
POPPET TYPE



NEW

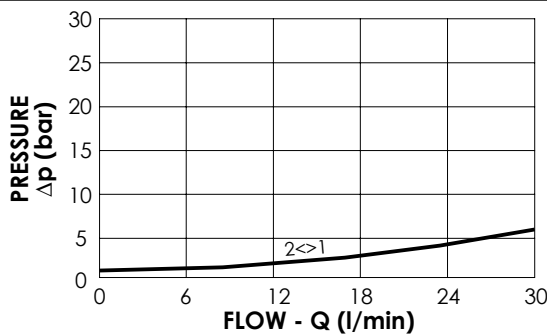


SPECIFICATIONS

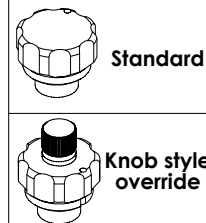
Max. operating pressure:	350 bar
Rated flow:	30 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

NOTES

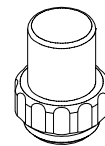
Installation torque: 45 - 50 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

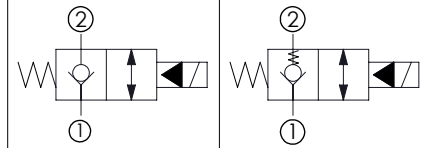
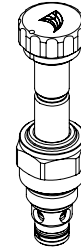
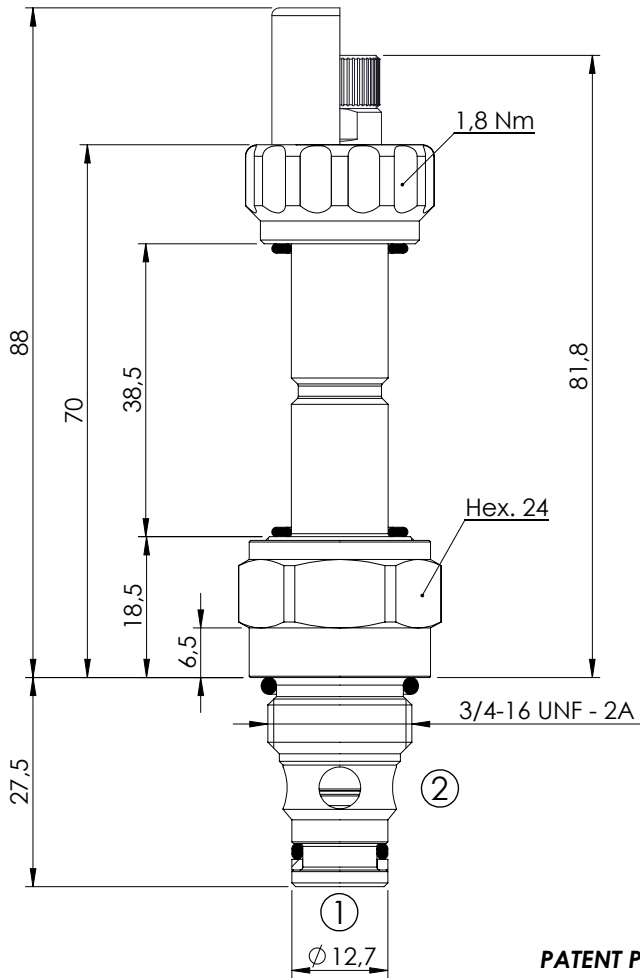
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000457	CEBN-030-NCFN-05-S08-N350	Standard	350
CE000458	CEBN-030-NCFK-05-S08-N350	Knob style override	350

SOLENOID OPERATED CARTRIDGE

CEBN-040-NCFN

**PILOT OPERATED
POPPET TYPE**



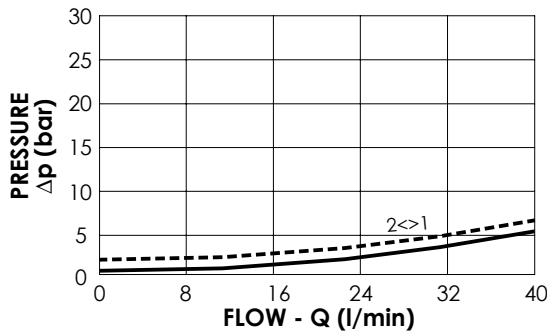
With extra spring

SPECIFICATIONS

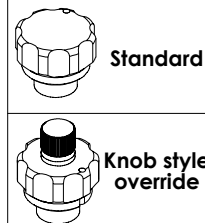
Max. operating pressure:	350/500 bar
Rated flow:	40 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

NOTES

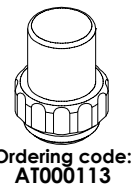
Installation torque: 45 - 50 Nm



OPTIONS



SEALING CAP



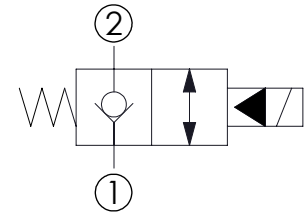
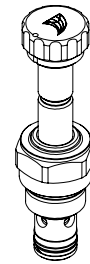
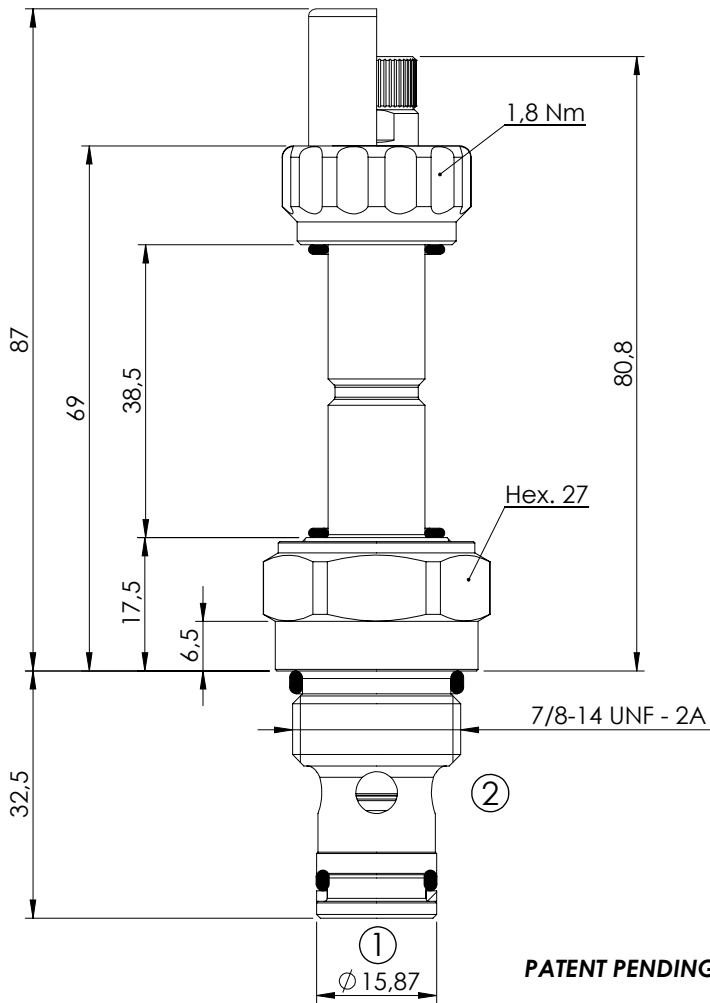
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)	Extra Spring
CE000218	CEBN-040-NCFN-05-S08-N350	Standard	350	No
CE000220	CEBN-040-NCFK-05-S08-N350	Knob style override	350	No
CE000219	CEBN-040-XCFN-05-S08-N350	Standard	350	Yes
CE000221	CEBN-040-XCFK-05-S08-N350	Knob style override	350	Yes
CE000518	CEBN-040-NCFN-05-S08-N500	Standard	500	No
CE000520	CEBN-040-NCFK-05-S08-N500	Knob style override	500	No

SOLENOID OPERATED CARTRIDGE

CEBN-070-NCFN

**PILOT OPERATED
POPPET TYPE**



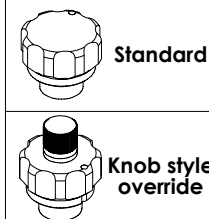
SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	70 l/min
Cavity:	SAE-10-2N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900082

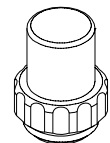
NOTES

Installation torque: 55 - 62 Nm

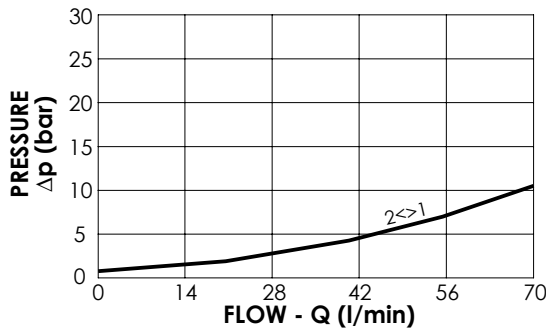
OPTIONS



SEALING CAP



Ordering code:
AT000113



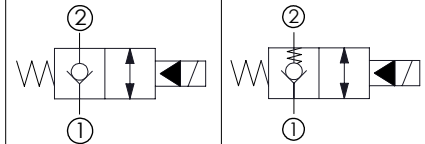
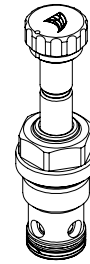
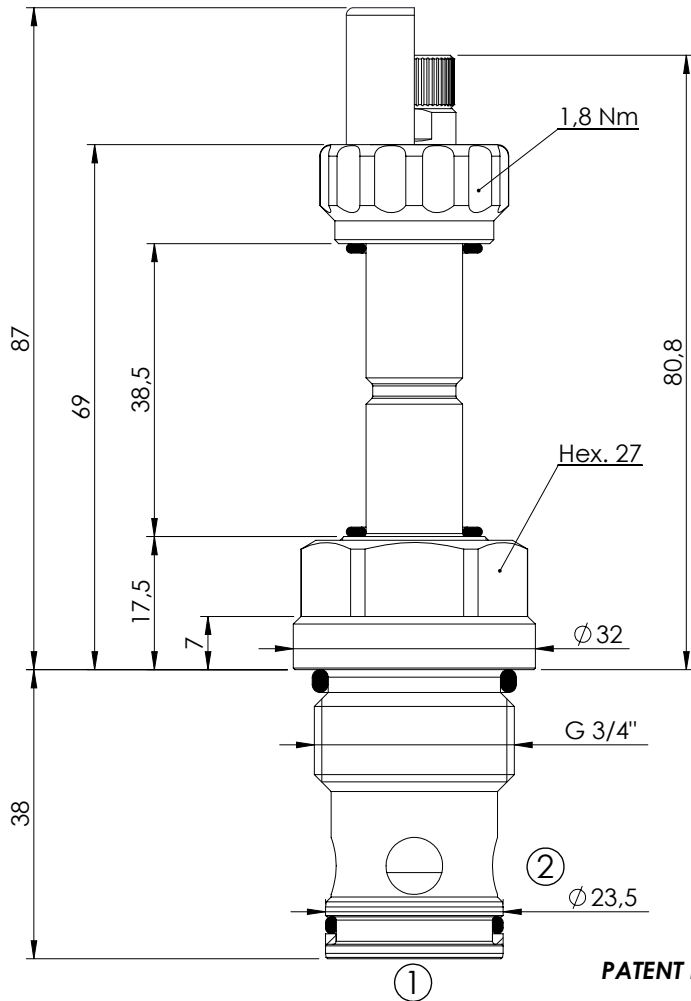
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000253	CEBN-070-NCFN-05-S10-N350	Standard	350
CE000255	CEBN-070-NCFK-05-S10-N350	Knob style override	350
CE000553	CEBN-070-NCFN-05-S10-N500	Standard	500
CE000555	CEBN-070-NCFK-05-S10-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-100-NCFN

**PILOT OPERATED
POPPET TYPE**

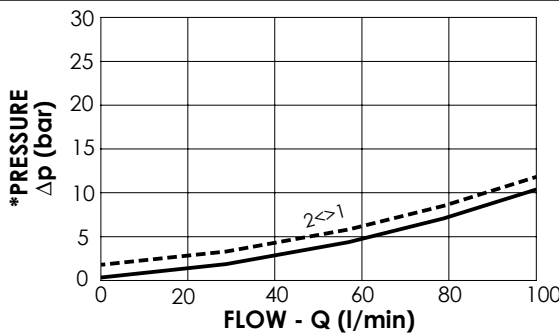


SPECIFICATIONS

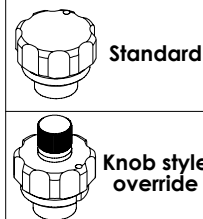
Max. operating pressure:	350/500 bar
Rated flow:	100 l/min
Cavity:	VP000057
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900057

NOTES

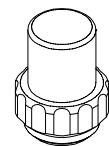
Installation torque: 110 - 130 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

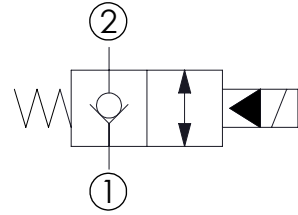
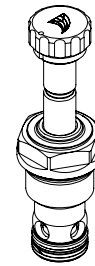
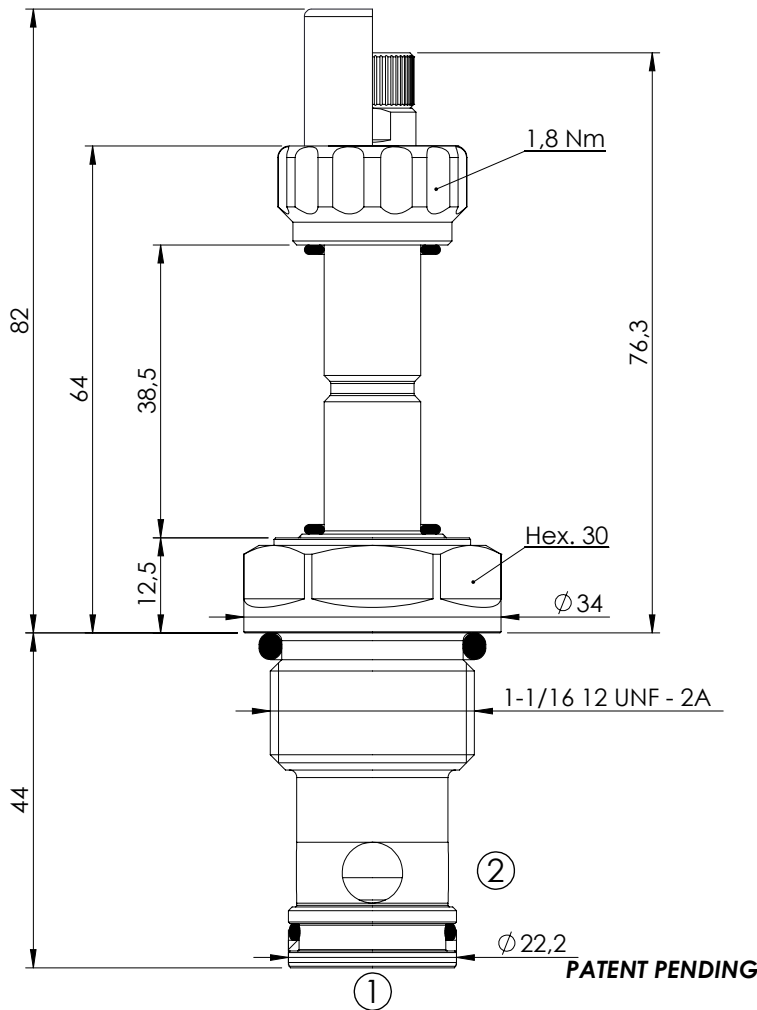
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)	Extra Spring
CE000288	CEBN-100-NCFN-05-057-N350	Standard	350	No
CE000290	CEBN-100-NCFK-05-057-N350	Knob style override	350	No
CE000289	CEBN-100-XCFN-05-057-N350	Standard	350	Yes
CE000291	CEBN-100-XCFK-05-057-N350	Knob style override	350	Yes
CE000588	CEBN-100-NCFN-05-057-N500	Standard	500	No
CE000590	CEBN-100-NCFK-05-057-N500	Knob style override	500	No

SOLENOID OPERATED CARTRIDGE

CEBN-180-NCFN

**PILOT OPERATED
POPPET TYPE**

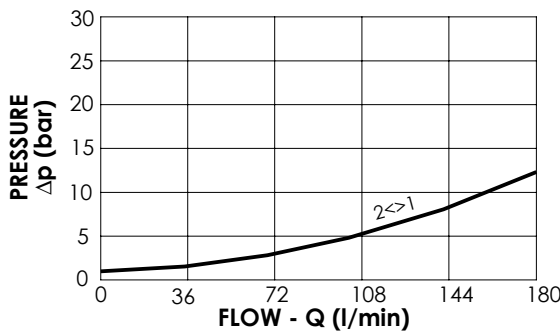


SPECIFICATIONS

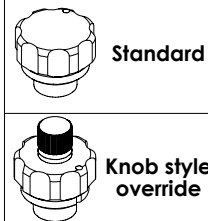
Max. operating pressure:	350/500 bar
Rated flow:	180 l/min
Cavity:	SAE-12-2N
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900083

NOTES

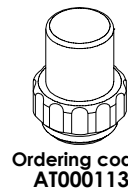
Installation torque: 135 - 150 Nm



OPTIONS



SEALING CAP



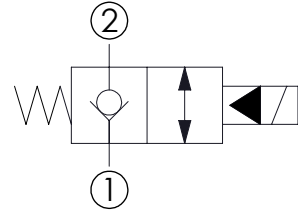
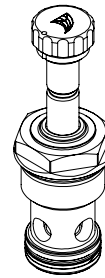
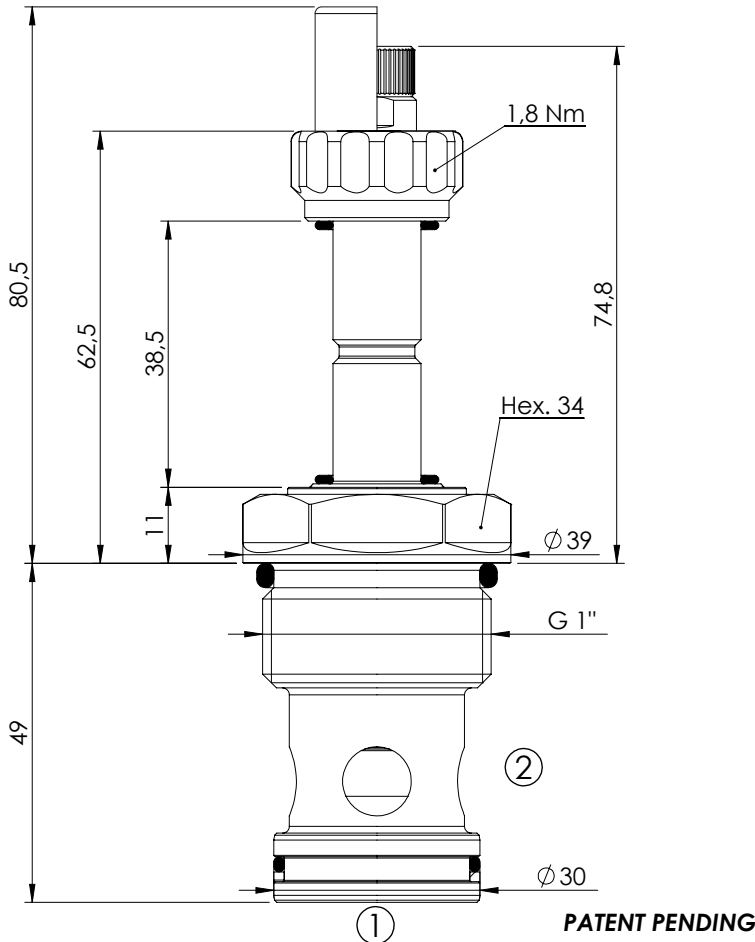
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000323	CEBN-180-NCFN-05-S12-N350	Standard	350
CE000325	CEBN-180-NCFK-05-S12-N350	Knob style override	350
CE000623	CEBN-180-NCFN-05-S12-N500	Standard	500
CE000625	CEBN-180-NCFK-05-S12-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-200-NCFN

**PILOT OPERATED
POPPET TYPE**

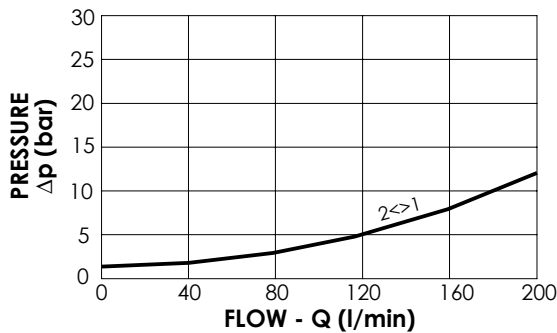


SPECIFICATIONS

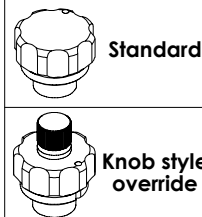
Max. operating pressure:	350/500 bar
Rated flow:	200 l/min
Cavity:	VP000013
Weight:	0,35 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900013

NOTES

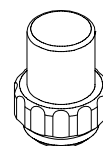
Installation torque: 135 - 150 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

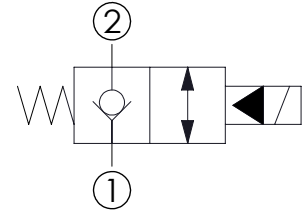
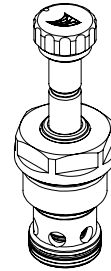
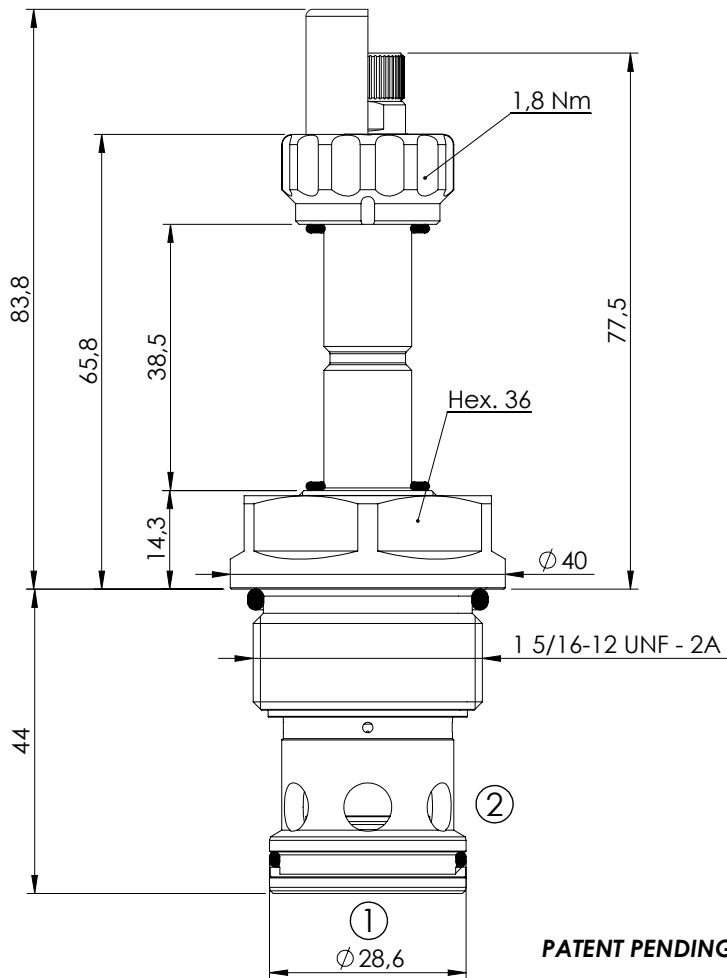
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000358	CEBN-200-NCFN-05-013-N350	Standard	350
CE000360	CEBN-200-NCFK-05-013-N350	Knob style override	350
CE000658	CEBN-200-NCFN-05-013-N500	Standard	500
CE000660	CEBN-200-NCFK-05-013-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-300-NCFN

**PILOT OPERATED
POPPET TYPE**

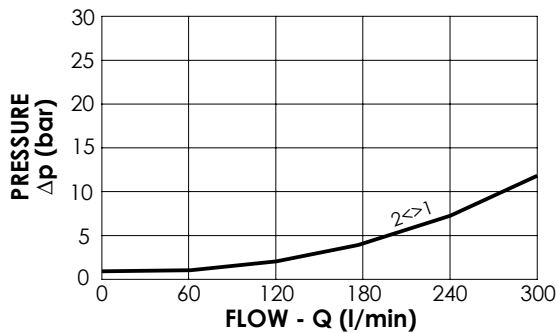


SPECIFICATIONS

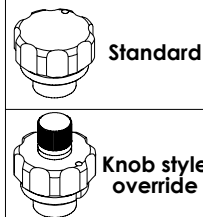
Max. operating pressure:	350/500 bar
Rated flow:	300 l/min
Cavity:	SAE-16-2N
Weight:	0,36 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900084

NOTES

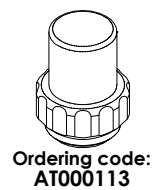
Installation torque: 118 - 132 Nm



OPTIONS



SEALING CAP



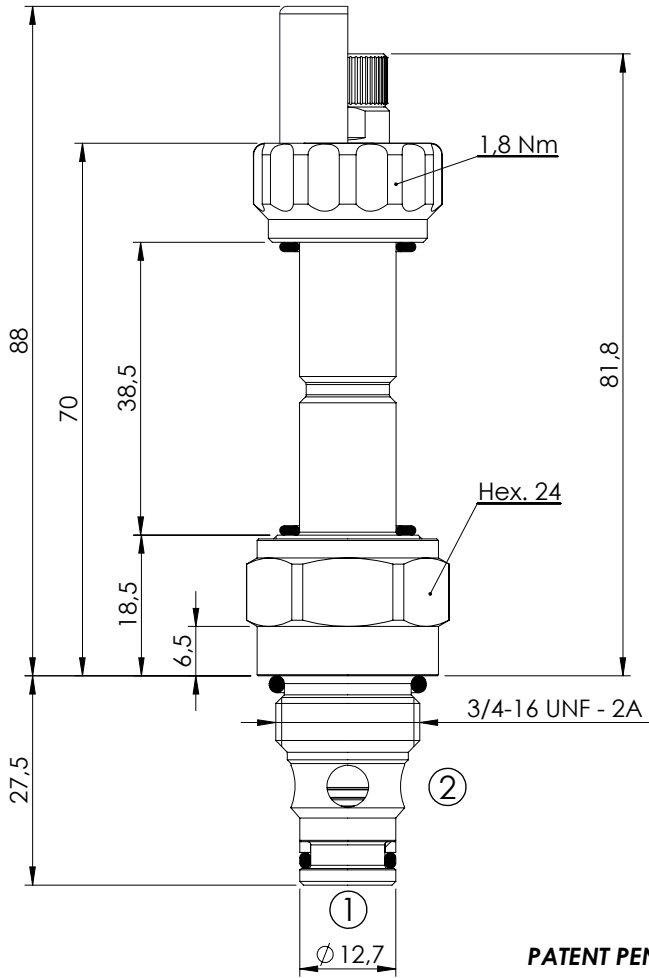
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000393	CEBN-300-NCFN-05-S16-N350	Standard	350
CE000395	CEBN-300-NCFK-05-S16-N350	Knob style override	350
CE000693	CEBN-300-NCFN-05-S16-N500	Standard	500
CE000695	CEBN-300-NCFK-05-S16-N500	Knob style override	500

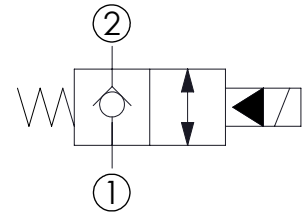
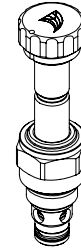
SOLENOID OPERATED CARTRIDGE

CEBN-040-NCFN

**PILOT OPERATED
POPPET TYPE**



PATENT PENDING

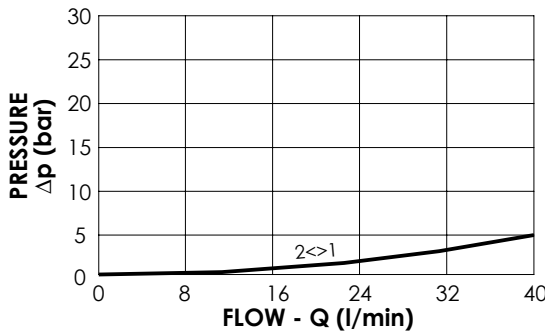


SPECIFICATIONS

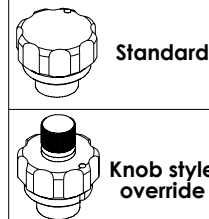
Max. operating pressure:	350/500 bar
Rated flow:	40 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

NOTES

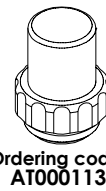
Installation torque: 45 - 50 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

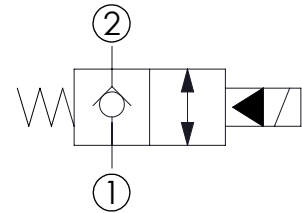
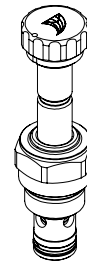
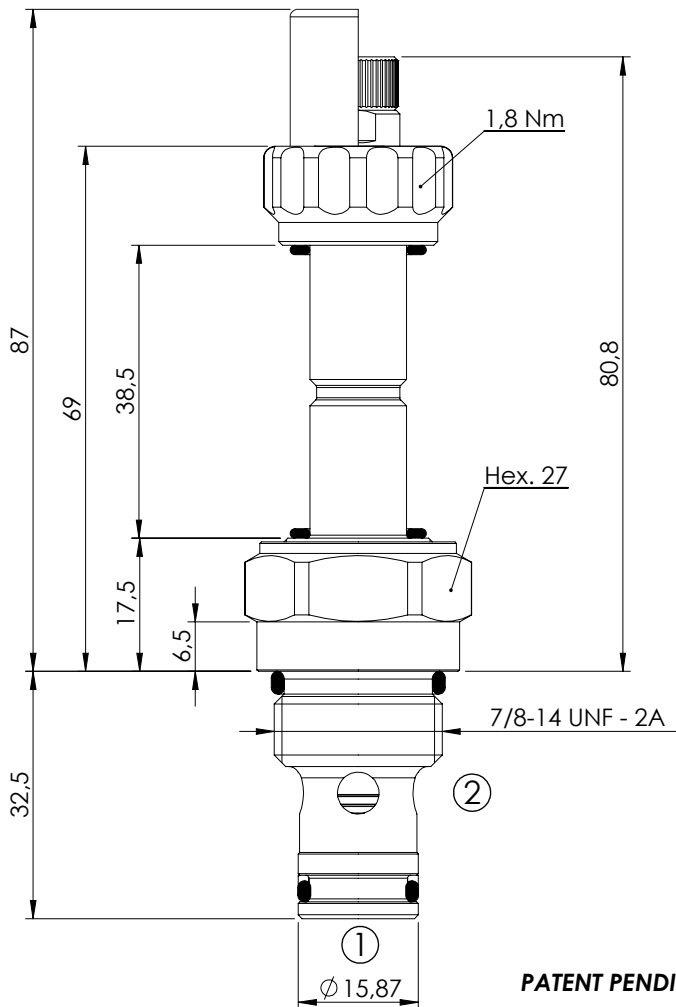
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000214	CEBN-040-NCFN-03-S08-N350	Standard	350
CE000216	CEBN-040-NCFK-03-S08-N350	Knob style override	350
CE000514	CEBN-040-NCFN-03-S08-N500	Standard	500
CE000516	CEBN-040-NCFK-03-S08-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-070-NCFN

**PILOT OPERATED
POPPET TYPE**



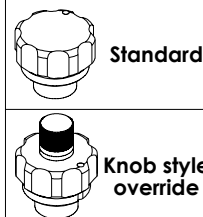
SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	70 l/min
Cavity:	SAE-10-2N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900082

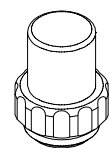
NOTES

Installation torque: 55 - 62 Nm

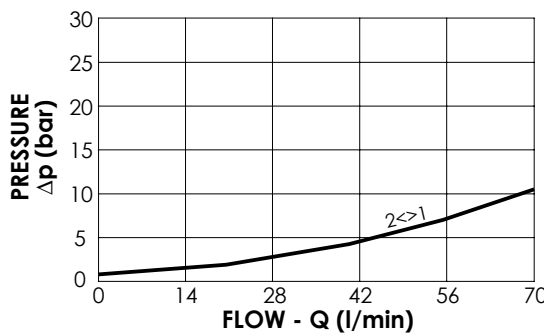
OPTIONS



SEALING CAP



Ordering code:
AT000113



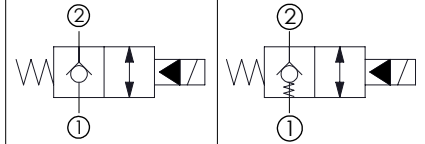
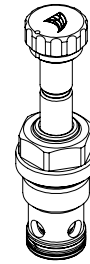
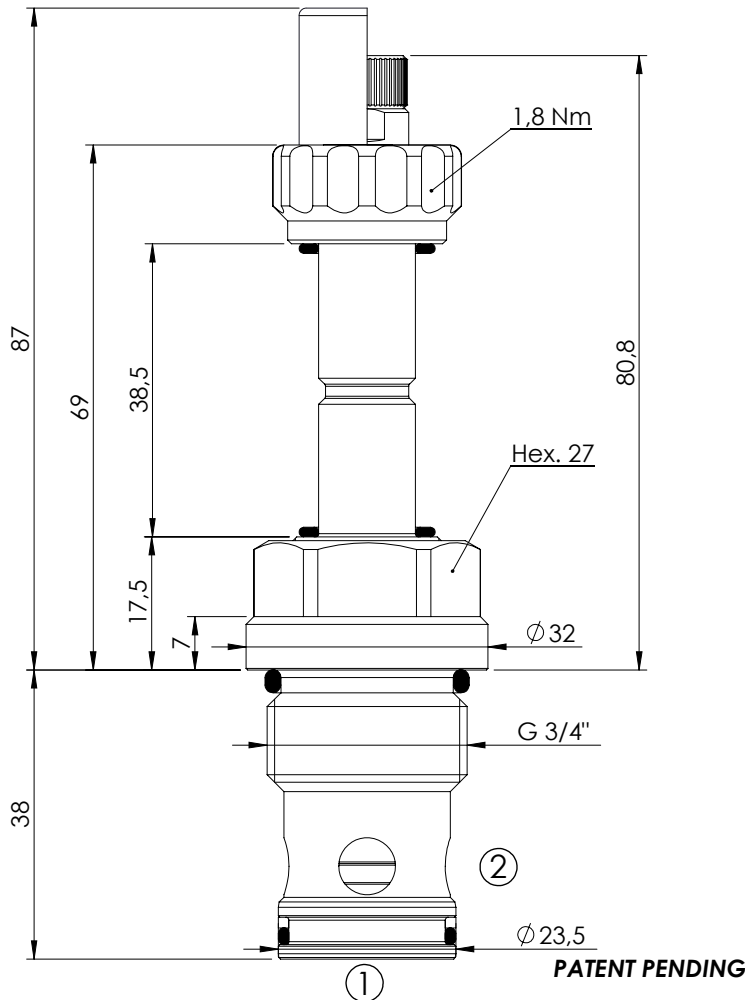
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000249	CEBN-070-NCFN-03-S10-N350	Standard	350
CE000251	CEBN-070-NCFK-03-S10-N350	Knob style override	350
CE000549	CEBN-070-NCFN-03-S10-N500	Standard	500
CE000551	CEBN-070-NCFK-03-S10-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-100-NCFN

**PILOT OPERATED
POPPET TYPE**



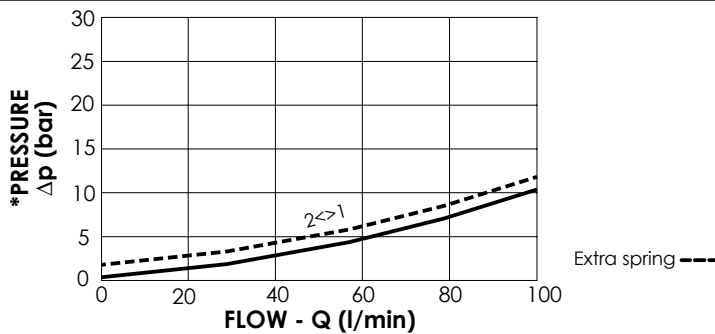
With extra spring

SPECIFICATIONS

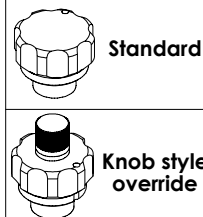
Max. operating pressure:	350/500 bar
Rated flow:	100 l/min
Cavity:	VP000057
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900057

NOTES

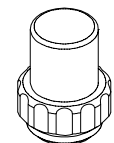
Installation torque: 110 - 130 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

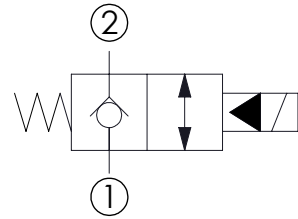
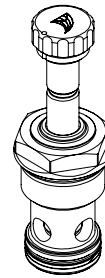
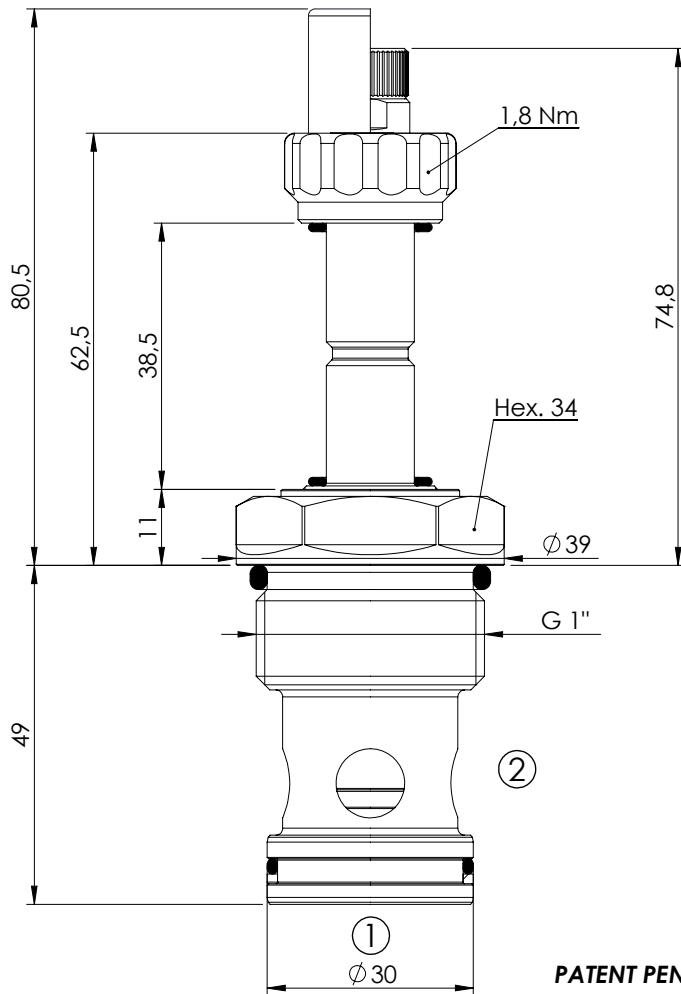
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)	Extra Spring
CE000284	CEBN-100-NCFN-03-057-N350	Standard	350	No
CE000286	CEBN-100-NCFK-03-057-N350	Knob style override	350	No
CE000584	CEBN-100-NCFN-03-057-N500	Standard	500	No
CE000586	CEBN-100-NCFK-03-057-N500	Knob style override	500	No
CE000585	CEBN-100-XCFN-03-057-N500	Standard	500	Yes
CE000587	CEBN-100-XCFK-03-057-N500	Knob style override	500	Yes

SOLENOID OPERATED CARTRIDGE

CEBN-200-NCFN

**PILOT OPERATED
POPPET TYPE**

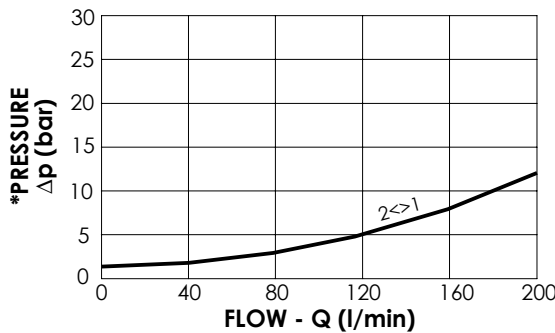


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	200 l/min
Cavity:	VP000013
Weight:	0,35 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC700013

NOTES

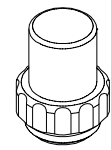
Installation torque: 135 - 150 Nm



OPTIONS



SEALING CAP



**Ordering code:
AT000113**

ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000354	CEBN-200-NCFN-03-013-N350	Standard	350
CE000356	CEBN-200-NCFK-03-013-N350	Knob style override	350
CE000654	CEBN-200-NCFN-03-013-N500	Standard	500
CE000656	CEBN-200-NCFK-03-013-N500	Knob style override	500

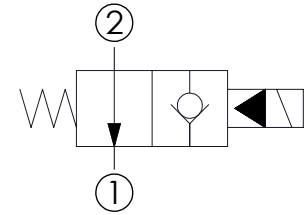
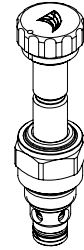
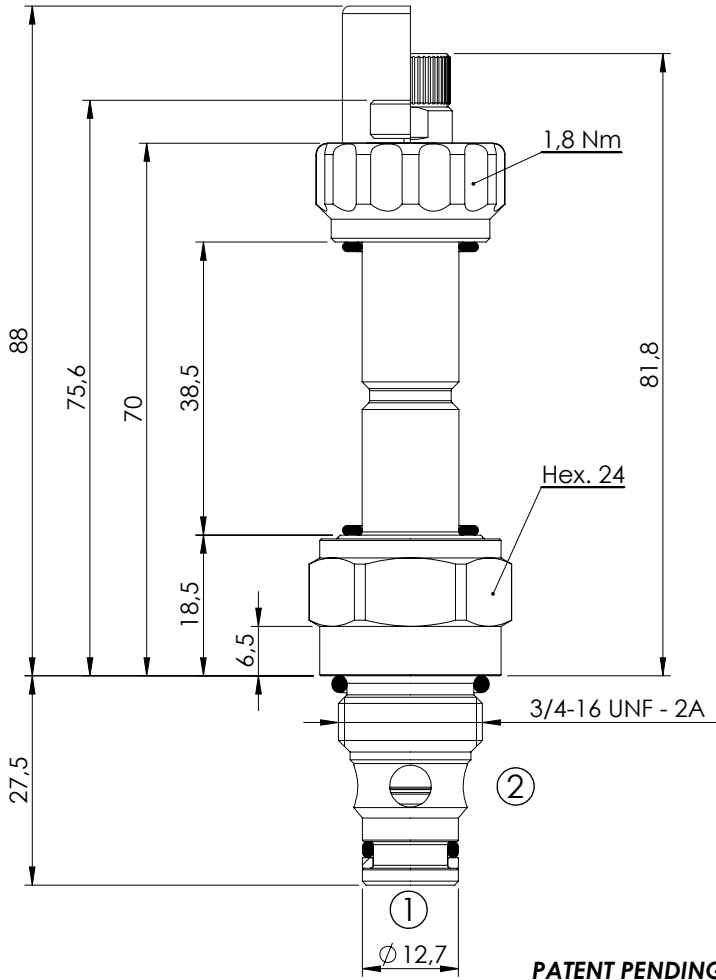
SOLENOID OPERATED CARTRIDGE

CEBN-030-NAFN

PILOT OPERATED
POPPET TYPE



NEW



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	30 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

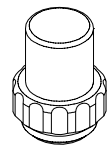
NOTES

Installation torque: 45 - 50 Nm

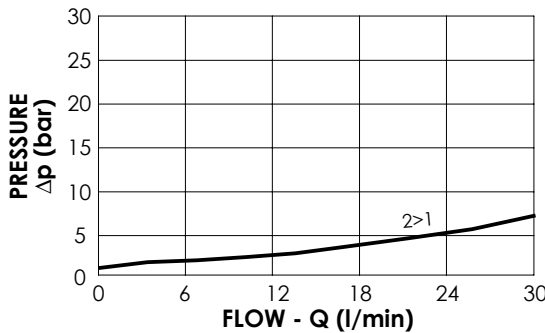
OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113



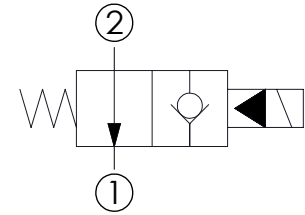
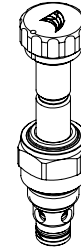
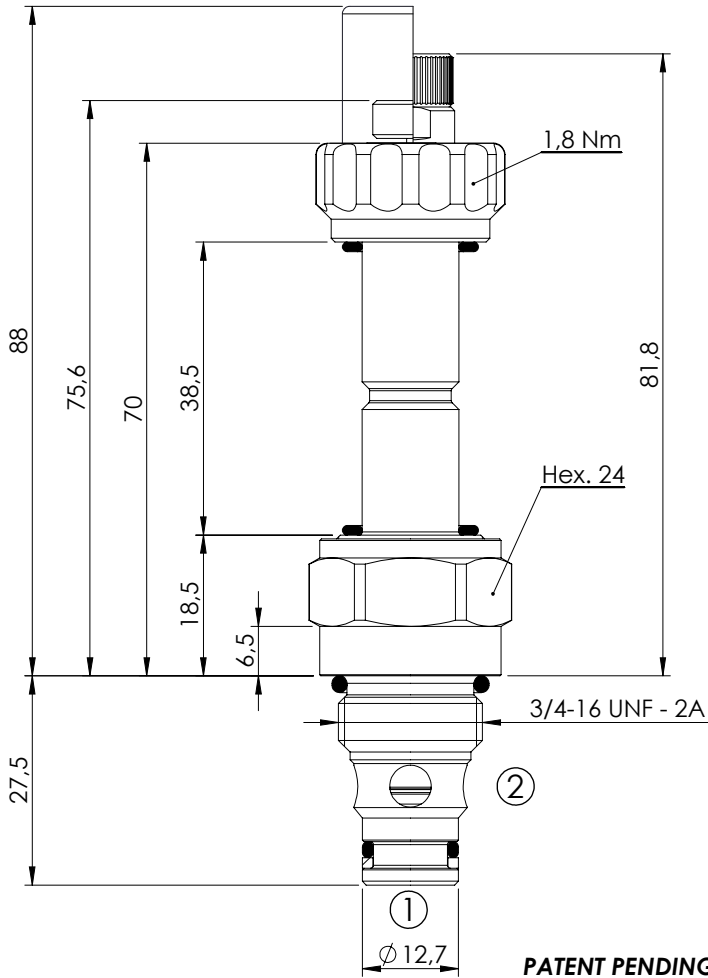
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000461	CEBN-030-NAFN-02-S08-N350	Standard	350
CE000462	CEBN-030-NAFP-02-S08-N350	Push style override	350
CE000463	CEBN-030-NAFK-02-S08-N350	Knob style override	350

SOLENOID OPERATED CARTRIDGE

CEBN-040-NAFN

**PILOT OPERATED
POPPET TYPE**

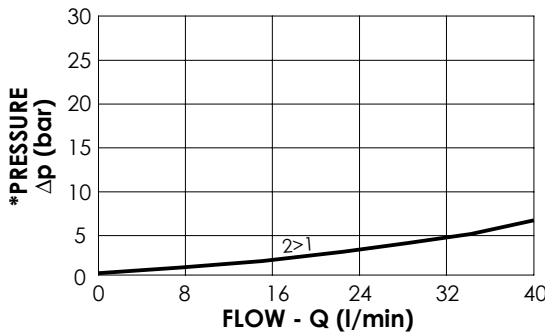


SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	40 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

NOTES

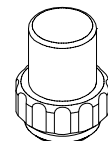
Installation torque: 45 - 50 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

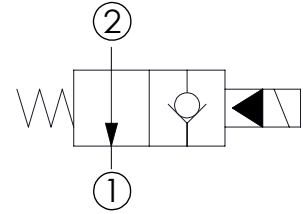
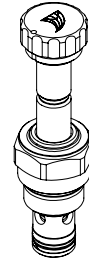
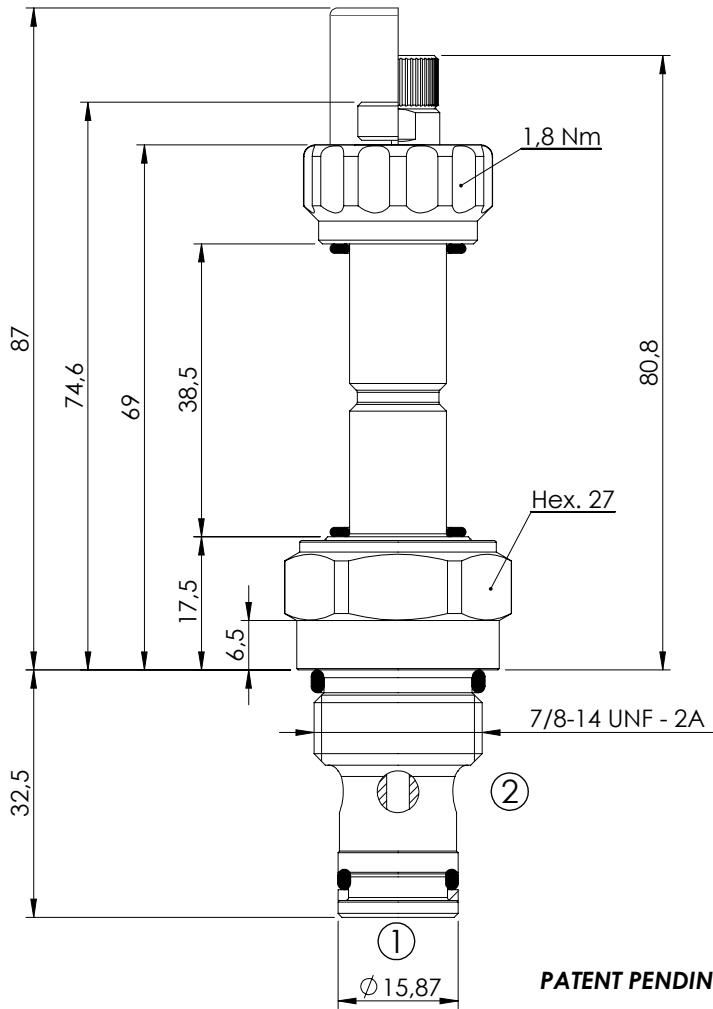
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000230	CEBN-040-NAFN-02-S08-N350	Standard	350
CE000231	CEBN-040-NAFP-02-S08-N350	Push style override	350
CE000232	CEBN-040-NAFK-02-S08-N350	Knob style override	350
CE000530	CEBN-040-NAFN-02-S08-N500	Standard	500
CE000531	CEBN-040-NAFP-02-S08-N500	Push style override	500
CE000532	CEBN-040-NAFK-02-S08-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-070-NAFN

**PILOT OPERATED
POPPET TYPE**

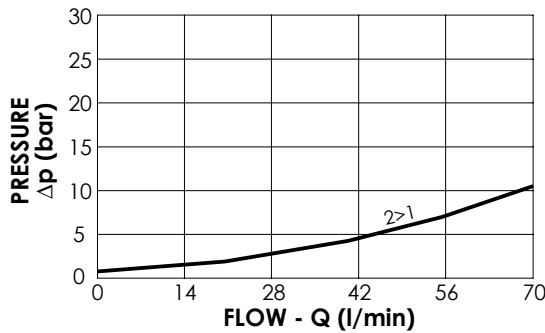


SPECIFICATIONS




Max. operating pressure:	350/500 bar
Rated flow:	70 l/min
Cavity:	SAE-10-2N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900082

NOTES

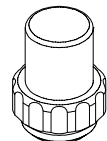
Installation torque: 55 - 62 Nm



OPTIONS

-  Standard
-  Push style override
-  Knob style override

SEALING CAP



Ordering code:
AT000113

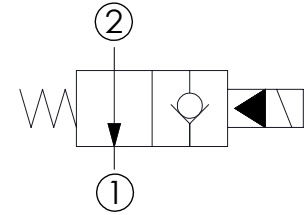
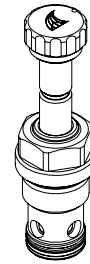
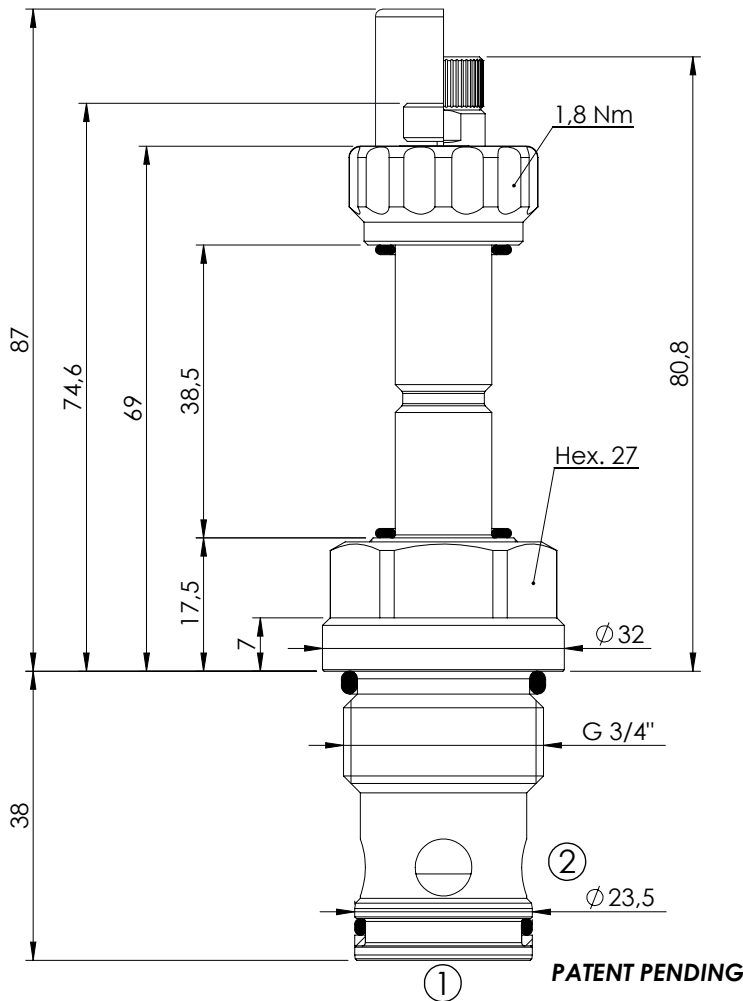
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000265	CEBN-070-NAFN-02-S10-N350	Standard	350
CE000266	CEBN-070-NAFP-02-S10-N350	Push style override	350
CE000267	CEBN-070-NAFK-02-S10-N350	Knob style override	350
CE000565	CEBN-070-NAFN-02-S10-N500	Standard	500
CE000566	CEBN-070-NAFP-02-S10-N500	Push style override	500
CE000567	CEBN-070-NAFK-02-S10-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-100-NAFN

**PILOT OPERATED
POPPET TYPE**

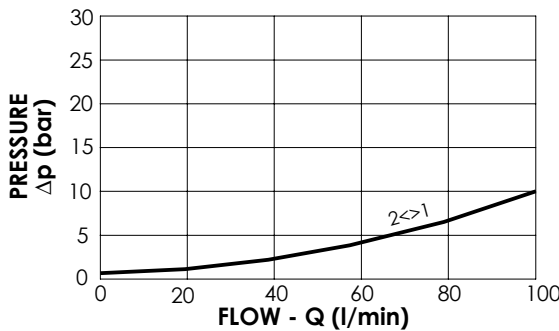


SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	100 l/min
Cavity:	VP000057
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900057

NOTES

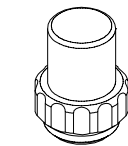
Installation torque: 110 - 130 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

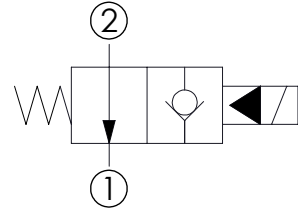
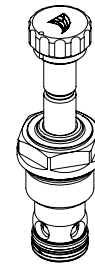
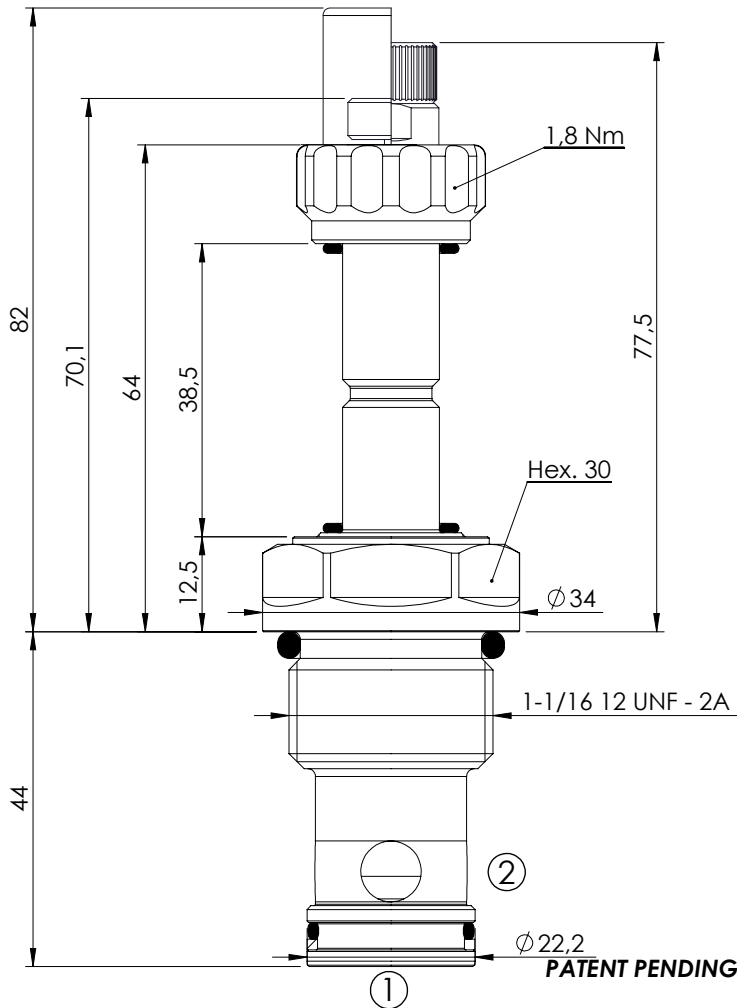
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000300	CEBN-100-NAFN-02-057-N350	Standard	350
CE000301	CEBN-100-NAFP-02-057-N350	Push style override	350
CE000302	CEBN-100-NAFK-02-057-N350	Knob style override	350
CE000600	CEBN-100-NAFN-02-057-N500	Standard	500
CE000601	CEBN-100-NAFP-02-057-N500	Push style override	500
CE000602	CEBN-100-NAFK-02-057-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-180-NAFN

**PILOT OPERATED
POPPET TYPE**

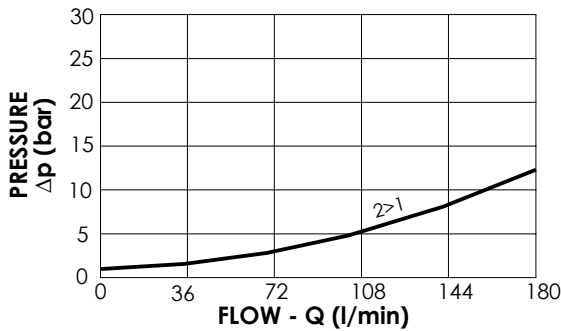


SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	180 l/min
Cavity:	SAE-12-2N
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900083

NOTES

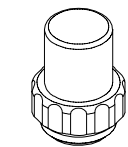
Installation torque: 135 - 150 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

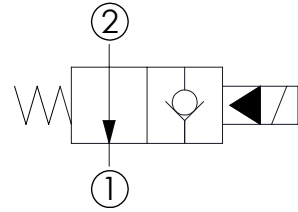
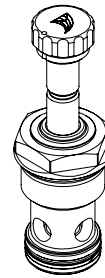
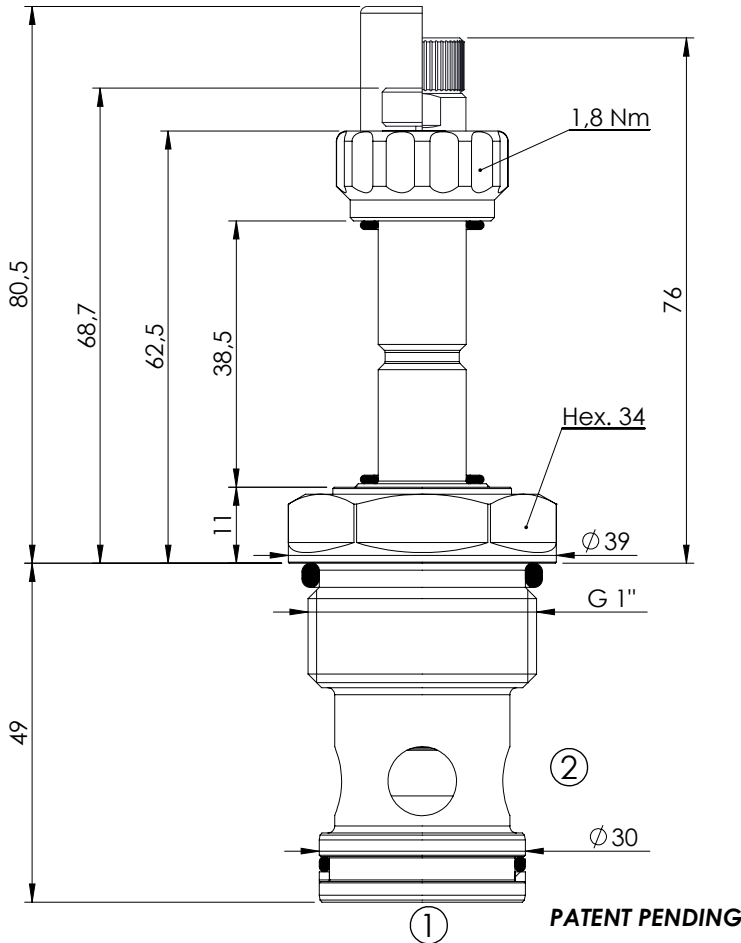
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000335	CEBN-180-NAFN-02-S12-N350	Standard	350
CE000336	CEBN-180-NAFP-02-S12-N350	Push style override	350
CE000337	CEBN-180-NAFK-02-S12-N350	Knob style override	350
CE000635	CEBN-180-NAFN-02-S12-N500	Standard	500
CE000636	CEBN-180-NAFP-02-S12-N500	Push style override	500
CE000637	CEBN-180-NAFK-02-S12-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-200-NAFN

**PILOT OPERATED
POPPET TYPE**

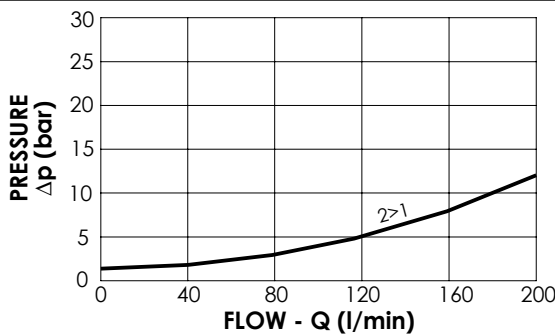


SPECIFICATIONS




Max. operating pressure:	350/500 bar
Rated flow:	200 l/min
Cavity:	VP000013
Weight:	0,35 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900013

NOTES

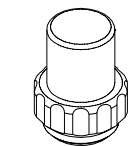
Installation torque: 135 - 150 Nm



OPTIONS

-  Standard
-  Push style override
-  Knob style override

SEALING CAP



Ordering code:
AT000113

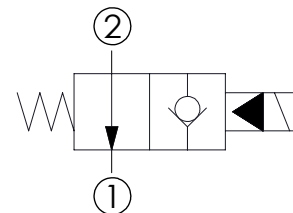
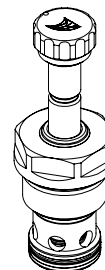
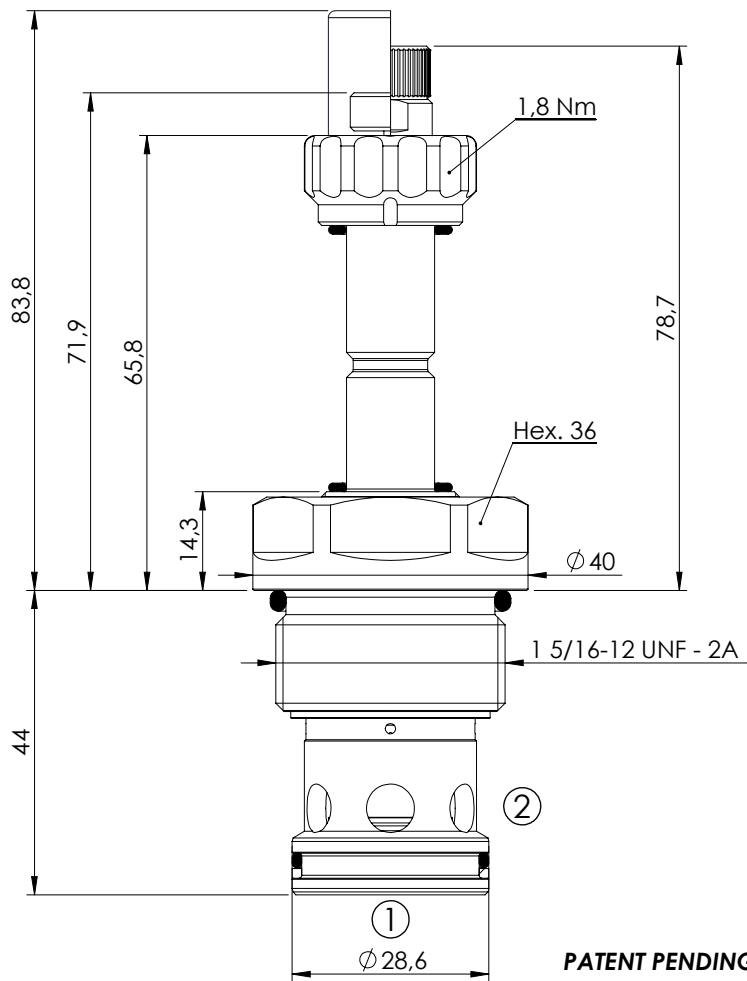
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000370	CEBN-200-NAFN-02-013-N350	Standard	350
CE000371	CEBN-200-NAFP-02-013-N350	Push style override	350
CE000372	CEBN-200-NAFK-02-013-N350	Knob style override	350
CE000670	CEBN-200-NAFN-02-013-N500	Standard	500
CE000671	CEBN-200-NAFP-02-013-N500	Push style override	500
CE000672	CEBN-200-NAFK-02-013-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-300-NAFN

**PILOT OPERATED
POPPET TYPE**






SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	300 l/min
Cavity:	SAE-16-2N
Weight:	0,36 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900084

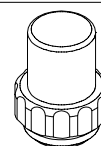
NOTES

Installation torque: 118 - 132 Nm

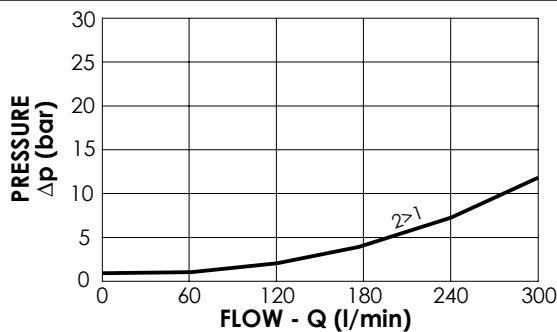
OPTIONS

-  Standard
-  Push style override
-  Knob style override

SEALING CAP



Ordering code:
AT000113



ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000405	CEBN-300-NAFN-02-S16-N350	Standard	350
CE000406	CEBN-300-NAFP-02-S16-N350	Push style override	350
CE000407	CEBN-300-NAFK-02-S16-N350	Knob style override	350
CE000705	CEBN-300-NAFN-02-S16-N500	Standard	500
CE000706	CEBN-300-NAFP-02-S16-N500	Push style override	500
CE000707	CEBN-300-NAFK-02-S16-N500	Knob style override	500

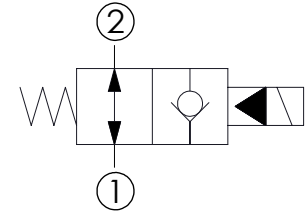
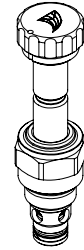
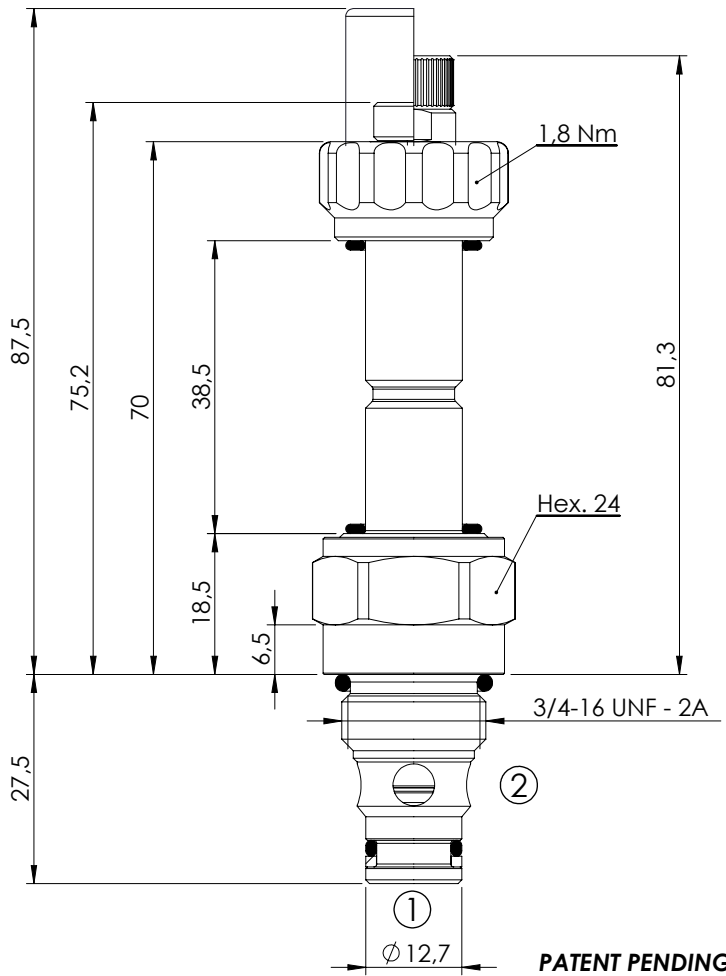
SOLENOID OPERATED CARTRIDGE

CEBN-030-NAFN

**PILOT OPERATED
POPPET TYPE**



NEW

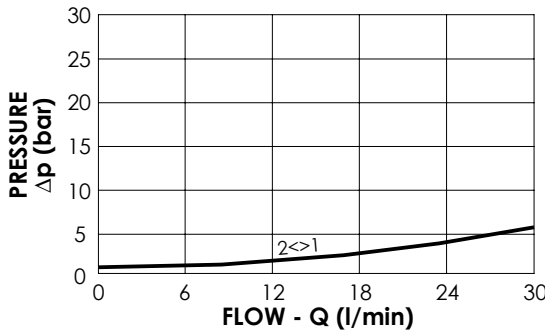


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	30 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

NOTES

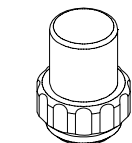
Installation torque: 45 - 50 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

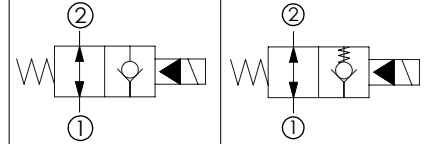
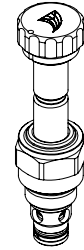
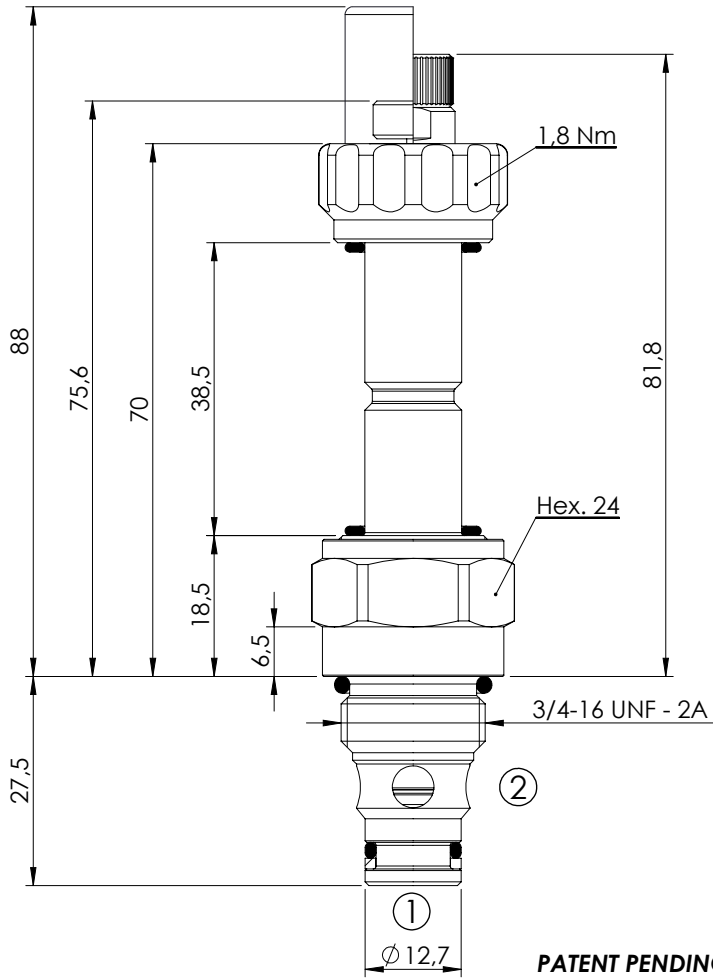
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000464	CEBN-030-NAFN-06-S08-N350	Standard	350
CE000465	CEBN-030-NAFP-06-S08-N350	Push style override	350
CE000466	CEBN-030-NAFK-06-S08-N350	Knob style override	350

SOLENOID OPERATED CARTRIDGE

CEBN-040-NAFN

**PILOT OPERATED
POPPET TYPE**



SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	40 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

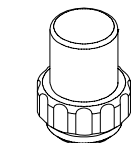
NOTES

Installation torque: 45 - 50 Nm

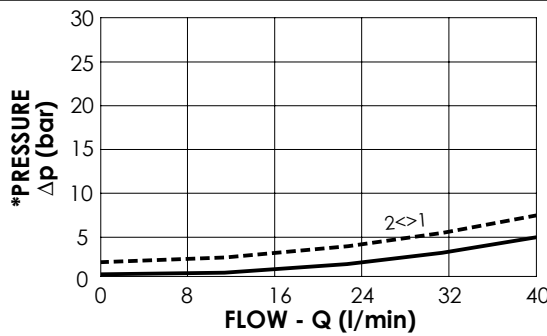
OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113



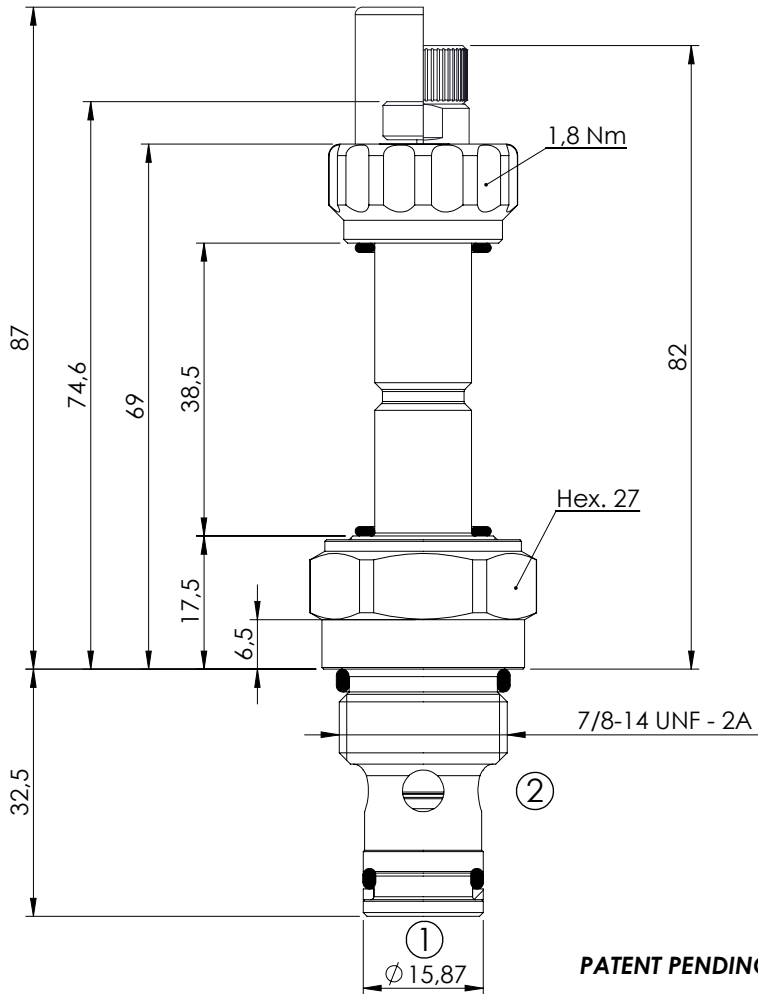
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)	Extra spring
CE000236	CEBN-040-NAFN-06-S08-N350	Standard	350	No
CE000237	CEBN-040-NAFP-06-S08-N350	Push style override	350	No
CE000238	CEBN-040-NAFK-06-S08-N350	Knob style override	350	No
CE000483	CEBN-040-XAFN-06-S08-N350	Standard	350	Yes
CE000536	CEBN-040-NAFN-06-S08-N500	Standard	500	No
CE000537	CEBN-040-NAFP-06-S08-N500	Push style override	500	No
CE000538	CEBN-040-NAFK-06-S08-N500	Knob style override	500	No

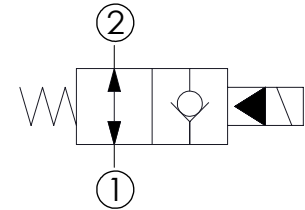
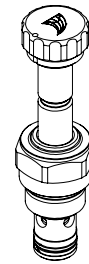
SOLENOID OPERATED CARTRIDGE

CEBN-070-NAFN

**PILOT OPERATED
POPPET TYPE**



PATENT PENDING

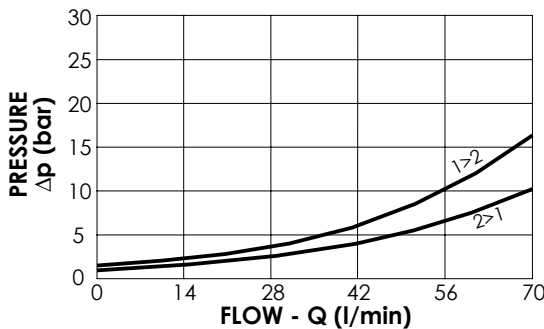


SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	70 l/min
Cavity:	SAE-10-2N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900082

NOTES

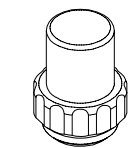
Installation torque: 55 - 62 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

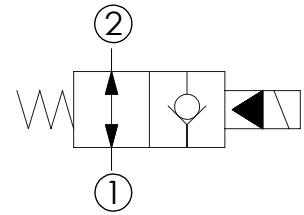
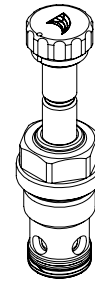
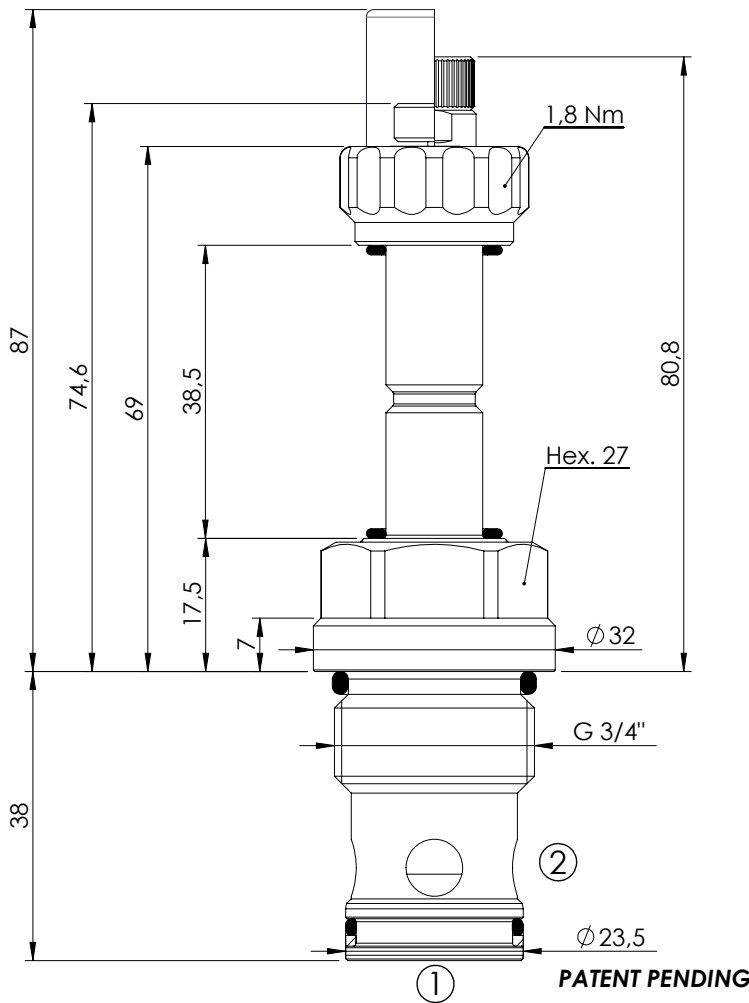
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000271	CEBN-070-NAFN-06-S10-N350	Standard	350
CE000272	CEBN-070-NAFP-06-S10-N350	Push style override	350
CE000273	CEBN-070-NAFK-06-S10-N350	Knob style override	350
CE000571	CEBN-070-NAFN-06-S10-N500	Standard	500
CE000572	CEBN-070-NAFP-06-S10-N500	Push style override	500
CE000573	CEBN-070-NAFK-06-S10-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-100-NAFN

**PILOT OPERATED
POPPET TYPE**

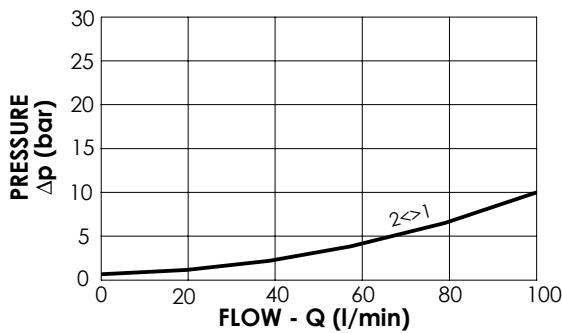


SPECIFICATIONS




Max. operating pressure:	350/500 bar
Rated flow:	100 l/min
Cavity:	VP000057
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900057

NOTES

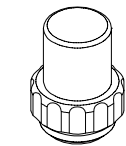
Installation torque: 110 - 130 Nm



OPTIONS

-  Standard
-  Push style override
-  Knob style override

SEALING CAP



Ordering code:
AT000113

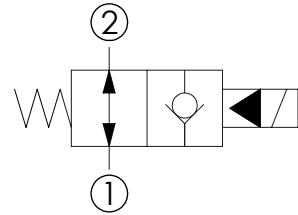
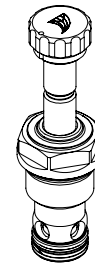
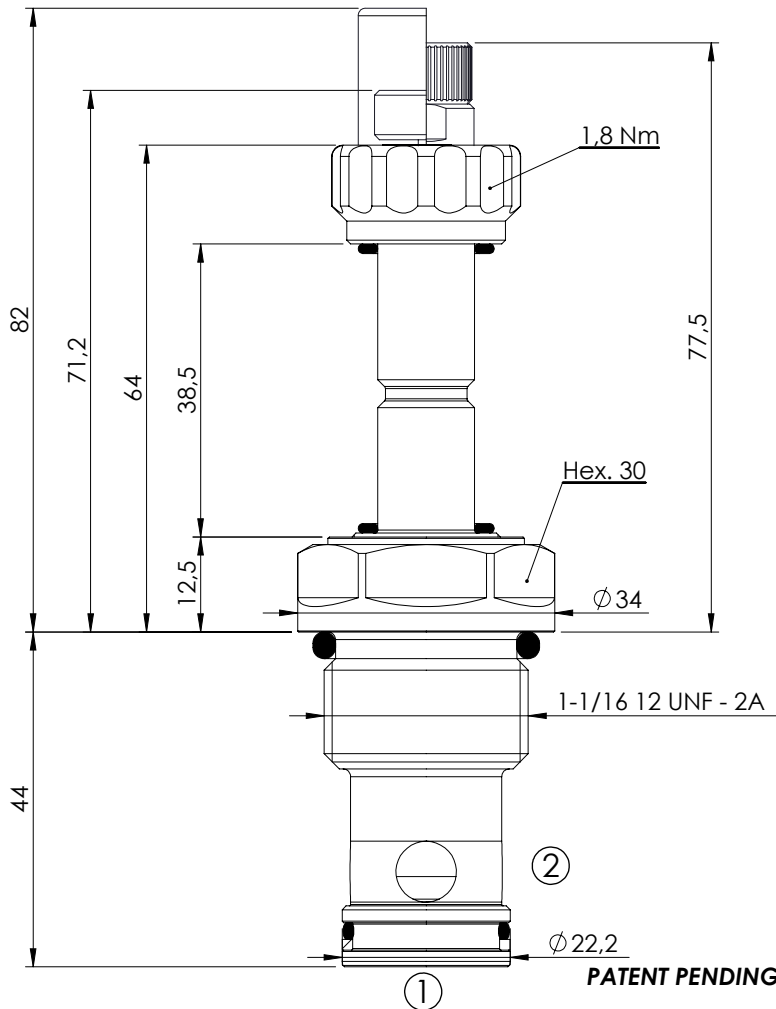
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000306	CEBN-100-NAFN-06-057-N350	Standard	350
CE000307	CEBN-100-NAFP-06-057-N350	Push style override	350
CE000308	CEBN-100-NAFK-06-057-N350	Knob style override	350
CE000606	CEBN-100-NAFN-06-057-N500	Standard	500
CE000607	CEBN-100-NAFP-06-057-N500	Push style override	500
CE000608	CEBN-100-NAFK-06-057-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-180-NAFN

**PILOT OPERATED
POPPET TYPE**



SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	180 l/min
Cavity:	SAE-12-2N
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900083

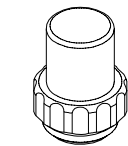
NOTES

Installation torque: 135 - 150 Nm

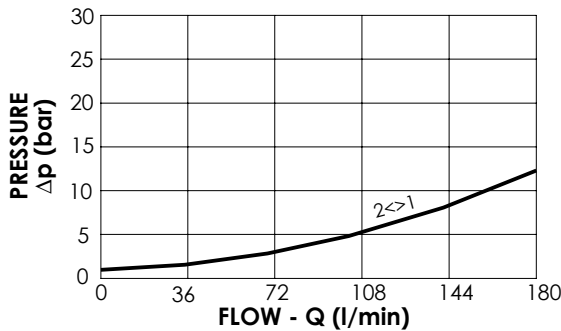
OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113



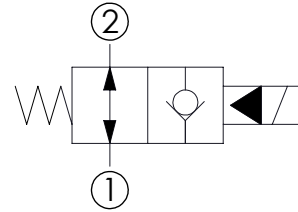
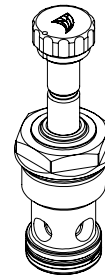
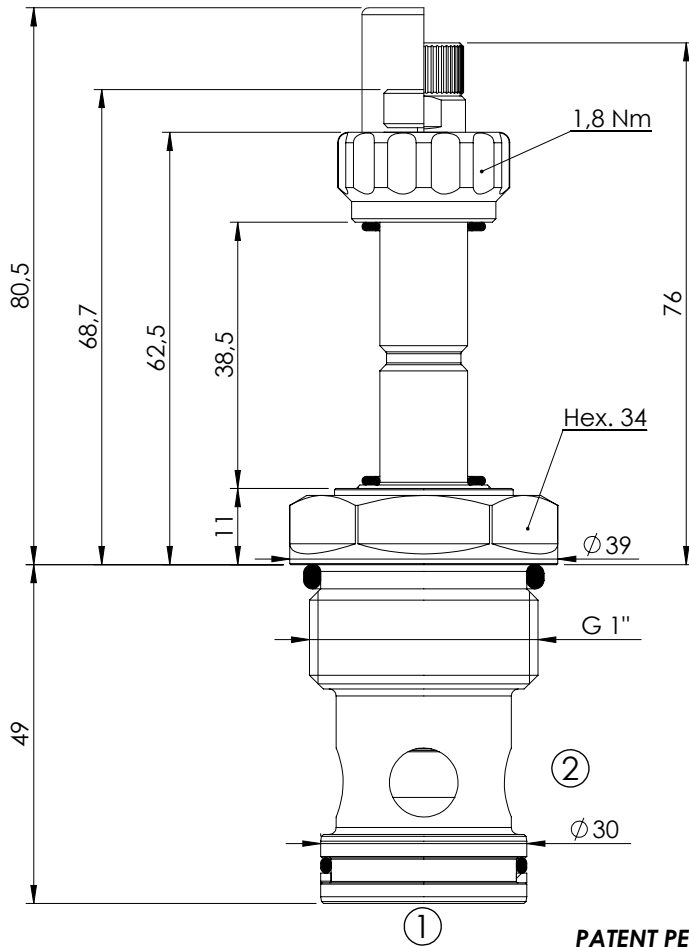
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000341	CEBN-180-NAFN-06-S12-N350	Standard	350
CE000342	CEBN-180-NAFP-06-S12-N350	Push style override	350
CE000343	CEBN-180-NAFK-06-S12-N350	Knob style override	350
CE000641	CEBN-180-NAFN-06-S12-N500	Standard	500
CE000642	CEBN-180-NAFP-06-S12-N500	Push style override	500
CE000643	CEBN-180-NAFK-06-S12-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-200-NAFN

**PILOT OPERATED
POPPET TYPE**

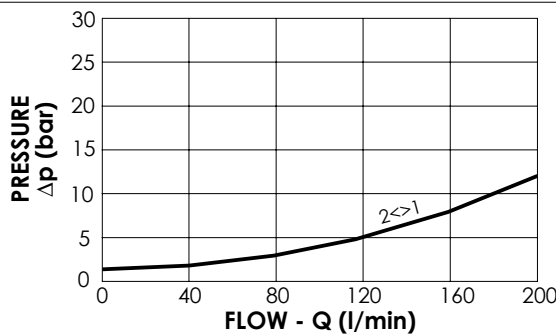


SPECIFICATIONS




Max. operating pressure:	350/500 bar
Rated flow:	200 l/min
Cavity:	VP000013
Weight:	0,35 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900013

NOTES

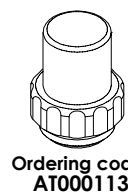
Installation torque: 135 - 150 Nm



OPTIONS

-  Standard
-  Push style override
-  Knob style override

SEALING CAP



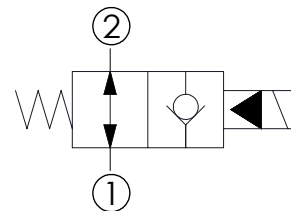
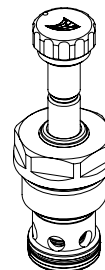
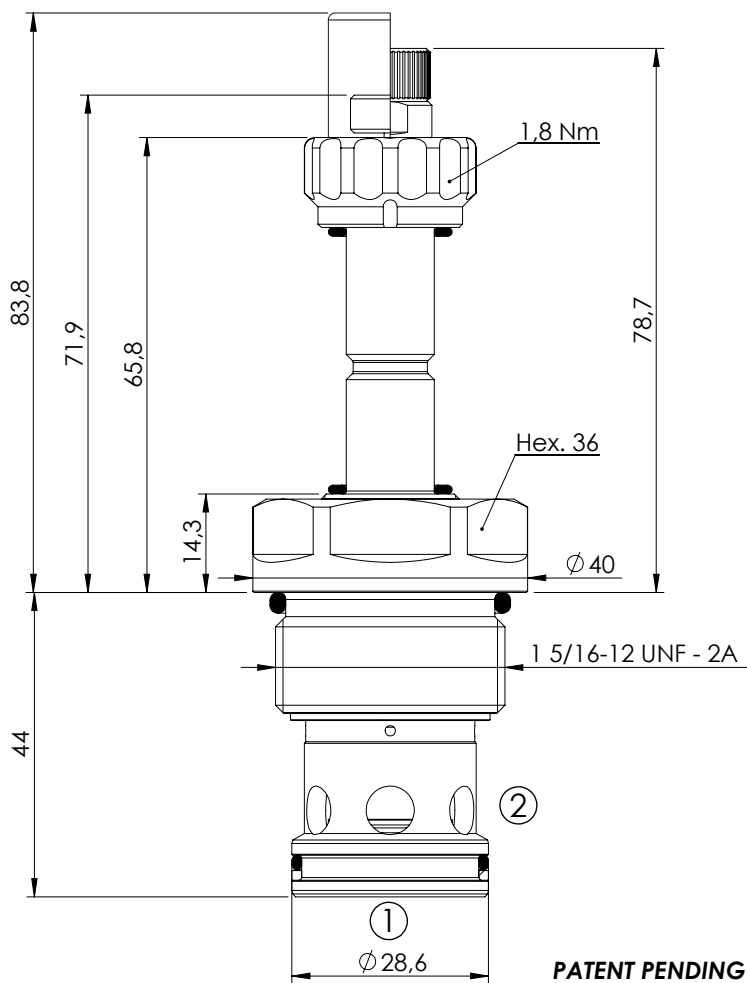
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000376	CEBN-200-NAFN-06-013-N350	Standard	350
CE000377	CEBN-200-NAFP-06-013-N350	Push style override	350
CE000378	CEBN-200-NAFK-06-013-N350	Knob style override	350
CE000676	CEBN-200-NAFN-06-013-N500	Standard	500
CE000677	CEBN-200-NAFP-06-013-N500	Push style override	500
CE000678	CEBN-200-NAFK-06-013-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-300-NAFN

**PILOT OPERATED
POPPET TYPE**

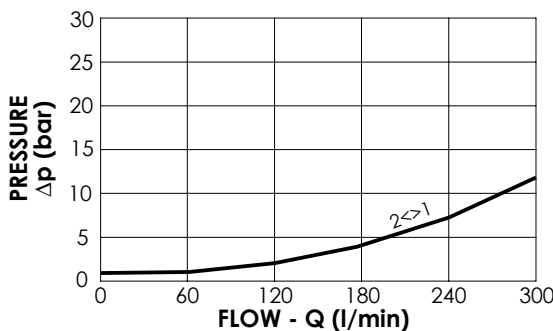


SPECIFICATIONS




Max. operating pressure:	350/500 bar
Rated flow:	300 l/min
Cavity:	SAE-16-2N
Weight:	0,36 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900084

NOTES

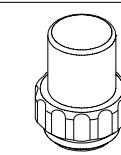
Installation torque: 118 - 132 Nm



OPTIONS

-  Standard
-  Push style override
-  Knob style override

SEALING CAP



Ordering code:
AT000113

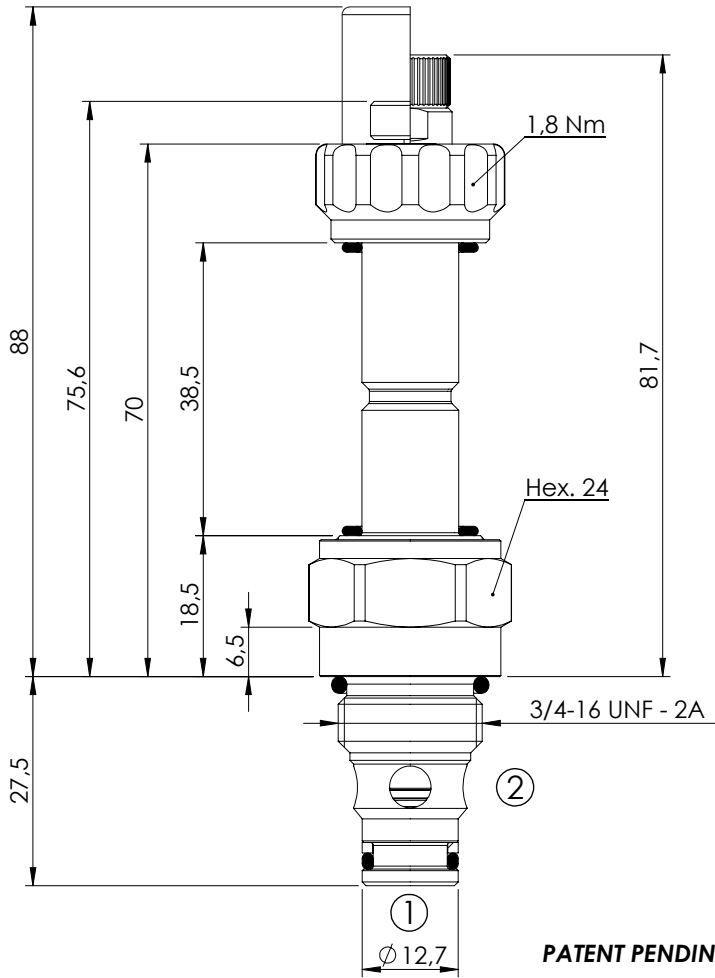
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000411	CEBN-300-NAFN-06-S16-N350	Standard	350
CE000412	CEBN-300-NAFP-06-S16-N350	Push style override	350
CE000413	CEBN-300-NAFK-06-S16-N350	Knob style override	350
CE000711	CEBN-300-NAFN-06-S16-N500	Standard	500
CE000712	CEBN-300-NAFP-06-S16-N500	Push style override	500
CE000713	CEBN-300-NAFK-06-S16-N500	Knob style override	500

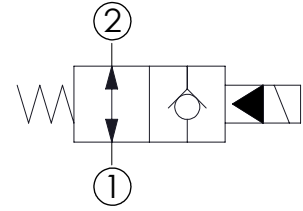
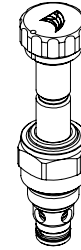
SOLENOID OPERATED CARTRIDGE

CEBN-040-NAFN

**PILOT OPERATED
POPPET TYPE**



PATENT PENDING

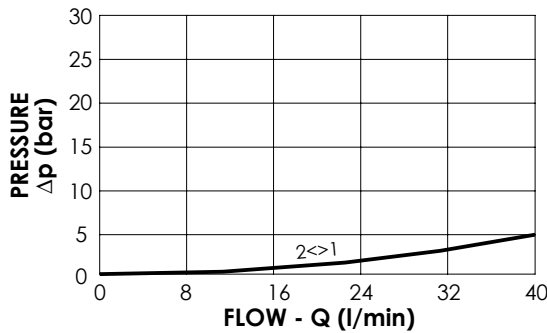


SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	40 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900081

NOTES

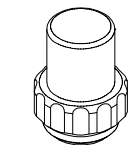
Installation torque: 45 - 50 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

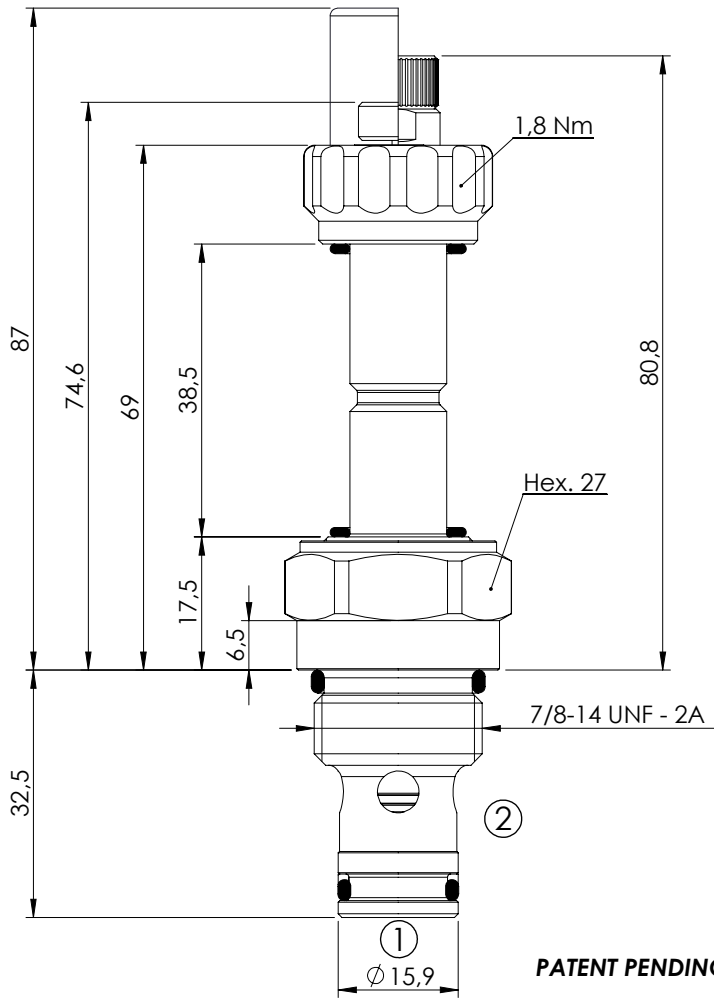
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000233	CEBN-040-NAFN-04-S08-N350	Standard	350
CE000234	CEBN-040-NAFP-04-S08-N350	Push style override	350
CE000235	CEBN-040-NAFK-04-S08-N350	Knob style override	350
CE000533	CEBN-040-NAFN-04-S08-N500	Standard	500
CE000534	CEBN-040-NAFP-04-S08-N500	Push style override	500
CE000535	CEBN-040-NAFK-04-S08-N500	Knob style override	500

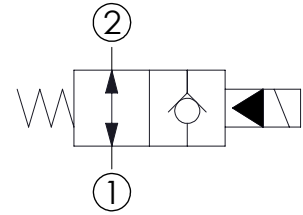
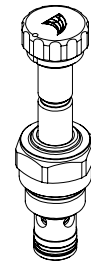
SOLENOID OPERATED CARTRIDGE

CEBN-070-NAFN

**PILOT OPERATED
POPPET TYPE**



PATENT PENDING

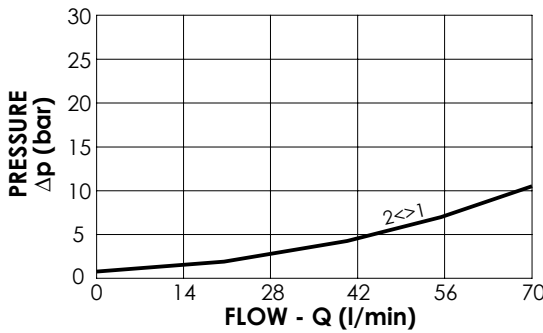


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	70 l/min
Cavity:	SAE-10-2N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RA900082

NOTES

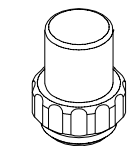
Installation torque: 45 - 50 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

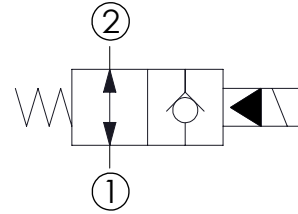
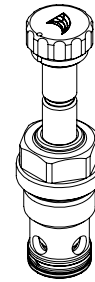
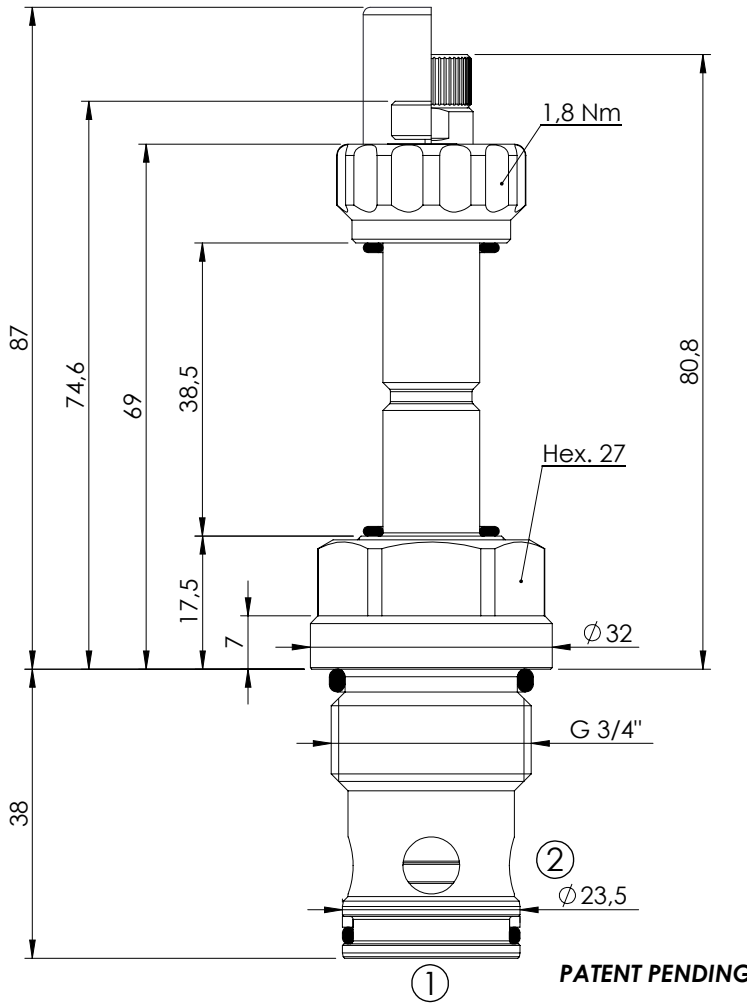
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000268	CEBN-070-NAFN-04-S10-N350	Standard	350
CE000269	CEBN-070-NAFP-04-S10-N350	Push style override	350
CE000270	CEBN-070-NAFK-04-S10-N350	Knob style override	350
CE000568	CEBN-070-NAFN-04-S10-N500	Standard	500
CE000569	CEBN-070-NAFP-04-S10-N500	Push style override	500
CE000570	CEBN-070-NAFK-04-S10-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-100-NAFN

**PILOT OPERATED
POPPET TYPE**



SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	100 l/min
Cavity:	VP000057
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900057

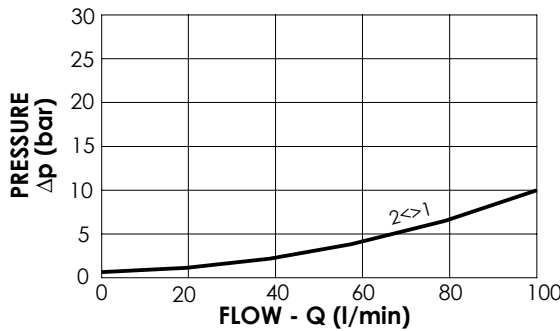
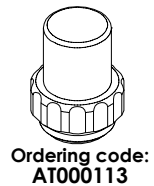
NOTES

Installation torque: 110 - 130 Nm

OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



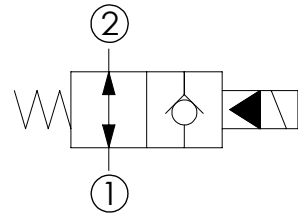
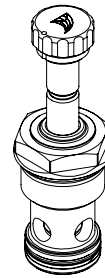
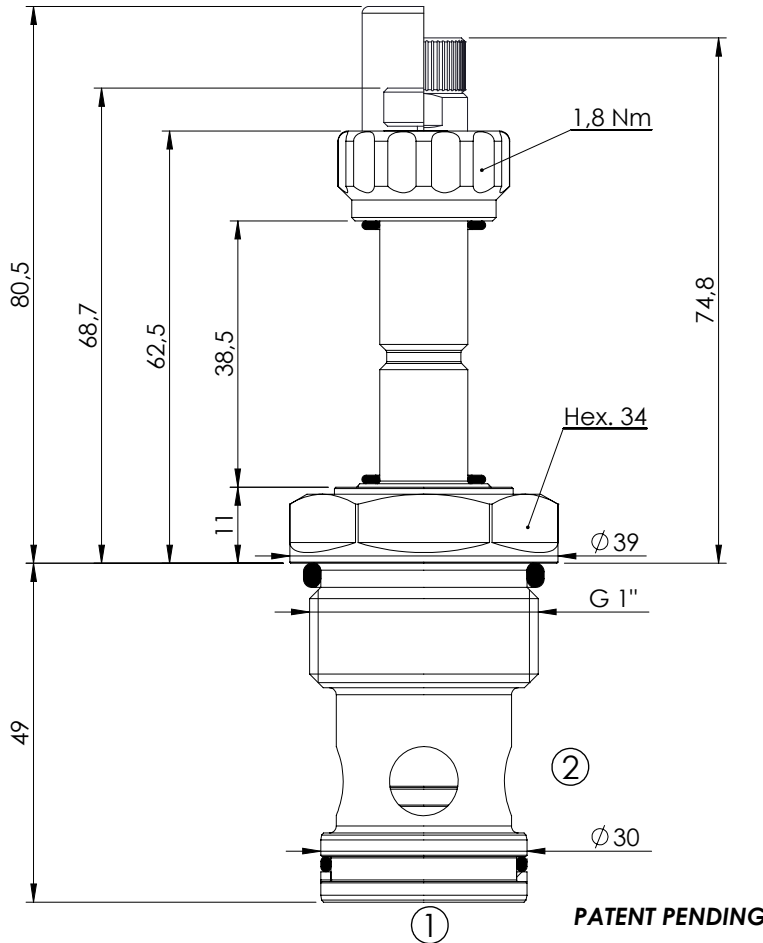
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000303	CEBN-100-NAFN-04-057-N350	Standard	350
CE000304	CEBN-100-NAFP-04-057-N350	Push style override	350
CE000305	CEBN-100-NAFK-04-057-N350	Knob style override	350
CE000603	CEBN-100-NAFN-04-057-N500	Standard	500
CE000604	CEBN-100-NAFP-04-057-N500	Push style override	500
CE000605	CEBN-100-NAFK-04-057-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-200-NAFN

**PILOT OPERATED
POPPET TYPE**

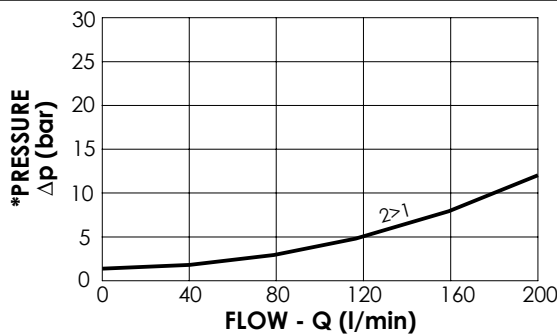


SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	200 l/min
Cavity:	VP000013
Weight:	0,35 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RC900013

NOTES

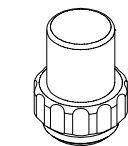
Installation torque: 135 - 150 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

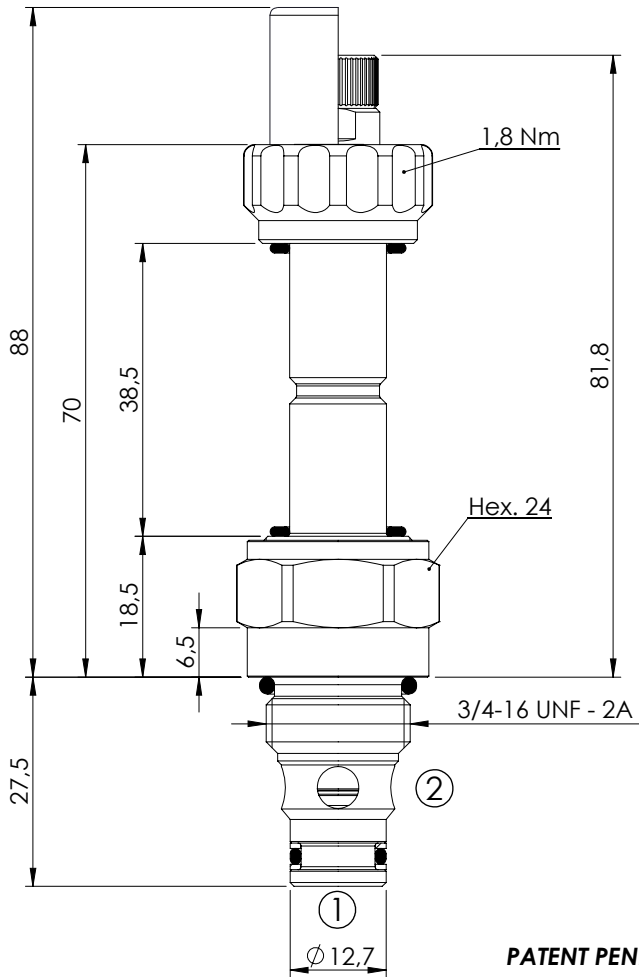
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000373	CEBN-200-NAFN-04-013-N350	Standard	350
CE000374	CEBN-200-NAFP-04-013-N350	Push style override	350
CE000375	CEBN-200-NAFK-04-013-N350	Knob style override	350
CE000673	CEBN-200-NAFN-04-013-N500	Standard	500
CE000674	CEBN-200-NAFP-04-013-N500	Push style override	500
CE000675	CEBN-200-NAFK-04-013-N500	Knob style override	500

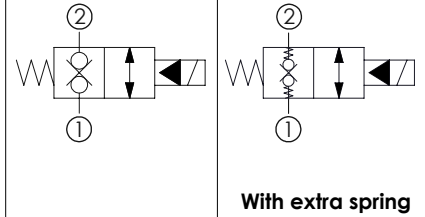
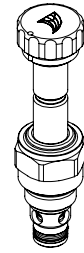
SOLENOID OPERATED CARTRIDGE

CEBN-040-NCFN

**PILOT OPERATED
POPPET TYPE**



PATENT PENDING



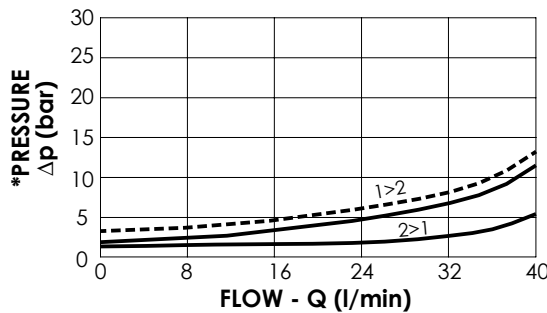
With extra spring

SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	40 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB900081

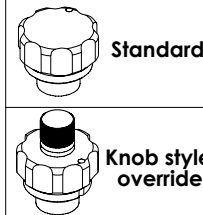
NOTES

Installation torque: 45 - 50 Nm

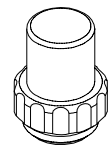


Extra spring

OPTIONS



SEALING CAP



Ordering code:
AT000113

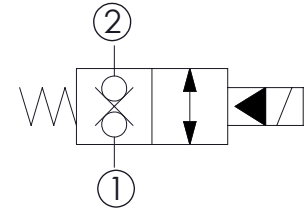
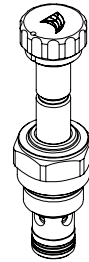
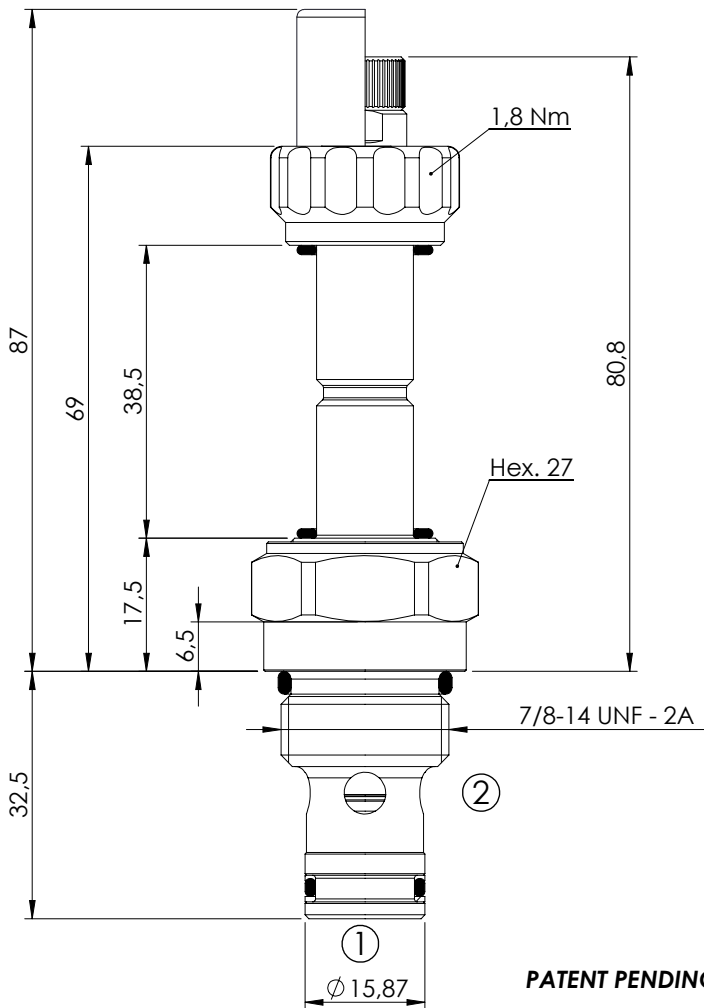
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)	Extra Spring
CE000226	CEBN-040-NCFN-31-S08-N350	Standard	350	No
CE000228	CEBN-040-NCFK-31-S08-N350	Knob style override	350	No
CE000227	CEBN-040-XCFN-31-S08-N350	Standard	350	Yes
CE000229	CEBN-040-XCFK-31-S08-N350	Knob style override	350	Yes
CE000526	CEBN-040-NCFN-31-S08-N500	Standard	500	No
CE000528	CEBN-040-NCFK-31-S08-N500	Knob style override	500	No

SOLENOID OPERATED CARTRIDGE

CEBN-070-NCFN

**PILOT OPERATED
POPPET TYPE**



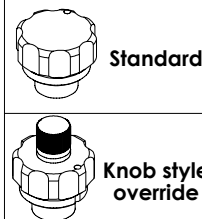
SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	70 l/min
Cavity:	SAE-10-2N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB900082

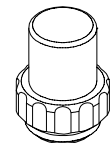
NOTES

Installation torque: 55 - 62 Nm

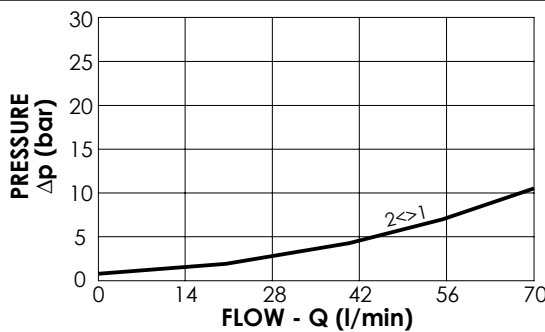
OPTIONS



SEALING CAP



Ordering code:
AT000113



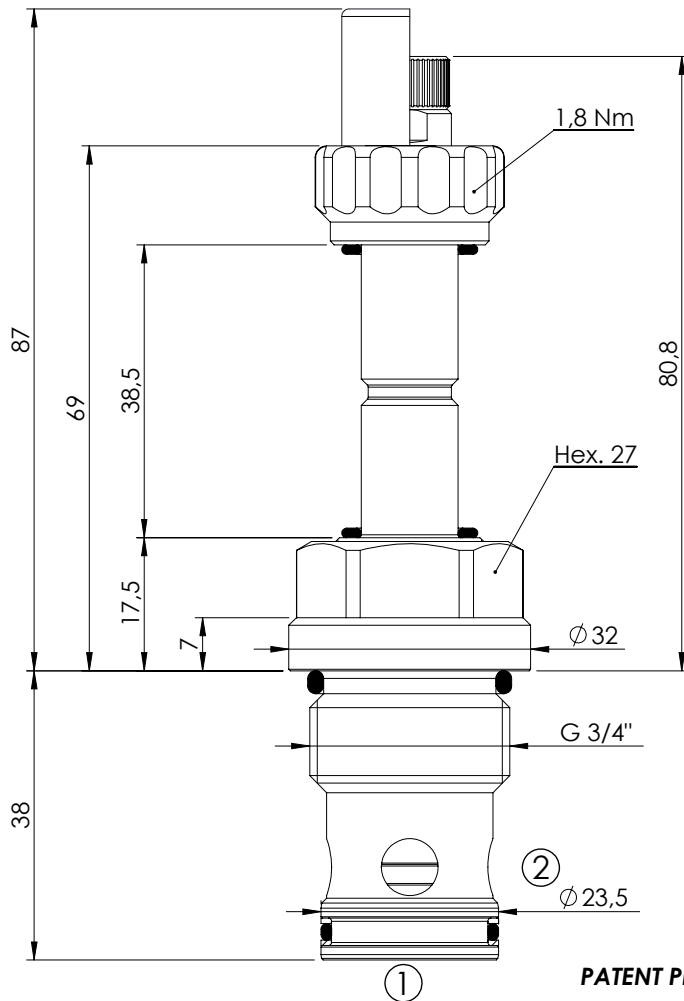
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000261	CEBN-070-NCFN-31-S10-N350	Standard	350
CE000263	CEBN-070-NCFK-31-S10-N350	Knob style override	350
CE000561	CEBN-070-NCFN-31-S10-N500	Standard	500
CE000563	CEBN-070-NCFK-31-S10-N500	Knob style override	500

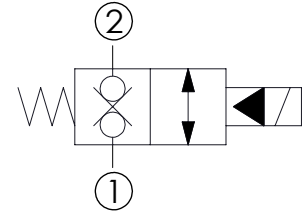
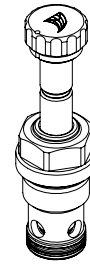
SOLENOID OPERATED CARTRIDGE

CEBN-100-NCFN

**PILOT OPERATED
POPPET TYPE**



PATENT PENDING



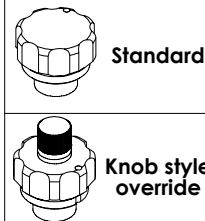
SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	100 l/min
Cavity:	VP000057
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RD900057

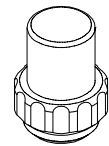
NOTES

Installation torque: 110 - 130 Nm

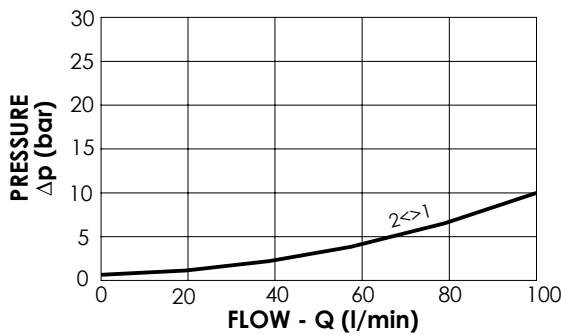
OPTIONS



SEALING CAP



Ordering code:
AT000113



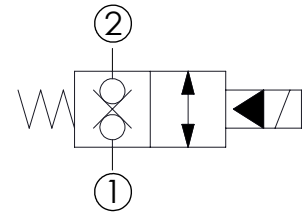
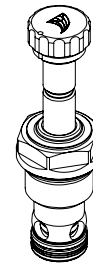
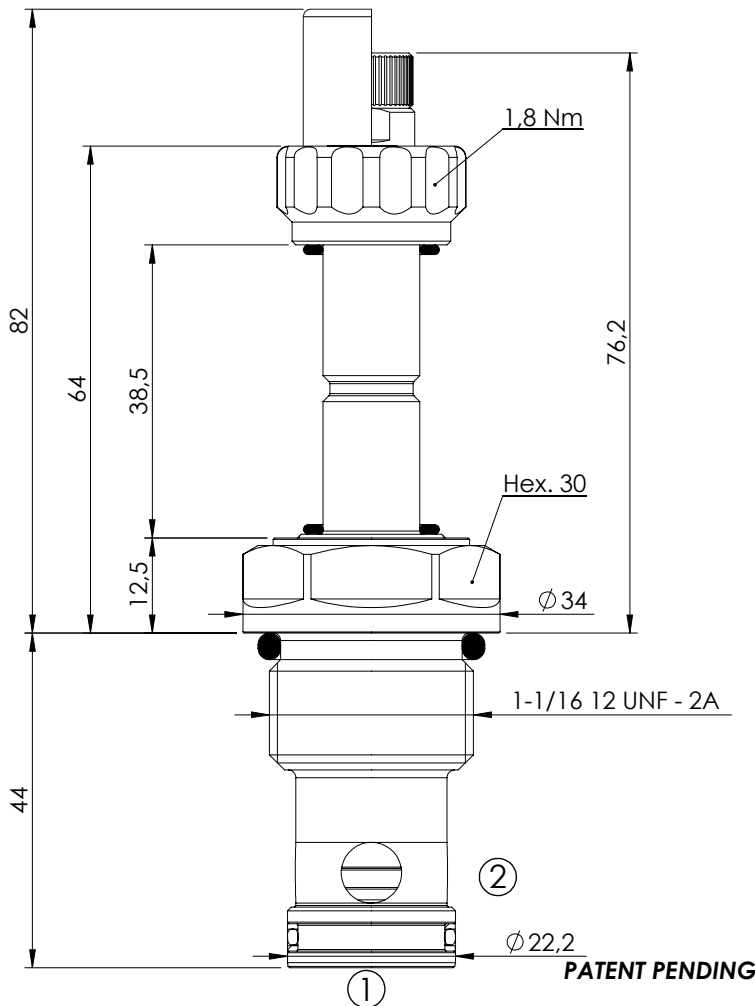
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000296	CEBN-100-NCFN-31-057-N350	Standard	350
CE000298	CEBN-100-NCFK-31-057-N350	Knob style override	350
CE000596	CEBN-100-NCFN-31-057-N500	Standard	500
CE000598	CEBN-100-NCFK-31-057-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-180-NCFN

**PILOT OPERATED
POPPET TYPE**

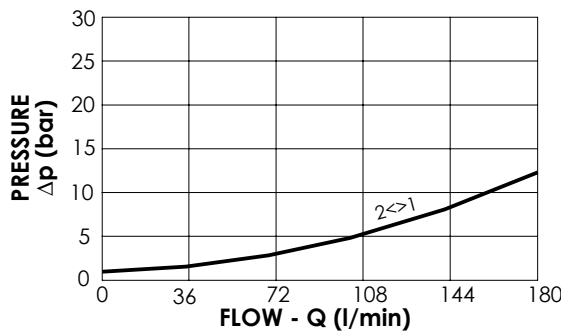


SPECIFICATIONS

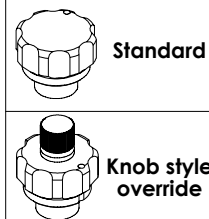
Max. operating pressure:	350/500 bar
Rated flow:	180 l/min
Cavity:	SAE-12-2N
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB900083

NOTES

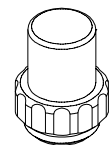
Installation torque: 135 - 150 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

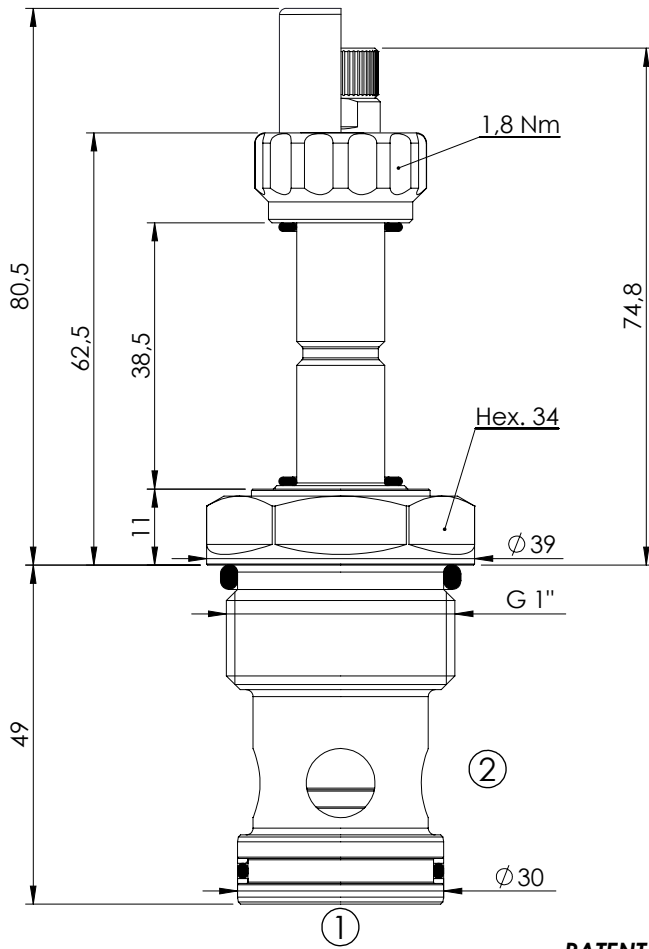
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000331	CEBN-180-NCFN-31-S12-N350	Standard	350
CE000333	CEBN-180-NCFK-31-S12-N350	Knob style override	350
CE000631	CEBN-180-NCFN-31-S12-N500	Standard	500
CE000633	CEBN-180-NCFK-31-S12-N500	Knob style override	500

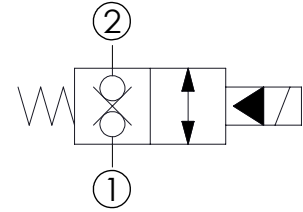
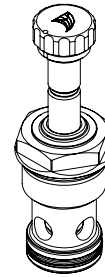
SOLENOID OPERATED CARTRIDGE

CEBN-200-NCFN

**PILOT OPERATED
POPPET TYPE**



PATENT PENDING

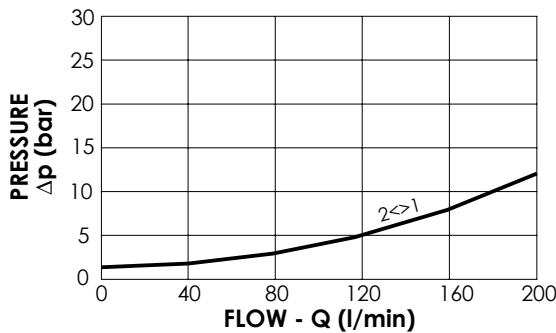


SPECIFICATIONS

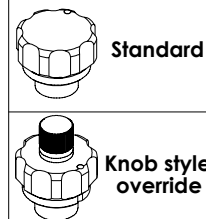
Max. operating pressure:	350/500 bar
Rated flow:	200 l/min
Cavity:	VP000013
Weight:	0,35 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RD900013

NOTES

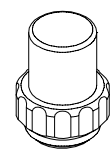
Installation torque: 135 - 150 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

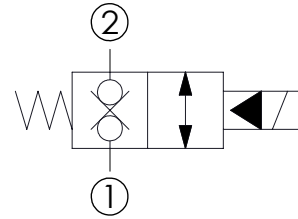
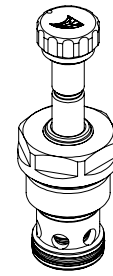
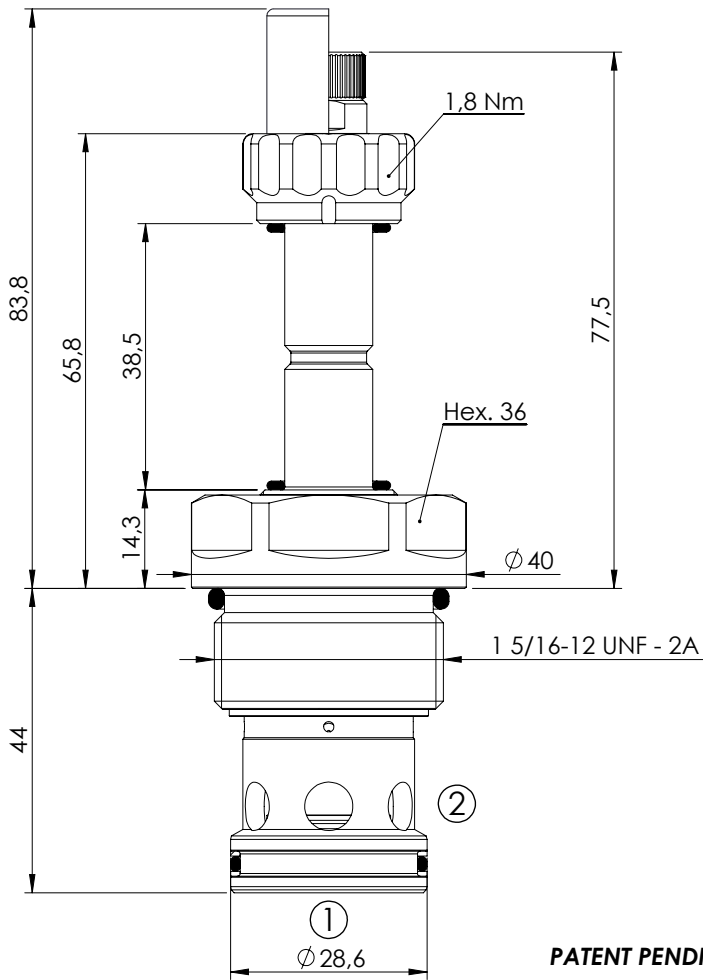
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000366	CEBN-200-NCFN-31-013-N350	Standard	350
CE000368	CEBN-200-NCFK-31-013-N350	Knob style override	350
CE000666	CEBN-200-NCFN-31-013-N500	Standard	500
CE000668	CEBN-200-NCFK-31-013-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-300-NCFN

**PILOT OPERATED
POPPET TYPE**



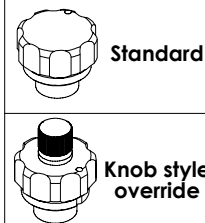
SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	300 l/min
Cavity:	SAE-16-2N
Weight:	0,36 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB900084

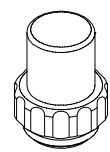
NOTES

Installation torque: 118 - 132 Nm

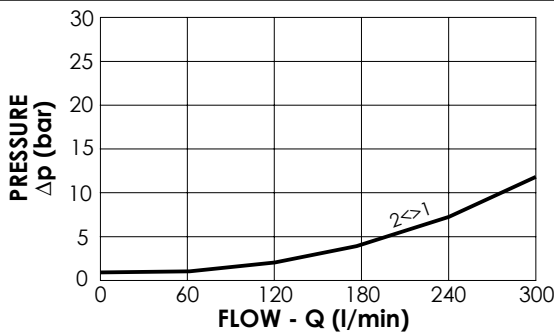
OPTIONS



SEALING CAP



Ordering code:
AT000113



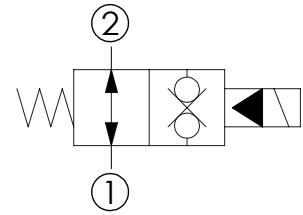
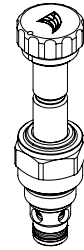
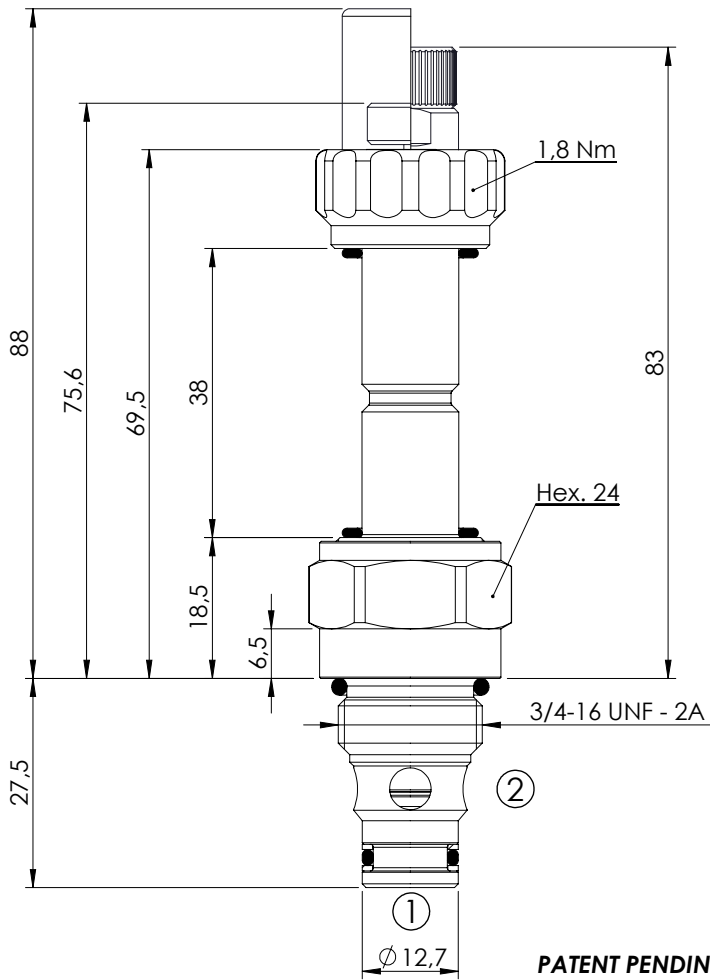
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000401	CEBN-300-NCFN-31-S16-N350	Standard	350
CE000403	CEBN-300-NCFK-31-S16-N350	Knob style override	350
CE000701	CEBN-300-NCFN-31-S16-N500	Standard	500
CE000703	CEBN-300-NCFK-31-S16-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-040-NAFN

**PILOT OPERATED
POPPET TYPE**

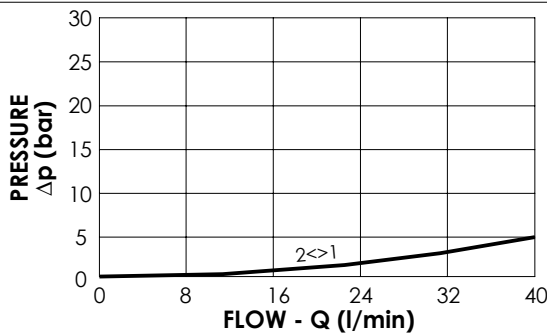


SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	40 l/min
Cavity:	SAE-08-2N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB900081

NOTES

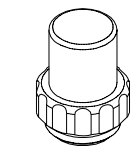
Installation torque: 45 - 50 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

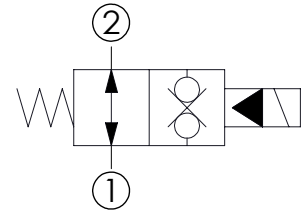
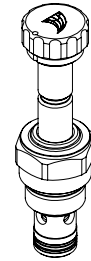
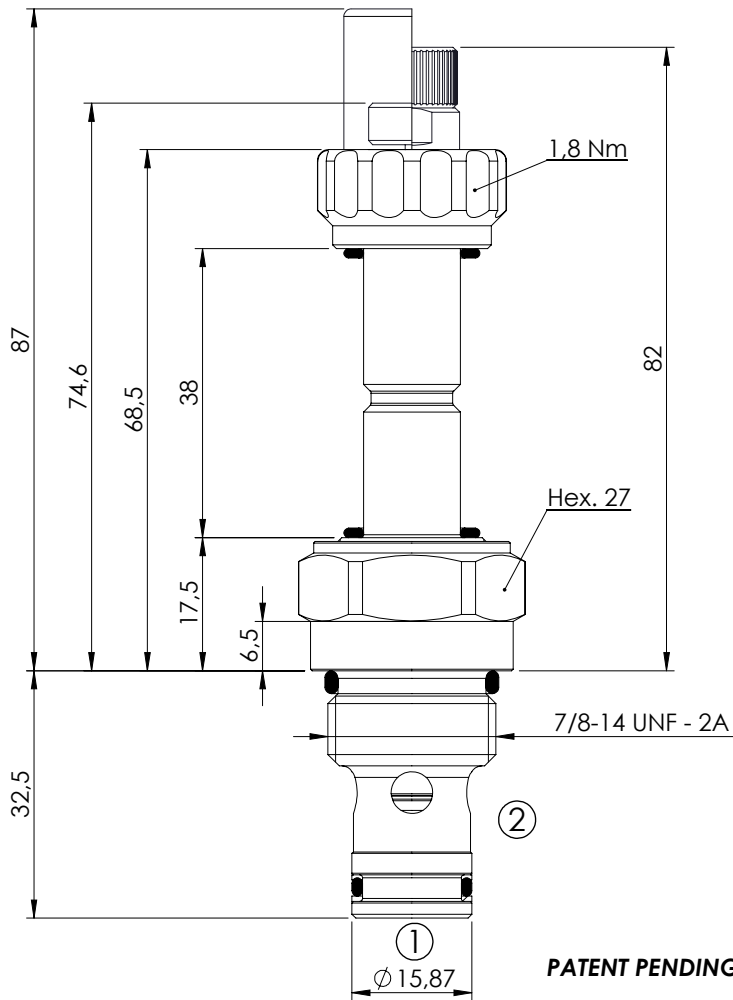
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000242	CEBN-040-NAFN-32-S08-N350	Standard	350
CE000243	CEBN-040-NAFP-32-S08-N350	Push style override	350
CE000244	CEBN-040-NAFK-32-S08-N350	Knob style override	350
CE000542	CEBN-040-NAFN-32-S08-N500	Standard	500
CE000543	CEBN-040-NAFP-32-S08-N500	Push style override	500
CE000544	CEBN-040-NAFK-32-S08-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-070-NAFN

**PILOT OPERATED
POPPET TYPE**






SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	70 l/min
Cavity:	SAE-10-2N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB900082

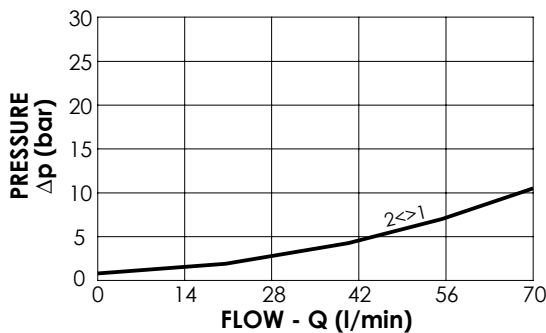
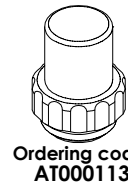
NOTES

Installation torque: 55 - 62 Nm

OPTIONS

-  Standard
-  Push style override
-  Knob style override

SEALING CAP



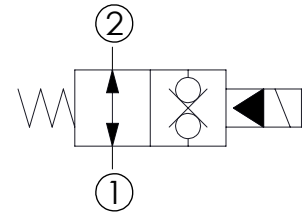
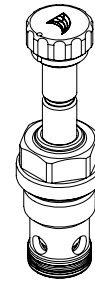
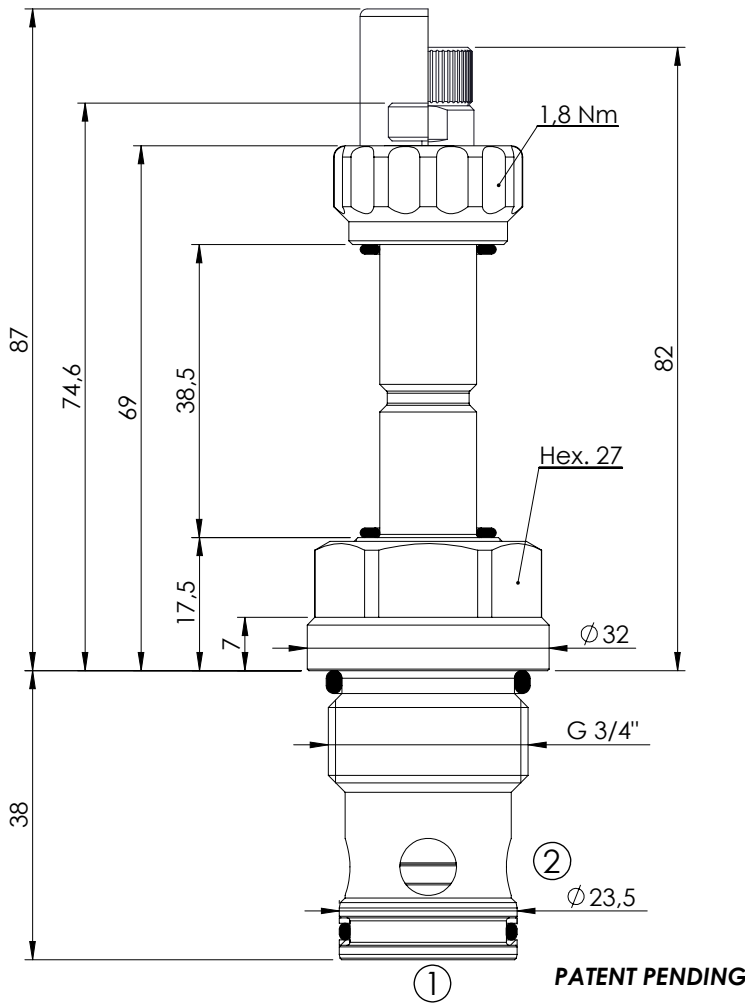
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000277	CEBN-070-NAFN-32-S10-N350	Standard	350
CE000278	CEBN-070-NAFP-32-S10-N350	Push style override	350
CE000279	CEBN-070-NAFK-32-S10-N350	Knob style override	350
CE000577	CEBN-070-NAFN-32-S10-N500	Standard	500
CE000578	CEBN-070-NAFP-32-S10-N500	Push style override	500
CE000579	CEBN-070-NAFK-32-S10-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-100-NAFN

**PILOT OPERATED
POPPET TYPE**



SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	100 l/min
Cavity:	VP000057
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RD900057

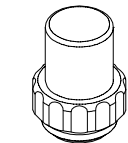
NOTES

Installation torque: 110 - 130 Nm

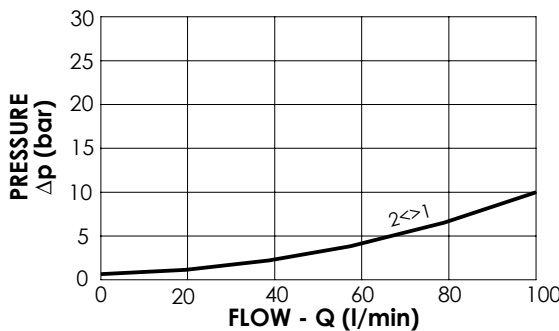
OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113



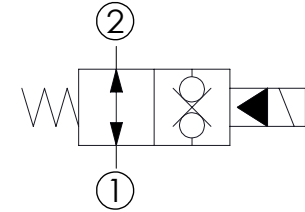
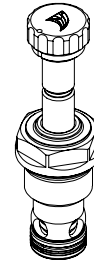
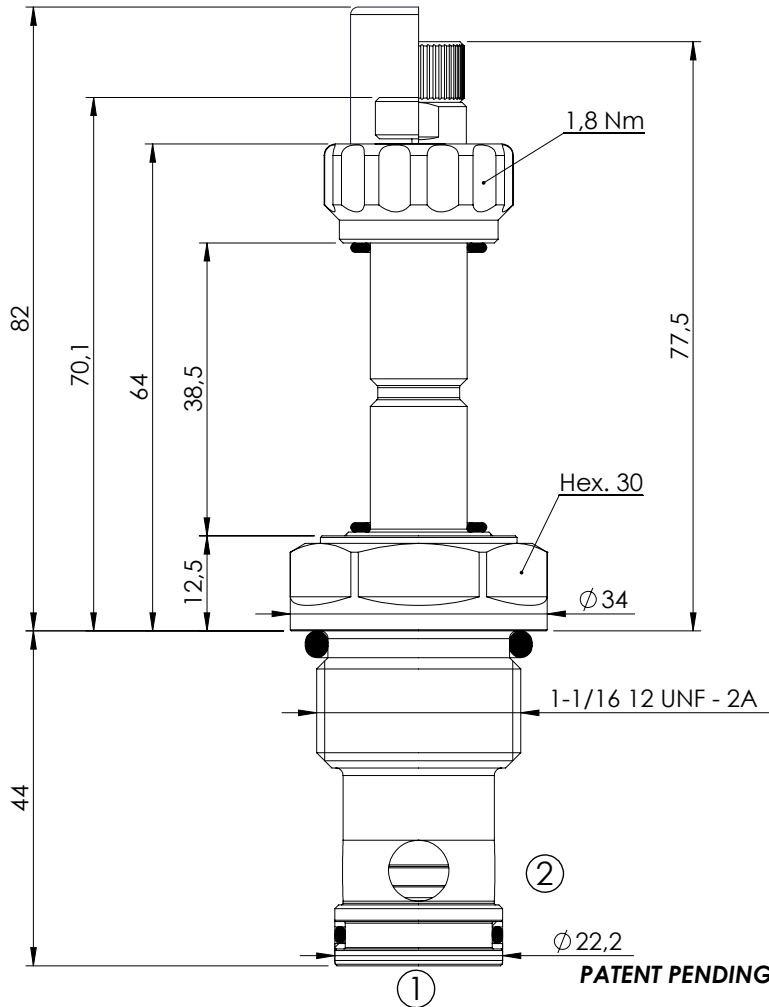
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000312	CEBN-100-NAFN-32-057-N350	Standard	350
CE000313	CEBN-100-NAFP-32-057-N350	Push style override	350
CE000314	CEBN-100-NAFK-32-057-N350	Knob style override	350
CE000612	CEBN-100-NAFN-32-057-N500	Standard	500
CE000613	CEBN-100-NAFP-32-057-N500	Push style override	500
CE000614	CEBN-100-NAFK-32-057-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-180-NAFN

**PILOT OPERATED
POPPET TYPE**






SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	180 l/min
Cavity:	SAE-12-2N
Weight:	0,25 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB900083

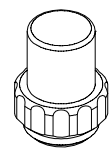
NOTES

Installation torque: 135 - 150 Nm

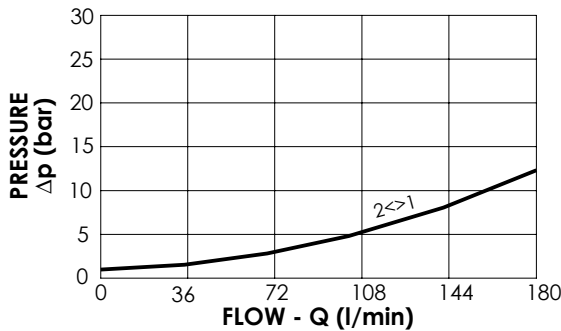
OPTIONS

-  Standard
-  Push style override
-  Knob style override

SEALING CAP



Ordering code:
AT000113



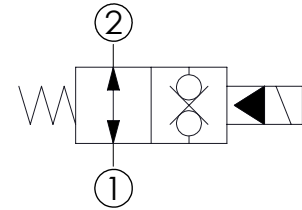
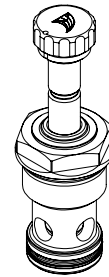
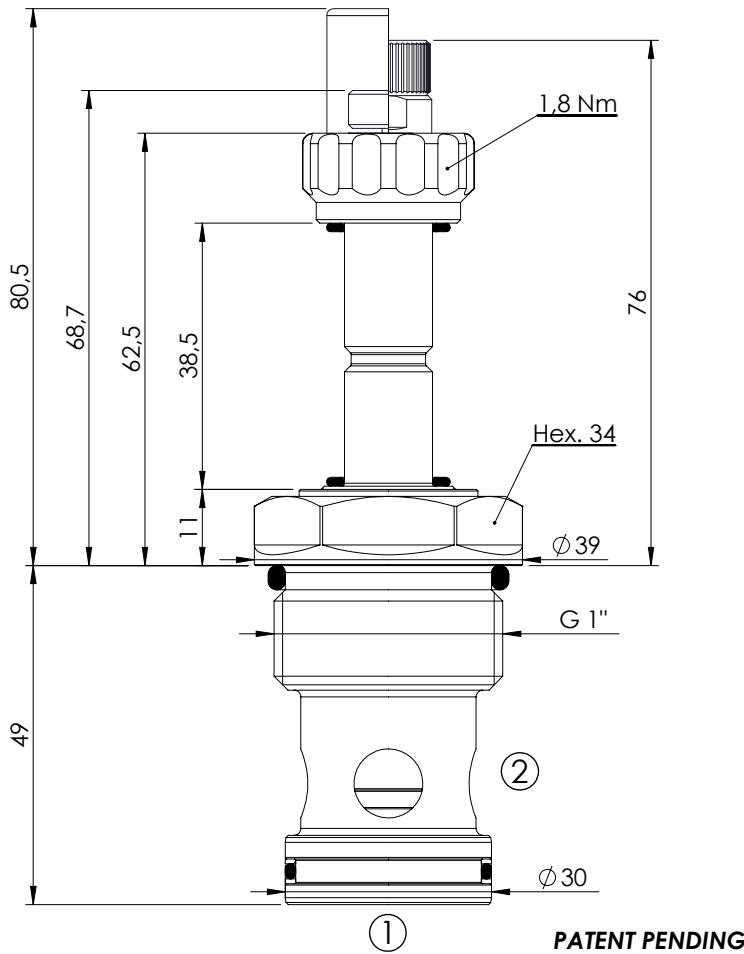
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000347	CEBN-180-NAFN-32-S12-N350	Standard	350
CE000348	CEBN-180-NAFP-32-S12-N350	Push style override	350
CE000349	CEBN-180-NAFK-32-S12-N350	Knob style override	350
CE000647	CEBN-180-NAFN-32-S12-N500	Standard	500
CE000648	CEBN-180-NAFP-32-S12-N500	Push style override	500
CE000649	CEBN-180-NAFK-32-S12-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-200-NAFN

**PILOT OPERATED
POPPET TYPE**

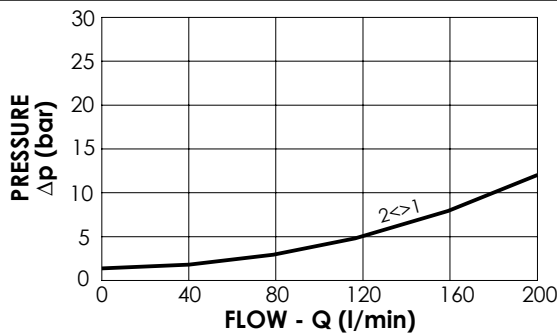


SPECIFICATIONS




Max. operating pressure:	350/500 bar
Rated flow:	200 l/min
Cavity:	VP000013
Weight:	0,35 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RD900013

NOTES

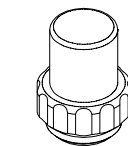
Installation torque: 135 - 150 Nm



OPTIONS

-  Standard
-  Push style override
-  Knob style override

SEALING CAP



Ordering code:
AT000113

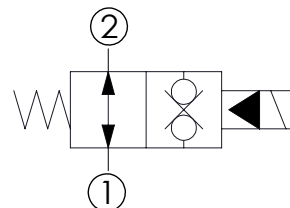
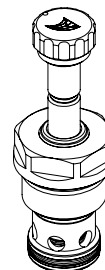
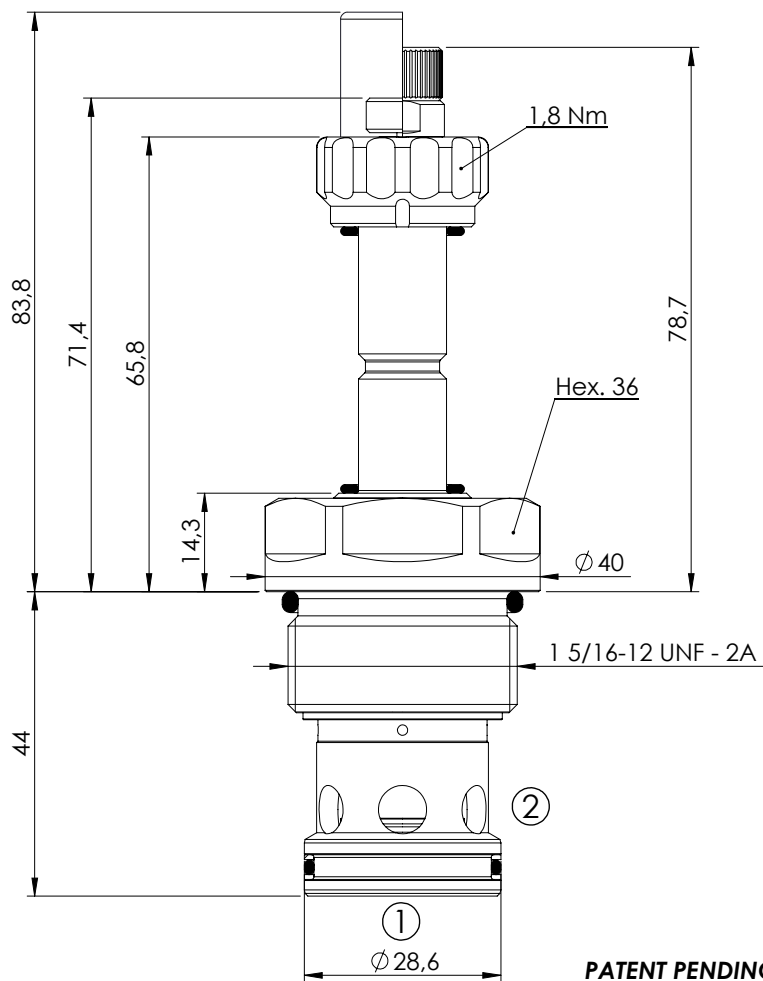
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)
CE000382	CEBN-200-NAFN-32-013-N350	Standard	350
CE000383	CEBN-200-NAFP-32-013-N350	Push style override	350
CE000384	CEBN-200-NAFK-32-013-N350	Knob style override	350
CE000682	CEBN-200-NAFN-32-013-N500	Standard	500
CE000683	CEBN-200-NAFP-32-013-N500	Push style override	500
CE000684	CEBN-200-NAFK-32-013-N500	Knob style override	500

SOLENOID OPERATED CARTRIDGE

CEBN-300-NAFN

**PILOT OPERATED
POPPET TYPE**

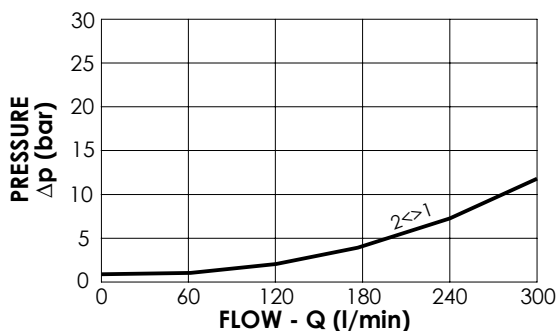


SPECIFICATIONS

Max. operating pressure:	350/500 bar
Rated flow:	300 l/min
Cavity:	SAE-16-2N
Weight:	0,36 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Seal kit:	RB900084

NOTES

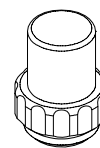
Installation torque: 118 - 132 Nm



OPTIONS

- Standard
- Push style override
- Knob style override

SEALING CAP



Ordering code:
AT000113

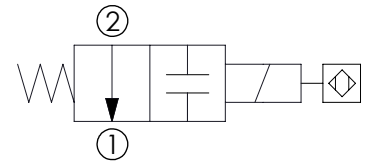
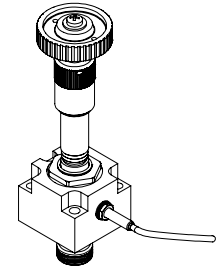
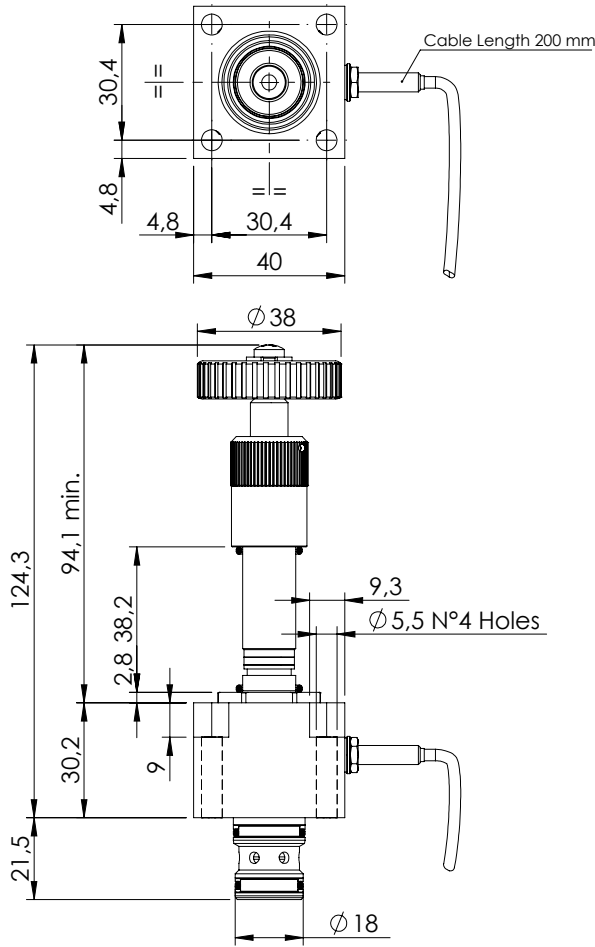
ORDERING CODES

Quick code	Description	Options	Max operating pressure (bar)	
CE000417	CEBN-300-NAFN-32-S16-N350	Standard	350	
CE000418	CEBN-300-NAFP-32-S16-N350	Push style override	350	
CE000419	CEBN-300-NAFK-32-S16-N350	Knob style override	350	
CE000717	CEBN-300-NAFN-32-S16-N500	Standard	500	
CE000718	CEBN-300-NAFP-32-S16-N500	Push style override	500	
CE000719	CEBN-300-NAFK-32-S16-N500	Knob style override	500	

SOLENOID OPERATED CARTRIDGE

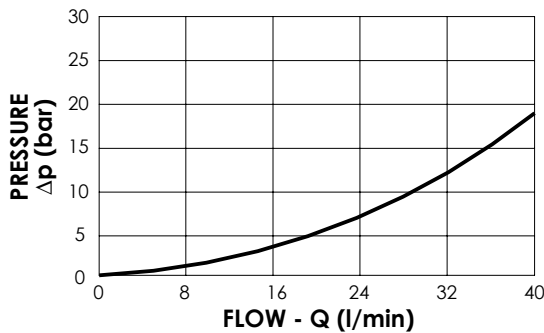
CEBD-040-NAMV

**DIRECT OPERATED
POPPET TYPE
POSITION SENSOR**



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	40 l/min
Cavity:	VP000338
Weight:	0,5 kg
Min. voltage required:	90% of nominal
Coil type:	M14 type
Installation torque:	5 Nm
Seal kit:	RD700338



NOTES

To be mounted with M5x30 screws
Maximum pressure in (2): 100 bar

ORDERING CODES

Quick code	Description	Sensor type	
CE000818	CEBD-040-NAMV-97-338-N350	Valve not energized Sensor open (PNP-NO)	
CE000819	CEBD-040-NACV-97-338-N350	Valve not energized Sensor closed (PNP-NC)	

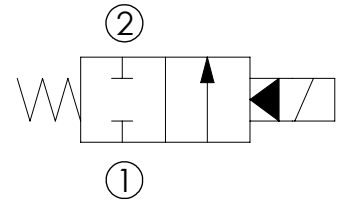
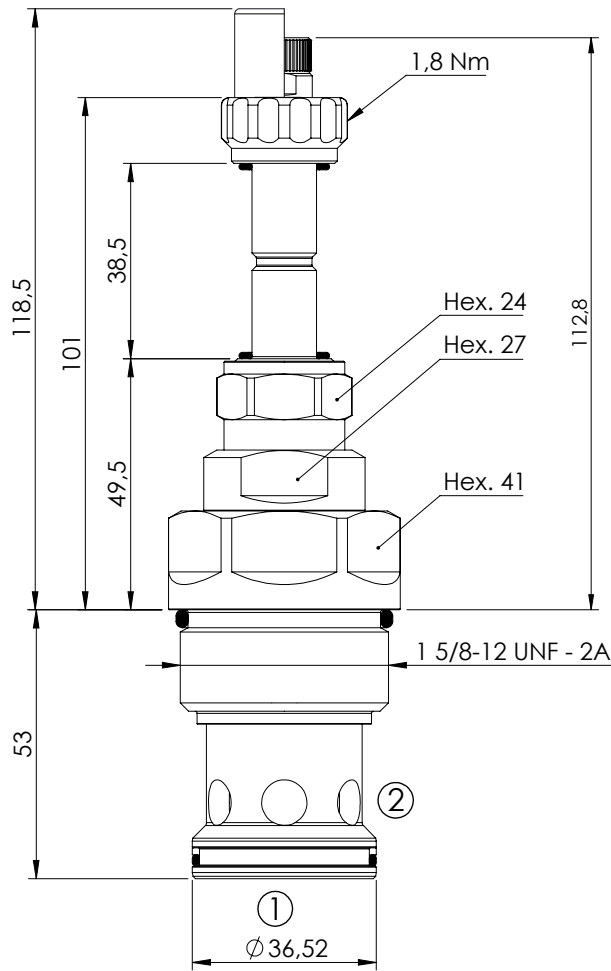
SOLENOID OPERATED CARTRIDGE

CEBT-500-NCFN

**PILOTED OPERATED
SPOOL TYPE**



NEW

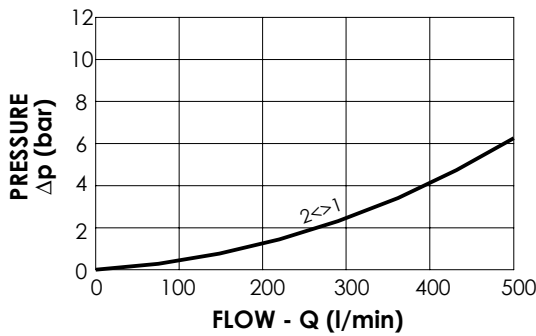


SPECIFICATIONS

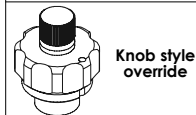
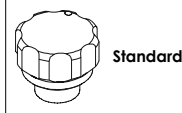
Max. operating pressure:	350 bar
Rated flow:	500 l/min
Cavity:	SAE-20-2N
Weight:	0,7 kg
Coil type:	M7 type
Max. int. leakage:	400 cm ³ /min (@46 cSt)
Seal kit:	RA900085

NOTES

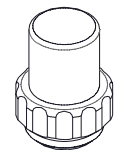
Installation torque: 230 - 250 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

ORDERING CODES

Quick code	Description	Options	
CE000763	CEBT-500-NCFN-98-S20-N350	Standard	
CE000764	CEBT-500-NCFK-98-S20-N350	Knob style override	

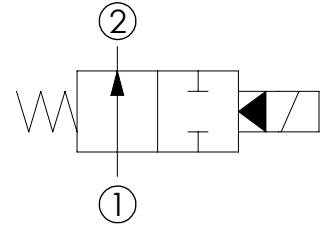
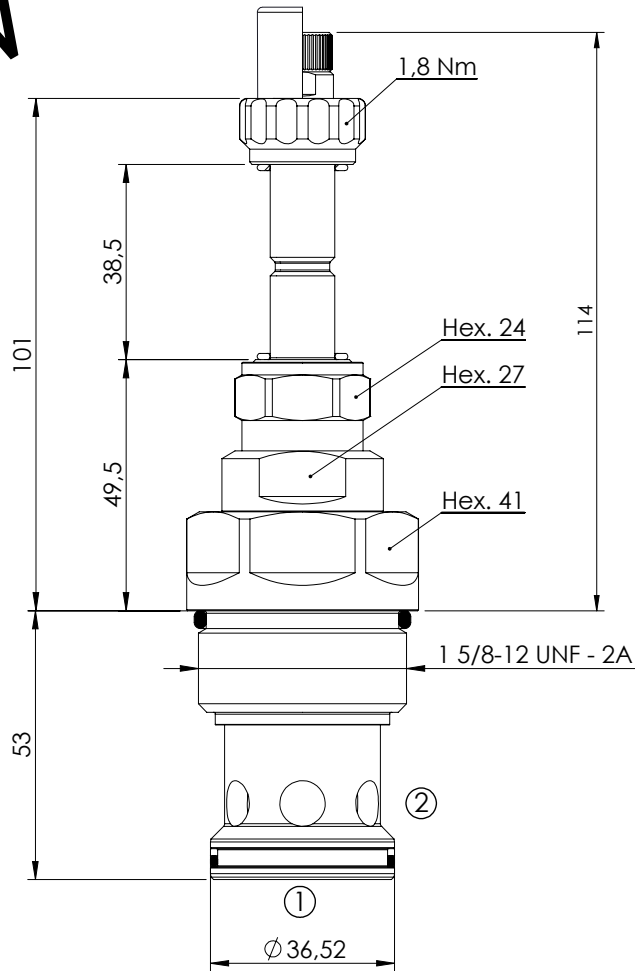
SOLENOID OPERATED CARTRIDGE

CEBT-500-NAFN

**PILOTED OPERATED
SPOOL TYPE**



NEW

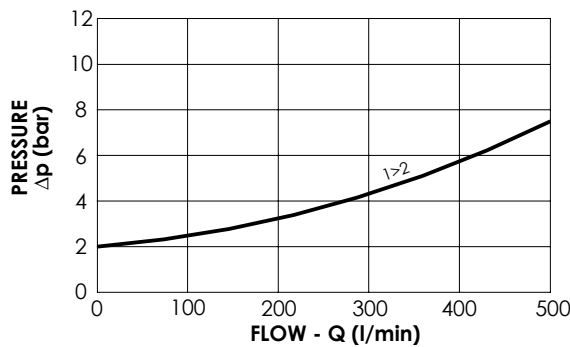


SPECIFICATIONS

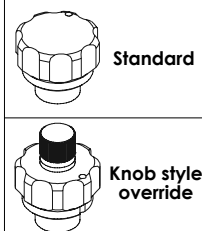
Max. operating pressure:	350 bar
Rated flow:	500 l/min
Cavity:	SAE-20-2N
Weight:	0,7 kg
Coil type:	M7 type
Max. int. leakage:	400 cm ³ /min (@46 cSt)
Seal kit:	RA900085

NOTES

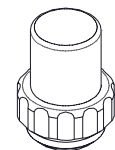
Installation torque: 230 - 250 Nm



OPTIONS



SEALING CAP



Ordering code:
AT000113

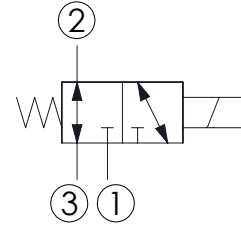
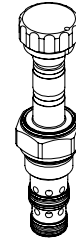
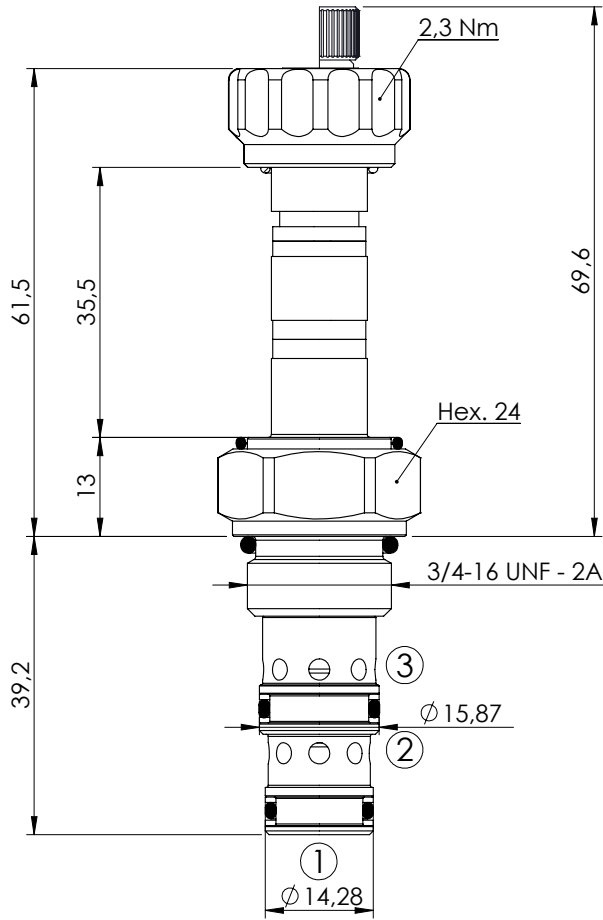
ORDERING CODES

Quick code	Description	Options	
CE000765	CEBT-500-NAFN-99-S20-N350	Standard	
CE000766	CEBT-500-NAFK-99-S20-N350	Knob style override	

SOLENOID OPERATED CARTRIDGE

CECS-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



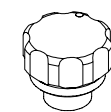
SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-3N
Weight:	0,13 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700091

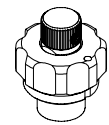
NOTES

Installation torque: 45 - 50 Nm

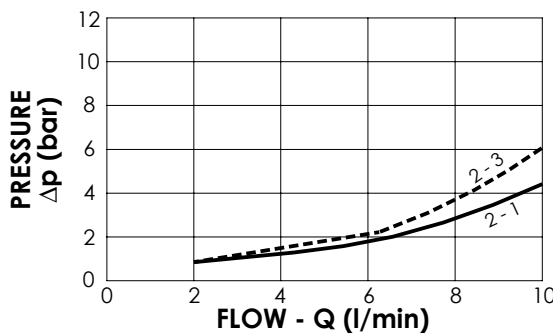
OPTIONS



Standard



Knob style
override



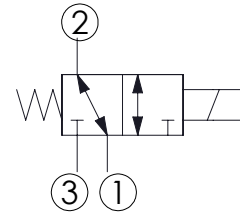
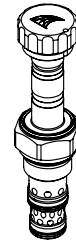
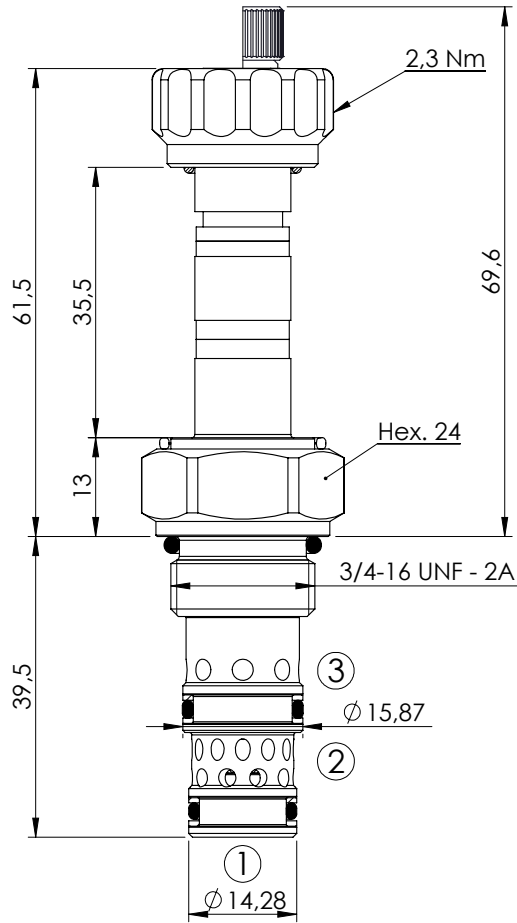
ORDERING CODES

Quick code	Description	Options	
CE000009	CECS-010-SEFN-61-S08-N210	Standard	
CE000066	CECS-010-SEFE-61-S08-N210	Knob style override	

SOLENOID OPERATED CARTRIDGE

CECS-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



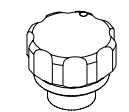
SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-3N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700091

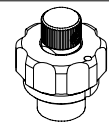
NOTES

Installation torque: 45 - 50 Nm

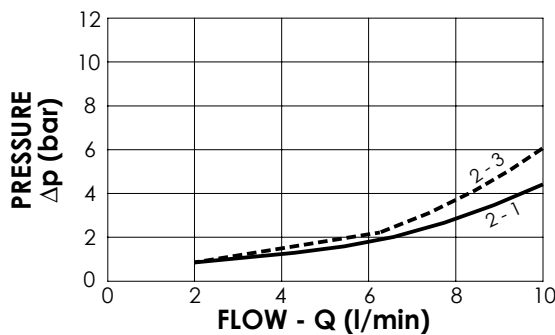
OPTIONS



Standard



Knob style
override



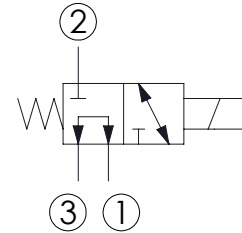
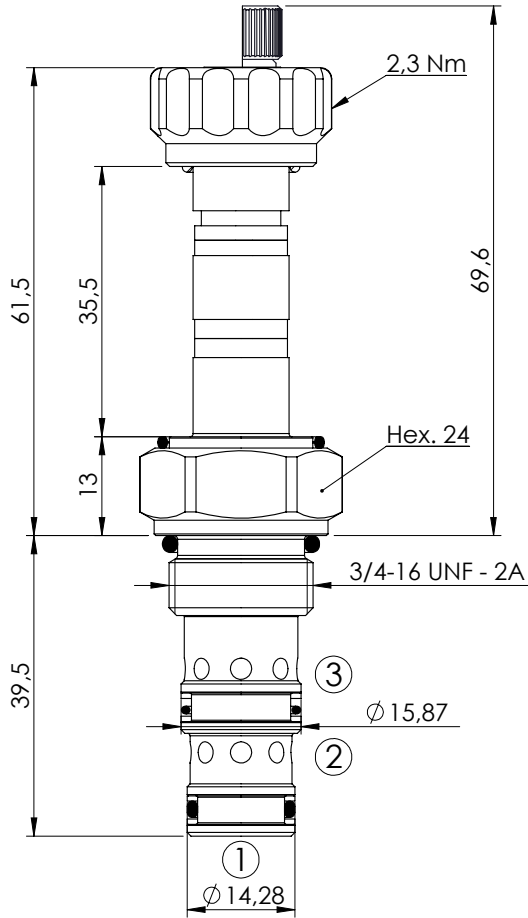
ORDERING CODES

Quick code	Description	Options	
CE000010	CECS-010-SEFN-62-S08-N210	Standard	
CE000067	CECS-010-SEFE-62-S08-N210	Knob style override	

SOLENOID OPERATED CARTRIDGE

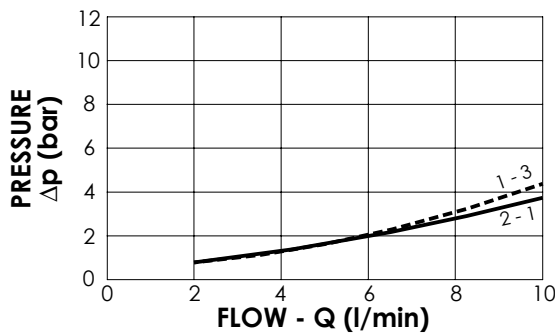
CECS-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



SPECIFICATIONS

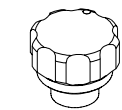
Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-3N
Weight:	0,13 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700091



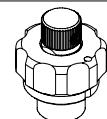
NOTES

Installation torque: 45 - 50 Nm

OPTIONS



Standard



Knob style
override

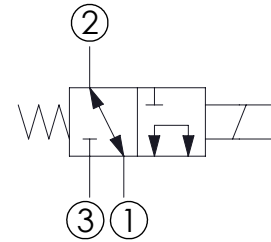
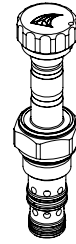
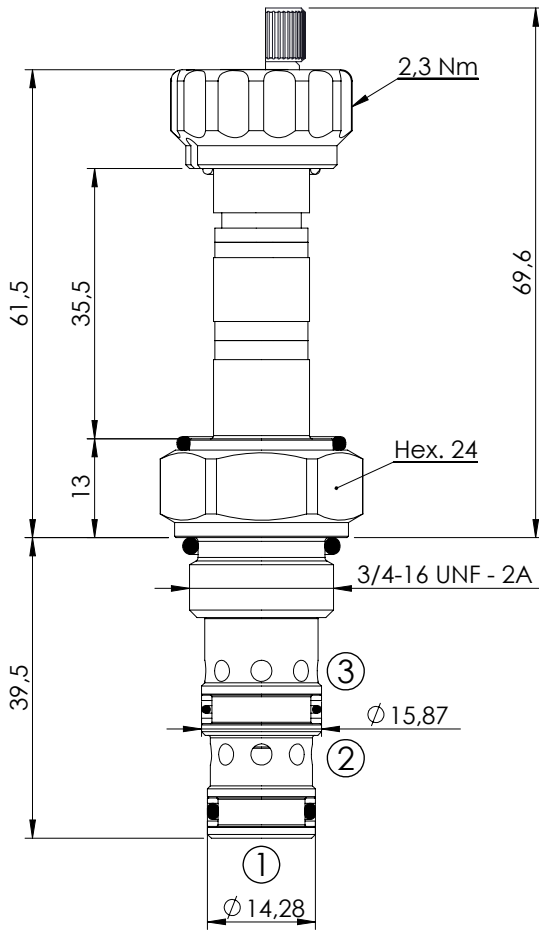
ORDERING CODES

Quick code	Description	Options	
CE000011	CECS-010-SEFN-63-S08-N210	Standard	
CE000068	CECS-010-SEFE-63-S08-N210	Knob style override	

SOLENOID OPERATED CARTRIDGE

CECS-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



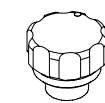
SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-3N
Weight:	0,13 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700091

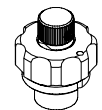
NOTES

Installation torque: 45 - 50 Nm

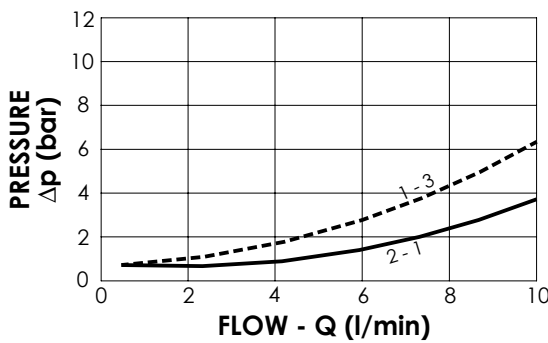
OPTIONS



Standard



Knob style
override



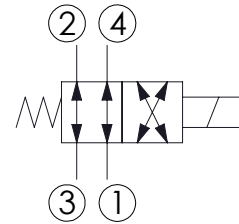
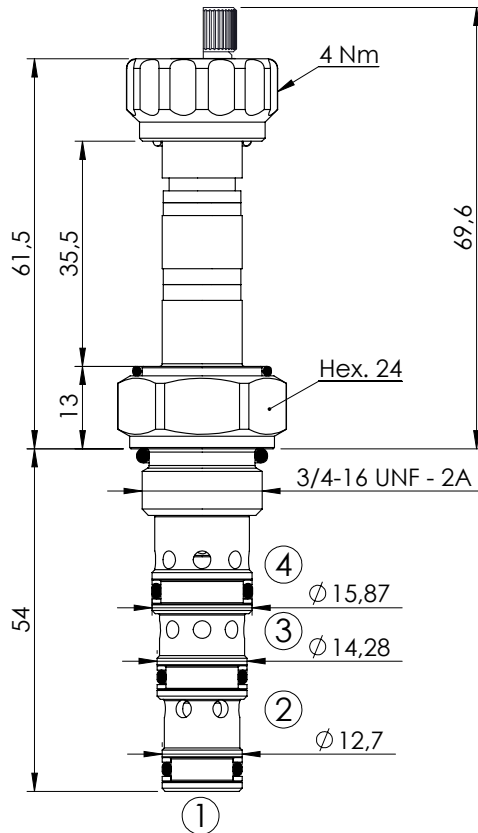
ORDERING CODES

Quick code	Description	Options	
CE000008	CECS-010-SEFN-64-S08-N210	Standard	
CE000070	CECS-010-SEFE-64-S08-N210	Knob style override	

SOLENOID OPERATED CARTRIDGE

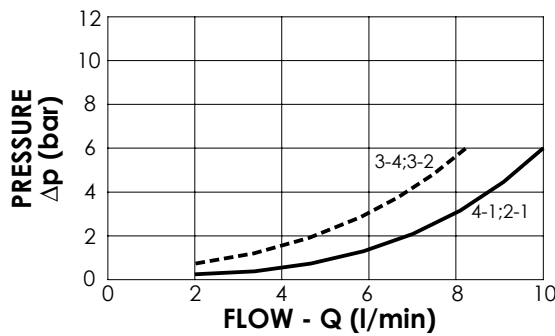
CEDS-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



SPECIFICATIONS

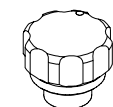
Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-4N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700101



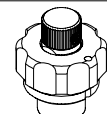
NOTES

Installation torque: **45 - 50 Nm**

OPTIONS



Standard



Knob style
override

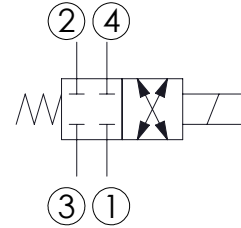
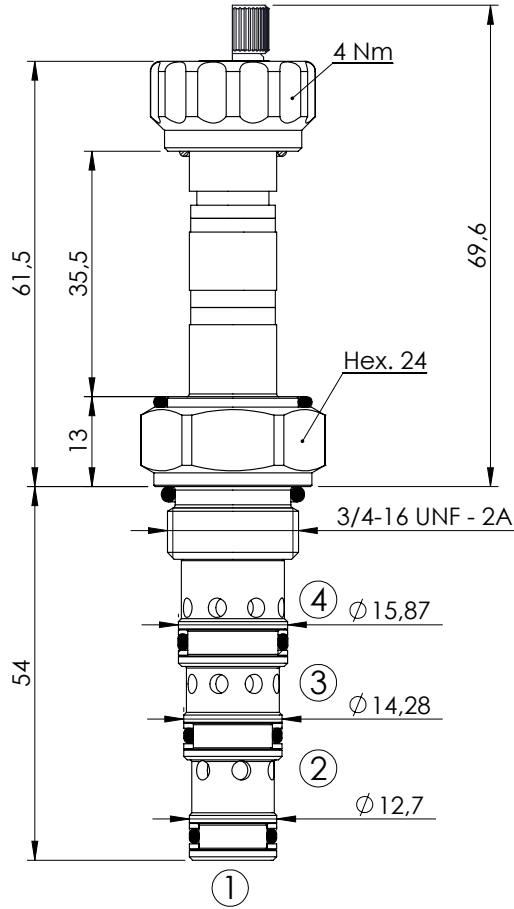
ORDERING CODES

Quick code	Description	Options	
CE000014	CEDS-010-SEFN-40-S08-N210	Standard	
CE000071	CEDS-010-SEFE-40-S08-N210	Knob style override	

SOLENOID OPERATED CARTRIDGE

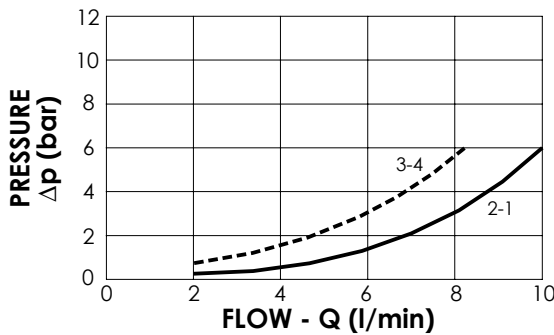
CEDS-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



SPECIFICATIONS

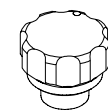
Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-4N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700101



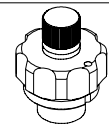
NOTES

Installation torque: 45 - 50 Nm

OPTIONS



Standard



Knob style
override

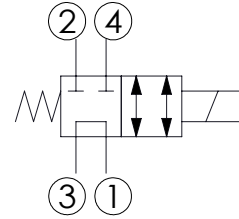
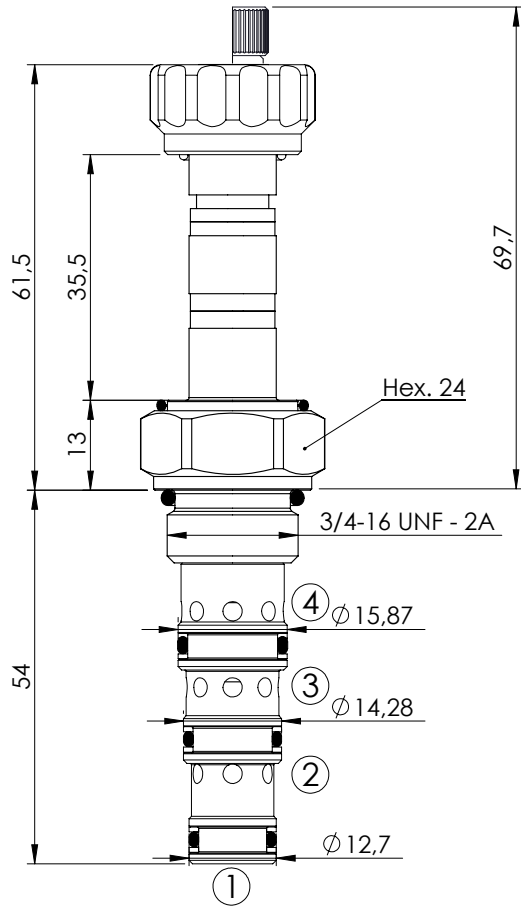
ORDERING CODES

Quick code	Description	Options	
CE000012	CEDS-010-SEFN-41-S08-N210	Standard	
CE000073	CEDS-010-SEFE-41-S08-N210	Knob style override	

SOLENOID OPERATED CARTRIDGE

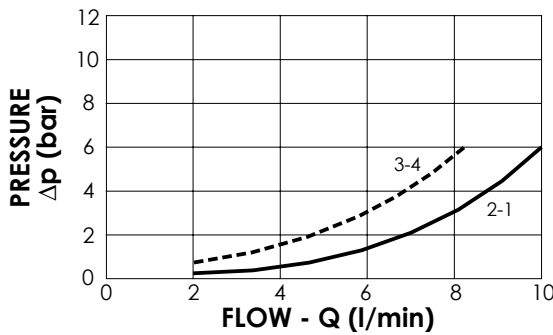
CEDS-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



SPECIFICATIONS

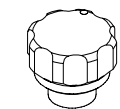
Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-4N
Weight:	0,14 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700101



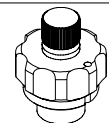
NOTES

Installation torque: 45 - 50 Nm

OPTIONS



Standard



Knob style
override

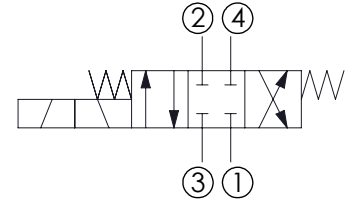
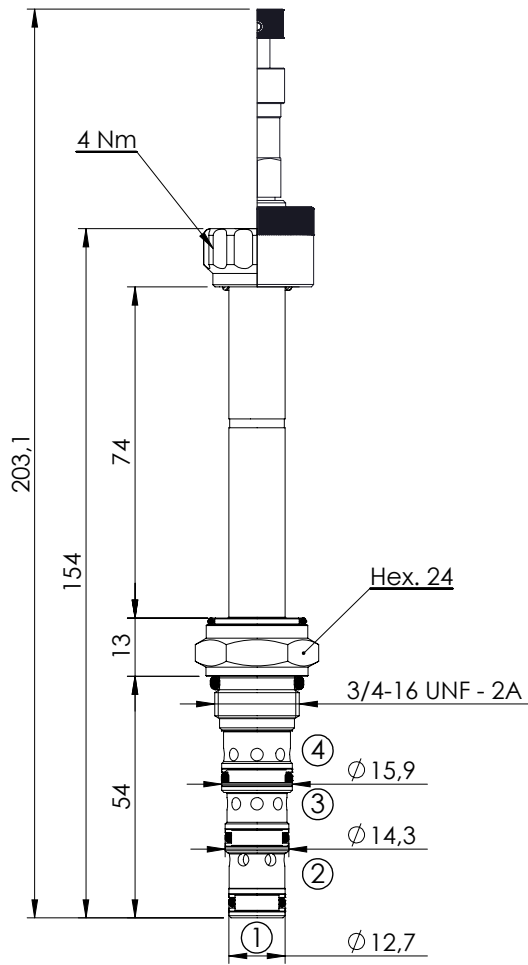
ORDERING CODES

Quick code	Description	Options	
CE000006	CEDS-010-SEFN-43-S08-N210	Standard	
CE000074	CEDS-010-SEFE-43-S08-N210	Knob style override	

SOLENOID OPERATED CARTRIDGE

CEES-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-4N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700101

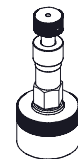
NOTES

Installation torque: 45 - 50 Nm

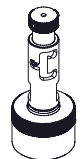
OPTIONS



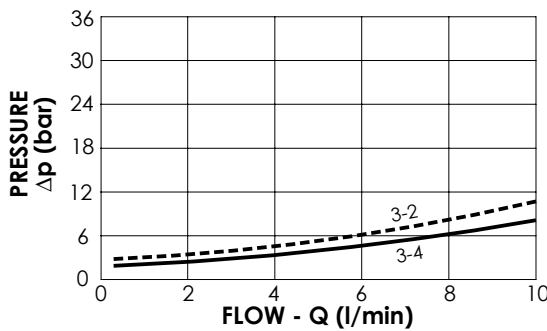
Standard



Push and pull manual override



Push pull and twist manual override



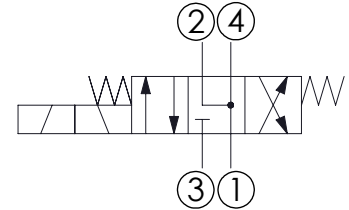
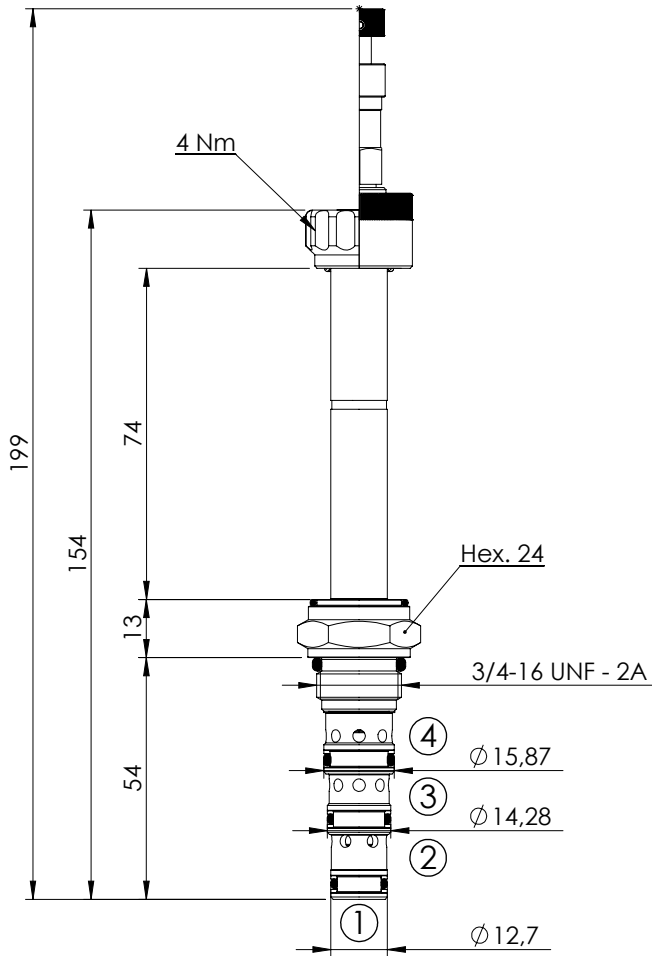
ORDERING CODES

Quick code	Description	Options	
CE000028	CEES-010-SEFN-51-S08-N210	Standard	
CE000098	CEES-010-SEFL-51-S08-N210	Push and pull manual override	
CE000189	CEES-010-SEFG-51-S08-N210	Push pull and twist manual override	

SOLENOID OPERATED CARTRIDGE

CEES-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



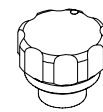
SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-4N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700101

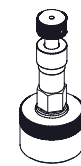
NOTES

Installation torque: 45 - 50 Nm

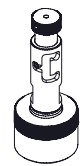
OPTIONS



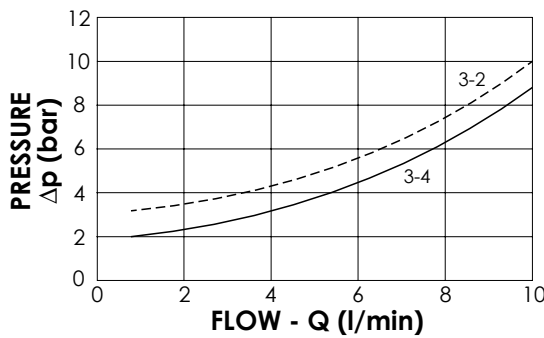
Standard



Push and pull manual override



Push pull and twist manual override



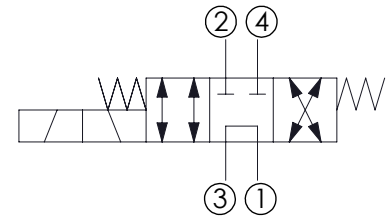
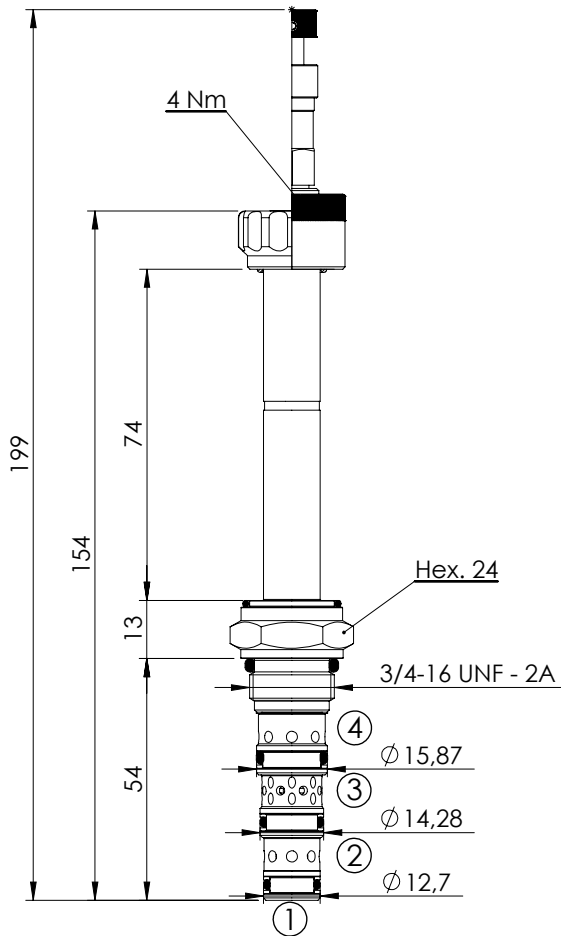
ORDERING CODES

Quick code	Description	Options	
CE000029	CEES-010-SEFN-52-S08-N210	Standard	
CE000095	CEES-010-SEFL-52-S08-N210	Push and pull manual override	
CE000145	CEES-010-SEFG-52-S08-N210	Push pull and twist manual override	

SOLENOID OPERATED CARTRIDGE

CEES-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



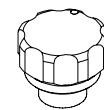
SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-4N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700101

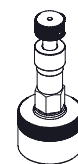
NOTES

Installation torque: 45 - 50 Nm

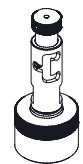
OPTIONS



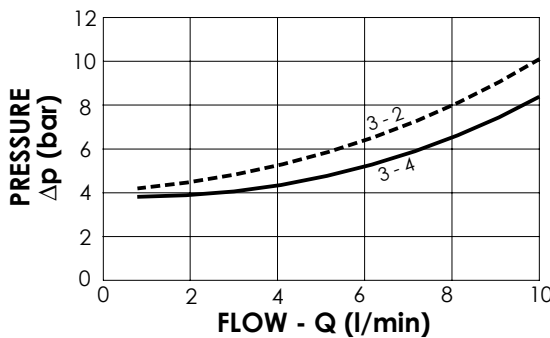
Standard



Push and pull manual override



Push pull and twist manual override



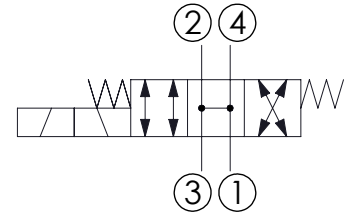
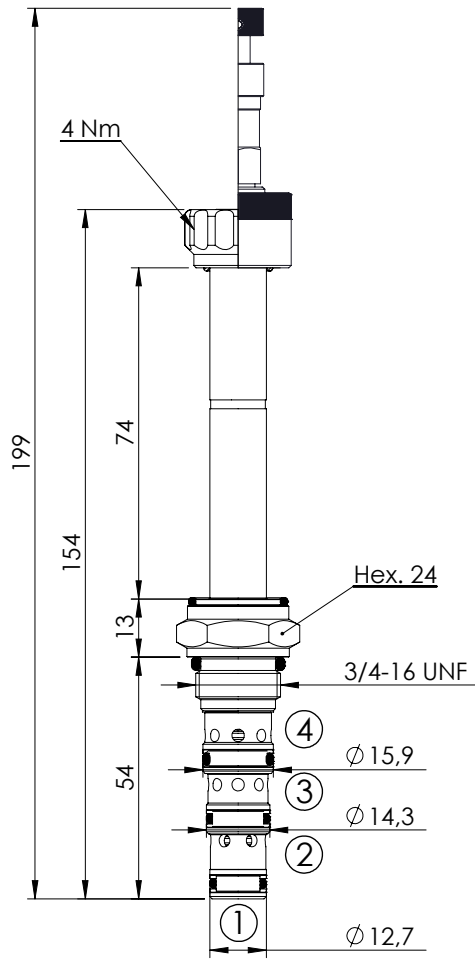
ORDERING CODES

Quick code	Description	Options	
CE000083	CEES-010-SEFN-53-S08-N210	Standard	
CE000097	CEES-010-SEFL-53-S08-N210	Push and pull manual override	
CE000185	CEES-010-SEFG-53-S08-N210	Push pull and twist manual override	

SOLENOID OPERATED CARTRIDGE

CEES-010-SEFN

**DIRECT OPERATED
SPOOL TYPE**



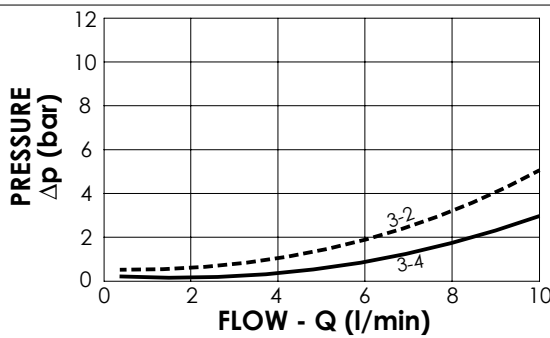
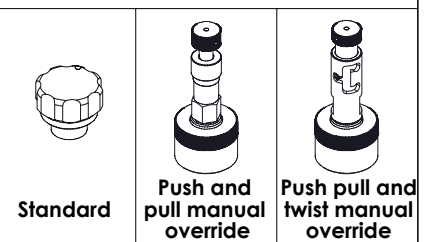
SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	10 l/min
Cavity:	SAE-08-4N
Weight:	0,18 kg
Min. voltage required:	90% of nominal
Coil type:	M7 type
Leakage:	120cm ³ /min
Seal kit:	RB700101

NOTES

Installation torque: 45 - 50 Nm

OPTIONS



ORDERING CODES

Quick code	Description	Options	
CE000018	CEES-010-SEFN-54-S08-N210	Standard	
CE000099	CEES-010-SEFL-54-S08-N210	Push and pull manual override	
CE000188	CEES-010-SEFG-54-S08-N210	Push pull and twist manual override	

SECTION 16



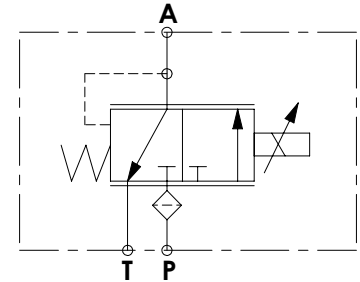
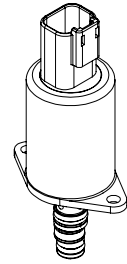
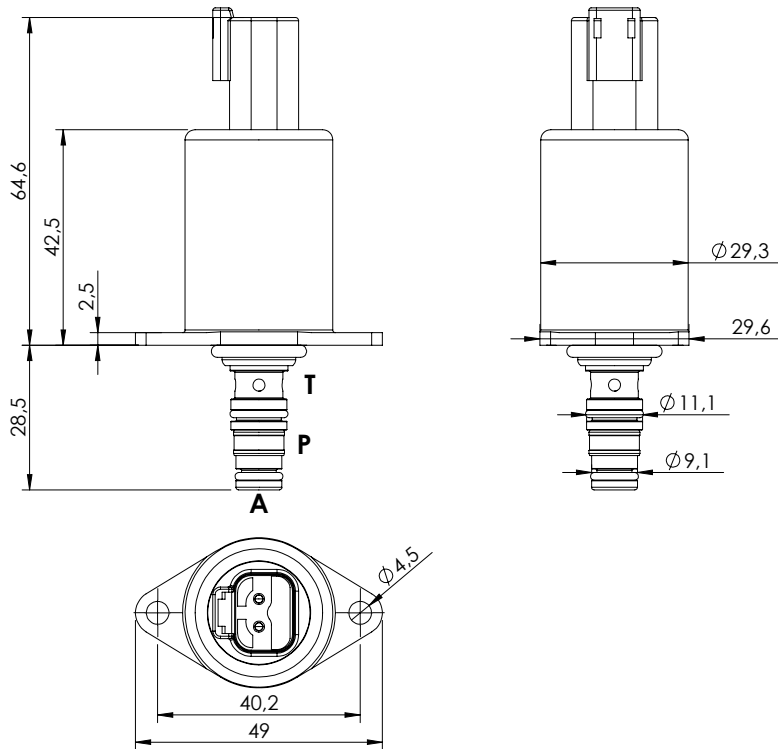
PROPORTIONAL CARTRIDGES

Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	CECS-005-PRPN	Proportional, direct operated, pressure reducing	5	50	DT04-2P	VP000371	16.01.010
	CECT-080-PRPS	Proportional, pilot operated, reducing and relieving	80	250	Cartridge	SAE-10-3N	16.02.020
	CEBD-005-PLPS	Proportional, poppet type relief	5	350	Cartridge	SAE-08-2N	16.03.030
	CEBT-120-PLPS	Proportional, pilot operated, relieving	120	350	Cartridge	SAE-10-2N	16.04.040
	CEBT-300-PLPS	Proportional, pilot operated, relieving	300	350	Cartridge	SAE-16-2N	16.04.050
	CEBT-500-PLPS	Proportional, pilot operated, relieving	500	350	Cartridge	SAE-20-2N	16.04.060
	CECS-020-FSPS	Proportional, non compensated, flow regulator	20	210	Cartridge	SAE-10-3N	16.05.070
	CECS-030-FSPS	Proportional, non compensated, flow regulator	30	210	Cartridge	SAE-10-3N	16.05.070
	CECS-040-FSPS	Proportional, non compensated, flow regulator	40	210	Cartridge	SAE-10-3N	16.05.070
	CECS-140-FRPV	Proportional, direct operated, flow regulator	140	320	Cartridge	SAE-16-3N	16.06.080
	ELPC-030-SCCB	Proportional electronic controller	-	-	DIN 43650	-	16.07.090

SOLENOID OPERATED CARTRIDGE

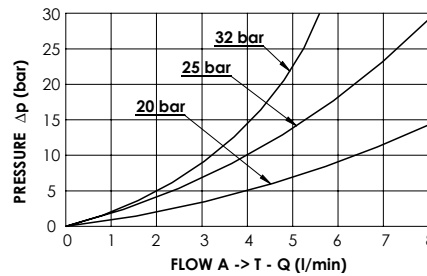
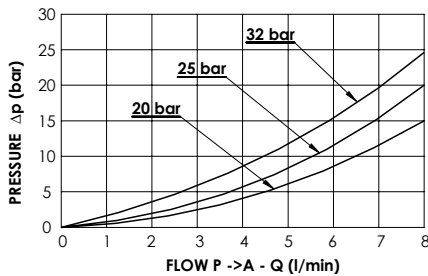
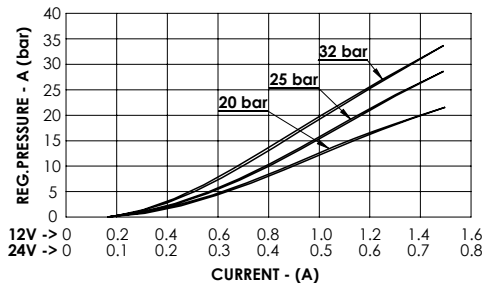
CECS-005-PRPN

**PROPORTIONAL VALVES
DIRECT OPERATED
PRESSURE REDUCING**



SPECIFICATIONS

Max. P pressure:	50 bar
Max. T pressure:	30 bar
Rated flow:	5 l/min
Cavity:	VP000371
Weight:	0.3 kg
Connector type:	Deutsch DT04-2P
Internal leakage:	15 cc/min (@ 25 bar, 46 cSt)
Protection class:	Up to IP6K6 / IPX9K
PWM range recommended:	100 Hz
Filter on P port:	125 µm
Mounting screw:	2 x M4x10 class 8.8
Mounting screw torque:	3.5 Nm
Mounting screw not included	
Seal kit:	RC700371



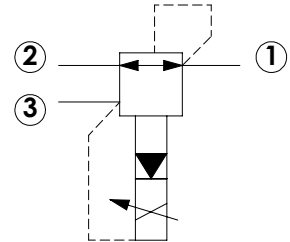
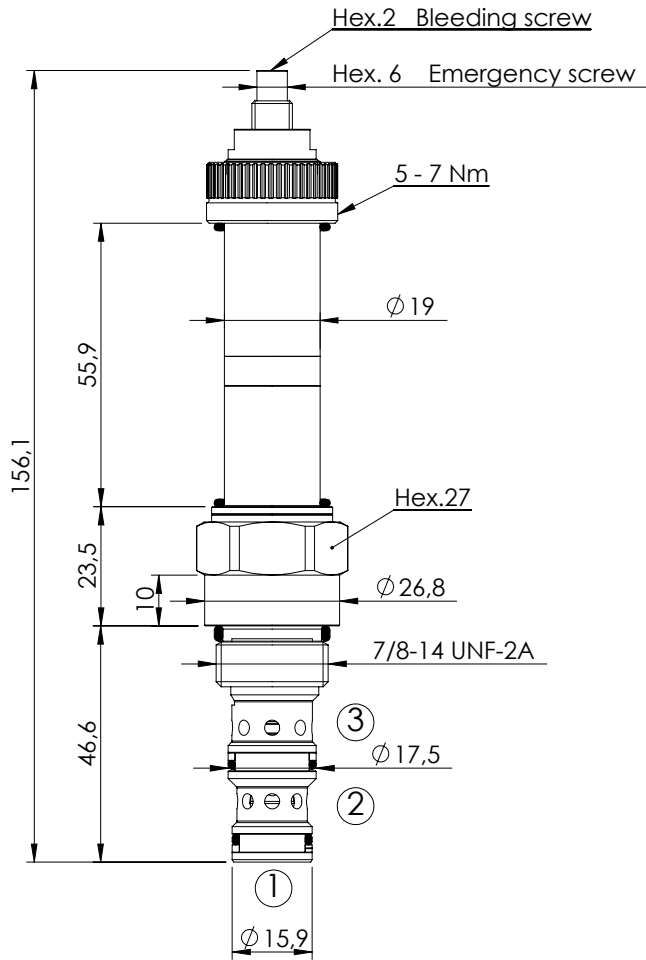
ORDERING CODES

Quick code	Description	Regulated pressure range (bar)	Voltage (V)	Current (mA)	Resistance (Ω) ± 5%	Hysteresis (bar) pA
CE000850	CECS-005-PRPN-95-371-N020-12DT	0-20	12	1500	4.72	< 0.7
CE000851	CECS-005-PRPN-95-371-N020-24DT	0-20	24	750	20.8	< 0.7
CE000852	CECS-005-PRPN-95-371-N025-12DT	0-25	12	1500	4.72	< 1.0
CE000853	CECS-005-PRPN-95-371-N025-24DT	0-25	24	750	20.8	< 1.0
CE000893	CECS-005-PRPN-95-371-N032-12DT	0-32	12	1500	4.72	< 1.0
CE000862	CECS-005-PRPN-95-371-N032-24DT	0-32	24	750	20.8	< 1.0

SOLENOID OPERATED CARTRIDGE

CECT-080-PRPS

**PROPORTIONAL VALVES
PILOTED OPERATED PRESSURE
REDUCING AND RELIEVING**

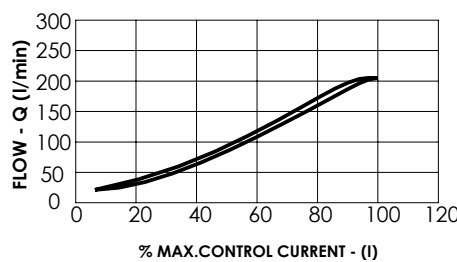
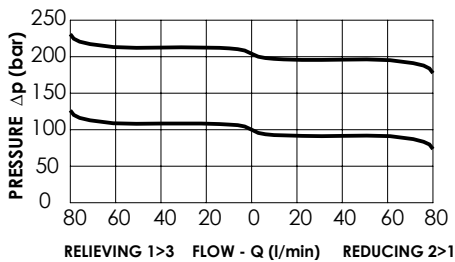


SPECIFICATIONS

Max. operating pressure:	250 bar
Rated flow:	80 l/min
Cavity:	SAE-10-3N
Weight:	0,22 kg
Coil type:	M15 type
Installation torque:	50 - 57 Nm
PWM range recommended:	120-150 Hz
Seal kit:	RA100092

NOTES

Bleed air before use



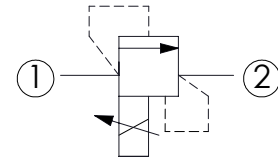
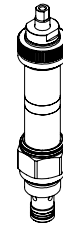
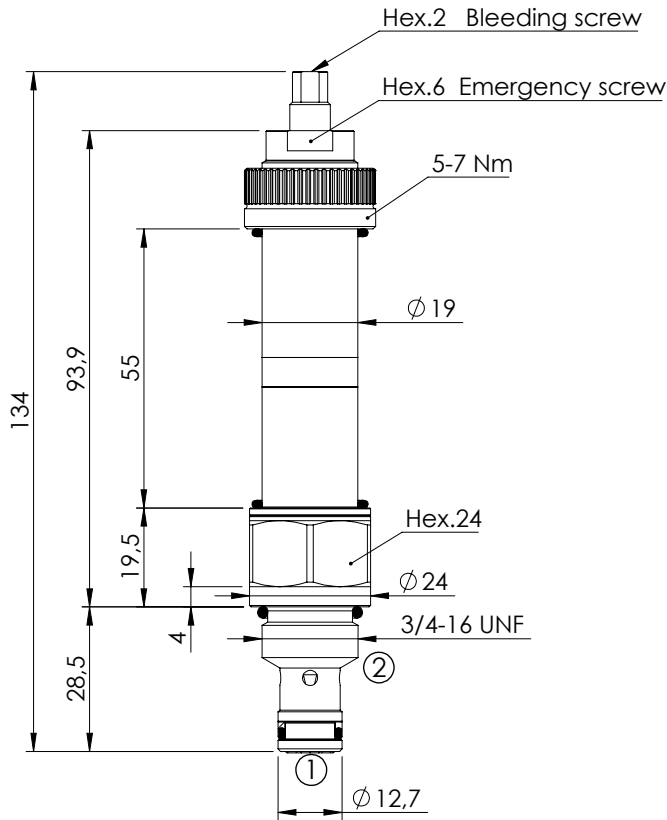
ORDERING CODES

Quick code	Description	Regulated pressure range (bar)	Threshold current (with 12VDC coil)	Max control current (with 12V DC coil)	Override
CE000122	CECT-080-PRPS-96-S10-V210	20-220	200 mA (+/-7%)	1700 mA (+/-7%)	Screw style

SOLENOID OPERATED CARTRIDGE

CEBD-005-PLPS

**PROPORTIONAL VALVES
POPPET TYPE RELIEF**

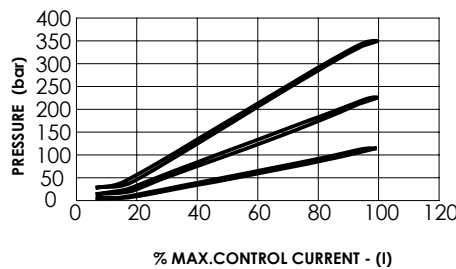
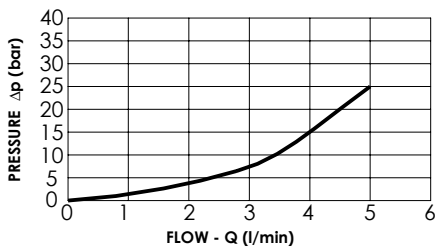


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	5 l/min
Cavity:	SAE-08-2N
Weight:	0,16 kg
Coil type:	M15 type
PWM range recommended:	120-150 Hz
Installation torque:	45 - 50 Nm
Seal kit:	RA100081

NOTES

Bleed air before use



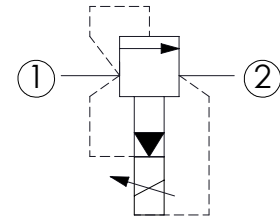
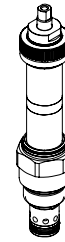
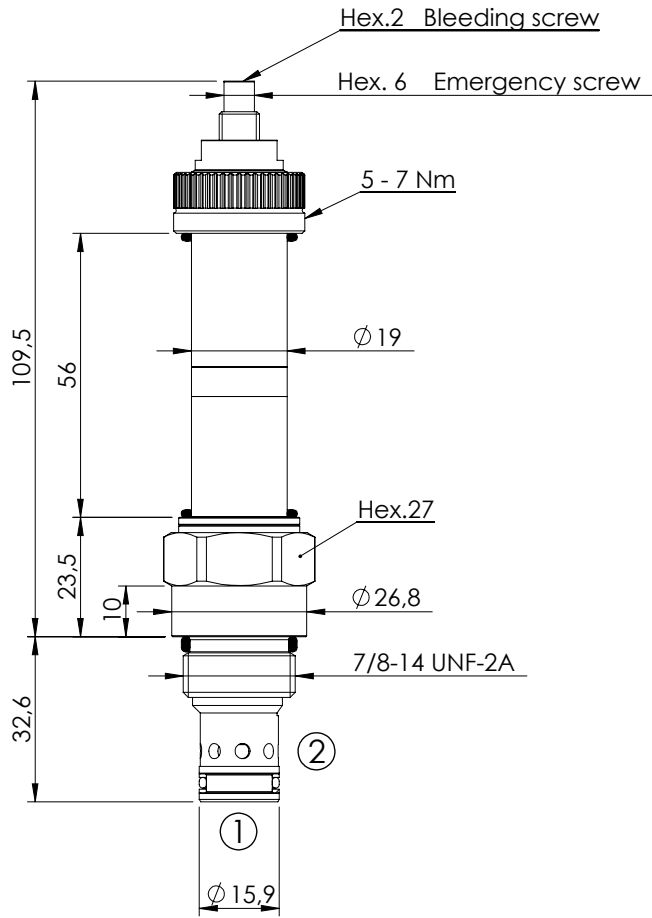
ORDERING CODES

Quick code	Description	Setting range (bar)	Threshold current (with 12VDC coil)	Max control current (with 12V DC coil)	Override
CE000910	CEBD-005-PLPS-92-S08-V350	30-350	250 mA (+/-7%)	1800 mA (+/-7%)	Screw style
CE000911	CEBD-005-PLPS-92-S08-V200	20-220	200 mA (+/-7%)	1700 mA (+/-7%)	Screw style
CE000912	CEBD-005-PLPS-92-S08-V100	10-120	200 mA (+/-7%)	1600 mA (+/-7%)	Screw style

SOLENOID OPERATED CARTRIDGE

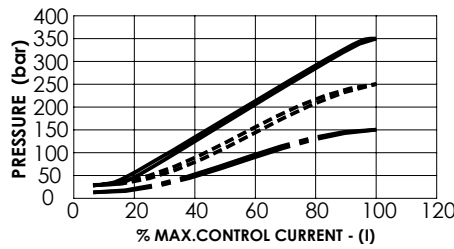
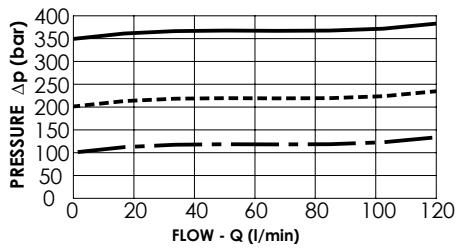
CEBT-120-PLPS

**PROPORTIONAL VALVES
PILOTED RELIEF
SPOOL TYPE**



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	120 l/min
Cavity:	SAE-10-2N
Weight:	0,2 kg
Coil type:	M15 type
Max. int. leakage:	200 cm ³ /min (@46 cSt)
Installation torque:	50 - 57 Nm
PWM range recommended:	150-180 Hz
Seal kit:	RB100082



CE000119 1>2 ————— CE000120 1>2 - - - - - CE000121 1>2 — - - - -

NOTES

Bleed air before use

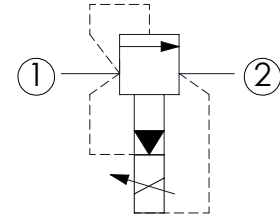
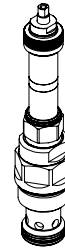
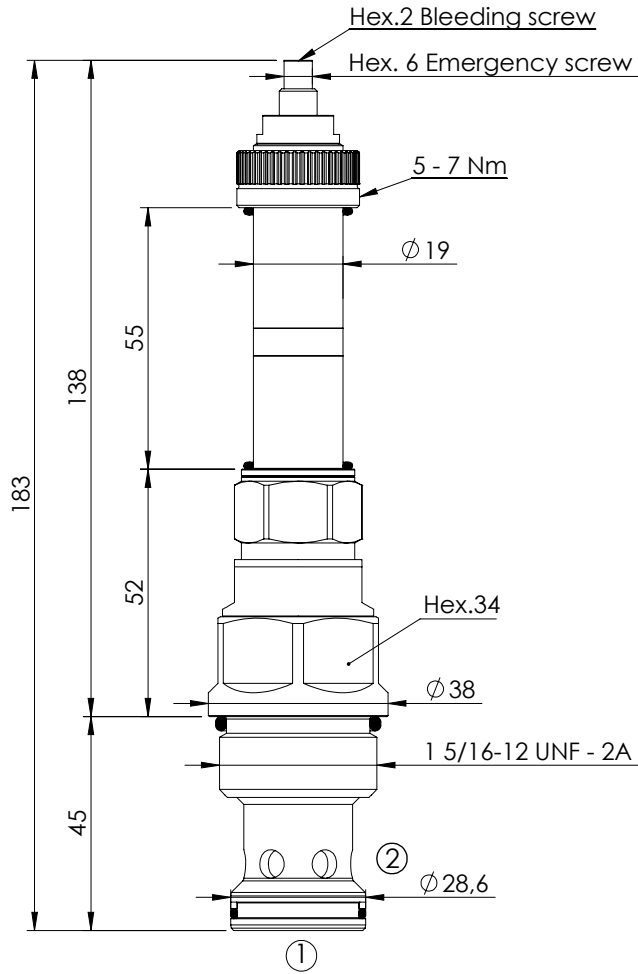
ORDERING CODES

Quick code	Description	Setting range (bar)	Threshold current (with 12VDC coil)	Max control current (with 12V DC coil)	Override
CE000119	CEBT-120-PLPS-91-S10-V350	30-350	200 mA (+/-7%)	1600 mA (+/-7%)	Screw style
CE000120	CEBT-120-PLPS-91-S10-V200	20-220	200 mA (+/-7%)	1700 mA (+/-7%)	Screw style
CE000121	CEBT-120-PLPS-91-S10-V100	15-90	200 mA (+/-7%)	1700 mA (+/-7%)	Screw style

SOLENOID OPERATED CARTRIDGE

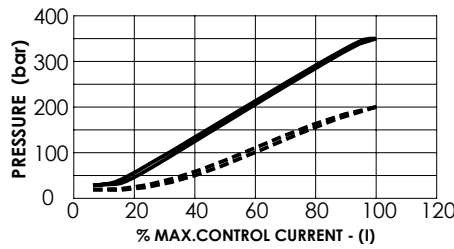
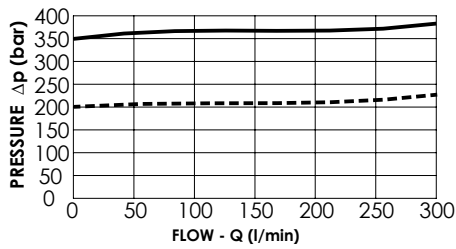
CEBT-300-PLPS

**PROPORTIONAL VALVES
PILOTED RELIEF
SPOOL TYPE**



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	300 l/min
Cavity:	SAE-16-2N
Weight:	0,5 kg
Coil type:	M15 type
Max. int. leakage:	200 cm ³ /min (@46 cSt)
Installation torque:	110 - 120 Nm
PWM range recommended:	150-180 Hz
Seal kit:	RA100084



CE000880 1>2 ————— CE000895 1>2 - - - - -

NOTES

Bleed air before use

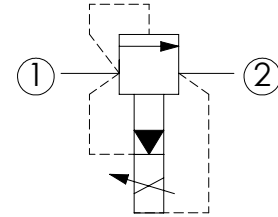
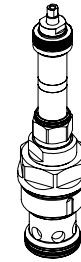
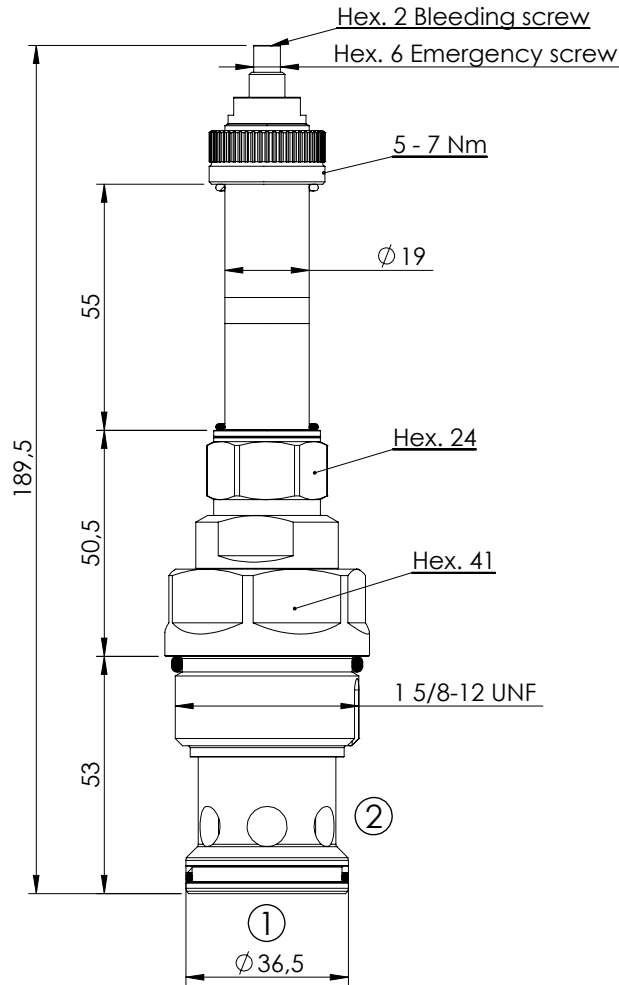
ORDERING CODES

Quick code	Description	Proportional setting range (bar)	Threshold current (with 12VDC coil)	Max control current (with 12V DC coil)	Override
CE000880	CEBT-300-PLPS-91-S16-V350	30-350	200 mA (+/-7%)	1600 mA (+/-7%)	Screw style
CE000895	CEBT-300-PLPS-91-S16-V200	20-200	200 mA (+/-7%)	1700 mA (+/-7%)	Screw style

SOLENOID OPERATED CARTRIDGE

CEBT-500-PLPS

**PROPORTIONAL VALVES
PILOTED RELIEF
SPOOL TYPE**



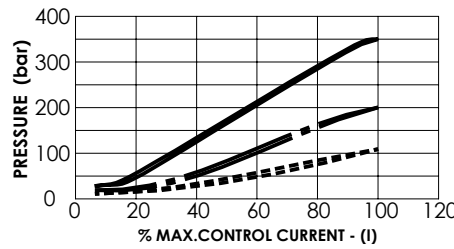
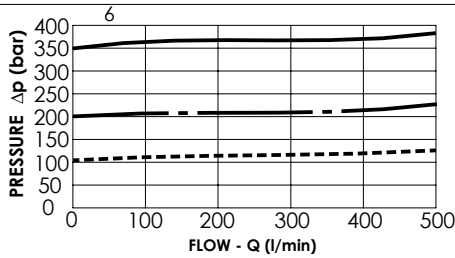
SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	500 l/min
Cavity:	SAE-20-2N
Weight:	0,7 kg
Coil type:	M5 type
Max. int. leakage:	200 cm ³ /min (@46 cSt)
Installation torque:	230 - 250 Nm
PWM range recommended:	150-180 Hz

Seal kit: RA100085

NOTES

Bleed air before use



CE000770 1>2 ———
 CE000771 1>2 - - - -
 CE000772 1>2

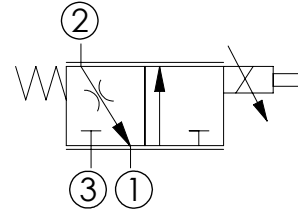
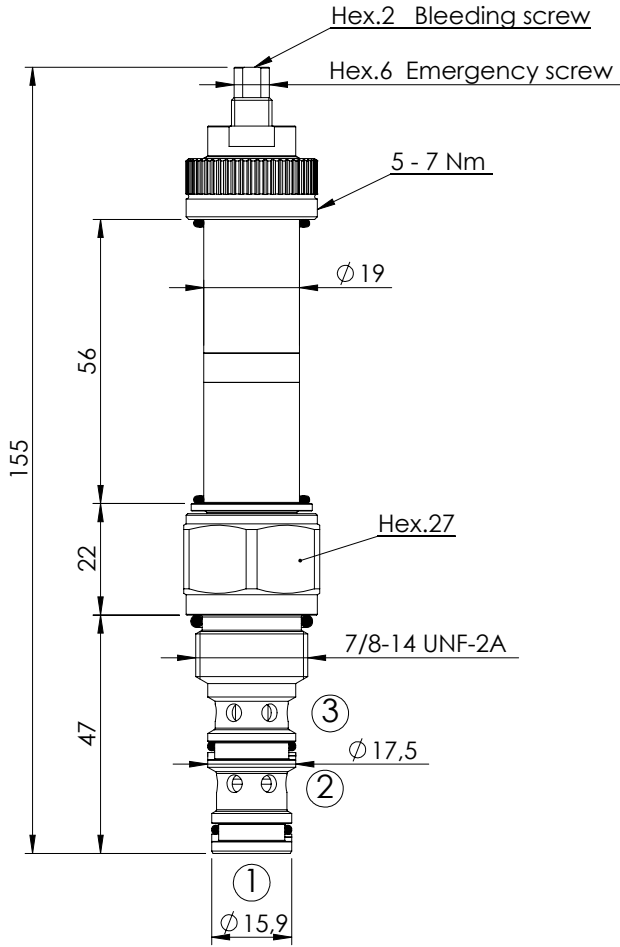
ORDERING CODES

Quick code	Description	Setting range (bar)	Threshold current (with 12VDC coil)	Max control current (with 12V DC coil)	Override
CE000770	CEBT-500-PLPS-91-S20-V350	30-350	200 mA (+/-7%)	1600 mA (+/-7%)	Screw style
CE000771	CEBT-500-PLPS-91-S20-V200	20-220	200 mA (+/-7%)	1700 mA (+/-7%)	Screw style
CE000772	CEBT-500-PLPS-91-S20-V100	15-90	200 mA (+/-7%)	1700 mA (+/-7%)	Screw style

SOLENOID OPERATED CARTRIDGE

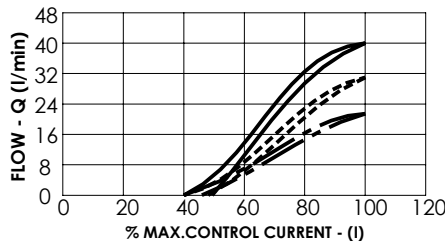
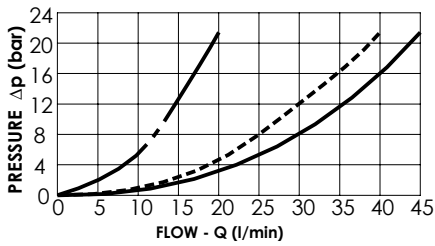
CECS-040-FSPS

**PROPORTIONAL VALVES
NON COMPENSATED
FLOW REGULATOR**



SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	40 l/min
Cavity:	SAE-10-3N
Weight:	0,22 kg
Coil type:	M15 type
Max. int. leakage:	150 cm ³ /min (@46 cSt)
Installation torque:	45 - 60 Nm
Recommended PWM range:	150-180 Hz
Seal kit:	RA100092



CE000111 3>2 ——— CE000112 3>2 - - - - - CE000113 3>2 — - - - -

NOTES

Bleed air before use

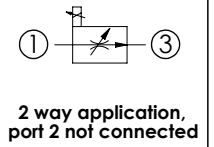
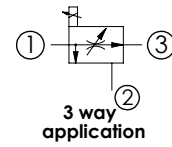
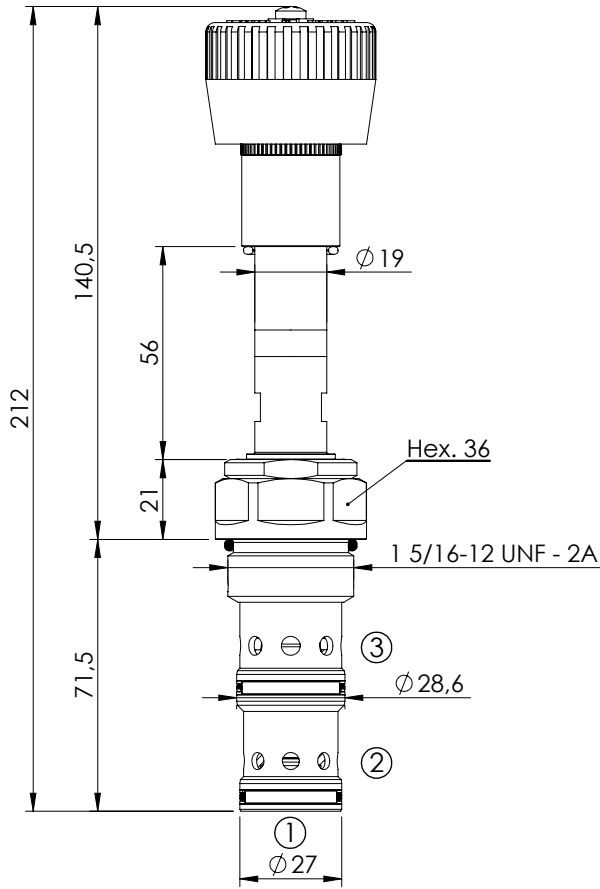
ORDERING CODES

Quick code	Description	Rated flow (l/min)	Threshold current (with 12VDC coil)	Max control current (with 12V DC coil)	Override
CE000111	CECS-040-FSPS-85-S10-V210	40	800 mA (+/-7%)	1600 mA (+/-7%)	Screw style
CE000112	CECS-030-FSPS-85-S10-V210	30	700 mA (+/-7%)	1500 mA (+/-7%)	Screw style
CE000113	CECS-020-FSPS-85-S10-V210	20	700 mA (+/-7%)	2400 mA (+/-7%)	Screw style

PROPORTIONAL CARTRIDGE

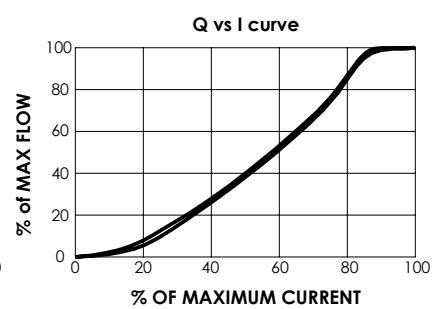
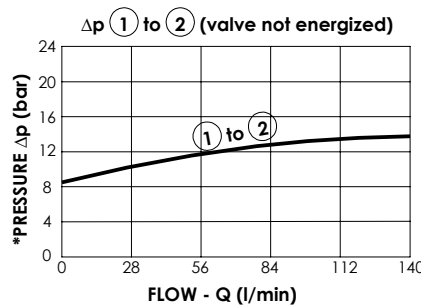
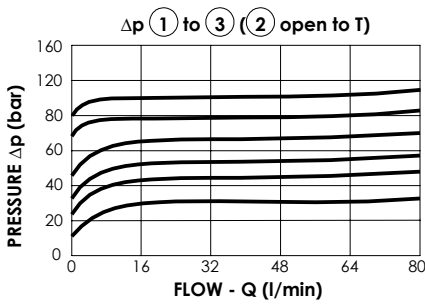
CECS-140-FRPV

**PROPORTIONAL VALVES
FLOW REGULATOR
3 WAYS COMBINATION**



SPECIFICATIONS

Max. operating pressure:	320 bar
Maximum flow (in inlet port ①):	140 l/min
Max. flow ① to ③:	80 l/min(regulated)
Pressure differential (① to ③):	7 - 11 bar
Hysteresis (ramp up and down):	1,5 - 3 %
Coil type:	M15
Voltage:	12- 24 V dc
Max voltage (12 V dc):	1800 mA
Max voltage (24 V dc):	1200 mA
Coil resistance (12 V dc):	3.3-5.8 Ω
Coil resistance (24 V dc):	7.2-13 Ω
Weight:	0,6 kg
Cavity:	SAE-16-3N
Installation torque:	130 -145 Nm
Surface protection proportional solenoid:	Coating DIN 50962 Fe8//ZiNi with passivation
Seal kit:	RB100094

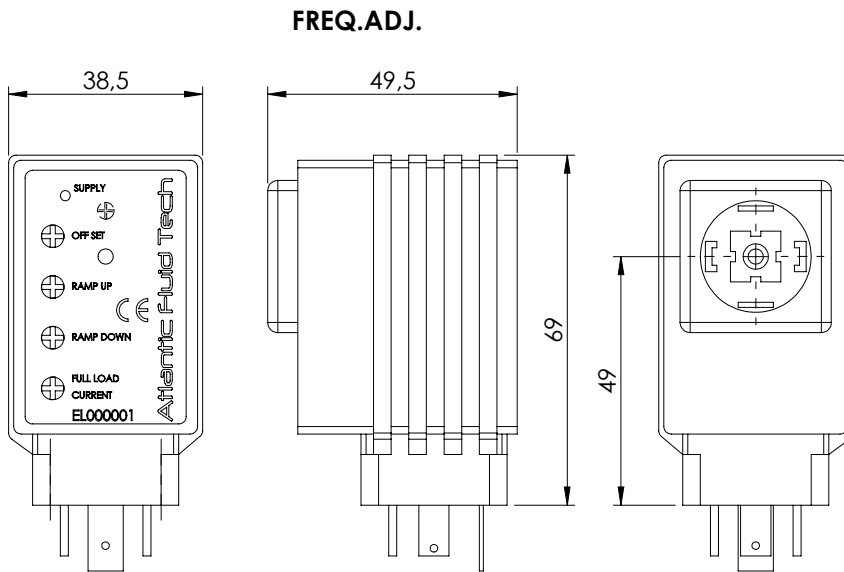
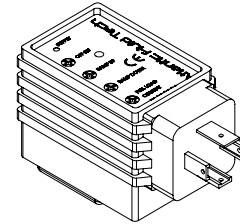


ORDERING CODES

Quick code	Description	Regulated flow range (l/min)	Adjustment type
CE000831	CECS-140-FRPV-15-S16-V320	0 - 15	Handknob
CE000832	CECS-140-FRPV-25-S16-V320	0 - 25	Handknob
CE000833	CECS-140-FRPV-40-S16-V320	0 - 40	Handknob
CE000834	CECS-140-FRPV-50-S16-V320	0 - 50	Handknob
CE000835	CECS-140-FRPV-65-S16-V320	0 - 65	Handknob
CE000836	CECS-140-FRPV-80-S16-V320	0 - 80	Handknob

PROPORTIONAL VALVE CONTROLLER

ELPC-030-SCCB



Max torque 0,5 Nm

SPECIFICATIONS

Supply voltage: 12 - 30 VDC
Coil rating must be matched with supply voltage:
 $R_{coil} < (V_{supply} - 1,5V) / I_{max}$

Control input signal options:
5KΩ external potentiometer
(accepts 2KΩ to 10KΩ), or 0-10 VDC signal
(see connection diagram)

Output current: up to 2A

Minimum current: 0 - 0,6 A

Max current deviation in temperature range: 3%

Ramp up / ramp down: 0,1 to 10 sec
Ramp setting independent from current range

PWM frequency: 100 - 500 Hz

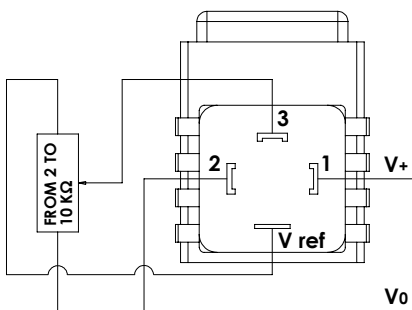
Operating conditions: -20 TO +70°C
0 to 85% relative humidity

Environmental protection: IP65
with cover and seals installed

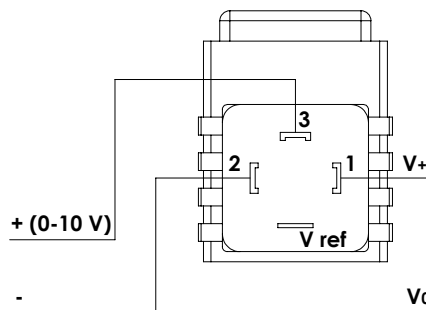
Connector type: DIN 43650 - ISO 4400

IMPORTANT
DO NOT REMOVE controller from solenoid when energized to avoid the risk of damaging it

CONNECTION EXAMPLE WITH JOYSTICK OR POTENTIOMETER



CONNECTION EXAMPLE WITH ANALOGIC SIGNAL



SETTING INSTRUCTIONS

SUPPLY: led is on when current is supplied

OFFSET: to be used to set minimum current value (I min), turn clockwise to increase setting

RAMP UP: to be used to set the ramp time from minimum (I min) to maximum current value (I max)

RAMP DOWN: to be used to set the ramp time from maximum (I max) to minimum current value (I min)

FULL LOAD CURRENT: to be used to set maximum current value (I max), turn clockwise to increase setting

FREQ. ADJ.: this trimmer is inside the controller and is preset by factory, to be used to modify the PWM frequency

ORDERING CODES

Quick code	Description
EL000001	Proportional controller ELPC-030-SCCB

SECTION 17

DIVERTER VALVES



Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	ESCB-025	Three ports	25	250-310	In line	G 1/4"	17.01. 010
	ESCB-050	Three ports	50	250-310	In line	G 3/8"	17.01. 020
	ESCB-090	Three ports	90	250-310	In line	G 1/2"	17.01. 030
	ELFB-025	Six ports single	25	250-310	In line	G 1/4"	17.02. 040
	ELFB-050	Six ports single	50	250-310	In line	G 3/8"	17.02. 050
	ELFB-090	Six ports single	90	250-310	In line	G 1/2"	17.02. 060
	ESFB-025	Six ports single and bankable	25	250-310	In line/Flanged	G 1/4"	17.03. 070
	ESFB-050	Six ports single and bankable	50	250-310	In line/Flanged	G 3/8"	17.03. 080
	ESFB-090	Six ports single and bankable	90	250-310	In line/Flanged	G 1/2"	17.03. 090
	ELFB-400	Six ports single	400	210-420	In line	G 3/4" - 1" SAE 6000	17.04. 100

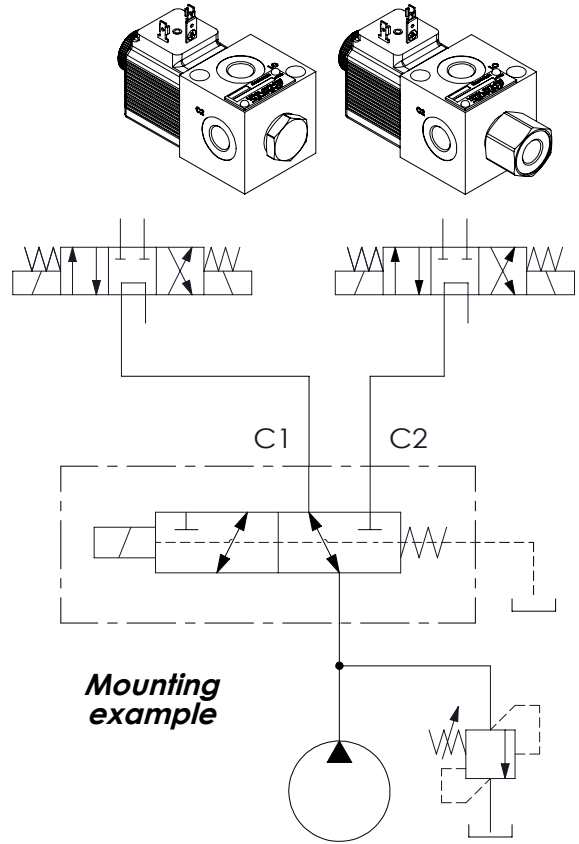
FLOW DIVERTERS

ESCB-025

3 WAYS FLOW DIVERTERS

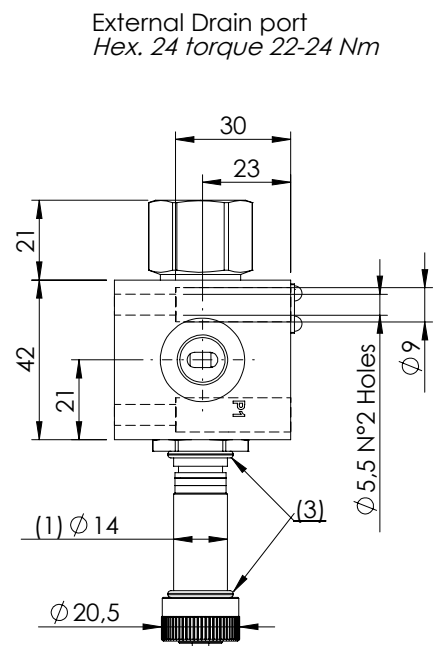
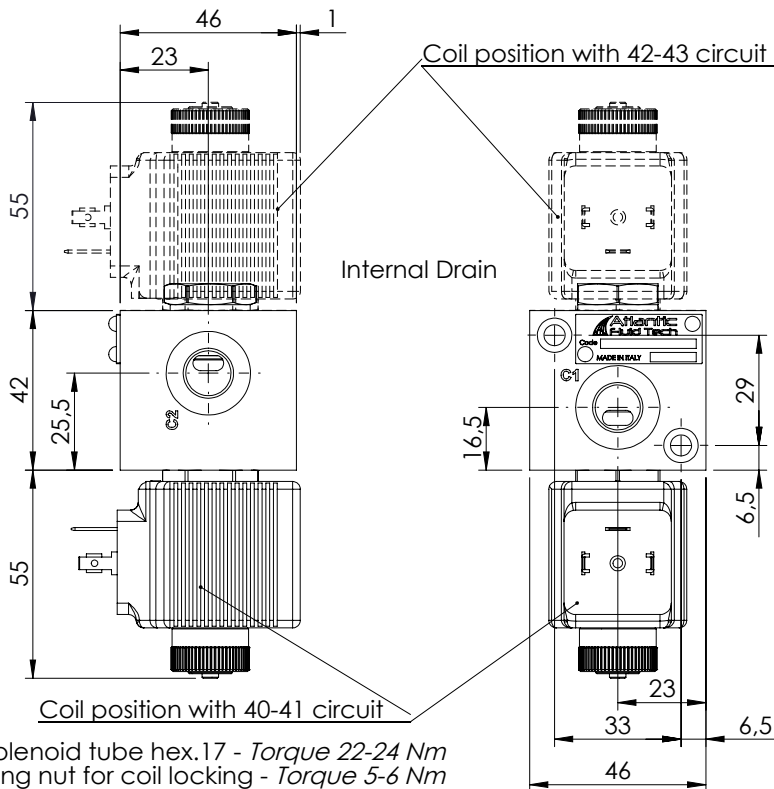


**	Circuit	Transit position
40		
41		
42		
43		



Technical data		
Rated flow	l/min	25
Operating pressure	with internal drain "N"	bar 250
	with external drain "E"	bar 310
Valve weight	Kg	0,80

OVERALL DIMENSIONS



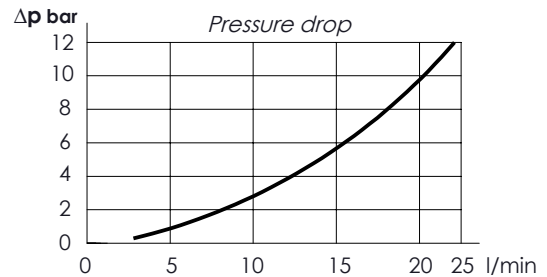
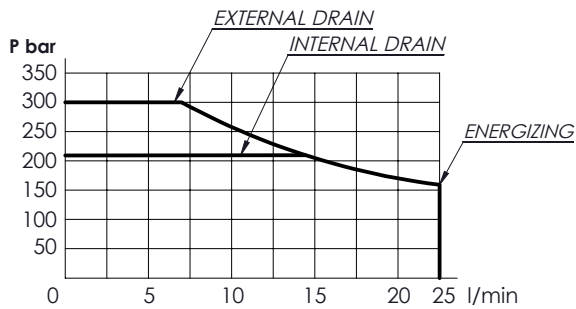
- (1) Solenoid tube hex.17 - Torque 22-24 Nm
- (2) Ring nut for coil locking - Torque 5-6 Nm
- (3) O-Ring Ø14,00x1,78

Characteristic curves

Measured with hydraulic fluid ISO-VG32 at 45° ± 5°C



Maximum performance



Internal leakage on C ports : MAX 15 cm³/min - Mineral oil with 32 cSt viscosity, at 40° C and 100 bar pressure

* OPERATED	Circuit
E Electric 	
N Hydraulic/pneumatic <p>(4) Hydraulic or pneumatic pilot connector: hex 30 mm - Torque 20-22 Nm With external drain Pilot Pressure Min. 5 bar With internal drain Pilot Pressure is 1/10 of the working pressure</p>	

* MANUAL OVERRIDE	Circuit
S Standard 	
P Push-button 	
V Screw 	
N Without manual override	

* DRAIN	Circuit
N Internal	
E External	

PORTS		
***	Main (C)	Drain (D)
G14	1/4" Gas	1/4" Gas
Other port sizes available		

N - Seals in NBR
V - Seals in VITON

ESCB - 025 - * * A * - ** - *** - * ** *

* Voltage (V)	Resistance (Ω) ± 7%	Power (W)	Current (A)	
-	Without coil			
A	12 DC	5,53	26	2,17
B	24 DC	22,1	26	1,08
Other voltages available on request				

* COIL	Type	Protection class
-	Without coil	
HR	DIN 43650 - ISO 4400 Class H	M14 IP65
AJ	AMP JUNIOR Class H	M14 IP65
DT	DEUTSCH DT04-2P-L Class H	M14 IP69

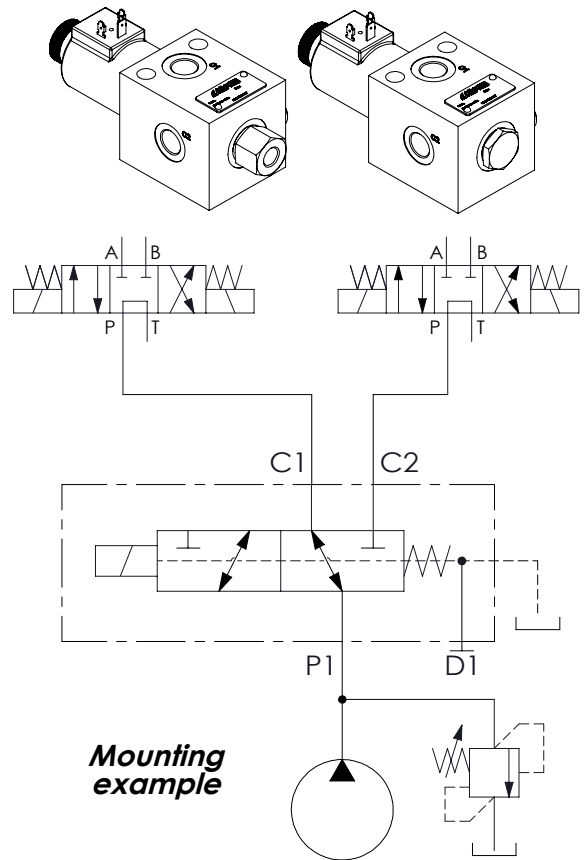
FLOW DIVERTERS

ESCB-050

3 WAYS FLOW DIVERTERS



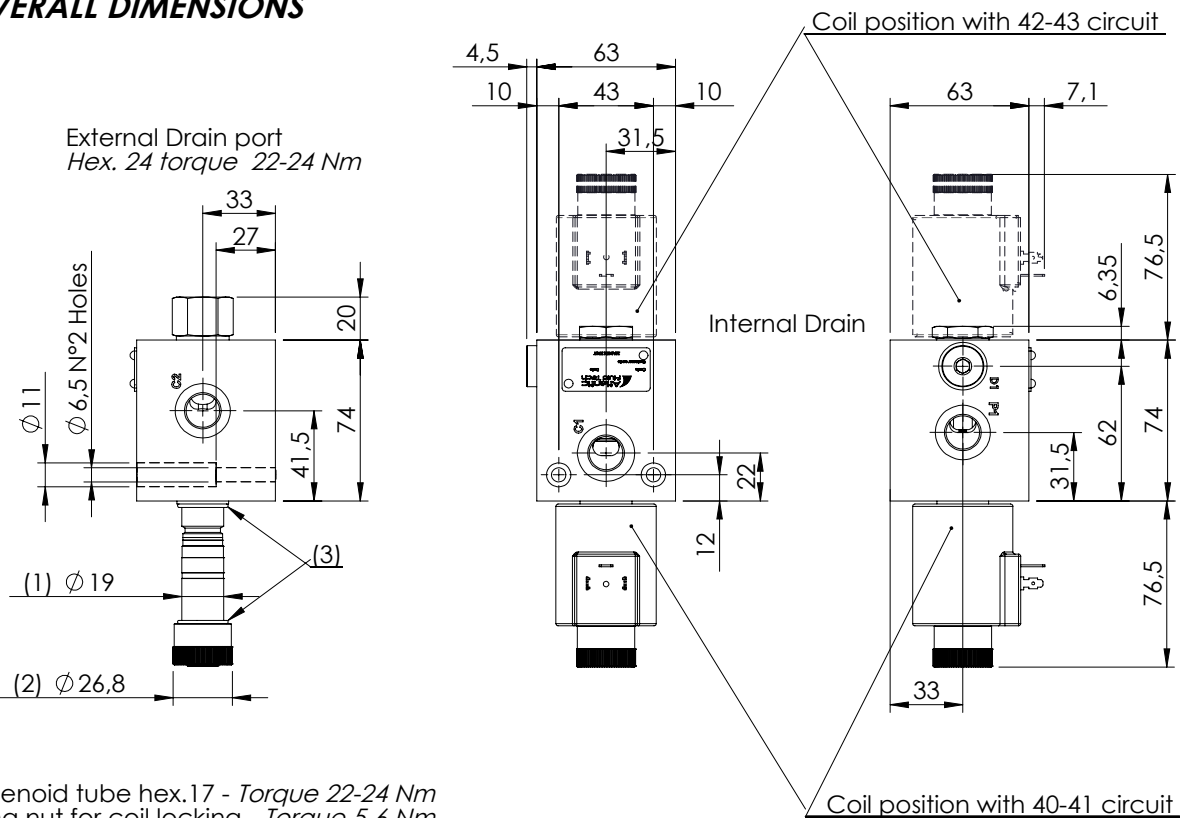
**	Circuit	Transit position
40		
41		
42		
43		



Technical data

Rated flow	l/min	50
Operating pressure	with internal drain "N"	bar 250
	with external drain "E"	bar 310
Valve weight	Kg	2,6

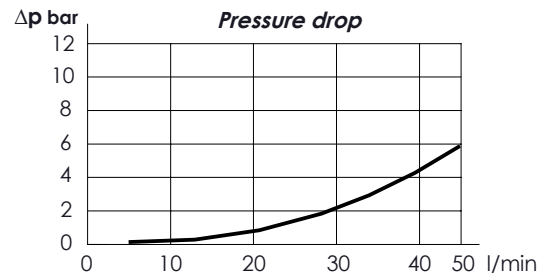
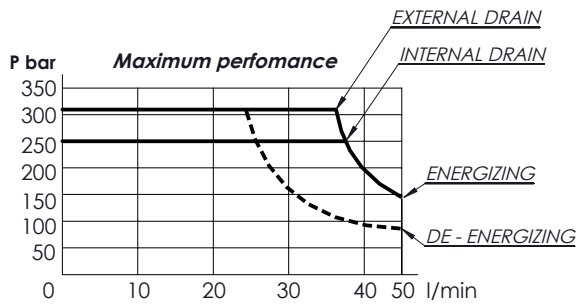
OVERALL DIMENSIONS



- (1) Solenoid tube hex.17 - Torque 22-24 Nm
- (2) Ring nut for coil locking - Torque 5-6 Nm
- (3) O-Ring Ø18,77 x1,78

Characteristic curves

Measured with hydraulic fluid ISO-VG32 at 45° ± 5°C



Internal leakage on C ports : MAX **25** cm³/min - Mineral oil with 32 cSt viscosity, at 40° C and 100 bar pressure

* OPERATED	Circuit
E Electric 	
N Hydraulic/pneumatic <p>(4) Hydraulic or pneumatic pilot connector: hex 30 mm - Torque 20-22 Nm With external drain Pilot Pressure Min. 5 bar With internal drain Pilot Pressure is 1/10 of the working pressure</p>	

* MANUAL OVERRIDE	Circuit
S Standard 	
P Push-button 	
V Screw 	
N Without manual override	

* DRAIN	Circuit
N Internal	
E External	

PORTS		
***	Main (C)	Drain (D)
G38	3/8" Gas	1/4" Gas
Other port sizes available		

N - Seals in NBR
V - Seals in VITON

ESCB - 050 - * * C * - ** - * - * ** ***

* Voltage (V)	Resistance (Ω) ± 7%	Power (W)	Current (A)
-	Without coil		
A 12 DC	4,36	33	2,75
B 24 DC	17,45	33	1,37
Other voltages available on request			

* COIL	Type	Protection class
-	Without coil	
HR DIN 43650 - ISO 4400 Class H	M8	IP65
AJ AMP JUNIOR Class H	M8	IP65
DT DEUTSCH DT04-2P-L Class H	M8	IP69

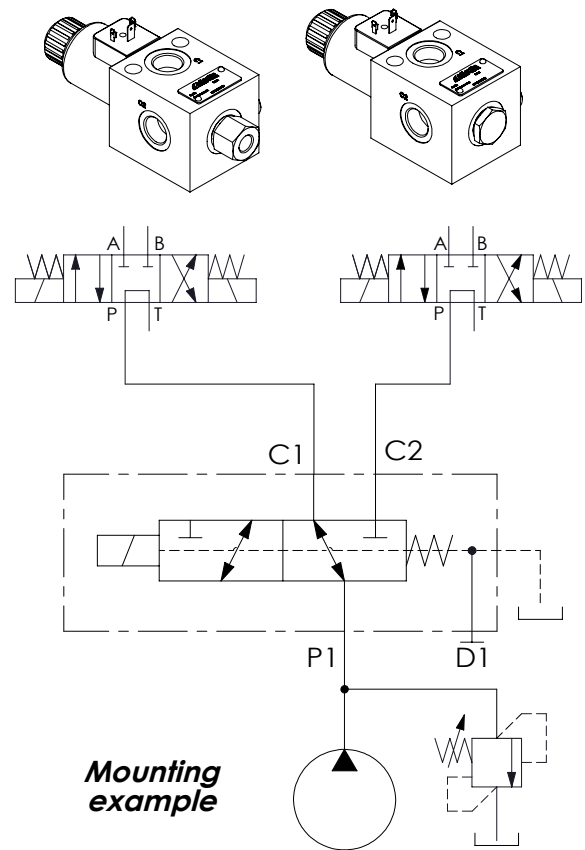
FLOW DIVERTERS

ESCB-090

3 WAYS FLOW DIVERTERS

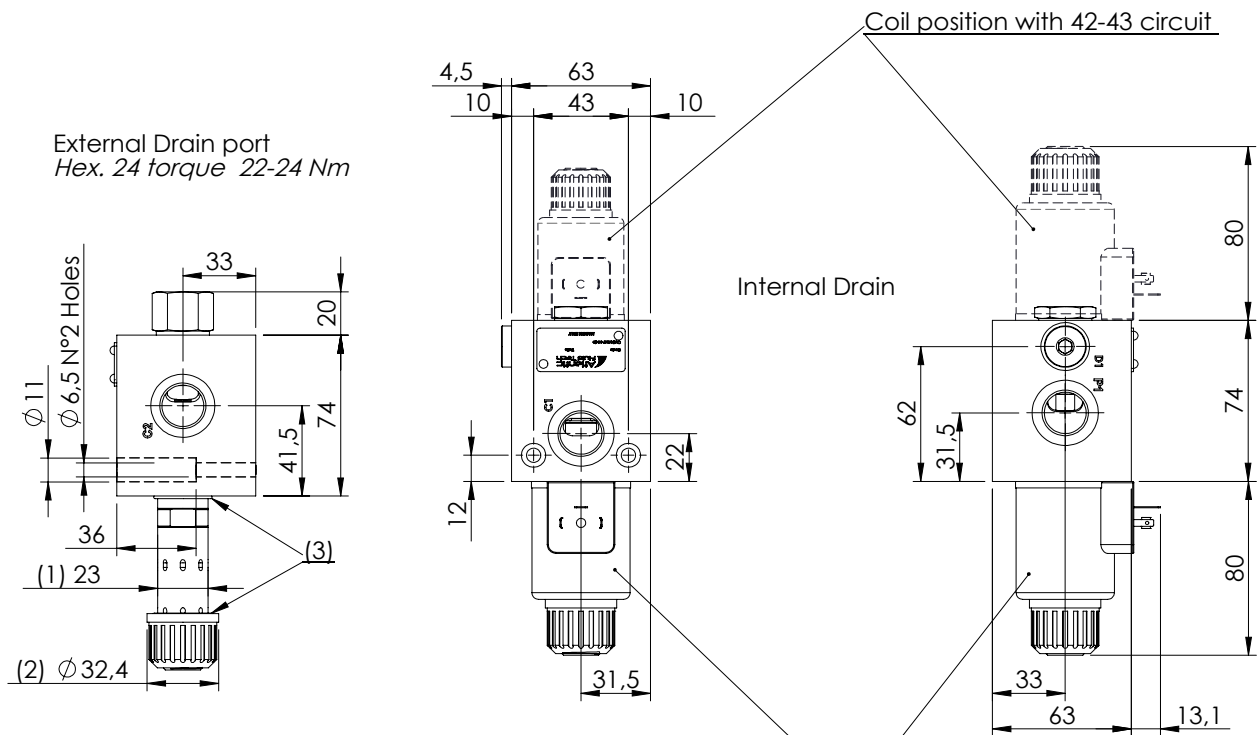


**	Circuit	Transit position
40		
41		
42		
43		



Technical data		
Rated flow	l/min	90
Operating pressure	with internal drain "N"	bar 250
	with external drain "E"	bar 310
Valve weight	Kg	2,4

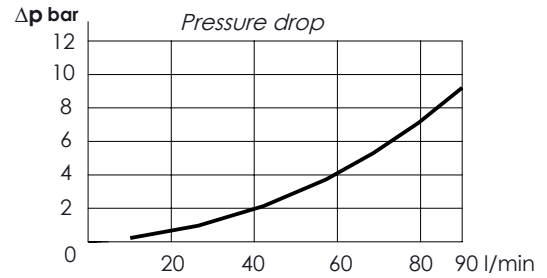
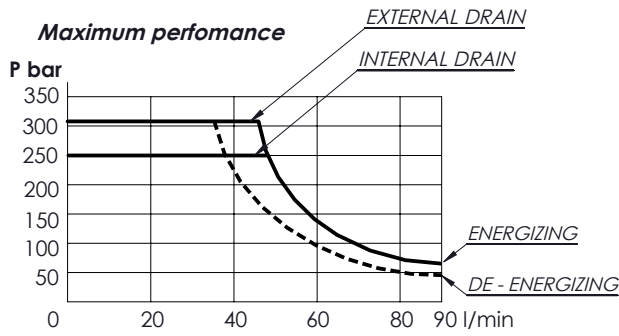
OVERALL DIMENSIONS



- (1) Solenoid tube hex.20 - Torque 18-22 Nm
- (2) Ring nut for coil locking - Torque 7-8 Nm
- (3) O-Ring \varnothing 21,95 x 1,78 - 22,22 x 2,62 (smaller one near manifold)

Characteristic curves

Measured with hydraulic fluid ISO-VG32 at 45° ± 5°C



Internal leakage on C ports : MAX 25 cm³/min - Mineral oil with 32 cSt viscosity, at 40° C and 100 bar pressure

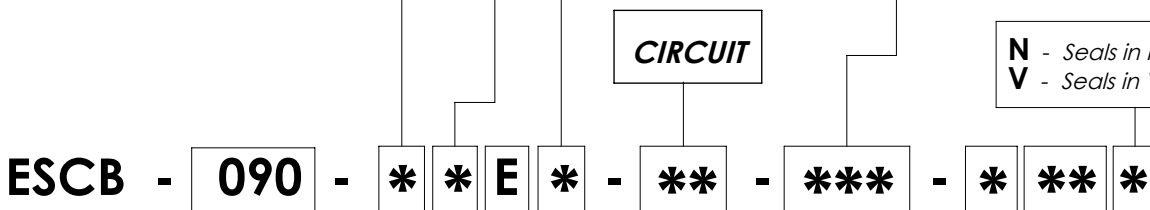
* OPERATED	Circuit
E Electric 	
N Hydraulic/pneumatic 	
(4) Hydraulic or pneumatic pilot connector: hex 30 mm - Torque 20-22 Nm With external drain Pilot Pressure Min. 5 bar With internal drain Pilot Pressure is 1/10 of the working pressure	

* MANUAL OVERRIDE	Circuit
S Standard 	
P Push-button 	
V Screw 	
N Without manual override	

* DRAIN	Circuit
N Internal	
E External	

PORTS		
***	Main (C)	Drain (D)
G12	1/2" Gas	1/4" Gas
Other port sizes available		

N - Seals in NBR
V - Seals in VITON



* Voltage (V)	Resistance (Ω) ± 7%	Power (W)	Current (A)
-	Without coil		
A 12 DC	3,27	44	3,67
B 24 DC	13,09	44	1,83
Other voltages available on request			

* COIL	Type	Protection class
-	Without coil	
HR DIN 43650 - ISO 4400 Class H	M11	IP65
AJ AMP JUNIOR Class H	M11	IP65
DT DEUTSCH DT04-2P-L Class H	M11	IP69

FLOW DIVERTERS

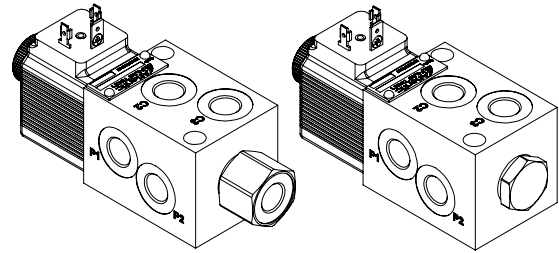
ELFB-025

**6 WAYS SINGLE IN LINE
FLOW DIVERTERS**

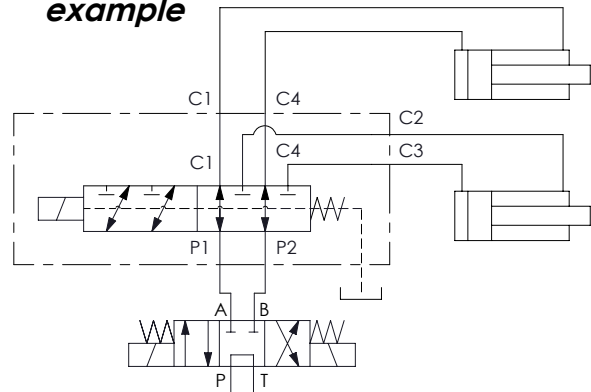


**	Circuit	Transit position
01		
02		
03		

*Only external drain



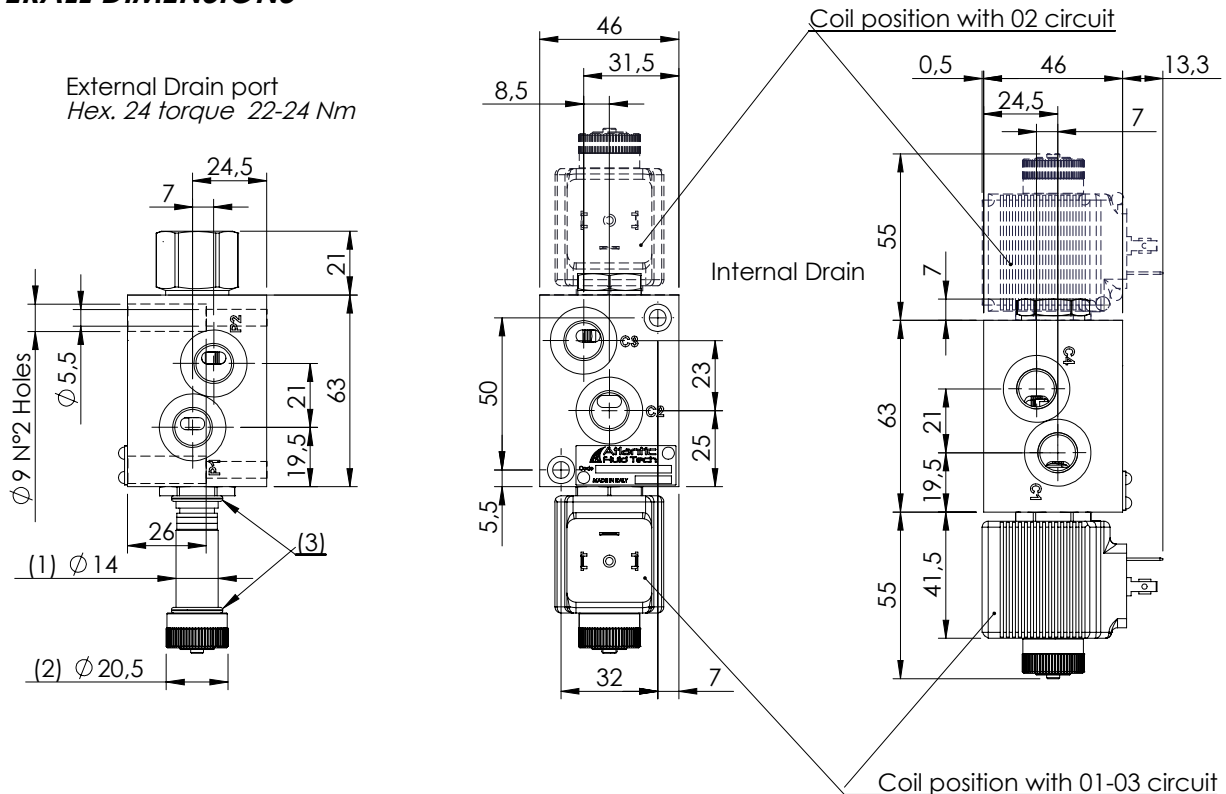
Mounting example



Technical data

Rated flow		l/min	25
Operating pressure	with internal drain "N"	bar	250
	with external drain "E"	bar	310
Valve weight		Kg	1,1

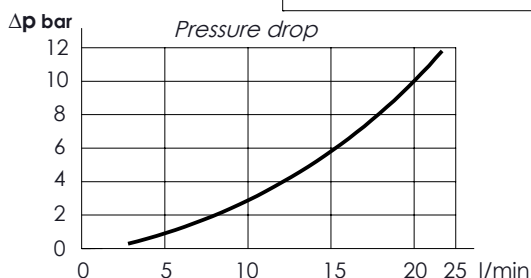
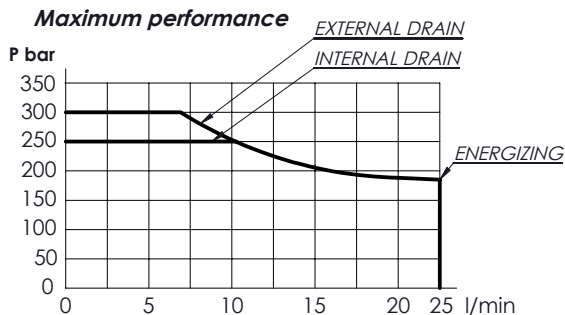
OVERALL DIMENSIONS



- (1) Solenoid tube hex.17 - Torque 22-24 Nm
- (2) Ring nut for coil locking - Torque 5-6 Nm
- (3) O-Ring Ø 14,00 x 1,78

Characteristic curves

Measured with hydraulic fluid ISO-VG32 at 45° ± 5°C



Internal leakage on C ports : MAX 15 cm3/min Mineral oil with 32 cSt viscosity, at 40° C and 100 bar pressure

* OPERATED	Circuit
E Electric 	
N Hydraulic/pneumatic <p>(4) Hydraulic or pneumatic pilot connector: hex 30 mm - Torque 20-22 Nm With external drain Pilot Pressure Min. 5 bar With internal drain Pilot Pressure is 1/10 of the working pressure</p>	

* MANUAL OVERRIDE	
S Standard	
P Push-button	
V Screw	
N Without manual override	

* DRAIN	Circuit
N Internal	
E External	

PORTS		
***	Main (C)	Drain (D)
G14	1/4" Gas	1/4" Gas
Other port sizes available		

N - Seals in NBR
V - Seals in VITON

ELFB - 025 - * * A * - ** - * - * ** ***

* Voltage (V)	Resistance (Ω) ± 7%	Power (W)	Current (A)
-	Without coil		
A	12 DC	5,53	26
B	24 DC	22,1	26
Other voltages available on request			

* COIL	Type	Protection class
-	Without coil	
HR	DIN 43650 - ISO 4400 Class H	M14 IP65
AJ	AMP JUNIOR Class H	M14 IP65
DT	DEUTSCH DT04-2P-L Class H	M14 IP69

FLOW DIVERTERS

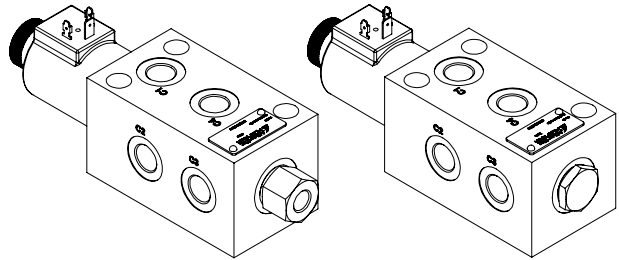
ELFB-050

**6 WAYS SINGLE IN LINE
FLOW DIVERTERS**

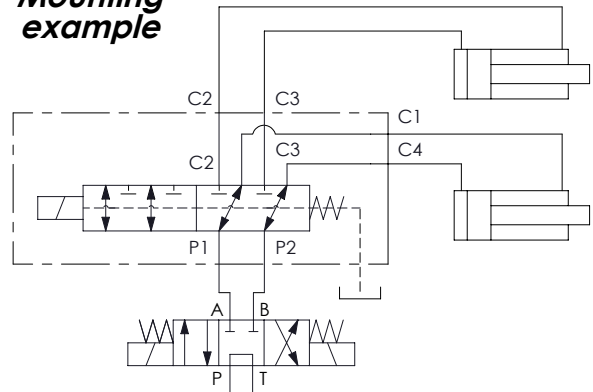


**	Circuit	Transit position
02		
03		

*Only external drain



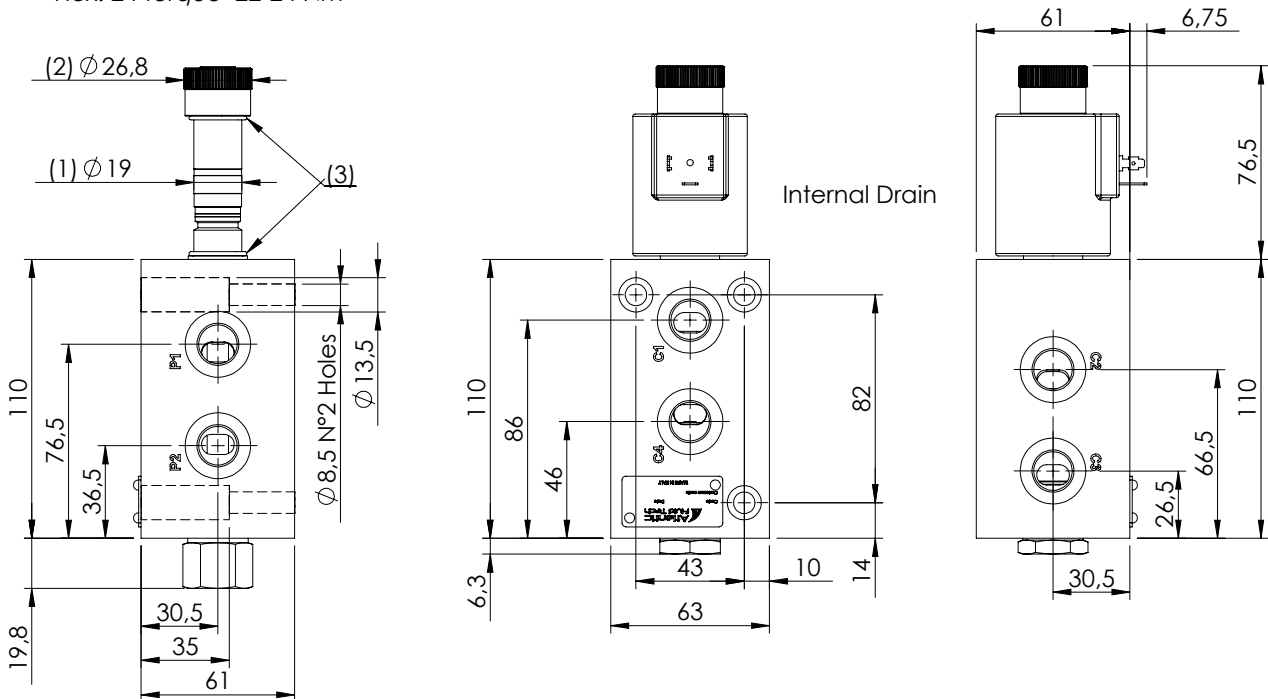
**Mounting
example**



Technical data			
Rated flow	l/min		50
Operating pressure	with internal drain "N"	bar	250
	with external drain "E"	bar	310
Valve weight	Kg		3,4

OVERALL DIMENSIONS

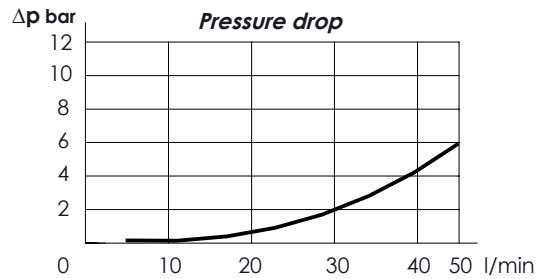
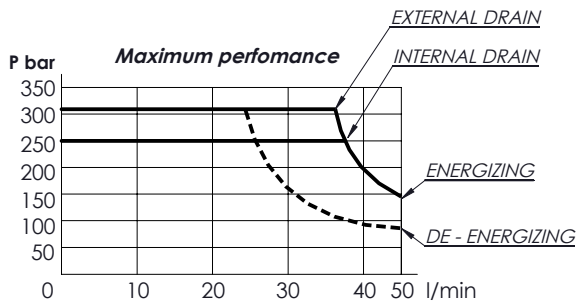
External Drain port
Hex. 24 torque 22-24 Nm



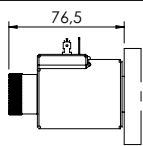

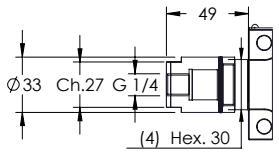
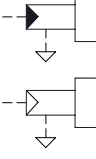
- (1) Solenoid tube hex.17 - Torque 22-24 Nm
- (2) Ring nut for coil locking - Torque 5-6 Nm
- (3) O-Ring Ø18,77 x 1,78



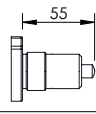




Characteristic curves



Measured with hydraulic fluid ISO-VG32 at 45° ± 5°C



Internal leakage on C ports :MAX 25 cm3/min Mineraloilwith 32 cSt viscosity, at 40° C and 100 bar pressure

* OPERATED	Circuit
E Electric 	
N Hydraulic/pneumatic  (4) Hydraulic or pneumatic pilot connector: hex 30 mm - Torque 20-22 Nm With external drain Pilot Pressure Min. 5 bar With internal drain Pilot Pressure is 1/10 of the working pressure	

* MANUAL OVERRIDE	Circuit
S Standard 	
P Push-button 	
V Screw 	
N Without manual override	




* DRAIN	Circuit
N Internal	
E External	

PORTS		
***	Main (C)	Drain (D)
G38	3/8" Gas	1/4" Gas
Other port sizes available		

N - Seals in NBR
V - Seals in VITON

ELFB - 050 - * * C * - ** - * - * ** ***

* Voltage (V)	Resistance (Ω) ± 7%	Power (W)	Current (A)
-	Without coil		
A 12 DC	4,36	33	2,75
B 24 DC	17,45	33	1,37
Other voltages available on request			

* COIL	Type	Protection class
-	Without coil	
HR 	DIN 43650 - ISO 4400 Class H	M8 IP65
AJ 	AMP JUNIOR Class H	M8 IP65
DT 	DEUTSCH DT04-2P-L Class H	M8 IP69

FLOW DIVERTERS

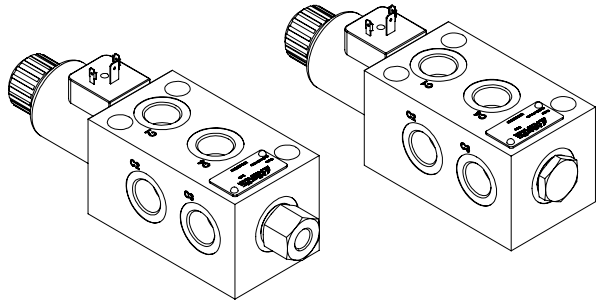
ELFB-090

**6 WAYS SINGLE IN LINE
FLOW DIVERTERS**

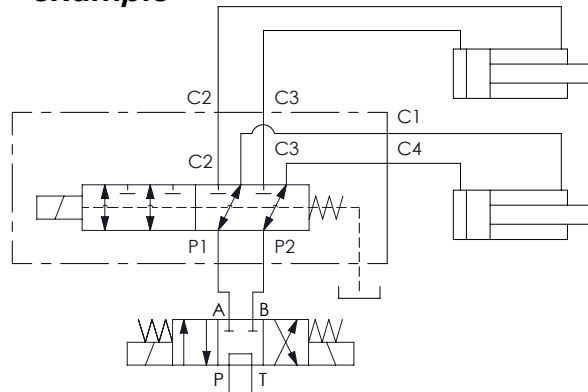


**	Circuit	Transit position
02		
03		

*Only external drain

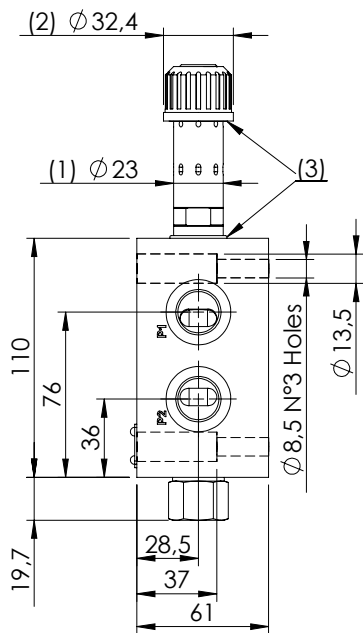


**Mounting
example**

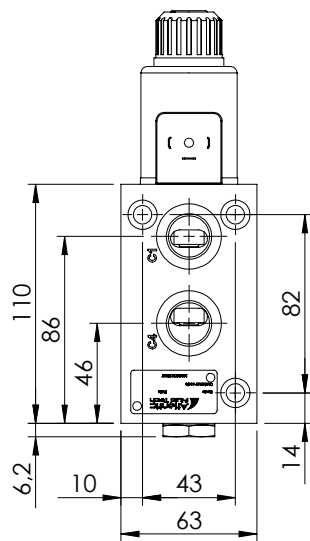


Technical data			
Rated flow	l/min		90
Operating pressure	with internal drain "N"	bar	250
	with external drain "E"	bar	310
Valve weight	Kg		3,2

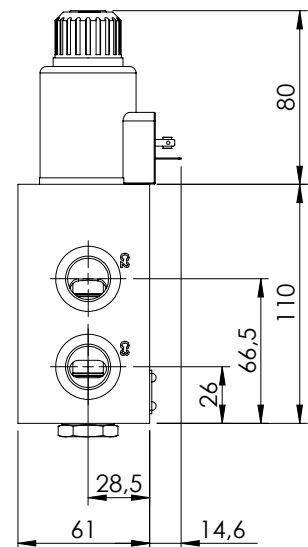
OVERALL DIMENSIONS



External Drain port
Hex. 24 torque 22-24 Nm



Internal Drain



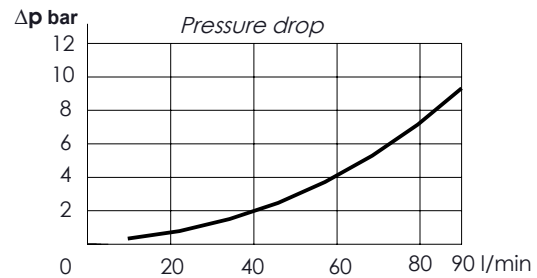
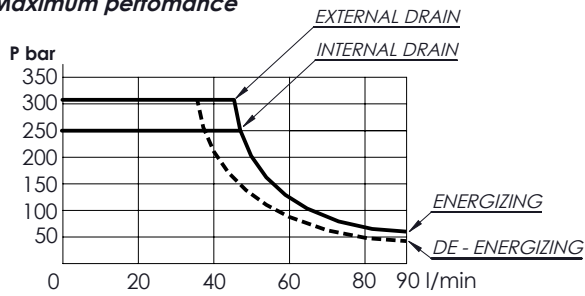
- (1) Solenoid tube hex.20 - Torque 18-22 Nm
- (2) Ring nut for coil locking - Torque 7-8 Nm
- (3) O-Ring Ø 21,95 x 1,78 - 22,22 x 2,62 (smaller one near manifold)

Characteristic curves

Measured with hydraulic fluid ISO-VG32 at 45° ± 5°C



Maximum performance



Internal leakage on C ports :MAX 25 cm³/min Mineraloil with 32 cSt viscosity, at 40° C and 100 bar pressure

* OPERATED	Circuit
E Electric 	
N Hydraulic/pneumatic <p>(4) Hydraulic or pneumatic pilot connector: hex 30 mm - Torque 20-22 Nm With external drain Pilot Pressure Min. 5 bar With internal drain Pilot Pressure is 1/10 of the working pressure</p>	

* MANUAL OVERRIDE	Circuit
S Standard 	
P Push-button 	
V Screw 	
N Without manual override	

* DRAIN	Circuit
N Internal	
E External	

PORTS		
***	Main (C)	Drain (D)
G12	1/2" Gas	1/4" Gas
Other port sizes available		

N - Seals in NBR
V - Seals in VITON

ELFB - 090 - * * E * - ** - * - * ** ***

* Voltage (V)	Resistance (Ω) ± 7%	Power (W)	Current (A)
-	Without coil		
A 12 DC	3,27	44	3,67
B 24 DC	13,09	44	1,83
Other voltages available on request			

* COIL	Type	Protection class
-	Without coil	
HR	DIN 43650 - ISO 4400 Class H	M11 IP65
AJ	AMP JUNIOR Class H	M11 IP65
DT	DEUTSCH DT04-2P-L Class H	M11 IP69

FLOW DIVERTERS

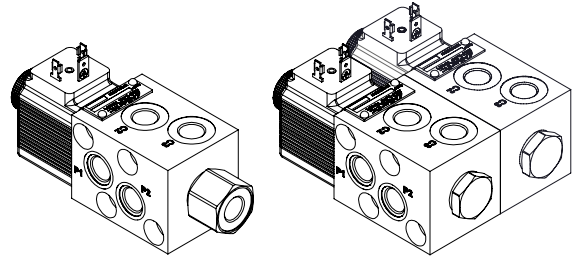
ESFB-025

**6 WAYS SINGLE & BANKABLE
FLOW DIVERTERS**

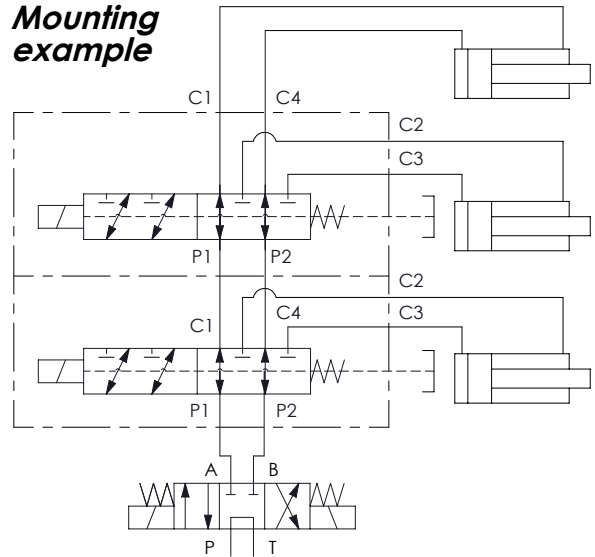


**	Circuit	Transit position
01		
02		
03		

*Only external drain



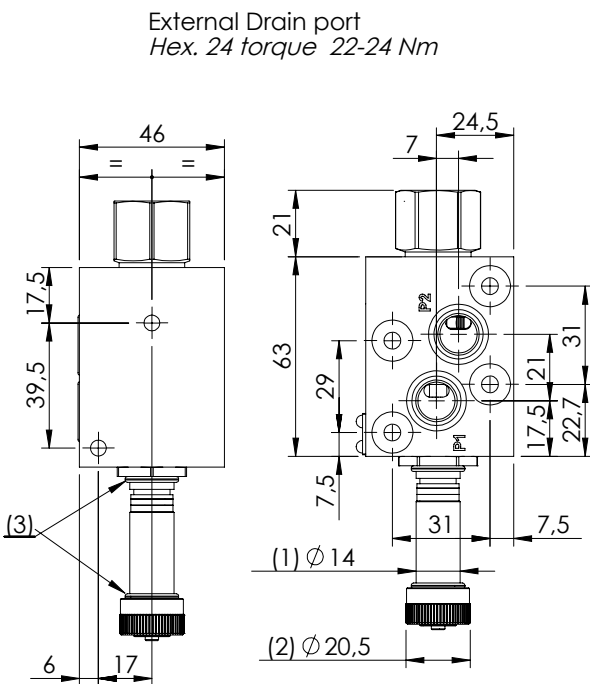
Mounting example



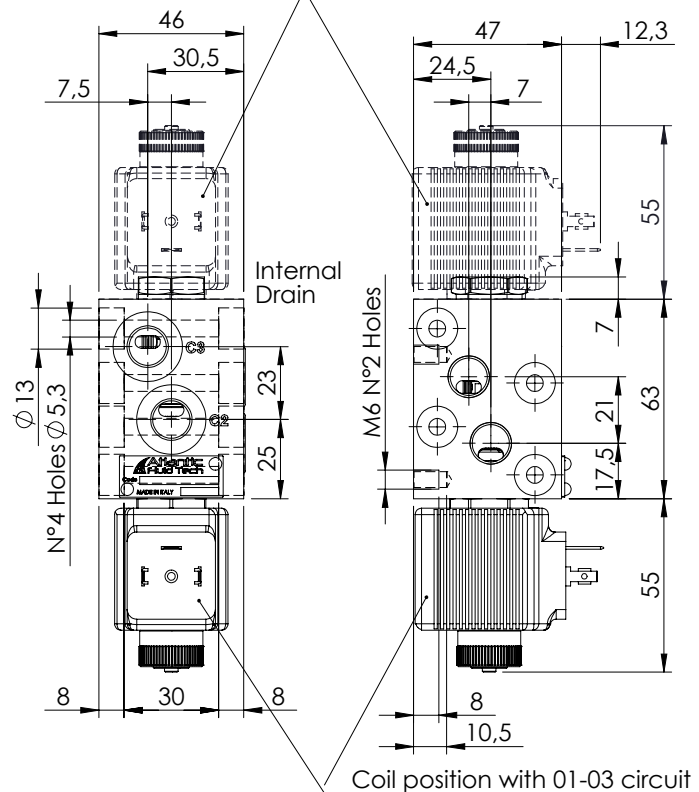
Technical data

Rated flow		l/min	25
Operating pressure	with internal drain "N"	bar	250
	with external drain "E"	bar	310
Valve weight		Kg	1

OVERALL DIMENSIONS



Coil position with 02 circuit

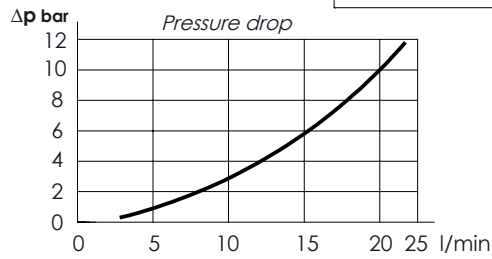
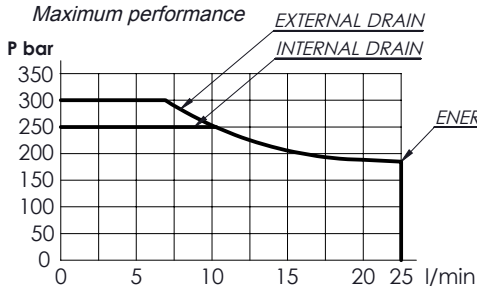


Coil position with 01-03 circuit

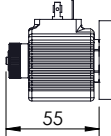

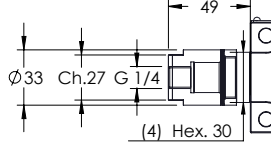
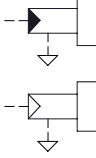
- (1) Solenoid tube hex.17 - Torque 22-24 Nm
- (2) Ring nut for coil locking - Torque 5-6 Nm
- (3) O-Ring Ø 14,00 x 1,78


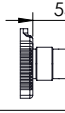
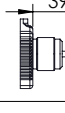
Characteristic curves



Measured with hydraulic fluid ISO-VG32 at 45° ± 5°C



Internal leakage on C ports :
MAX 15 cm³/min
Mineral oil with 32 cSt
viscosity, at 40° C and
100 bar pressure

*	OPERATED	Circuit
E	Electric 	
N	Hydraulic/pneumatic  (4) Hydraulic or pneumatic pilot connector: hex 30 mm - Torque 20-22 Nm With external drain Pilot Pressure Min. 5 bar With internal drain Pilot Pressure is 1/10 of the working pressure	

*	MANUAL OVERRIDE
S	Standard 
P	Push-button 
V	Screw 
N	Without manual override




*	DRAIN	Circuit
N	Internal	
E	External	

PORTS		
***	Main (C)	Drain (D)
G14	1/4" Gas	1/4" Gas
Other port sizes available		

N - Seals in NBR
V - Seals in VITON

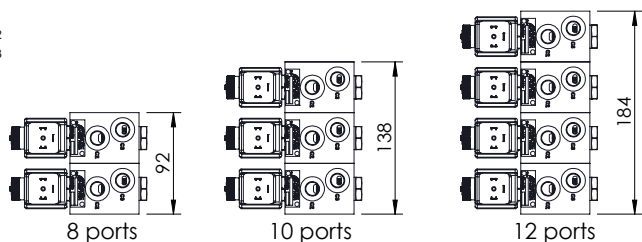
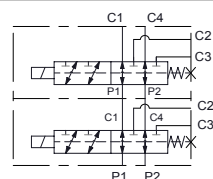
ESFB - 025 - * * A * - ** - * - * ** * ****

*	Voltage (V)	Resistance (Ω) ± 7%	Power (W)	Current (A)
-	Without coil			
A	12 DC	5,53	26	2,16
B	24 DC	22,1	26	1,08
Other voltages available on request				

*	COIL	Type	Protection class
-	Without coil		
HR	 DIN 43650 - ISO 4400 Class H	M14	IP65
AJ	 AMP JUNIOR Class H	M14	IP65
DT	 DEUTSCH DT04-2P-L Class H	M14	IP69

TYPE OF MOUNTING

*	Port number	Screw Tie rods	Installation torque
-	6	-	-
08	8	M5x92	5-6 Nm
10	10	M5x138	5-6 Nm
12	12	M5x184	5-6 Nm
14	14	-	-



FLOW DIVERTERS

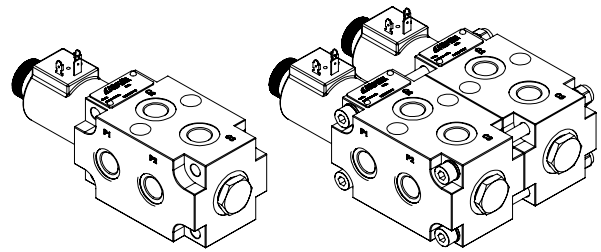
ESFB-050

**6 WAYS SINGLE & BANKABLE
FLOW DIVERTERS**

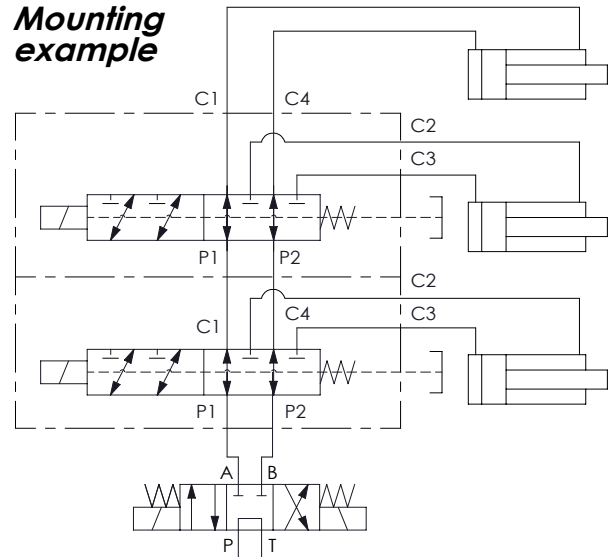


**	Circuit	Transit position
01		
02		
03		

*Only external drain



Mounting example

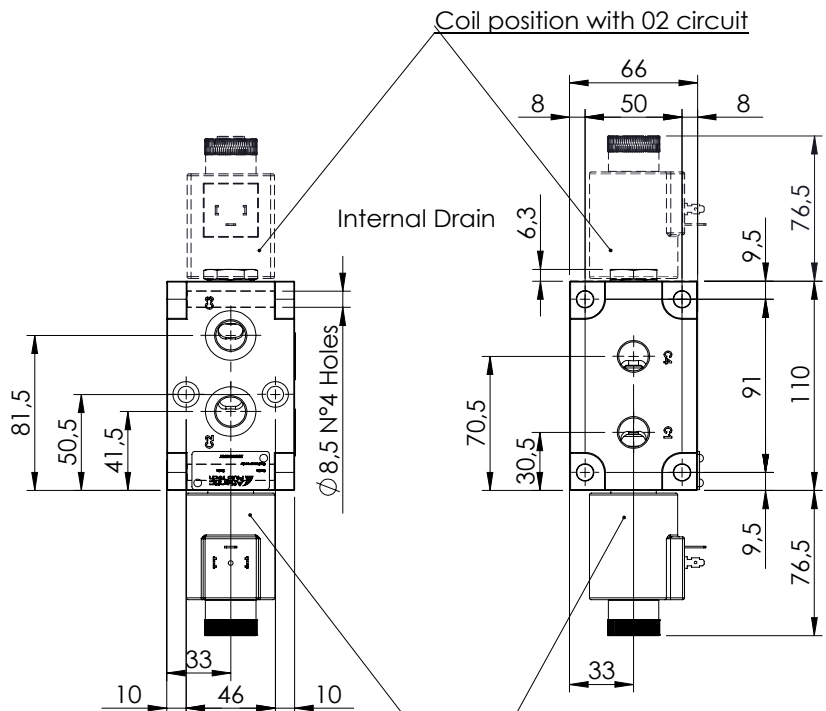
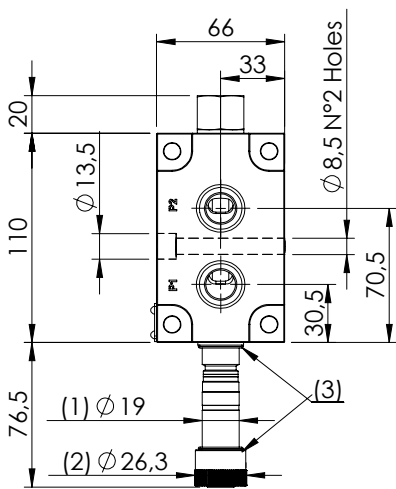


Technical data

Rated flow	l/min	50
Operating pressure	with internal drain "N"	bar 250
	with external drain "E"	bar 310
Valve weight	Kg	3,6

OVERALL DIMENSIONS

External Drain port
Hex. 24 torque 22-24 Nm

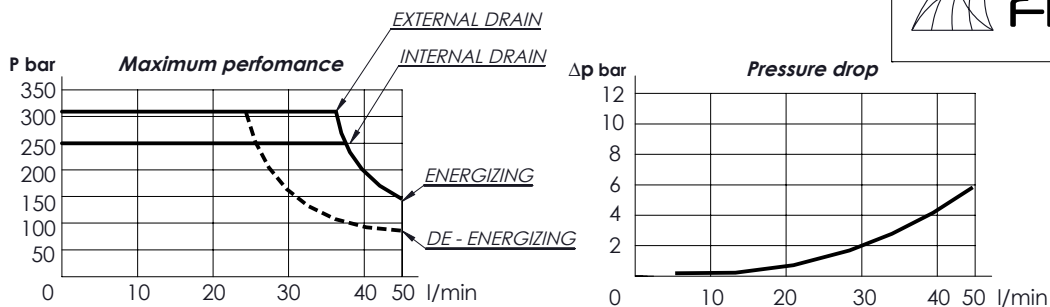


- (1) Solenoid tube hex.17 - Torque 22-24 Nm
- (2) Ring nut for coil locking - Torque 5-6 Nm
- (3) O-Ring Ø 18,77 x 1,78

Coil position with 01-03 circuit

Characteristic curves

Measured with hydraulic fluid ISO-VG32 at 45° ± 5°C



Internal leakage on C ports :
 MAX 25 cm³/min
 Mineral oil with 32 cSt
 viscosity, at 40° C and
 100 bar pressure

*	OPERATED	Circuit
E	Electric 	
N	Hydraulic/pneumatic (4) Hydraulic or pneumatic pilot connector: hex 30 mm - Torque 20-22 Nm With external drain Pilot Pressure Min. 5 bar With internal drain Pilot Pressure is 1/10 of the working pressure	

*	MANUAL OVERRIDE
S	Standard
P	Push-button
V	Screw
N	Without manual override

*	DRAIN	Circuit
N	Internal	
E	External	

PORTS		
***	Main (C)	Drain (D)
G38	3/8" Gas	1/4" Gas
Other port sizes available		

N - Seals in NBR
 V - Seals in VITON

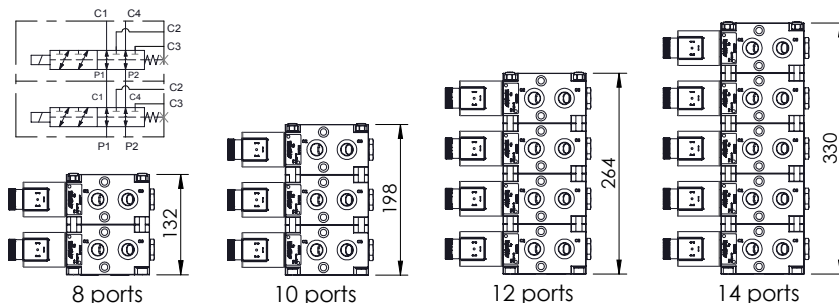
ESFB - 050 - * * C * - ** - * - * ** * ****

*	Voltage (V)	Resistance (Ω) ± 7%	Power (W)	Current (A)
-	Without coil			
A	12 DC	4,36	33	2,75
B	24 DC	17,45	33	1,37
Other voltages available on request				

*	COIL	Type	Protection class
-	Without coil		
HR	DIN 43650 - ISO 4400 Class H	M8	IP65
AJ	AMP JUNIOR Class H	M8	IP65
DT	DEUTSCH DT04-2P-L Class H	M8	IP69

TYPE OF MOUNTING

*	Port number	Screw Tie rods	Installation torque
-	6	-	-
08	8	M8x130	15-17 Nm
10	10	M8x196	15-17 Nm
12	12	M8x262	15-17 Nm
14	14	M8x328	15-17 Nm



FLOW DIVERTERS

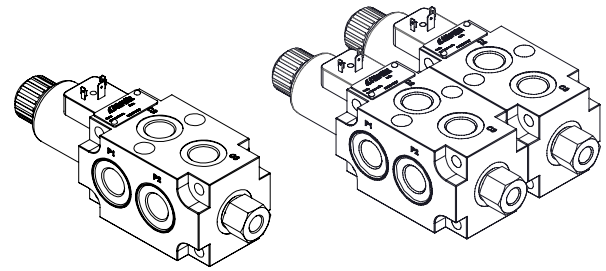
ESFB-090

6 WAYS SINGLE & BANKABLE
FLOW DIVERTERS

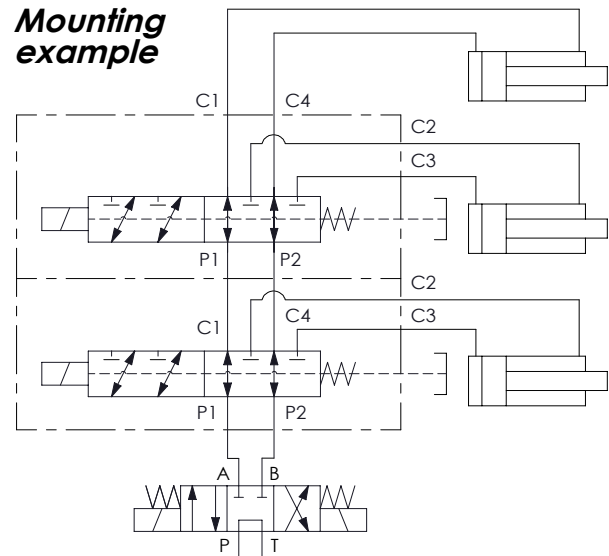


**	Circuit	Transit position
01		
02		
03		

*Only external drain



Mounting example

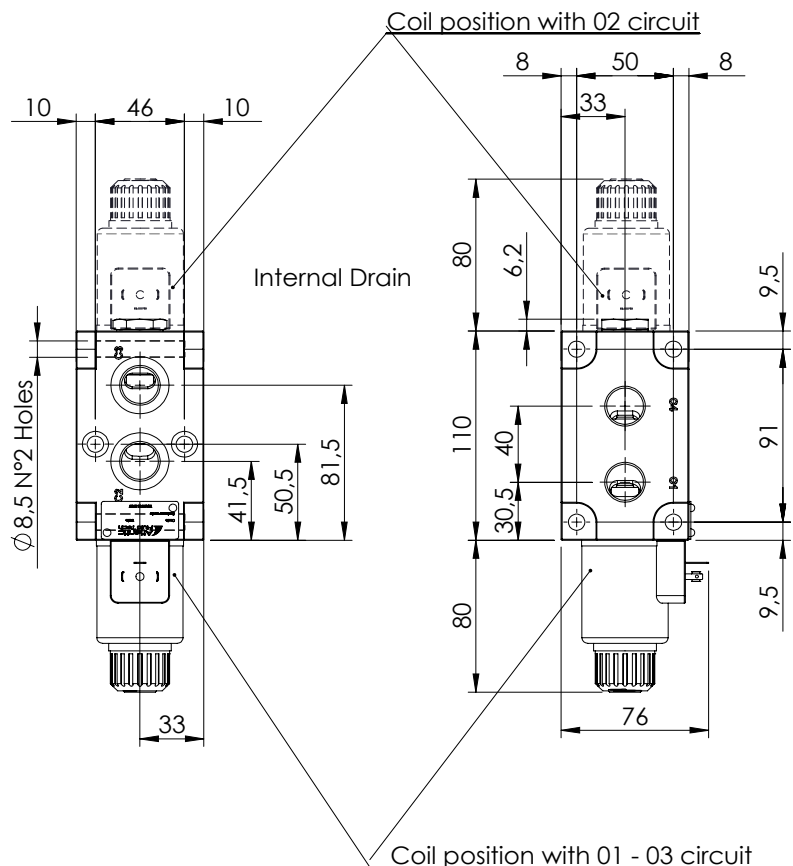
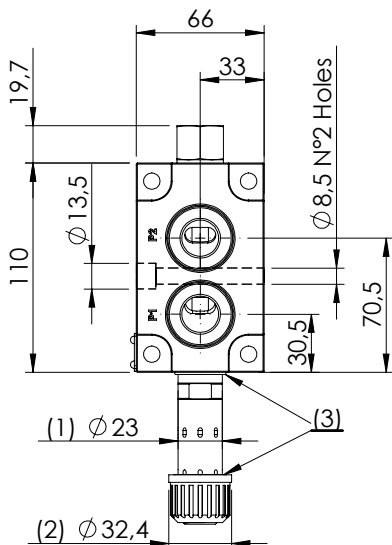


Technical data

Rated flow	l/min	90
Operating pressure	with internal drain "N"	bar 250
	with external drain "E"	bar 310
Valve weight	Kg	3,4

OVERALL DIMENSIONS

External Drain port
Hex. 24 torque 22-24 Nm



- (1) Solenoid tube hex.20 - Torque 18-22 Nm
- (2) Ring nut for coil locking - Torque 7-8 Nm
- (3) O-Ring Ø 21,95 x 1,78 - 22,22 x 2,62 (smaller one near manifold)

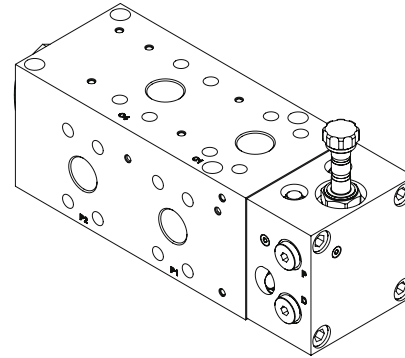
FLOW DIVERTERS

ELFB-400

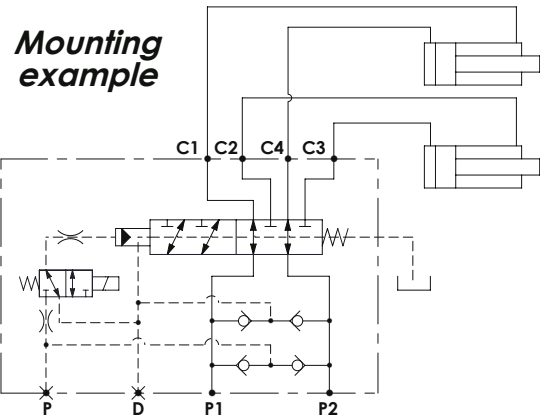
**6 WAYS SINGLE IN LINE
FLOW DIVERTERS**



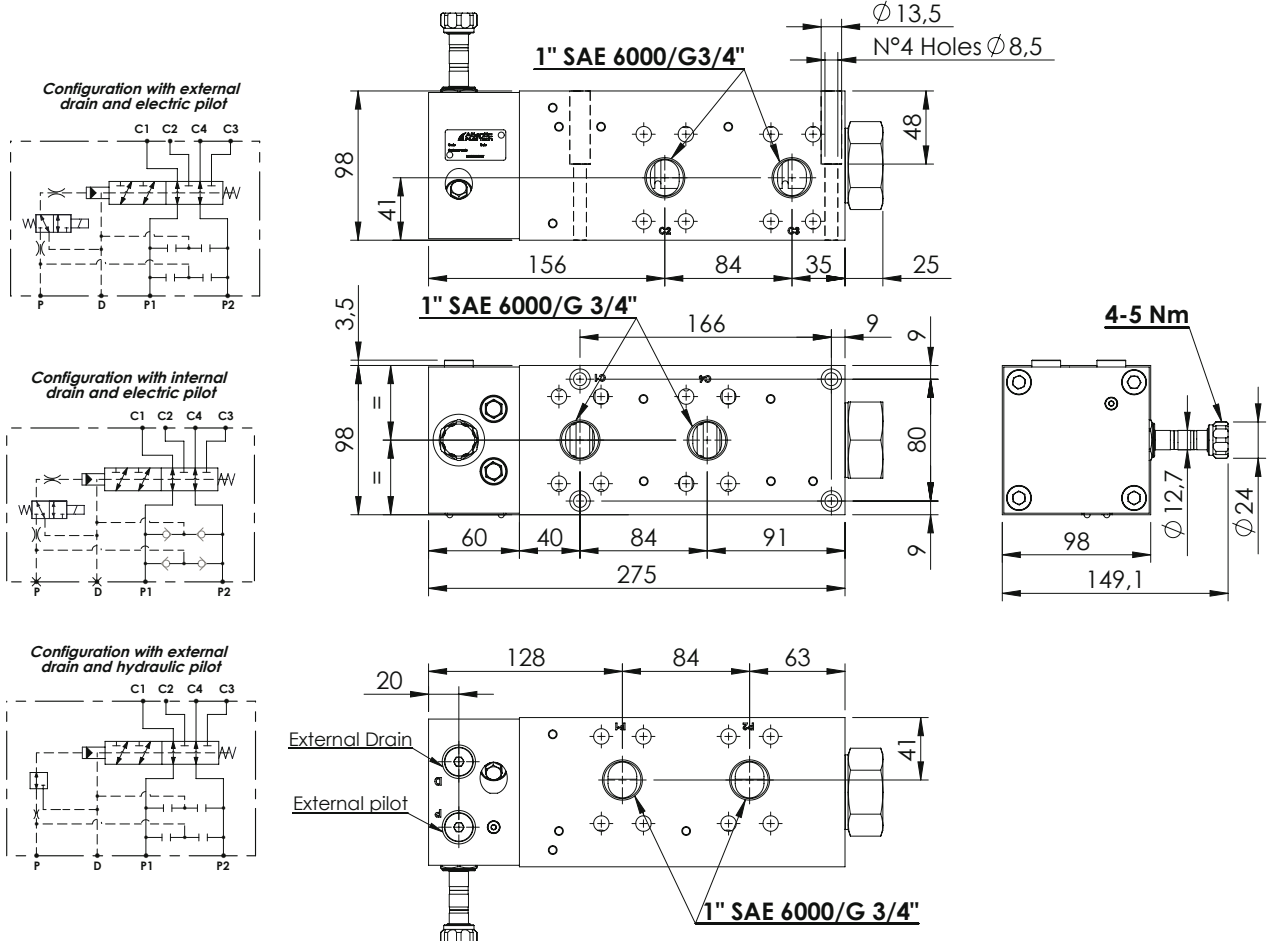
**	Circuit	Transit position
01		



Technical data			
Rated flow		l/min	400
Operating pressure	with internal drain "N"	bar	210
	with external drain "E"	bar	420
Minimum pilot pressure		bar	20
Valve weight		Kg	17,2
Standard Ports		1" SAE 6000	



OVERALL DIMENSIONS

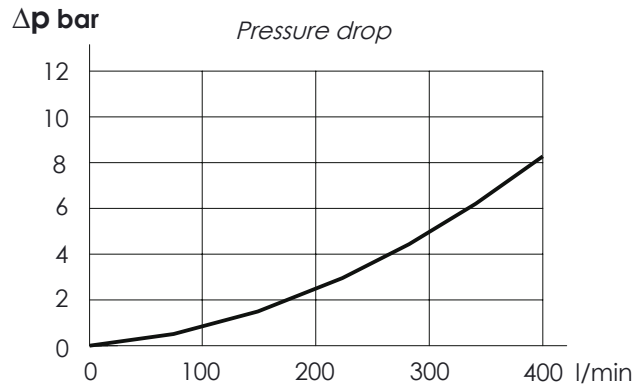
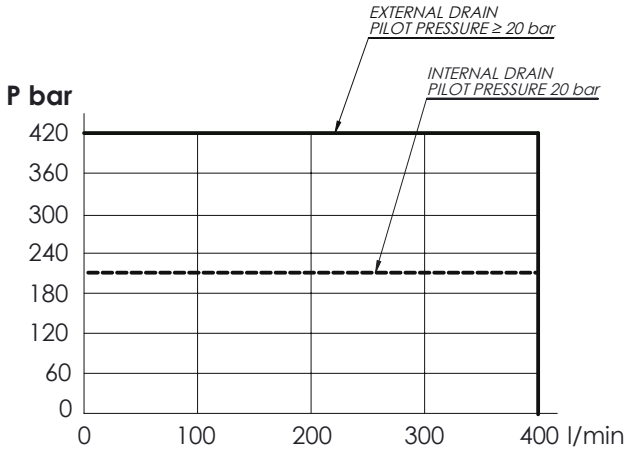


Characteristic curves

With pressure and flow in P1 or P2 and C4 and C1 without pressure



Maximum performance



* OPERATED	Circuit
H Hydraulic 	
E Electric 	
Max. pilot pressure with external drain: 250 bar	

* DRAIN	Circuit
N Internal	
E External	

PORTS		
***	Main (C)	Drain (D) Pilot (P)
S10 G34	1" SAE 6000 G3/4"	1/4" Gas
Special port sizes available		

V - Seals in VITON

CIRCUIT

ELFB - 400 - * S F * - 01 - * - * ** ***

* Voltage (V)	Resistance (Ω) ± 7%	Power (W)	Current (A)	
-	Without coil			
A	12 DC	7,2	20	1,67
B	24 DC	28,7	20	0,84
Special voltages available on request				

* COIL	Type	Protection class
-	Without coil	
HR	DIN 43650 - ISO 4400 Class H	M7 IP65
AJ	AMP JUNIOR Class H	M7 IP65
DT	DEUTSCH DT04-2P-L Class H	M7 IP69

SECTION 18

MODULAR VALVES FOR CETOP

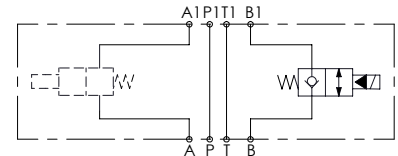
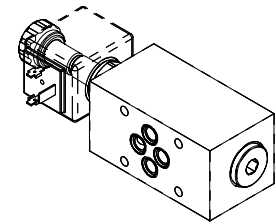
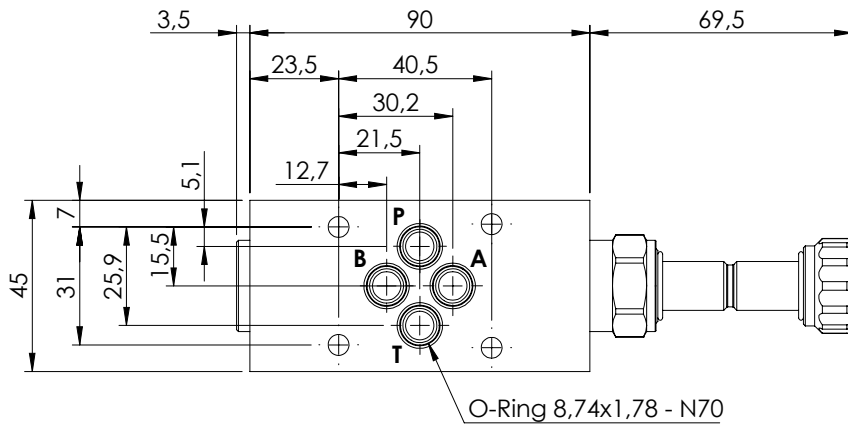


Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	BNND-040-LE	Left version	40	210	Flanged	Cetop 3	18.01.010
	BNND-040-LE	Right version	40	210	Flanged	Cetop 3	18.01.010
	BNFN-040-NT	Pilot operated, cetop 3	40	210	Flanged	Cetop 3	18.02.020
	KPLN-030-DPNA	Direct acting, cetop 3	30	210	Flanged	Cetop 3	18.03.030
	KPLN-030-DPNA	Direct acting, poppet type, subplate cetop 3	30	350	Flanged	Cetop 3	18.04.040
	KPLN-080-DPNA	Direct acting, poppet type, subplate cetop 5	80	350	Flanged	Cetop 5	18.04.050
	KPLT-030-DPNA	Direct acting, compensated	30	210	Flanged	Cetop 3	18.05.060
	MBSN-060-ZTNR	Single acting, cetop 3	60	250	Flanged	Cetop 3	18.06.070
	MBSN-060-ATNR	Single acting, cetop 3	60	350	Flanged	Cetop 3	18.06.080
	MBST-100-ATNR	Single acting, cetop 5	100	250	Flanged	Cetop 5	18.07.090
	MBDN-030-LTNT	Double acting, cetop 3	30	210	Flanged	Cetop 3	18.08.100
	MBDN-060-ZTNR	Double acting, cetop 3	60	210	Flanged	Cetop 3	18.08.110
	MBDN-060-ATNR	Double acting, cetop 3	60	350	Flanged	Cetop 3	18.08.120
	MBDN-100-ZTNR	Double acting, cetop 5	100	350	Flanged	Cetop 5	18.08.130
	MBDP-060-ZTNR	Double acting, cetop 3	60	210	Flanged	Cetop 3	18.10.140
	MBDT-100-ATNR	Double acting, cetop 5	100	350	Flanged	Cetop 5	18.09.150

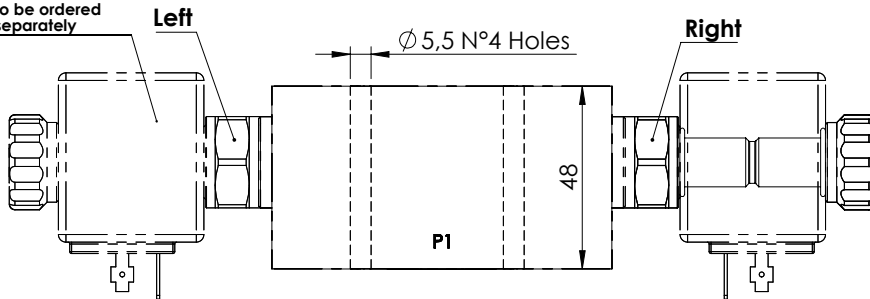
MODULAR VALVE FOR CETOP

BNND-040-LE

CETOP 3

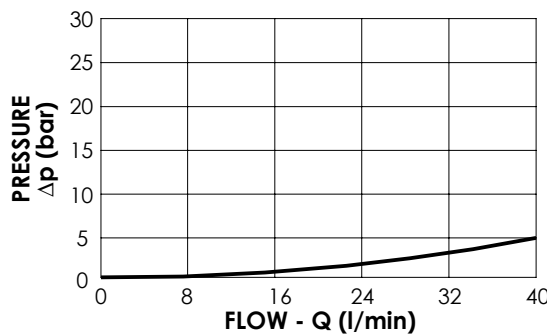


Coil type M7
not included and
to be ordered
separately



SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	40 l/min
Cavity:	Aluminium
Weight:	0,61 kg
Coil type:	M7



NOTES

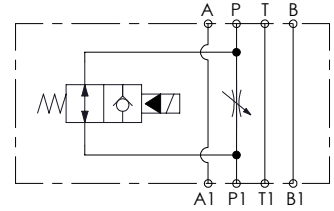
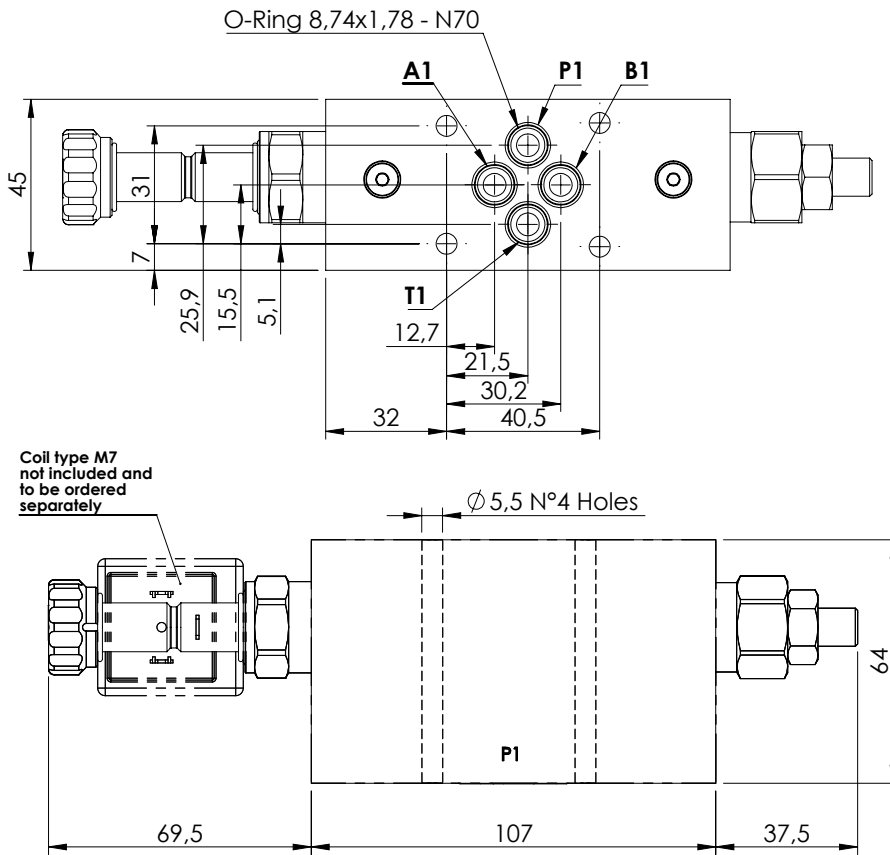
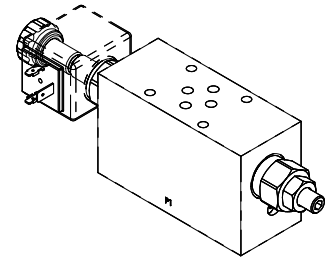
ORDERING CODES

Quick code	Description	Main ports size	Version
BD000034	BNND-040-LE-N06-N210-R	A,B,P,T: CETOP 3	Right
BD000119	BNND-040-LE-N06-N210-L	A,B,P,T: CETOP 3	Left

MODULAR VALVE FOR CETOP

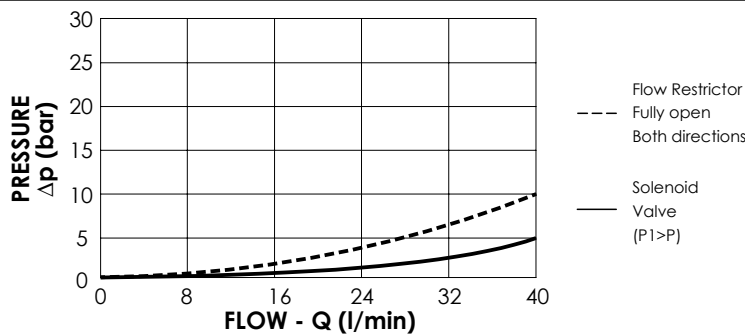
BNFN-040-NT

CETOP 3



SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	40 l/min
Manifold:	Aluminium
Weight:	1 kg
Coil type:	M7



NOTES

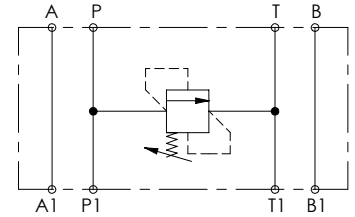
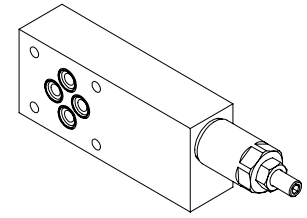
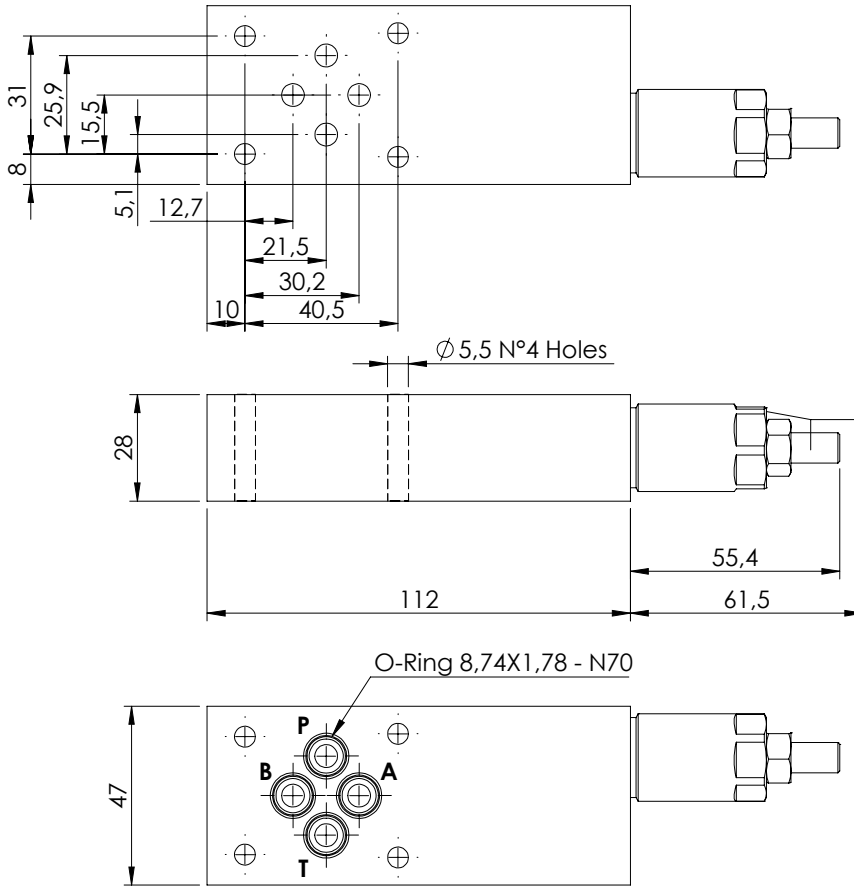
ORDERING CODES

Quick code	Description	Main ports size	
BF000004	BNFN-040-NT-N06-N210	A,B,P,T: CETOP 3	

MODULAR VALVE FOR CETOP

KPLN-030-DPNA

CETOP 3

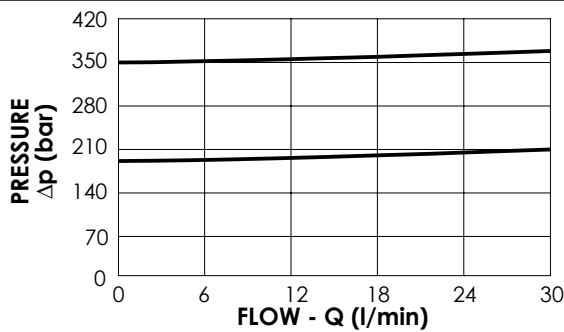
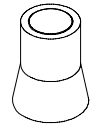


SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	30 l/min
Manifold:	Aluminium
Weight:	0,52 kg

SEALING CAP

Ordering code:
AT000020



NOTES

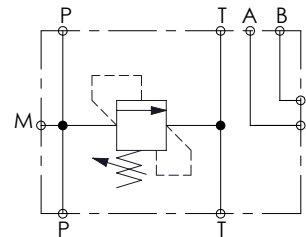
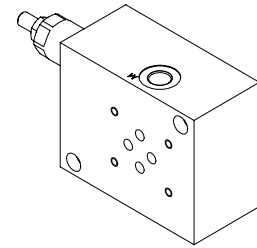
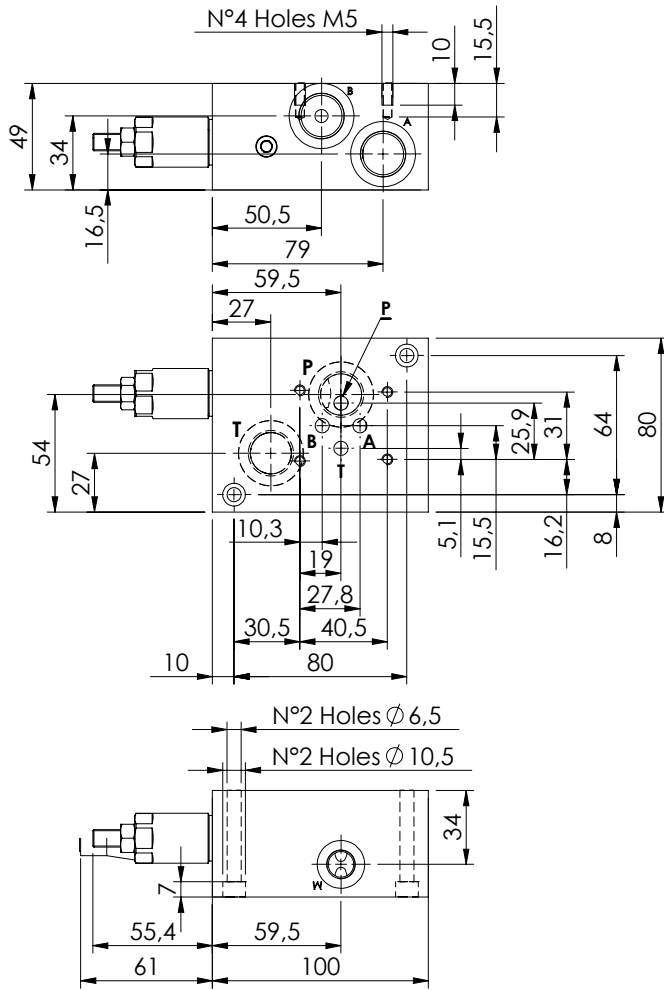
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjustm. range (bar)	Pressure increase (bar/turn)
KP000170	KPLN-030-DPNA-HN-N06-N350	A,B,P,T: CETOP 3	350	100-350	91
KP000112	KPLN-030-DPNA-HN-N06-N200	A,B,P,T: CETOP 3	200	50-210	42

MODULAR VALVE FOR CETOP

KPLN-030-DPNA

**CETOP 3
SUBPLATE**

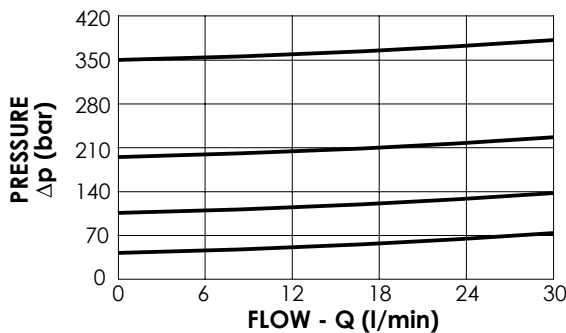
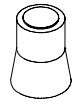


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	30 l/min
Manifold:	Aluminium
Weight:	1,04 kg

SEALING CAP

Ordering code:
AT000020



NOTES

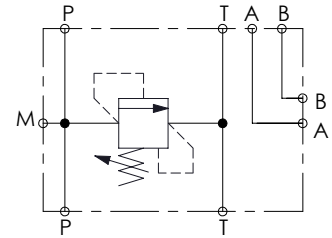
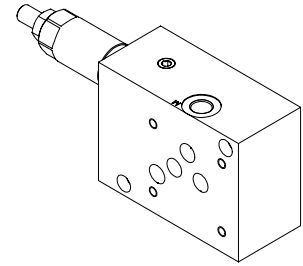
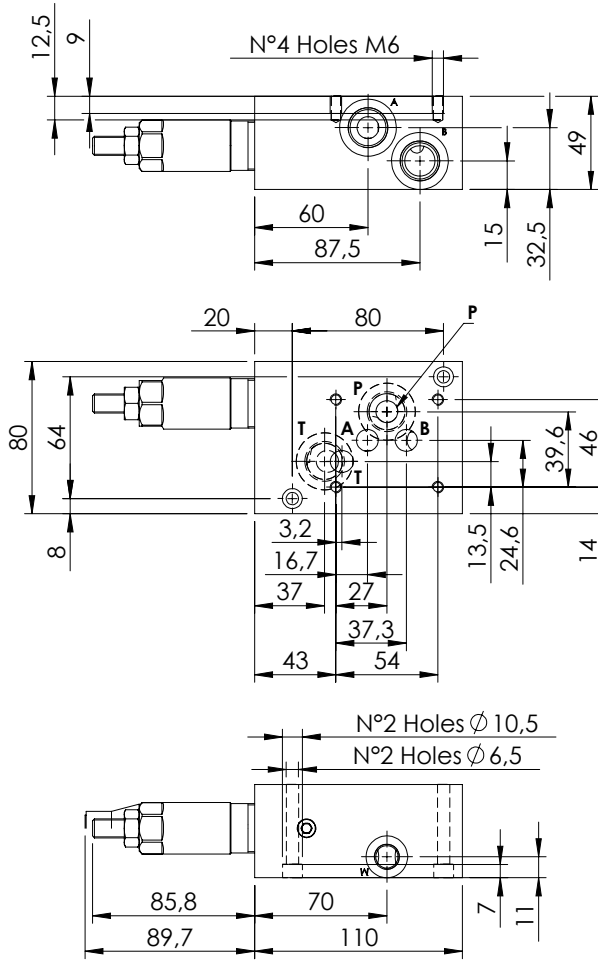
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjustm. range (bar)	Pressure increase (bar/turn)
KP000071	KPLN-030-DPNA-HN-N06-N350	A,B,P,T : CETOP 3 A,B,P,T : G 1/2" ; M: G1/4"	350	100-350	91
KP000072	KPLN-030-DPNA-HN-N06-N200	A,B,P,T : CETOP 3 A,B,P,T : G 1/2" ; M: G1/4"	200	50-210	42
KP000073	KPLN-030-DPNA-HN-N06-N100	A,B,P,T : CETOP 3 A,B,P,T : G 1/2" ; M: G1/4"	100	30-100	20
KP000074	KPLN-030-DPNA-HN-N06-N050	A,B,P,T : CETOP 3 A,B,P,T : G 1/2" ; M: G1/4"	50	5-50	10

MODULAR VALVE FOR CETOP

KPLN-080-DPNA

**CETOP 5
SUBPLATE**

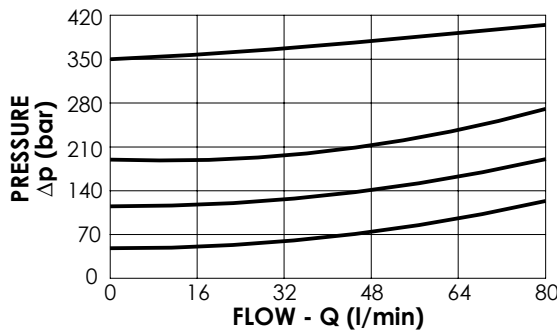
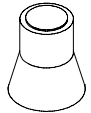


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	80 l/min
Manifold:	Aluminium
Weight:	1,26 kg

SEALING CAP

Ordering code:
AT000021



NOTES

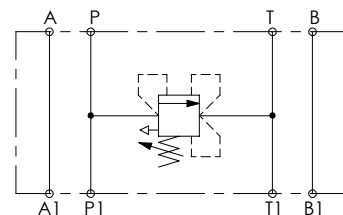
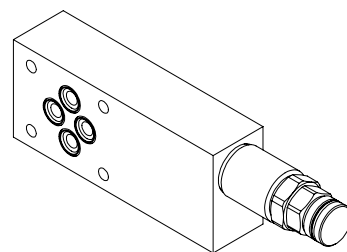
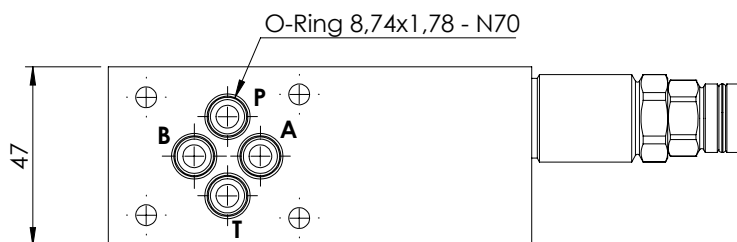
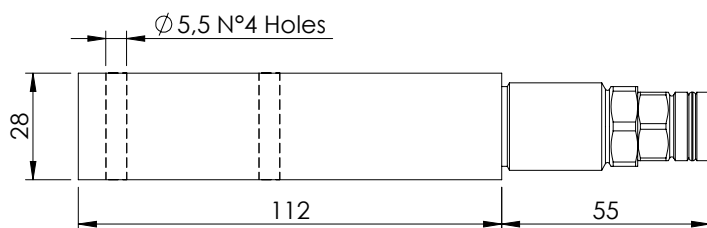
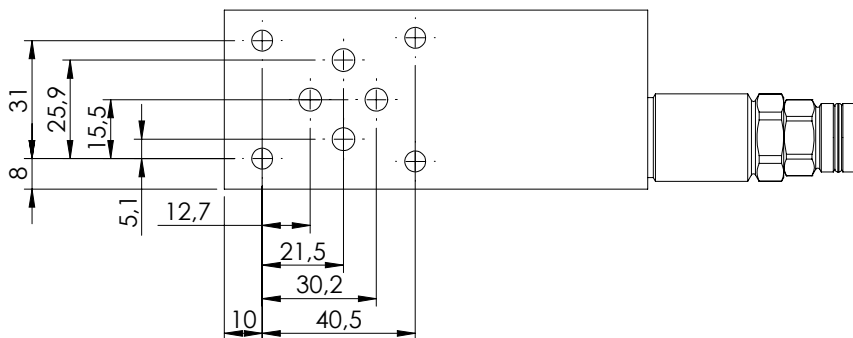
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjustm. range (bar)	Pressure increase (bar/turn)
KP000075	KPLN-080-DPNA-HN-N10-N350	A,B,P,T: CETOP 5 A,B,P,T: G 1/2" ;M: G1/4"	350	100-350	42
KP000076	KPLN-080-DPNA-HN-N10-N200	A,B,P,T: CETOP 5 A,B,P,T: G 1/2" ;M: G1/4"	200	60-210	24
KP000077	KPLN-080-DPNA-HN-N10-N100	A,B,P,T: CETOP 5 A,B,P,T: G 1/2" ;M: G1/4"	100	25-100	13
KP000102	KPLN-080-DPNA-HN-N10-N050	A,B,P,T: CETOP 5 A,B,P,T: G 1/2" ;M: G1/4"	50	5-50	9

MODULAR VALVE FOR CETOP

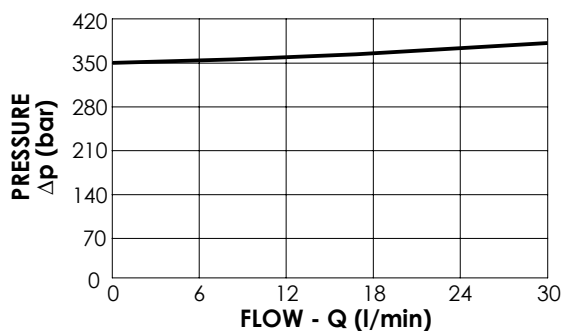
KPLT-030-DPNA

CETOP 3



SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	30 l/min
Manifold:	Aluminium
Weight:	0,54 kg



NOTES

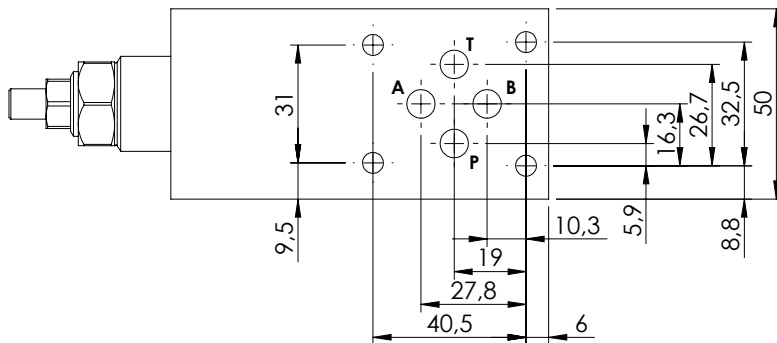
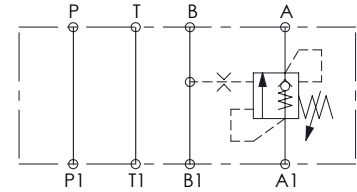
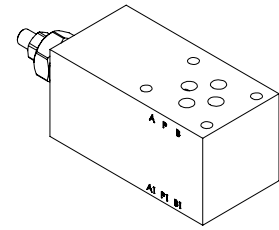
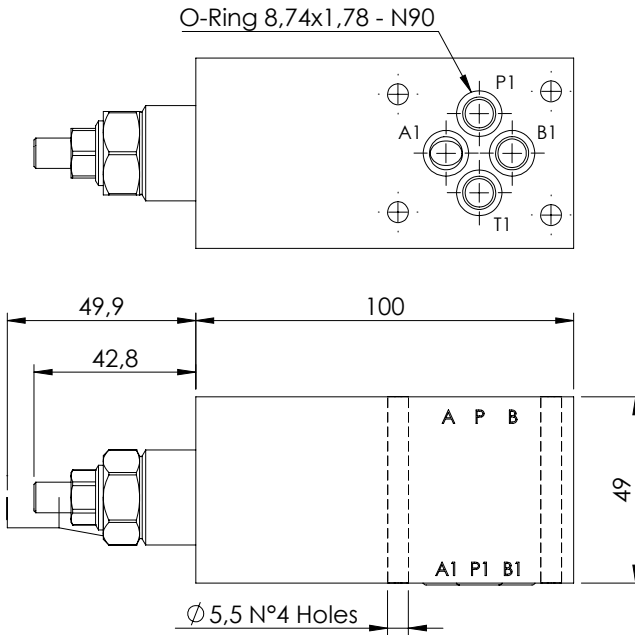
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjustm. range (bar)	Pressure increase (bar/turn)
KP000171	KPLT-030-DPNA-HN-N06-N350	A,B,P,T: CETOP 3	350	100-350	91

MODULAR VALVE FOR CETOP

MBSN-060-ZTNP

SINGLE ACTING
CETOP 3

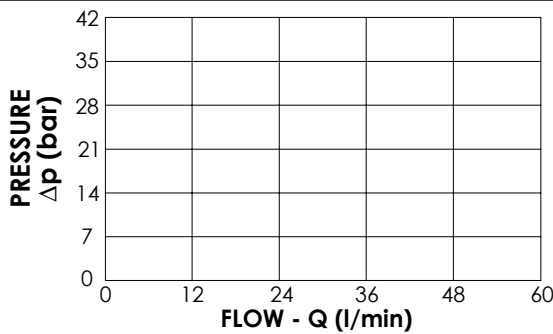
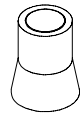


SPECIFICATIONS

Max. operating pressure:	250 bar
Rated flow:	60 l/min
Manifold:	Aluminium
Weight:	724,4 g

SEALING CAP

Ordering code:
AT000020



NOTES

Setting: at least 1.3 times the load induced pressure

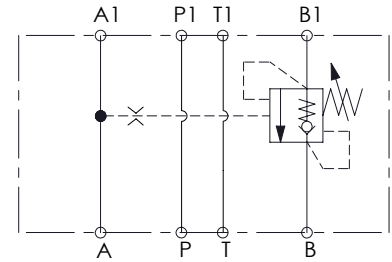
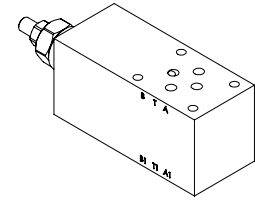
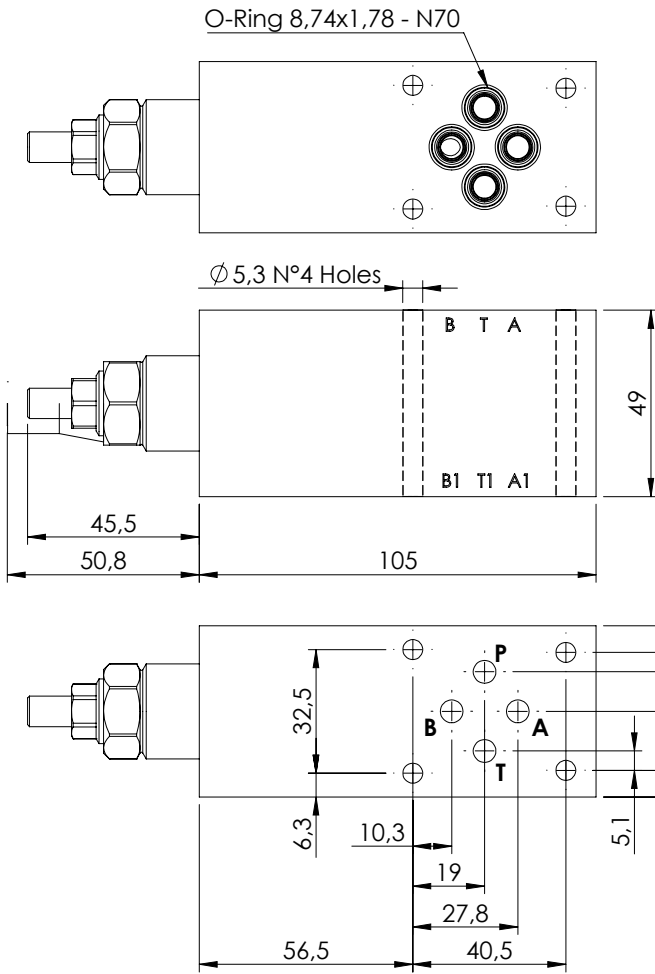
ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000923	MBSN-060-ZTNP-01-N06-N250	1:0	A,B,P,T: CETOP 3	25	3-30	5

CETOP AND MODULAR VALVE

MBSN-060-ARNR

SINGLE ACTING
CETOP 3

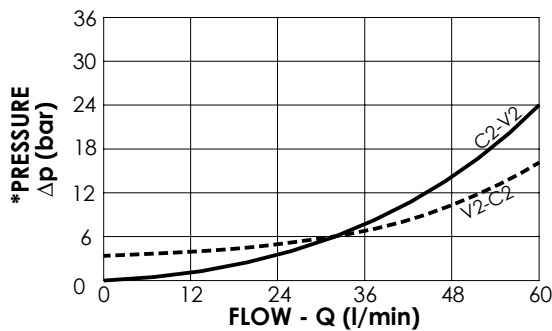
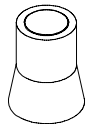


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	60 l/min
Manifold:	Steel
Weight:	1,78 kg

SEALING CAP

Ordering code:
AT000020



NOTES

Setting: at least 1.3 times the load induced pressure

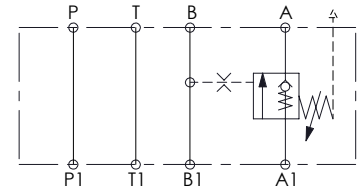
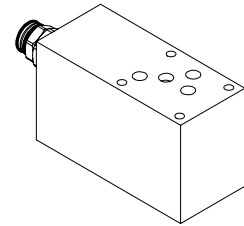
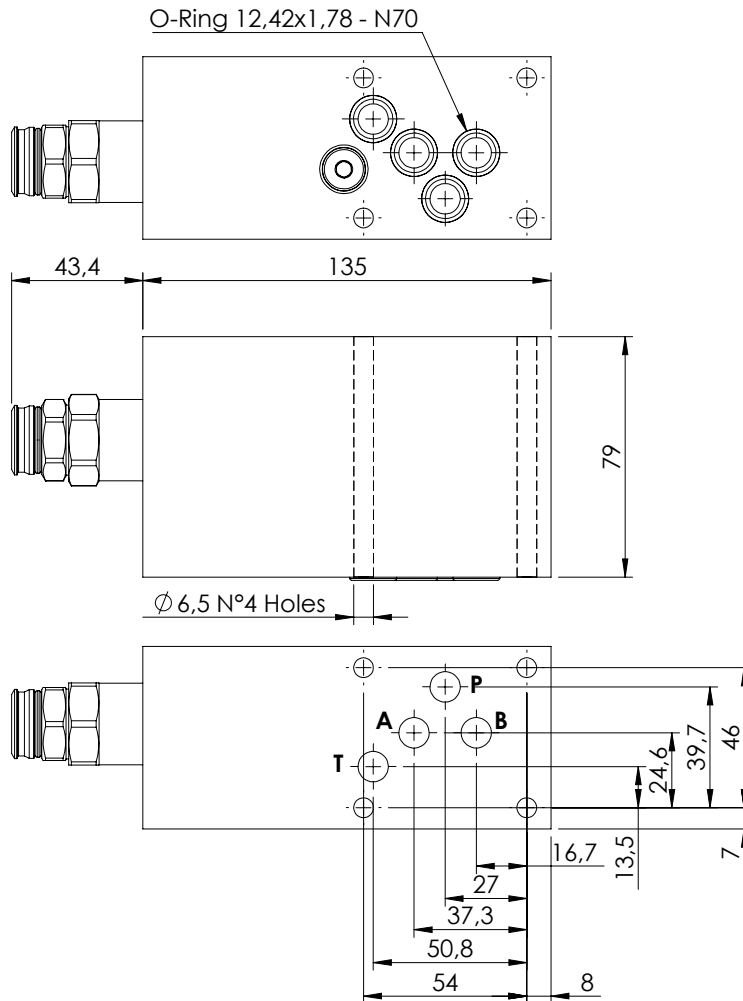
ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000886	MBSN-060-ATNR-04-N06-N350	4,2:1	A,B,P,T: CETOP 3	350	100-350	139

MODULAR VALVE FOR CETOP

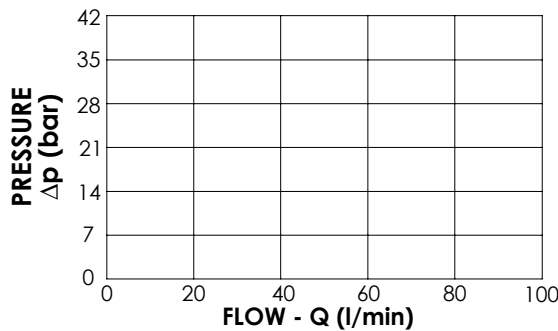
MBST-100-ZTNP

SINGLE ACTING
CETOP 5



SPECIFICATIONS

Max. operating pressure:	250 bar
Rated flow:	100 l/min
Manifold:	Aluminium
Weight:	1751,3 g



NOTES

Setting: at least 1.3 times the load induced pressure

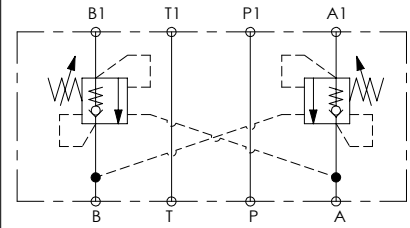
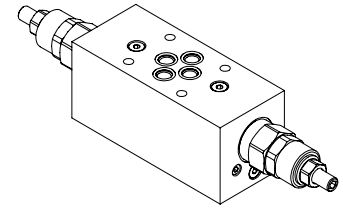
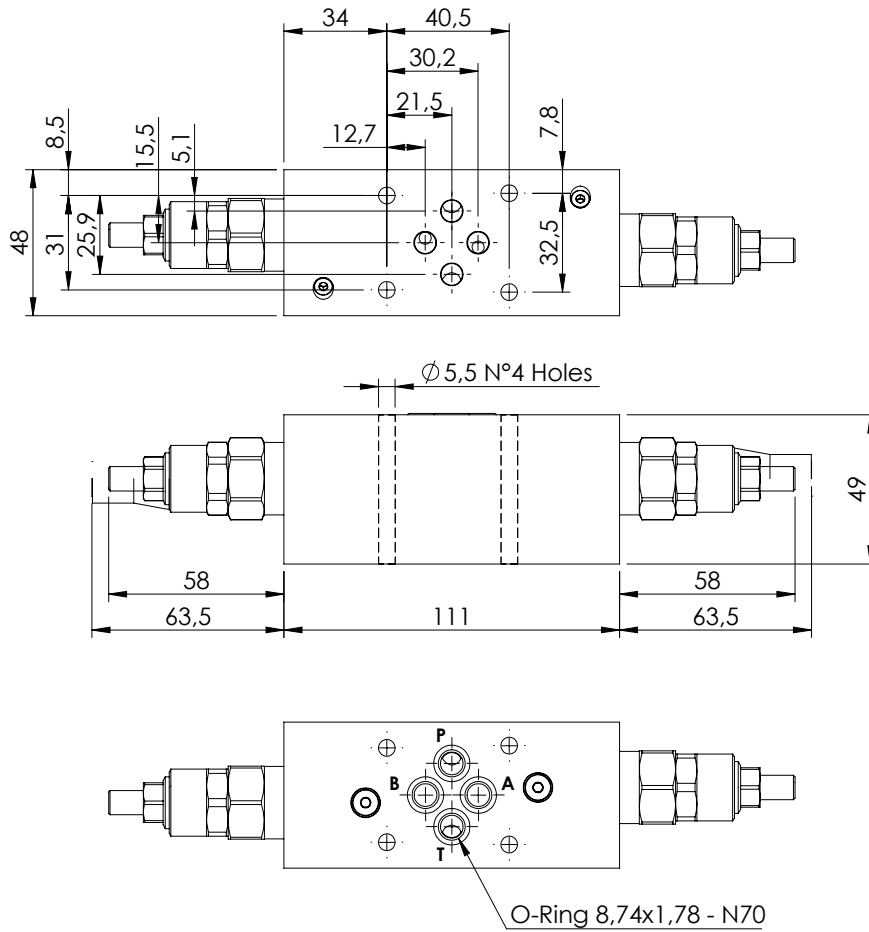
ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000924	MBST-100-ZTNP-01-T10-N250	1:0	A,B,P,T: CETOP 5	10	3-25	8

MODULAR VALVE FOR CETOP

MBDN-030-LTNR

DOUBLE ACTING
CETOP 3

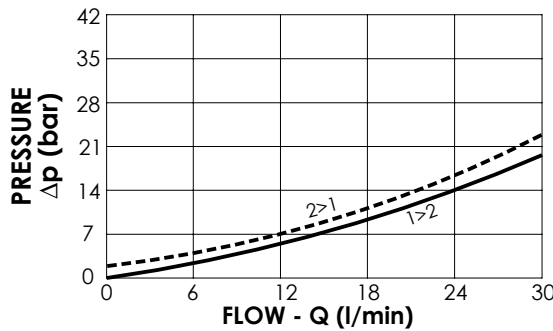
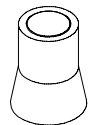


SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	30 l/min
Manifold:	Aluminium
Weight:	1 kg

SEALING CAP

Ordering code:
AT000020



NOTES

Setting: at least 1.3 times the load induced pressure

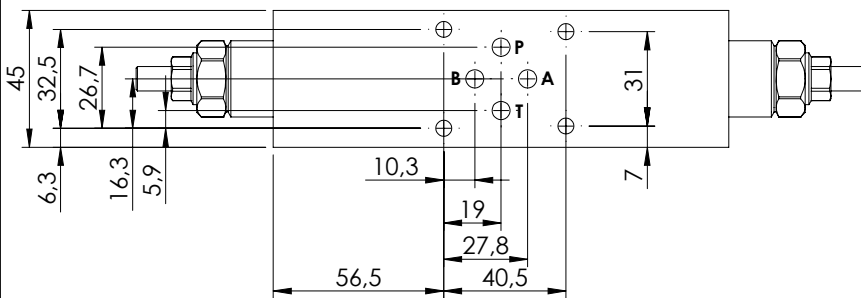
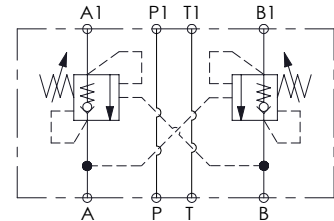
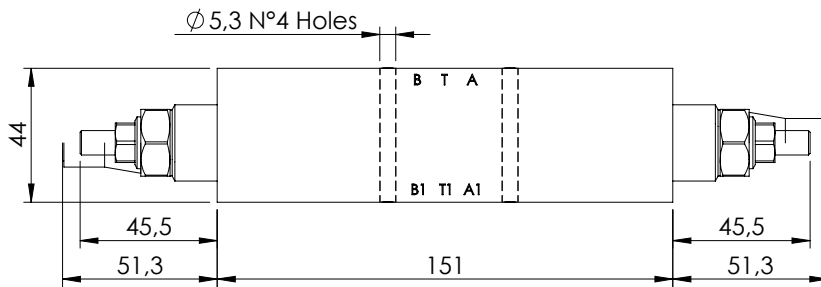
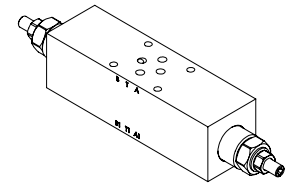
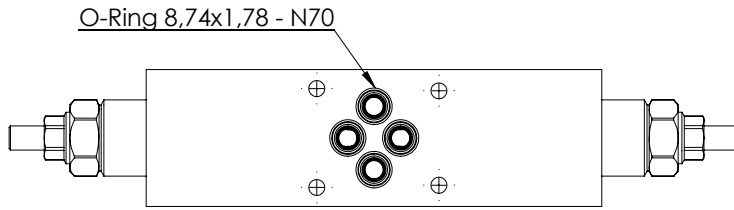
ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000917	MBDN-030-LTNR-04-N06-N210	4:1	A,B,P,T: CETOP 3	200	70-210	93,5

MODULAR VALVE FOR CETOP

MBDN-060-ZTNR

DOUBLE ACTING
CETOP 3

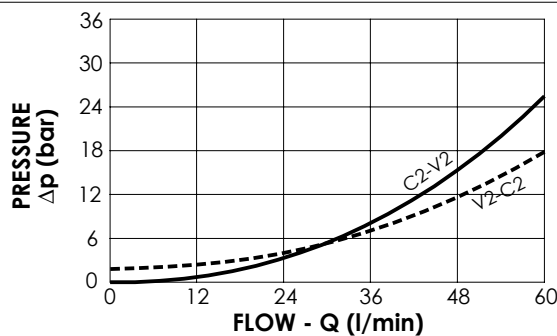
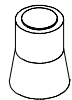


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	60 l/min
Manifold:	Aluminium
Weight:	1,03 kg

SEALING CAP

Ordering code:
AT000020



NOTES

Setting: at least 1.3 times the load induced pressure

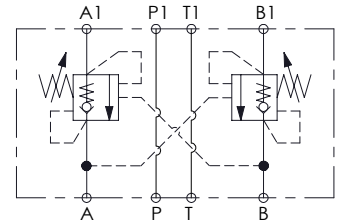
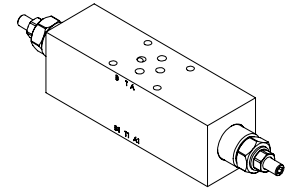
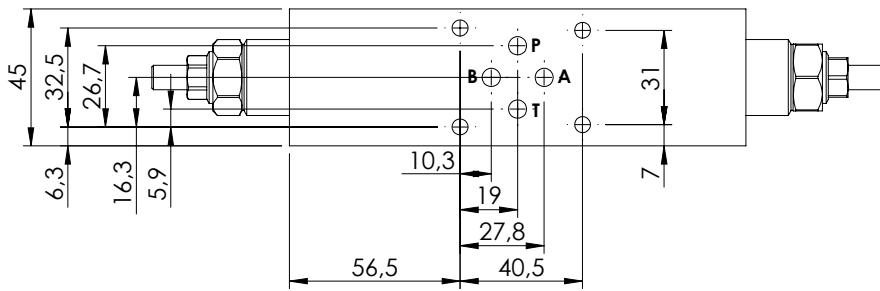
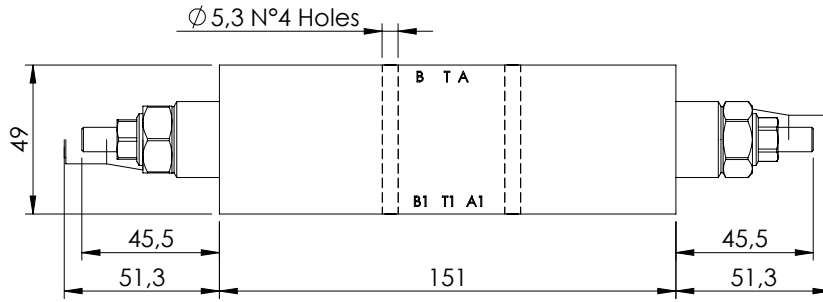
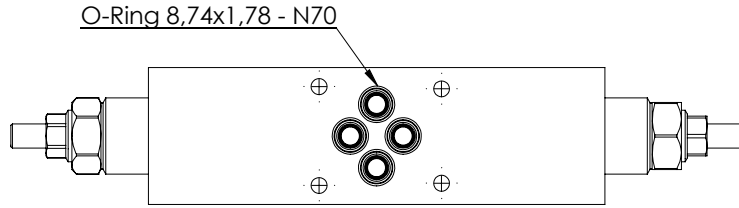
ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000517	MBDN-060-ZTNR-04-N06-N350	4,2:1	A,B,P,T: CETOP 3	350	100-350	138
MB000546	MBDN-060-ZTNR-04-N06-N200	4,2:1	A,B,P,T: CETOP 3	200	60-210	62

MODULAR VALVE FOR CETOP

MBDN-060-ATNR

**DOUBLE ACTING
CETOP 3**

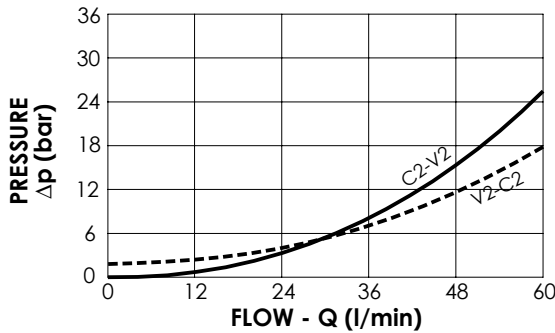
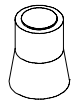


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	60 l/min
Manifold:	Steel
Weight:	2,61 kg

SEALING CAP

Ordering code:
AT000020



NOTES

Setting: at least 1.3 times the load induced pressure

ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000929	MBDN-060-ATNR-04-N06-N350	4,2:1	A,B,P,T: CETOP 3	350	100-350	138
MB000774	MBDN-060-ATNR-04-N06-N200	4,2:1	A,B,P,T: CETOP 3	200	50-210	62

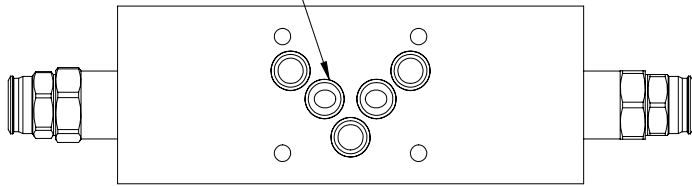
MODULAR VALVE FOR CETOP

MBDN-100-ZTNR

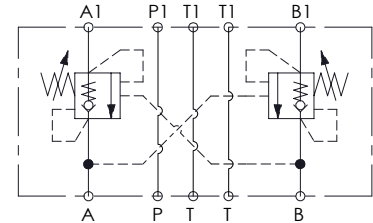
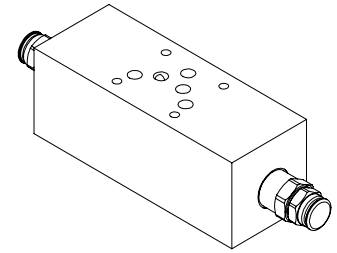
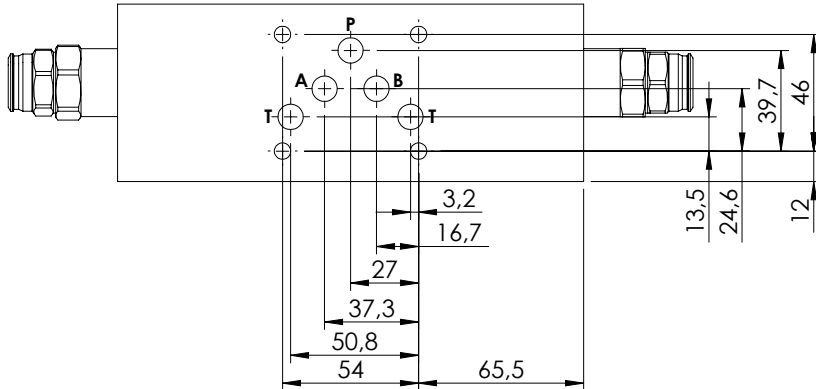
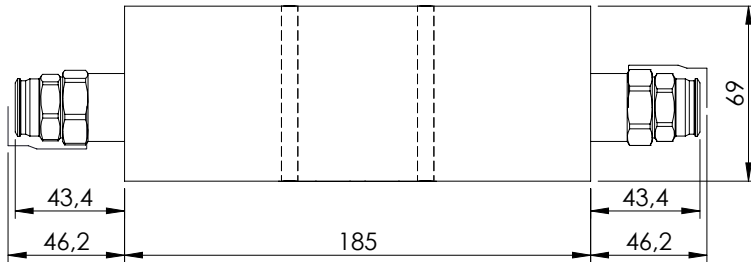
DOUBLE ACTING
CETOP 5



O-Ring 12,42x1,78 - N70



∅ 6,5 N°4 Holes

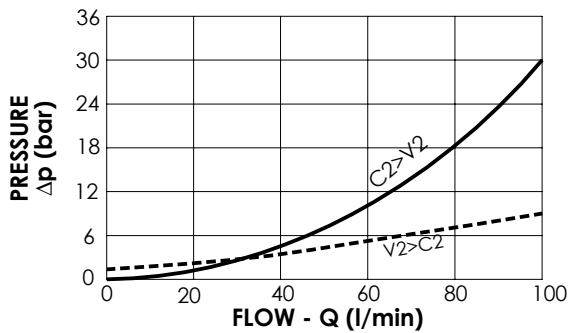
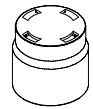


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	100 l/min
Manifold:	Aluminium
Weight:	2,64 kg

SEALING CAP

Ordering code:
PT000243



NOTES

Setting: at least 1.3 times the load induced pressure

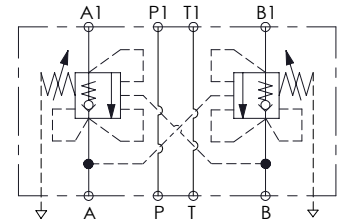
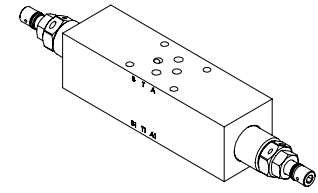
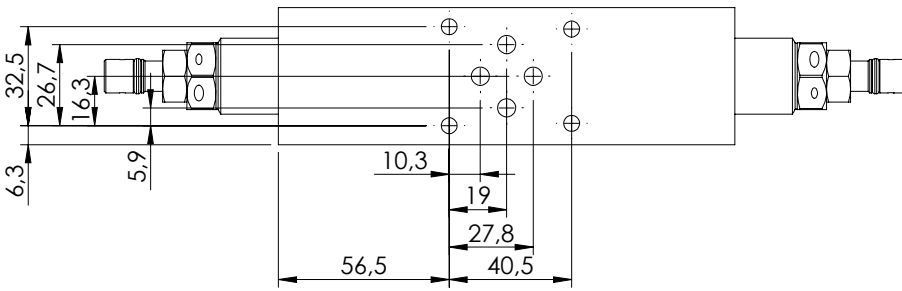
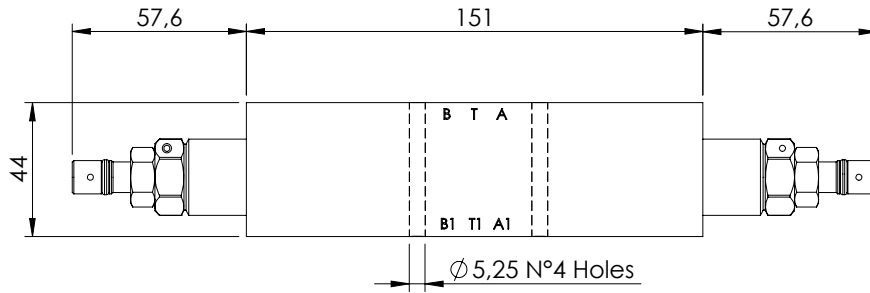
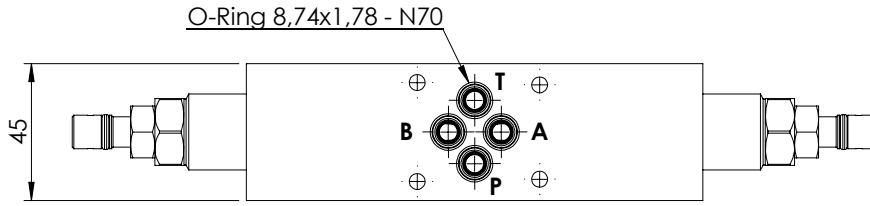
ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000916	MBDN-100-ZTNR-04-N10-N350	4:1	A,B,P,T: CETOP 5	350	100-350	118

OVERCENTRE VALVE

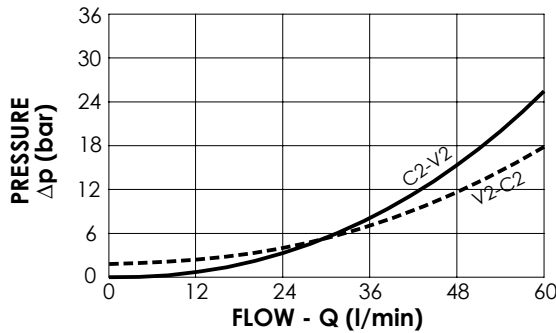
MBDP-060-ZTNR

DOUBLE ACTING
CETOP 3



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	60 l/min
Manifold:	Aluminium
Weight:	1,09 kg



NOTES

Setting: at least 1.3 times the load induced pressure

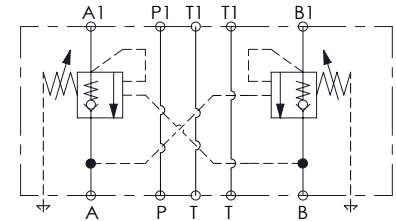
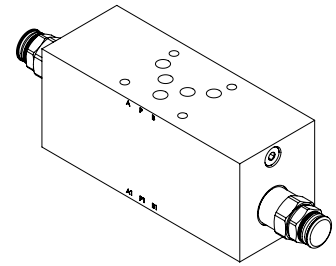
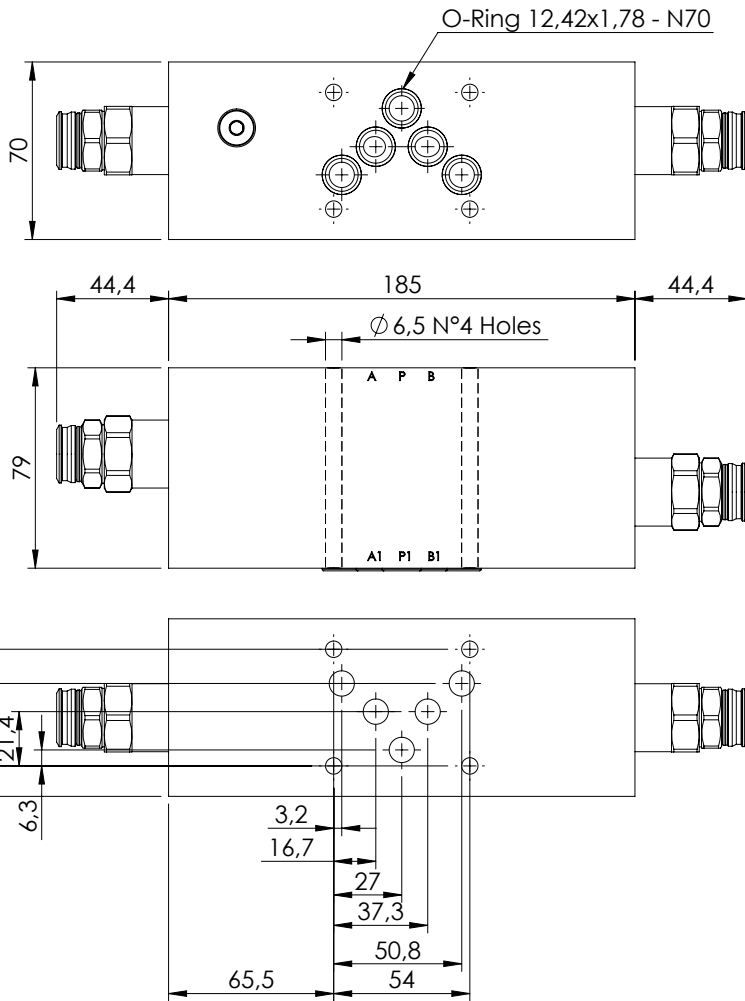
ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000454	MBDP-060-ZTNR-04-N06-N350	4,2:1	A,B,P,T: CETOP 3	350	100-350	166

MODULAR VALVE FOR CETOP

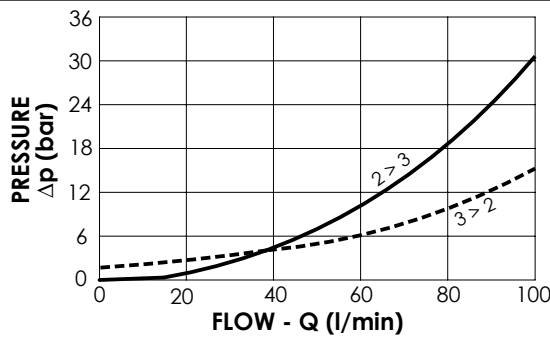
MBDT-100-ARNR

CETOP 5



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	100 l/min
Manifold:	Steel
Weight:	7,7 kg



NOTES

Setting: at least 1.3 times the load induced pressure

ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000930	MBDT-100-ATNR-04-N10-N350	3,8:1	A,B,P,T: CETOP 5	350	100-350	118

SECTION 19

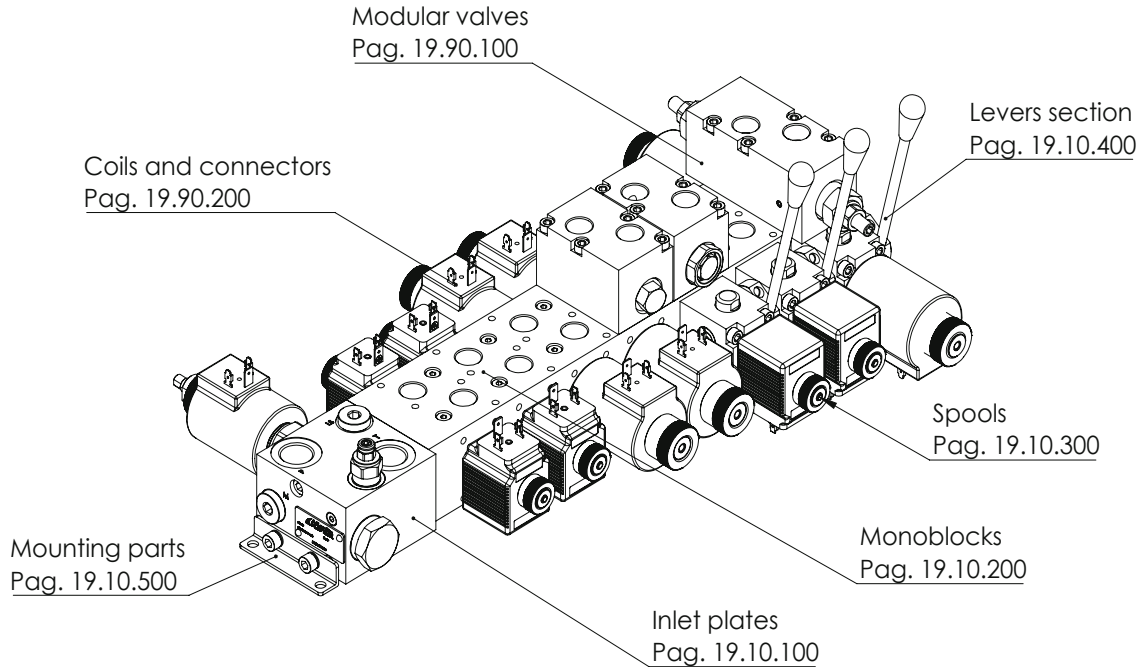
DIRECTIONAL VALVES



Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Page
	EBN	On-off or proportional	30/60	210/320	19.10.000
	EBL	Load sensing, on-off or proportional	30/60	210/320	19.20.000
	EBP	Precompensated, load sensing, on-off or proportional	30/60	210/320	19.30.000
	Accessories	-	-	-	19.90.000

EBN series

**MONOBLOCK
DIRECTIONAL VALVE
ON-OFF OR
PROPORTIONAL**



FEATURES

- Compact dimensions
- Low weight
- Custom spools
- Custom inlet blocks
- Sandwich valves for extra functions
- Cast iron monoblock and aluminum inlet block for standard applications
- High resistance cast iron monoblock and steel inlet block for high pressure systems
- Optional levers for manual operation
- No leak risk between sections
- Spools not under rod tension
- Zinc plated/anodized components for corrosion resistance

SPECIFICATION \ DESCRIPTION

MAXIMUM OPERATING PRESSURE	Steel inlet block: 320 bar (4500 PSI) Aluminium inlet block: 210 bar (3045 PSI)
MAXIMUM TANK PRESSURE	20 bar (290 PSI)
RATED FLOW	030 series: 30 l/min (7.9 GPM) 060 series: 60l/min (15.8 GPM)
COIL POWER	030 series: 26 W 060 series: 33 W
VOLTAGE	12 VDC, 24 VDC, others on request
COIL CONNECTOR	DIN43650, AMP Junior, Deutsch DT04-2P
PORTS	Inlet: G1/2", 1/2 JIS, 7/8-14 UNF-2B (SAE#10) Outlet: G3/8", 3/8 JIS, 3/4-16 UNF-2B (SAE#8)
OPERATING TEMPERATURE	NBR (ISO 1629) seals: -30, +80 °C FKM (ISO 1629) seals: -20, +110 °C
FILTRATION	ISO 4406:1999: class 19/17/14 NAS 1638: class 8
MOUNTING POSITION	No restrictions
MATERIAL	Spool body: cast iron Spool: hardened and grounded steel Inlet block: Aluminium or steel
SURFACE TREATMENT	Steel: zinc plating Aluminium: anodization

EBN series is a new directional valve that has innovative features in terms of performance, dimension, manufacturing reliability and customization. The valve consists in an inlet block flanged to a monoblock with spools. This construction gives the advantages of high flexibility in inlet block schemes, combined with the reliability and simplicity of monoblock spool valve construction, eliminating the risk of spools blocking due to overtightening of tie rods or the risk of leakage between sections. The spool monoblock is a 2 or 3 position, 4 ways, direct acting solenoid operated type. All sections have threaded ports at the top and removable plugs for tank connections to allow the installation of flanged blocks with additional functions like crossover reliefs, reliefs to tank, relief and anticavitations, counterbalance valves, P.O. checks, flow restrictors and flow regulators. All sections are equipped with standard push button override and they can be equipped with lever for manual use.

HOW ORDER IT

To order an assembled block, contact AFT sales network specifying the part numbers following page 19.90.900 path.

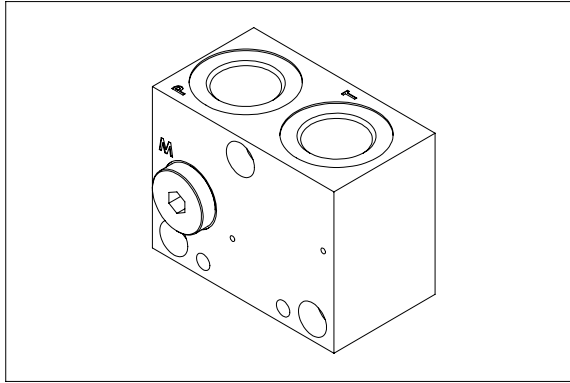
For special versions please contact AFT sales network.

To order the separate parts please refer to each catalogue page.

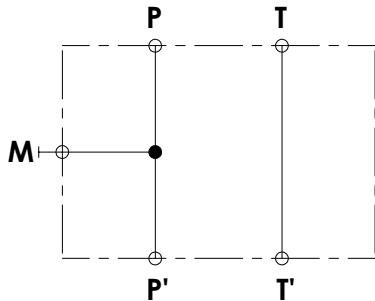
EBN series - INLET SECTION

SFNL-060-ZNNN-01

**P, T PORTS
M PORTS**



HYDRAULIC SCHEME

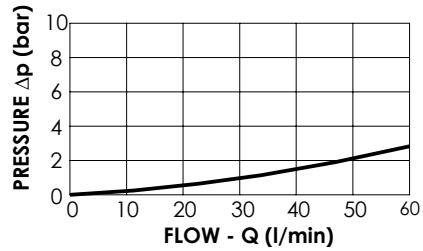


This inlet section is equipped with two thread ports (P, T) available in two different types G 1/2" or 3/4"-16 UNF plus a third threaded port M for pressure measuring available in G 1/4" or 7/16"-20.
The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,3 Kg

PRESSURE DROP



ORDERING DETAILS: SEPARATE ELEMENTS

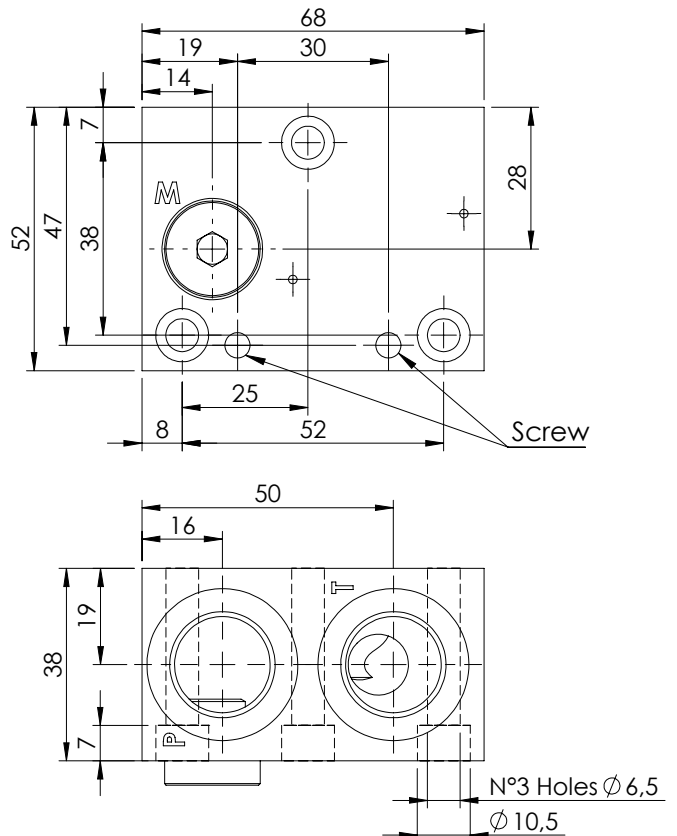
SFNL-060 - * NNN-01- * -N**

*	MATERIAL TYPE	
A	Steel zinc-plated	(320 bar)
Z	Aluminium anodized	(210 bar)

***	PORTS		
	P line	T line	M
G12	G 1/2"	G 1/2"	G 1/4"
U34	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF

QUICK CODE	
DESCRIPTION	CODE
SFNL-060-ZNNN-01-G12-N	SF000004

OVERALL DIMENSIONS

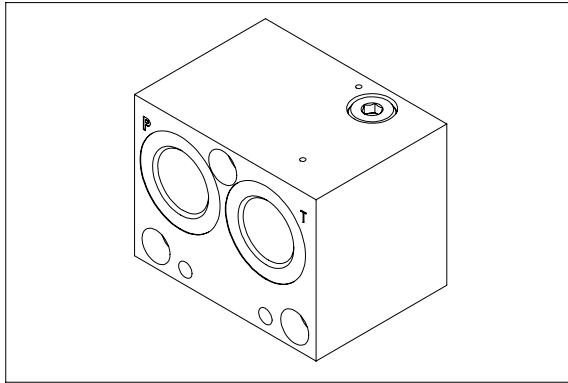


EBN series - INLET SECTION



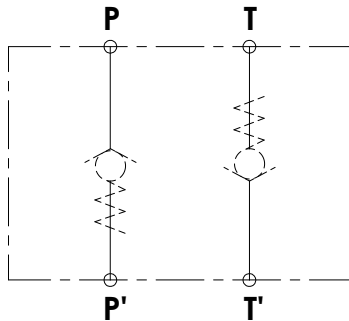
SFNL-060-ZNNN-02

CHECK VALVE OPTIONS



This inlet section is equipped with threaded ports (P, T) available in two different sizes G 1/2" or 3/4"-16 UNF, M ports is not available in this inlet section. The ports have extra threads to allow the installation of check valve on P and T ports. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

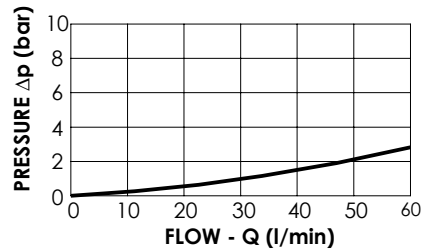
HYDRAULIC SCHEME



TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,4 Kg

PRESSURE DROP



ORDERING DETAILS: SEPARATE ELEMENTS

SFNL-060-[*]NN[*]-02-*-N**

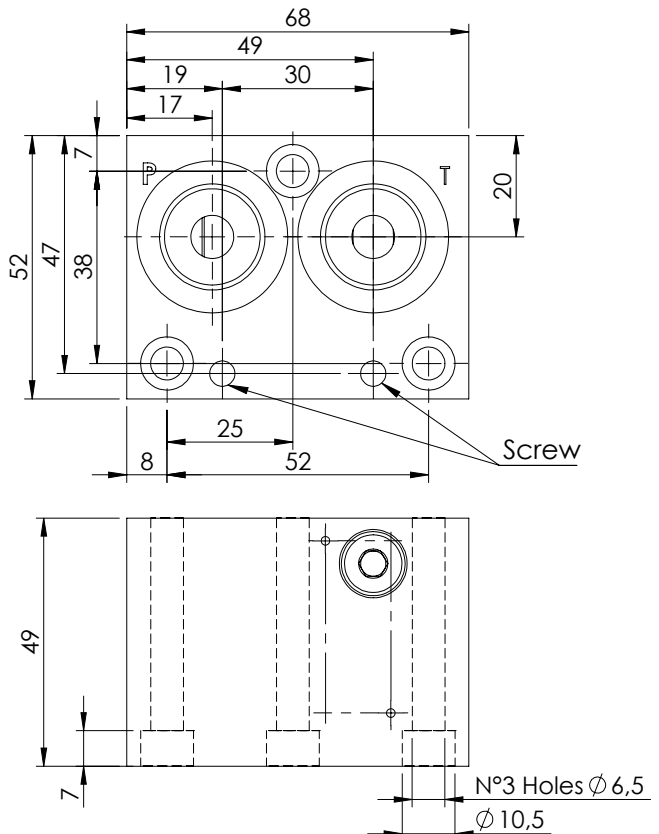
*	MATERIAL TYPE
A	Steel zinc-plated (320 bar)
Z	Aluminium anodized (210 bar)

*	CHECK VALVE OPTION
N	No check valve
D	Check valve on P e T ports
P	Check valve only P port
T	Check valve only T port

***	PORTS		
	P line	T line	M
G12	G 1/2"	G 1/2"	/
U34	3/4"-16 UNF	3/4"-16 UNF	/

QUICK CODE	
DESCRIPTION	CODE
SFNL-060-ZNNN-02-G12-N	SF000008
Check valve on P	CD000181
Check valve on T	CD000175

OVERALL DIMENSIONS

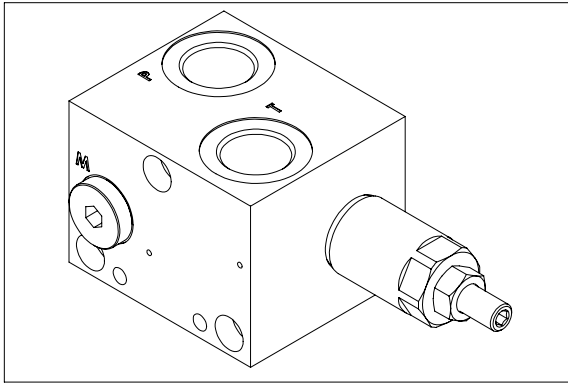


EBN series - INLET SECTION

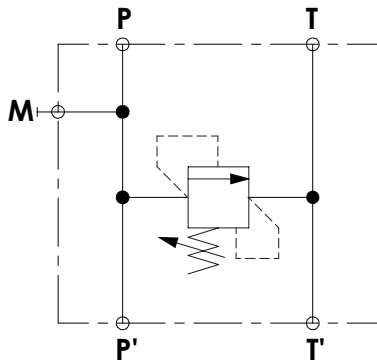


SFNL-060-ZNNN-03

**RELIEF VALVE
M PORT**



HYDRAULIC SCHEME

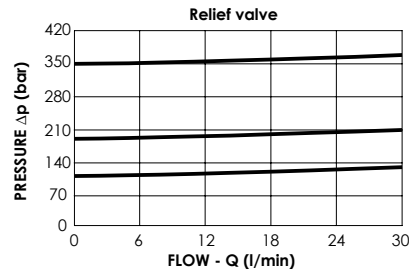


This inlet section is equipped with threaded ports (P, T) available in two different sizes G 1/2" or 3/4"-16 UNF, an M ports is available in sizes G 1/4" or 9/16-18 UNF. It is also present a with relief valve with adjustable setting, the adjustment is made by socket screw; the max flow on the relief valve is 30 l/min. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,6 Kg

PRESSURE DROP



ORDERING DETAILS: SEPARATE ELEMENTS

SFNL-060- * N * * -03- * -N**

*	MATERIAL TYPE
A	Steel zinc-plated (320 bar)
Z	Aluminium anodized (210 bar)

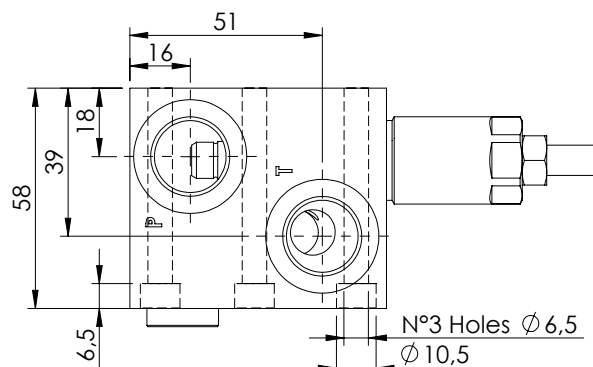
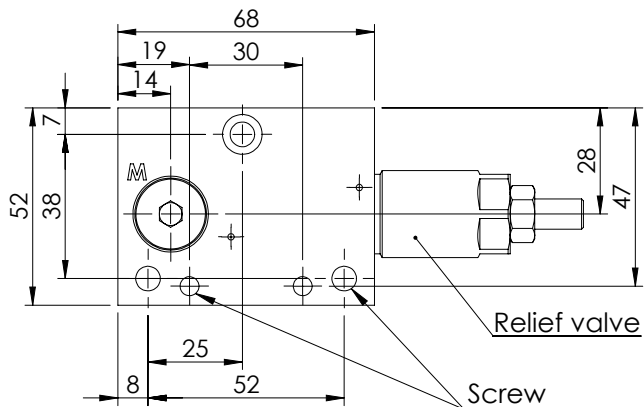
*	SETTING RANGE
N	Max setting 210 bar (CP000083)
A	Max setting 110 bar (CP000084)
B	Max setting 350 bar (CP000082)

*	ADJUSTMENT OPTION
N	Screw adjustment
V	Knob adjustment

***	PORTS		
	P line	T line	M
G12	G 1/2"	G 1/2"	G 1/4"
U34	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF

QUICK CODE	
DESCRIPTION	CODE
SFNL-060-ZNNN-03-G12-N	SF000003

OVERALL DIMENSIONS

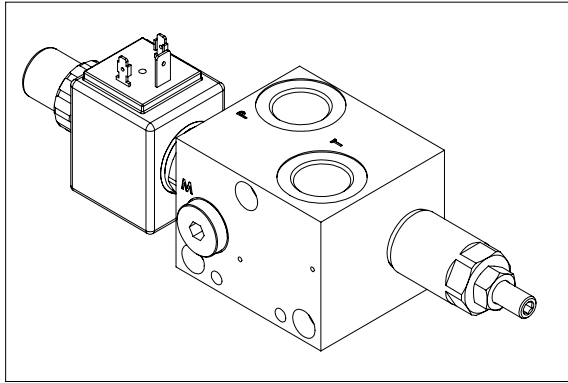


EBN series - INLET SECTION

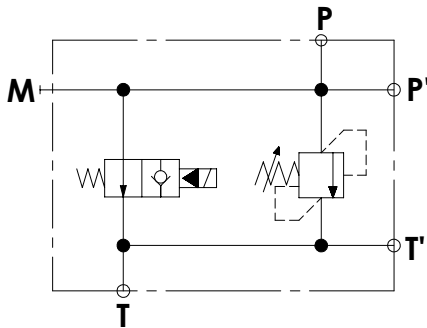


SFNL-060-ZNNN-05

RELIEF VALVE UNLOADING VALVE



HYDRAULIC SCHEME

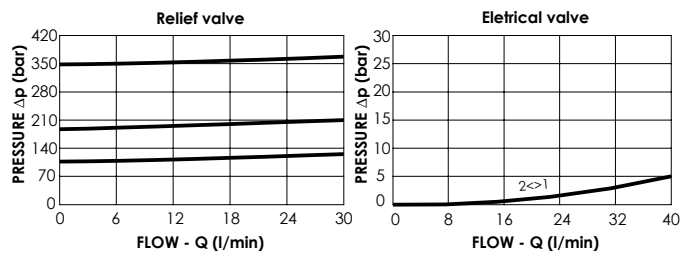


This inlet section is equipped with threaded ports (P, T) available in two different sizes G 1/2" or 3/4"-16 UNF, an M ports is available in sizes G 1/4" or 9/16-18 UNF. A with relief valve with adjustable setting protect from peak pressure; the max flow on the relief valve is 30 l/min. A solenoid valve normally open allow to unload the system and is equipped with manual override, max flow on the solenoid valve is 40 l/min. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,75 Kg

PRESSURE DROP

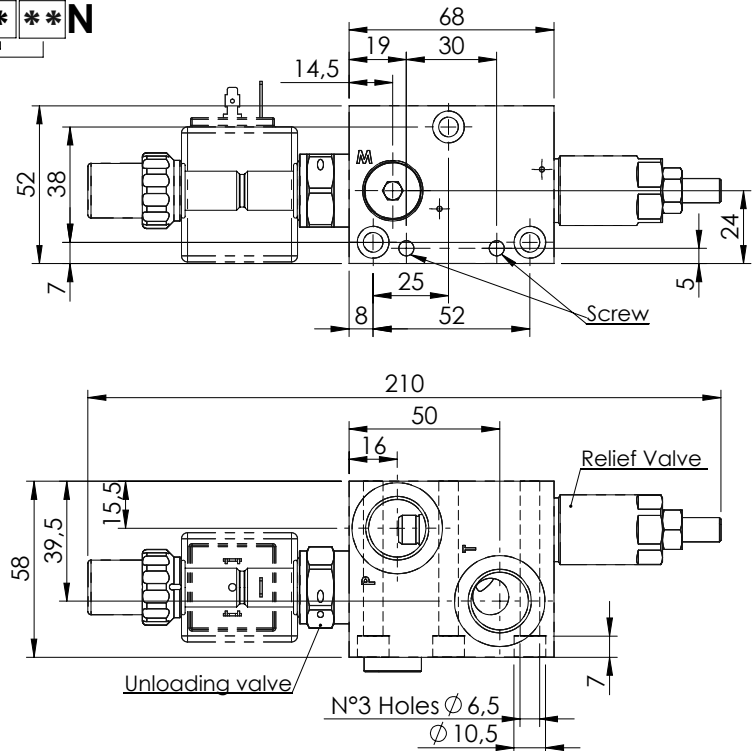


ORDERING DETAILS: SEPARATE ELEMENTS

SFNL-060-*N**-05-***-*N

*	MATERIAL TYPE	
A	Steel zinc-plated	(310 bar)
Z	Aluminium anodized	(210 bar)
*	SETTING RANGE	
N	Max setting	210 bar (CP000083)
A	Max setting	110 bar (CP000084)
B	Max setting	350 bar (CP000082)
*	ADJUSTMENT OPTION	
N	Screw adjustment	
V	Knob adjustment	
***	PORTS	
	P line	T line M
G12	G 1/2"	G 1/2" G 1/4"
U34	3/4"-16 UNF	3/4"-16 UNF 7/16"-20 UNF
*	VOLTAGE	
	no coils	
A	12 V dc	
B	24 V dc	
**	COILS TYPE	
	no coils	
HR	Hirschmann (ISO 4400 DIN 43650)	
DT	Deutsch (DT04-2P)	
AJ	Amp junior (AJ type)	
	QUICK CODE	
	DESCRIPTION	CODE
	SFNL-060-ZNNN-05-G12-N	SF000002
	Unloading valve	CE000868

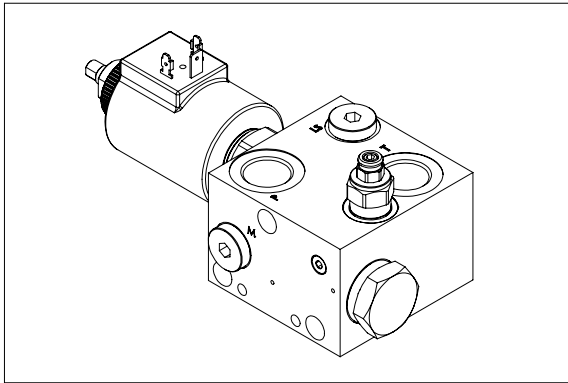
OVERALL DIMENSIONS



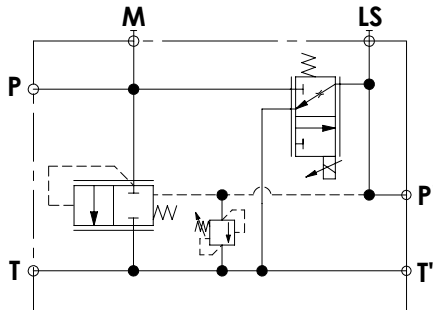
EBN series - INLET SECTION

SFNL-060-ZDNN-07

PROPORTIONAL COMPENSATED FLOW REGULATOR



HYDRAULIC SCHEME

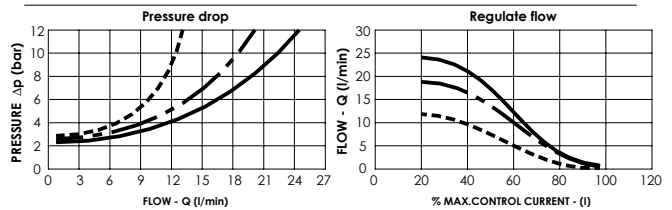


This inlet section is equipped with threaded ports (P, T) available in two different sizes G 1/2" or 3/4"-16 UNF, an M ports is available in sizes G 1/4" or 9/16-18 UNF; an LS port allows to measure of the load pressure.
 A proportional flow regulator with external flow compensator controls the metering, the maximum flow is 40 l/min; when not energized the compensator is unloading the flow.
 A relief valve with adjustable setting protect from peak of pressure.
 The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,75 Kg

PROPORTIONAL FLOW REGULATOR CURVES

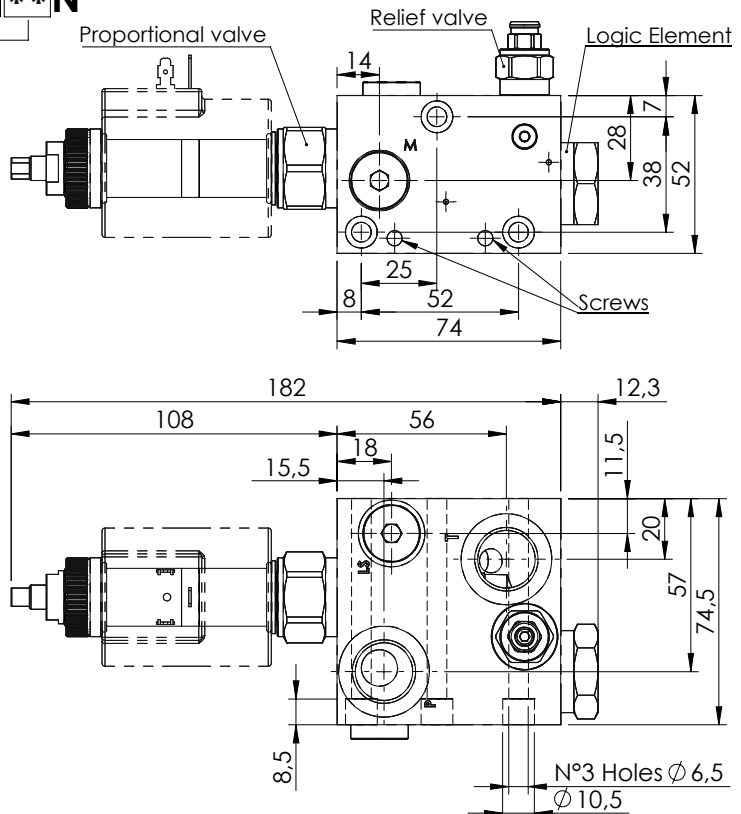


ORDERING DETAILS: SEPARATE ELEMENTS

SFNL-060-*D***-07-***-*N

* MATERIAL TYPE	A Steel zinc-plated (320 bar)	Z Aluminium anodized (210 bar)	
* RELIEF VALVE SETTING	N Max setting 210 bar (CP000029)	A Max setting 110 bar (CP000030)	
	B Max setting 350 bar (CP000002)		
* ADJUSTMENT FLOW	N 30 l/min (CE000112)	A 20 l/min (CE000113)	
	B 10 l/min (CE000111)		
*** PORTS	P line	T line	M
G12	G 1/2"	G 1/2"	G 1/4"
U34	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF
* VOLTAGE	no coils	A 12 V dc	B 24 V dc
** COILS TYPE	no coils	HR Hirschmann (ISO 4400 DIN 43650)	DT Deutsch (DT04-2P)
		AJ Amp junior (AJ type)	
QUICK CODE	DESCRIPTION	CODE	
	SFNL-060-ZNNN-05-G12-N	SF000001	

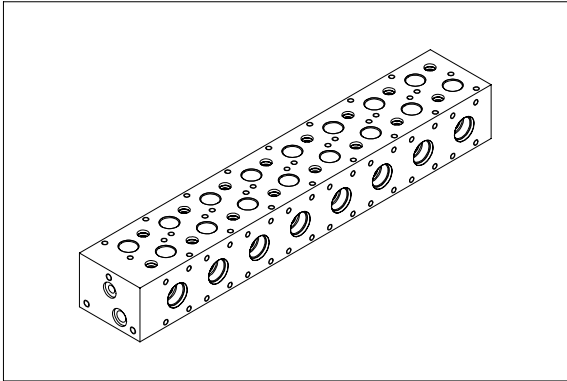
OVERALL DIMENSIONS



LDNP-060-NNNN

**CAST-IRON
MANIFOLD**

In LDNS/P-030-C plug are included in the manifold



The monoblock valve can be ordered with a number of spool's section from 1 to 8, each section is equipped with side mounting holes for lever option and with treaded holes at the top for flangeable modular valve. There are also two removable plugs connecting to a T line to allow to flange special blocks.

The standard version has G 3/8" ports and can be supplied with top blocks with 9/16"-18 UNF (SAE6) or M16x1.5.

The manifold it is made with cast-iron and protected from corrosion with zinc-plating surface treatment.

The inlet face has 3 threaded holes to flange an inlet block that can be customized for each application, giving high flexibility to the project.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	60 l/min
Material	Cast-iron
Surface treatment	Zinc-plated black
Weight for single section	1,6 kg
Wight for additional sections	+ 1 Kg each

ORDERING DETAILS: SEPARATE ELEMENTS

LDN * -060-NNNN- ** - ***

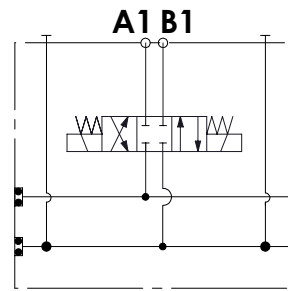
*	TYPE OF MANIFOLD
S	Series connection
P	Parallel connection

**	NUMBER OF SECTION
01	manifold with one section
02	manifold with two sections
03	manifold with three sections
04	manifold with four sections
05	manifold with five sections
06	manifold with six sections
07	manifold with seven sections
08	manifold with eight sections

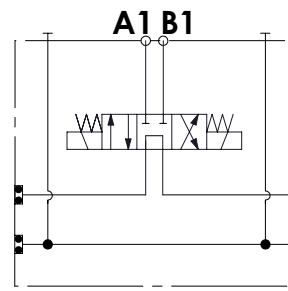
***	PORTS		
	P line	T line	M
G38	G 3/8"	G 3/8"	G 1/4"
U09	9/16"-18 UNF	9/16"-18 UNF	7/16"-20 UNF

QUICK CODE	
DESCRIPTION	CODE
LDNP-060-NNNN-01-G38	LD000156
LDNP-060-NNNN-02-G38	LD000155
LDNP-060-NNNN-03-G38	LD000147
LDNP-060-NNNN-04-G38	LD000146
LDNP-060-NNNN-05-G38	LD000154
LDNP-060-NNNN-06-G38	LD000153
LDNP-060-NNNN-07-G38	LD000157
LDNP-060-NNNN-08-G38	LD000158

MANIFOLD CONFIGURATIONS

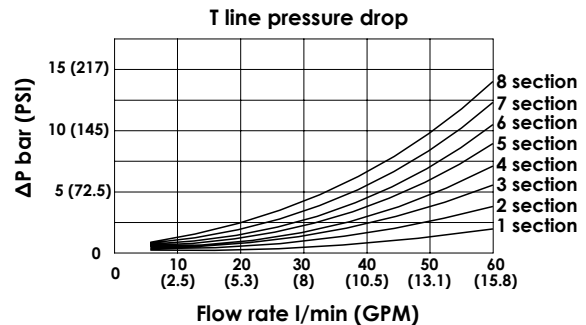
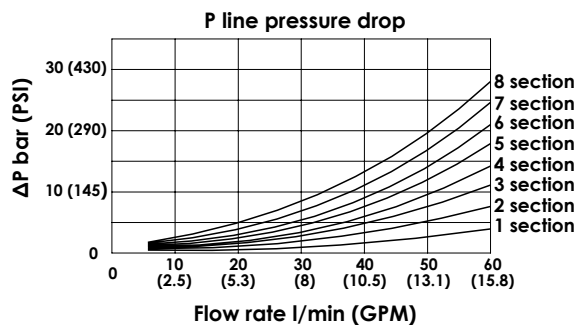


LDNP-060



LDNS-060

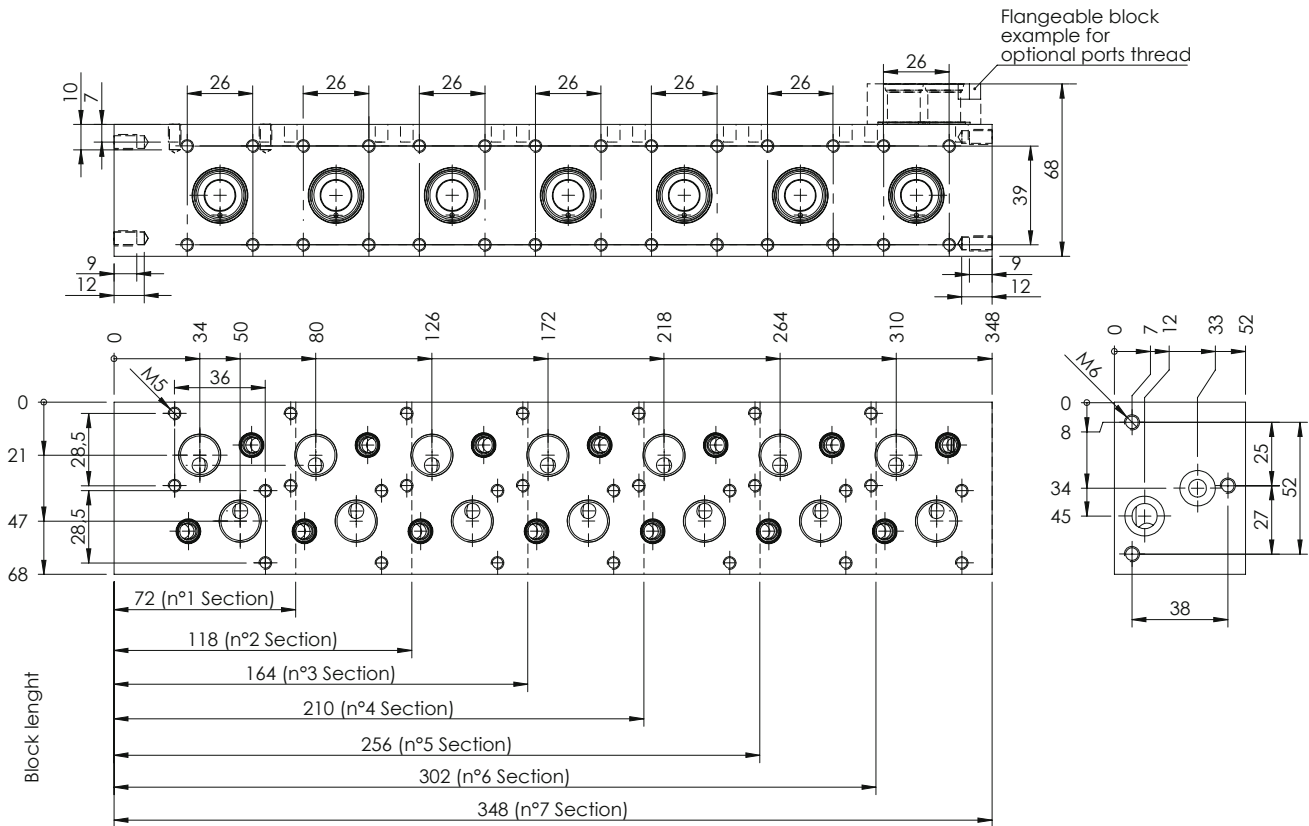
MONOBLOCK PRESSURE DROP



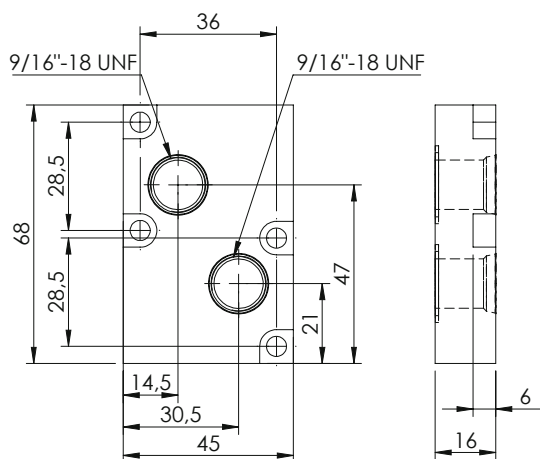
LDNS-060-NNNN

**CAST-IRON
MANIFOLD**

GAS VERSION



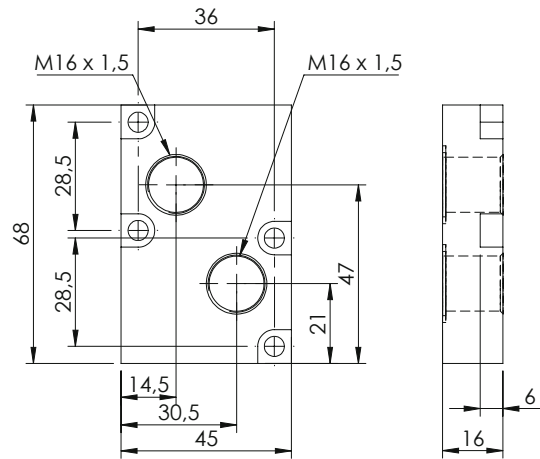
SAE VERSION



This top flangeable block transform the monoblock to a UNF version.

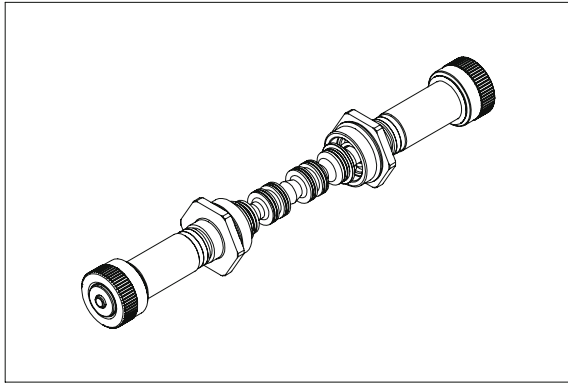
Quick code: MP000096

METRIC VERSION



This top flangeable block transform the monoblock to a Metric version.

Quick code: MP000097



This spool group is rated for 30 lpm and for a maximum pressure of 320 bar; the spool is actuated by on off tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	30 l/min
Duty cycle	100 % ED
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight with one solenoid	0,15 Kg
Weight with two solenoid	0,12 kg

ORDERING DETAILS: SEPARATE ELEMENTS

SH** - 030 - NN** - ** - 321 - ***N

*	VERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	ACTUATION TYPE
ON	On/Off
SS	Soft shift

**	SPOOL TYPE
...	See table n°1

*	VOLTAGE
	no coils
A	12 V dc
B	24 V dc

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutsch (DT04-2P)
AJ	Amp junior (AJ type)

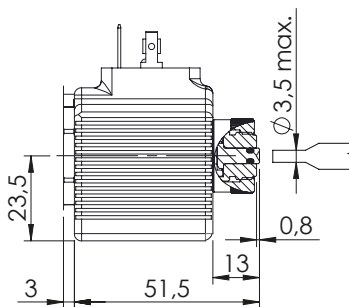
QUICK CODE	
DESCRIPTION	CODE
SHNE-030-NNON-46-321	
SHNE-030-NNON-10-321	
SHNE-030-NNON-07-321	

HYDRAULIC SYMBOLS

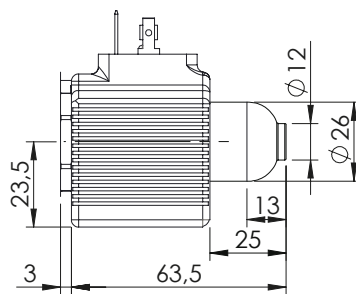
Table n°1

SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION	
46			
10			
07			
SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION	
a	b	a	b
23			
21			
22			
17			
18			

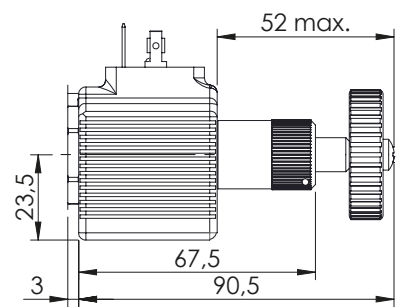
VERRIDE TYPE



VERRIDE TYPE "N"



VERRIDE TYPE "P"

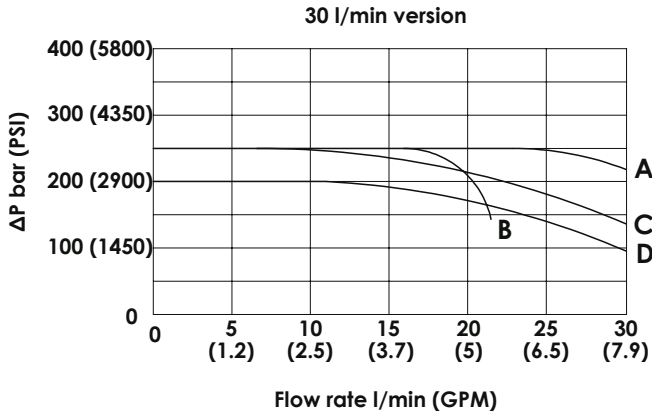


VERRIDE TYPE "V"

SHNE-030-NNON

30 L/MIN
SOLENOID VALVE

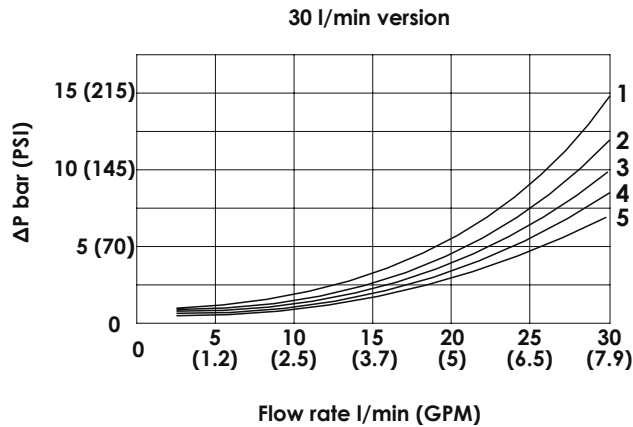
PERFORMANCE LIMITS CURVES - STANDARD SECTION



Spool type	Performance limits curve
46	A
10	A
07	B
23	A
21	A
22	A
17	C
18	D

The tests are carried out with hot solenoids, powered with 90 % of nominal voltage, with 50 ° C fluid temperature. The fluid used is mineral oil having a viscosity of 46 mm² / s @ 40 ° C . The values in the diagram refer to tests carried out with flow simultaneously in both directions (P > A, B > T). In cases of schemes 4/2 or 4/3 used with the flow in one direction only the performance can change.

PRESSURE DROP CURVES - STANDARD SECTION

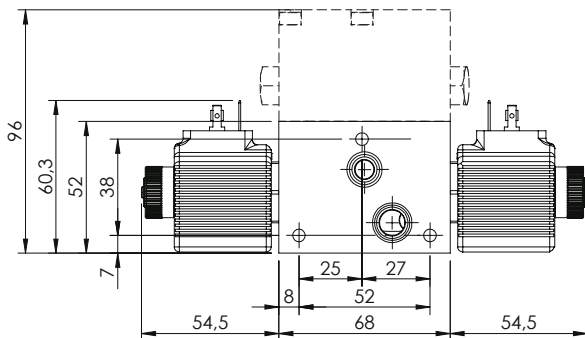


Spool type	Pressure drop curve				
	P>A	P>B	A>T	B>T	P>T
46	3	3	4	4	/
10	3	3	5	5	/
07	2	2	1	1	2
23	/	3	4	/	/
21	/	3	5	/	/
22	2	/	/	1	/
17	/	3	4	/	/
18	/	2	3	/	/

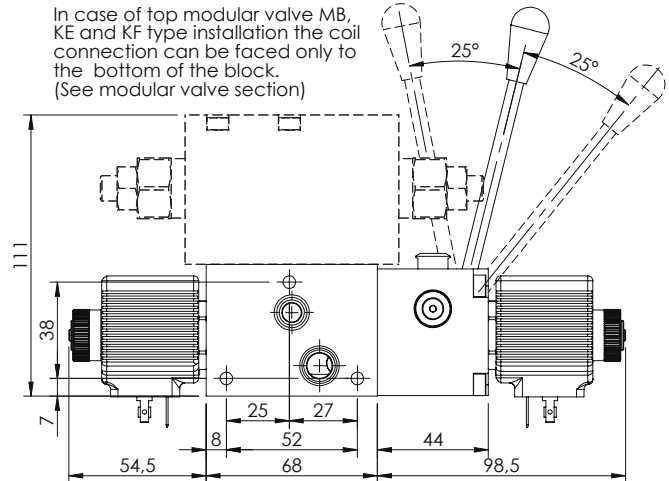
The diagram shows the performance limit curve of standard section. The fluid used is mineral oil viscosity 46 mm²/s at 40 ° C ; the tests are performed at a 40 ° C temperature

OVERALL DIMENSION - STANDARD SECTION

In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)

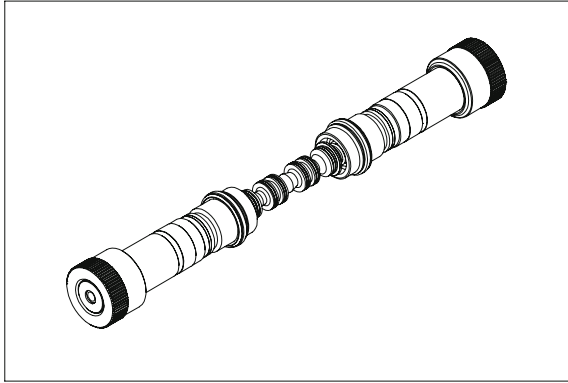


In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



SHNE-060-NNON

60 L/MIN
SOLENOID VALVE



This spool group is rated for 60 lpm and for a maximum pressure of 320 bar; the spool is actuated by on off tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	60 l/min
Duty cycle	100 % ED
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight with one solenoid	0,2 Kg
Weight with two solenoid	0,4 kg

ORDERING DETAILS: SEPARATE ELEMENTS

SH** - 060 - NN** - ** - 321 - * ** N

*	VERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	ACTUATION TYPE
ON	On/Off
SS	Soft shift

**	SPOOL TYPE
...	See table n°1

*	VOLTAGE
	no coils
A	12 V dc
B	24 V dc

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutsch (DT04-2P)
AJ	Amp junior (AJ type)

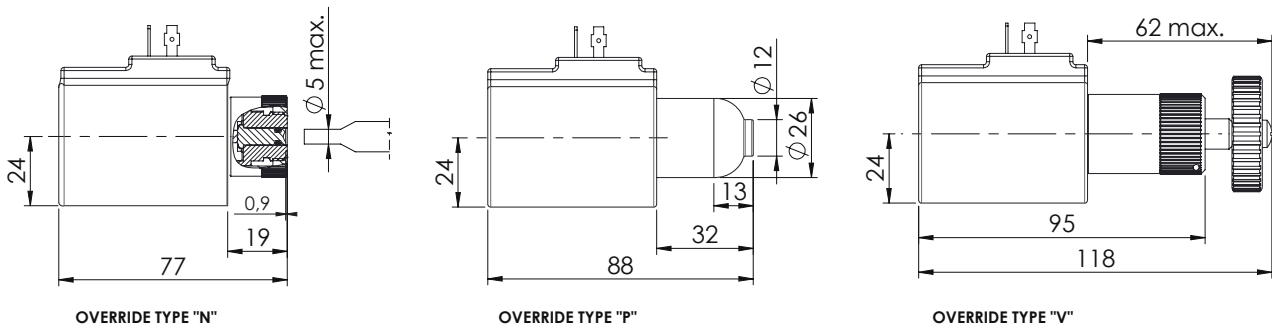
QUICK CODE	
DESCRIPTION	CODE
SHNE-060-NNON-46-321	
SHNE-060-NNON-10-321	
SHNE-060-NNON-07-321	

HYDRAULIC SYMBOLS

Table n°1

SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION	
46			
10			
07			
SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION	
a	b	a	b
23			
21			
22			
17			
18			

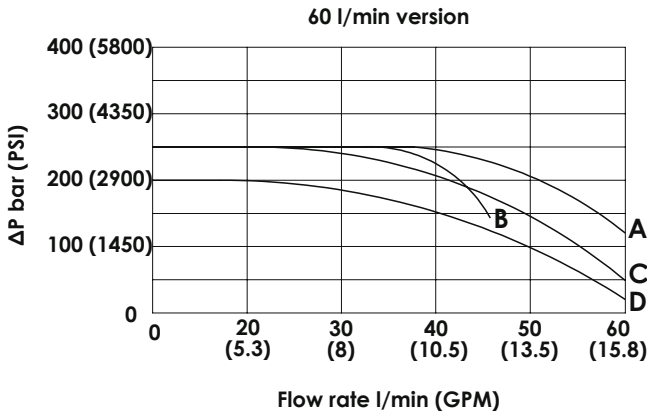
OVERRIDE TYPE



SHNE-060-NNON

60 L/MIN
SOLENOID VALVE

PERFORMANCE LIMIT CURVES - STANDARD SECTION



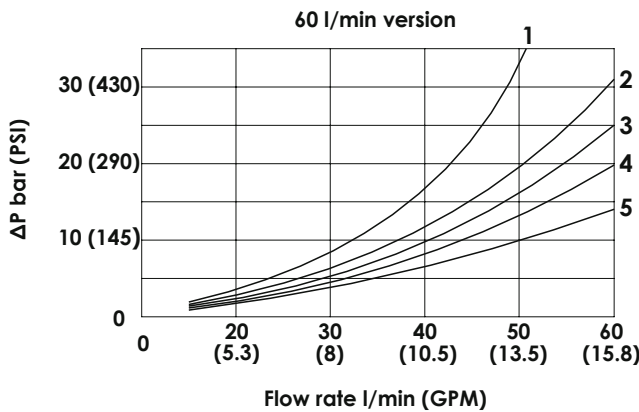
Spool type	Performance limits curve
46	A
10	A
07	B
23	A
21	A
22	A
17	C
18	D

The tests are carried out with hot solenoids, powered with 90 % of nominal voltage, with 50 ° C fluid temperature. The fluid used is mineral oil having a viscosity of 46 mm² / s @ 40 ° C .

The values in the diagram refer to tests carried out with flow simultaneously in both directions (P > A, B > T).

In cases of schemes 4/2 or 4/3 used with the flow in one direction only the performance can change.

PRESSURE DROP CURVES - STANDARD SECTION

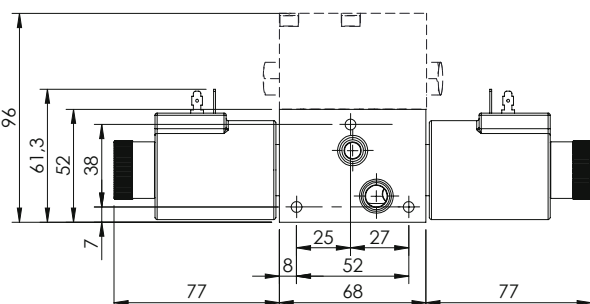


Spool type	Pressure drop curve				
	P>A	P>B	A>T	B>T	P>T
46	3	3	4	4	/
10	3	3	5	5	/
07	2	2	1	1	2
23	/	3	4	/	/
21	/	3	5	/	/
22	2	/	/	1	/
17	/	3	4	/	/
18	/	2	3	/	/

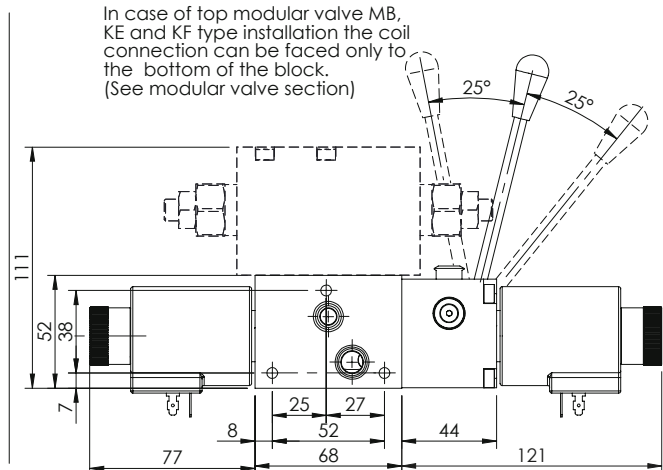
The diagram shows the performance limit curve of standard section. The fluid used is mineral oil viscosity 46 mm²/s at 40 ° C ; the tests are performed at a 40 ° C temperature

OVERALL DIMENSION - STANDARD SECTION

In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)

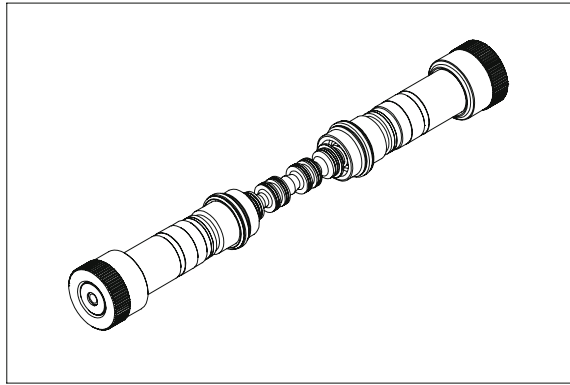


In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



SHNE-050-NNPR

50 L/MIN
PROPORTIONAL
SOLENOID VALVE



This spool group is rated for 50 lpm and for a maximum pressure of 320 bar; the spool is actuated by proportional tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	50 l/min
Duty cycle	100 % ED
Max current	1.76A (12 V dc) 0.88A (24 V dc)
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight with one solenoid	0,2 Kg
Weight with two solenoid	0,4 kg

ORDERING DETAILS: SEPARATE ELEMENTS

SH** - O**-NNPR-**-321-***N

*	VERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

*	SPOOL FLOW
20	20 l/min at 12 bar - 10 l/min at 6 bar
35	35 l/min at 12 bar - 20 l/min at 6 bar
50	50 l/min at 12 bar - 30 l/min at 6 bar

**	See table n°1
----	---------------

*	VOLTAGE
	no coils
A	12 V dc
B	24 V dc

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutsch (DT04-2P)
AJ	Amp junior (AJ type)

QUICK CODE	
DESCRIPTION	CODE
SHNE-030-NNPR-59-321	
SHNE-030-NNPR-55-321	

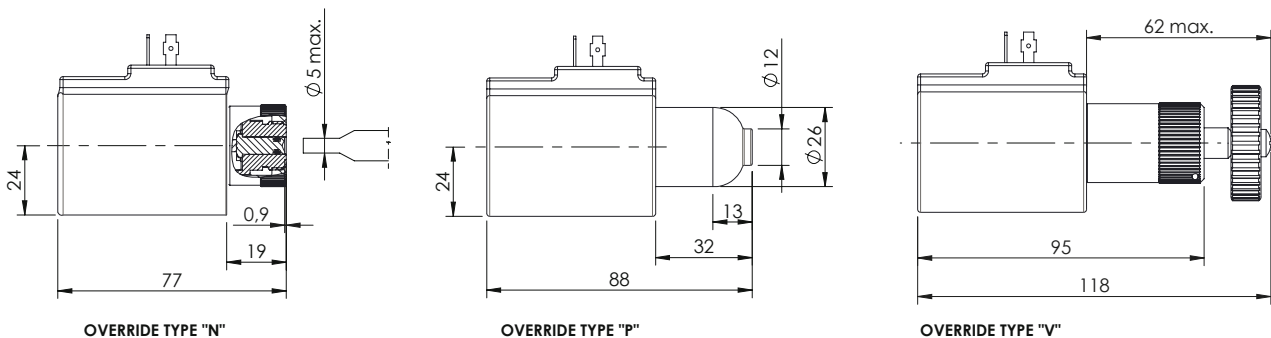
HYDRAULIC SYMBOLS

Table n°1

SPOOL CODE	HYDRAULIC SCHEME		TRANSITORY POSITION	
	a	b	a	b
59				
55				

For single solenoid operation please contact AFT sales network.

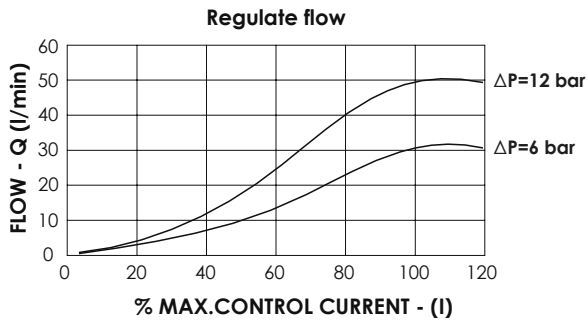
VERRIDE TYPE



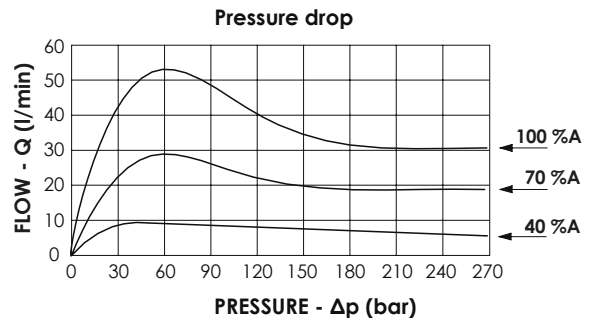
SHNE-050-NNPR

50 L/MIN
PROPORTIONAL
SOLENOID VALVE

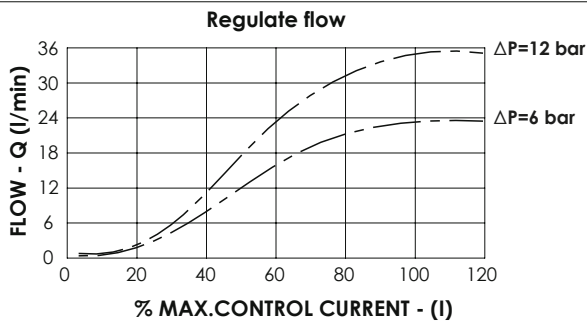
FLOW DIAGRAM - 050



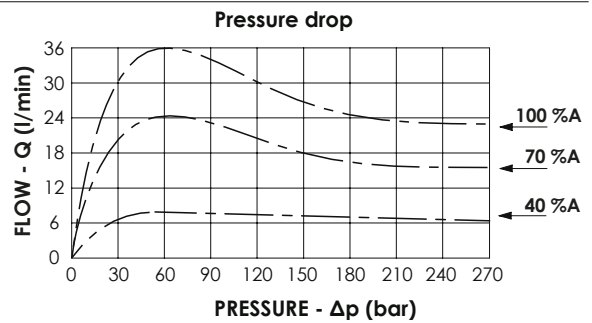
REGULATION DIAGRAM - 050



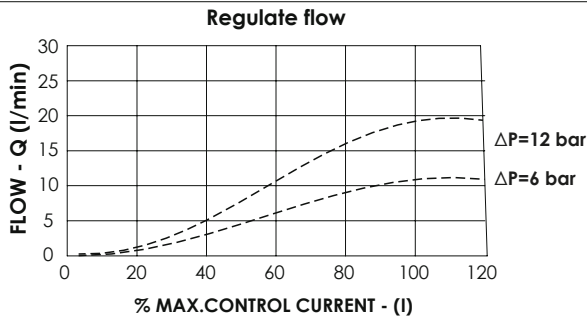
FLOW DIAGRAM - 035



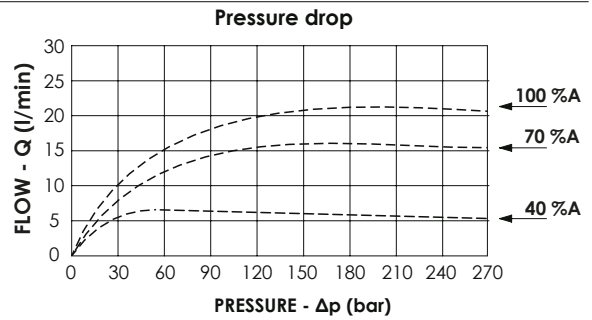
REGULATION DIAGRAM - 035



FLOW DIAGRAM - 020



REGULATION DIAGRAM - 020



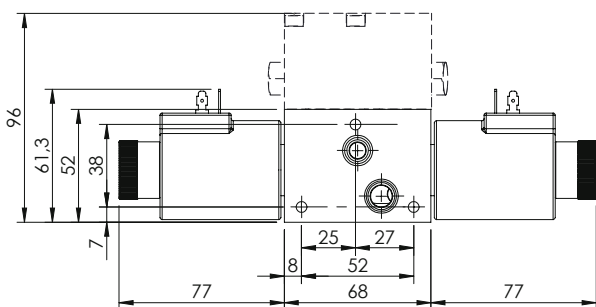
Spool type:

- 10 -----
- 20 -----
- 30 -----

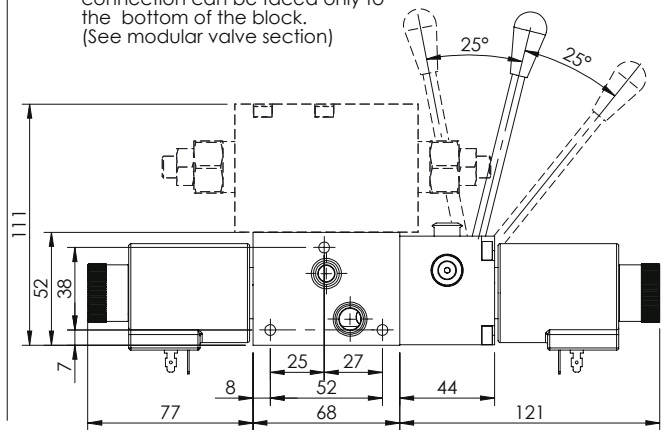
The diagram shows the performance limit curve of a standard section. The fluid used is mineral oil with viscosity of 46 mm²/s @ 40 °C ; the tests are performed at a 40 °C temperature.

OVERALL DIMENSION - STANDARD SECTION

In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)

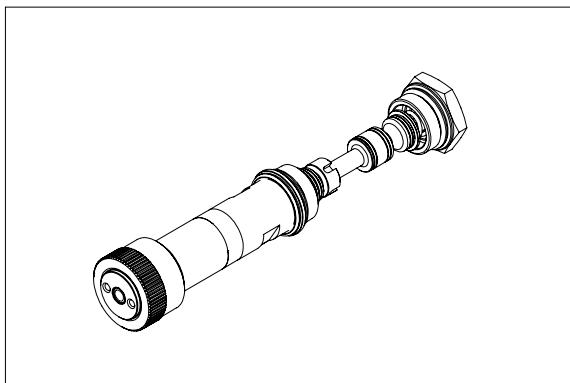


In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



SHNE-030-POPR

30 L/MIN
PROPORTIONAL FLOW
UNLOADING



The solenoid valve can be ordered with 3 types of ports for connection nipples, G 3/8" 9/16"-18 UNF (SAE6) and M16x1, 5. Spool actuation is electrical and the center position is maintained through centering springs with calibrated length, upon termination of the solenoid action, springs immediately reposition the cursor in the central position. The solenoids are only available in the continues current (the most common strains); the coil will be supply with terminals DIN 43650 ISO 4400 (for stadard versions). The valve have cast iron body with black galvanizing surface treatment with sealant.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	25 l/min
Duty cycle	100 % ED
Max current	1.76A (12 V dc) 0.88A (24 V dc)
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm
Fluid temperature	-25°C/75°C
Enviroment temperature	-25°C/60°C
Weight with one solenoid	2 Kg
Weight with two solenoid	2,5 kg

ORDERING DETAILS: SEPARATE ELEMENTS

SH** - 0** - POPR - ** - 321 - ***N

*	VERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	SPOOL FLOW
10	12 l/min at 10 bar
20	18 l/min at 10 bar
30	25 l/min at 10 bar

**	PROPORTIONAL TYPE
88	Not compesated

*	VOLTAGE
	no coils
A	12 V dc
B	24 V dc

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutsch (DT04-2P)
AJ	Amp junior (AJ type)

QUICK CODE	
DESCRIPTION	CODE
SHNE-030-POPR-88-321	
SHNE-020-POPR-88-321	
SHNE-010-POPR-88-321	

TECHNICAL FEATURES

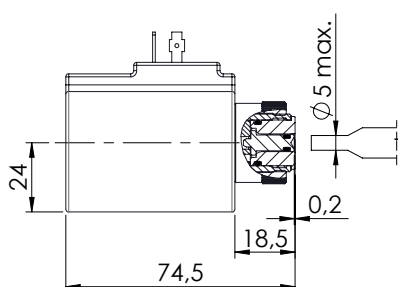
Spool Flow	Rated flow with 10 bar ΔP	Maximum flow	Max. operating pressure
10	10	12	320
20	16	18	320
30	23	28	320

HYDRAULIC SYMBOLS

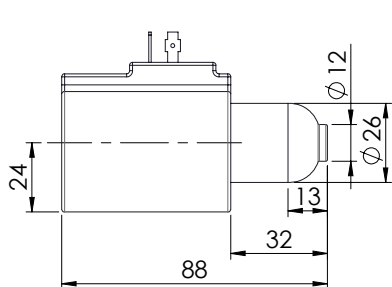
Table n°1

SPOOL CODE	HYDRAULIC SCHEME	TRANSYORY POSITION
88		

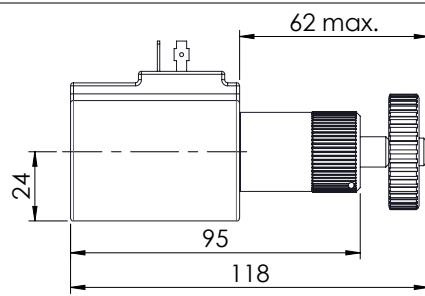
VERRIDE TYPE



VERRIDE TYPE "N"



VERRIDE TYPE "P"

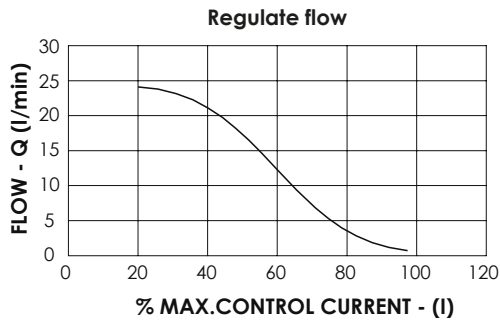


VERRIDE TYPE "V"

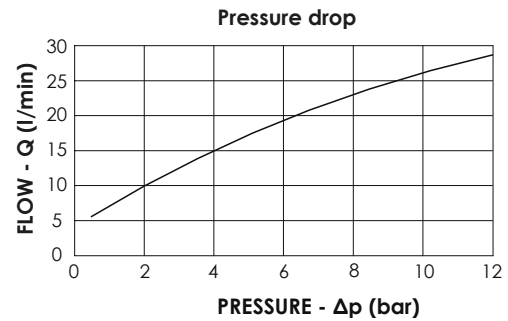
SHNE-030-PRPO

30 L/MIN
PROPORTIONAL FLOW
UNLOADING

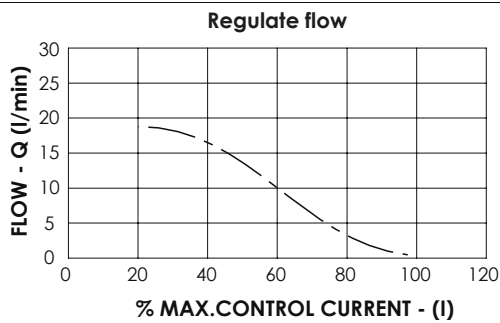
FLOW DIAGRAM - 030



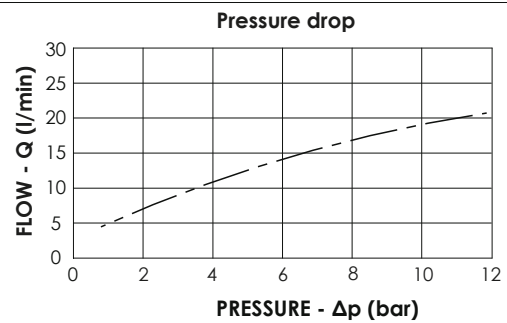
PRESSURE DROP DIAGRAM - 030



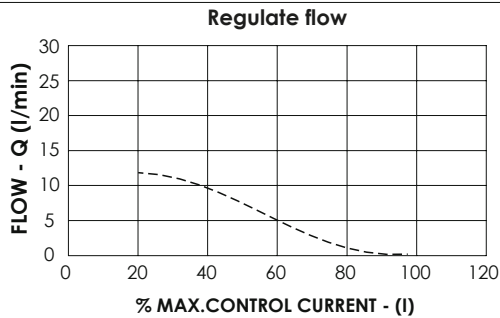
FLOW DIAGRAM - 020



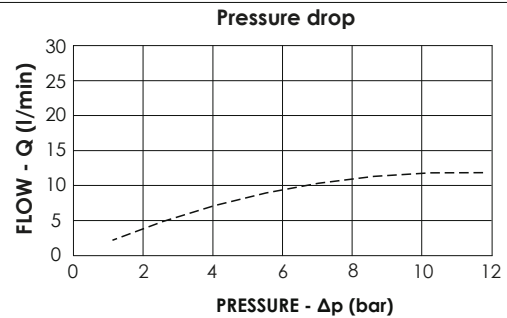
PRESSURE DROP DIAGRAM - 020



FLOW DIAGRAM - 010



PRESSURE DROP DIAGRAM - 010

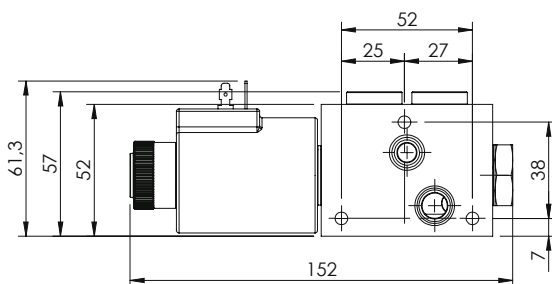


Spool type:
 -10 -----
 -20 -----
 -30 -----

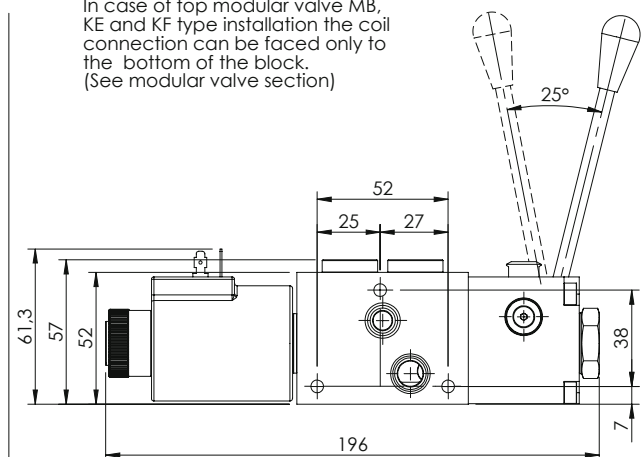
The diagram shows the performance limit curve of a standard section. The fluid used is mineral oil with viscosity of 46 mm²/s @ 40 °C ; the tests are performed at a 40 °C temperature.

OVERALL DIMENSION - STANDARD SECTION

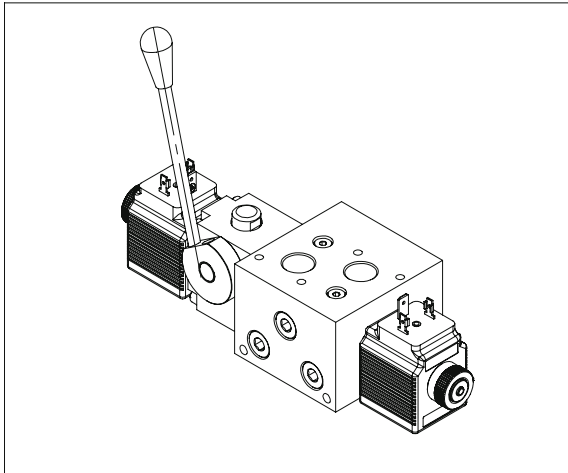
In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)



In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



MANUAL LEVER



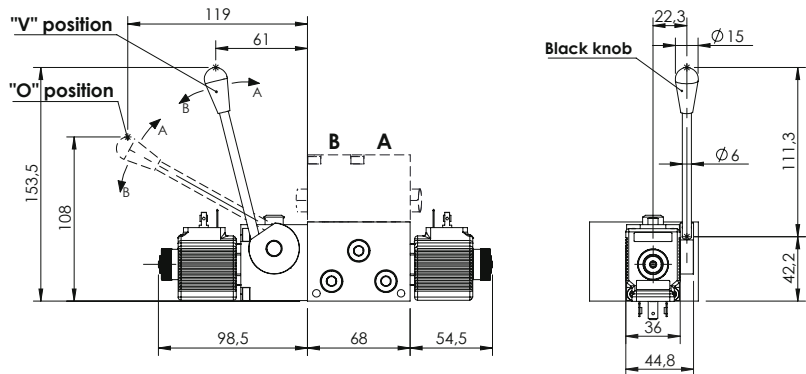
The lever option allow to operate manually the spool and can be ordered for all hydraulic schemes; in the standard version it is installed between monoblock and B port side coil. The lever is normally installed on the monoblock port side but can be installed also rotated of 180°; in each of these two positions the lever can be mounted vertical or horizontal simply removing the lever and reinstalling. The lever is not engaged during solenoid operation and doesn't move when a coil is energized.

TECHNICAL DATA

Tabella generale	
Max pressure	210/320 bar
Max pressure series version	210 bar
Rated flow	30/60 l/min
Duty cycle	100 % ED
Weight more than standard	2 Kg
Weight more than standard	2,5 kg

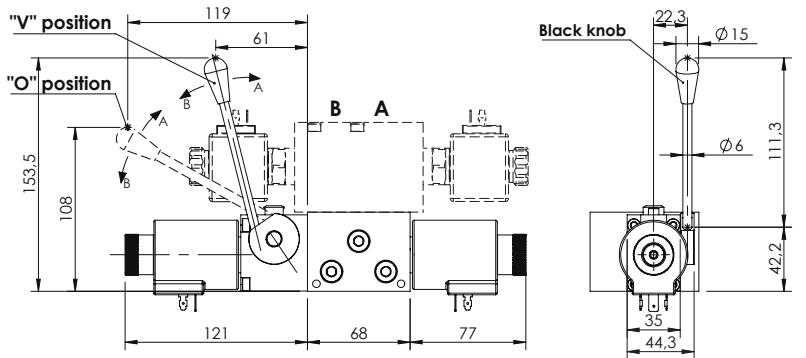
OVERALL DIMENSIONS/ LEVER FOR 30 L/MIN SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.



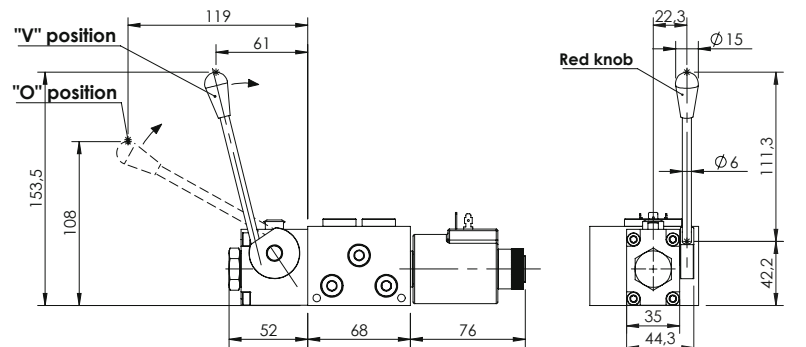
OVERALL DIMENSIONS/ LEVER FOR 60 L/MIN SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.

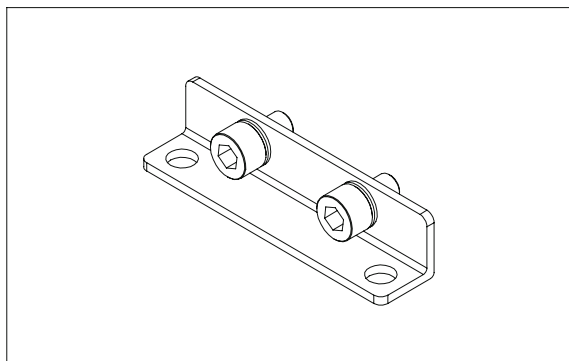


OVERALL DIMENSION/ LEVER FOR 30 L/MIN UNLOADING SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.



MOUNTING ELEMENTS

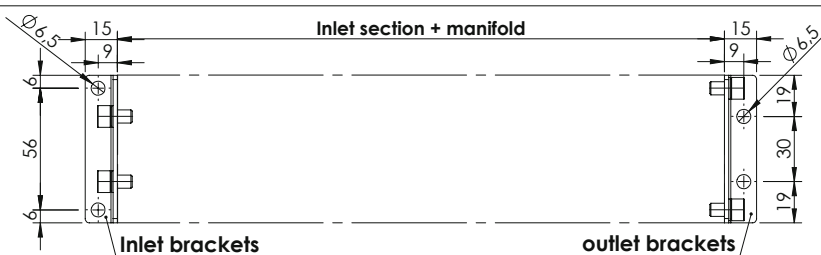
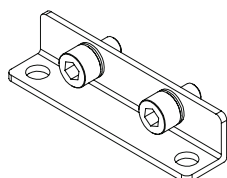


These parts are used to mount the directional valve on the application or to install modular valves and inlet section on the monoblock.

TECHNICAL DATA

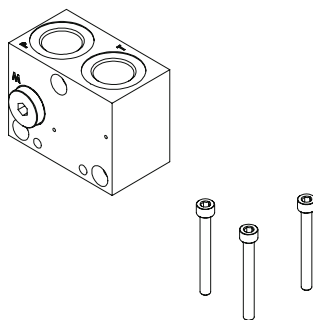
Screw type	ISO 4762
Thread type	coarse thread
Standard screw	resistance class 8.8
High resistance screw	resistance class 12.9
Standard screw treatment	zinc-plated (white)
High res. screw treatment	Anodized (black)

MOUNTING BRACKETS



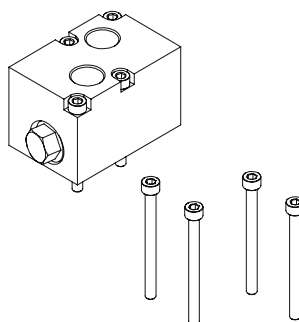
Mounting brackets	Screw length (mm)	Reference	Tightening Torque
PV000371	M6x10	AV000015 + PR000129	6 - 7 N/m

MOUNTING INLET SECTION



Inlet section	Screw length (mm)	Reference	Tightening Torque
SF000004	M6X40	AV000051	6 - 7 N/m
SF000016	M6X50	PE000100	6 - 7 N/m
SF000003	M6X60	AV000074	6 - 7 N/m
SF000002	M6X60	AV000074	6 - 7 N/m
SF000001	M6X75	PE000418	6 - 7 N/m

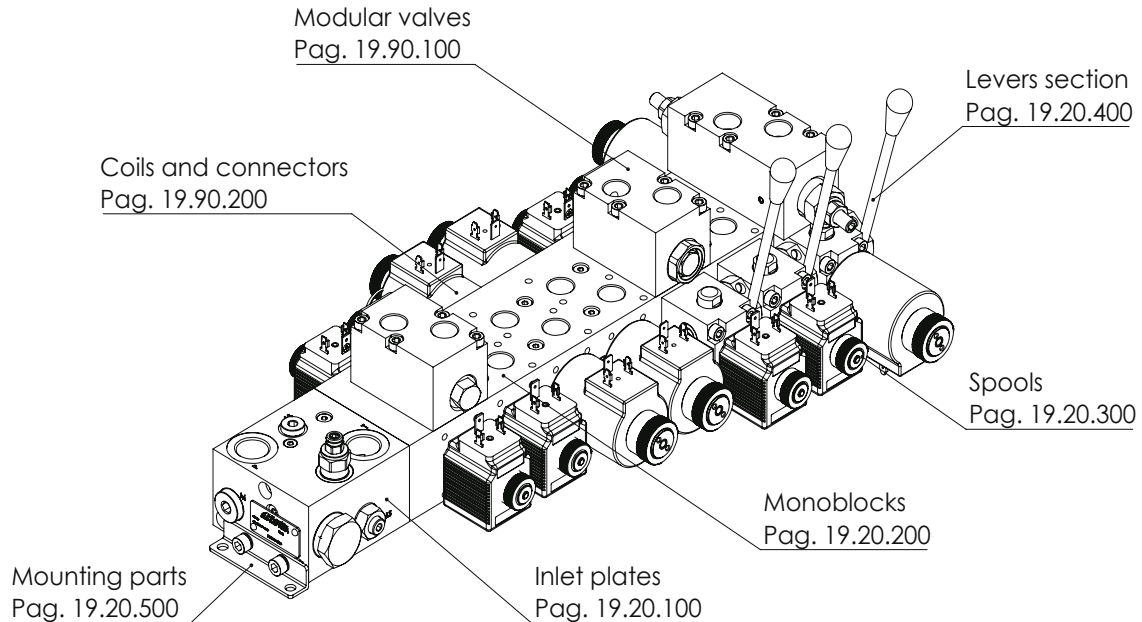
FIXING STACKING MODULES



Flangiabile valve	Screw length (mm)	Reference	Tightening Torque
MP	M5x16	AV000035	3 - 4 N/m
MA, MC and MB	M5x45	PE000148	3 - 4 N/m
KE and MF	M5x60	AV000016	3 - 4 N/m

EBL series

**MONOBLOCK
LOAD SENSING VALVE
ON-OFF OR
PROPORTIONAL**



FEATURES

- Compact dimensions
- Low weight
- Custom spools
- Custom inlet blocks
- LS line on each spool section
- Sandwich valves for extra functions
- Cast iron monoblock and aluminum inlet block for standard applications
- High resistance cast iron monoblock and steel inlet block for high pressure systems
- Optional levers for manual operation
- No leak risk between sections
- Spools not under rod tension
- Zinc plated/anodized components for corrosion resistance

SPECIFICATION \ DESCRIPTION

MAXIMUM OPERATING PRESSURE	Steel inlet block: 320 bar (4600 PSI) Aluminium inlet block: 210 bar (3045 PSI)
MAXIMUM TANK PRESSURE	20 bar (290 PSI)
RATED FLOW	030 series: 30 l/min (7.9 GPM) 060 series: 60 l/min (15.8 GPM)
COIL POWER	030 series: 26 W 060 series: 33 W
VOLTAGE	12 Vdc, 24 V DC, others on request
COIL CONNECTOR	DIN43650, AMP Junior, Deutsch DT04-2P
PORTS	Inlet: G1/2", 1/2 JIS, 7/8-14 UNF-2B (SAE#10) Outlet: G3/8", 3/8 JIS, 3/4-16 UNF-2B (SAE#8)
OPERATING TEMPERATURE	NBR (ISO 1629) seals: -30, + 80 °C FKM (ISO 1629) seals: -20, +110 °C
FILTRATION	ISO 4406:1999: class 19/17/14 NAS 1638: class 8
MOUNTING POSITION	No restrictions
MATERIAL	Spool body: cast iron Spool: Hardened and grounded steel Inlet block: Aluminium or steel
SURFACE TREATMENT	Steel: zinc plating Aluminium: anodization

EBL series is a new directional load sensing valve that has innovative features in terms of performance, dimension, manufacturing reliability and customization. The valve consists in an inlet block flanged to a monoblock with spools. This construction gives the advantages of high flexibility in inlet block schemes, combined with the reliability and simplicity of monoblock spool valve construction, eliminating the risk of spools blocking due to overtightening of tie rods or the risk of leakage between sections. The spool monoblock is a 2 or 3 position, 4 ways, direct acting solenoid operated type. All sections have threaded ports at the top and removable plugs for tank connections to allow the installation of flanged blocks with additional functions like crossover reliefs, reliefs to tank, relief and anticavitations, counterbalance valves, P.O. checks, flow restrictors and flow regulators. All sections are equipped with standard push button override and they can be equipped with lever for manual use.

HOW ORDER IT

To order the separate parts please refer to each catalogue page.

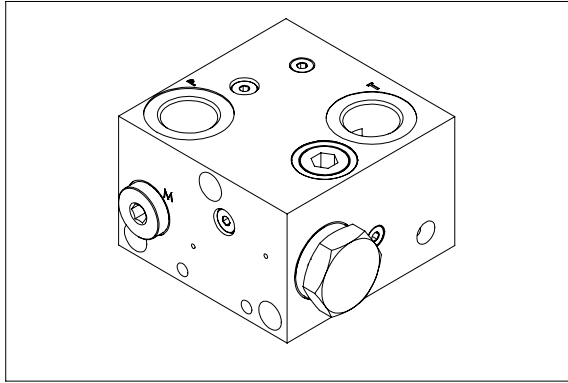
To order an assembled block, contact AFT sales network specifying the part numbers following page 19.90.900 path.

For special versions please contact AFT sales network.

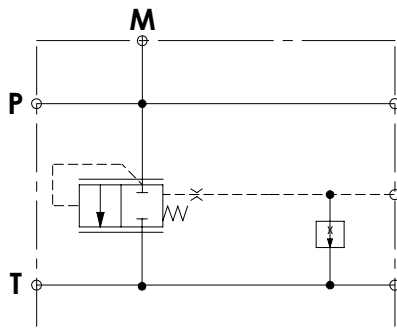
EBL series - INLET SECTION

SFLL-060-ZDNN-16

P, T PORTS
M PORT



HYDRAULIC SCHEME

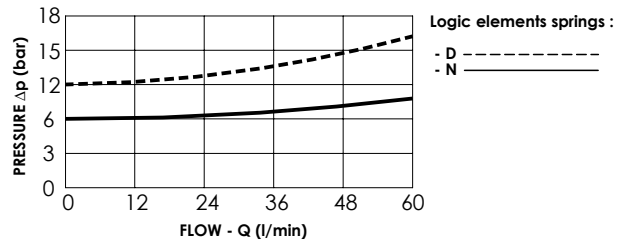


This inlet section is equipped with two thread ports (P,T) available in two different types G 1/2" or 3/4"-16 UNF plus a third threaded port M for pressure measuring available in G 1/4" or 7/16"-20. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,9 Kg

PRESSURE DROP LOGIC ELEMENT

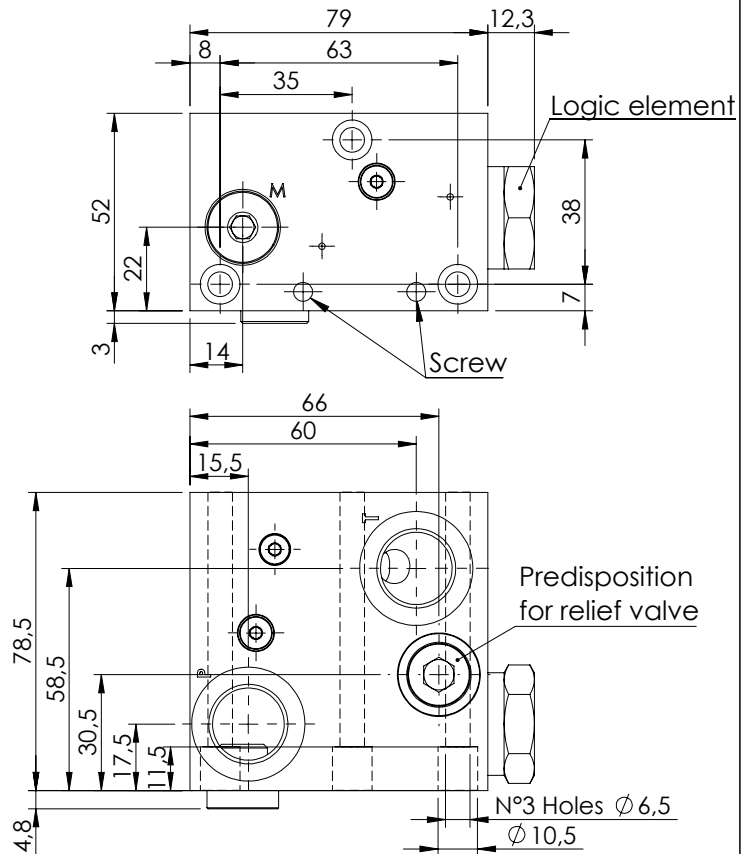


ORDERING DETAILS: SEPARATE ELEMENTS

SFLL-060- * * NN-16 - *** - N

*	MATERIAL TYPE		
A	Steel zinc-plated (320 bar)		
Z	Aluminium anodized (210 bar)		
*	LOGIC ELEMENT SPRING		
D	Spring setting 12 bar (CD000103)		
N	Spring setting 6 bar (CD000073)		
***	PORTS		
	P line	T line	M
G12	G 1/2"	G 1/2"	G 1/4"
U34	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF
	QUICK CODE		
	DESCRIPTION	CODE	
	SFLL-060-ZDNN-16-G12-N	SF000045	

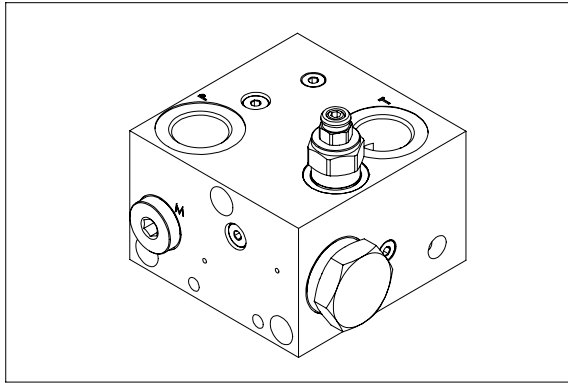
OVERALL DIMENSIONS



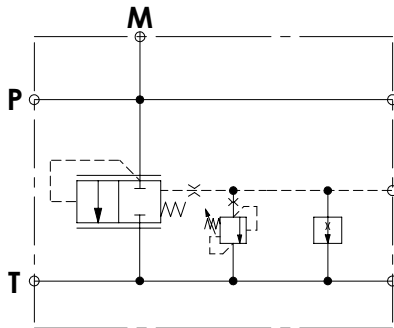
EBL series - INLET SECTION

SFLL-060-ZDNN-17

**RELIEF VALVE
M PORT**



HYDRAULIC SCHEME

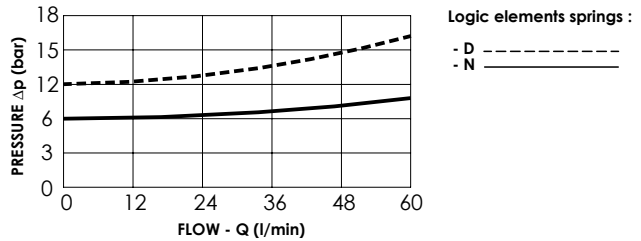


This inlet section is equipped with relief valve with adjustable setting operating on Ls signal, the adjustment is made by socket screw. This inlet section is equipped with two thread ports (P,T) available in two different types G 1/2" or 3/4"-16 UNF plus a third threaded port M for pressure measuring available in G 1/4" or 7/16"-20. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,9 Kg

PRESSURE DROP LOGIC ELEMENT



ORDERING DETAILS: SEPARATE ELEMENTS

SFLL-060-*N-17-***-N**

*	MATERIAL TYPE
A	Steel zinc-plated (320 bar)
Z	Aluminium anodized (210 bar)

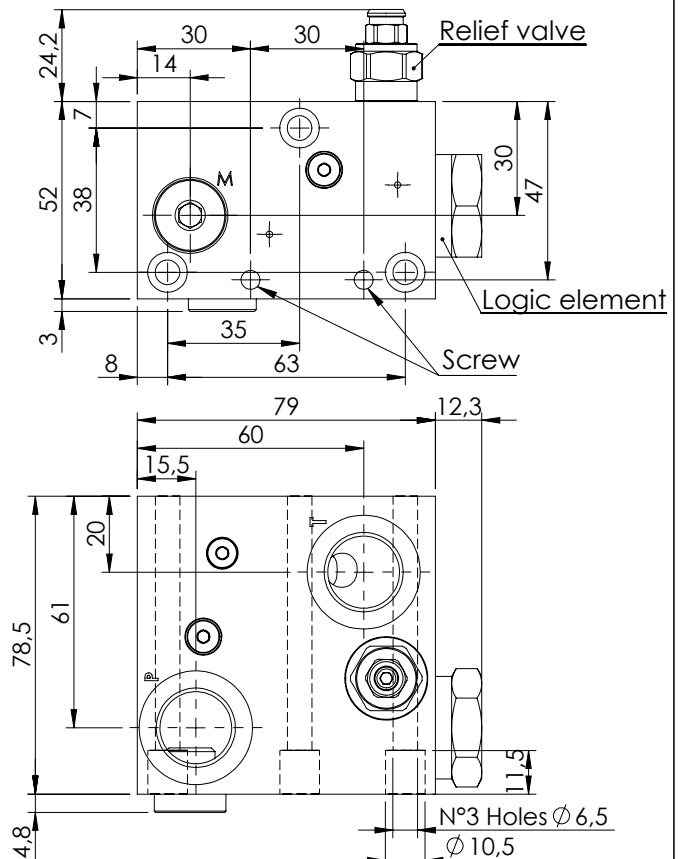
*	LOGIC ELEMENT SPRING
D	Spring setting 12 bar (CD000103)
N	Spring setting 6 bar (CD000073)

*	SETTING RANGE
N	Max setting 210 bar (CP000029)
A	Max setting 110 bar (CP000030)
B	Max setting 350 bar (CP000002)

***	PORTS		
	P line	T line	M
G12	G 1/2"	G 1/2"	G 1/4"
U34	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF

QUICK CODE	
DESCRIPTION	CODE
SFLL-060-ZDNN-17-G12-N	SF000010
SFLL-060-ZNNN-17-G12-N	SF000032

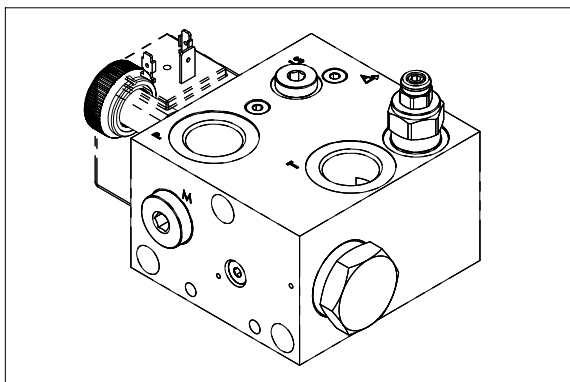
OVERALL DIMENSIONS



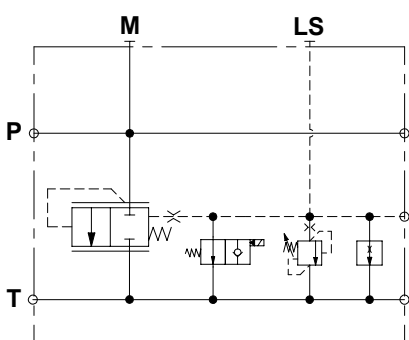
EBL series - INLET SECTION

SFLL-060-ZDNN-19

**RELIEF VALVE
UNLOADING VALVE**



HYDRAULIC SCHEME

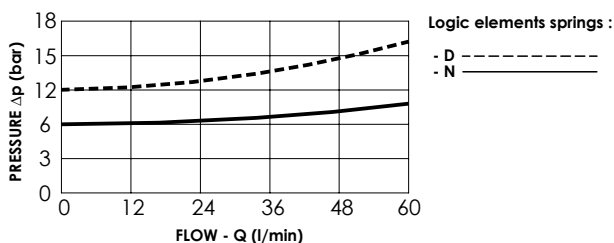


This inlet section is equipped with relief valve with adjustable setting operating on Ls signal, the adjustment is made by socket screw. It is present an unloading solenoid valve normally open with emergency operating on Ls signal. There are two thread ports (P, T) available in two different types G 1/2" or 3/4"-16 UNF plus M port available in G 1/4". Max inlet flow 60 l/min. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	1,05 Kg

PRESSURE DROP LOGIC ELEMENT



ORDERING DETAILS: SEPARATE ELEMENTS

SFLL-060-*N-19-***-***N**

*	MATERIAL TYPE
A	Steel zinc-plated (320 bar)
Z	Aluminium anodized (210 bar)

*	LOGIC ELEMENT SPRING
D	Spring setting 12 bar (CD000103)
N	Spring setting 6 bar (CD000073)

*	SETTING RANGE
N	Max setting 210 bar (CP000029)
A	Max setting 110 bar (CP000030)
B	Max setting 350 bar (CP000032)

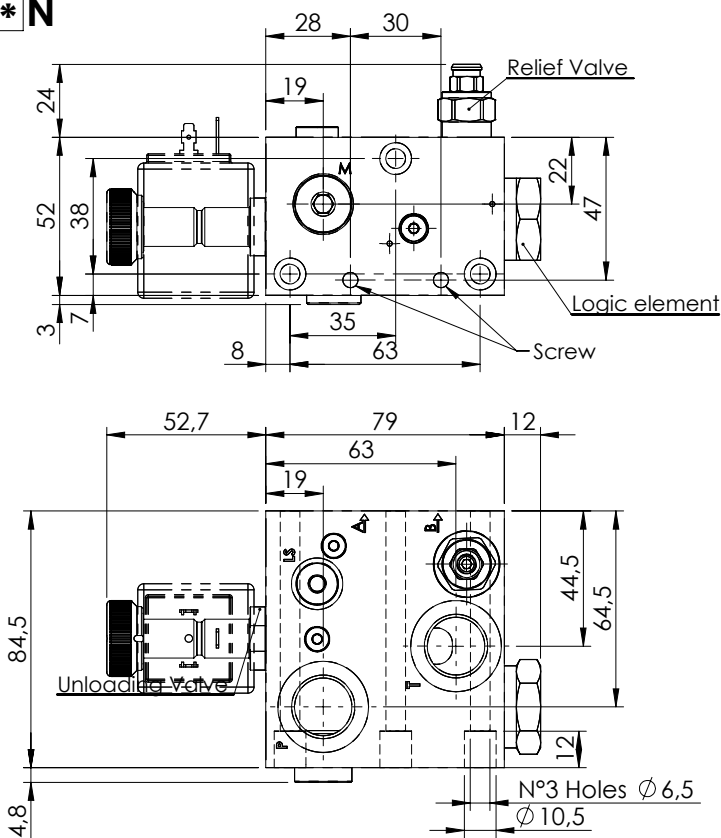
***	PORTS
	P line T line M
G12	G 1/2" G 1/2" G 1/4"
U34	3/4"-16 UNF 3/4"-16 UNF 7/16"-20 UNF

*	VOLTAGE
	no coils
A	12 V DC
B	24 V DC

**	COILS TYPE
	no coils
HR	Hirshmann (ISO 4400 DIN 43650)
DT	Deutsch (DT04-2P)
AJ	Amp junior (AJ type)

QUICK CODE	
DESCRIPTION	CODE
SFLL-060-ZDNN-19-G12-N	SF000019
Unloading Valve	CE000873

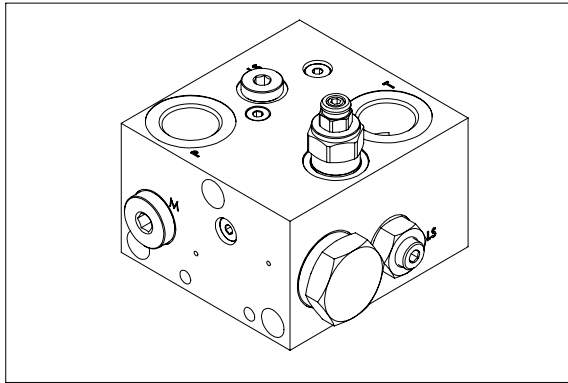
OVERALL DIMENSIONS



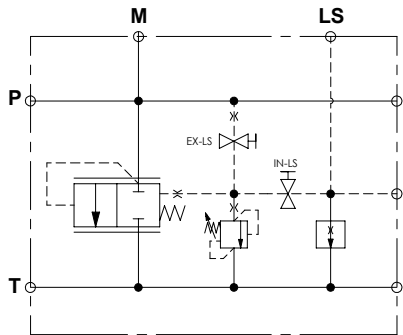
EBL series - INLET SECTION

SFLL-060-ZDNN-18

**RELIEF VALVE
EXTERNAL OR INTERNAL LS**



HYDRAULIC SCHEME

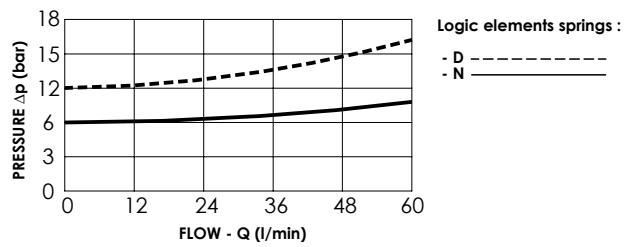


This inlet section is equipped with relief valve with adjustable setting operating on LS signal, the adjustment is made by socket screw. It is present an unloading compensator normally closed operating with LS signal. There are two thread ports (P, T) available in two different types G 1/2" or 3/4"-16 UNF plus M port available in G 1/4". Max inlet flow 60 l/min. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	1 Kg

PRESSURE DROP LOGIC ELEMENT

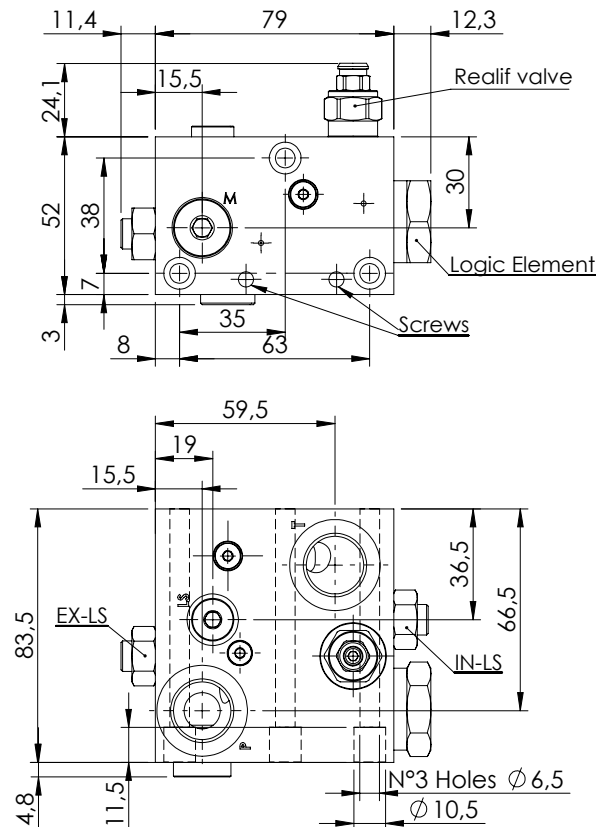


ORDERING DETAILS: SEPARATE ELEMENTS

SFLL-060-*N-18-***-N**

*	MATERIAL TYPE	
A	Steel zinc-plated (320 bar)	
Z	Aluminium anodized (210 bar)	
*	LOGIC ELEMENT SPRING	
D	Spring setting 12 bar (CD000103)	
N	Spring setting 6 bar (CD000073)	
*	SETTING RANGE	
N	Max setting 210 bar (CP000029)	
A	Max setting 110 bar (CP000030)	
B	Max setting 350 bar (CP000002)	
***	PORTS	
	P line	T line
G12	G 1/2"	G 1/2"
U34	3/4"-16 UNF	3/4"-16 UNF
		M
		G 1/4"
		7/16"-20 UNF
	QUICK CODE	
	DESCRIPTION	CODE
	SFLL-060-ZDNN-18-G12-N	SF000011
	SFLL-060-ZNNN-18-G12-N	SF000031

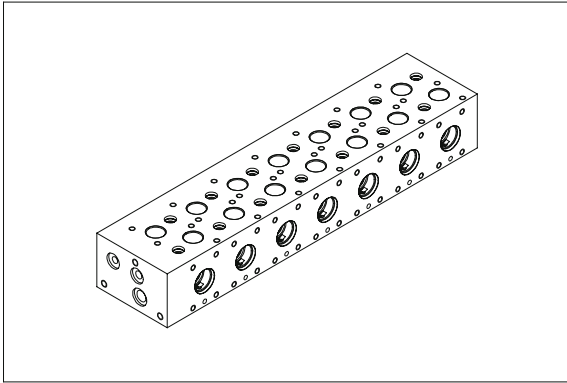
OVERALL DIMENSIONS



LDLP-060-NNNN

CAST-IRON MANIFOLD

In LDNS/P-030-C plug are included in the manifold



The monoblock valve can be ordered with a number of spool's section from 1 to 7, each section is equipped with side mounting holes for lever option and with threaded holes at the top for flangeable modular valve. There are also two removable plugs connecting to a T line to allow to flange special blocks.

The standard version has G 3/8" ports and can be supplied with top blocks with 9/16"-18 UNF (SAE6) or M16x1,5.

The manifold it is made with cast-iron and protected from corrosion with zinc-plating surface treatment.

The inlet face has 3 threaded holes to flange an inlet block that can be customized for each application, giving high flexibility to the project.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	60 l/min
Material	Cast-iron
Surface treatment	Zinc-plated black
Weight for single section	1,9 kg
Wight for additional sections	+ 1,1 Kg each

ORDERING DETAILS: SEPARATE ELEMENTS

LDL * -060- NNNN - ** - ***

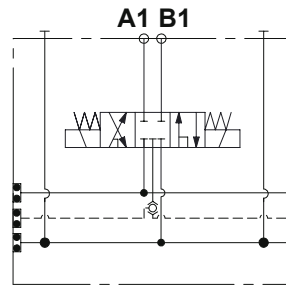
*	TYPE OF MANIFOLD
S	Series connection
P	Parallel connection

**	NUMBER OF SECTION
01	manifold with one section
02	manifold with two sections
03	manifold with three sections
04	manifold with four sections
05	manifold with five sections
06	manifold with six sections
07	manifold with seven sections

***	PORTS		
	P line	T line	M
G38	G 3/8"	G 3/8"	G 1/4"
U09	9/16"-18 UNF	9/16"-18 UNF	7/16"-20 UNF

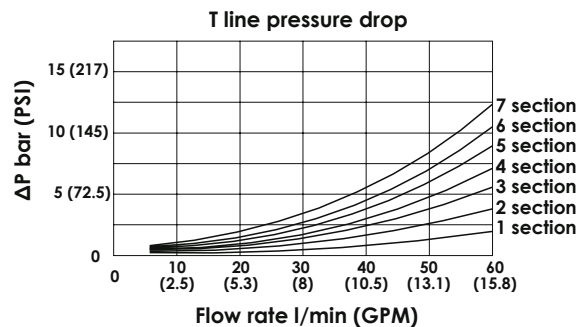
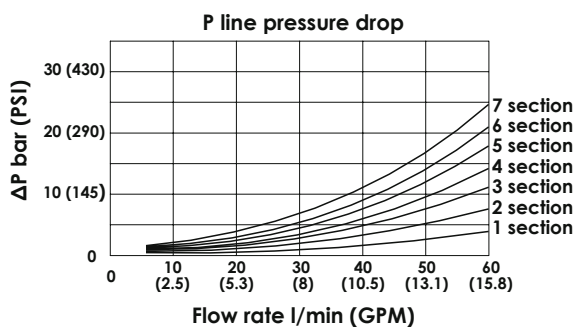
QUICK CODE	
DESCRIPTION	CODE
LDLP-060-NNNN-01-G38	LD000183
LDLP-060-NNNN-02-G38	LD000184
LDLP-060-NNNN-03-G38	LD000185
LDLP-060-NNNN-04-G38	LD000187
LDLP-060-NNNN-05-G38	LD000188
LDLP-060-NNNN-06-G38	LD000189
LDLP-060-NNNN-07-G38	LD000190

MANIFOLD CONFIGURATIONS



LDLP-060

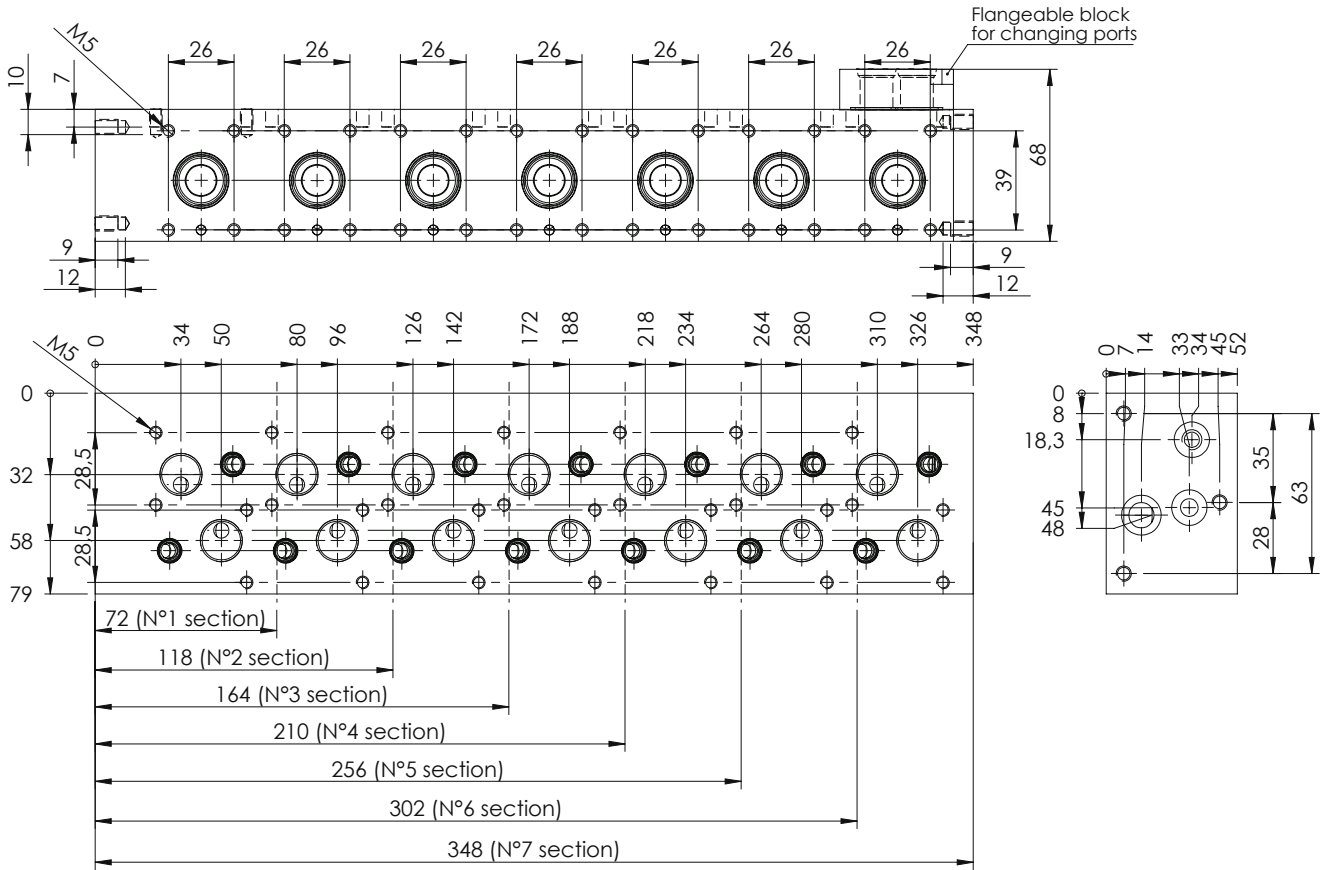
MONOBLOCK PRESSURE DROP



LDLP-060-NNNN

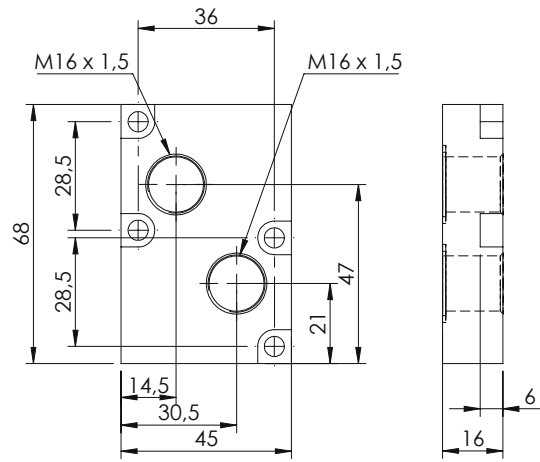
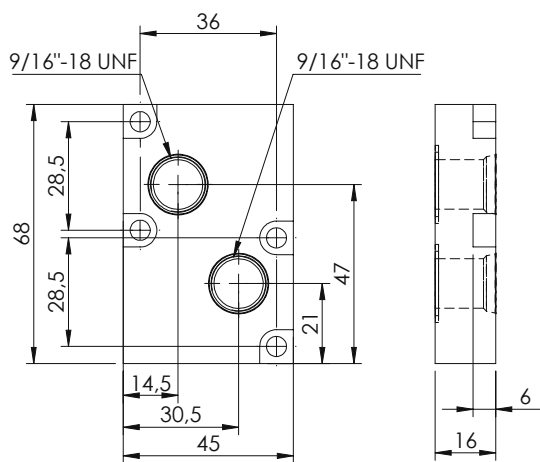
**CAST-IRON
MANIFOLD**

GAS VERSION



SAE VERSION

METRIC VERSION

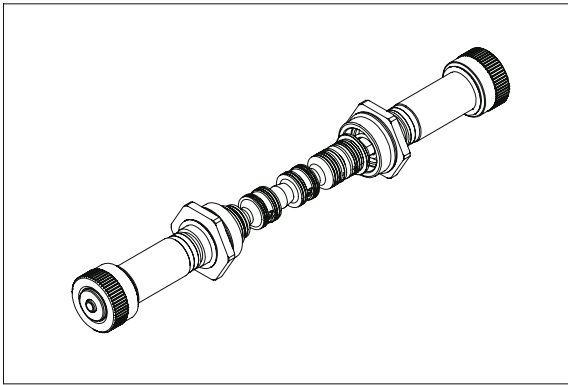


This top flangeable block transform the monoblock to a UNF version.

This top flangeable block transform the monoblock to a Metric version.

Quick code: **MP000096**

Quick code: **MP000097**



This spool group is rated for 30 lpm and for a maximum pressure of 320 bar; the spool is actuated by on off tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	30 l/min
Max excitation frequency	3 Hz
Duty cycle	100 % ED
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm ² /s
Fluid temperature	-25°C/75°C
Enviroment temperature	-25°C/60°C
Weight with one solenoid	0,12 Kg
Weight with two solenoid	0,15kg

ORDERING DETAILS: SEPARATE ELEMENTS

SH** - 030 - LS** - ** - 396 - * ** N

*	VERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	ACTUATION TYPE
ON	On/Off
SS	Soft shift

**	SPOOL TYPE
...	See table n°1

*	COILS VOLTAGE
	no coils
A	12 V DC
B	24 V DC

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutshc (DT04-2P)
AJ	Amp Junior (AJ type)

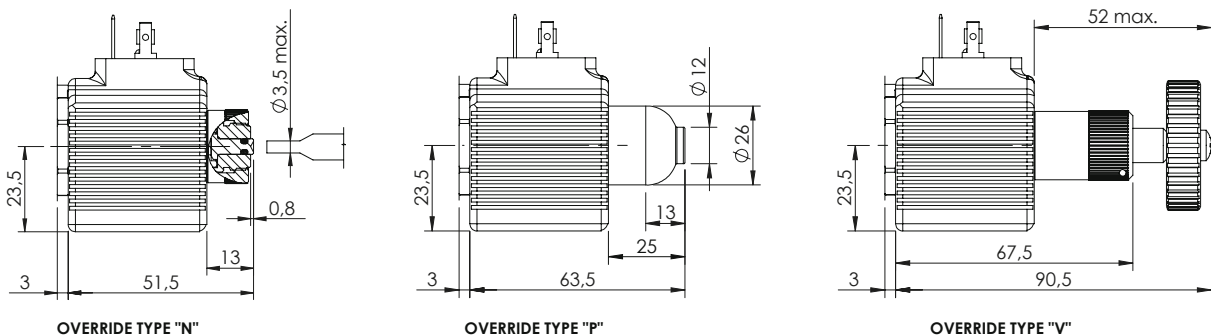
QUICK CODE	
DESCRIPTION	CODE
SHNE-030-LSO-74-396	
SHNE-030-LSO-75-396	

HYDRAULIC SYMBOLS

Table n°1

SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION
74		
75		
SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION
a	b	a

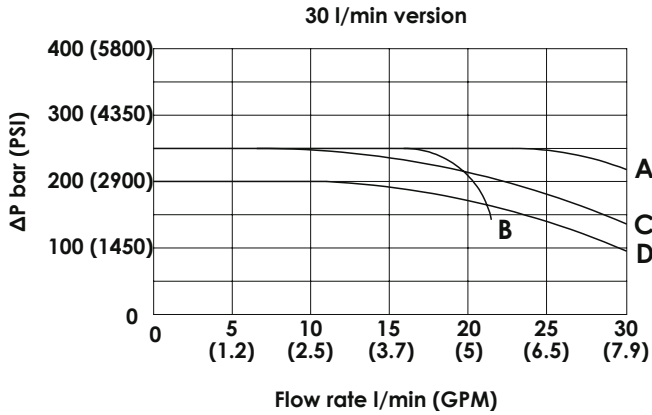
VERRIDE TYPE



SHNE-030-LSON

30 L/MIN
SOLENOID VALVE

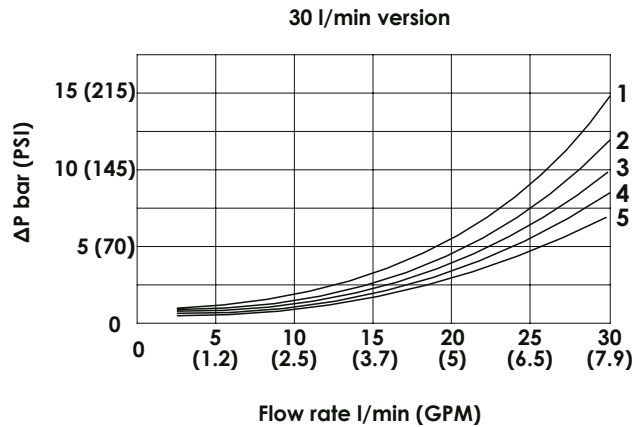
PERFORMANCE LIMITS CURVES - STANDARD SECTION



Spool type	Performance limits curve
74	A
75	A
	B
	A
	A
	A
	C
	D

The tests are carried out with hot solenoids, powered with 90 % of nominal voltage, with 50 °C fluid temperature. The fluid used is mineral oil having a viscosity of 46 mm² / s @ 40 °C. The values in the diagram refer to tests carried out with flow simultaneously in both directions (P > A, B > T). In cases of schemes 4/2 or 4/3 used with the flow in one direction only the performance can change.

PRESSURE DROP CURVES - STANDARD SECTION



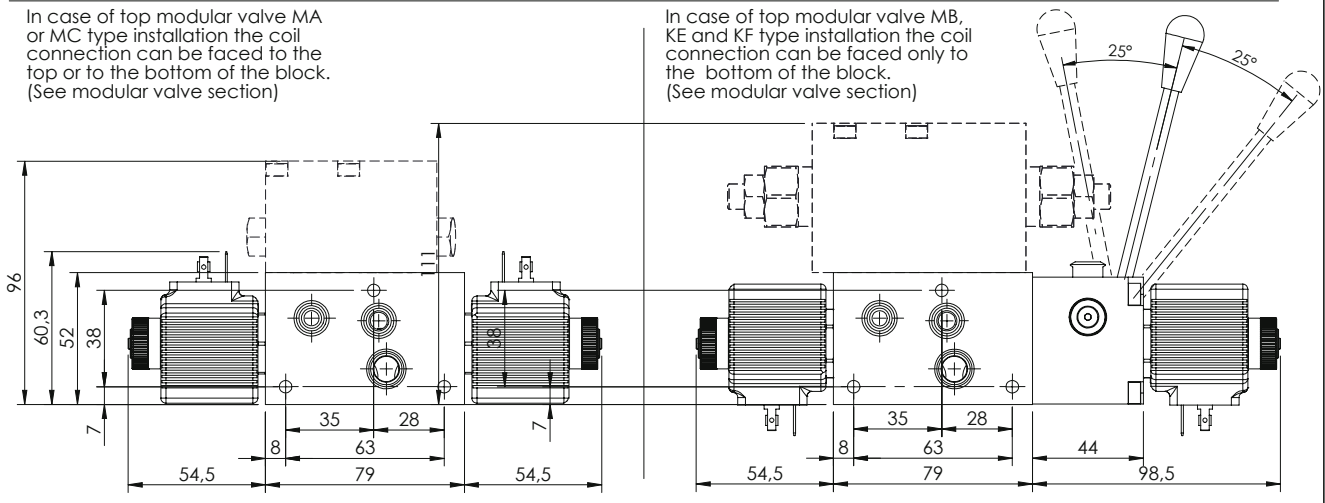
Spool type	Pressure drop curve				
	P>A	P>B	A>T	B>T	P>T
74	3	3	4	4	/
75	3	3	5	5	/
	2	2	1	1	2
	/	3	4	/	/
	/	3	5	/	/
	2	/	/	1	/
	/	3	4	/	/
	/	2	3	/	/

The diagram shows the performance limit curve of standard section. The fluid used is mineral oil viscosity 46 mm²/s at 40 °C ; the tests are performed at a 40 °C temperature

OVERALL DIMENSION - STANDARD SECTION

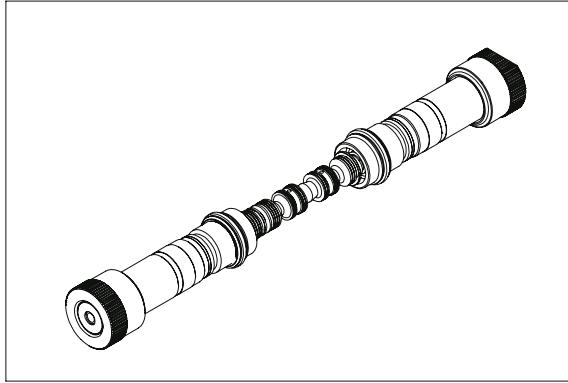
In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)

In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



SHNE-060-LSON

60 L/MIN
SOLENOID VALVE



This spool group is rated for 60 lpm and for a maximum pressure of 320 bar; the spool is actuated by on off tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	60 l/min
Max excitation frequency	3 Hz
Duty cycle	100 % ED
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight with one solenoid	0,2 Kg
Weight with two solenoid	0,4 kg

ORDERING DETAILS: SEPARATE ELEMENTS

SH** - 060 - LS ** - ** - 396 - *** N

*	VERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	ACTUATION TYPE
ON	On/Off
SS	Soft shift

**	SPOOL TYPE
...	See table n°1

**	COILS VOLTAGE
	no coils
A	12 V DC
B	24 V DC

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutshc (DT04-2P)
AJ	Amp Junior (AJ type)

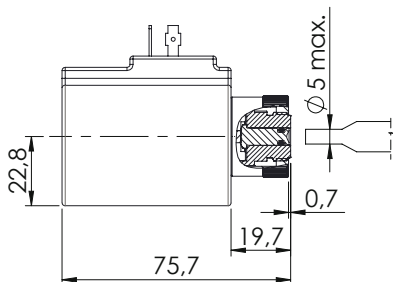
QUICK CODE	
DESCRIPTION	CODE
SHNE-060-LSON-74-396	
SHNE-060-LSON-75-396	

HYDRAULIC SYMBOLS

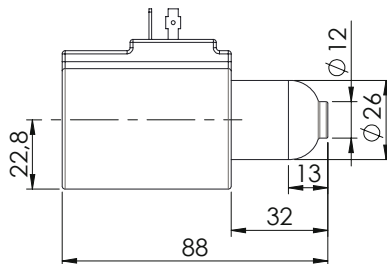
Table n°1

SPOOL CODE	HYDRAULIC SCHEME		TRANSITORY POSITION	
	a	b	a	b
74				
75				
SPOOL CODE	HYDRAULIC SCHEME		TRANSITORY POSITION	
	a	b	a	b

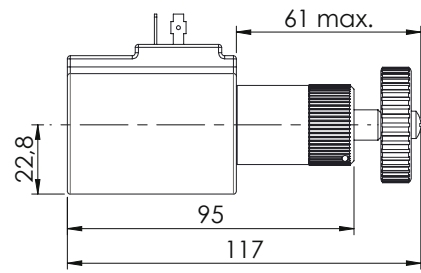
VERRIDE TYPE



VERRIDE TYPE "N"

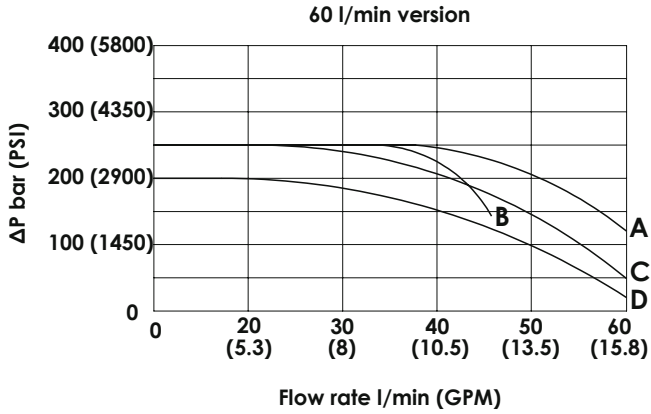


VERRIDE TYPE "P"



VERRIDE TYPE "V"

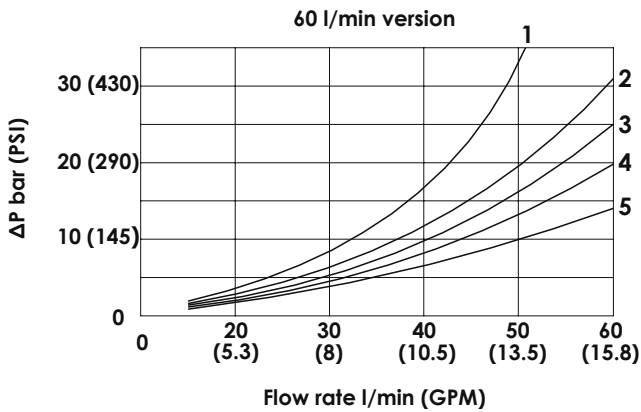
PERFORMANCE LIMIT CURVES - STANDARD SECTION



Spool type	Performance limits curve
74	A
75	A
	B
	A
	A
	A
	C
	D

The tests are carried out with hot solenoids, powered with 90 % of nominal voltage, with 50 °C fluid temperature. The fluid used is mineral oil having a viscosity of 46 mm² / s at 40 °C. The values in the diagram refer to tests carried out with flow simultaneously in both directions (P > A, B > T). In cases of schemes 4/2 or 4/3 used with the flow in one direction only the performance can change.

PRESSURE DROP CURVES - STANDARD SECTION



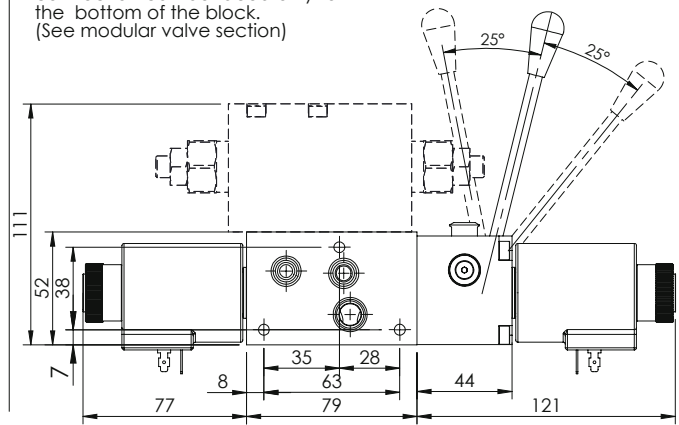
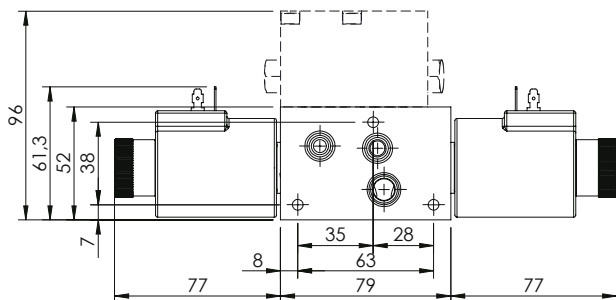
Spool type	Pressure drop curve				
	P>A	P>B	A>T	B>T	P>T
74	3	3	4	4	/
75	3	3	5	5	/
	2	2	1	1	2
	/	3	4	/	/
	/	3	5	/	/
	2	/	/	1	/
	/	3	4	/	/
	/	2	3	/	/

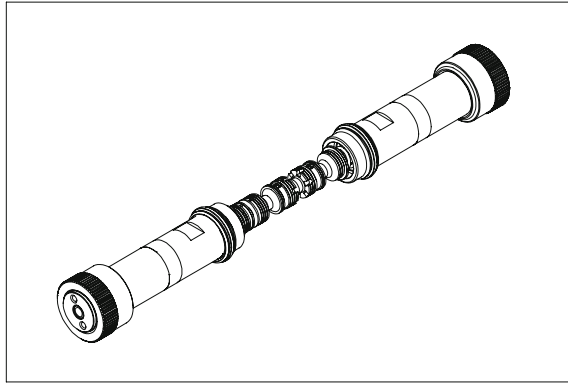
The diagram shows the performance limit curve of standard section. The fluid used is mineral oil viscosity 46 mm²/s at 40 °C ; the tests are performed at a 40 °C temperature

OVERALL DIMENSION - STANDARD SECTION

In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)

In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)





This spool group is rated for 50 lpm and for a maximum pressure of 320 bar; the spool is actuated by proportional tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	50 l/min
Max excitation frequency	3 Hz
Duty cycle	100 % ED
Max current	1,76A(12 V dc) 0,88A (24 V dc)
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm ² /s
Fluid temperature	-25°C/75°C
Enviroment temperature	-25°C/60°C
Weight with one solenoid	0,5 Kg
Weight with two solenoid	0,7 kg

ORDERING DETAILS: SEPARATE ELEMENTS

SH** - 0** - LSPR - ** - 396 - ***N

*	VERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	SPOOL FLOW
20	20 l/min at 12 bar - 10 l/min at 6 bar
35	35 l/min at 12 bar - 20 l/min at 6 bar
50	50 l/min at 12 bar - 30 l/min at 6 bar

**	ROPORTIONAL TYPE
...	See table n°1

*	COILS VOLTAGE
	no coils
A	12 V DC
B	24 V DC

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutshc (DT04-2P)
AJ	Amp Junior (AJ type)

QUICK CODE	
DESCRIPTION	CODE
SHNE-030-LSPR-77-396	
SHNE-030-LSPR-78-396	

TECHNICAL FEATURES

Proportionl type	Spool flow	Rated flow with 12 bar ΔP	Maximum flow	Max. operating pressure
All	20	15	20	320
All	35	30	35	320
All	50	45	50	320

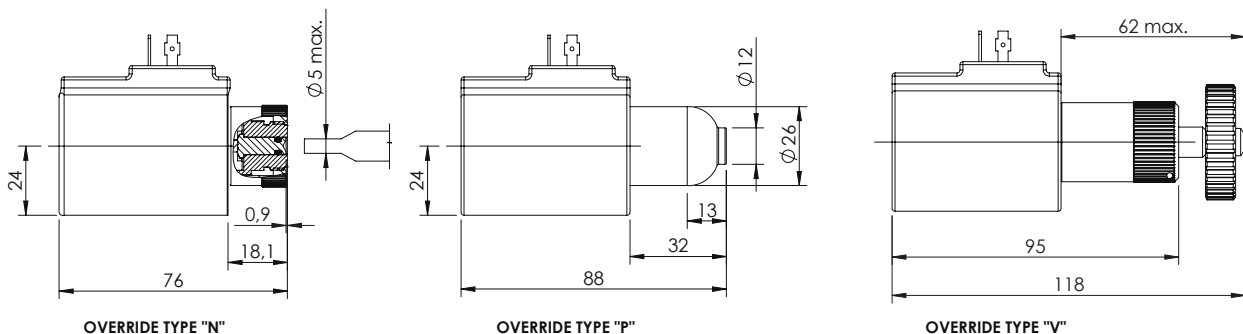
Proportionl type	Spool flow	Rated flow with 6 bar ΔP	Maximum flow	Max. operating pressure
All	20	10	15	320
All	35	20	25	320
All	50	30	35	320

HYDRAULIC SYMBOLS

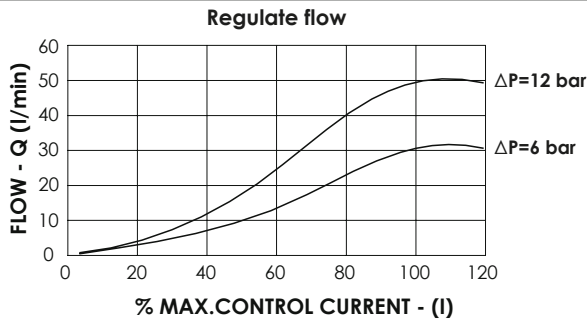
Table n°1

SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION
77		
78		

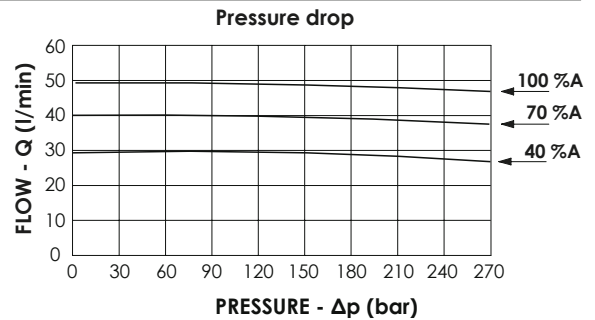
VERRIDE TYPE



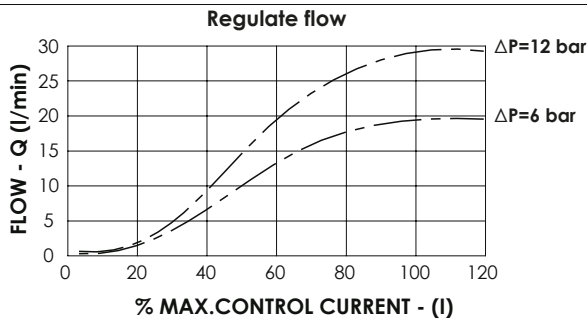
FLOW DIAGRAM - 050



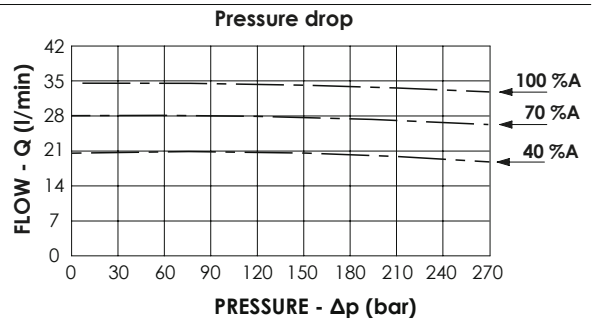
COMPESATION DIAGRAM - 050



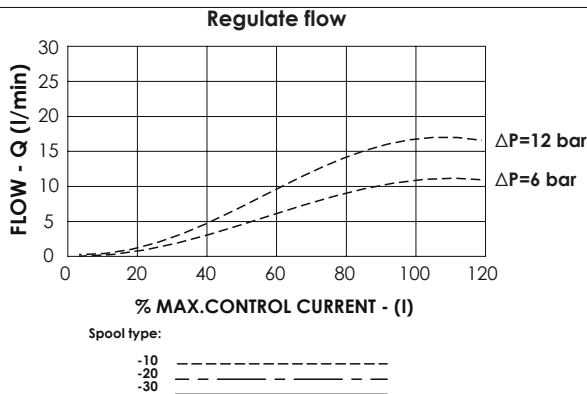
FLOW DIAGRAM - 035



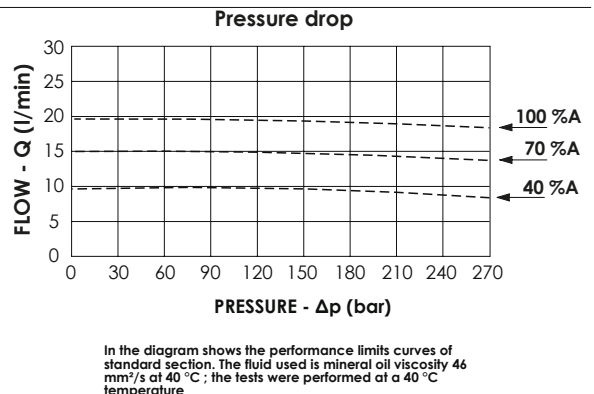
COMPENSATION DIAGRAM - 035



FLOW DIAGRAM - 020

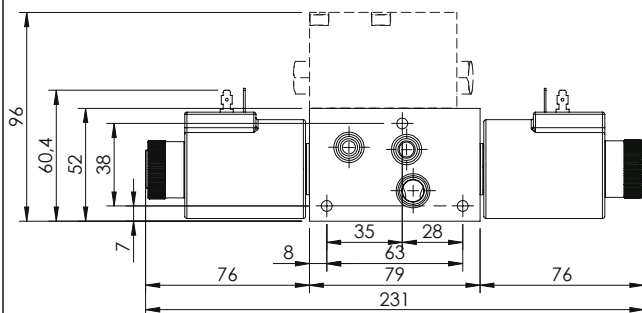


COMPENSATION DIAGRAM - 020

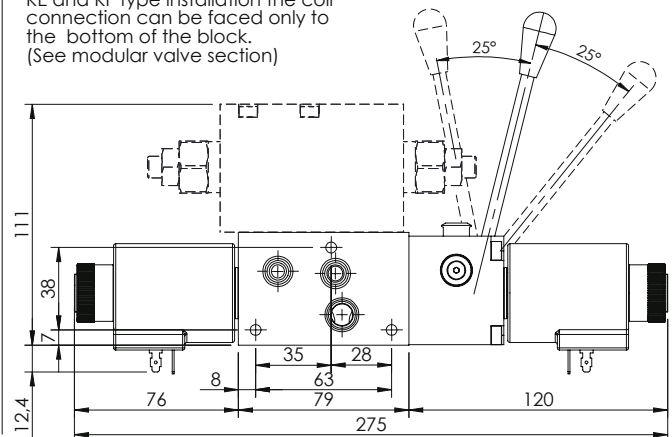


OVERALL DIMENSION - STANDARD SECTION

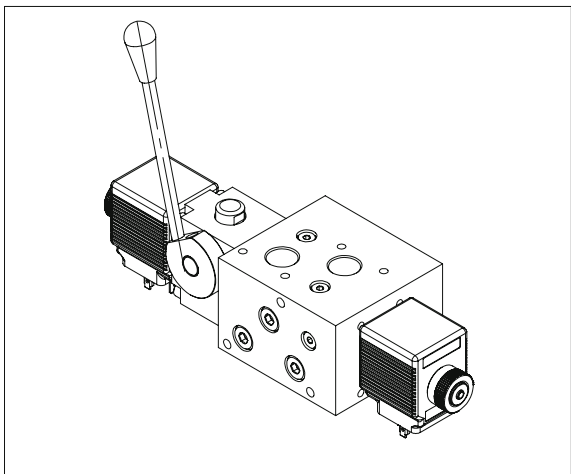
In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)



In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



MANUAL LEVER



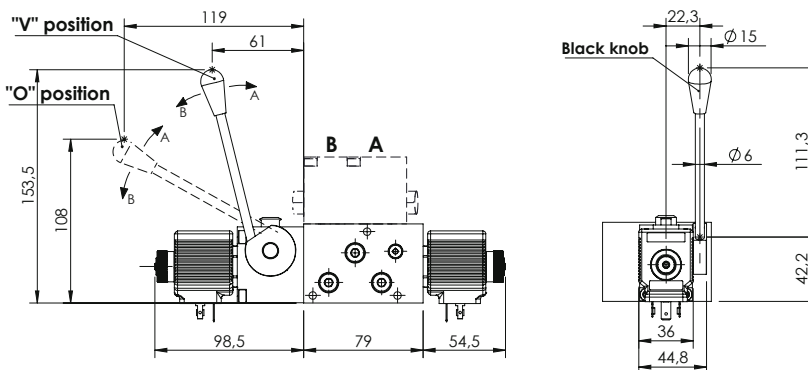
The lever option allow to operate manually the spool and can be ordered for all hydraulic schemes; in the standard version it is installed between monoblock and B port side coil. The lever is normally installed on the monoblock port side but can be installed also rotated of 180°; in each of these two positions the lever can be mounted vertical or horizontal simply removing the lever and reinstalling. The lever is not engaged during solenoid operation and doesn't move when a coil is energized.

TECHNICAL DATA

Max pressure	210/320 bar
Max pressure in line type	210 bar
Rated flow	30/60 l/min
Insertion	100 % ED
Weight more than standard	2 Kg
Weight more than standard	2,5 kg

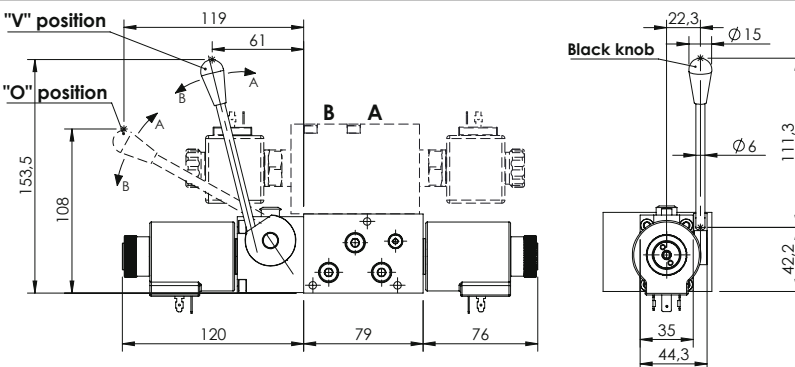
OVERALL DIMENSIONS/ LEVER FOR 30 L/MIN SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.



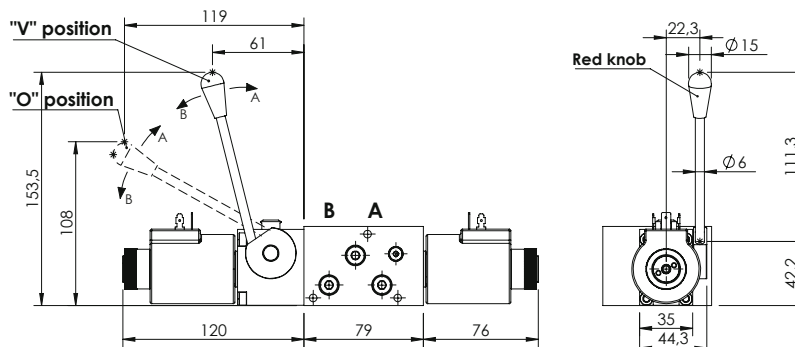
OVERALL DIMENSIONS/ LEVER FOR 60 L/MIN SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.

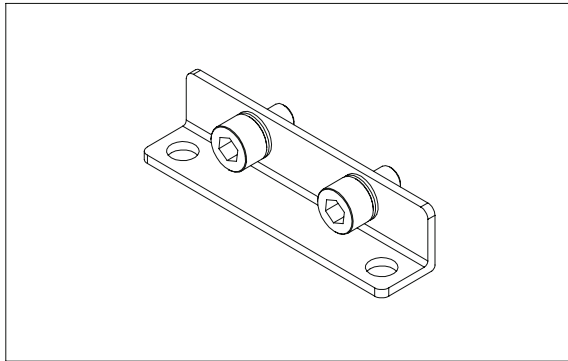


OVERALL DIMENSION/ LEVER FOR 50 L/MIN PROPORTIONAL SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.



MOUNTING SCREW

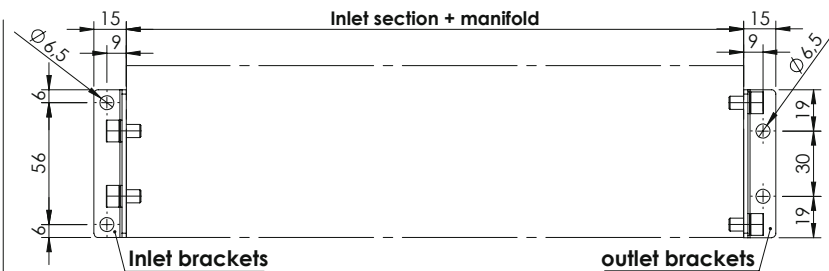
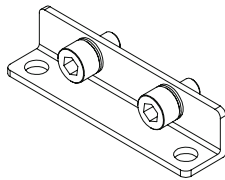


These parts are used to mount the directional valve on the application or to install modular valves and inlet section on the monoblock.

TECHNICAL DATA

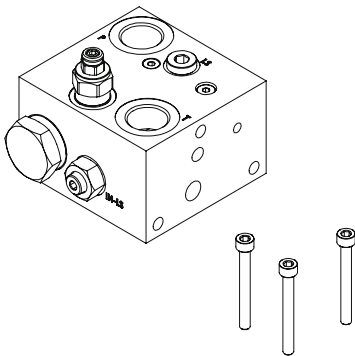
Screw type	ISO 4762
Thread type	coarse thread
Standard screw	resistance class 8.8
High resistance screw	resistance class 12.9
Standard screw treatment	zinc-plated (white)
High res. screw treatment	Anodized (black)

MOUNTING BRACKETS



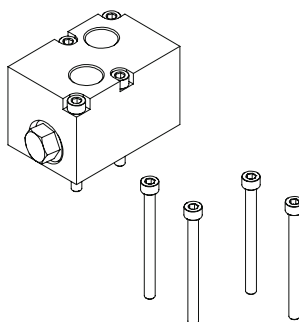
Mounting brackets	Screw length (mm)	Reference	Tightening Torque
PV000371	M6x10	AV000015 + PR000129	6 - 7 N/m

MOUNTING INLET SECTION



Inlet section	Screw length (mm)	Reference	Tightening Torque
SF000011	M6x80	AV000073	6 - 7 N/m
SF000019	M6x80	AV000073	6 - 7 N/m
SF000042	M6x75	PE000418	6 - 7 N/m
SF000045	M6x75	PE000418	6 - 7 N/m

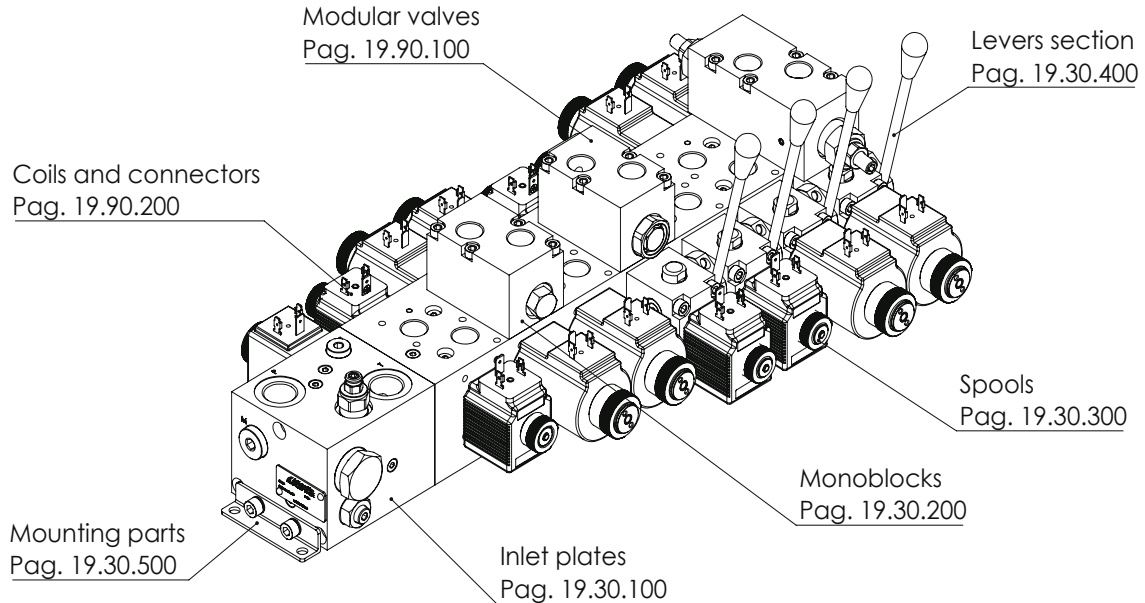
FIXING STACKING MODULES



Flangiabile valve	Screw length (mm)	Reference	Tightening Torque
MP	M5x16	AV000035	3 - 4 N/m
MA, MC and MB	M5x45	PE000148	3 - 4 N/m
KE and MF	M5x60	AV000016	3 - 4 N/m

EBP series

**MONOBLOCK
PRE-COMPENSATED
LOAD SENSING VALVE
ON-OFF OR PROPORTIONAL**



FEATURES

- Compact dimensions
- Low weight
- Custom spools
- Custom inlet blocks
- LS line on each spool section
- LS compensator on each spool section
- Sandwich valves for extra functions
- Cast iron monoblock and aluminum inlet block for standard applications
- High resistance cast iron monoblock and steel inlet block for high pressure systems
- Optional levers for manual operation
- No leak risk between sections
- Spools not under rod tension
- Zinc plated/anodized components for corrosion resistance

SPECIFICATION \ DESCRIPTION

MAXIMUM OPERATING PRESSURE	Steel inlet block: 320 bar (4600 PSI) Aluminium inlet block: 210 bar (3045 PSI)
MAXIMUM TANK PRESSURE	20 bar (290 PSI)
RATED FLOW	030 series: 30 l/min (7.9 GPM) 060 series: 60l/min (15.8 GPM)
COIL POWER	030 series: 26 W 060 series: 33 W
VOLTAGE	12 V dc, 24 VDC, others on request
COIL CONNECTOR	DIN43650, AMP Junior, Deutsch DT04
PORTS	Inlet: G1/2", 1/2 JIS, 7/8-14 UNF-2B (SAE#10) Outlet: G3/8", 3/8 JIS, 3/4-16 UNF-2B (SAE#8)
OPERATING TEMPERATURE	NBR (ISO 1629) seals: -30, + 80 °C FKM (ISO 1629) seals: -20, +110 °C
FILTRATION	ISO 4406 17/14 or better
MOUNTING POSITION	No restrictions
MATERIAL	Spool body: cast iron Spool: Hardened and grounded steel Inlet block: Aluminium or steel
SURFACE TREATMENT	Steel: zinc plating Aluminium: anodization

EBN series is a new directional load sensing pre-compesated valve that has innovative features in terms of performance, dimension, manufacturing reliability and customization. The valve consists in an inlet block flanged to a monoblock with spools. This construction gives the advantages of high flexibility in inlet block schemes, combined with the reliability and simplicity of monoblock spool valve construction, eliminating the risk of spools blocking due to overtightening of tie rods or the risk of leakage between sections. The spool monoblock is a 2 or 3 position, 4 ways, direct acting solenoid operated type. All sections have threaded ports at the top and removable plugs for tank connections to allow the installation of flanged blocks with additional functions like crossover reliefs, reliefs to tank, relief and anticavitations, counterbalance valves, P.O. checks, flow restrictors and flow regulators. All sections are equipped with standard push button override and they can be equipped with lever for manual use.

HOW ORDER IT

To order the separate parts please refer to each catalogue page.

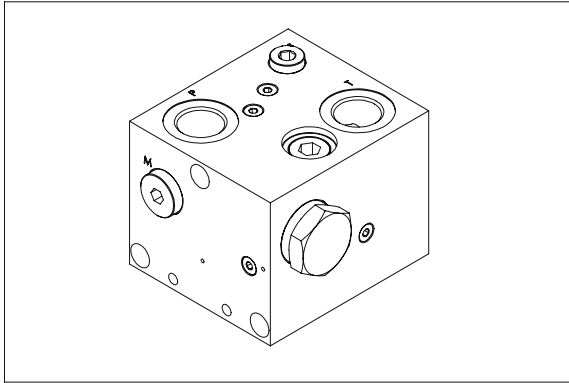
To order an assembled block, contact AFT sales network specifying the part numbers following page 19.90.900 path.

For special versions please contact AFT sales network.

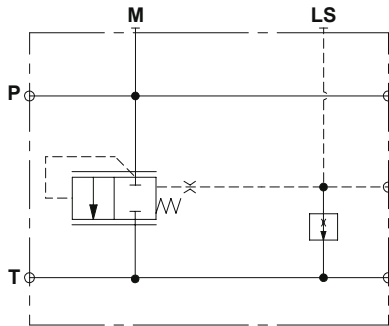
EBP series - INLET SECTION

SFPL-060-ZNNN-16

**P, T PORTS
M PORTS**



HYDRAULIC SCHEME

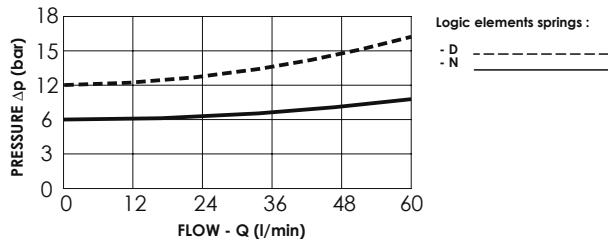


This inlet section is equipped with two thread ports (P,T) available in two different types G 1/2" or 3/4"-16 UNF plus a third threaded port M for pressure measuring available in G 1/4" or 7/16"-20. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	1,2 Kg

PRESSURE DROP LOGIC ELEMENT



ORDERING DETAILS: SEPARATE ELEMENTS

SFPL-060- * * NN-16 - * * * -N

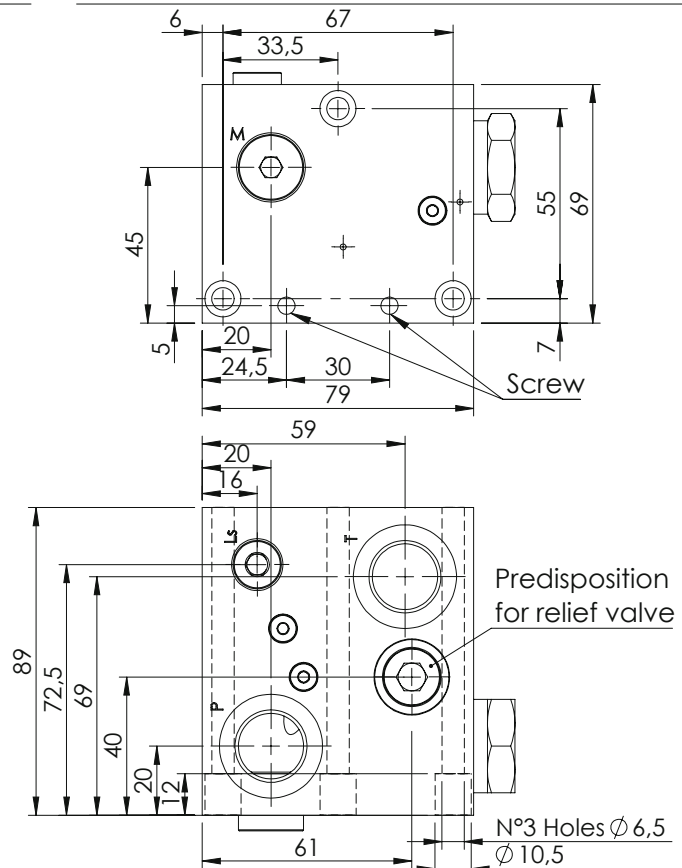
*	MATERIAL TYPE	
A	Steel zinc-plated	(320 bar)
Z	Aluminium anodized	(210 bar)

*	LOGIC ELEMENT SPRING	
D	Spring setting 12 bar	(CD000103)
N	Spring setting 6 bar	(CD000073)

***	PORTS		
	P line	T line	M
G12	G 1/2"	G 1/2"	G 1/4"
U34	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF

QUICK CODE	
DESCRIPTION	CODE
SFPL-060-ZNNN-16-G12-N	SF000048

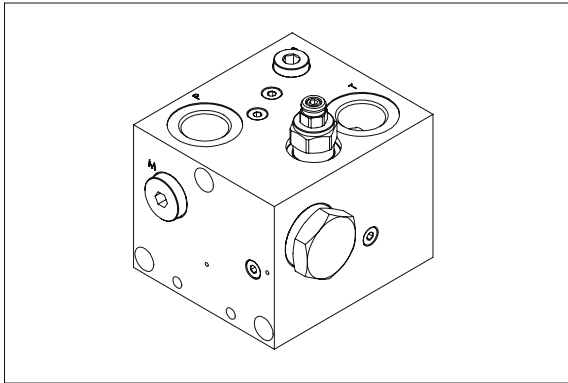
OVERALL DIMENSIONS



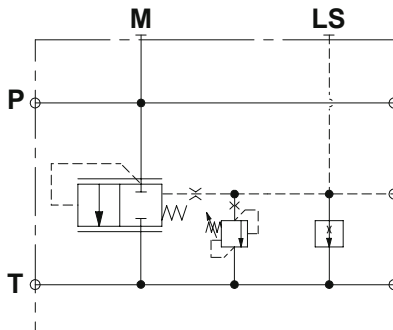
EBP series - INLET SECTION

SFPL-060-ZNNN-17

**RELIEF VALVE
M PORTS**



HYDRAULIC SCHEME

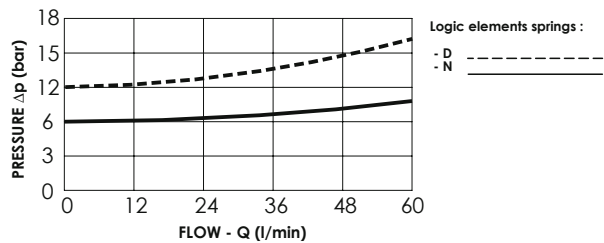


This inlet section is equipped with relief valve with adjustable setting operating on Ls signal, the adjustment is made by socket screw. This inlet section is equipped with two thread ports (P,T) available in two different types G 1/2" or 3/4"-16 UNF plus a third threaded port M for pressure measuring available in G 1/4" or 7/16"-20. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	1,3 Kg

PRESSURE DROP LOGIC ELEMENT



ORDERING DETAILS: SEPARATE ELEMENTS

SFPL-060-*N-17-***-N**

*	MATERIAL TYPE
A	Steel zinc-plated (310 bar)
Z	Aluminium anodized (210 bar)

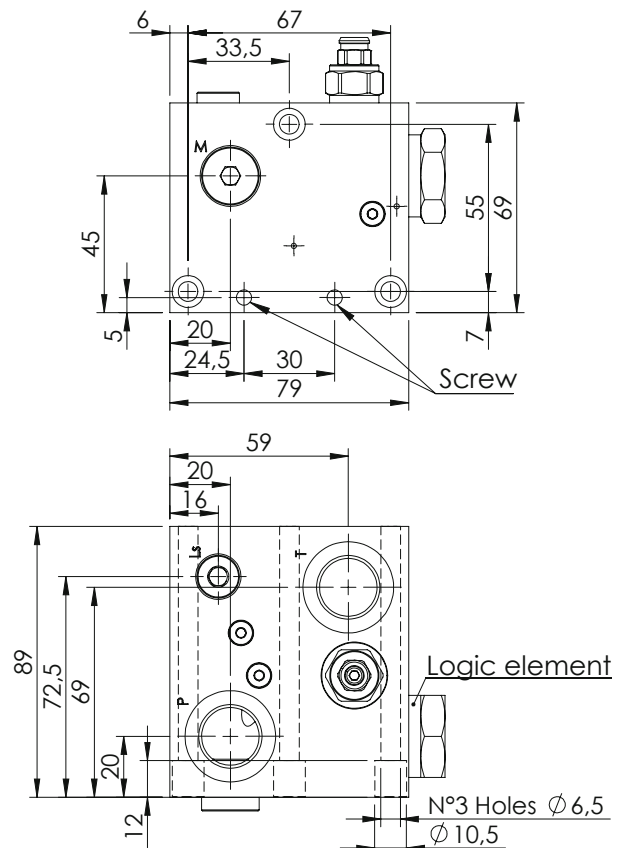
*	LOGIC ELEMENT SPRING
D	Spring setting 12 bar (CD000103)
N	Spring setting 6 bar (CD000073)

*	SETTING RANGE
N	Max setting 210 bar (CP000029)
A	Max setting 110 bar (CP000030)
B	Max setting 350 bar (CP000002)

***	PORTS		
	P line	T line	M
G12	G 1/2"	G 1/2"	G 1/4"
U34	3/4"-16 UNF	3/4"-16 UNF	7/16"-20 UNF

QUICK CODE	
DESCRIPTION	CODE
SFPL-060-ZNNN-17-G12-N	SF000047

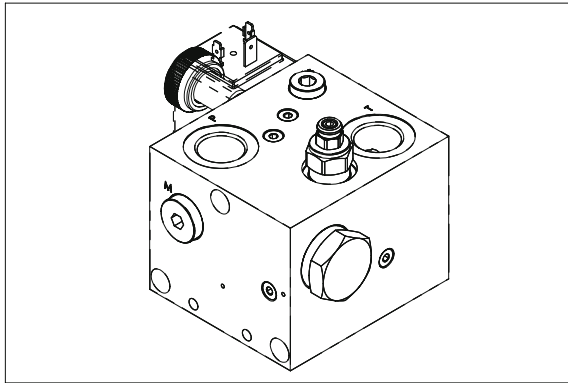
OVERALL DIMENSIONS



EBP series - INLET SECTION

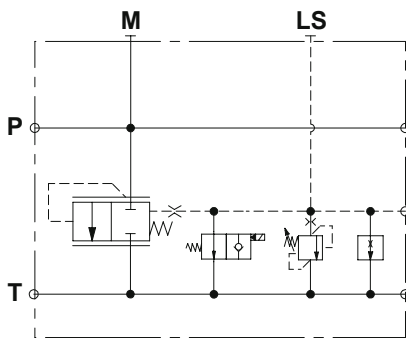
SFPL-060-ZNNN-19

**RELIEF VALVE
UNLOADING VALVE**



This inlet section is equipped with relief valve with adjustable setting operating on Ls signal, the adjustment is made by socket screw. It is present an unloading solenoid valve normally open with emergency operating on Ls signal. There are two thread ports (P, T) available in two different types G 1/2" or 3/4"-16 UNF plus M port available in G 1/4". Max inlet flow 60 l/min. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

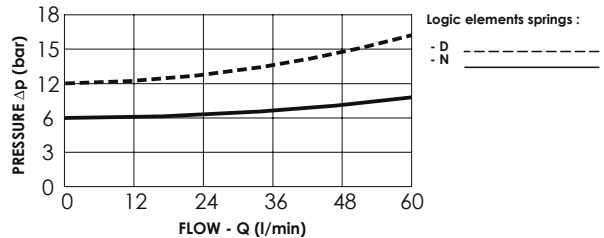
HYDRAULIC SCHEME



TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	1,4 Kg

PRESSURE DROP LOGIC ELEMENT

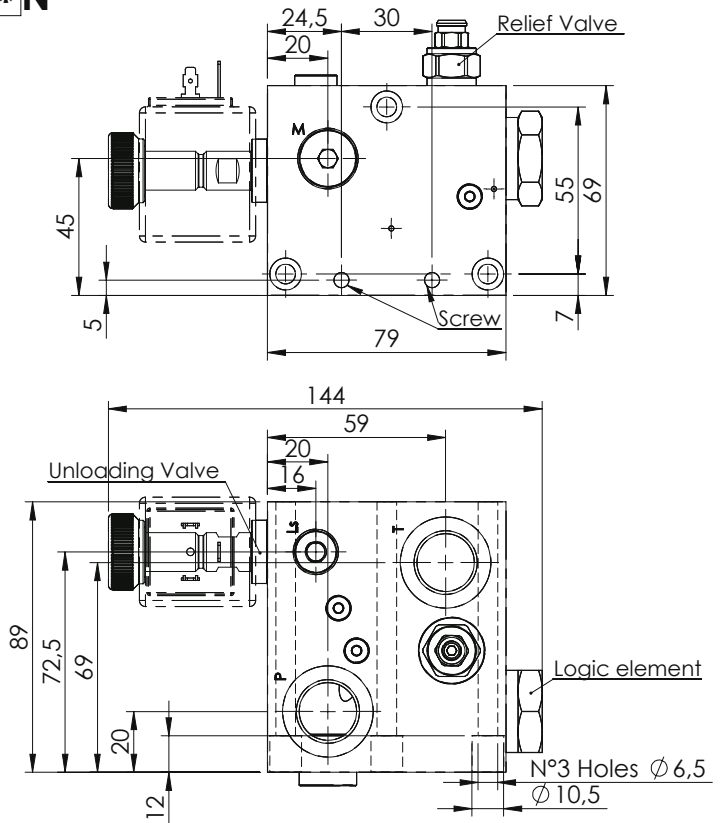


ORDERING DETAILS: SEPARATE ELEMENTS

SFPL-060-*N-19-***-***N**

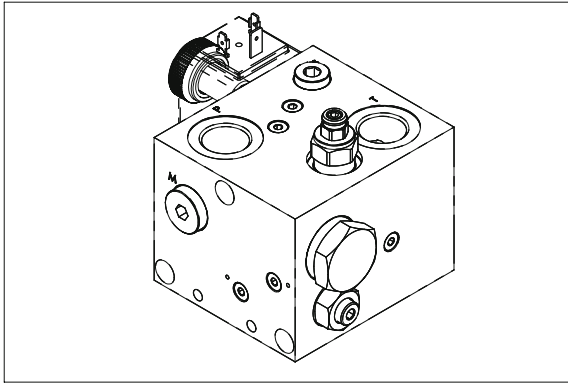
*	MATERIAL TYPE	
A	Steel zinc-plated	(320 bar)
Z	Aluminium anodized	(210 bar)
*	LOGIC ELEMENT SPRING	
D	Spring setting 12 bar	(CD000103)
N	Spring setting 6 bar	(CD000073)
*	SETTING RANGE	
N	Max setting 210 bar	(CP000029)
A	Max setting 110 bar	(CP000030)
B	Max setting 350 bar	(CP000002)
***	PORTS	
	P line	T line M
G12	G 1/2"	G 1/2" G 1/4"
U34	3/4"-16 UNF	3/4"-16 UNF 7/16"-20 UNF
*	VOLTAGE	
	no coils	
A	12 V DC	
B	24 V DC	
**	COILS TYPE	
	no coils	
HR	Hirshmann (ISO 4400 DIN 43650)	
DT	Deutsch (DT04-2P)	
AJ	Amp junior (AJ type)	
	QUICK CODE	
	DESCRIPTION	CODE
	SFPL-060-ZNNN-19-G12-N	SF000046
	Unloading valve	CE000873

OVERALL DIMENSIONS

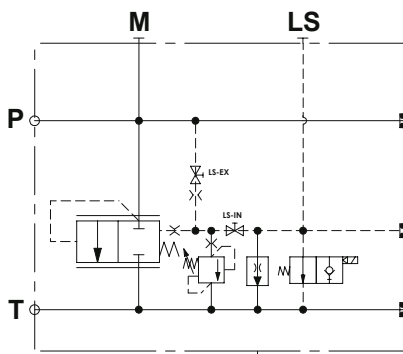


SFPL-060-ZNNN-20

RELIEF VALVE
UNLOADING VALVE WITH
EXTERNAL OR INTERNAL LS



HYDRAULIC SCHEME

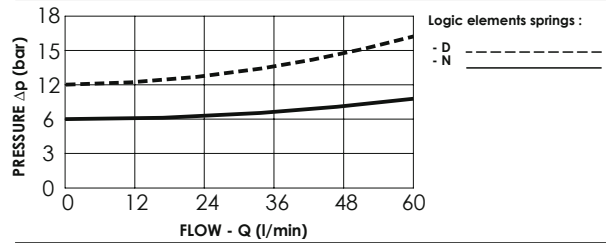


This inlet section is equipped with relief valve with adjustable setting operating on Ls signal, the adjustment is made by socket screw. It is present an unloading compensator normally closed operating with Ls signal. There are two thread ports (P, T) available in two different types G 1/2" or 3/4"-16 UNF plus M port available in G 1/4". Max inlet flow 60 l/min. The manifold material is aluminium for applications up to 210 bar or zinc plated steel for applications up to 320 bar.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	1,4 Kg

PRESSURE DROP LOGIC ELEMENT

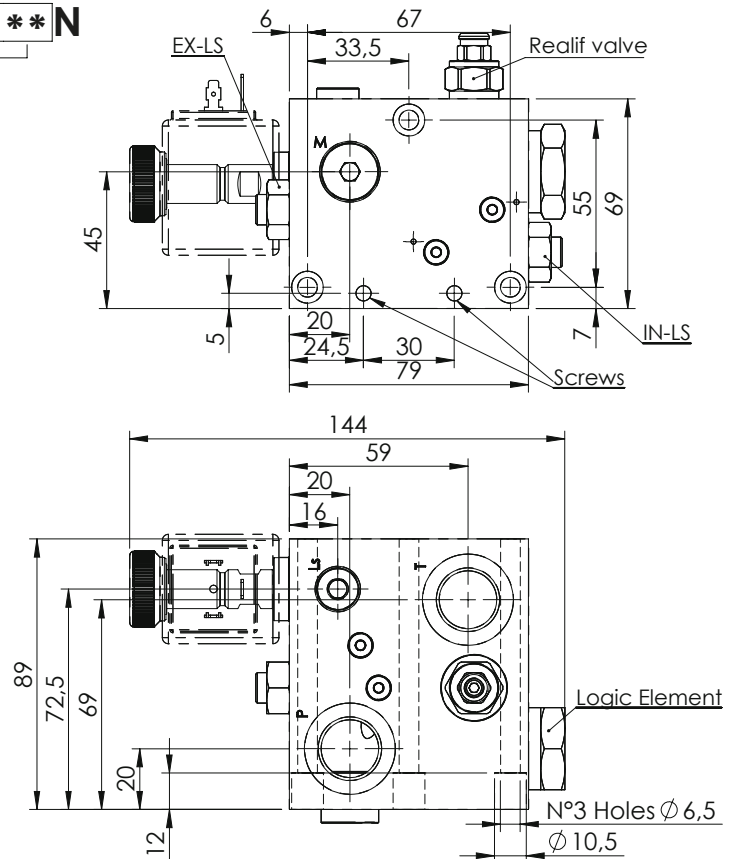


ORDERING DETAILS: SEPARATE ELEMENTS

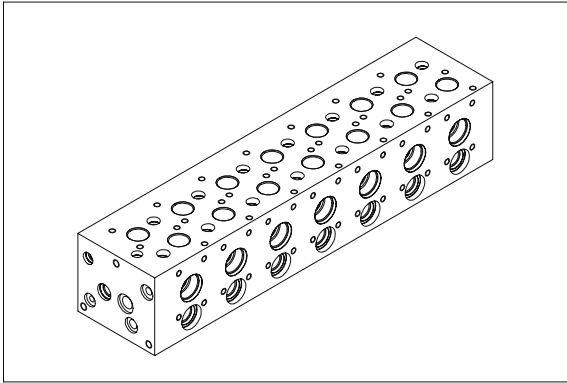
SFPL-060-***N-20-***-***N

*	MATERIAL TYPE
A	Steel zinc-plated (320 bar)
Z	Aluminium anodized (210 bar)
*	LOGIC ELEMENT SPRING
D	Spring setting 12 bar (CD000103)
N	Spring setting 6 bar (CD000073)
*	SETTING RANGE
N	Max setting 210 bar (CP000029)
A	Max setting 110 bar (CP000030)
B	Max setting 350 bar (CP000002)
***	PORTS
	P line T line M
G12	G 1/2" G 1/2" G 1/4"
U34	3/4"-16 UNF 3/4"-16 UNF 7/16"-20 UNF
*	VOLTAGE
	no coils
A	12 V DC
B	24 V DC
**	COILS TYPE
	no coils
HR	Hirshmann (ISO 4400 DIN 43650)
DT	Deutsch (DT04-2P)
AJ	Amp junior (AJ type)
	QUICK CODE
	DESCRIPTION CODE
	SFPL-060-ZNNN-20-G12-N SF000041
	Unloading valve CE000873

OVERALL DIMENSIONS



In LDPP/S-060-C plug are included in the manifold



The manifold's valve can be ordered with 3 types of ports for connection nipples G 3/8" 9/16"-18 UNF (SAE6) and M16x1,5. Standard version is G 3/8" for other type of ports we will mounting flangiabe elemens it change G 3/8" to 9/16"-18 UNF (SAE6) or M16x1,5 (can look that in dimension drawing). Manifold it's made in cast-iron with zinc-plated (black) surface treatment with sealant. It isn't a modular block for reduce to minimun the leakage throught the section and also for haven't problem with screw torque. Also can easely open, removing plug, extra T connection for different kind of use such as modular valve flangiabe on distributor.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	60 l/min
Material	Cast-iron
Surface treatment	Zinc-plated black
Weight for single section	2,5 kg
Wight for additional sections	+ 1,5 Kg each

ORDERING DETAILS: SEPARATE ELEMENTS

LDP * - 060 - NNNN - ** - ***

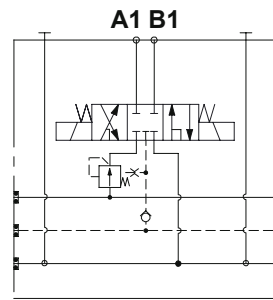
*	TYPE OF MANIFOLD
S	Series connection
P	Parallel connection

**	NUMBER OF SECTION
01	manifold with one section
02	manifold with two sections
03	manifold with three sections
04	manifold with four sections
05	manifold with five sections
06	manifold with six sections
07	manifold with seven sections

***	PORTS		
	P line	T line	M
G38	G 3/8"	G 3/8"	G 1/4"
U09	9/16"-18 UNF	9/16"-18 UNF	7/16"-20 UNF

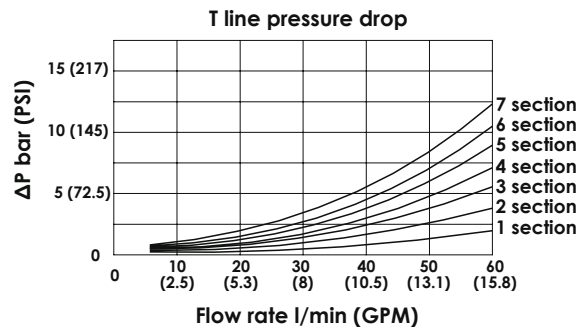
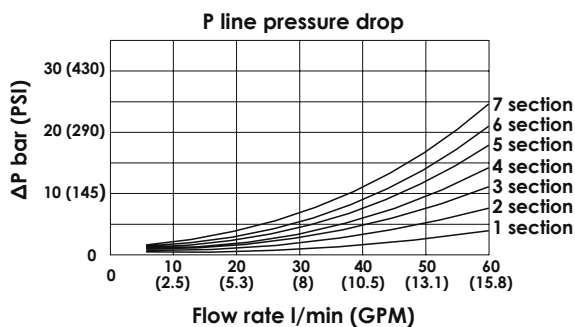
QUICK CODE	
DESCRIPTION	CODE
LDPP-060-NNNN-01-G12	LD000289
LDPP-060-NNNN-02-G12	LD000293
LDPP-060-NNNN-03-G12	LD000292
LDPP-060-NNNN-04-G12	LD000291
LDPP-060-NNNN-05-G12	LD000290
LDPP-060-NNNN-06-G12	LD000279
LDPP-060-NNNN-07-G12	LD000284

MANIFOLD CONFIGURATIONS



LDPP-060

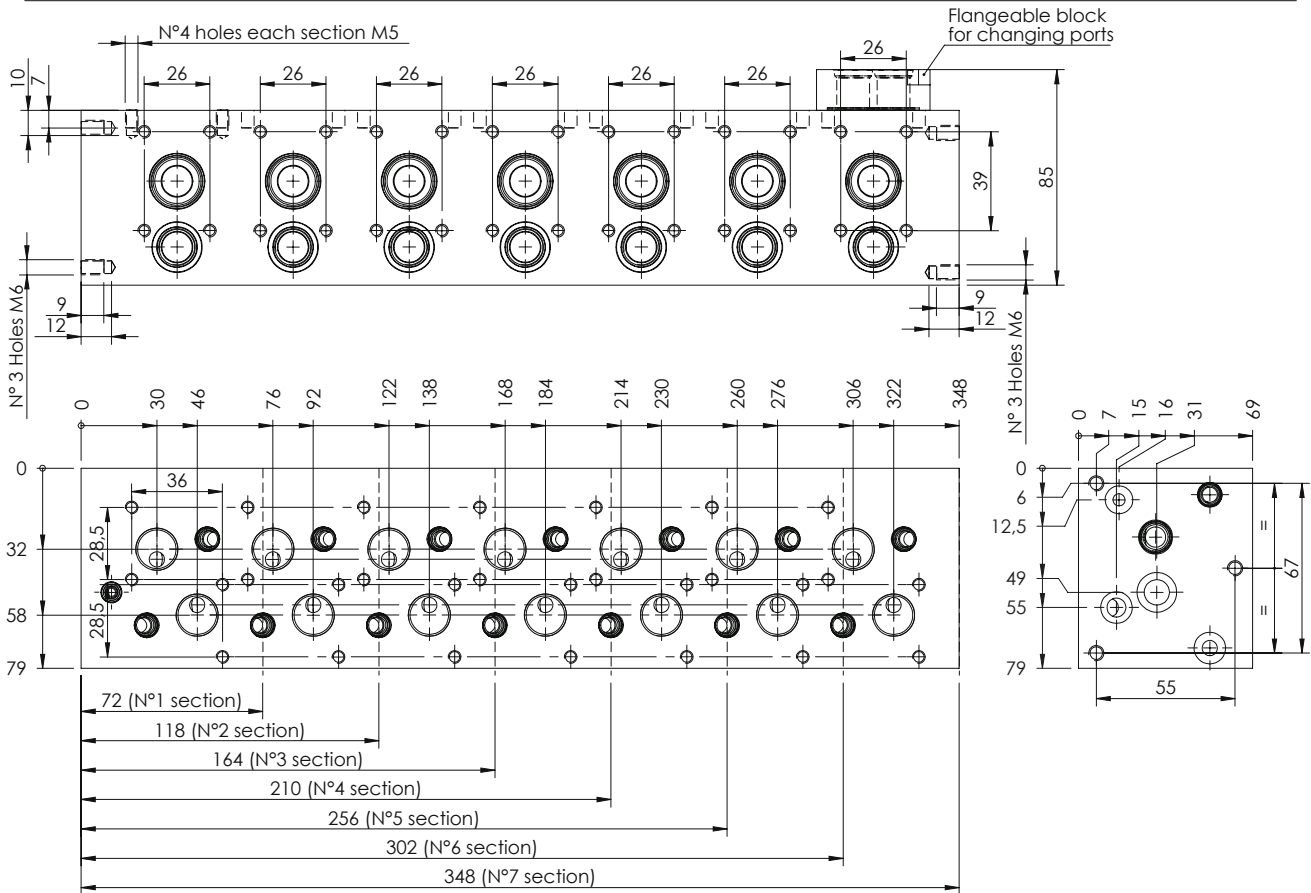
MONOBLOCK PRESSURE DROP



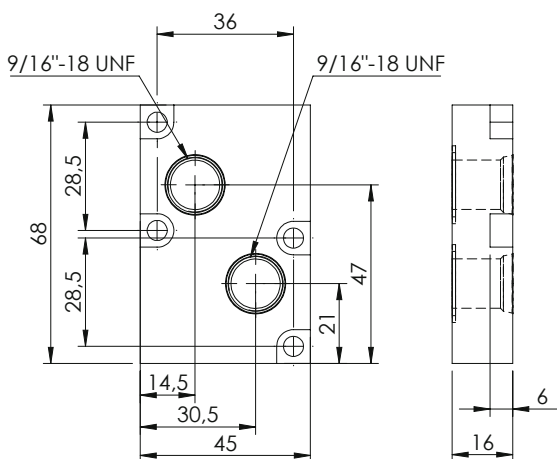
LDPP-060-NNNN

**CAST-IRON
MANIFOLD**

GAS VERSION



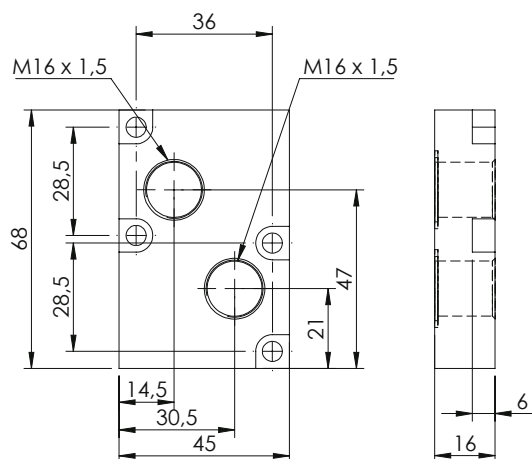
SAE VERSION



This top flangeable block transform the monoblock to a UNF version.

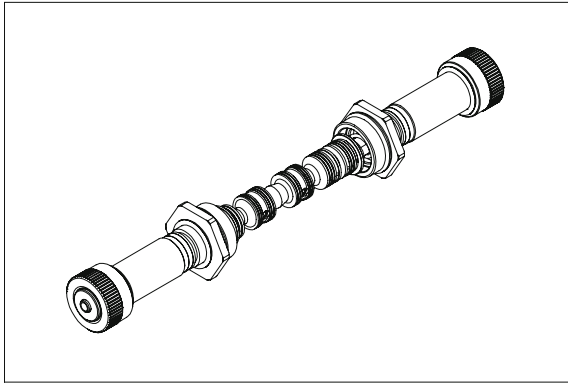
Quick code: **MP000096**

METRIC VERSION



This top flangeable block transform the monoblock to a Metric version.

Quick code: **MP000097**



This spool group is rated for 30 lpm and for a maximum pressure of 320 bar; the spool is actuated by on off tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	30 l/min
Max excitation frequency	3 Hz
Duty cycle	100 % ED
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm ² /s
Fluid temperature	-25°C/75°C
Enviroment temperature	-25°C/60°C
Weight with one solenoid	0,12 Kg
Weight with two solenoid	0,15 kg

ORDERING DETAILS: SEPARATE ELEMENTS

SH * * - 030 - LS ** - ** - 396 - * * * N

*	VERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	ACTUATION TYPE
ON	On/Off
SS	Soft shift

**	SPOOL TYPE
...	See table n°1

*	COILS VOLTAGE
	no coils
A	12 V DC
B	24 V DC

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutshc (DT04-2P)
AJ	Amp Junior (AJ type)

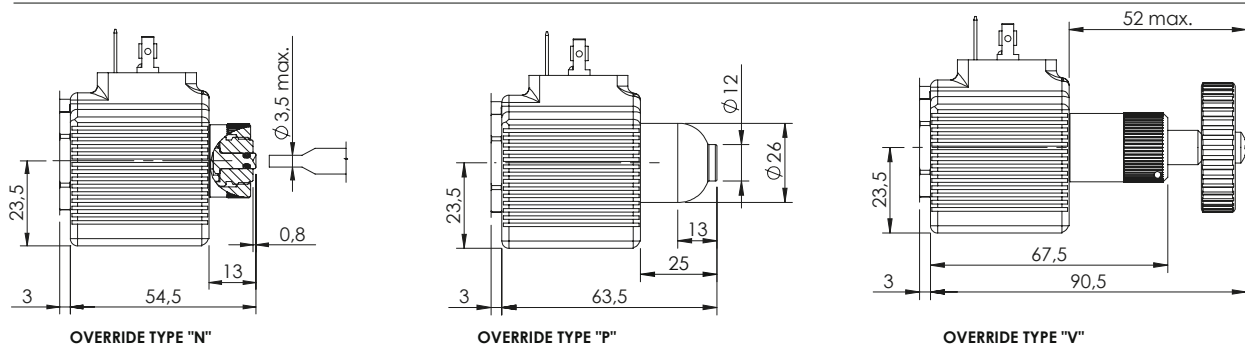
QUICK CODE	
DESCRIPTION	CODE
SHNE-030-LSO-74-396	
SHNE-030-LSO-75-396	

HYDRAULIC SYMBOLS

Table n°1

SPOOL CODE	HYDRAULIC SCHEME		TRANSITORY POSITION	
	a	b	a	b
74				
75				
SPOOL CODE	HYDRAULIC SCHEME		TRANSITORY POSITION	
	a	b	a	b

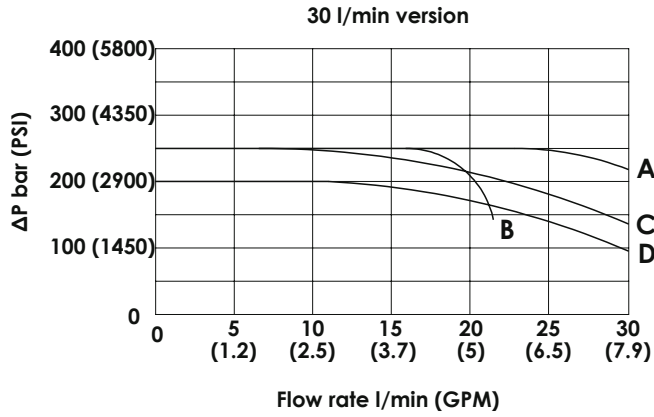
VERRIDE TYPE



SHNE-030-LSON

30 L/MIN
SOLENOID VALVE

PERFORMANCE LIMITS CURVES - STANDARD SECTION



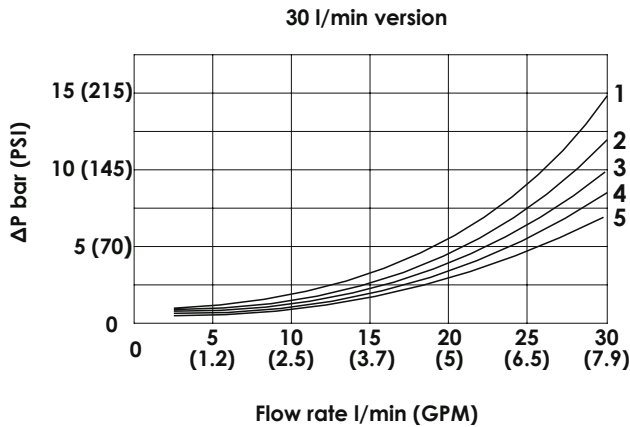
Spool type	Performance limits curve
74	A
75	A
	B
	A
	A
	A
	C
	D

The tests are carried out with hot solenoids, powered with 90 % of nominal voltage, with 50 °C fluid temperature. The fluid used is mineral oil having a viscosity of 46 mm² / s @ 40 °C.

The values in the diagram refer to tests carried out with flow simultaneously in both directions (P > A, B > T).

In cases of schemes 4/2 or 4/3 used with the flow in one direction only the performance can change.

PRESSURE DROP CURVES - STANDARD SECTION

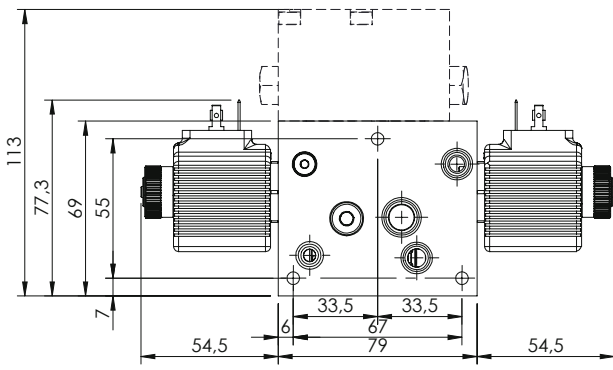


Spool type	Pressure drop curve				
	P>A	P>B	A>T	B>T	P>T
74	3	3	4	4	/
75	3	3	5	5	/
	2	2	1	1	2
	/	3	4	/	/
	/	3	5	/	/
	2	/	/	1	/
	/	3	4	/	/
	/	2	3	/	/

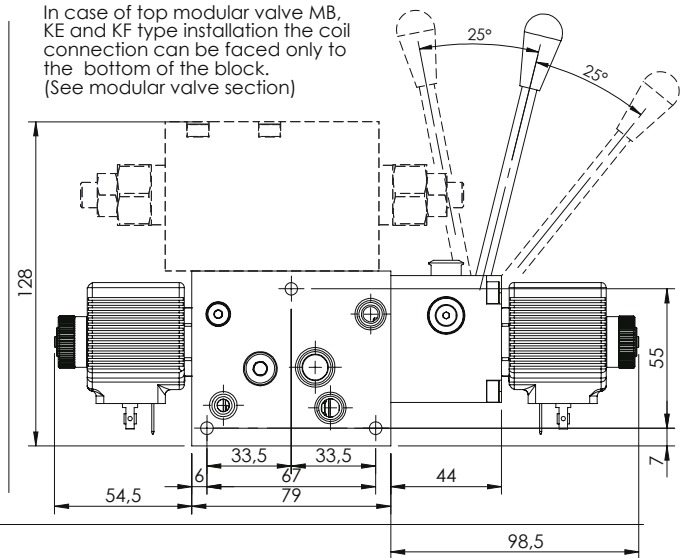
The diagram shows the performance limit curve of standard section. The fluid used is mineral oil viscosity 46 mm²/s at 40 °C ; the tests are performed at a 40 °C temperature

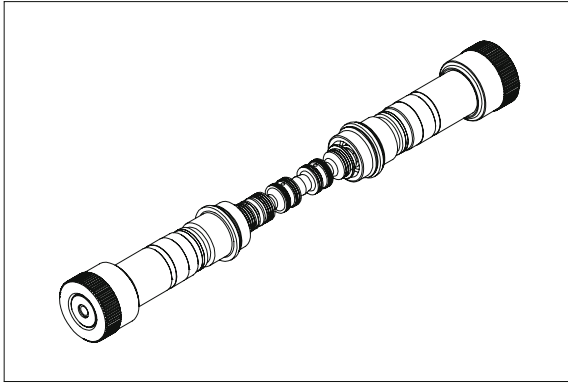
OVERALL DIMENSION - STANDARD SECTION

In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)



In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)





This spool group is rated for 60 lpm and for a maximum pressure of 320 bar; the spool is actuated by on off tubes and can be ordered with different hydraulic schemes. Each spool is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	60 l/min
Max excitation frequency	3 Hz
Duty cycle	100 % ED
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight with one solenoid	0,2 Kg
Weight with two solenoid	0,4 kg

ORDERING DETAILS: SEPARATE ELEMENTS

SH** - 060 - LS ** - ** - 396 - ** * N

*	VERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	ACTUATION TYPE
ON	On/Off
SS	Soft shift

**	SPOOL TYPE
...	See table n°1

*	COILS VOLTAGE
	no coils
A	12 V DC
B	24 V DC

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutshc (DT04-2P)
AJ	Amp Junior (AJ type)

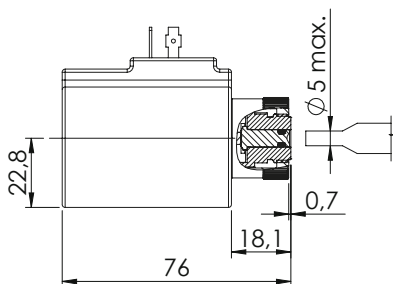
QUICK CODE	
DESCRIPTION	CODE
SHNE-060-LSON-74-396	
SHNE-060-LSON-75-396	

HYDRAULIC SYMBOLS

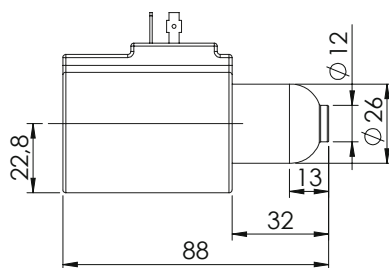
Table n°1

SPOOL CODE	HYDRAULIC SCHEME		TRANSITORY POSITION		
	a	b	a	b	
74					
75					
SPOOL CODE	HYDRAULIC SCHEME		TRANSITORY POSITION		
a	b	a	b	a	b

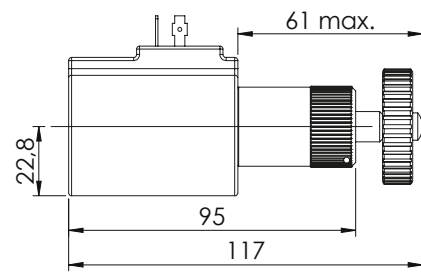
VERRIDE TYPE



VERRIDE TYPE "N"

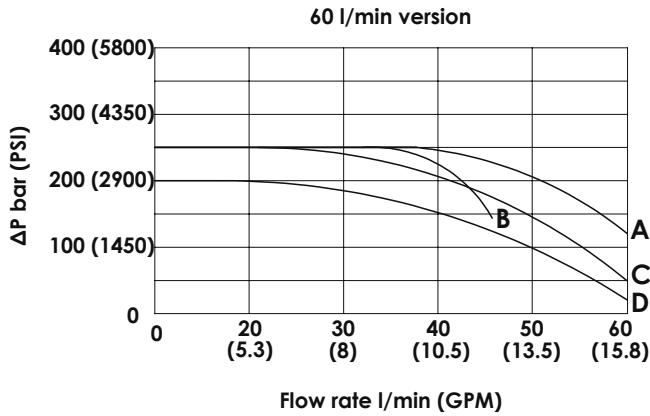


VERRIDE TYPE "P"



VERRIDE TYPE "V"

PERFORMANCE LIMIT CURVES - STANDARD SECTION



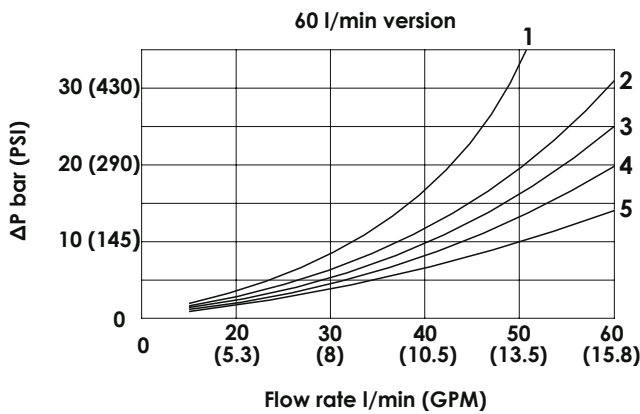
Spool type	Performance limits curve
74	A
75	A
	B
	A
	A
	A
	C
	D

The tests are carried out with hot solenoids, powered with 90 % of nominal voltage, with 50 °C fluid temperature. The fluid used is mineral oil having a viscosity of 46 mm² / s @ 40 °C.

The values in the diagram refer to tests carried out with flow simultaneously in both directions (P > A, B > T).

In cases of schemes 4/2 or 4/3 used with the flow in one direction only the performance can change.

PRESSURE DROP CURVES - STANDARD SECTION

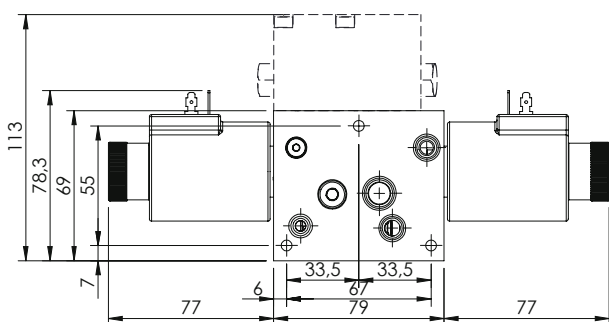


Spool type	Pressure drop curve				
	P>A	P>B	A>T	B>T	P>T
74	3	3	4	4	/
75	3	3	5	5	/
	2	2	1	1	2
	/	3	4	/	/
	/	3	5	/	/
	2	/	/	1	/
	/	3	4	/	/
	/	2	3	/	/

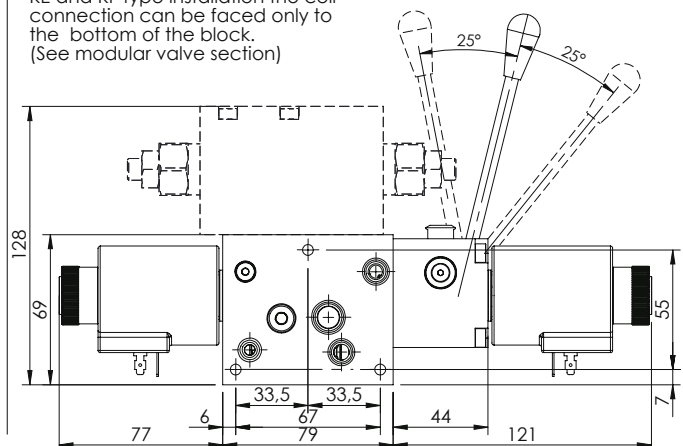
The diagram shows the performance limit curve of standard section. The fluid used is mineral oil viscosity 46 mm²/s at 40 °C ; the tests are performed at a 40 °C temperature

OVERALL DIMENSION - STANDARD SECTION

In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)

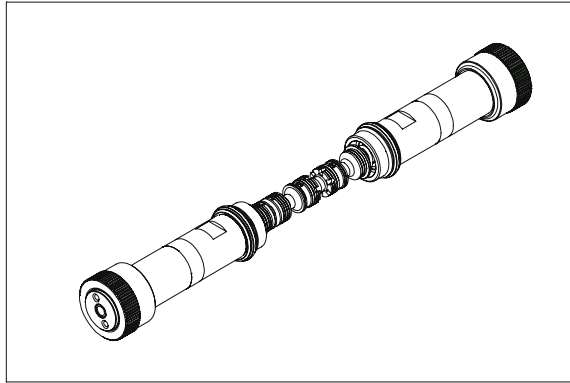


In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



SHNE-050-LSPR

50 L/MIN
PROPORTIONAL
SOLENOID VALVE



This spool group is rated for 50 lpm and for a maximum pressure of 320 bar; the spool is actuated by proportional tubes and can be ordered with different hydraulic schemes. Each spools is interchangeable to give maximum flexibility and can be fit in all monoblock sections, changing spools require adequate training. The group is made by two tubes, one spool, two springs and mounting components.

TECHNICAL DATA

Max pressure	320 bar
Rated flow	50 l/min
Max excitation frequency	3 Hz
Duty cycle	100 % ED
Max current	1,76A(12 V dc) 0,88A (24 V dc)
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10/500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight with one solenoid	0,2 Kg
Weight with two solenoid	0,4 kg

ORDERING DETAILS: SEPARATE ELEMENTS

SH** - 0** - LSPR - ** - 396 - ***N

*	OVERRIDE TYPE
N	Standard
P	Push
V	Screw

*	SECTION TYPE
E	Solenoid operated
L	Solenoid operated plus lever operated
M	Lever operated

**	SPOOL FLOW
20	20 l/min at 12 bar - 10 l/min at 6 bar
35	35 l/min at 12 bar - 20 l/min at 6 bar
50	50 l/min at 12 bar - 30 l/min at 6 bar

**	SPOOL TYPE
...	See table n°1

*	COILS VOLTAGE
	no coils
A	12 V DC
B	24 V DC

**	COILS TYPE
	no coils
HR	Hirschmann (ISO 4400 DIN 43650)
DT	Deutshc (DT04-2P)
AJ	Amp Junior (AJ type)

QUICK CODE	
DESCRIPTION	CODE
SHNE-030-LSPR-77-396	
SHNE-030-LSPR-78-396	

TECHNICAL FEATURES

Proportionl type	Spool flow	Rated flow with 12 bar ΔP	Maximum flow	Max. operating pressure
All	20	15	20	320
All	35	30	35	320
All	50	45	50	320

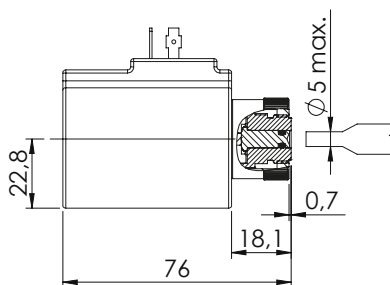
Proportionl type	Spool flow	Rated flow with 6 bar ΔP	Maximum flow	Max. operating pressure
All	20	10	15	320
All	35	20	25	320
All	50	30	35	320

HYDRAULIC SYMBOLS

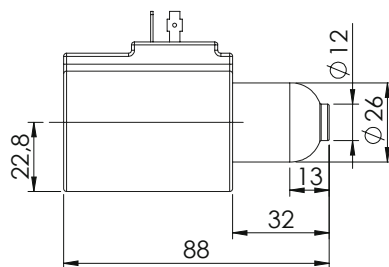
Table n°1

SPOOL CODE	HYDRAULIC SCHEME	TRANSITORY POSITION
77		
78		

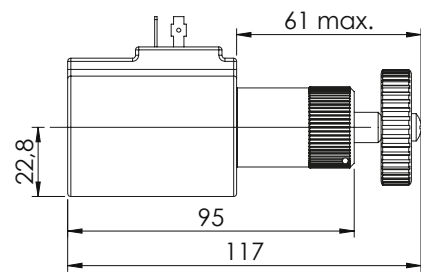
VERRIDE TYPE



VERRIDE TYPE "N"



VERRIDE TYPE "P"

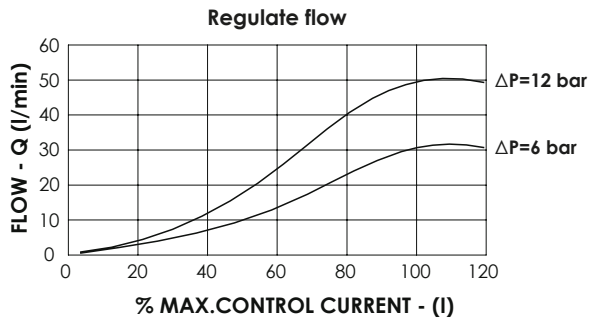


VERRIDE TYPE "V"

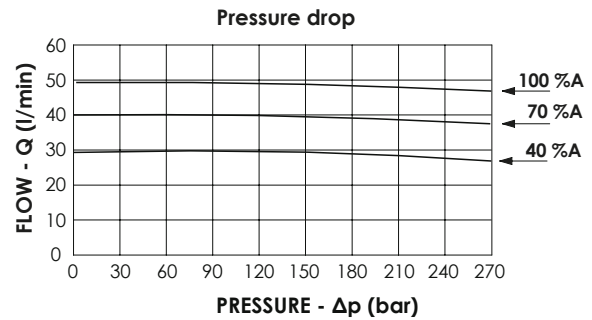
SHNE-050-LSPR

50 L/MIN
PROPORTIONAL
SOLENOID VALVE

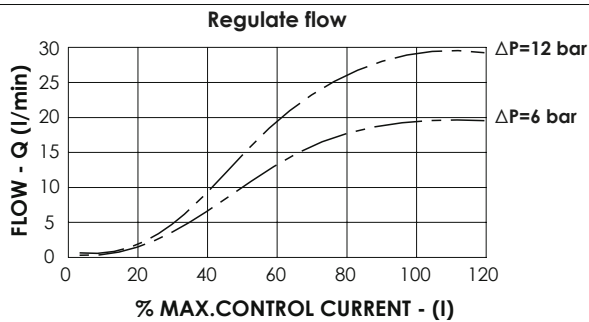
FLOW DIAGRAM - 050



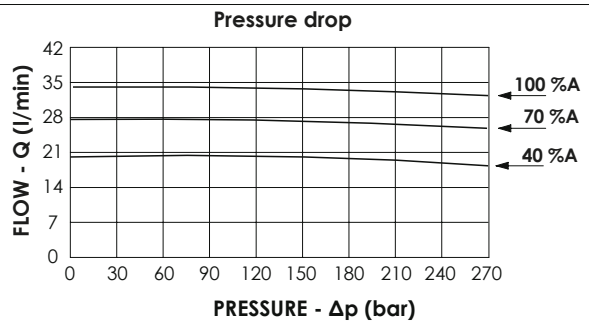
COMPESATION DIAGRAM - 050



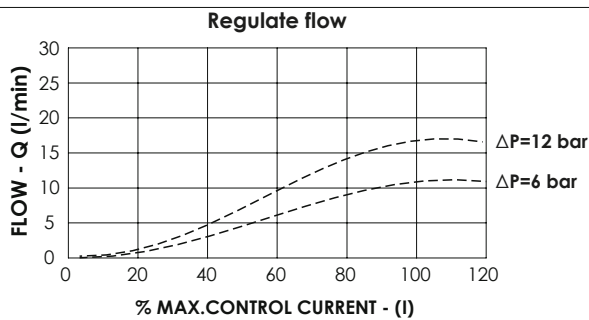
FLOW DIAGRAM - 035



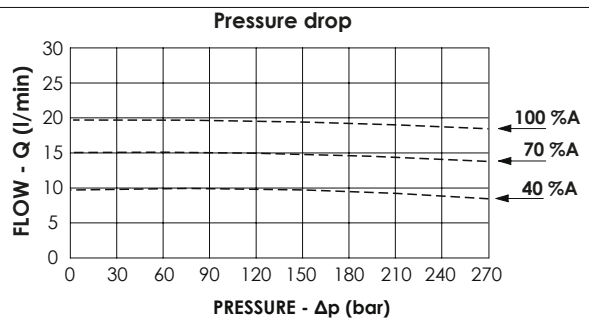
COMPENSATION DIAGRAM - 035



FLOW DIAGRAM - 020



COMPENSATION DIAGRAM - 020

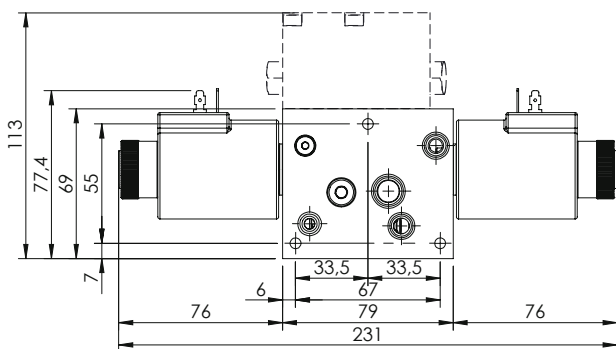


Spool type:
-10 _____
-20 _____
-30 _____

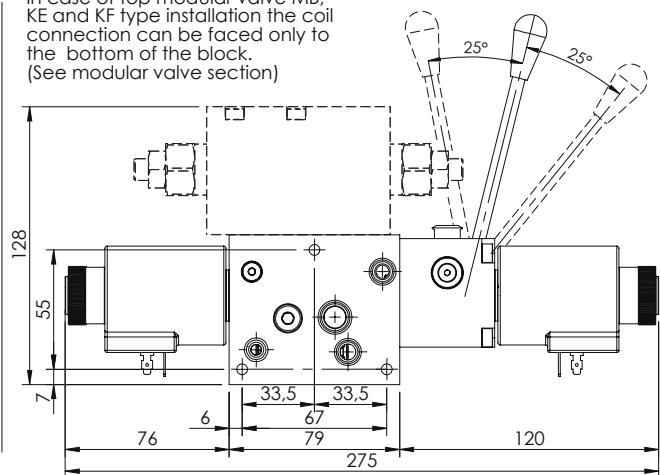
In the diagram shows the performance limits curves of standard section. The fluid used is mineral oil viscosity 46 mm²/s at 40 °C ; the tests were performed at a 40 °C temperature

OVERALL DIMENSION - STANDARD SECTION

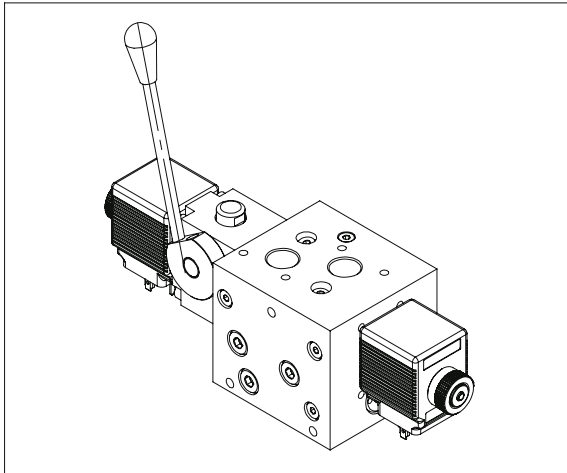
In case of top modular valve MA or MC type installation the coil connection can be faced to the top or to the bottom of the block. (See modular valve section)



In case of top modular valve MB, KE and KF type installation the coil connection can be faced only to the bottom of the block. (See modular valve section)



MANUAL LEVER



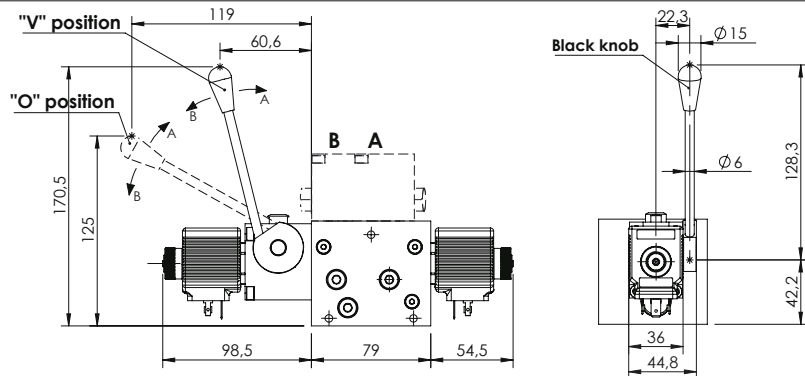
The lever option allow to operate manually the spool and can be ordered for all hydraulic schemes; in the standard version it is installed between monoblock and B port side coil. The lever is normally installed on the monoblock port side but can be installed also rotated of 180°; , in each of these two positions the lever can be mounted vertical or horizontal simply removing the lever and reinstalling. The lever is not engaged during solenoid operation and doesn't move when a coil is energized.

TECHNICAL DATA

Max pressure	210/320 bar
Max pressure in line type	210 bar
Rated flow	30/60 l/min
Insertion	100 % ED
Weight more than standard	3 Kg
Weight more than standard	3,5 kg

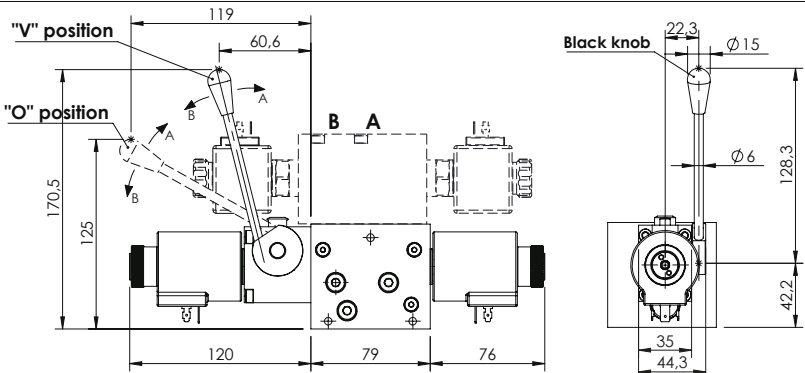
OVERALL DIMENSIONS/ LEVER FOR 30 L/MIN SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.



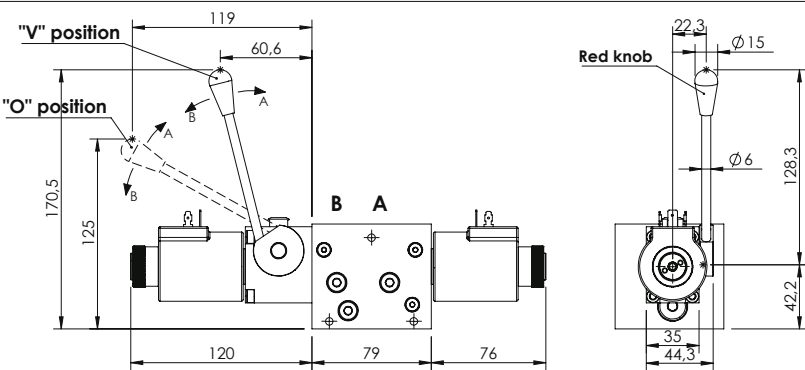
OVERALL DIMENSIONS/ LEVER FOR 60 L/MIN SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.

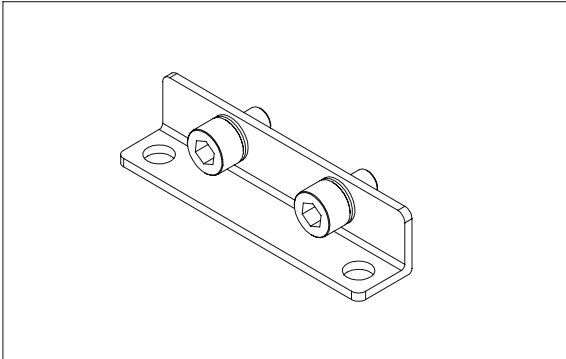


OVERALL DIMENSION/ LEVER FOR 50 L/MIN PROPORTIONAL SECTION

The lever option is designed to activate the spool manually, when the lever is pulled the flow is delivered from the port close to the lever, when it is pushed the flow is delivered from the port opposite to the lever. The standard operation deliver full flow, in case of override operation it is possible to reduce the maximum stroke and consequently the speed, for this option contact AFT sales network. The lever can be easily positioned vertical or horizontal by unscrewing it from the rotating shaft.



MOUNTING SCREW

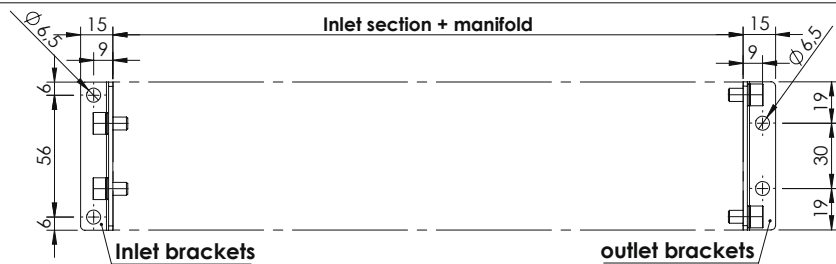
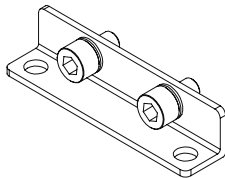


This accessories it use for mounting and fixing distributor on machine, in case the mounting brackets, or for mounting the different componets who assemble the whole distributor.

TECHNICAL DATA

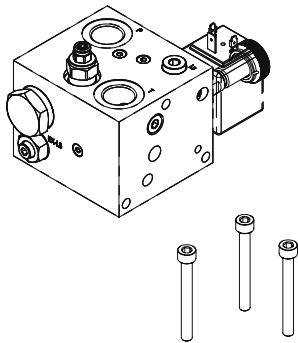
Screw type	ISO 4762
Thread type	coarse thread
Standard screw	resistence class 8.8
High resistance screw	resistence class 12.9
Standard screw treatment	zinc-plated (white)
High res. screw treatment	Anodized (black)

MOUNTING BRACKETS



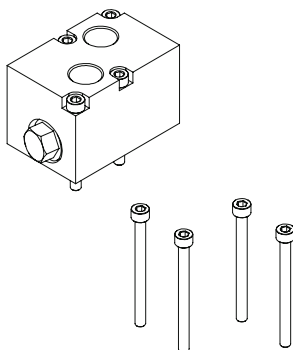
Mounting brackets	Screw lenght (mm)	Reference	Tightening Torque
PV000371	M6x10	AV000015 + PR000129	6 - 7 N/m

MOUNTING INLET SECTION



Inlet section	Screw lenght (mm)	Reference	Tightening Torque
SF000048	85	PE000491	6 - 7 N/m
SF000047	85	PE000491	6 - 7 N/m
SF000046	85	PE000491	6 - 7 N/m
SF000041	85	PE000491	6 - 7 N/m

FIXING STACKING MODULES

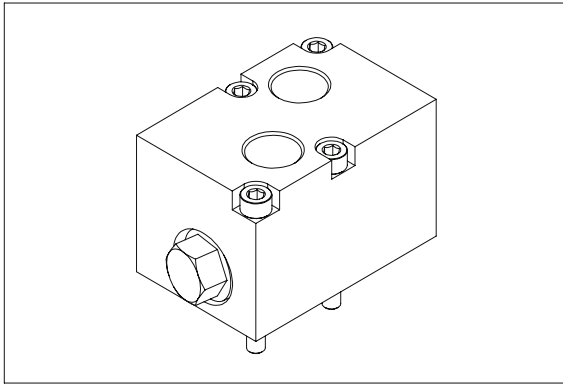


Flangiabile valve	Screw lenght (mm)	Reference	Tightening Torque
MP	M5x16	AV000035	3 - 4 N/m
MA, MC and MB	M5x45	PE000148	3 - 4 N/m
KE and MF	M5x60	AV000016	3 - 4 N/m

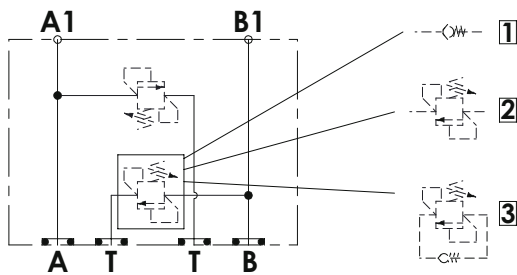
EB - MODULAR VALVE SECTION

MADN-060-ZNFD

ANTI SHOCK/CAVITATION FLANGEABLE VALVE



HYDRAULIC SCHEME

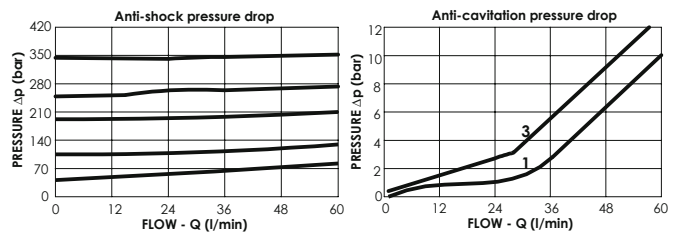


This flangeable valve can be mounted on top of the monoblock after removing the T line plugs; it has different configurations such as anti-shock, anti-cavitation or anti-shock/cavitation. There are three mounting options, single valve on A or on B for single effect operation or valves on A and B for double effect operation. The manifold is made in aluminium with anodization surface treatment or on request in steel with zinc plating treatment.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,4 Kg

PRESSURE DROP



ORDERING DETAILS: SEPARATE ELEMENTS

MA** -060- *NFD- ** -***-N***

* VALVE TYPE
S Single effect
D Double effect

* VALVE OPTION
N Valves in both ports
A Valve only A port
B Valve only B port

* MATERIAL TYPE
A Steel zinc-plated (320 bar)
Z Aluminium anodized (210 bar)

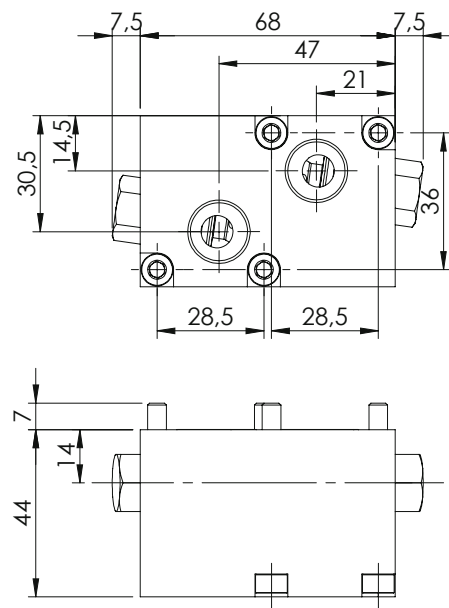
** VALVE TYPE	A line	B line
	no valve	no valve
1	anti-cavitation	anti-cavitation
2	anti-shock	anti-shock
3	anti-cav/shock	anti-cav/shock

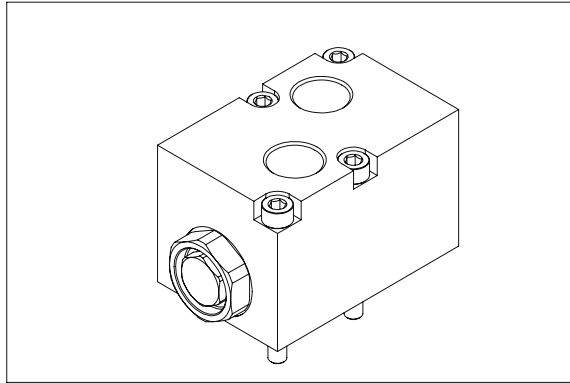
*** PORTS	A line	B line	M
G38	G 3/8"	G 3/8"	/
U09	9/16"-18 UNF	9/16"-18 UNF	/

* SETTINGS RANGE
... 10 - 310 bar
../.. For difference A e B setting sign it

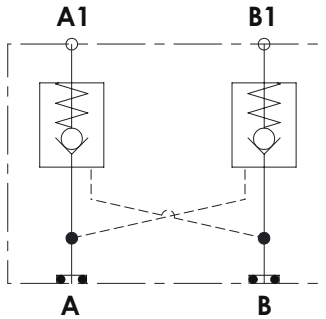
QUICK CODE	
DESCRIPTION	CODE

OVERALL DIMENSIONS





HYDRAULIC SCHEME

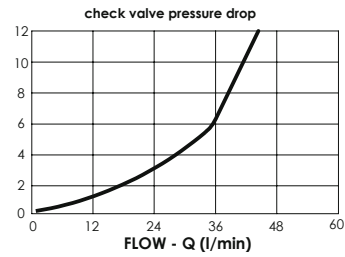


This flangeable valve can be mounted on top of the monoblock keeping the T line plugs.
The valve consists in two pilot operated check piloted by the opposite line and is poppet type.
The manifold is made in aluminium with anodization surface treatment or on request in steel with zinc plating treatment.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Pilot ratio	6:1
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,4 Kg

PRESSURE DROP



ORDERING DETAILS: SEPARATE ELEMENTS

MC** - 060 - * NFD - 06 - *** - N

*	VALVE TYPE
S	Single effect
D	Double effect

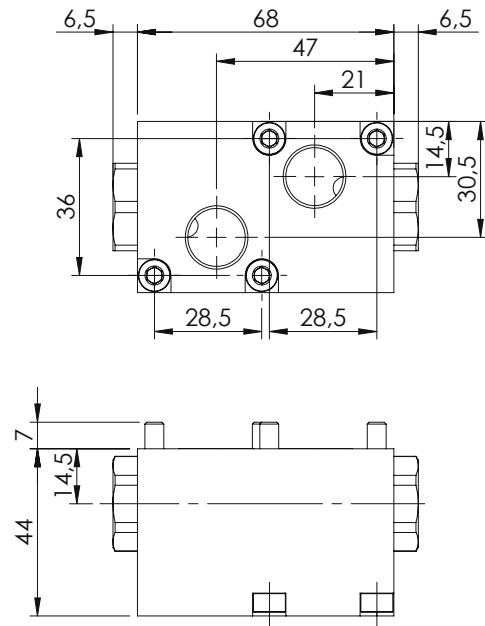
*	VALVE OPTION
N	Check valve on A e B ports
A	Check valve only A port
B	Check valve only B port

*	MATERIAL TYPE
A	Steel zinc-plated (320 bar)
Z	Aluminium anodized (210 bar)

***	PORTS		
	A line	B line	M
G38	G 3/8"	G 3/8"	/
U09	9/16"-18 UNF	9/16"-18 UNF	/

QUICK CODE	
DESCRIPTION	CODE
MCDN-060-ZNFD-06-G38-N210	MC000173
MCSA-060-ZNFD-06-G38-N210	MC000185

OVERALL DIMENSIONS

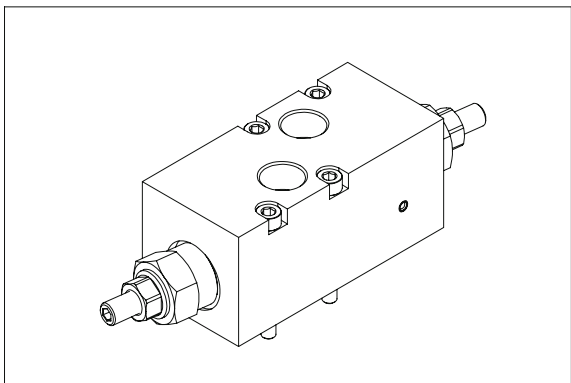


EB - MODULAR VALVE SECTION

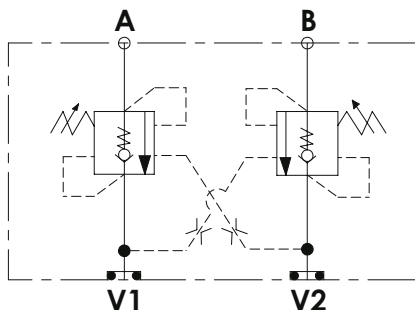


MBDN-060-ZNFD

OVERCENTER FLANGEABLE VALVE



HYDRAULIC SCHEME

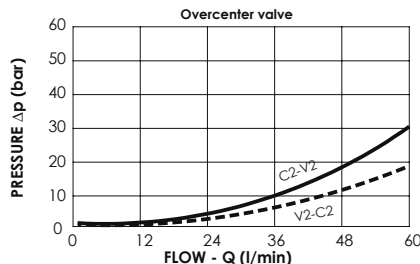


This modular block is made with overcenter valves to control the load on A and B port. The valves are poppet type with a pilot ratio of 4:1, other pilot ratios are available on request. The standard configuration provides valves on both lines, it is possible to order also valves on only one side. The manifold is made in aluminium with anodization surface treatment or on request in steel with zinc plating treatment.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Pilot ratio	4:1
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,4 Kg

PRESSURE DROP



ORDERING DETAILS: SEPARATE ELEMENTS

MB - 060 - *NFD-04-***-N*****

*	VALVE TYPE
S	Single effect
D	Double effect

*	VALVE OPTION
N	Check valve on A e B ports
A	Check valve only A port
B	Check valve only B port

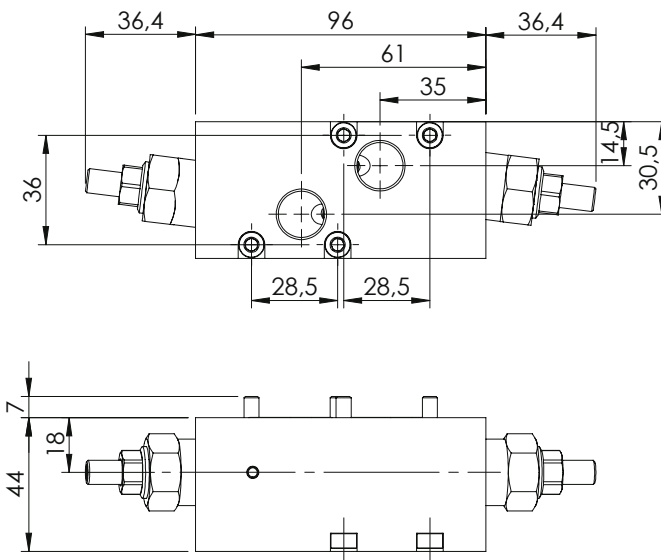
*	MATERIAL TYPE
A	Steel zinc-plated (320 bar)
Z	Aluminium anodized (210 bar)

***	PORTS		
	A line	B line	M
G38	G 3/8"	G 3/8"	/
U09	9/16"-18 UNF	9/16"-18 UNF	/

*	O-RING TYPE
100	100 bar settings
210	210 bar settings (standard)
320	320 bar settings (steel manifold)

QUICK CODE	
DESCRIPTION	CODE
MBDN-060-ZNFD-04-G38-N210	MB000874
MBSA-060-ZNFD-04-G38-N210	MB000875

OVERALL DIMENSIONS

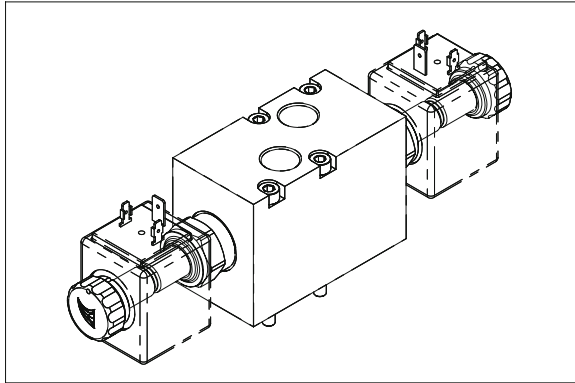


EB - MODULAR VALVE SECTION

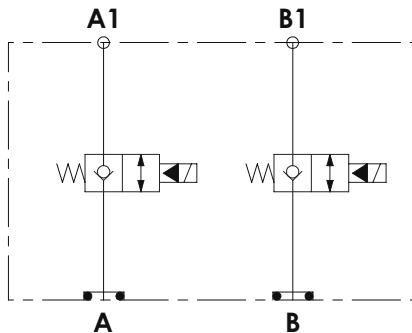


KEDN-060-ZNFD

IN LINE ELETTRICAL FLANGEABLE VALVE



HYDRAULIC SCHEME



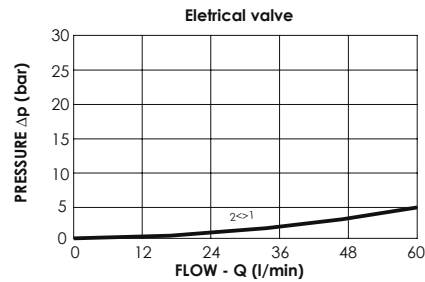
This modular block is equipped with solenoid valves, normally closed, poppet type and can be used to obtain a leak free function on the spool valve or to stop functions. It is available in three configurations, with valves on both lines or on A or on B line.

The manifold is made in aluminium with anodization surface treatment or on request in steel with zinc plating treatment.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Insertion	100% ED
Hydraulic fluid	Mineral oil DIN 51524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,4 Kg

PRESSURE DROP



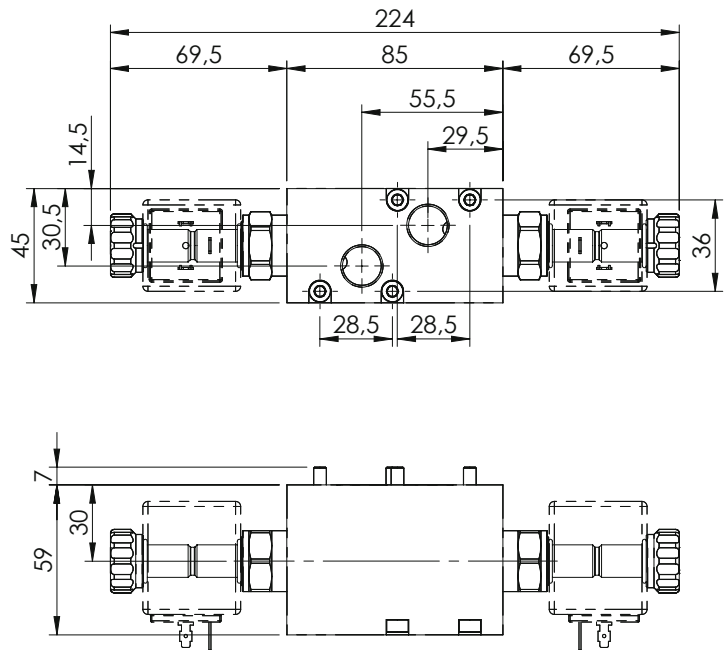
ORDERING DETAILS: SEPARATE ELEMENTS

KE * * - 060 - * NFD-04 - * - * * * N**

*	VALVE TYPE		
S	Single effect		
D	Double effect		
*	VALVE OPTION		
N	EV on A e B ports		
A	EV only A port		
B	EV only B port		
*	MATERIAL TYPE		
A	Steel zinc-plated (320 bar)		
Z	Aluminium anodized (210 bar)		
***	PORTS		
	A line	B line	M
G38	G 3/8"	G 3/8"	/
U09	9/16"-18 UNF	9/16"-18 UNF	/
*	VOLTAGE		
	no coils		
A	12 V dc		
B	24 V dc		
**	COILS TYPE		
	no coils		
HR	Hirschmann (ISO 4400 DIN 43650)		
DT	Deutsch (DT04-2P)		
AJ	Amp junior (AJ type)		

QUICK CODE	
DESCRIPTION	CODE

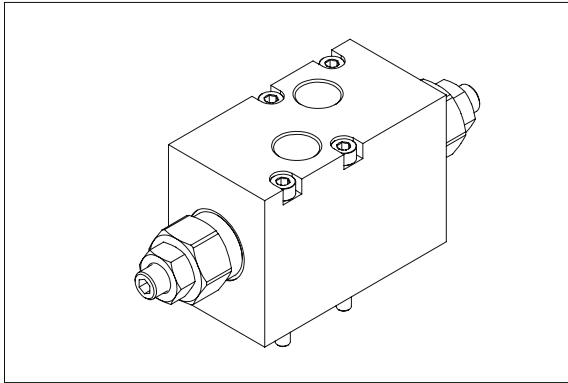
OVERALL DIMENSIONS



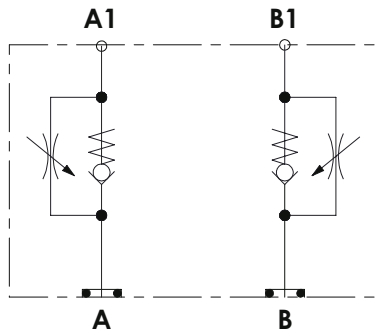
EB - MODULAR VALVE SECTION

KFDN-060-ZNFD

IN LINE FLOW RESTRICTOR FLANGIABLE VALVE



HYDRAULIC SCHEME

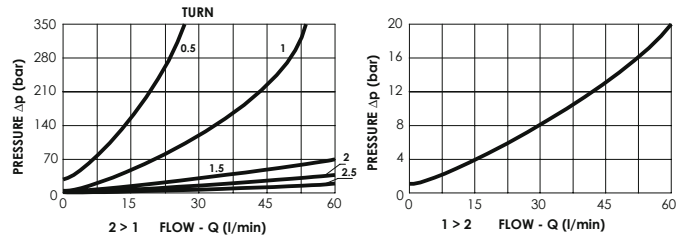


This modular valve is equipped with mono directional flow restrictor not compensated to adjust the speed of the application; it is available in three configurations, with valves on A line, on B line (single effect) or A and B line (double effect). The manifold is made in aluminium with anodization surface treatment or on request in steel with zinc plating treatment.

TECHNICAL DATA

Max pressure	210/320 bar
Rated flow	60 l/min
Hydraulic fluid	Mineral oil DIN 51 524
Fluid viscosity	10-500 mm ² /s
Fluid temperature	-25°C/75°C
Environment temperature	-25°C/60°C
Weight	0,8 Kg

PRESSURE DROP



ORDERING DETAILS: SEPARATE ELEMENTS

KF - 060 - *NFD-04-***-N**

*	VALVE TYPE
S	Single effect
D	Double effect

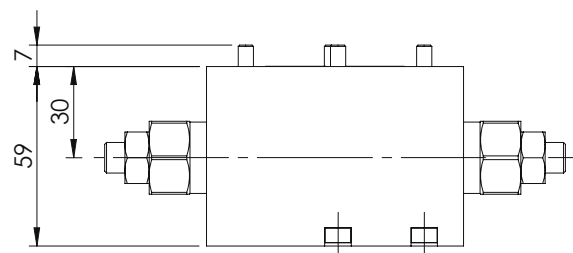
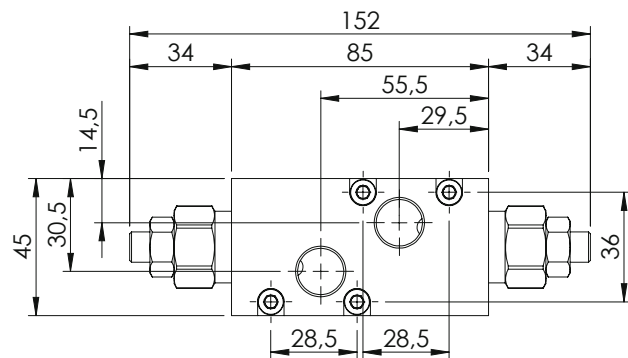
*	VALVE OPTION
N	Flow restrictor on A e B ports
A	Flow restrictor only A port
B	Flow restrictor only B port

*	MATERIAL TYPE
A	Steel zinc-plated (320 bar)
Z	Aluminium anodized (210 bar)

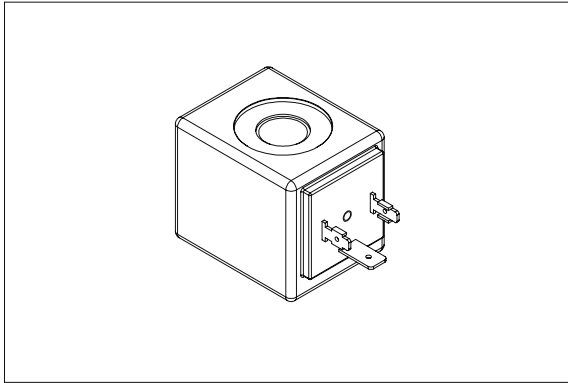
***	PORTS		
	A line	B line	M
G38	G 3/8"	G 3/8"	/
U09	9/16"-18 UNF	9/16"-18 UNF	/

QUICK CODE	
DESCRIPTION	CODE

OVERALL DIMENSIONS



COIL SERIES M7



COIL TYPE

The coils have the magnetic circuit coated with black thermoplastic material. All metal parts are protected against oxidation according to RoHS directive. For proper insulation it is required to install the proper seals supplied with the tubes.

TECHNICAL DATA

Protection type	IP 65 with all seal
Protection type	IP 69K with all seal only DT
Alimentation tolerance	+10%
Ambient temperature	-20°C +50°C
Duty cycle	100% ED (max 40°C ambient)
Isolation class	Class H (max 180°C)
Weight	0,18 kg

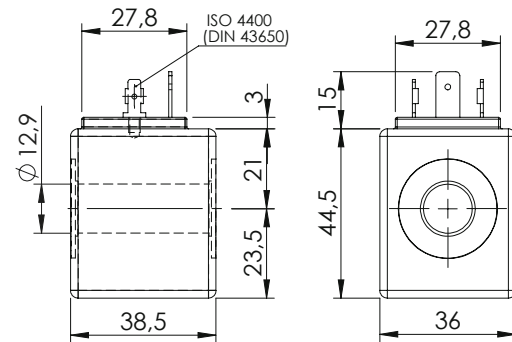
Coils are available with three different connections type, special voltage are available on request, please contact AFT sales network.

(1) Ambient temperature 25°C

(2) Ambient temperature 20°C

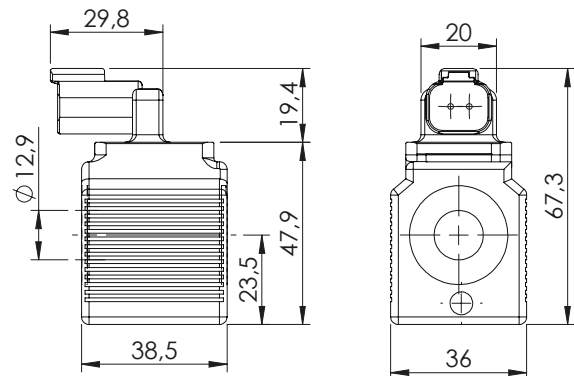
DIN 43650 (HR)

Coils		Max winding temperature (1)	Nominal potency	Resistance (±7%) (2)	Code parts
Code	Voltage				
A	12 V DC	135°C	20 W	7.2	AB000002
B	24 V DC	135°C	20 W	28.8	AB000003
C	48 V DC	135°C	20 W	115.2	AB000046
D	110 R AC	120°C	20 W	605	AB000012
E	220 R AC	120°C	20 W	2420	AB000007



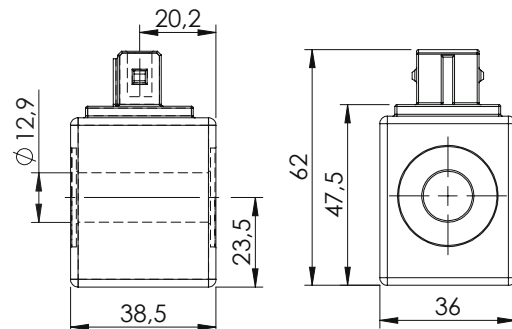
DEUTSCH (DTV)

Coils		Max winding temperature (1)	Nominal potency	Resistance (±7%) (2)	Code parts
Code	Voltage				
A	12 V DC	135°C	20 W	7.2	AB000022
B	24 V DC	135°C	20 W	28.8	AB000023
C	48 V DC	135°C	20 W	115.2	
D	110 R AC	120°C	20 W	605	
E	220 R AC	120°C	20 W	2420	

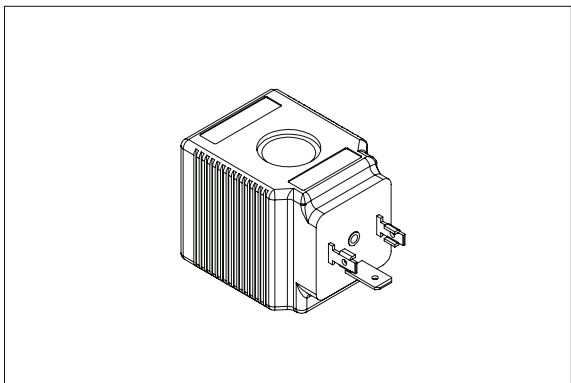


AMP JUNIOR (AJ)

Coils		Max winding temperature	Nominal potency	Resistance (±7%)	Code parts
Code	Voltage				
A	12 V DC	135°C	20 W	7.2	AB000005
B	24 V DC	135°C	20 W	28.8	AB000014
C	48 V DC	135°C	20 W	115.2	AB000021
D	110 R AC	120°C	20 W	605	
E	220 R AC	120°C	20 W	2420	



COIL SERIES M14



COILS TYPE

The coils have the magnetic circuit coated with black thermoplastic material. All metal parts are protected against oxidation according to RoHS directive. For proper insulation it is required to install the proper seals supplied with the tubes.

TECHNICAL DATA

Protection type	IP 65 with all seal
Protection type	IP 69K with all seal only DT
Activation	18000/h
Alimentation tolerance	+10%
Ambient temperature	-20°C + 50°C
Duty cycle	100% ED (max 40°C ambient)
Isolation class	Class H (max 180°C)
Weight	0,18 kg

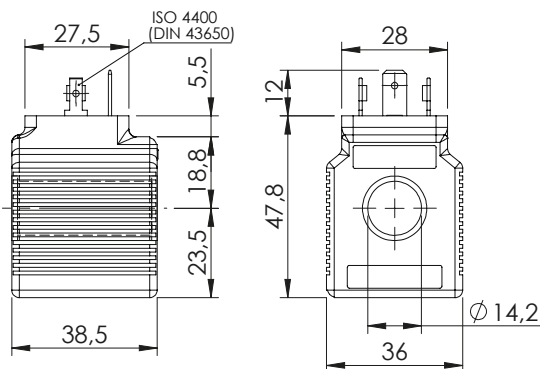
Coils are available with three different connections type, special voltage are available on request, please contact AFT sales network.

- (1) Ambient temperature 25°C
- (2) Ambient temperature 20°C

OVERALL DIMENSIONS

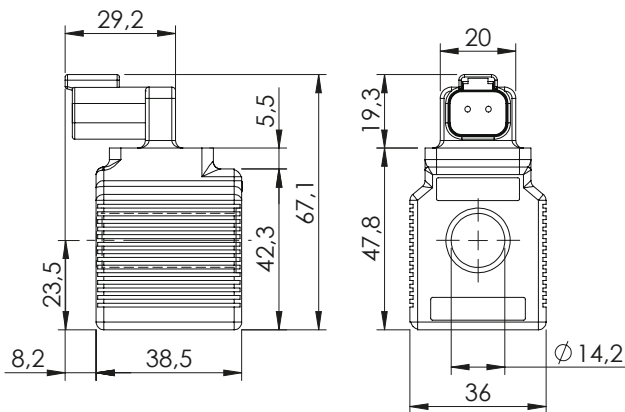
DIN 43650 (HR)

Coils		Max winding temperature (1)	Nominal potency	Resistance (±7%) (2)	Code parts
Code	Voltage				
A	12 V DC	135°C	26 W	5.54	AB000143
B	24 V DC	135°C	26 W	22.15	AB000144
C	48 V DC	135°C	26 W	88.6	
D	110 R AC	120°C	26 W	465.4	
E	220 R AC	120°C	26 W	1861.5	



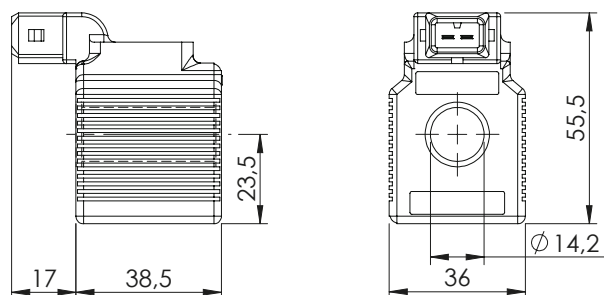
DEUTSCH (DTV)

Coils		Max winding temperature (1)	Nominal potency	Resistance (±7%) (2)	Code parts
Code	Voltage				
A	12 V DC	135°C	26 W	5.54	AB000132
B	24 V DC	135°C	26 W	22.15	AB000133
C	48 V DC	135°C	26 W	88.6	
D	110 R AC	120°C	26 W	465.4	
E	220 R AC	120°C	26 W	1861.5	

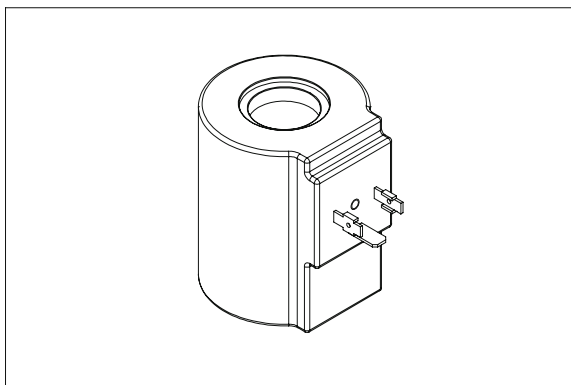


AMP JUNIOR (AJ)

Coils		Max winding temperature	Nominal potency	Resistance (±7%)	Code parts
Code	Voltage				
A	12 V DC	135°C	26 W	5.54	AB000136
B	24 V DC	135°C	26 W	22.15	
C	48 V DC	135°C	26 W	88.6	AB000131
D	110 R AC	120°C	26 W	465.4	
E	220 R AC	120°C	26 W	1861.5	



COIL SERIES M8



COILS TYPE

The coils have the magnetic circuit coated with black thermoplastic material. All metal parts are protected against oxidation according to RoHS directive. For proper insulation it is required to install the proper seals supplied with the tubes.

TECHNICAL DATA

Protection type	IP 65 with all seal
Protection type	IP 69K with all seal only DT
Alimentation tolerance	+10%
Ambient temperature	-20°C + 50°C
Duty cycle	100% ED (max 40°C ambient)
Isolation class	Class H (max 180°C)
Weight	0,18 kg

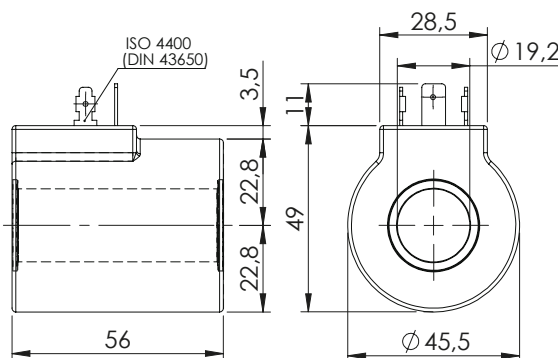
Coils are available with three different connections type, special voltage are available on request, please contact AFT sales network.

- (1) Ambient temperature 25°C
- (2) Ambient temperature 20°C

OVERALL DIMENSIONS

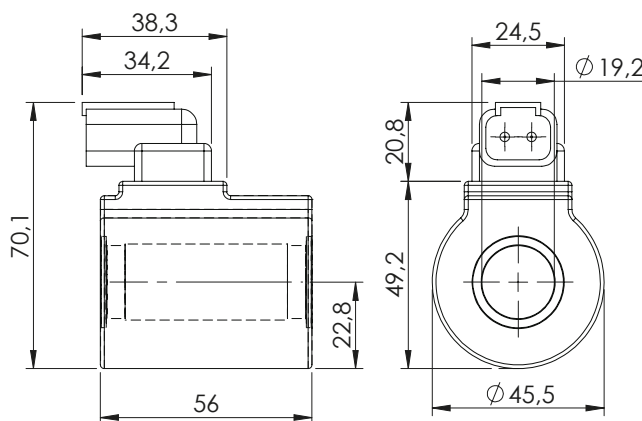
HIRSCHMANN (HR)

Coils		Max winding temperature (1)	Nominal potency	Resistance (±7%) (2)	Code parts
Code	Voltage				
A	12 V DC	135°C	33 W	4.36	AB000015
B	24 V DC	135°C	33 W	17.5	AB000029
C	48 V DC	135°C	33 W	69.8	AB000158
D	110 R AC	120°C	33 W	366.7	AB000092
E	220 R AC	120°C	33 W	1466.7	



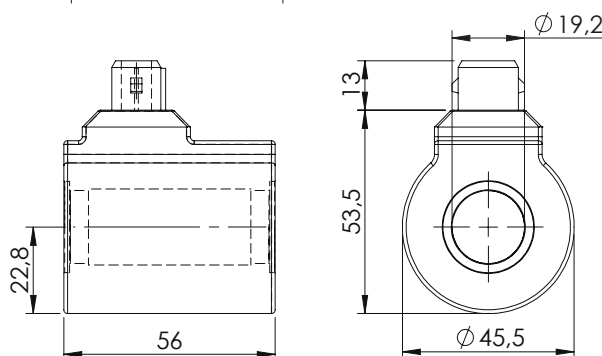
DEUTSCH (DTV)

Coils		Max winding temperature (1)	Nominal potency	Resistance (±7%) (2)	Code parts
Code	Voltage				
A	12 V DC	135°C	33 W	4.36	AB000104
B	24 V DC	135°C	33 W	17.5	AB000105
C	48 V DC	135°C	33 W	69.8	
D	110 R AC	120°C	33 W	366.7	
E	220 R AC	120°C	33 W	1466.7	

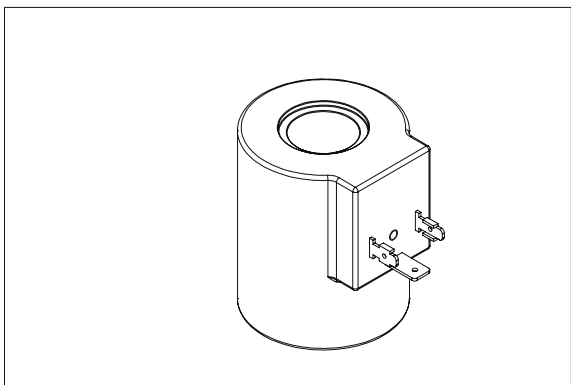


AMP JUNIOR (AJ)

Coils		Max winding temperature	Nominal potency	Resistance (±7%)	Code parts
Code	Voltage				
A	12 V DC	135°C	33 W	4.36	AB000048
B	24 V DC	135°C	33 W	17.5	
C	48 V DC	135°C	33 W	69.8	
D	110 R AC	120°C	33 W	366.7	
E	220 R AC	120°C	33 W	1466.7	



COIL SERIES M15



COILS TYPE

The coils have the magnetic circuit coated with black thermoplastic material. All metal parts are protected against oxidation according to RoHS directive. For proper insulation it is required to install the proper seals supplied with the tubes.

TECHNICAL DATA

Protection type	IP 65 with all seal
Protection type	IP 69K with all seal only DT
Alimentation tolerance	+10%
Ambient temperature	-20°C + 50°C
Duty cycle	100% ED (max 40°C ambient)
Isolation class	Class H (max 180°C)
Weight	0,18 kg

Coils are available with three different connections type, special voltage are available on request, please contact AFT sales network.

- (1) Ambient temperature 25°C
- (2) Ambient temperature 20°C

HIRSCHMANN (HR)

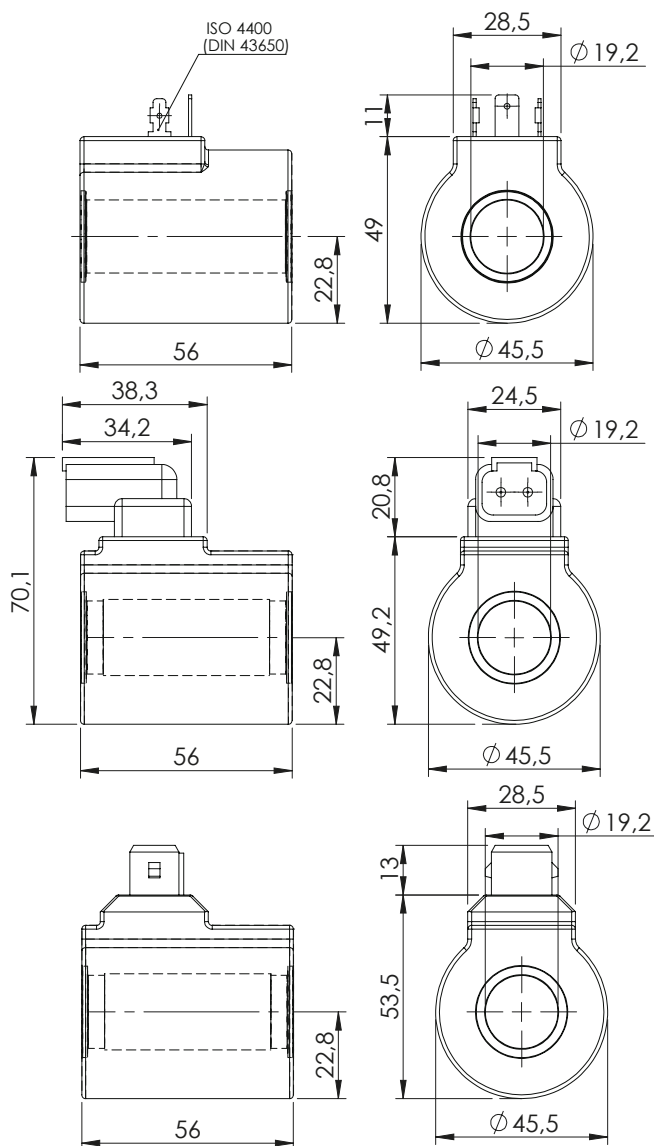
Coils		Max winding temperature (1)	Nominal potency	Resistance (±7%) (2)	Code parts
Code	Voltage				
A	12 V DC	135°C	23 W	6.3	AB000137
B	24 V DC	135°C	23 W	25	AB000138
C	48 V DC	135°C	23 W	100.2	
D	110 R AC	120°C	23 W	526	
E	220 R AC	120°C	23 W	2104.3	

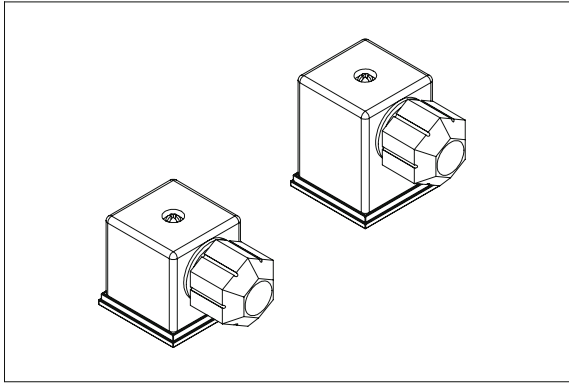
DEUTSCH (DTV)

Coils		Max winding temperature (1)	Nominal potency	Resistance (±7%) (2)	Code parts
Code	Voltage				
A	12 V DC	135°C	23 W	6.3	AB000141
B	24 V DC	135°C	23 W	25	AB000142
C	48 V DC	135°C	23 W	100.2	
D	110 R AC	120°C	23 W	526	
E	220 R AC	120°C	23 W	2104.3	

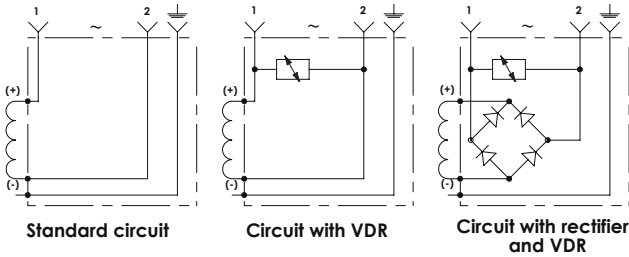
AMP JUNIOR (AJ)

Coils		Max winding temperature	Nominal potency	Resistance (±7%)	Code parts
Code	Voltage				
A	12 V DC	135°C	23 W	6.3	AB000139
B	24 V DC	135°C	23 W	25	AB000140
C	48 V DC	135°C	23 W	100.2	
D	110 R AC	120°C	23 W	526	
E	220 R AC	120°C	23 W	2104.3	





ELECTRIC SCHEME

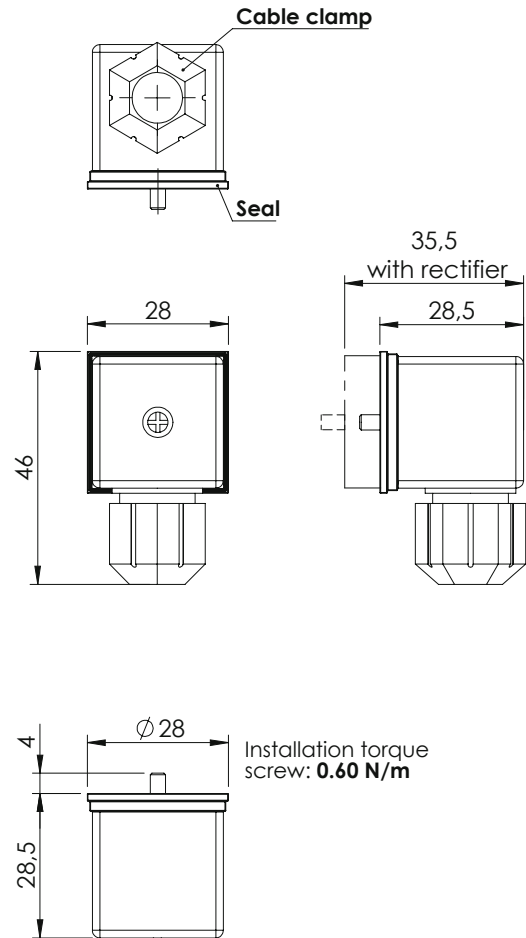


Connector for solenoid valve according to standards DIN 43650 / ISO 4400, different types of circuits are available, standard circuit, circuit with "VDR", circuit with "VDR+ rectifier" or circuit with LED

TECHNICAL DATA

Voltage rating	AC/DC: up to 250/300 V max
Max current	16.0 A
Contact resistance	≤ 4 mΩ
Max conductor	1.5 mm ²
Cable range	Ø4.0 to Ø9.0 mm
Protection class	IP 67 EN60529
Seal	Nitrile rubber
Poles	2 plus ground
Connector	EN 175301-803 (DIN 43650)

OVERALL DIMENSIONS

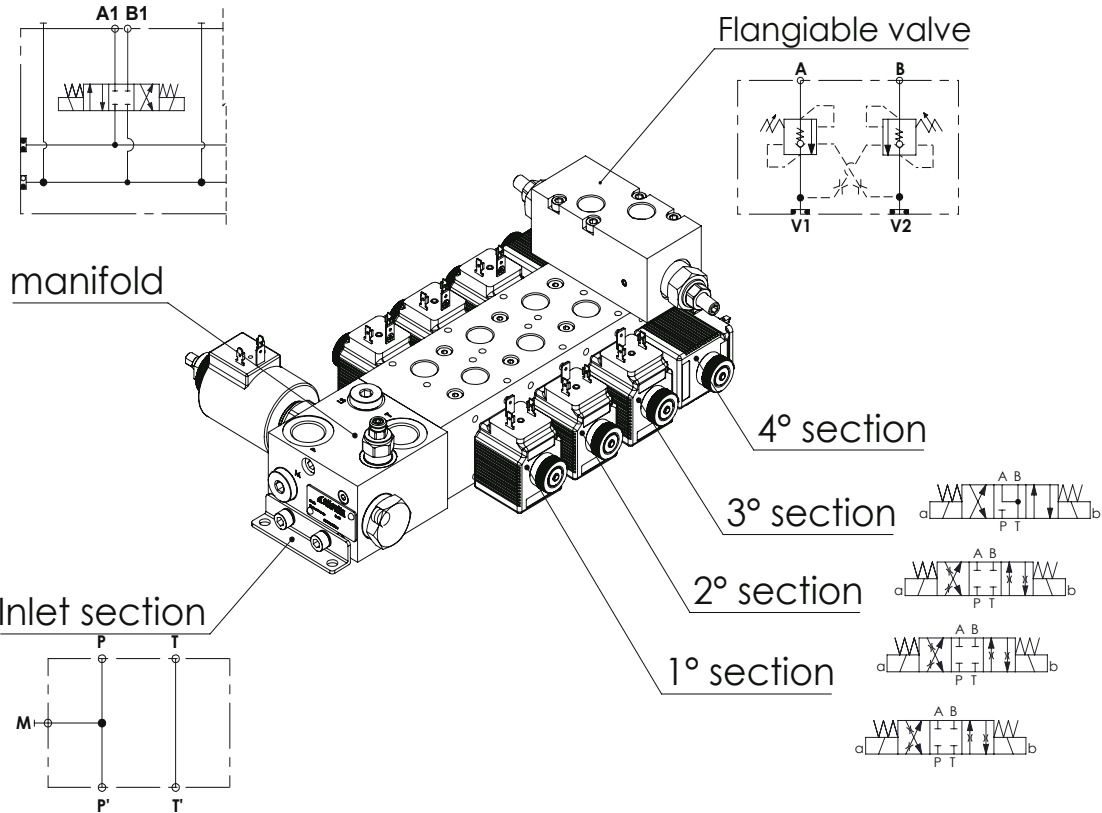


ORDERING DETAILS: SEPARATE ELEMENTS

Quick code	Colour	VDR	LED	Rectifier	Voltage
PV000171	Black	No	No	No	12V to 230V
PV000195	Black	Yes	No	No	12V dc
PV000349	Black	Yes	No	No	24V dc
PV000198	Trasparent	Yes	Yes	No	12V dc
PV000196	Trasparent	Yes	Yes	No	24V dc
PV000347	Black	Yes	No	Yes	12V RAC
PV000348	Black	Yes	No	Yes	24V RAC
	Black	Yes	No	Yes	110V RAC
	Black	Yes	No	Yes	220V RAC
	Trasparent	Yes	Yes	Yes	110V RAC
	Trasparent	Yes	Yes	Yes	220V RAC

NB: To have full performance and to guarantee the IP 65 level of protection, it is essential to assemble connectors with the supplied seals and with screw properly installed.

EB - ORDERING PART SECTION



ORDER CODE

	QUICK CODE OR DESCRIPTION	COIL QUICK CODE OR DESCRIPTION
INLET SECTION		
MANIFOLD		
SPOOL SECTION 1		
FLANGEABLE VALVE SECTION 1		
SPOOL SECTION 2		
FLANGEABLE VALVE SECTION 2		
SPOOL SECTION 3		
FLANGEABLE VALVE SECTION 3		
SPOOL SECTION 4		
FLANGEABLE VALVE SECTION 4		
SPOOL SECTION 5		
FLANGEABLE VALVE SECTION 5		
SPOOL SECTION 6		
FLANGEABLE VALVE SECTION 6		
SPOOL SECTION 7		
FLANGEABLE VALVE SECTION 7		
COILS		
OPTIONS		
OPTIONS		



Applications

Section 20

SECTION 20**APPLICATIONS**

Chapter	Valve type	Page
20. 1	Excavators - Mini excavators	20.01.000
20. 2	All terrain cranes	20.02.000
20. 3	Concrete pump cranes	20.03.000
20. 4	Salt sprayers	20.04.000
20. 5	Garbage compactors	20.05.000
20. 6	Hook loaders	20.06.000

SECTION 20. 1

APPLICATIONS - EXCAVATORS



Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	MLST-160-RLGR	Right version with oil recovery	160	420	In line	G 3/4"	20.01.010
	MLST-200-RAUR	Right version	250	420	Flanged	3/4" SAE 6000	20.01.020
	MLST-200-RAUL	Left version	250	420	Flanged	3/4" SAE 6000	20.01.030
	BNND-010-AERV	Quick hitch	10	380	In line	1/4" Jis	20.01.040
	BNND-010-AEERRV	Quick hitch	10	350	In line	G 1/4"	20.01.050
	BNND-100-ALBE	Excavator attachment function	100	350	Flanged	G 1/2"	20.01.060
	BNND-200-ALBE	Excavator attachment function	200	350	Flanged	3/4" SAE 6000	20.01.070
	BNND-300-ALBE	Excavator attachment function	300	350	Flanged	1" SAE 6000	20.01.080
	MDRC-200-SLVN	Selector valve	200	500	Flanged	3/4" SAE 6000	20.01.090
	BPF0-060-ALSU	Flow regulated with relief valve	60	350	In line	G 1/2"	20.01.100

SECTION 20. 1

APPLICATIONS - EXCAVATORS

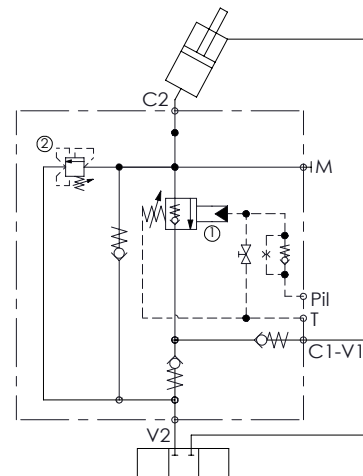
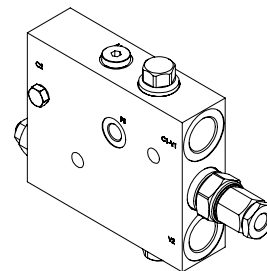
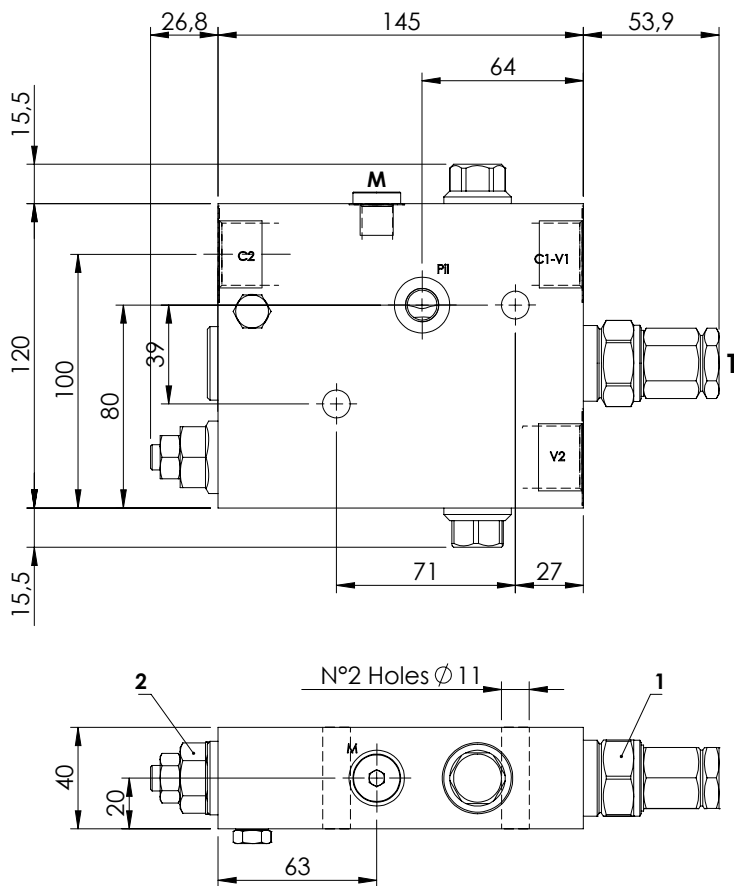


Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	BNND-070-AERC	Solenoid activated	70	420	Flanged	3/4" SAE 3000/6000	20.01.110
	BNND-070-AERC	Solenoid activated	70	420	Flanged	1" SAE 3000/6000	20.01.120

EXCAVATORS VALVE

MLST-160-RLGR

WITH OIL RECOVERY

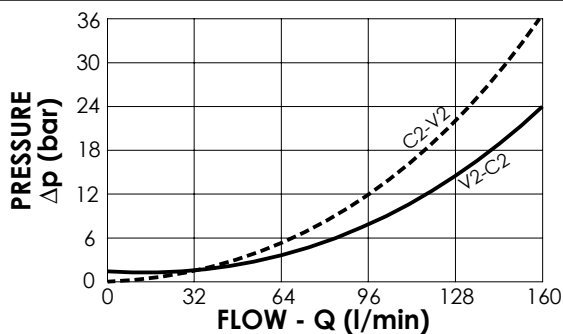


SPECIFICATIONS

Max. operating pressure:	420 bar
Rated flow:	160 l/min
Manifold:	Steel
Weight:	5,01 kg

NOTES

When correctly adjusted for the specific excavator installation, these valves meet the requirement of ISO 8643



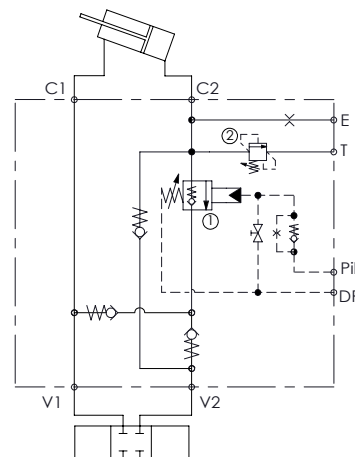
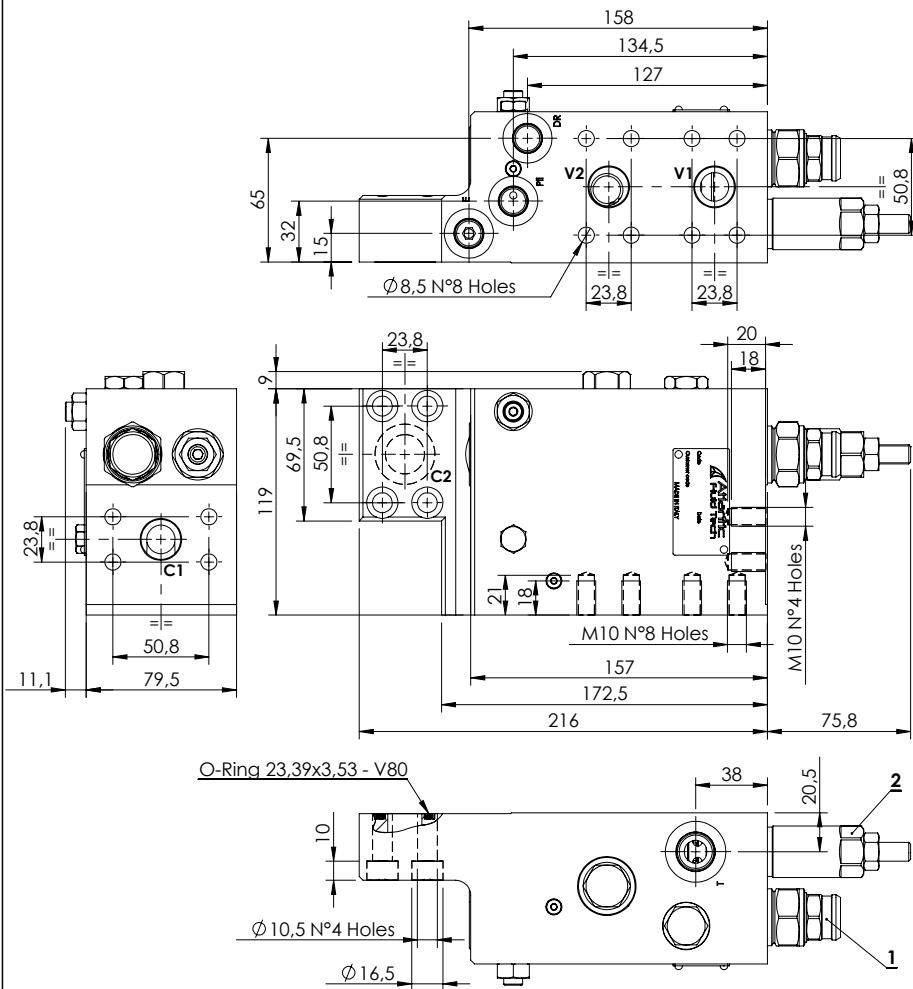
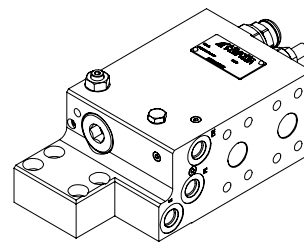
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar)	Adjust. range (bar)	Pressure increase (bar/turn)
ML000165	MLST-160-RLGR-00-G34-N420	V2,C2: G 3/4" P1,T,M: G 1/4"	① 350 Q=5 l/min ② 7.5 Crack. pr.	① 350-400 ② 3-15	① 72 ② 8

EXCAVATORS VALVE

MLST-250-RAUR

**FLANGED TYPE
3/4" SAE 6000
WITH OIL RECOVERY**

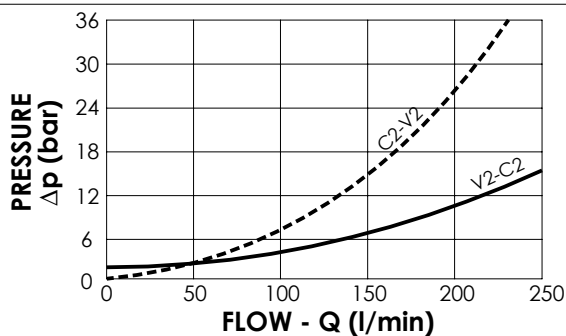


SPECIFICATIONS

Max. operating pressure:	420 bar
Rated flow:	250 l/min
Manifold:	Steel
Weight:	11,7 kg

NOTES

When correctly adjusted for the special excavator installation, these valves meet the requirement of ISO 8643



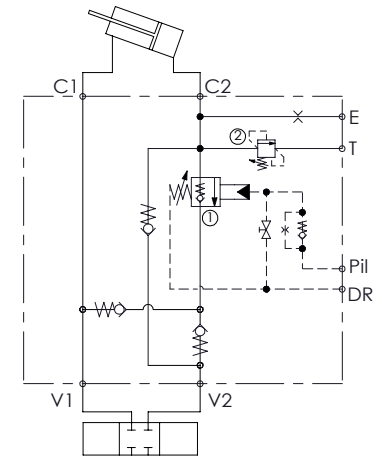
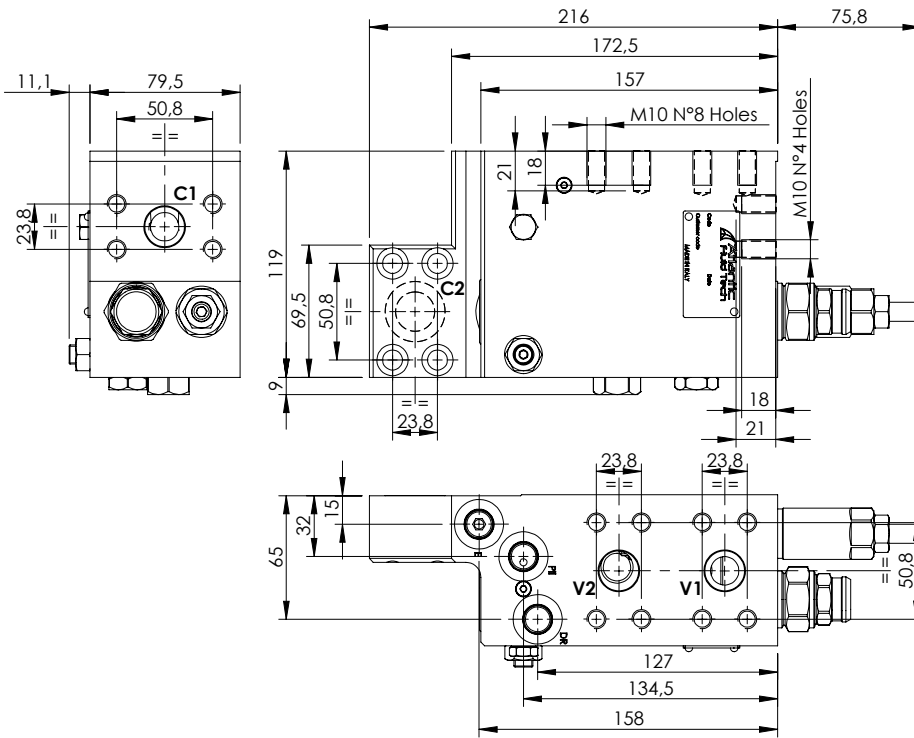
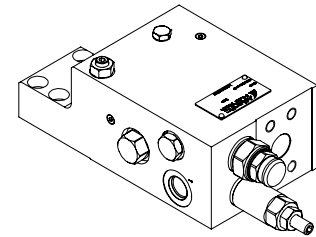
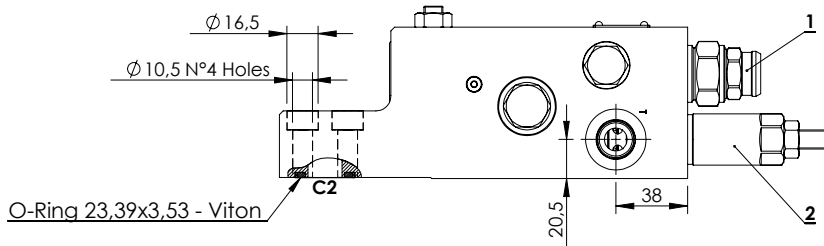
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar)	Adjust. range (bar)	Pressure increase (bar/turn)
ML000265	MLST-250-RAUR-00-S34-N420	V1,V2,C1,C2: 3/4" SAE 6000 E,Pii,Dr: 9/16-18 UNF T: 3/4-16 UNF	① 7.9 Crack. pr. ② 395 Q=5 l/min	① 3-15 ② 150-420	① 6 ② 53

EXCAVATORS VALVE

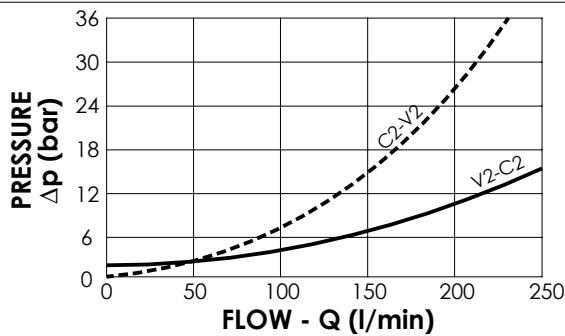
MLST-250-RAUL

**FLANGED TYPE
3/4" SAE 6000
WITH OIL RECOVERY**



SPECIFICATIONS

Max. operating pressure:	420 bar
Rated flow:	250 l/min
Manifold:	Steel
Weight:	11,72 kg



NOTES

When correctly adjusted for the special excavator installation, these valves meet the requirement of ISO 8643

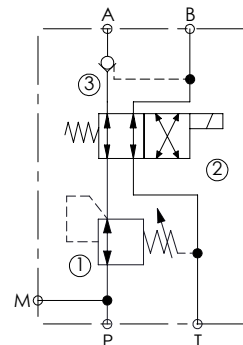
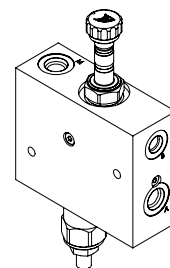
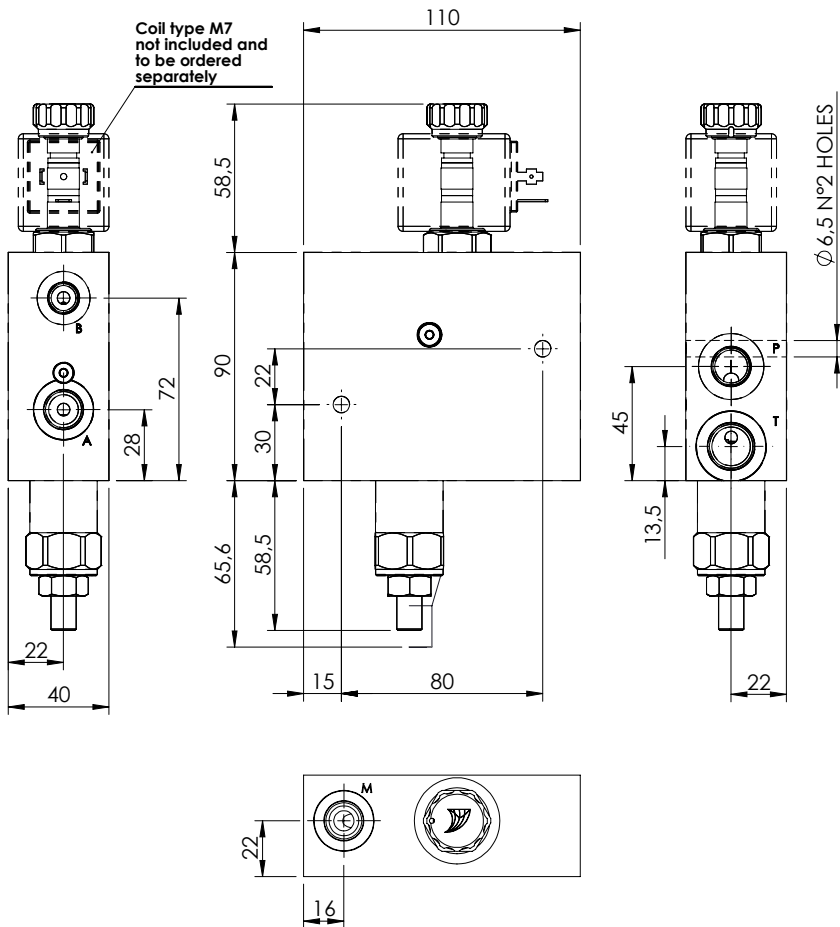
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar)	Adjust. range (bar)	Pressure increase (bar/turn)
ML000266	MLST-250-RAUL-00-S34-N420	V1,V2,C1,C2: 3/4" SAE 6000 E,Pii,Dr: 9/16-18 UNF T: 3/4-16 UNF	① 7.9 Crack. pr. ② 395 Q=5 l/min	① 3-15 ② 150-420	① 6 ② 53

EXCAVATORS VALVE

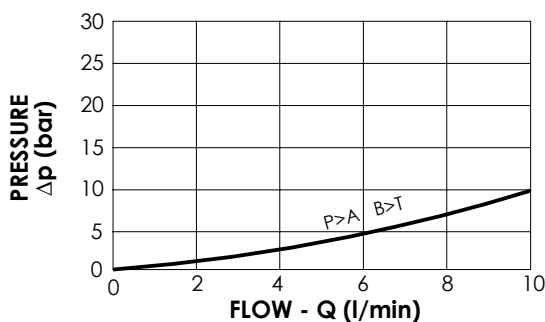
BNND-010-AERV

AUXILIARY QUICK HITCH



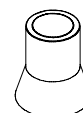
SPECIFICATIONS

Max. operating pressure:	380 bar
Rated flow:	10 l/min
Manifold:	Steel
Weight:	3,2 kg
Coil Type:	M7



SEALING CAP

Ordering code:
AT000021



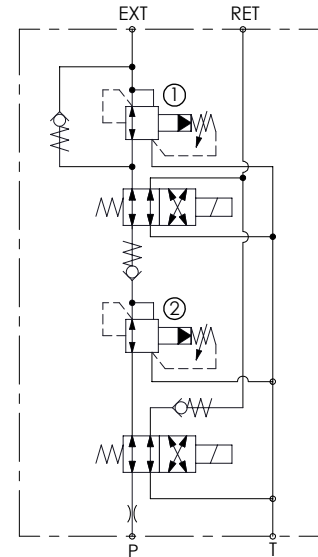
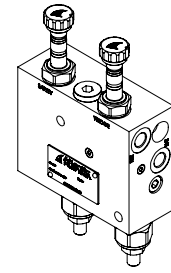
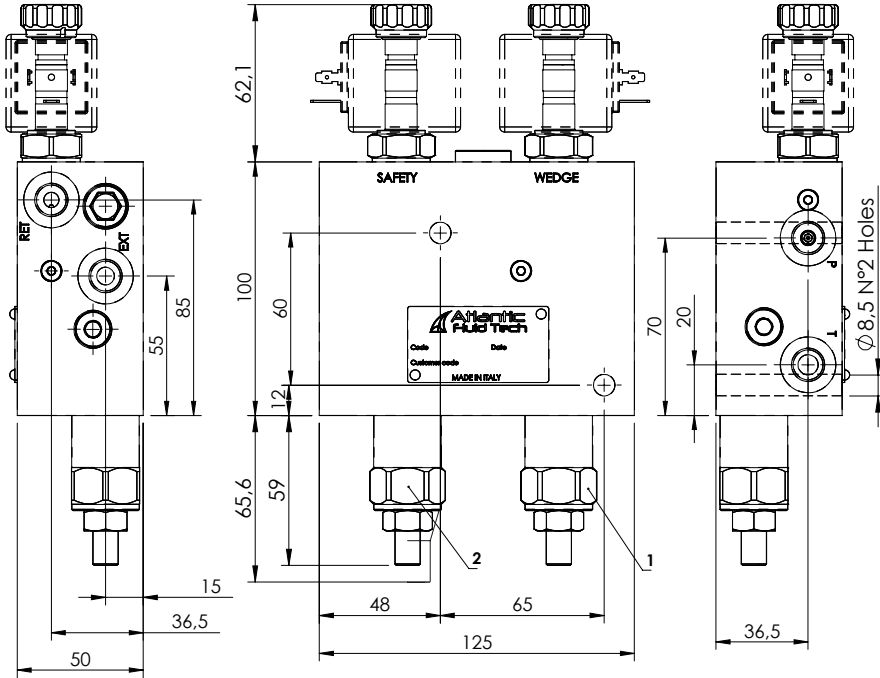
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjustm. range (bar)	Pressure increase (bar/turn)
BD000063	BNND-010-AERV-NP-J14-N350	P,T,A,B,M: 1/4" JIS	300	70 - 350	114

EXCAVATORS VALVE

BNND-010-AERV

AUXILIARY
QUICK HITCH

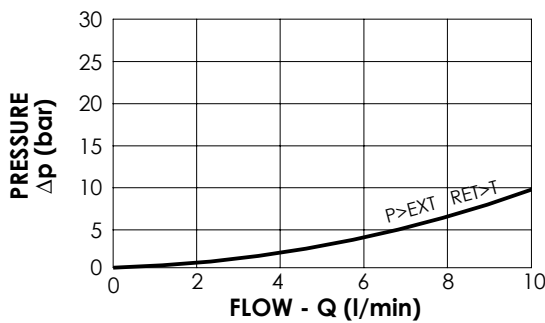
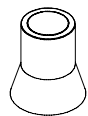


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	10 l/min
Manifold:	Steel
Weight:	4,9 kg
Coil Type:	M7

SEALING CAP

Ordering code:
AT00021



ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjustm. range (bar)	Pressure increase (bar/turn)
BD000207	BNND-010-AERV-NP-G14-N350	P,T,A,B M: G 1/4"	① :120 ② :240	70 - 350	114

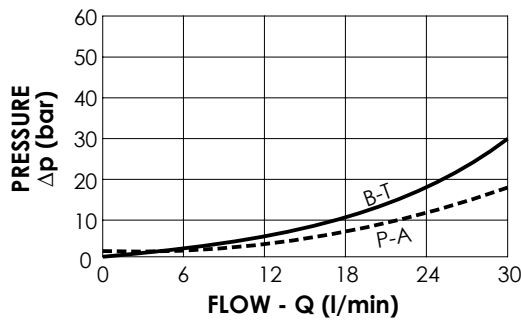
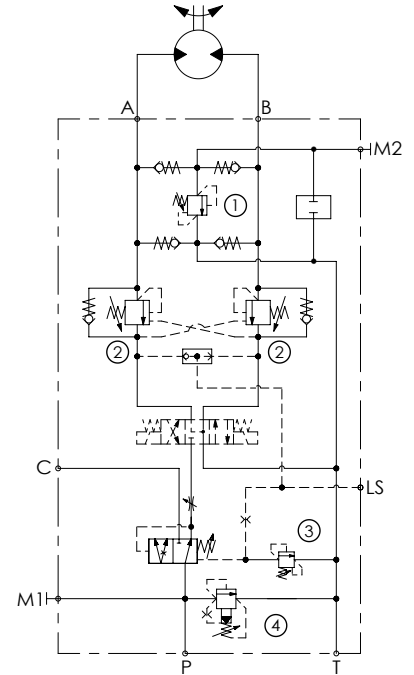
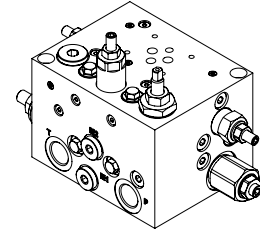
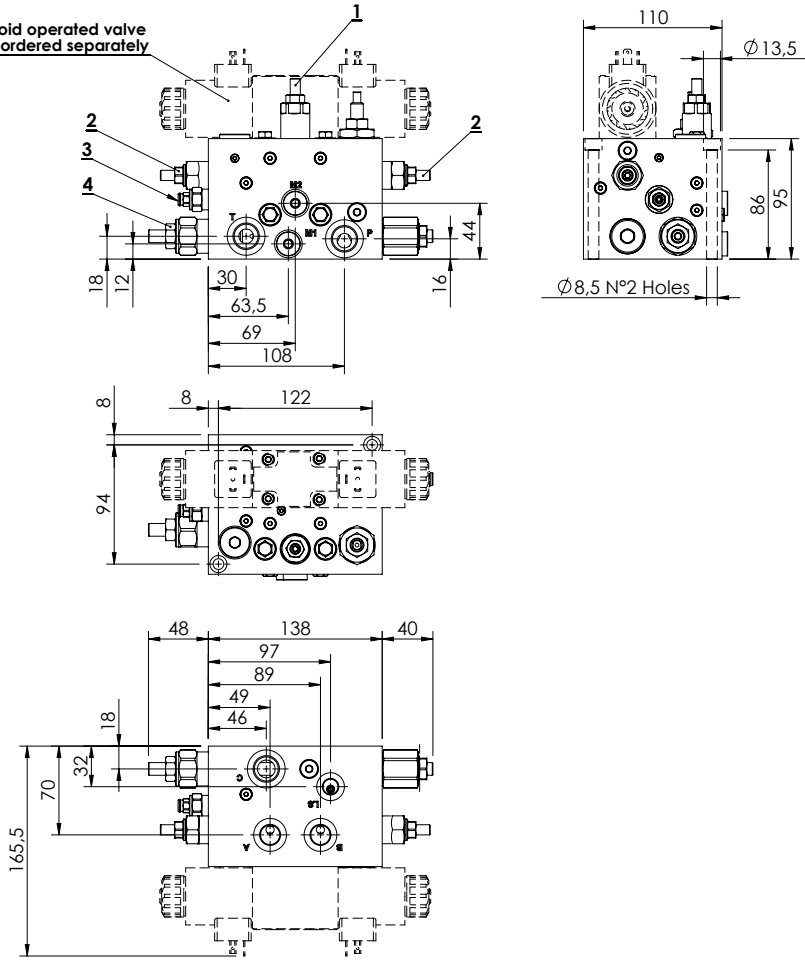
EXCAVATORS VALVE

BNND-100-ALBE

EXCAVATOR ATTACHMENT
FUNCTION - G 1/2"



Solenoid operated valve
to be ordered separately



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	Q max inlet : 100 l/min Q in A - B : 30 l/min
Manifold:	Steel zincplated
Weight:	10,96 kg

NOTES

Our spring on the compensator is adjustable from 5 to 15 bar, the max flow in A and B depend on the Δp curve of the electrical valve.

ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
BD000081	Excavator attachment function - G 1/2	4 : 1	P-T-C: G1/2" A-B: G3/8" M1-M2-LS: G1/4"	① 220 ③ 200 ② 260 ④ 250	①② 100-350 ③ 120-350 ④ 140-350	① 91 ③ 165 ② 184 ④ 114

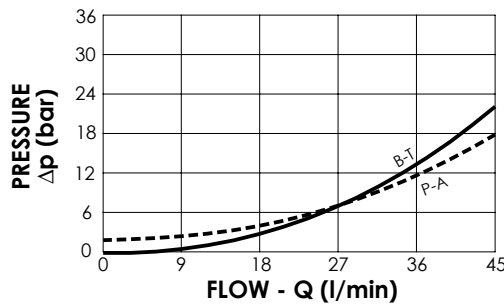
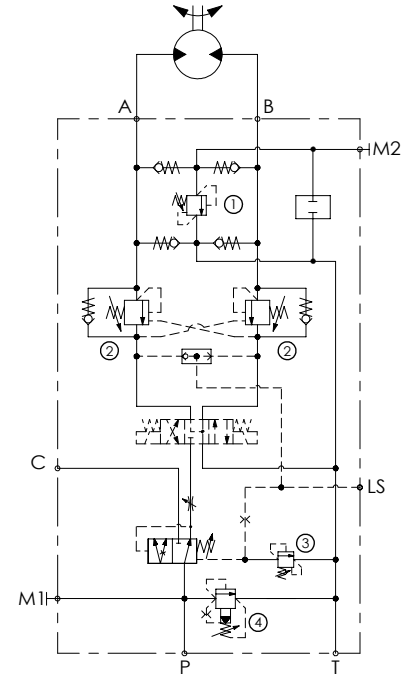
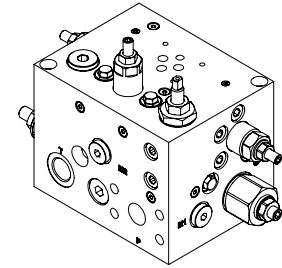
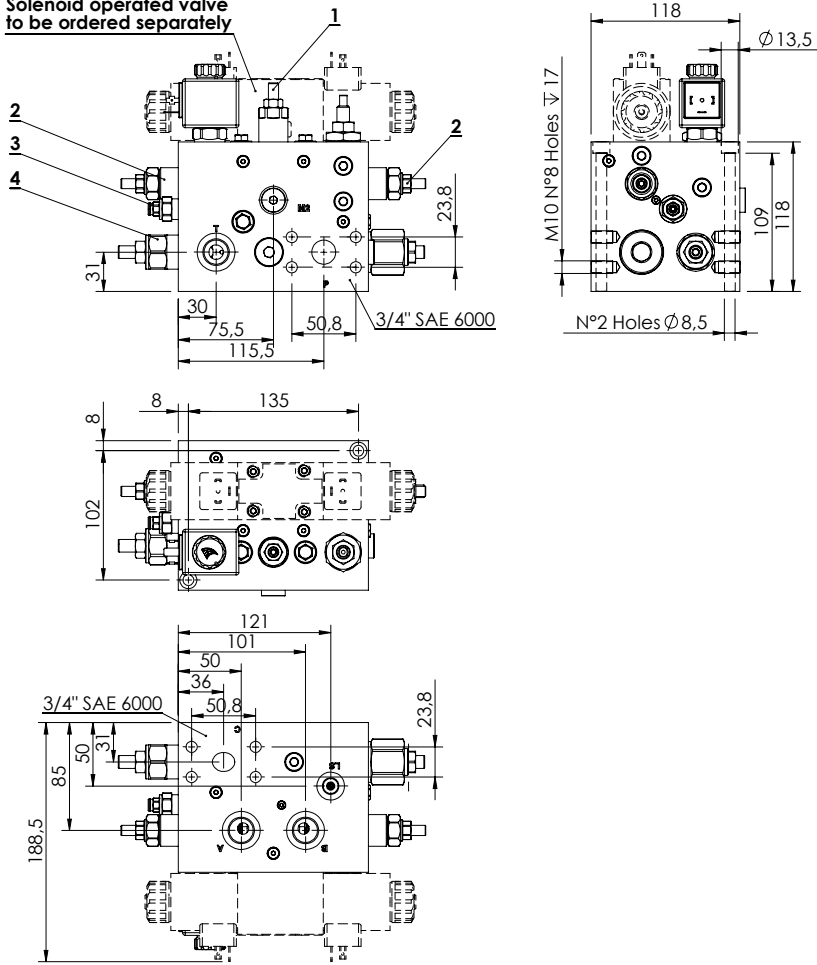
EXCAVATORS VALVE

BNND-200-ALBE

EXCAVATOR ATTACHMENT
FUNCTION - G 3/4" SAE 6000



Solenoid operated valve
to be ordered separately



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	Q max inlet : 200 l/min Q in A - B : 45 l/min
Manifold:	Steel zincplated
Weight:	16,01 kg

NOTES

Our spring on the compensator is adjustable from 5 to 15 bar, the max flow in A and B depend on the Δp curve of the electrical valve.

ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
BD000082	Excavator attachment function - 3/4" SAE 6000	4 : 1	P-C: G3/4" SAE 6000 A-B-T: G3/4" M1-M2-LS: G1/4"	① 220 ③ 200 ② 260 ④ 250	①② 100-350 ③ 120-350 ④ 140-350	① 91 ③ 165 ② 138 ④ 114

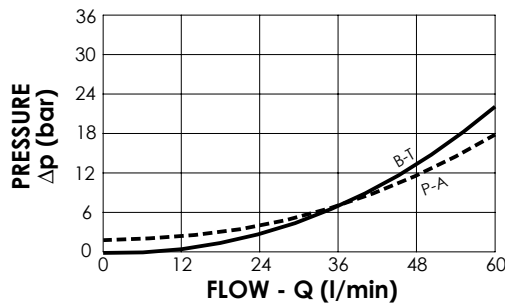
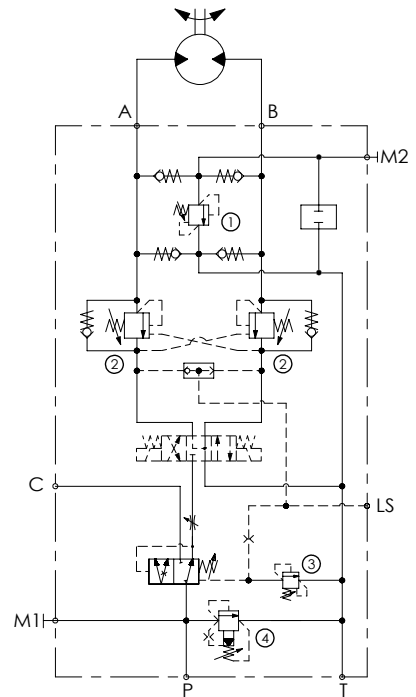
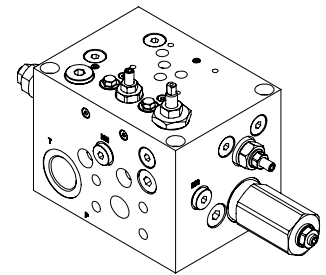
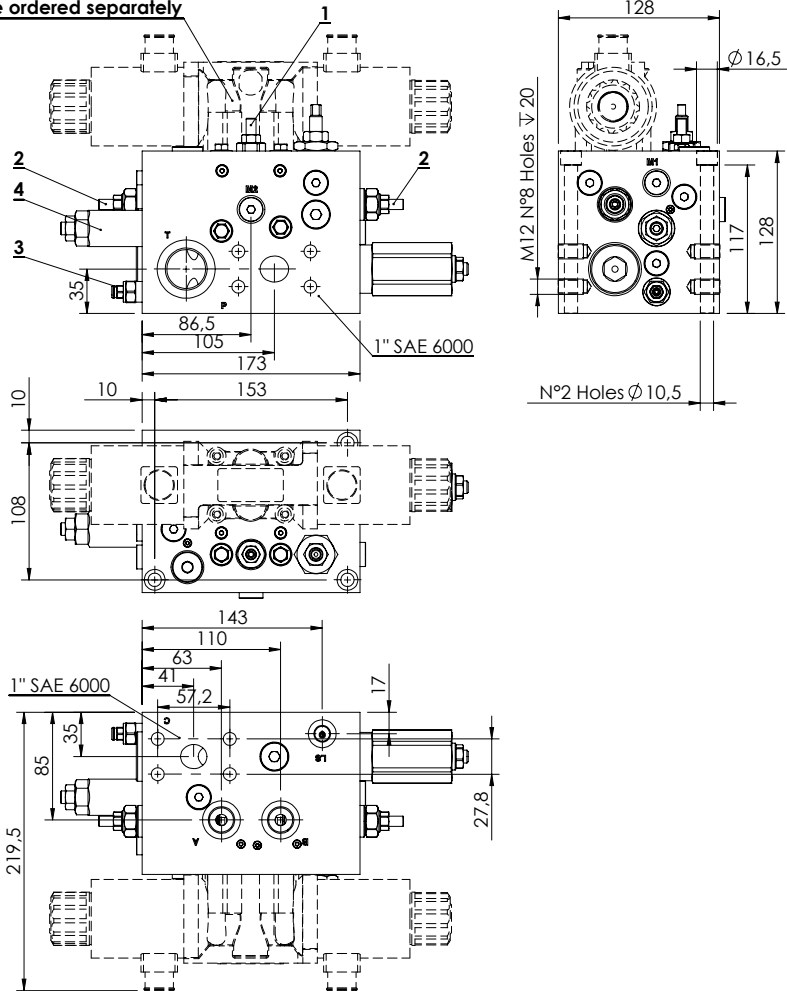
EXCAVATORS VALVE

BNND-300-ALBE

EXCAVATOR ATTACHMENT
FUNCTION - G 1" SAE 6000



Solenoid operated valve
to be ordered separately



SPECIFICATIONS

- Max. operating pressure: **350 bar**
- Rated flow: **Q max inlet : 300 l/min**
Q in A - B : 60 l/min
- Manifold: **Steel zincplated**
- Weight: **26,76 kg**

NOTES

Our spring on the compensator is adjustable from 5 to 15 bar, the max flow in A and B depend on the Δp curve of the electrical valve.

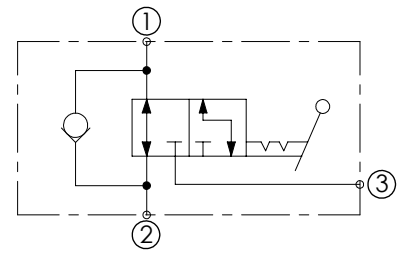
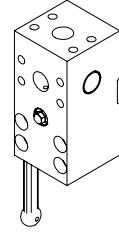
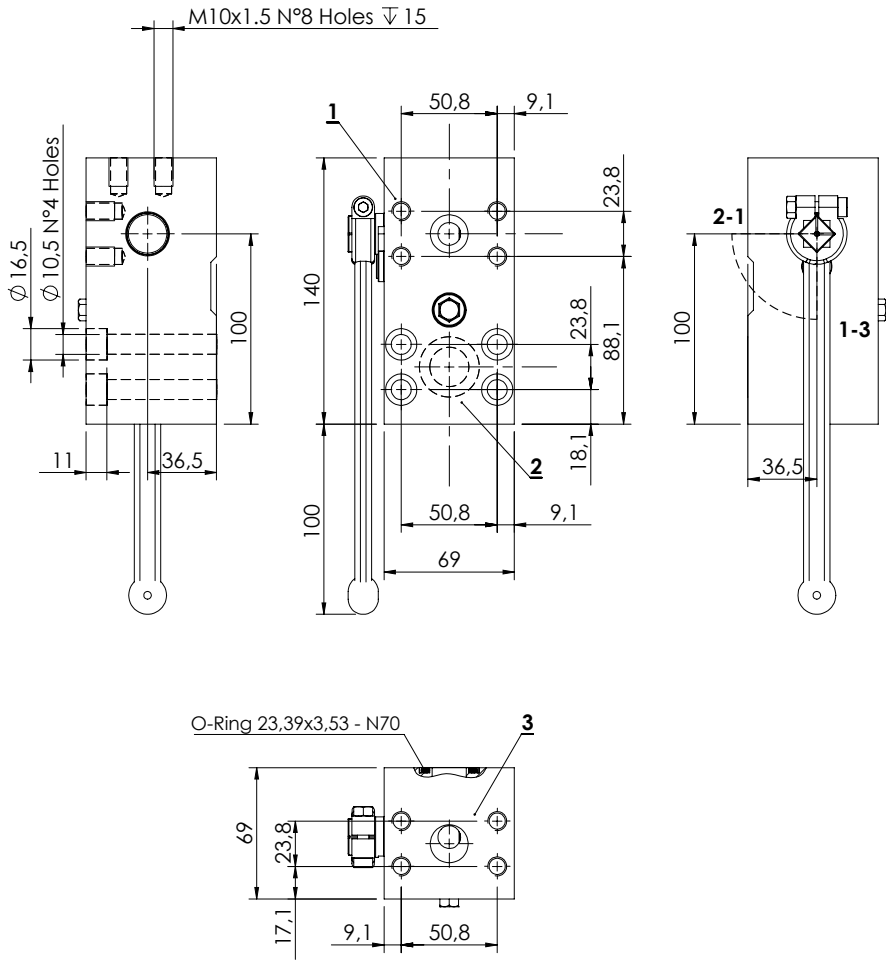
ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
BD000083	Excavator attachment function - 1" SAE 6000	4 : 1	P-C: G1" SAE 6000 A-B-T: G1/2" M1-M2-LS: G1/4"	① 220 ③ 200 ② 260 ④ 250	①② 100-350 ③ 120-350 ④ 140-270	① 91 ③ 165 ② 138 ④ 49

EXCAVATORS VALVE

MDRC-200-SLVN

AUXILIARY
SELECTOR VALVE



SPECIFICATIONS

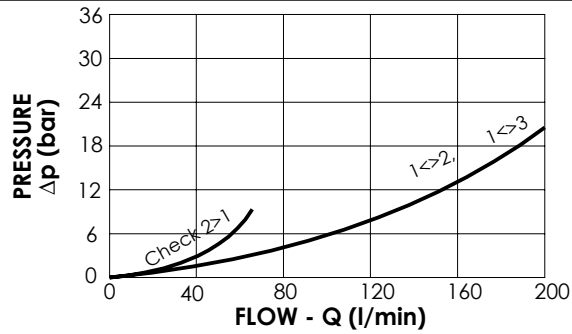
Max. operating pressure:	500 bar
Rated flow:	200 l/min
Manifold:	Steel
Weight:	4,86 kg

NOTES

1 to 2, leakage in 3: 20 cc @ 100 bar
1 to 3, leakage in 2: 20 cc @ 100 bar

Oil specification: 46 cSt
Oil temperature: 35°C

Handle supplied separately,
not attached to the block.



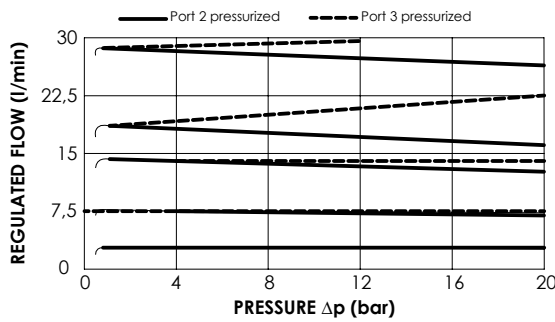
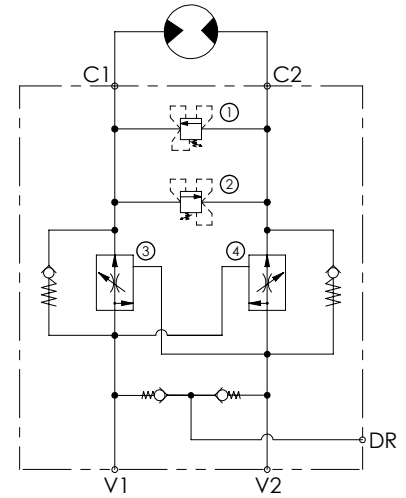
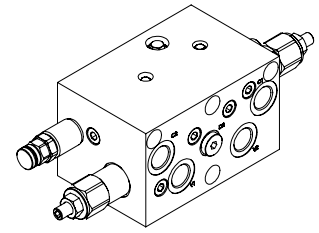
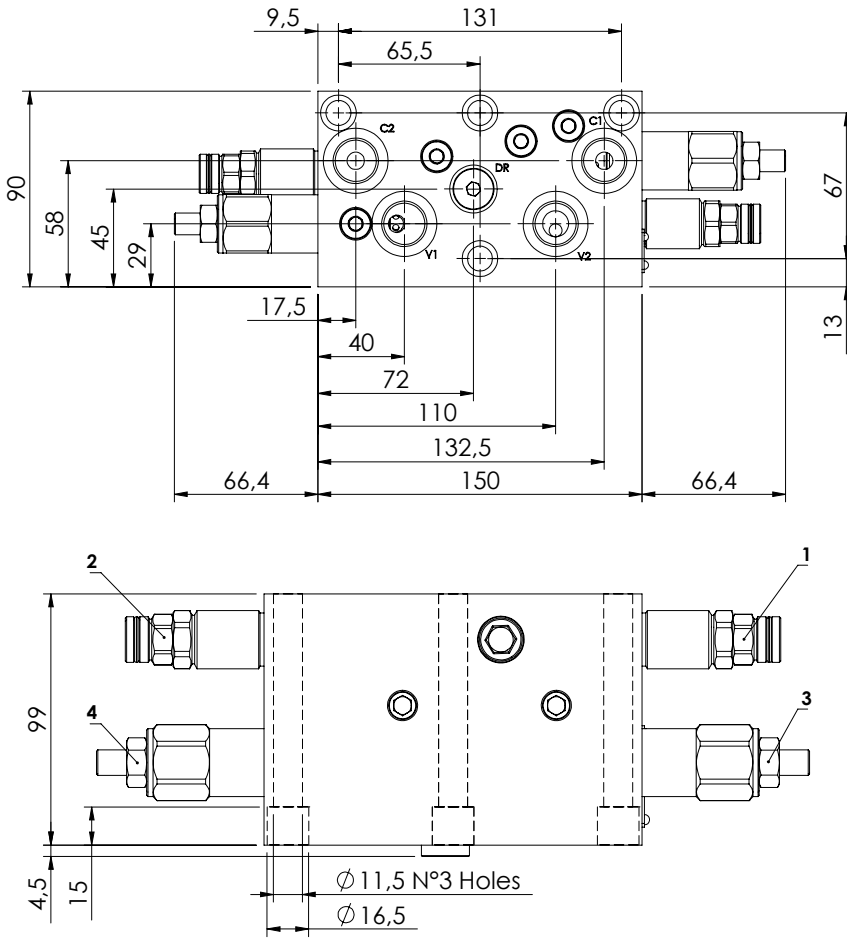
ORDERING CODES

Quick code	Description	Main ports size	
MD000072	MDRC-200-SLVN-NP-S34-N500	3/4" SAE 6000	

EXCAVATORS VALVE

BPFD-060-ALSU

FLOW REGULATOR WITH RELIEF VALVE



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	60 l/min
Regulated Flow:	30 l/min
Manifold:	Steel
Weight:	9,79 kg
Coil:	

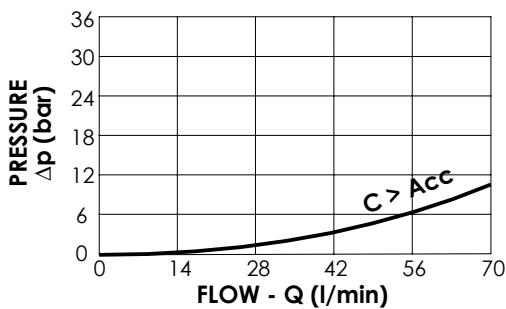
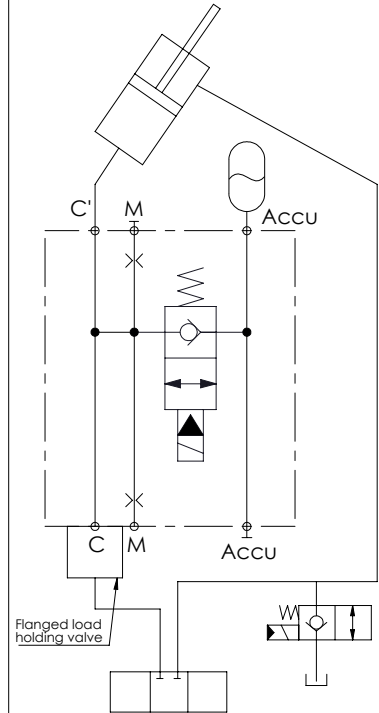
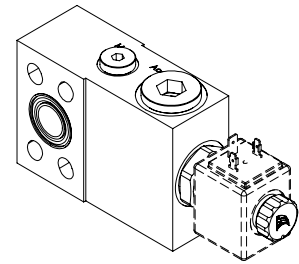
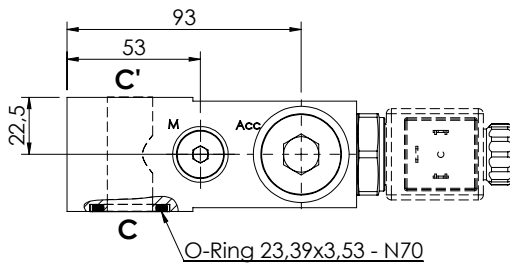
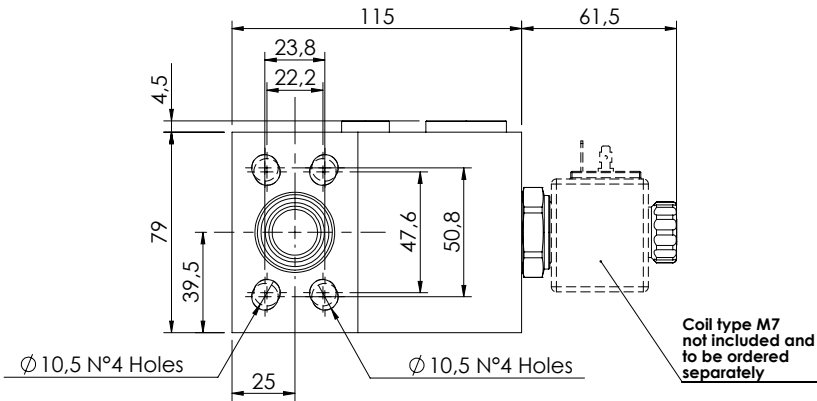
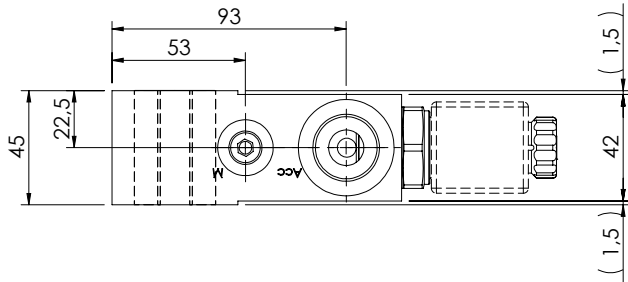
ORDERING CODES

Quick code	Description	Main ports size	Setting range (bar)	Adjustment range (bar)	Pressure increase (bar/turn)
BP000039	BPFD-060-ALSU-FT-G12-N350	V1,V2,C1,C2: G 1/2" DR: G 1/4"	90	30-100	20

EXCAVATORS VALVE

BNND-070-AERC

SOLENOID ACTIVATED
FLANGED



SPECIFICATIONS

Max. operating pressure:	420 bar
Rated flow:	70 l/min
Manifold:	Steel
Weight:	2,9 kg
Coil type:	M7

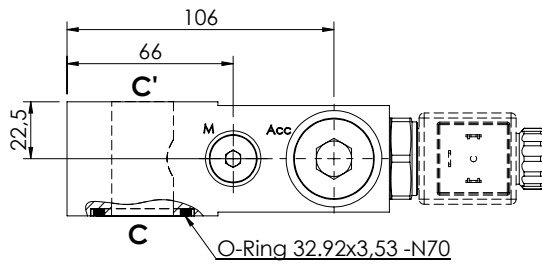
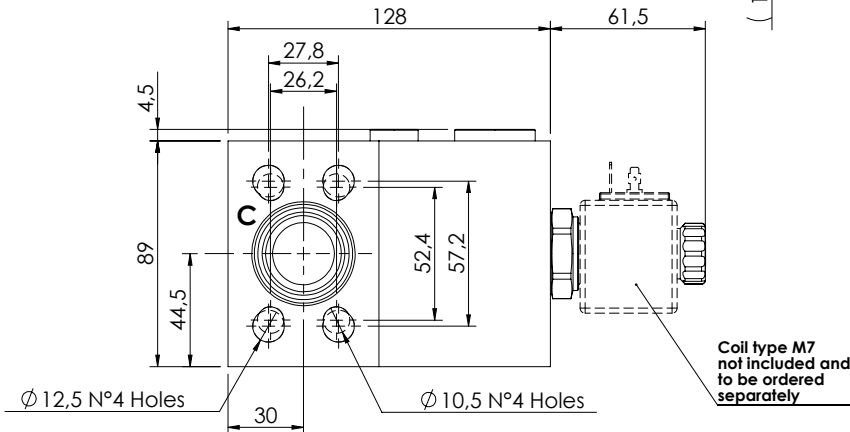
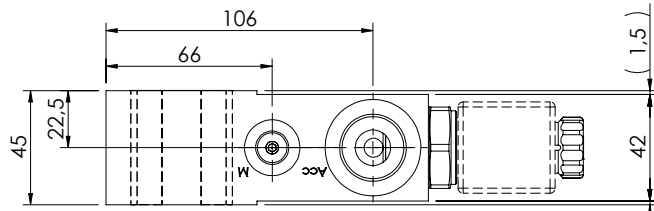
ORDERING CODES

Quick code	Description	Main ports size
BD000065	BNND-070-AERC-00-S34-N350	C,C': 3/4" SAE 3000/6000 Acc: G 3/4" M: G 1/4"

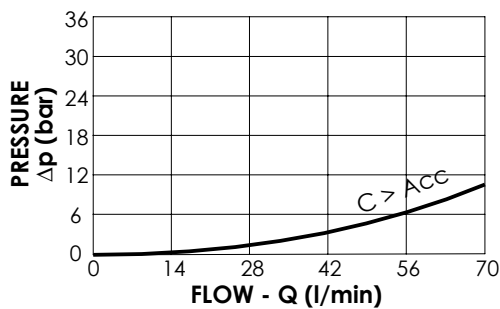
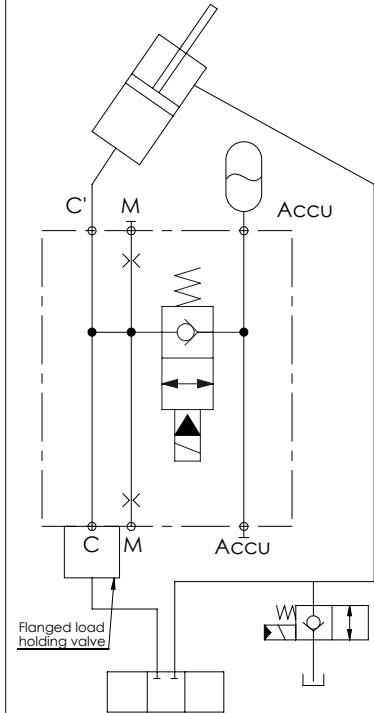
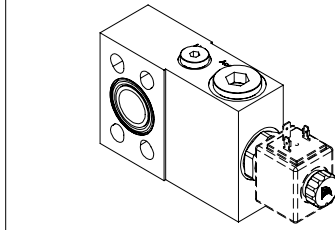
EXCAVATORS VALVE

BNND-070-AERC

SOLENOID ACTIVATED
FLANGED



Coil type M7
not included and
to be ordered
separately



SPECIFICATIONS

Max. operating pressure:	420 bar
Rated flow:	70 l/min
Manifold:	Steel
Weight:	3,54 kg
Coil type:	M7

ORDERING CODES

Quick code	Description	Main ports size
BD000066	BNND-070-AERC-00-S10-N350	C, C': 1" SAE 3000/6000 Acc: G 3/4" M: G 1/4"

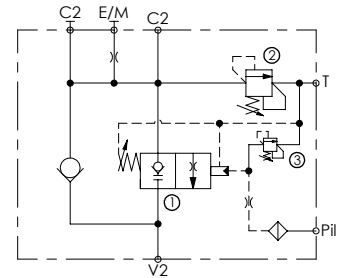
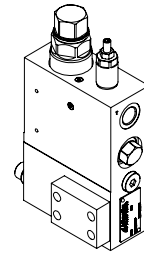
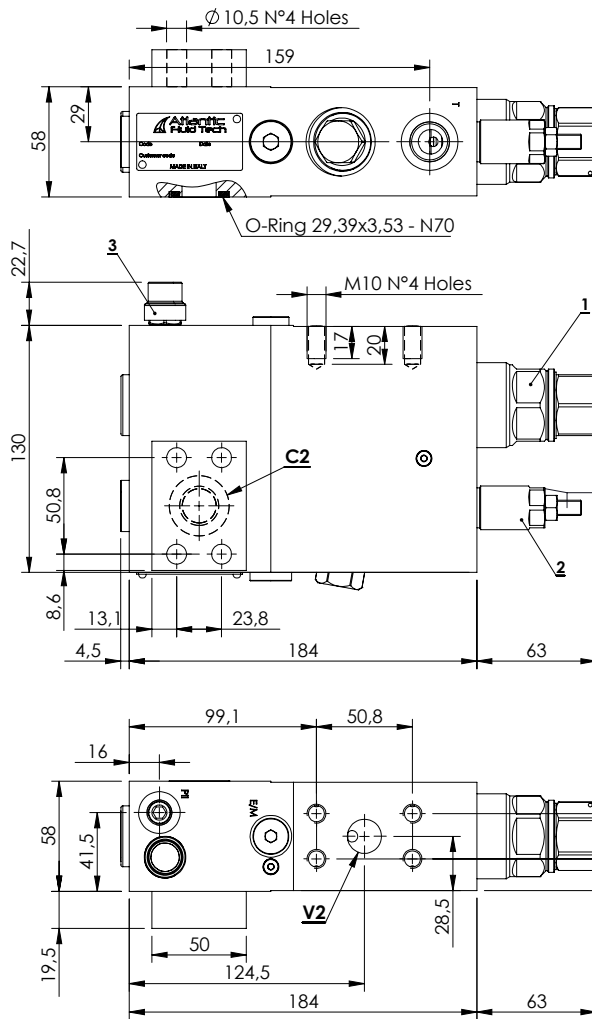
SECTION 20. 2

APPLICATIONS - ALL TERRAIN CRANES



Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	MLST-250-AAGN	-	250	350	In line	3/4" SAE 6000	20.02.010

MLST-250-AAGN

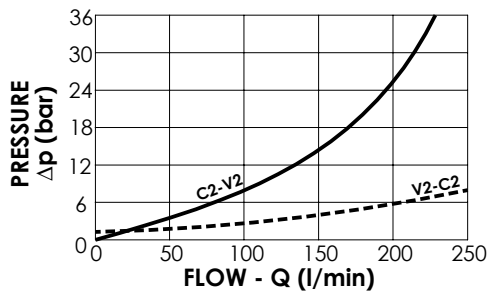
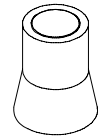


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	250 l/min
Manifold:	Steel
Weight:	10,54 kg

SEALING CAP

Ordering code:
AT000020



NOTES

When correctly adjusted for the special excavator installation, these valves meet the requirement of ISO 8643

Piston with grooves

ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar)	Adjust. range (bar)	Pressure increase (bar/turn)
ML000212	MLST-250-AAGN-00-S34-N350	V2,C2: 3/4" SAE 6000 E/M,Pil: G 1/4" T: G 1/2"	① 9 Q=5 l/min ③ 20 C.P. ② 350 Q=5 l/min	① 2-15 ③ 10-40 ② 100-350	① 1,6 ③ 22 ② 91

SECTION 20. 3

APPLICATIONS - CONCRETE PUMP CRANES

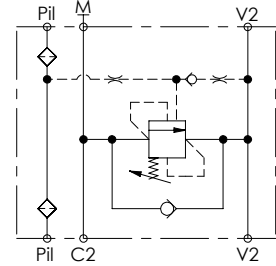
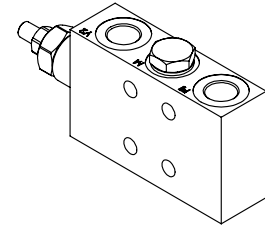
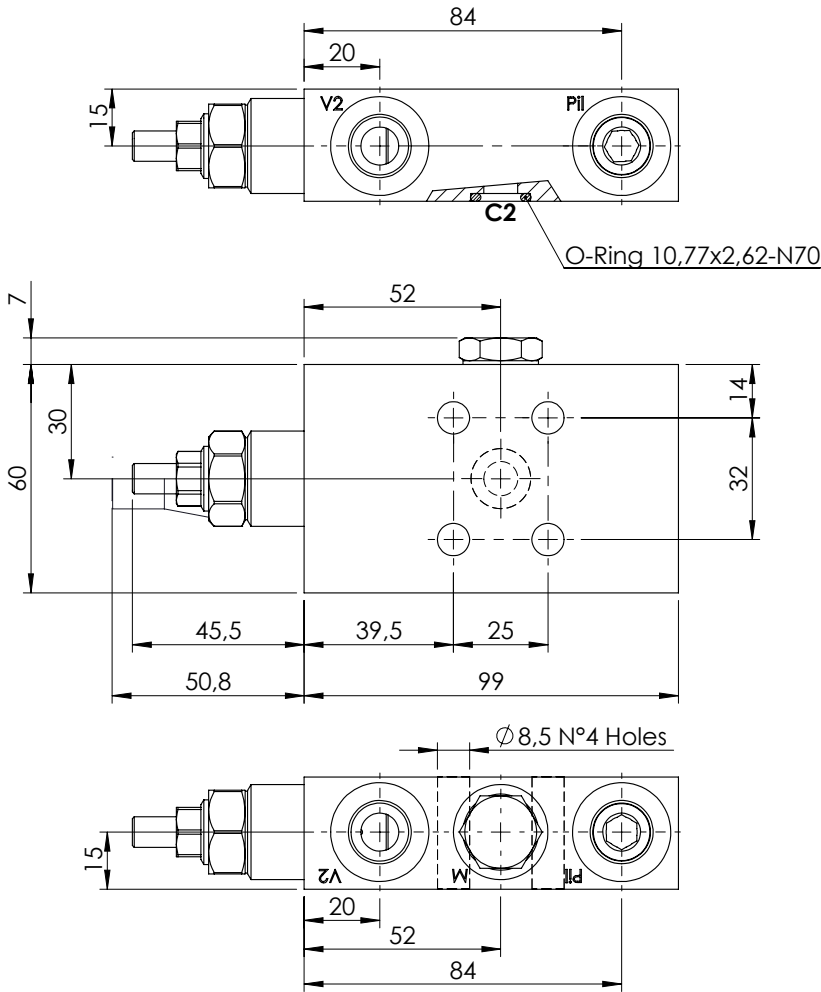


Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	MLST-250-AAGN	-	250	350	In line	3/4" SAE 6000	20.03.010
	MBSN-060-ZAPF	-	60	350	In line	G 3/8"	20.03.020
	MBSN-060-AAST	-	60	350	Flanged	Ø9	20.03.030
	MBSN-060-AASA	-	60	350	Flanged	Ø9	20.03.040
	MBSN-060-APST	-	60	350	Flanged	M22x1,5	20.03.050
	MBSN-080-APST	-	80	350	Flanged	M22x1,5	20.03.060
	MBSN-060-ZENV	-	60	350	Flanged	Ø9	20.03.070

CONCRETE PUMP CRANES

MBSN-060-ZAPF

SINGLE ACTING
FLANGED

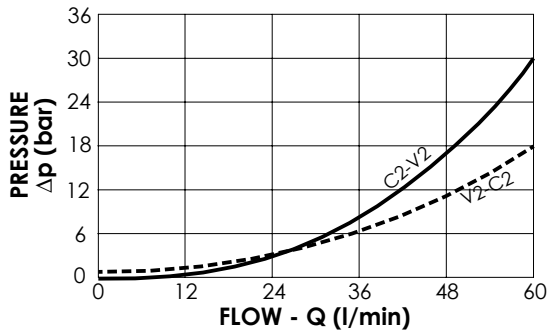
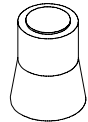


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	60 l/min
Manifold:	Aluminium
Weight:	0,56 kg

SEALING CAP

Ordering code:
AT000020



NOTES

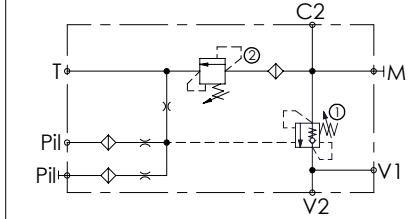
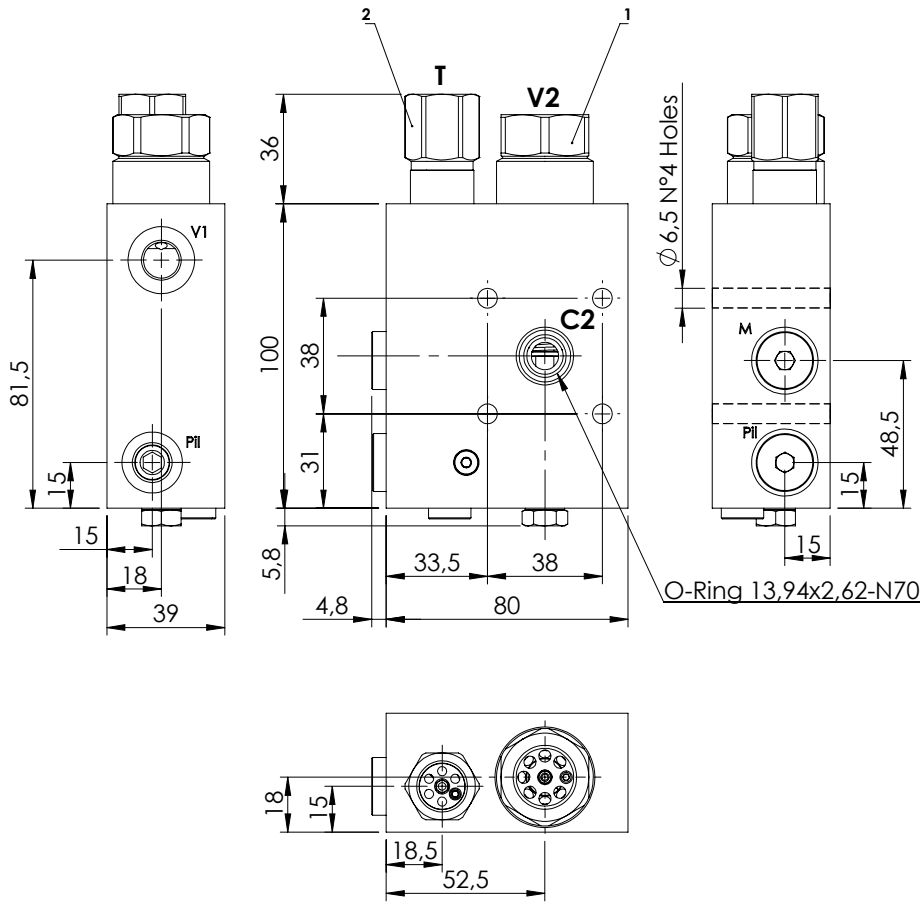
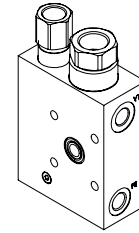
Setting: at least 1.3 times the load induced pressure

Pilot ratio: 4,2:1
Operative pilot ratio: 2,1:1

ORDERING CODES

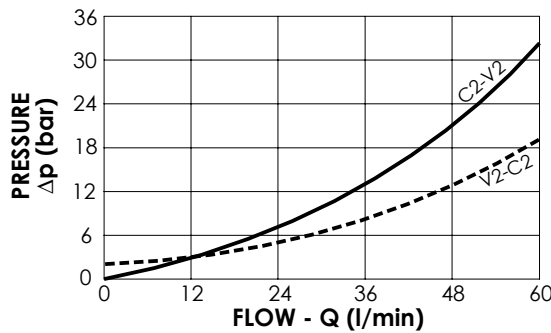
Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000461	MBSN-060-ZAPF-02-G38-N350	V2,P11:G 3/8" M:M12x1,5	340	100-350	138

MBSN-060-AAST



SPECIFICATIONS

Max. operating pressure:	500 bar
Rated flow:	60 l/min
Manifold:	Steel
Weight:	2,42 kg



NOTES

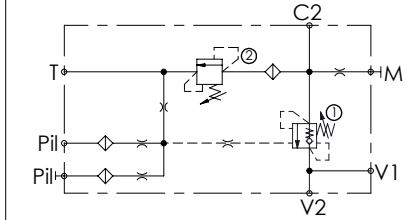
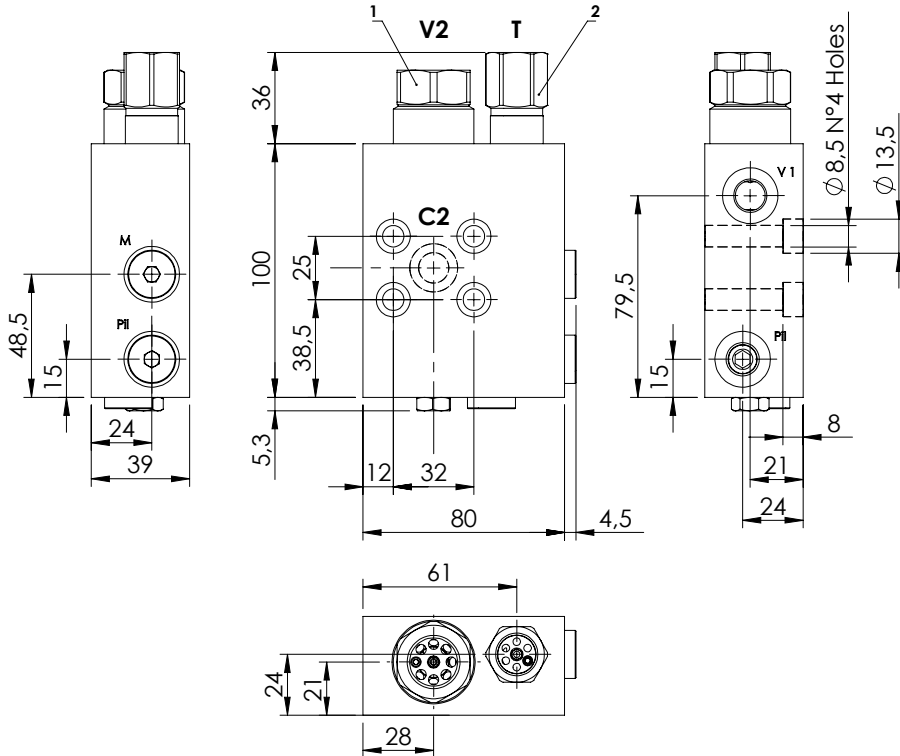
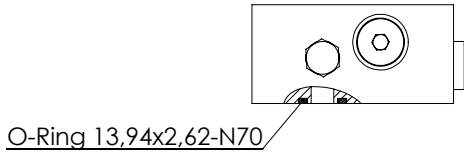
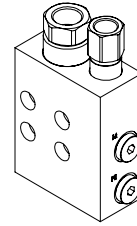
Setting: at least 1.3 times the load induced pressure

Pilot ratio: 7:1
Operated pilot ratio: 3,6:1

ORDERING CODES

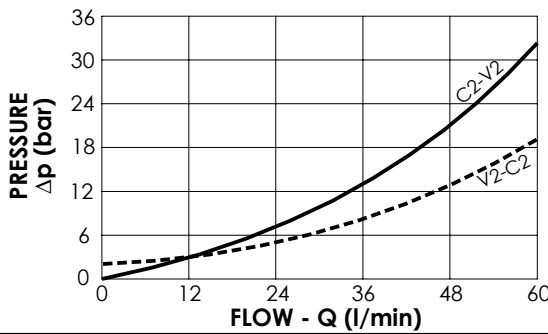
Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000101	MBSN-060-AAST-07-G12-N500	V1,Pil,M:G1/4" T:G3/8" V2:G1/2" C2:Ø9	①:450 ②:450	①:200-450 ②:250-450	①:366 ②:167

MBSN-060-AASA



SPECIFICATIONS

Max. operating pressure:	500 bar
Rated flow:	60 l/min
Manifold:	Steel
Weight:	2,38 kg



NOTES

Setting: at least 1.3 times the load induced pressure

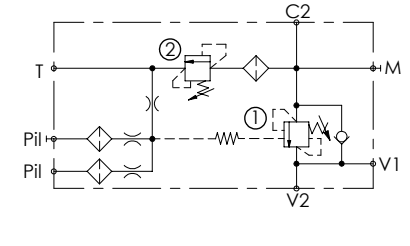
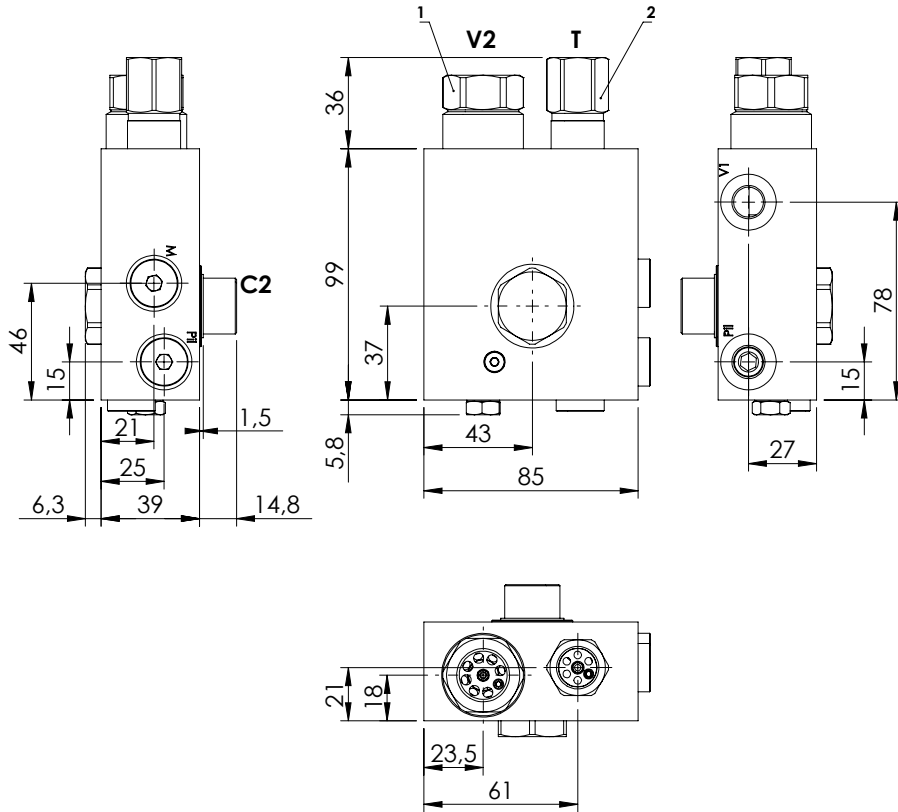
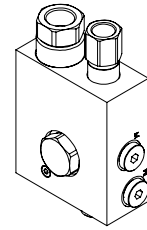
Pilot ratio: 7:1
Operated pilot ratio: 2,5:1

ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000088	MBSN-060-AASA-07-G12-N500	V2: G1/2" T: G 3/8" M: G1/8" V1, Pil: G1/4" C2: Ø9	① :420 ② :280	① :200-450 ② :100-350	① :366 ② :102

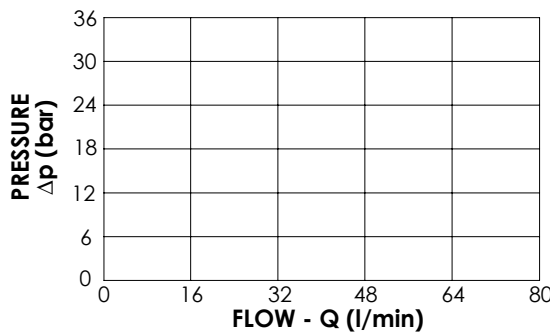
CONCRETE PUMP CRANES

MBSN-060-APST



SPECIFICATIONS

Max. operating pressure:	420 bar
Rated flow:	60 l/min
Manifold:	Steel
Weight:	2,61 kg



NOTES

Setting: at least 1.3 times the load induced pressure

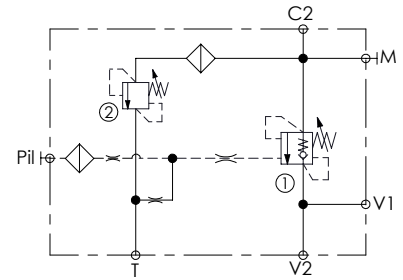
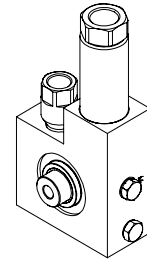
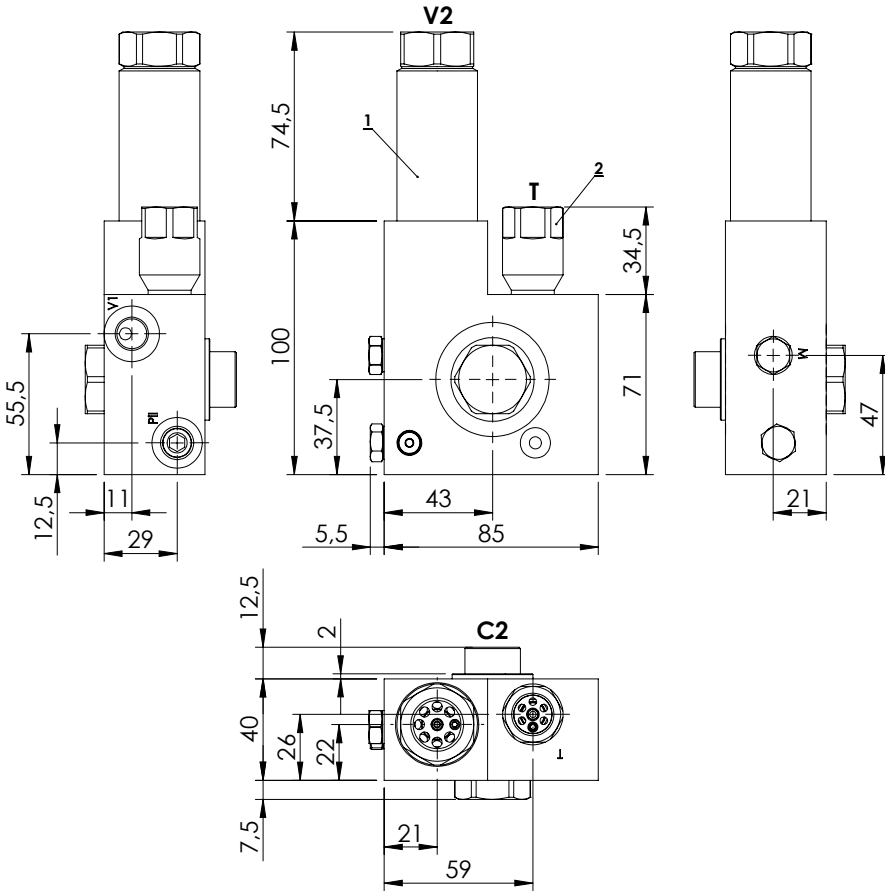
Pilot ratio: 7:1

ORDERING CODES

Quick code	Description	Oper. pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000823	MBSN-060-APST-07-M22-N420	1,5:1	T:G3/8" V2:G1/2" V1,M,Pil:G1/4" C2:M22x1,5	①:380 ②:400	①:200-420 ②:250-450	①:366 ②:167
MB000824	MBSN-060-APST-07-M22-N420	2,3:1	T:G3/8" V2:G1/2" V1,M,Pil:G1/4" C2:M22x1,5	①:210 ②:230	①:200-420 ②:250-450	①:366 ②:167

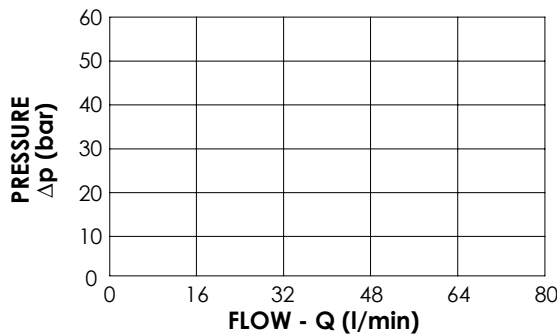
CONCRETE PUMP CRANES

MBSN-080-APST



SPECIFICATIONS

Max. operating pressure:	500 bar
Rated flow:	80 l/min
Manifold:	Steel
Weight:	2,49 kg



NOTES

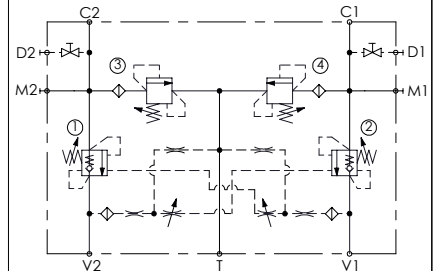
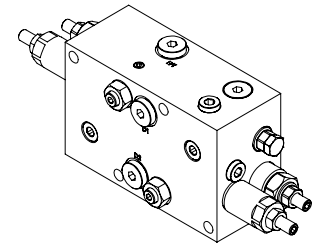
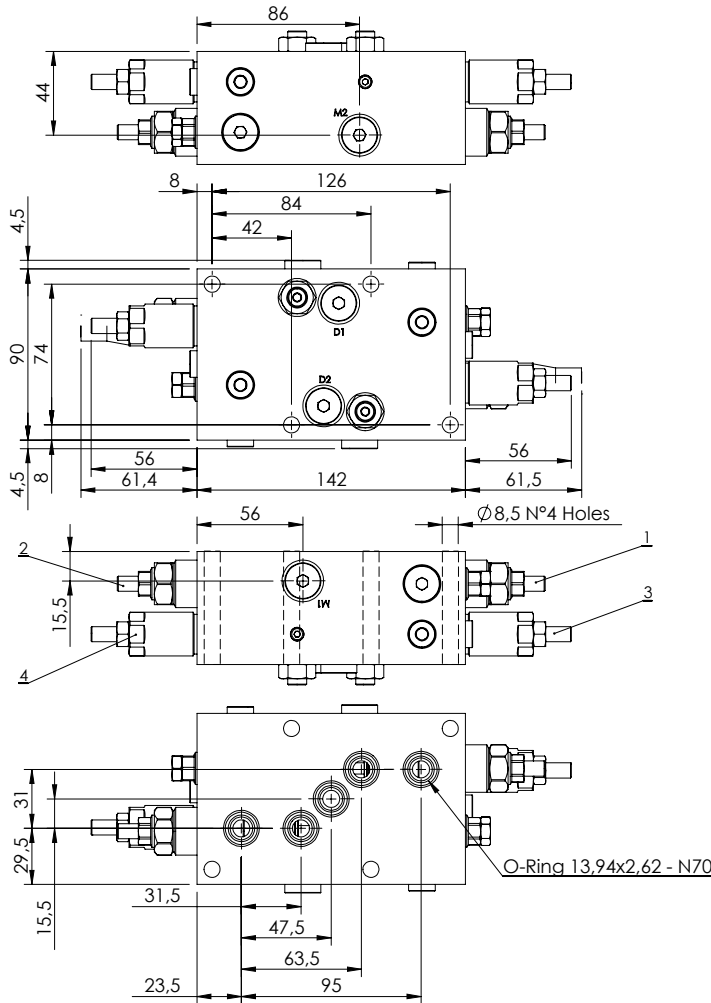
Setting: at least 1.3 times the load induced pressure
 Banjo can be installed on both sides
 Pilot ratio: 7:1

ORDERING CODES

Quick code	Description	Oper. Pilot ratio	Main ports size	Standard setting (bar)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000913	MBSN-080-APST-07-M22-N500	2,3:1	C2:M22x1,5 V2:G 1/2" V1,Pil:G 1/4" T:G 3/8" M:M8x1	① 380 Q=5 l/min ② 420 Crack. pr.	① 200-450 ② 250-450	① 366 ② 195

CONCRETE PUMP CRANES

MBSN-060-ZENV

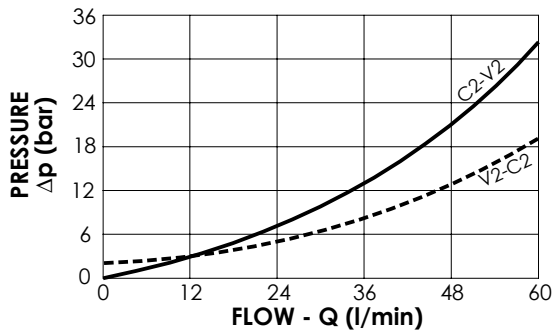
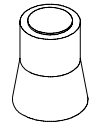


SPECIFICATIONS

Max. operating pressure:	500 bar
Rated flow:	60 l/min
Manifold:	Aluminium
Weight:	2,63 kg

SEALING CAP

Ordering code:
AT000020



NOTES

Setting: at least 1.3 times the load induced pressure

ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000931	MBSN-060-ZENV-04-TPF-N500	4:1	C1,C2,V1,V2,T: $\varnothing 9$ M1,M2:G1/4"	①②:400 ③④:390	①②:250-420 ③④:100-350	①②:150 ③④:106

SECTION 20. 4

APPLICATIONS - SALT SPRAYERS

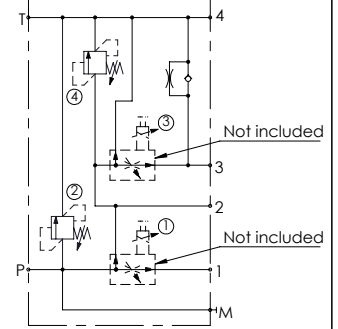
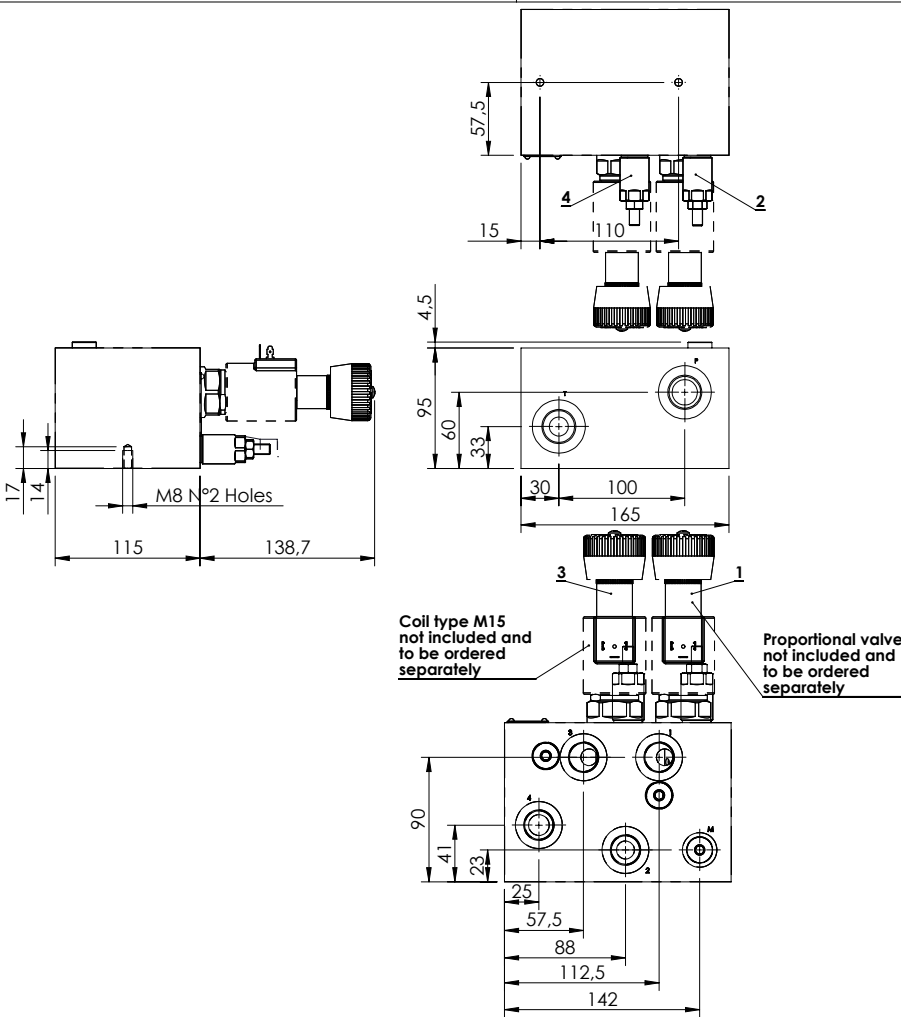
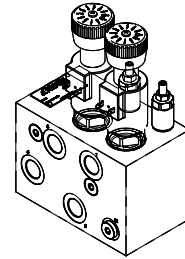


Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	BNFN-140-LPNR-02	Proportional valve	140	250	In line	M26x1,5	20.04.010
	BNFN-140-LPNR-03	Proportional valve	140	250	In line	M27x1,5	20.04.020
		Directional valve	40	320	In line	G 3/8"	20.04.030
		Directional valve	40	320	In line	G 3/8"	20.04.040

SALT SPRAYER VALVE

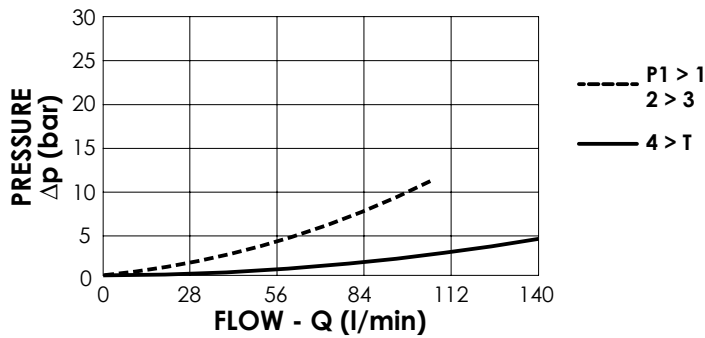
BNFN-140-LPNR

PROPORTIONAL VALVE



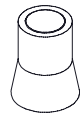
SPECIFICATIONS

Max. operating pressure:	250 bar
Rated flow:	140 l/min
Max regulated flow:	0 - 80 l/min
Manifold:	Aluminium
Weight:	4,4 kg
Coil type:	M15
Cavity type:	SAE-16-3N



SEALING CAP:

Ordering code:
AT000020



NOTES

- See chapter 18.00.000 for coils.
- See chapter 16.00.000 for proportional valve info.

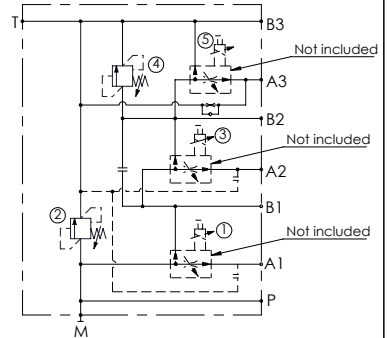
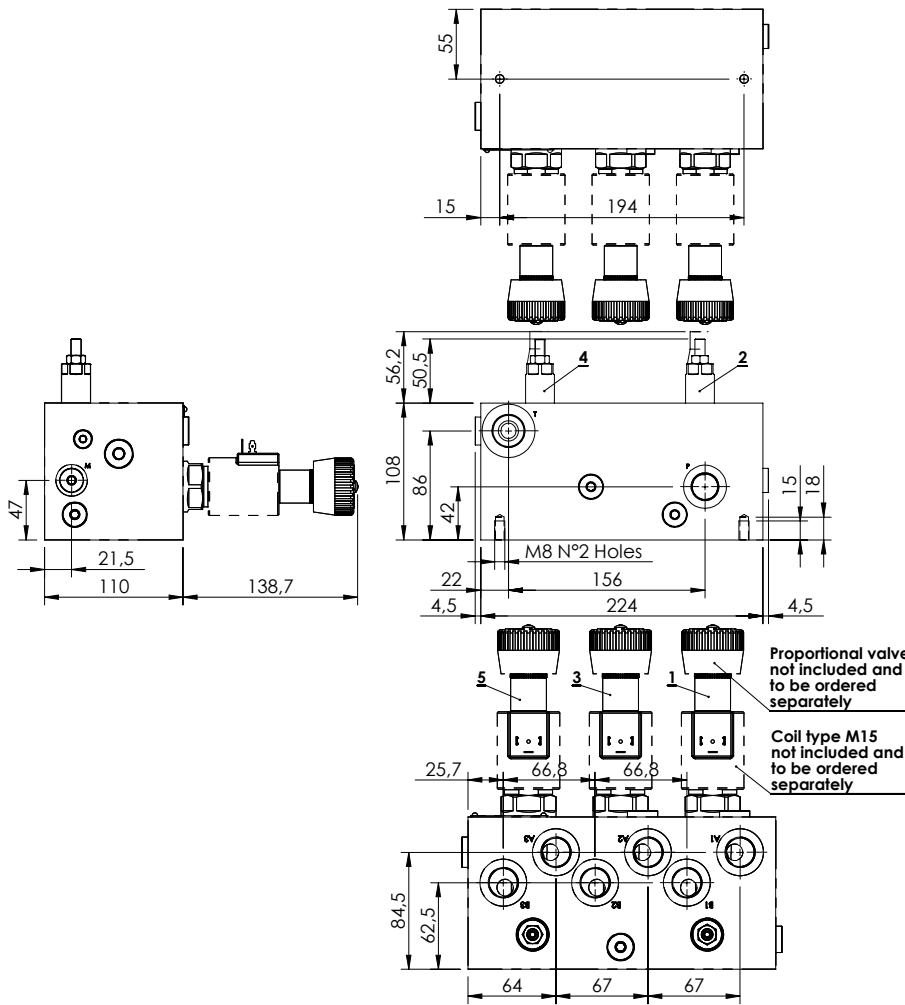
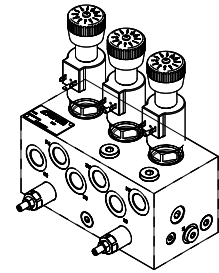
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
BF000020	BNFN-140-LPNR-02-M26-N250	1,2,3,4: M22x1,5 P,T: M27x2 M: M14x1,5	②:200 ④:100	②:50-210 ④:30-100	②:42 ④:20

SALT SPRAYER VALVE

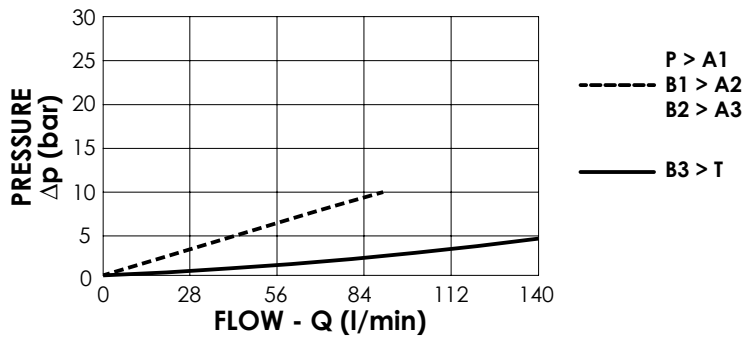
BNFN-140-LPNR

PROPORTIONAL VALVE



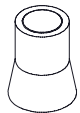
SPECIFICATIONS

Max. operating pressure:	250 bar
Rated flow:	140 l/min
Max regulated flow:	0 - 80 l/min
Manifold:	Aluminium
Weight:	6,4 kg
Coil type:	M15
Cavity type:	SAE-16-3N



SEALING CAP:

Ordering code:
AT000020



NOTES

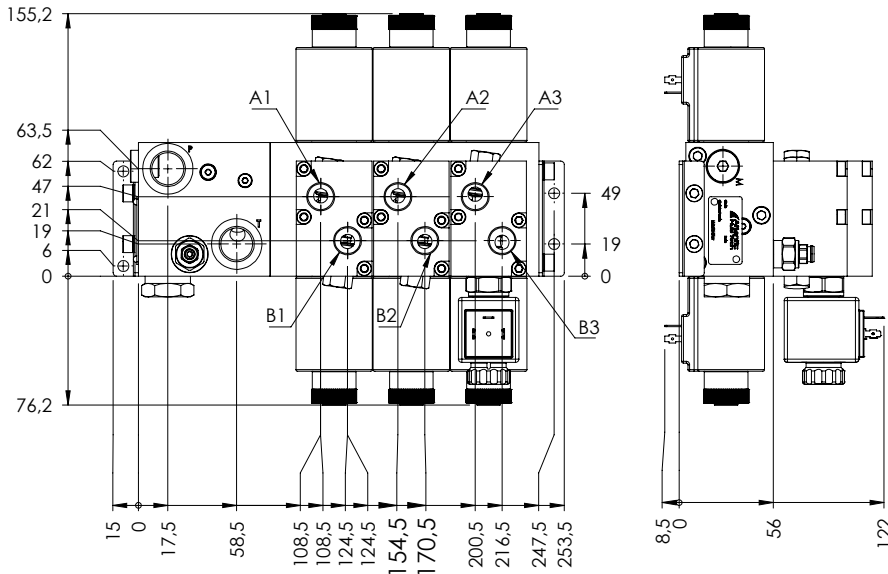
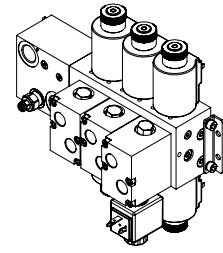
- See chapter 18.00.000 for coils.
- See chapter 16.00.000 for proportional valve info.

ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
BF000019	BNFN-140-LPNR-03-M26-N250	A,B,P: M22x1,5 T: M26x1,5 M: M14x1,5	②:200 ④:100	②:50-210 ④:30-100	②:42 ④:20

SALT SPRAYER VALVE

EBLE-040-CCSM

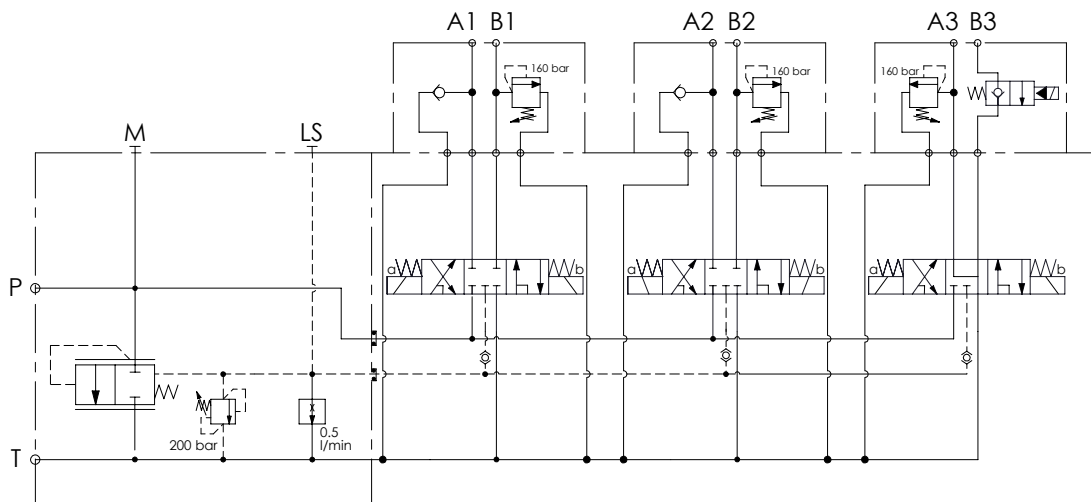


SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	40 l/min
Manifold:	Cast-iron
Weight:	9,9 kg

NOTES

For more informations see the chapter 19.00.000

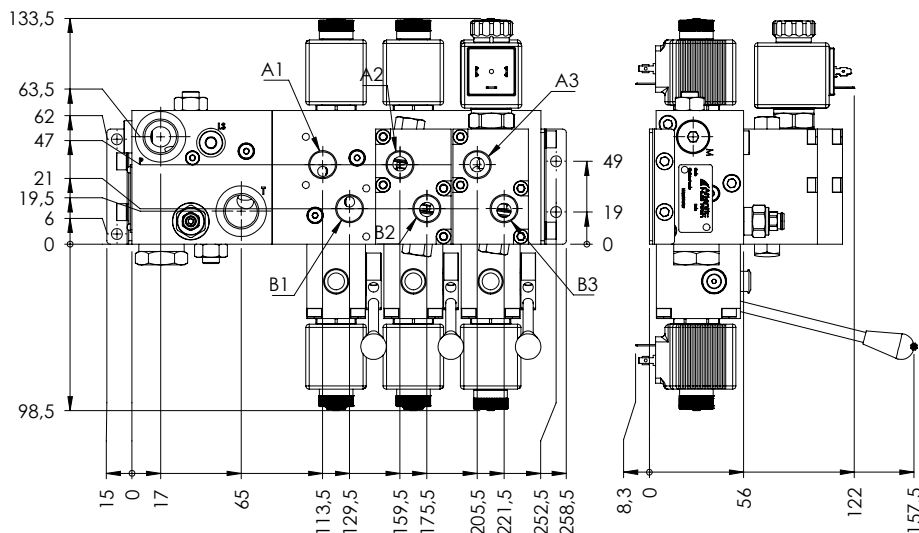
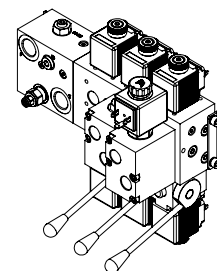


ORDERING CODES

Quick code	Description	Main ports size:	General relief setting: (bar)	Voltage: (V)	Coil type:
EB000041	EBLE-040-CCSM-MX-G12-BHRN	A,B: G3/8" P,T: G1/2" M: G1/4"	200	DIN 43650	24

SALT SPRAYER VALVE

EBLE-040-CCLM

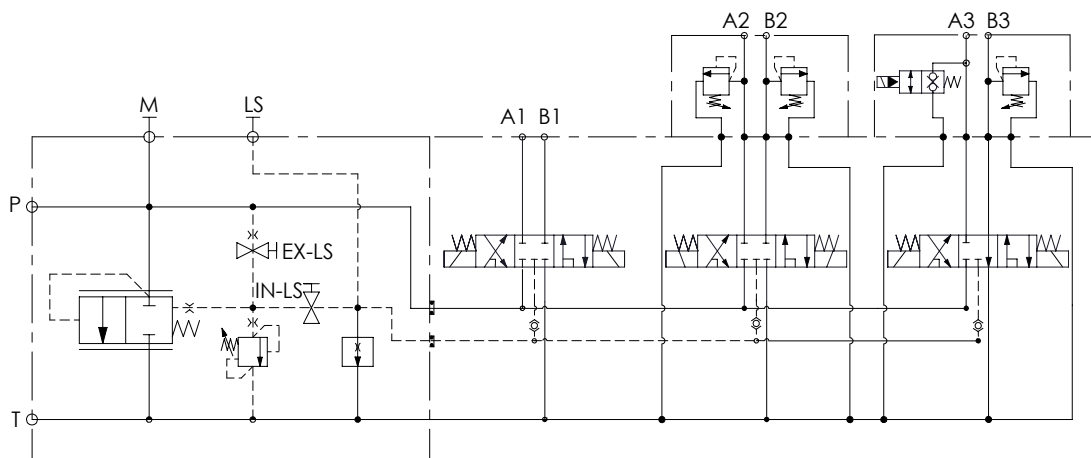


SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	40 l/min
Manifold:	Cast-iron
Weight:	8,5 kg

NOTES

For more informations see the chapter 19.00.000



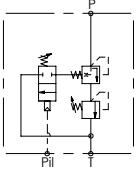
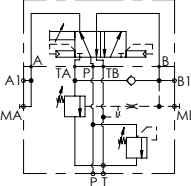
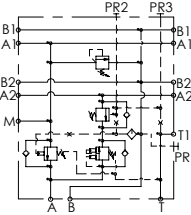
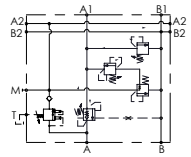
ORDERING CODES

Quick code	Description	Main ports size:	General relief setting: (bar)	Voltage: (V)	Coil type:
EB000042	EBLE-060-CCLM-MX-G12-BHRN	A,B: G3/8" P,T: G1/2" M: G1/4" LS: G1/8"	200	DIN 43650	24

SECTION 20. 5

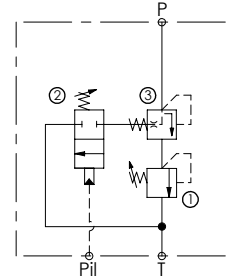
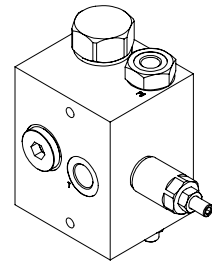
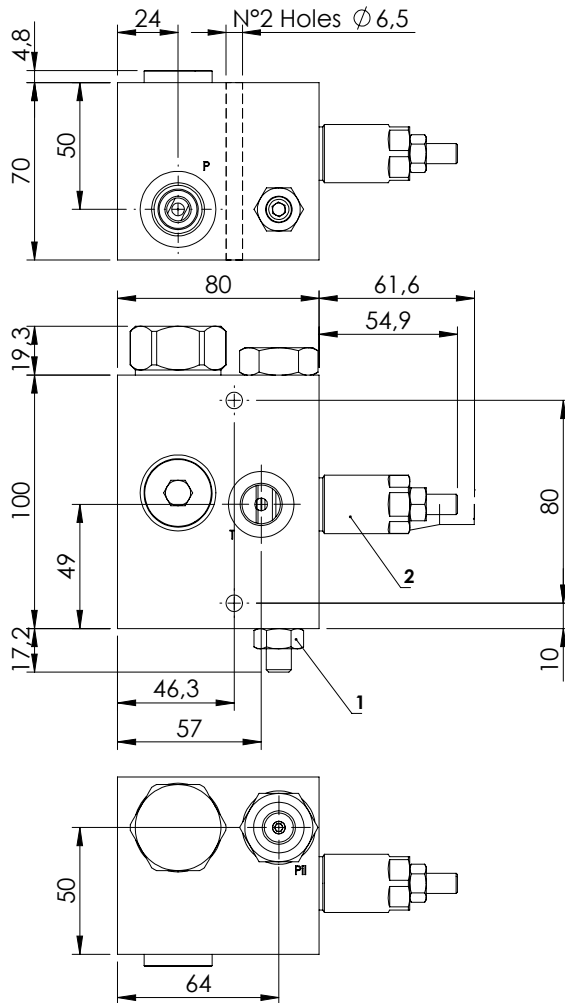
APPLICATIONS - GARBAGE COMPACTORS



Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	MTLN-030-TLSL	-	30	210	In line	G 1/2"	20.05.010
	MDAF-080-BRNR	-	80	210	In line	G 1/2"	20.05.020
	MRDN-100-ZLNP	-	100	350	In line	G 3/4"	20.05.030
	BNND-100-NLBCU	-	150	350	In line	G 3/4"	20.05.040

GARBAGE COMPACTORS

MTLN-030-TLSL

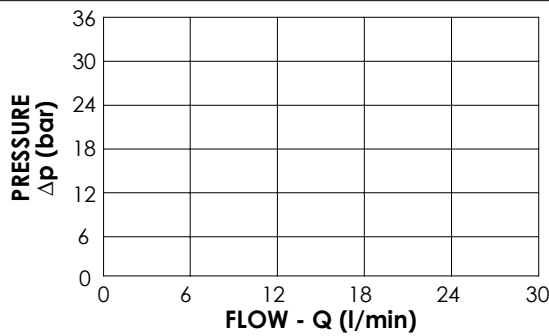
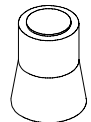


SPECIFICATIONS

Max. operating pressure:	210 bar
Rated flow:	30 l/min
Manifold:	Aluminium
Weight:	1,9 kg

SEALING CAP

Ordering code:
AT000020



NOTES

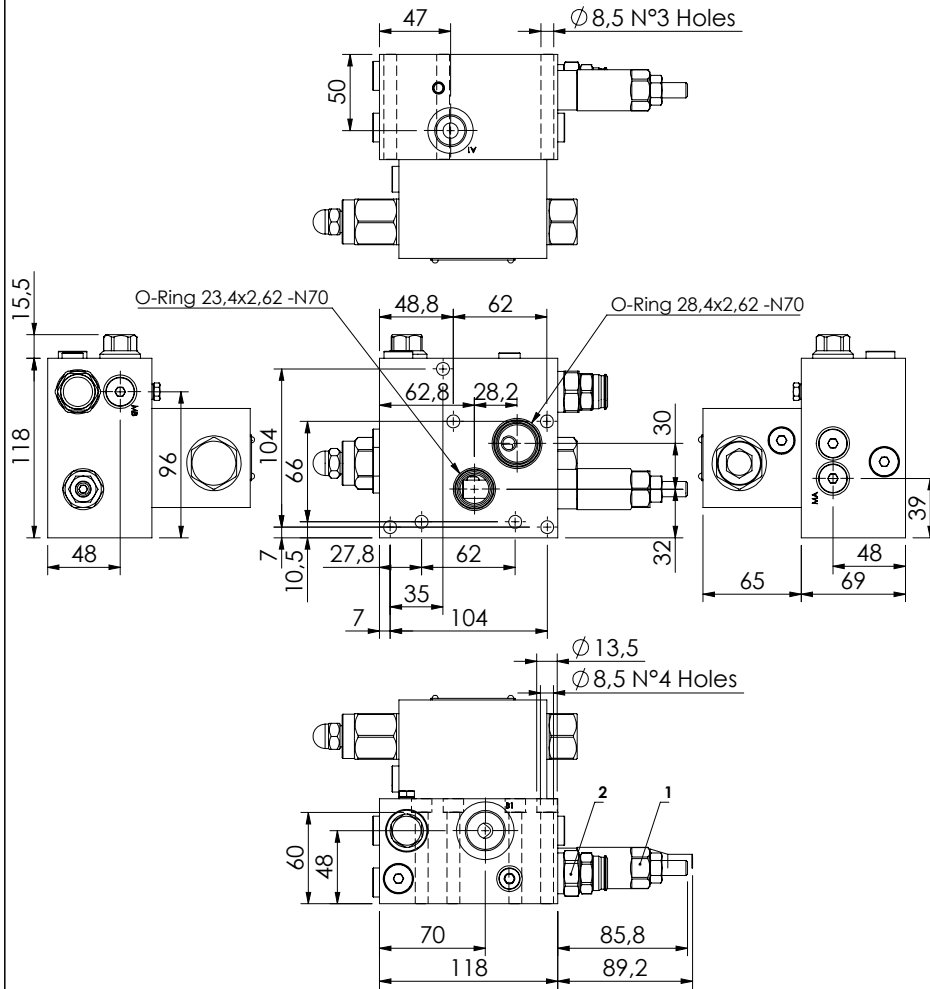
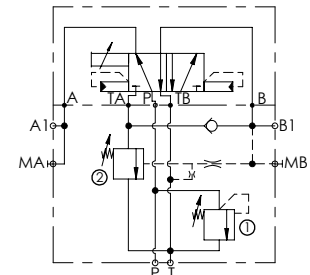
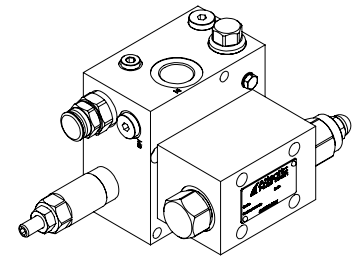
ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MT000008	MTLN-030-TLSL-NP-G12-N180	P, T:G 1/2" Pi:G 1/4"	①:180 ②:40	①:40-200 ②:10-50	①:49 ②:10

GARBAGE COMPACTORS

MDAF-080-BRNR

REGENERATIVE FUNCTION

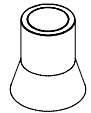


SPECIFICATIONS

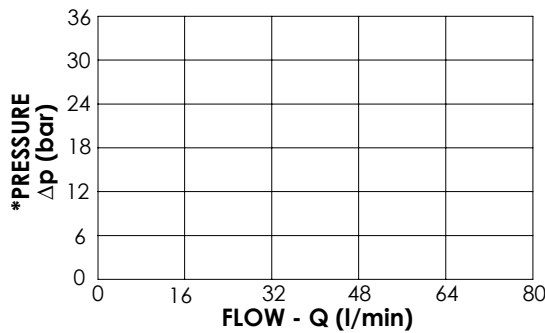
Max. operating pressure:	210 bar
Rated flow:	80 l/min
Manifold:	Aluminium
Weight:	5,99 kg

SEALING CAP

Ordering code:
AT000021



NOTES

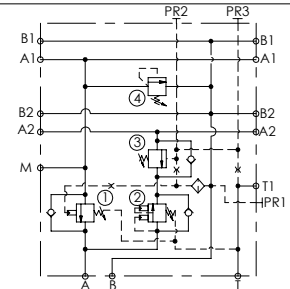
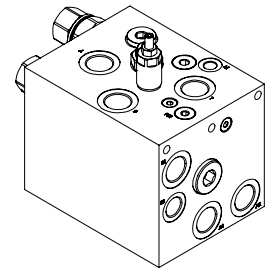
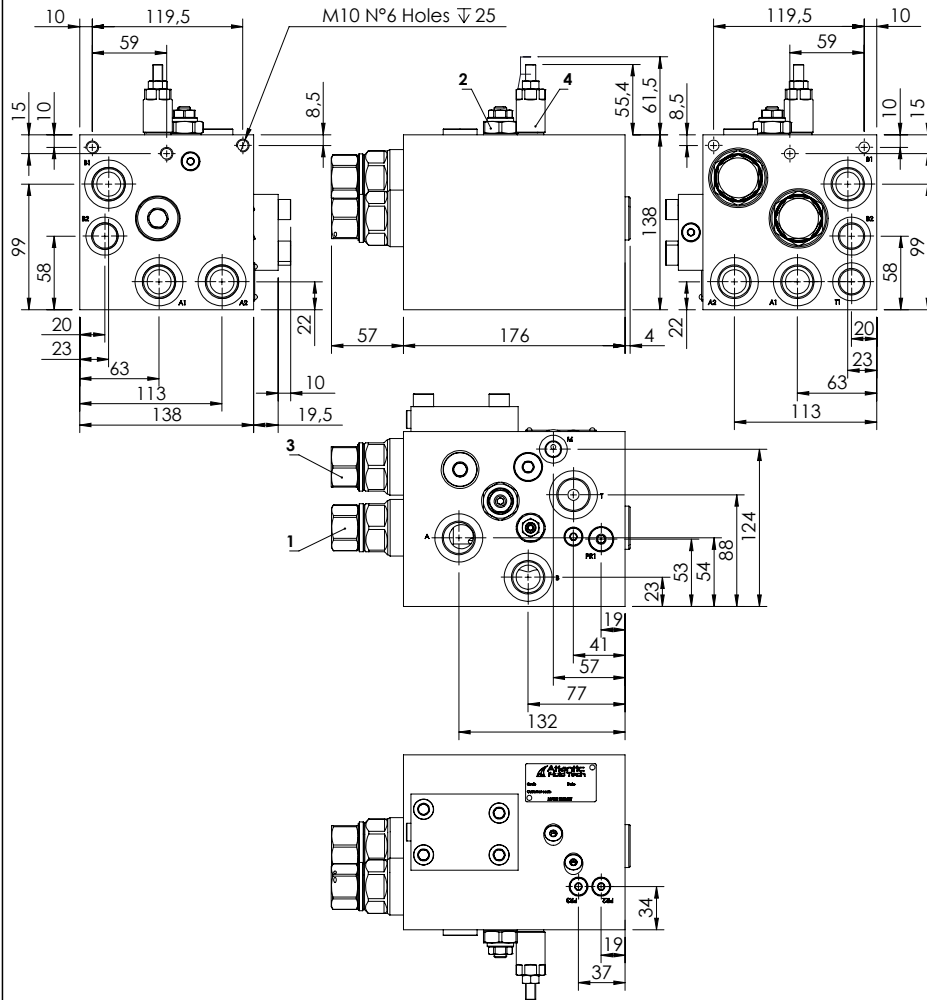


ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MD000023	MDAF-080-BRNR-NP-N10-N210	P,A1:G1/2" T,B1:G3/4" MA,MB:G 1/4"	①180 ②130	①100-350 ②70-140	①42 ②-

GARBAGE COMPACTORS

MRDN-150-ZLNP

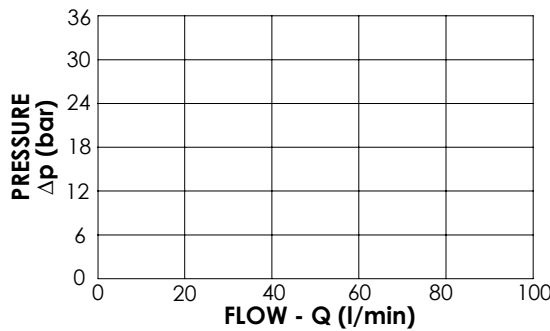
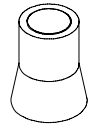


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	150 l/min
Manifold:	Aluminium
Weight:	10,18 kg

SEALING CAP

Ordering code:
AT000020



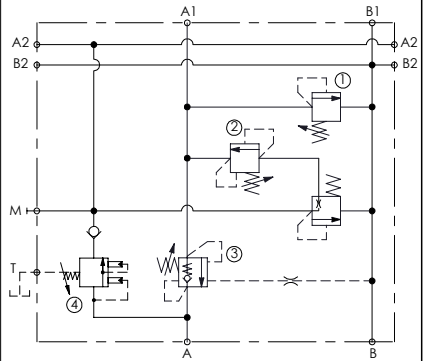
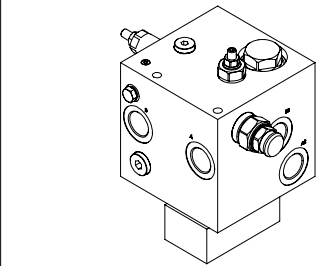
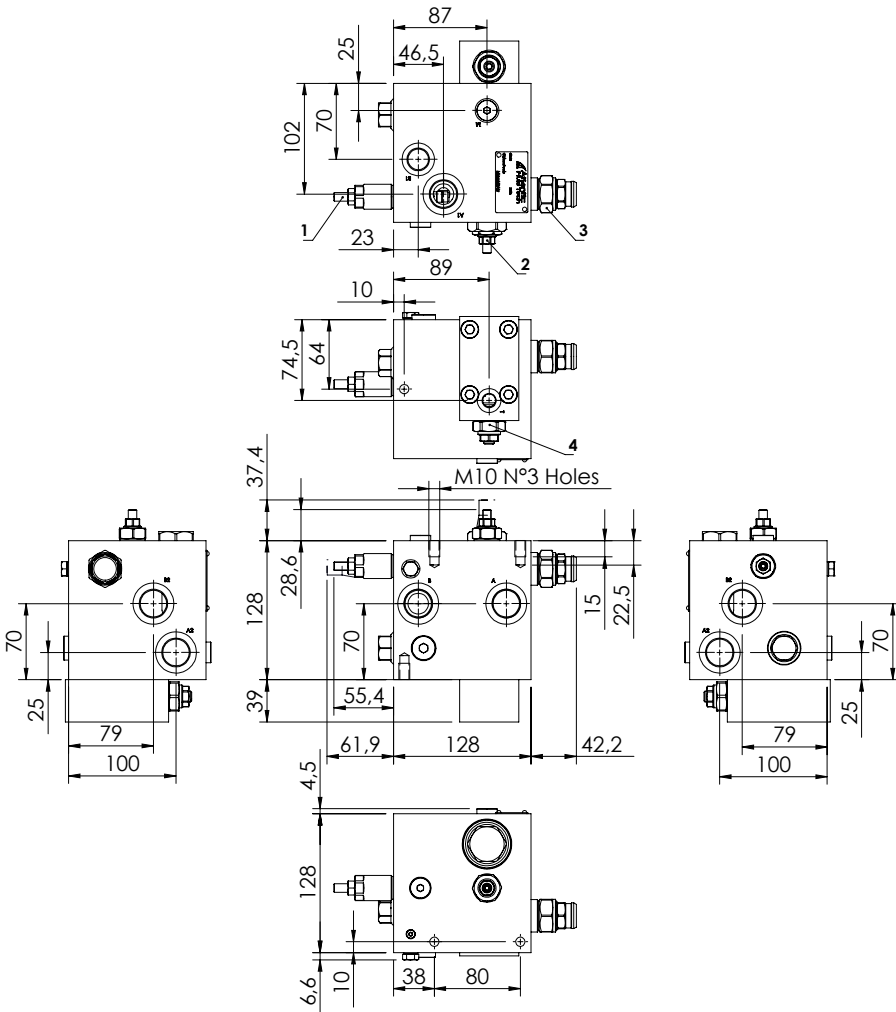
NOTES

ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjustment range (bar)	Pressure increase (bar/turn)
MB000700	MRDN-150-ZLNP-06-G34-N350	6:1	A, A1, A2, B, B1, T: G3/4" B2, T1: G1/2" T2, M1, T3: G1/4"	① 300 ③ 350 ② 175 ④ 280	① 100-350 ③ 60-210 ② 140-350 ④ 100-350	① 105 ③ 62 ② 70,5 ④ 91

GARBAGE COMPACTORS

BNND-150-NLBCU



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	150 l/min
Manifold:	Aluminium
Weight:	3,2 kg

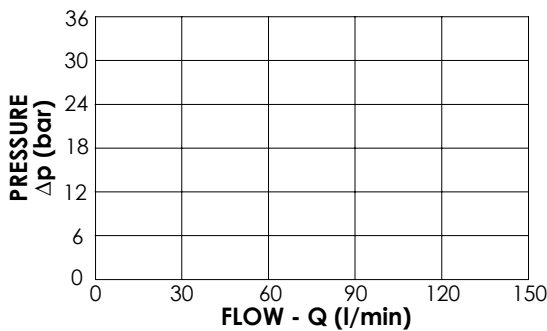
SEALING CAP

Ordering code:

AT000020
Relief valve



ST000012
Counterbalance valve



ORDERING CODES

Quick code	Description	Main ports size	Standard setting (bar, Q=5 l/min)	Adjustment range (bar)	Pressure increase (bar/turn)
BD000131	BNND-150-NLBCU-08-G34-N350	A,A1,A2,B,B2: G3/4" B1: G1/2" M,T: G1/4"	① 280 ③ 230 ② 50 ④ 175	① 100-350 ③ 60-210 ② 90-210 ④ 140-350	① 91 ③ 50 ② 87 ④ 70,5

SECTION 20. 6

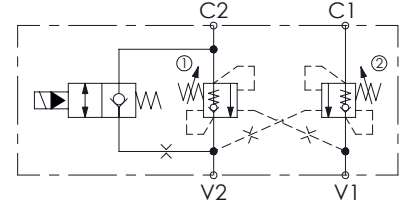
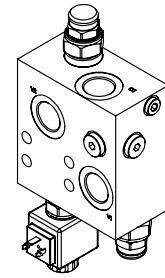
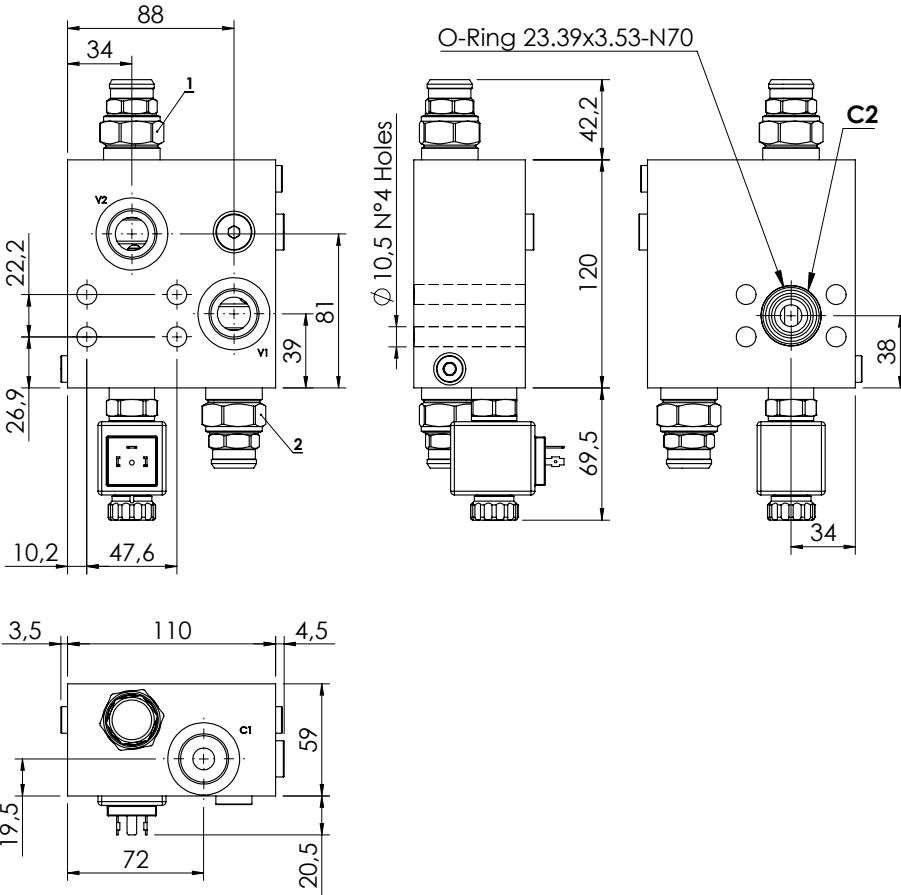
APPLICATIONS - HOOK LOADERS



Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	MBDN-150-ZABE	-	150	350	In line	G 3/4"	20.06.010
	MBPN-150-ZLNR	-	150	350	In line	G 3/4"	20.06.020
	MRSN-150-ALBE	-	150	350	In line	G 3/4"	20.06.030
	MRLN-150-ZABE	-	150	350	In line	G 3/4"	20.06.040

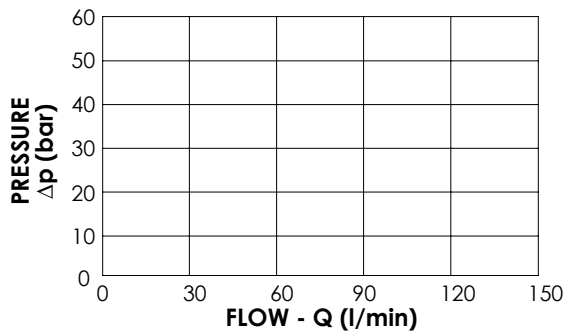
HOOK LOADERS

MBDN-150-ZABE



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	150 l/min
Manifold:	Steel
Weight:	2,75 kg
Coil:	M7 Type - 26V



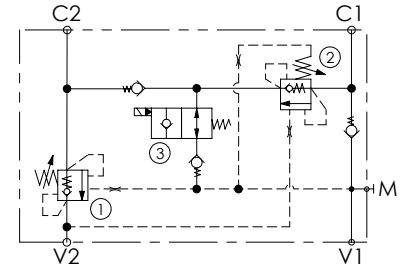
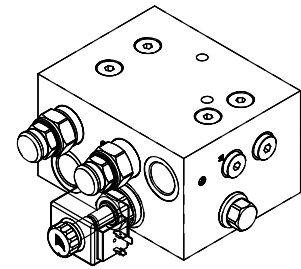
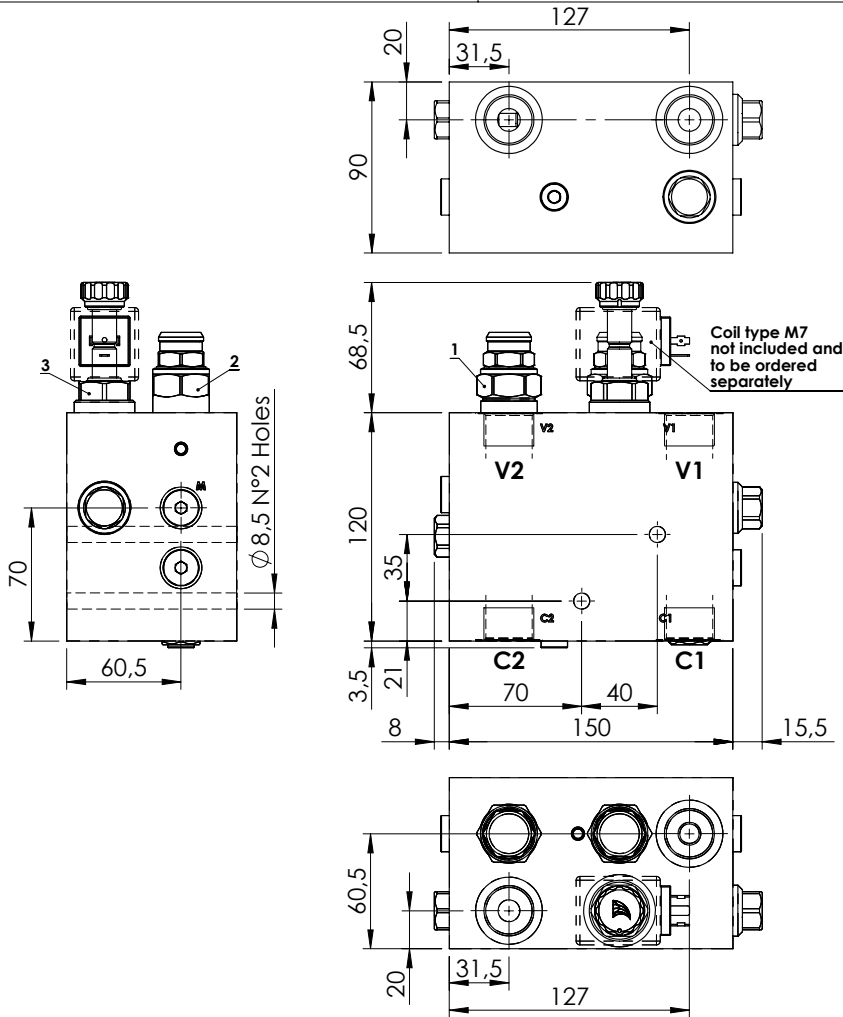
NOTES

ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000915	MBDN-150-ZABE-04-G34-N350	4:1	V1,V2,C1: G3/4" C2: 3/4 SAE 3000	350	100-350	104

HOOK LOADERS

MBPN-150-ZLNR

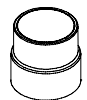


SPECIFICATIONS

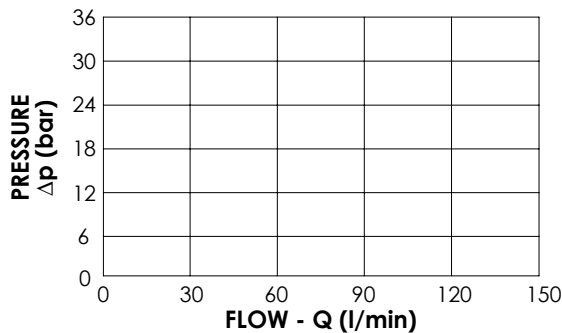
Max. operating pressure:	350 bar
Rated flow:	150 l/min
Manifold:	Aluminium
Weight:	4,91 kg
Coil type:	M7

SEALING CAP

Ordering code:
ST000012



NOTES

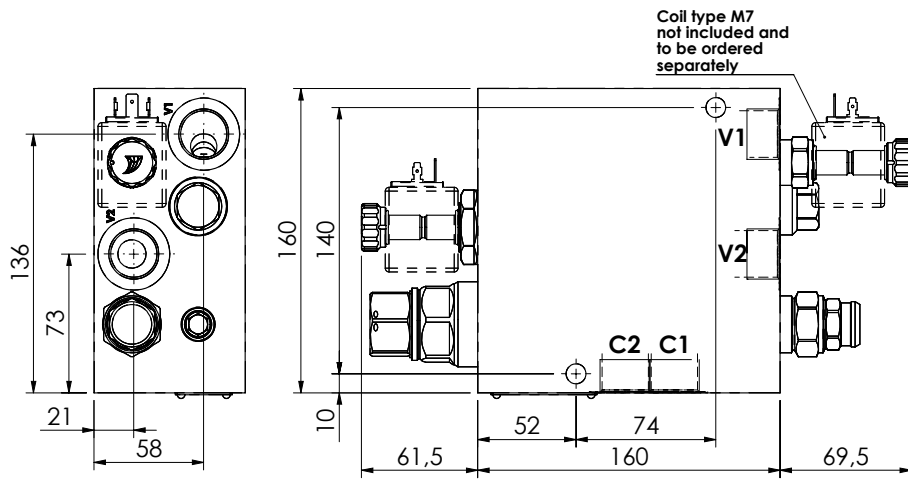
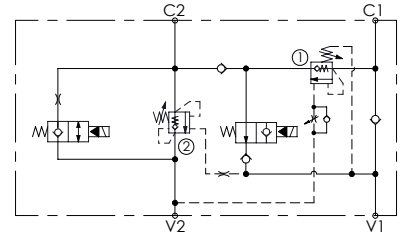
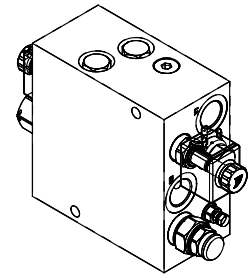
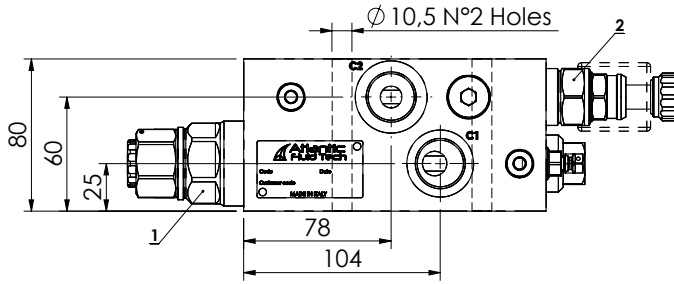


ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000919	MBPN-150-ZLNR-04-G34-N210	4:1	C1,C2,V1,V2: G3/4" M: G1/4"	350	100-350	104

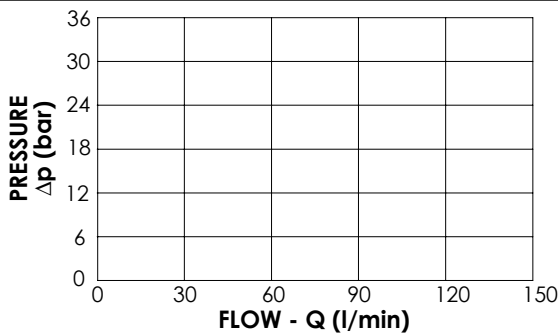
HOOK LOADERS

MRSN-150-ALBE



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	150 l/min
Manifold:	Steel
Weight:	14,95 kg
Coil type:	M7



NOTES

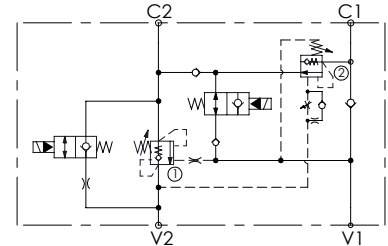
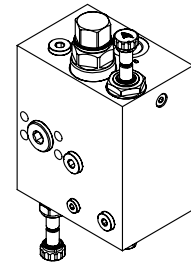
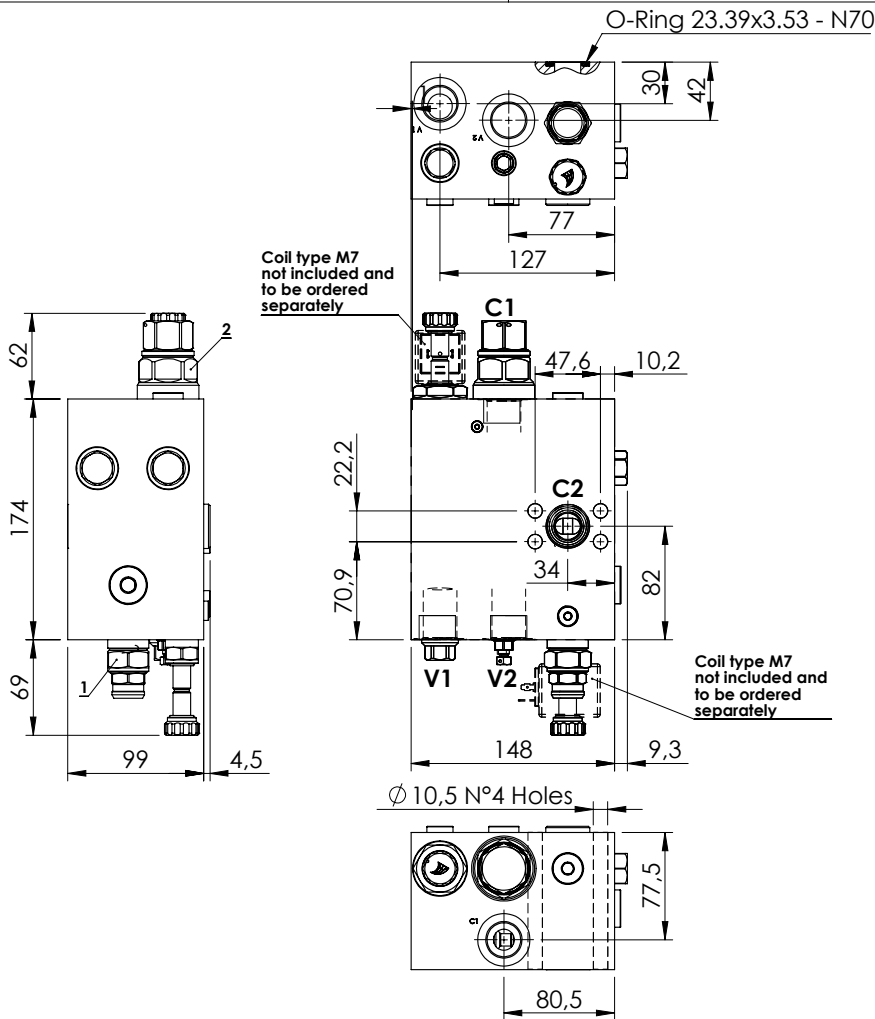
Seating: at least 1.3 times the load induced pressure

ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000920	MRSN-150-ALBE-04-G34-N350	4:1	V1, V2: G3/4" C1, C2: G3/4"	350	100-350	104

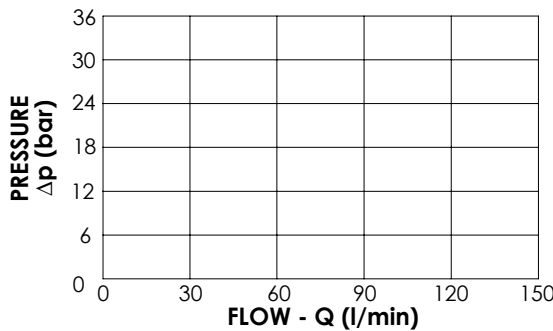
HOOK LOADERS

MRLN-150-ZABE



SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	150 l/min
Manifold:	Steel
Weight:	7,59 kg
Coil type:	M7



NOTES

Seating: at least 1.3 times the load induced pressure

ORDERING CODES

Quick code	Description	Pilot ratio	Main ports size	Standard setting (bar, Q=5 l/min)	Adjust. range (bar)	Pressure increase (bar/turn)
MB000119	MRLN-150-ZABE-04-G34-N350	4:1	V2,C2,C1: G3/4" C2: Ø22	350	100-350	104

SECTION 21



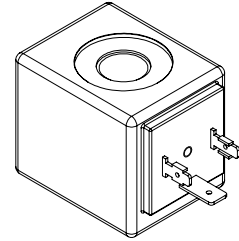
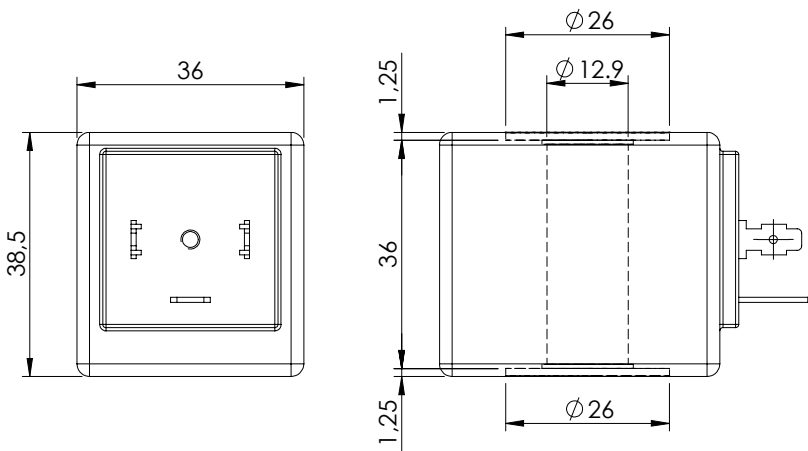
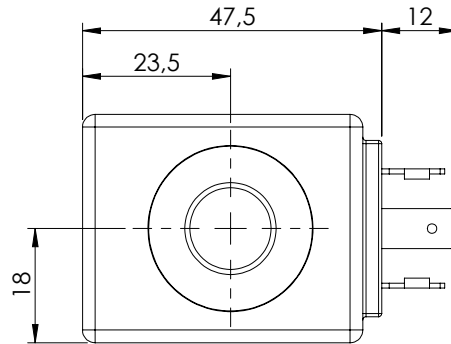
COILS AND CONNECTORS

Description	Type	Heat insulation class	Connector	Page
Coil M7 HS	M7 - For solenoid operated cartridge valve	H - 180°C	EN 175301-803 - DIN 43650 - ISO 4400	21.00. 010
Coil M7 HS	M7 - For solenoid operated cartridge valve - RAC	H - 180°C	EN 175301-803 - DIN 43650 - ISO 4400	21.00. 020
Coil M7 AJ	M7 - For solenoid operated cartridge valve	H - 180°C	Amp Junior	21.00. 030
Coil M7 DT	M7 - For solenoid operated cartridge valve	H - 180°C	Deutsch - DT04-2P-L	21.00. 040
Coil M7 DT	M7 - For solenoid operated cartridge valve	H - 180°C	Deutsch - DT04-2P-V	21.00. 050
Coil M14 HS	M14 - For solenoid operated cartridge valve	H - 180°C	EN 175301-803 - DIN 43650 - ISO 4400	21.00. 060
Coil M14 DT	M14 - For solenoid operated cartridge valve	H - 180°C	Deutsch - DT04-2P-V	21.00. 070
Coil M15 HS	M15 - For proportional solenoid operated cartridge valve	H - 180°C	EN 175301-803 - DIN 43650 - ISO 4400	21.00. 080
Coil M8 HS	M8 - For Ø19 tube diverter valve	H - 180°C	EN 175301-803 - DIN 43650 - ISO 4400	21.00. 090
Coil M11 HS	M11 - For Ø22 tube diverter valve	H - 180°C	EN 175301-803 - DIN 43650 - ISO 4400	21.00. 100
DIN Connector	IP67 - Standard / with VDR / with rectifier	-	EN 175301-803 - DIN 43650 - ISO 4400	21.00. 110

COIL

COIL SERIES M7

DIN 43650 - ISO 4400
CLASS H



SPECIFICATIONS

Heat insulation class H	180°C
Ambient temperature	-20 + 50°C
Inlet voltage	±10% tol.
Insulation class IP65 with all seals properly mounted	
Weight:	0,217 kg

NOTES

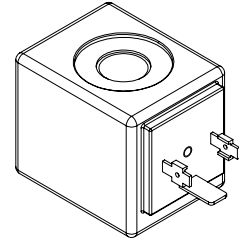
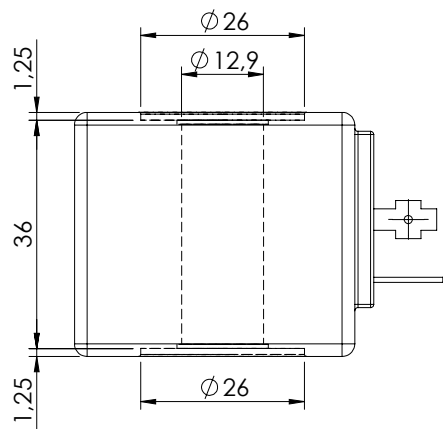
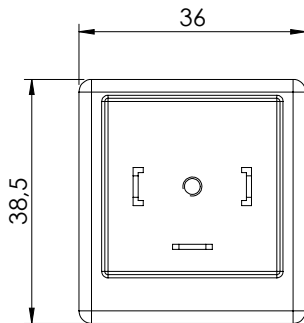
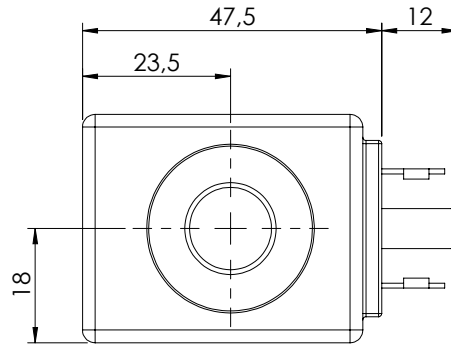
ORDERING CODES

Quick code	Description	Connection type	Voltage (V)	Resistance (Ω) $\pm 7\%$	Power (w)	Current (A)
AB000002	Coil M7 HS 12V CLASS H	DIN 43650-ISO 4400	12 DC	7,2	20	1,67
AB000018	Coil M7 HS 14V CLASS H	DIN 43650-ISO 4400	14 DC	9,8	20	1,43
AB000003	Coil M7 HS 24V CLASS H	DIN 43650-ISO 4400	24 DC	28,8	20	0,83
AB000004	Coil M7 HS 26V CLASS H	DIN 43650-ISO 4400	26 DC	33,8	20	0,77
AB000043	Coil M7 HS 10.5V CLASS H	DIN 43650-ISO 4400	10.5 DC	5,5	20	1,90
AB000046	Coil M7 HS 48V CLASS H	DIN 43650-ISO 4400	48 DC	115,2	20	0,42

COIL

COIL SERIES M7

DIN 43650 - ISO 4400
RAC CLASS H



SPECIFICATIONS

Heat insulation class H	180°C
Ambient temperature	-20 + 50°C
Inlet voltage	±10% tol.
Insulation class IP65 with all seals properly mounted	
Weight:	0,217 kg

NOTES

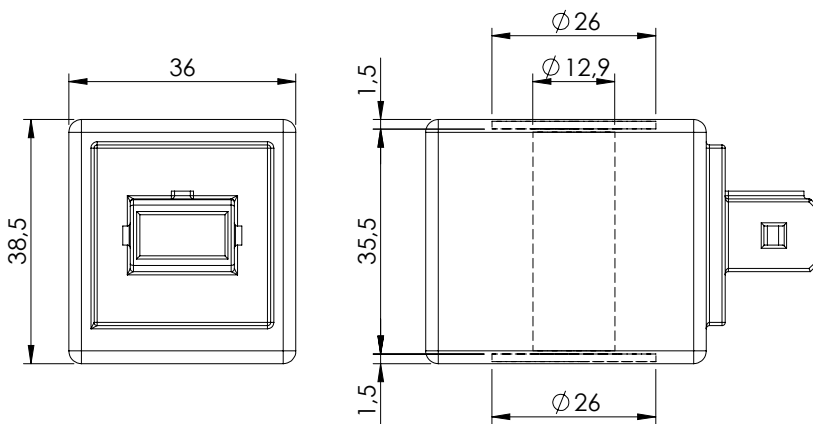
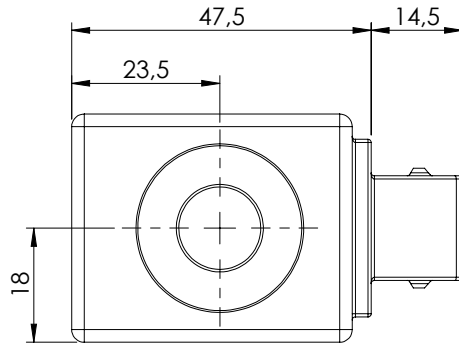
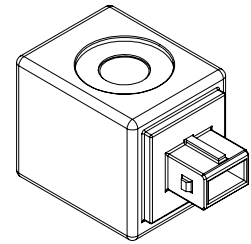
ORDERING CODES

Quick code	Description	Connection type	Voltage (V)	Resistance (Ω) ± 7%	Power (w)	Current (A)
AB000011	Coil M7 HS 24V RAC Class H	DIN 43650-ISO 4400	24 RAC	28,9	20	0,83
AB000012	Coil M7 HS 110V RAC Class H	DIN 43650-ISO 4400	110 RAC	605	20	0,18
AB000007	Coil M7 HS 220V RAC Class H	DIN 43650-ISO 4400	220 RAC	2140	20	0,09

COIL

COIL SERIES M7

**AMP JUNIOR
CLASS H**



SPECIFICATIONS

Heat insulation class H 180°C

Ambient temperature -20 + 50°C

Inlet voltage ±10% tol.

Insulation class IP65 with all seals properly mounted

Weight: 0,217 kg

NOTES

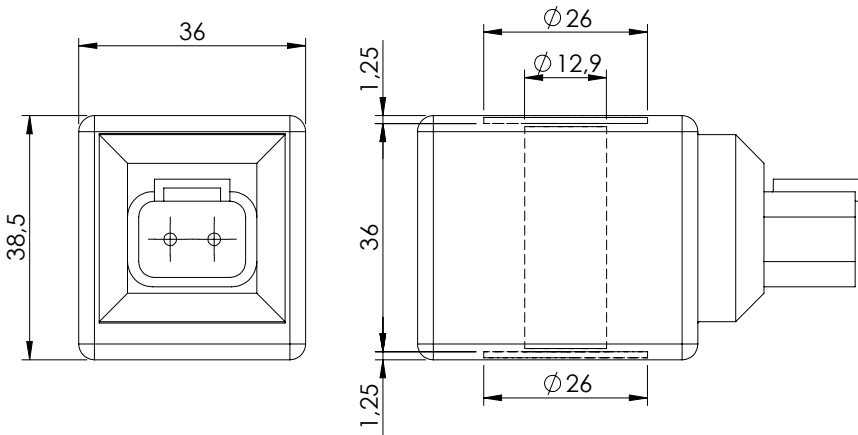
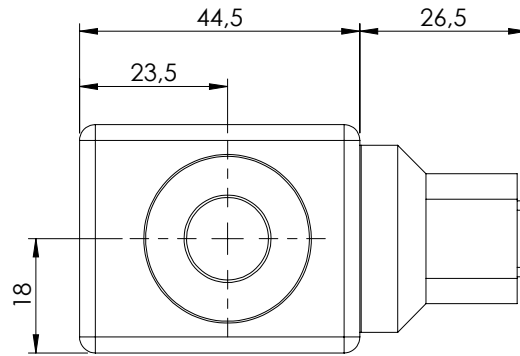
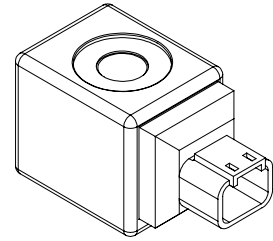
ORDERING CODES

Quick code	Description	Connection type	Voltage (V)	Resistance (Ω) ± 7%	Power (w)	Current (A)
AB000005	Coil M7 AJ 12V CLASS H	AMP JUNIOR	12 DC	7,2	20	1,67
AB000014	Coil M7 AJ 24V CLASS H	AMP JUNIOR	24 DC	28,8	20	0,83
AB000010	Coil M7 AJ 26V CLASS H	AMP JUNIOR	26 DC	33,8	20	0,77

COIL

COIL SERIES M7

DEUTSCH DT04-2P-L
CLASS H



SPECIFICATIONS

Heat insulation class H	180°C
Ambient temperature	-20 + 50°C
Inlet voltage	±10% tol.
Insulation class IP69K with all seals properly mounted	
Weight:	0,217 kg

NOTES

With bi-directional diode

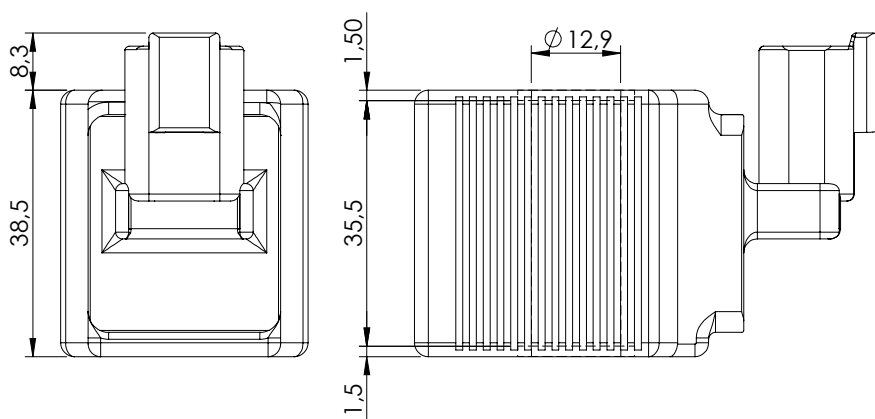
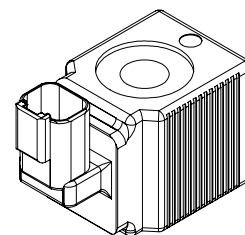
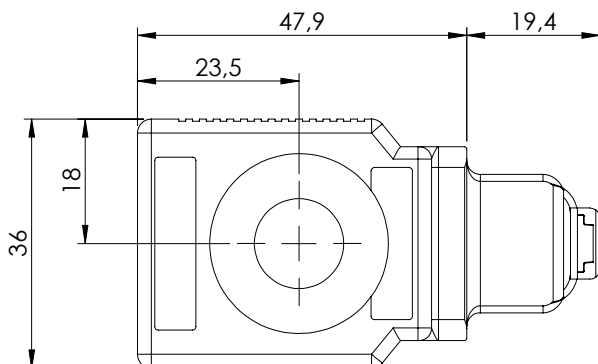
ORDERING CODES

Quick code	Description	Connection type	Voltage (V)	Resistance (Ω) \pm 7%	Power (w)	Current (A)
AB000001	Coil M7 DT 12V CLASS H	DT04-2P-L	12 DC	7,2	20	1,67
AB000008	Coil M7 DT 24V CLASS H	DT04-2P-L	24 DC	28,8	20	0,83

COIL

COIL SERIES M7

DEUTSCH DT04-2P-V
CLASS H



SPECIFICATIONS

Heat insulation class H	180°C
Ambient temperature	-20 + 50°C
Inlet voltage	±10% tol.
Insulation class IP69K with all seals properly mounted	
Weight:	0,217 kg

NOTES

With bi-directional diode

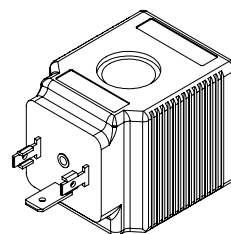
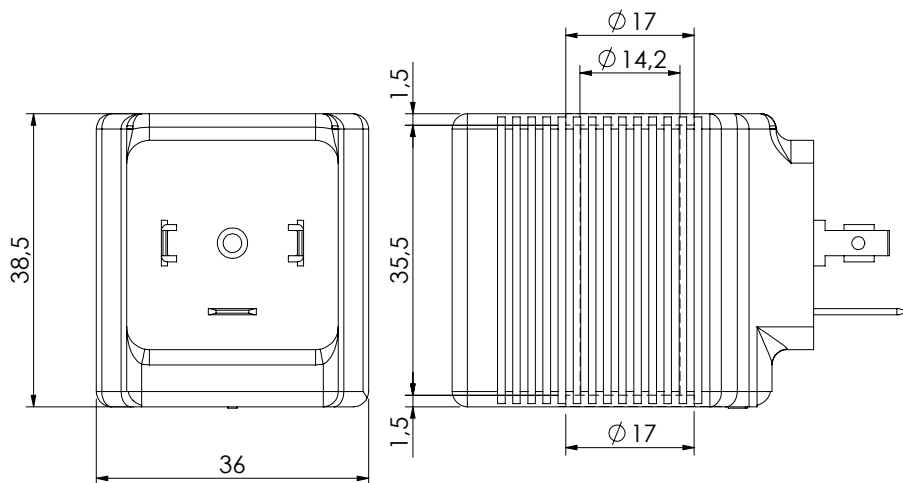
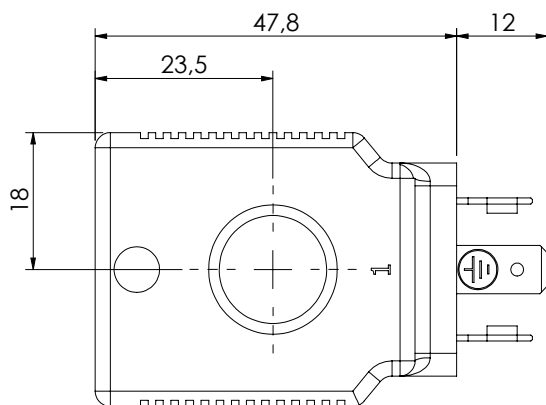
ORDERING CODES

Quick code	Description	Connection type	Voltage (V)	Resistance (Ω) ± 7%	Power (w)	Current (A)
AB000022	Coil M7 DTV 12V CLASS H	DT04-2P-V	12 DC	7,2	20	1,67
AB000023	Coil M7 DTV 24V CLASS H	DT04-2P-V	24 DC	28,8	20	0,83
AB000024	Coil M7 DTV 26V CLASS H	DT04-2P-V	26 DC	33,8	20	0,77

COIL

COIL SERIES M14

DIN 43650 - ISO 4400
CLASS H



SPECIFICATIONS

Heat insulation class H	180°C
Ambient temperature	-20 + 50°C
Inlet voltage	±10% tol.
Insulation class IP65 with all seals properly mounted	
Weight:	0,20 kg

NOTES

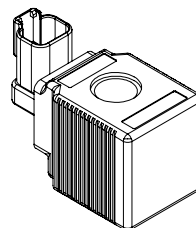
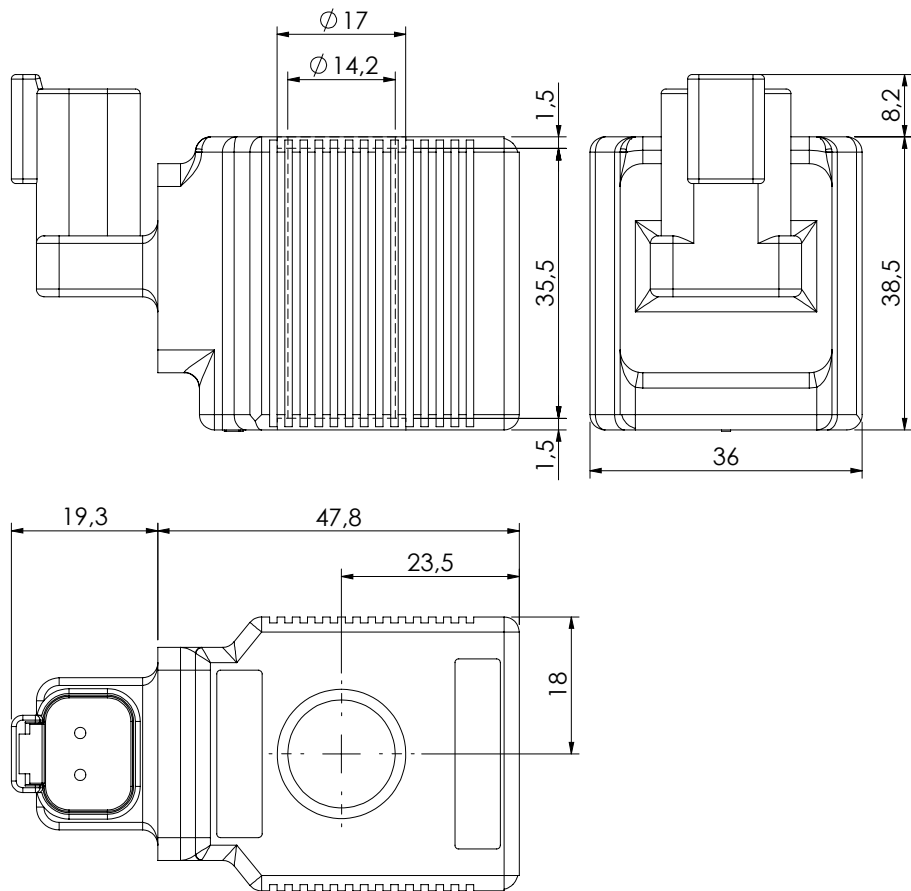
ORDERING CODES

Quick code	Description	Connector type	Voltage (V)	Resistance (Ω) ±7%	Power (w)	Current (A)
AB000143	Coil M14 HS 12V CLASS H	DIN 43650-ISO 4400	12 DC	5.54	26	2.17
AB000145	Coil M14 HS 13V CLASS H	DIN 43650-ISO 4400	13 DC	6.5	26	2.00
AB000144	Coil M14 HS 24V CLASS H	DIN 43650-ISO 4400	24 DC	22.2	26	1.08

COIL

COIL SERIES M14

DEUTSCH DT04-2P-V
CLASS H



SPECIFICATIONS

Heat insulation class H	180°C
Ambient temperature	-20 + 50°C
Inlet voltage	±10% tol.
Insulation class IP69K with all seals properly mounted	
Weight:	0,20 kg

NOTES

With bi-directional diode

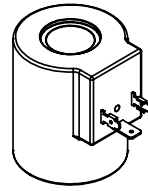
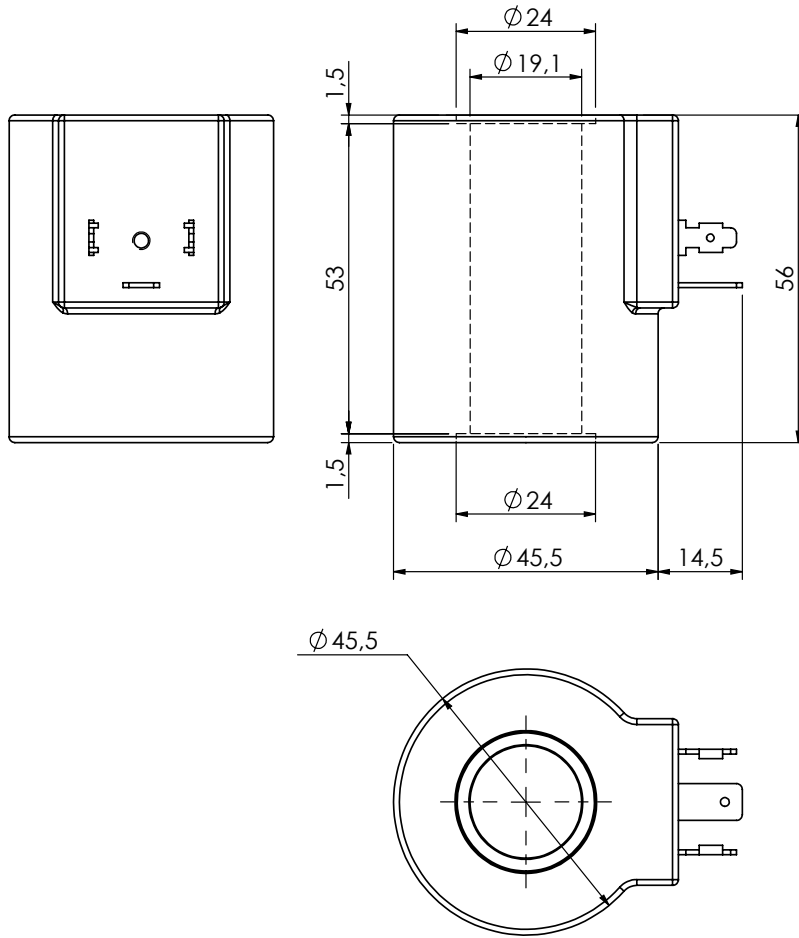
ORDERING CODES

Quick code	Description	Connector type	Voltage (V)	Resistance (Ω) ±7%	Power (w)	Current (A)
AB000132	Coil M14 DTV 12V CLASS H	DT04-2P-V	12 DC	5,53	26	2,17
AB000133	Coil M14 DTV 24V CLASS H	DT04-2P-V	24 DC	22,15	26	1,08

COIL

COIL SERIES M15

DIN 43650 - ISO 4400
CLASS H



SPECIFICATIONS

Heat insulation class H	180°C
Ambient temperature	-20 + 50°C
Inlet voltage	±10% tol.
Insulation class IP65 with all seals properly mounted	
Weight:	0,329 kg

NOTES

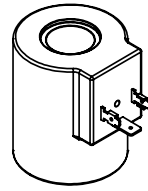
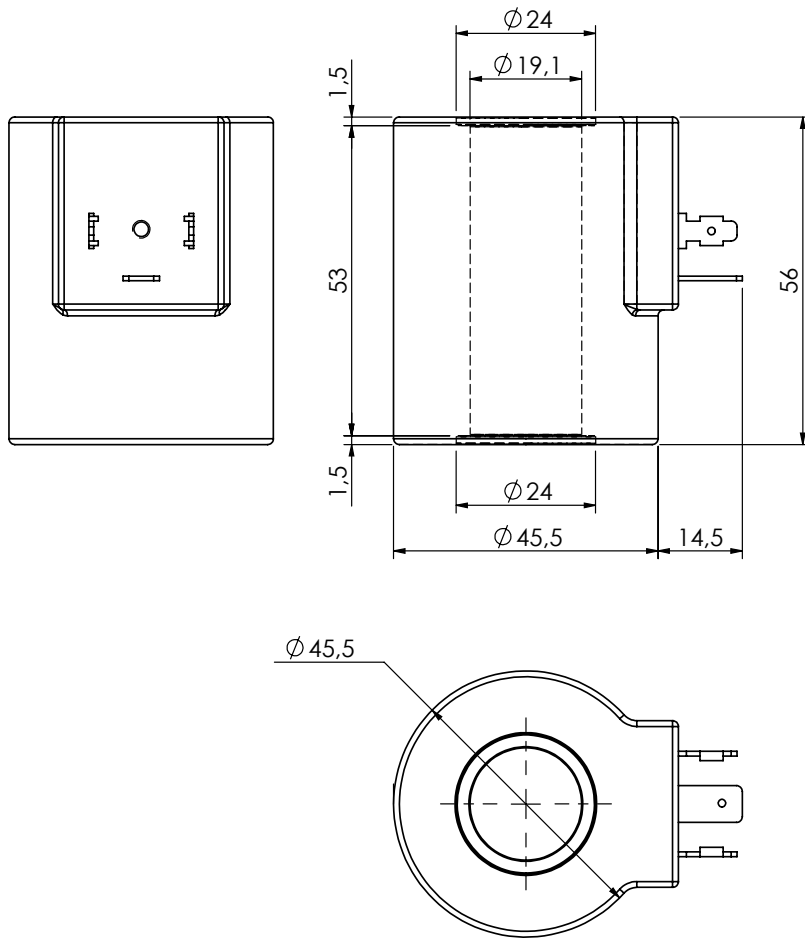
ORDERING CODES

Quick code	Description	Connector type	Voltage (V)	Resistance (Ω) ±7%	Power (w)	Current (A)
AB000137	Coil M15 HS 12V CLASS H	DIN 43650-ISO 4400	12 DC	6.26	23	1.92
AB000138	Coil M15 HS 24V CLASS H	DIN 43650-ISO 4400	24 DC	25.05	23	0.96

COIL

COIL SERIES M8

DIN 43650 - ISO 4400
CLASS H



SPECIFICATIONS

Heat insulation class H	180°C
Ambient temperature	-20 + 50°C
Inlet voltage	±10% tol.
Insulation class IP65 with all seals properly mounted	
Weight:	0,329 kg

NOTES

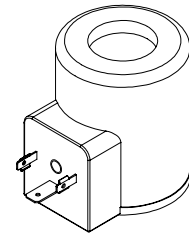
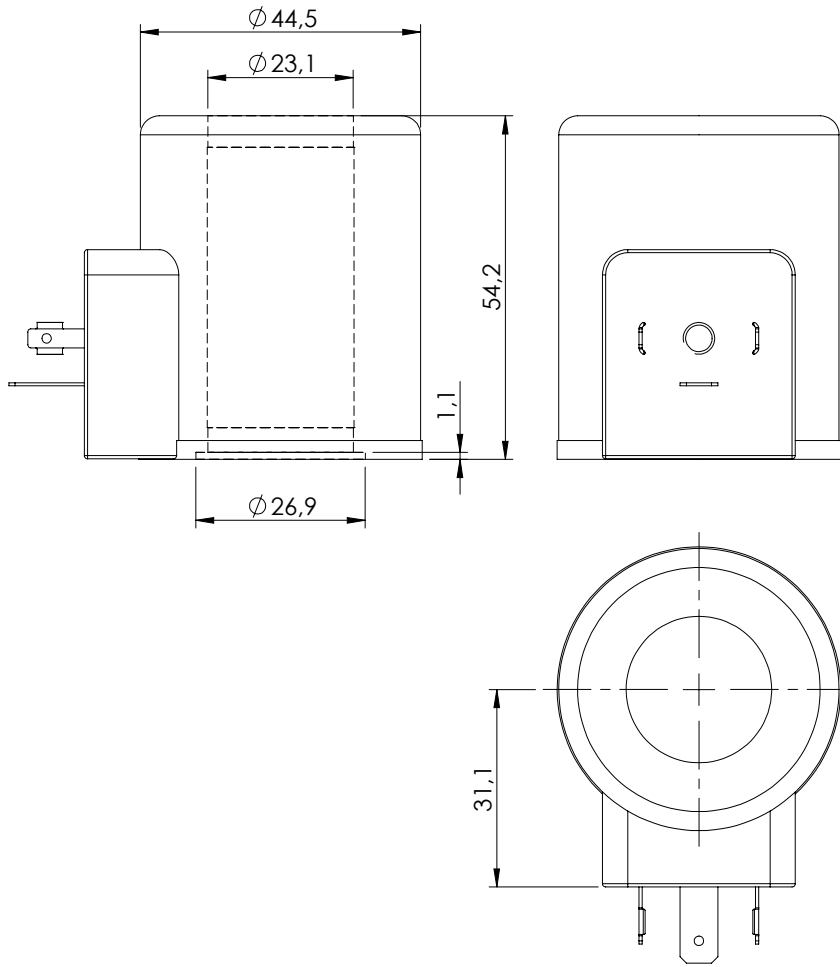
ORDERING CODES

Quick code	Description	Connector type	Voltage (V)	Resistance (Ω) ±7%	Power (w)	Current (A)
AB000015	Coil M8 HS 12V CLASS H	DIN 43650-ISO 4400	12 DC	4.4	33 W	2.75
AB000029	Coil M8 HS 24V CLASS H	DIN 43650-ISO 4400	24 DC	17.5	33 W	1.38
AB000159	Coil M8 HS 14V CLASS H	DIN 43650-ISO 4400	14 DC	5.94	33 W	2.36
AB000160	Coil M8 HS 26V CLASS H	DIN 43650-ISO 4400	26 DC	20.48	33 W	1.27
AB000158	Coil M8 HS 48V CLASS H	DIN 43650-ISO 4400	48 DC	69.81	33 W	0.69

COIL

COIL SERIES M11

DIN 43650 - ISO 4400
CLASS H



SPECIFICATIONS

Heat insulation class H	180°C
Ambient temperature	-20 + 50°C
Inlet voltage	±10% tol.
Insulation class IP65 with all seals properly mounted	
Weight:	0,350 kg

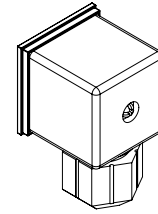
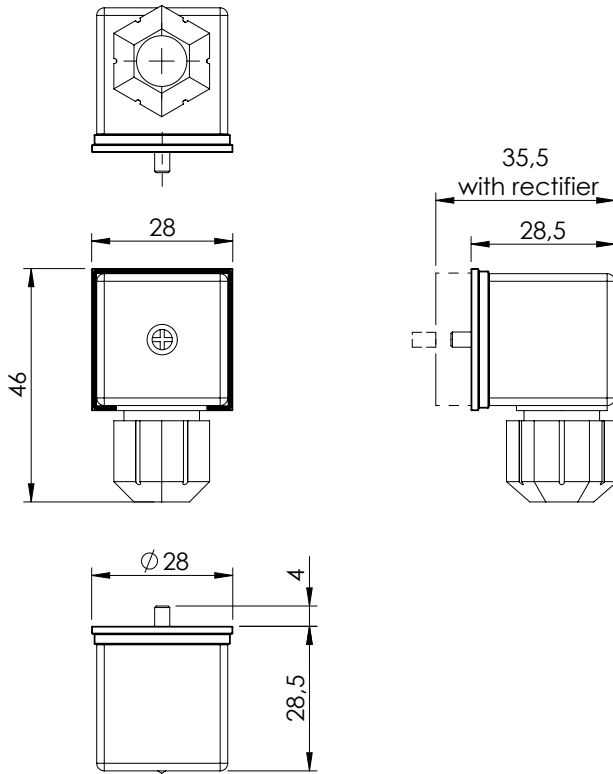
NOTES

ORDERING CODES

Quick code	Description	Connection type	Voltage (V)	Resistance (Ω) $\pm 7\%$	Power (w)	Current (A)
AB000149	Coil M11 HS 12V CLASS H	DIN 43650-ISO 4400	12 DC	3.27	44	3.67
AB000150	Coil M11 HS 24V CLASS H	DIN 43650-ISO 4400	24 DC	13.09	44	1.83

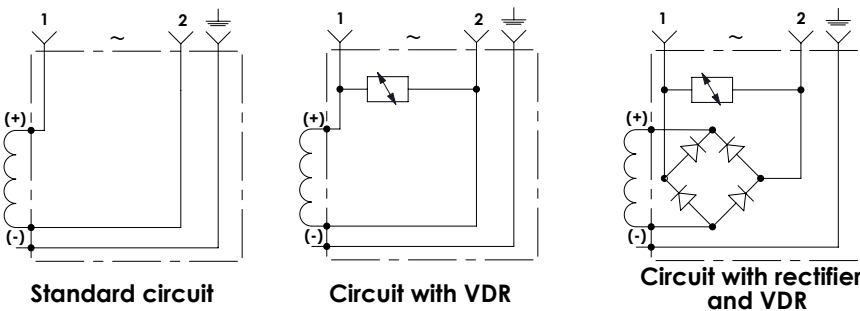
CONNECTOR

DIN CONNECTOR



SPECIFICATIONS

Voltage rating:	AC: up to 250 V Max. DC: up to 300 V Max.
Max. Current	16.0 A
Contact resistance:	≤ 4 mΩ
Max. conductor:	1.5 mm ²
Cable range	Ø4.0 to Ø9.0 mm
Protection class:	IP67 EN60529
Seal:	Nitrile rubber
Poles:	2 + ground
Connector:	EN 175301-803 (DIN 43650)



ORDERING CODES

Quick code	Colour	VDR	LED	Rectifier	Voltage
PV000171	Black	No	No	No	12V to 230V
PV000195	Black	Yes	No	No	12V DC
PV000349	Black	Yes	No	No	24V DC
PV000347	Black	Yes	No	Yes	12V RAC
PV000198	Transparent	Yes	Yes	No	12V DC
PV000348	Black	Yes	No	Yes	24V RAC
PV000196	Transparent	Yes	Yes	No	24V DC
PV000199	Black	Yes	No	Yes	230V RAC
PV000243	Transparent	Yes	Yes	No	230V DC

SECTION 22

ACCESSORIES AND SPARE

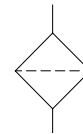
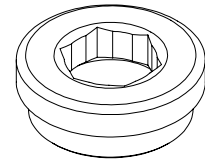
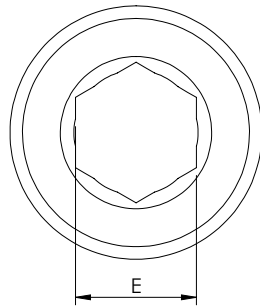
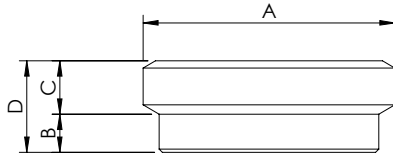


Hydraulic scheme	Valve description	Valve type	Rated flow (l/min)	Max. pressure (bar)	Installation	Main port size or cavity type	Page
	Filter G 1/4"	300 micron filtration	25	Δp 35	Insert	G1/4"	22.00.010
	Filter G 3/8"	300 micron filtration	50	Δp 35	Insert	G3/8"	22.00.010
	Filter G 1/8"	300 micron filtration	10	Δp 35	Insert	G1/8"	22.00.010
	Manual override	Detent type	-	-	Screw	-	22.00.020
	Sleeve body G 1/4"	For hose burst and check valve	-	350	In line	G1/4"	22.00.030
	Sleeve body G 3/8"	For hose burst and check valve	-	350	In line	G3/8"	22.00.030
	Sleeve body G 1/2"	For hose burst and check valve	-	350	In line	G1/2"	22.00.030
	Sleeve body G 3/4"	For hose burst and check valve	-	350	In line	G3/4"	22.00.030
	Sleeve body G 1/4"	For flow control valve	-	350	In line	G1/4"	22.00.040
	Sleeve body G 3/8"	For flow control valve	-	350	In line	G3/8"	22.00.040
	Sleeve body G 1/2"	For flow control valve	-	350	In line	G1/2"	22.00.040
	Sleeve body G 3/4"	For flow control valve	-	350	In line	G3/4"	22.00.040
	CFSN-090-PBSR-06	For flow control valve	0 - 6	350	In line	VP000132	22.00.050
	CFSN-090-PBSR-12	For flow control valve	0 - 12	350	In line	VP000132	22.00.050
	CFSN-090-PBSR-25	For flow control valve	0 - 25	350	In line	VP000132	22.00.050
	CFSN-090-PBSR-32	For flow control valve	0 - 32	350	In line	VP000132	22.00.050
	CFSN-090-PBSR-50	For flow control valve	0 - 50	350	In line	VP000132	22.00.050
	CFSN-090-PBSR-63	For flow control valve	0 - 63	350	In line	VP000132	22.00.050
	CFSN-090-PBSR-70	For flow control valve	0 - 70	350	In line	VP000132	22.00.050
	CFSN-090-PBSR-80	For flow control valve	0 - 80	350	In line	VP000132	22.00.050
	CFSN-200-BHSR	For flow control valve	-	350	In line	VP000096	22.00.060
	CFSN-200-BVSR	For flow control valve	-	350	In line	VP000096	22.00.060
	CFSN-200-BMSR	For flow control valve	-	350	In line	VP000096	22.00.060
	CFSN-090-BHSR	For flow control valve	-	350	In line	VP000132	22.00.060
	CFSN-090-BVSR	For flow control valve	-	350	In line	VP000132	22.00.060
	CFSN-090-BMSR	For flow control valve	-	350	In line	VP000132	22.00.060
	CFSN-035-BHSR	For flow control valve	-	350	In line	VP000132	22.00.060
	CFSN-035-BVSR	For flow control valve	-	350	In line	VP000132	22.00.060
	CFSN-035-BMSR	For flow control valve	-	350	In line	VP000132	22.00.060
	VP000057 G 3/4"	Cavity plug	-	-	In line	VP000057	22.00.070
	VP000013 G 1"	Cavity plug	-	-	In line	VP000013	22.00.070
	SAE-08-2N	Cavity plug	-	-	In line	3/4-16 UNF-2B	22.00.080
	SAE-10-2N	Cavity plug	-	-	In line	7/8-14 UNF-2B	22.00.080
	SAE-08-3N	Cavity plug	-	-	In line	3/4-16 UNF-2B	22.00.090
	SAE-10-3N	Cavity plug	-	-	In line	7/8-14 UNF-2B	22.00.090
	SAE-08-4N	Cavity plug	-	-	In line	3/4-16 UNF-2B	22.00.100
	SAE-10-4N	Cavity plug	-	-	In line	7/8-14 UNF-2B	22.00.100
	Seal kit	Cavity Personalized	-	-	-	-	22.00.110
		Cavity SAE	-	-	-	-	22.00.120

ACCESSORIES

FILTER

SCREW IN FILTER



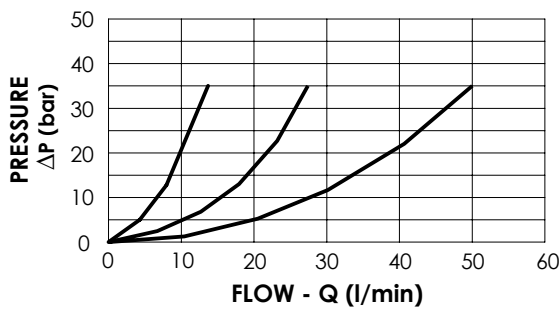
Code	A	B	C	D	E
CT000002	G 3/8"	2.5	3.5	6	8
CT000003	G 1/4"	2	3	5	6
CT000004	G 1/8"	1.6	2.2	3.8	5

SPECIFICATIONS

Max. operating Δp :	35 bar
Rated flow:	See table
Cavity:	See table
Weight:	8 g

APPLICATION LIMITATIONS

- Not suitable for use with:
- fast acting valve
 - cold oil
 - high viscosity oil
 - other conditions creating pressure drop greater than 35 bar



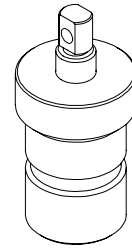
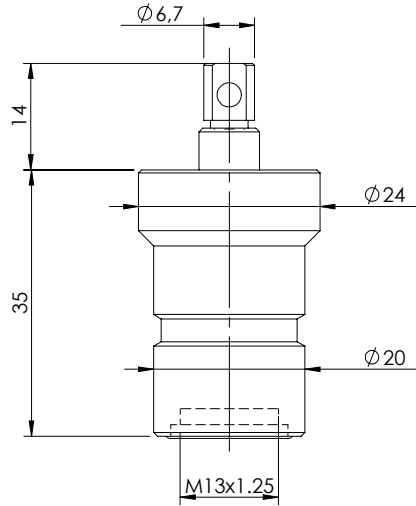
ORDERING CODES

Quick code	Description	Max. ΔP admitted (bar)	Max. flow (l/min)	Filtration (micron)	Installation torque (Nm)
CT000002	Filter G 3/8"	35	50	300	10
CT000003	Filter G 1/4"	35	25	300	5
CT000004	Filter G 1/8"	35	10	300	3

ACCESSORIES



MANUAL OVERRIDE DETENT TYPE



SPECIFICATIONS

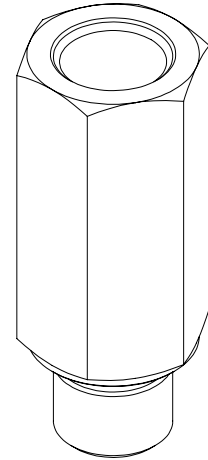
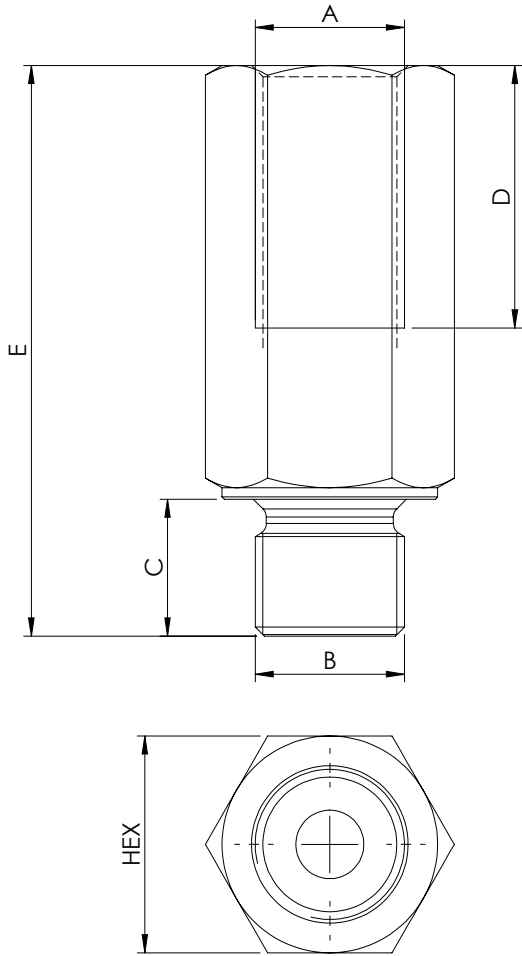
Suitable for push style override solenoid valves

ORDERING CODES

Quick code	Description	
ST000364	MANUAL OVERRIDE	

SLEEVE BODY

SLEEVE



SPECIFICATIONS

Max. operating pressure: 350 bar

Material: Zinc plated steel

NOTES

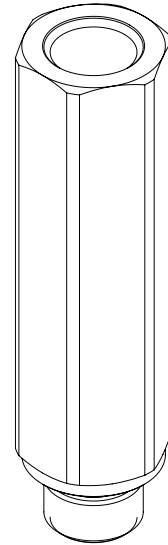
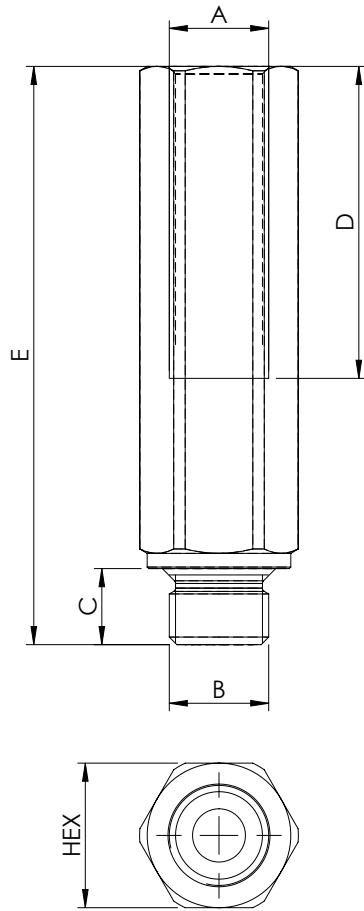
Suitable for:
-Hose burst valve
CFHN-XXX-MHST

ORDERING CODES

Quick code	A	B	C	D	E	HEX	Weight (Kg)
PC000127	G 1/4"	G 1/4"	12	23	50	19	0,07
PC000128	G 3/8"	G 3/8"	12	27	55	22	0,09
PC000129	G 1/2"	G 1/2"	14	33	63	27	0,15
PC000130	G 3/4"	G 3/4"	16	36	75	32	0,23

SLEEVE BODY

SLEEVE



SPECIFICATIONS

Max. operating pressure: 350 bar

Material: Zinc plated steel

NOTES

Suitable for:
-Flow control valves
CFST-XXX-MDST

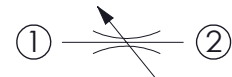
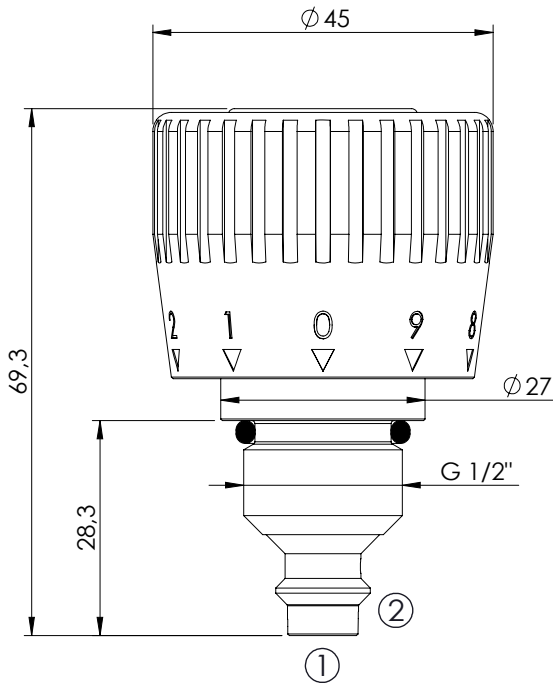
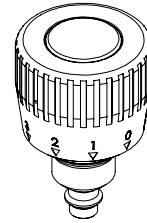
ORDERING CODES

Quick code	A	B	C	D	E	HEX	Weight (Kg)
PC000196	G 1/4"	G 1/4"	10	41	76	19	0,080
PC000197	G 3/8"	G 3/8"	12	41	82	22	0,110
PC000162	G 1/2"	G 1/2"	14	45	100	27	0,165
PC000198	G 3/4"	G 3/4"	16	55	112	32	0,250

ACCESSORIES

Kit CFSN-090-BPSR

**FLOW REGULATOR
SPARE PART**

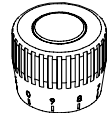


SPECIFICATIONS

Max. operating pressure:	350 bar
Rated flow:	90 l/min
Cavity:	VP000132
Weight:	0,26 kg
Installation torque:	130-140 Nm
Seal kit:	RC700132

ADJUSTMENT OPTIONS

Graduated handknob for flow regulation under pressure



NOTE

Components we be supplied partially disassembled.
Contact AFT sales network for assembling instruction

ORDERING CODES

Quick code	Description	Flow range adjustment (l/min)	Adjustment option
RF700001	Kit CFSN-090-BPSR-06-132-N350	0 - 6	Graduated handknob
RF700002	Kit CFSN-090-BPSR-12-132-N350	0 - 12	Graduated handknob
RF700003	Kit CFSN-090-BPSR-25-132-N350	0 - 25	Graduated handknob
RF700004	Kit CFSN-090-BPSR-32-132-N350	0 - 32	Graduated handknob
RF700005	Kit CFSN-090-BPSR-50-132-N350	0 - 50	Graduated handknob
RF700006	Kit CFSN-090-BPSR-63-132-N350	0 - 63	Graduated handknob
RF700007	Kit CFSN-090-BPSR-70-132-N350	0 - 70	Graduated handknob
RF700008	Kit CFSN-090-BPSR-80-132-N350	0 - 80	Graduated handknob

ACCESSORIES

FLOW CONTROL



	REGULATION TYPE			
	STANDARD (G 3/4")	STANDARD (G 1/2")	FINE	
A D J U S T M E N T T Y P E	<p>40,3 max. Hex.30 Screw and locknut</p>	<p>38 max. Hex.27 Screw and locknut</p>	<p>38,8 max. Hex.27 Screw and locknut</p>	
	<p>45 max. Ø 38 Handknob and locknut</p>	<p>44 max. Ø 38 Handknob and locknut</p>	<p>44,5 max. Ø 38 Handknob and locknut</p>	
	<p>44,5 max. Ø 45 Graduated handknob</p>	<p>41,5 max. Ø 45 Graduated handknob</p>	<p>42 max. Ø 45 Graduated handknob</p>	
R E G U L A T I O N	<p>31,3 G3/4" Totally closed</p>	<p>24 G1/2" Totally closed</p>	<p>24 G1/2" Totally closed</p>	<p>NOTES</p> <ul style="list-style-type: none"> -Spare parts for flow regulations parts parts in body. -Contact AFT sales network for assembling instruction.

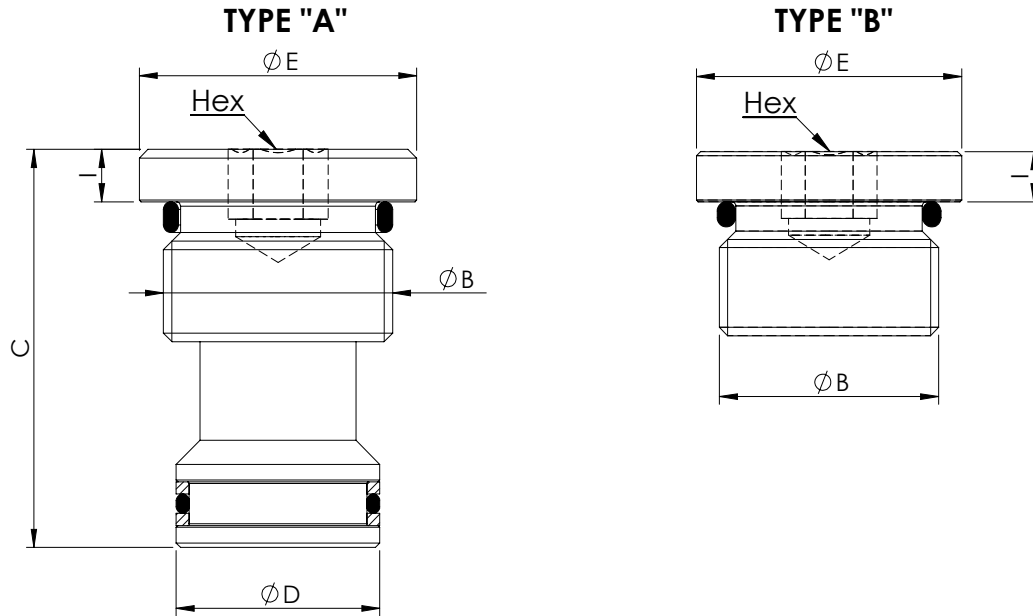
ORDERING CODES

Quick code	Description	Adjustment Options	Regulated sensivity	Flow regulation family (l/min)	Cavity	Install. torque (Nm)
CF000015	CFSN-200-BHSR-19-096-N350	Screw and locknut	Standard	280 - 190	VP000096	120-150
CF000030	CFSN-200-BVSR-19-096-N350	Handknob and locknut	Standard	280 - 190	VP000096	120-150
CF000042	CFSN-200-BMSR-19-096-N350	Graduated handknob	Standard	280 - 190	VP000096	120-150
CF000029	CFSN-090-BHSR-55-132-N350	Screw and locknut	Standard	90 - 55 - 30	VP000132	75-85
CF000019	CFSN-090-BVSR-55-132-N350	Handknob and locknut	Standard	90 - 55 - 30	VP000132	75-85
CF000033	CFSN-090-BMSR-55-132-N350	Graduated handknob	Standard	90 - 55 - 30	VP000132	75-85
CF000036	CFSN-035-BHSR-30-132-N350	Screw and locknut	Fine	90 - 55 - 30	VP000132	75-85
CF000037	CFSN-035-BVSR-30-132-N350	Handknob and locknut	Fine	90 - 55 - 30	VP000132	75-85
CF000034	CFSN-035-BMSR-30-132-N350	Graduated handknob	Fine	90 - 55 - 30	VP000132	75-85

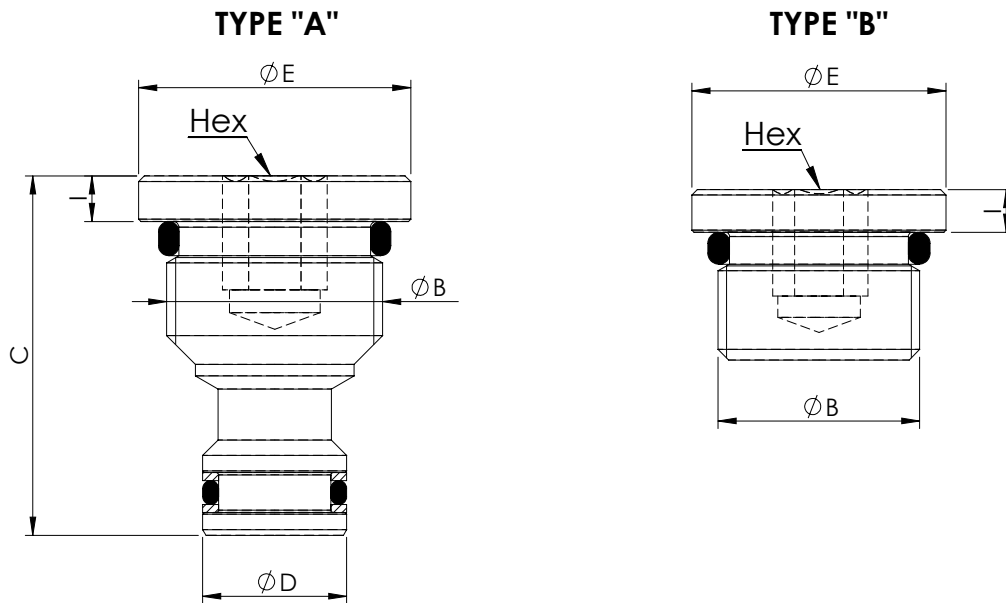
STANDARD PLUG



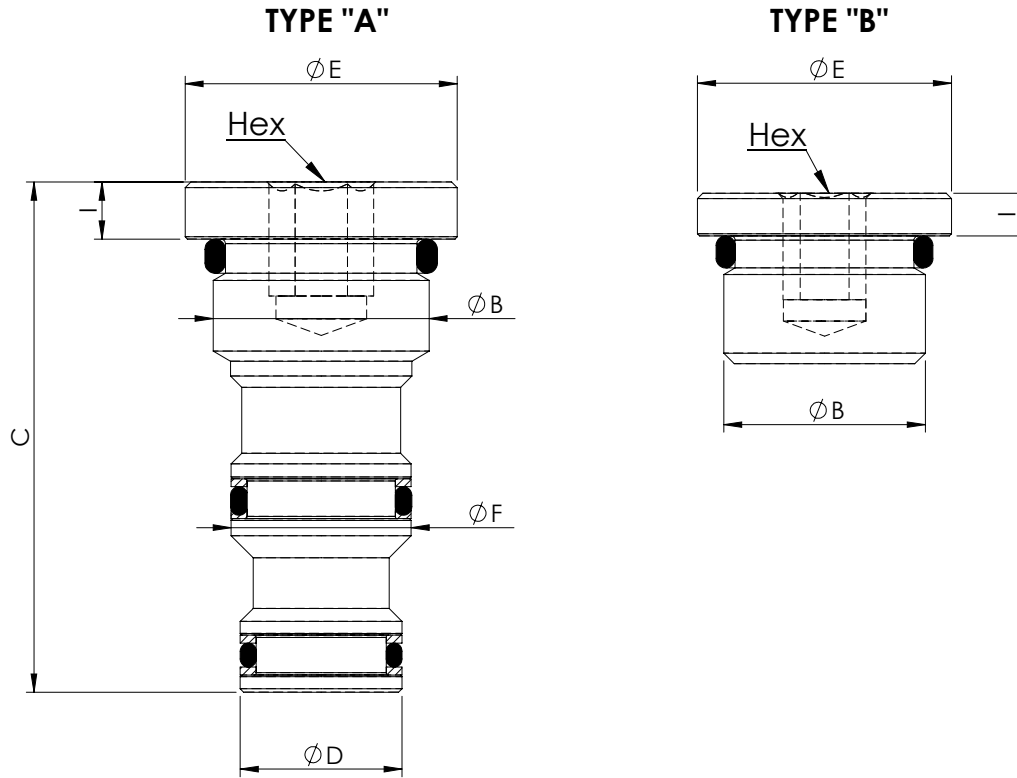
VP000057/VP000013



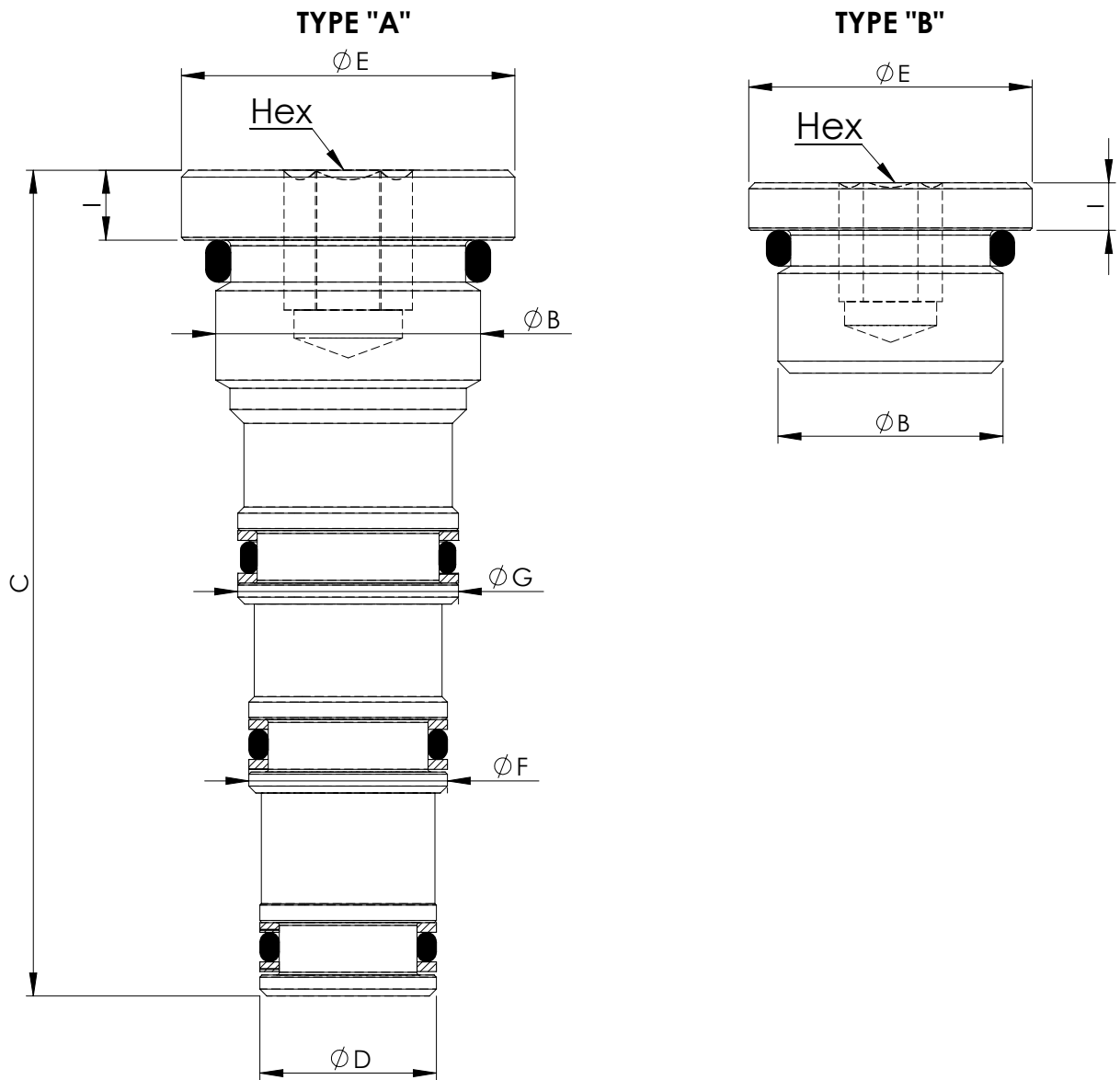
CAVITY A	DIMENSION (mm)								CODE Type " A "	TORQUE (Nm)	CODE Type " B "	TORQUE (Nm)
	B	C	D	E	F	G	Hex	I				
VP000057	G 3/4"	45,5	23,5	32			10	6	ST000259	110-130	ST000278	110-130
VP000013	G 1"	55	30	38			13	6	ST000337	135-150	ST000338	135-150



CAVITY A	DIMENSION (mm)								CODE Type " A "	TORQUE (Nm)	CODE Type " B "	TORQUE (Nm)
	B (UNF-2A)	C	D	E	F	G	Hex	I				
SAE-08-2N	3/4-16	31,5	12,7	24			8	4	ST000027	45-50	ST000331	45-50
SAE-10-2N	7/8-14	38	15,87	27			10	6	ST000332	50-55	ST000333	50-55



CAVITY A	B (UNF-2B)	DIMENSION (mm)							CODE Type " A "	TORQUE (Nm)	CODE Type " B "	TORQUE (Nm)
		C	D	E	F	G	Hex	I				
SAE-08-3N	3/4-16	44,7	14,27	24	15,87		8	5	ST000292	45-50	ST000331	45-50
SAE-10-3N	7/8-14	53	15,87	27	17,47		10	6	ST000334	50-55	ST000333	50-55



CAVITY A	B (UNF-2B)	DIMENSION (mm)							CODE Type "A"	TORQUE (Nm)	CODE Type "B"	TORQUE (Nm)
		C	D	E	F	G	Hex	I				
SAE-08-4N	3/4-16	59	12,7	24	14,28	15,87	8	5	ST000335	45-50	ST000331	45-50
SAE-10-4N	7/8-14	68,6	15,87	27	17,47	19,05	10	6	ST000336	50-55	ST000333	50-55

SEAL KIT

SEAL KIT-STANDARD CAVITIES



CAVITY	BACKUP RING TYPE	NBR 70	NBR 90	VITON 80
SAE-08-2N	Single backup ring	RA700081	RA900081	
	Double backup ring	RB700081	RB900081	
SAE-10-2N	Single backup ring	RA700082	RA900082	
	Double backup ring	RB700082	RB900082	
SAE-12-2N	Single backup ring	RA700083	RA900083	
	Double backup ring			
SAE-16-2N	Single backup ring	RA700084	RA900084	
	Double backup ring			
SAE-20-2N	Single backup ring		RA900085	
	Double backup ring			
SAE-08-3C	Single backup ring	RA700086		
	Double backup ring			
SAE-10-3C	Single backup ring	RA700087		
	Double backup ring	RB700087		
SAE-12-3C	Single backup ring			
	Double backup ring			
SAE-16-3C	Single backup ring			
	Double backup ring			
SAE-20-3C	Single backup ring			
	Double backup ring		RB900090	
SAE-08-3N	Single backup ring			
	Double backup ring	RB700091		
SAE-10-3N	Single backup ring	RA700092		
	Double backup ring	RB700092		
SAE-12-3N	Single backup ring	RA700093		
	Double backup ring			
SAE-16-3N	Single backup ring			
	Double backup ring	RB700094		
SAE-20-3N	Single backup ring			
	Double backup ring			
SAE-08-4N	Single backup ring			
	Double backup ring	RB700101		
SAE-10-4N	Single backup ring			
	Double backup ring	RB700102		
SAE-12-4N	Single backup ring			
	Double backup ring	RB700103		
SAE-16-4N	Single backup ring			
	Double backup ring	RB700104		
SAE-20-4N	Single backup ring			
	Double backup ring			

SEAL KIT

SEAL KIT-SPECIAL CAVITIES



CAVITY	BACKUP RING TYPE	NBR 70	NBR 90	VITON 80
VP000005	Single backup ring	RC700005		
	Double backup ring			
VP000006	Single backup ring	RC700006		
	Double backup ring			
VP000008	Single backup ring	RC700008		
	Double backup ring			
VP000013	Single backup ring		RC900013	
	Double backup ring		RD900013	
VP000015	Single backup ring	RC700015		
	Double backup ring			
VP000016	Single backup ring	RC700016		
	Double backup ring			
VP000018	Single backup ring	-		
	Double backup ring	-		
VP000028	Single backup ring	RC700028		
	Double backup ring			
VP000038	Single backup ring	RC700038		
	Double backup ring			
VP000057	Single backup ring		RC900057	
	Double backup ring		RD900057	
VP000058	Single backup ring	RC700058		
	Double backup ring			
VP000065	Single backup ring		RC900065	
	Double backup ring		RD900065	
VP000070	Single backup ring	RC700070		
	Double backup ring			
VP000079	Single backup ring	-		
	Double backup ring	-		
VP000080	Single backup ring		RC900080	
	Double backup ring			
VP000086	Single backup ring	RC700086		
	Double backup ring			
VP000096	Single backup ring			
	Double backup ring			
VP000098	Single backup ring	RC700098		
	Double backup ring			
VP000120	Single backup ring			
	Double backup ring	RD700120		
VP000121	Single backup ring			
	Double backup ring	RD700121		

SEAL KIT



SEAL KIT - SPECIAL CAVITIES

CAVITY	BACKUP RING TYPE	NBR 70	NBR 90	VITON 80
VP000127	Single backup ring			
	Double backup ring		RD900127	
VP000128	Single backup ring			
	Double backup ring		RD900128	
VP000132	Single backup ring			
	Double backup ring	RC700132		
VP000154	Single backup ring		RC900154	
	Double backup ring			
VP000158	Single backup ring	-		
	Double backup ring	-		
VP000161	Single backup ring	RC700161		
	Double backup ring			
VP000165	Single backup ring	RC700165		
	Double backup ring			
VP000166	Single backup ring	RC700166		
	Double backup ring			
VP000174	Single backup ring			
	Double backup ring	RD700174		
VP000178	Single backup ring	RC700178		
	Double backup ring			
VP000180	Single backup ring			
	Double backup ring			
VP000189	Single backup ring	RC700189		
	Double backup ring			
VP000193	Single backup ring	RC700193		
	Double backup ring			
VP000198	Single backup ring			
	Double backup ring	RD700198		
VP000202	Single backup ring	-		
	Double backup ring	-		
VP000204	Single backup ring	RC700204		
	Double backup ring			
VP000216	Single backup ring	RC700216		
	Double backup ring			
VP000249	Single backup ring		RC900249	
	Double backup ring			
VP000250	Single backup ring		RC900250	
	Double backup ring			
VP000263	Single backup ring	RC700263		
	Double backup ring			

SEAL KIT



SEAL KIT - SPECIAL CAVITIES

CAVITY	BACKUP RING TYPE	NBR 70	NBR 90	VITON 80
VP000307	Single backup ring	-		
	Double backup ring	-		
VP000309	Single backup ring	-		
	Double backup ring	-		
VP000310	Single backup ring	-		
	Double backup ring	-		
VP000311	Single backup ring	-		
	Double backup ring	-		
VP000312	Single backup ring	-		
	Double backup ring	-		
VP000314	Single backup ring	RC700314		
	Double backup ring			
VP000330	Single backup ring	RC700330		
	Double backup ring			
VP000338	Single backup ring			
	Double backup ring	RD700338		
VP000371	Single backup ring	RC700371		
	Double backup ring			
VP000445	Single backup ring	RC700445		
	Double backup ring			

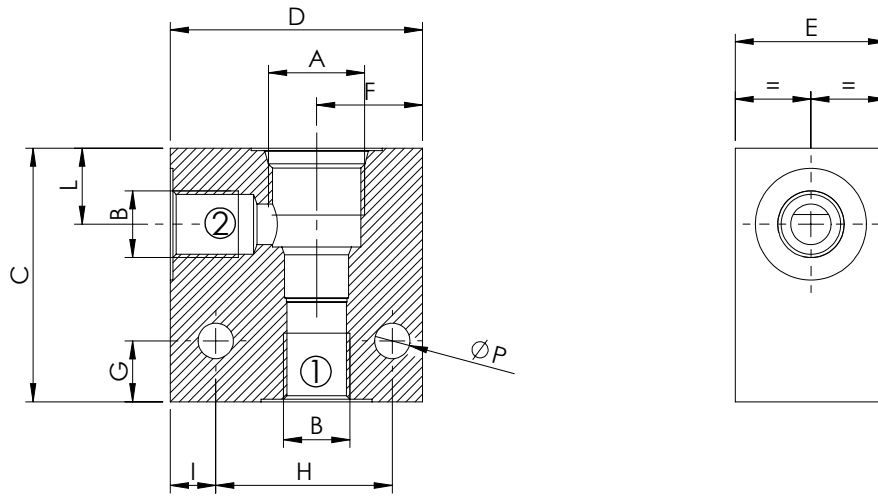
SECTION 23

STANDARD MANIFOLDS

Description	Material	Valve type	Max. pressure (bar)	Installation	Port size	Page
SAE-XX-2N	Aluminium	Two way	250	In line	See datasheet	23.00.010
SAE-XX-2N	Steel	Two way	350	In line	See datasheet	23.00.020
SAE-XX-3C	Aluminium	Three way	250	In line	See datasheet	23.00.030
SAE-XX-3C	Steel	Three way	350	In line	See datasheet	23.00.030
SAE-XX-3N	Aluminium	Three way	250	In line	See datasheet	23.00.040
SAE-XX-3N	Steel	Three way	350	In line	See datasheet	23.00.040
SAE-XX-4N-3P	Aluminium	Four way, three ports	250	In line	See datasheet	23.00.050
SAE-XX-4N-3P	Steel	Four way, three ports	350	In line	See datasheet	23.00.050
SAE-XX-4N	Aluminium	Four way	250	In line	See datasheet	23.00.060
SAE-XX-4N	Steel	Four way	350	In line	See datasheet	23.00.060
VP000057	Aluminium	Two way	250	In line	See datasheet	23.00.070
VP000057	Steel	Two way	350	In line	See datasheet	23.00.070
VP000013	Aluminium	Two way	250	In line	See datasheet	23.00.070
VP000013	Steel	Two way	350	In line	See datasheet	23.00.070
VP000180	Aluminium	Two way	250	In line	See datasheet	23.00.070
VP000180	Steel	Two way	350	In line	See datasheet	23.00.070
SAE-XX-2N	Aluminium	Two way, with override screw	250	In line	See datasheet	23.00.080
SAE-XX-2N	Steel	Two way, with override screw	350	In line	See datasheet	23.00.080
VP000057	Aluminium	Two way, with override screw	250	In line	See datasheet	23.00.090
VP000057	Steel	Two way, with override screw	350	In line	See datasheet	23.00.090
VP000013	Aluminium	Two way, with override screw	250	In line	See datasheet	23.00.090
VP000013	Steel	Two way, with override screw	350	In line	See datasheet	23.00.090

STANDARD MANIFOLDS

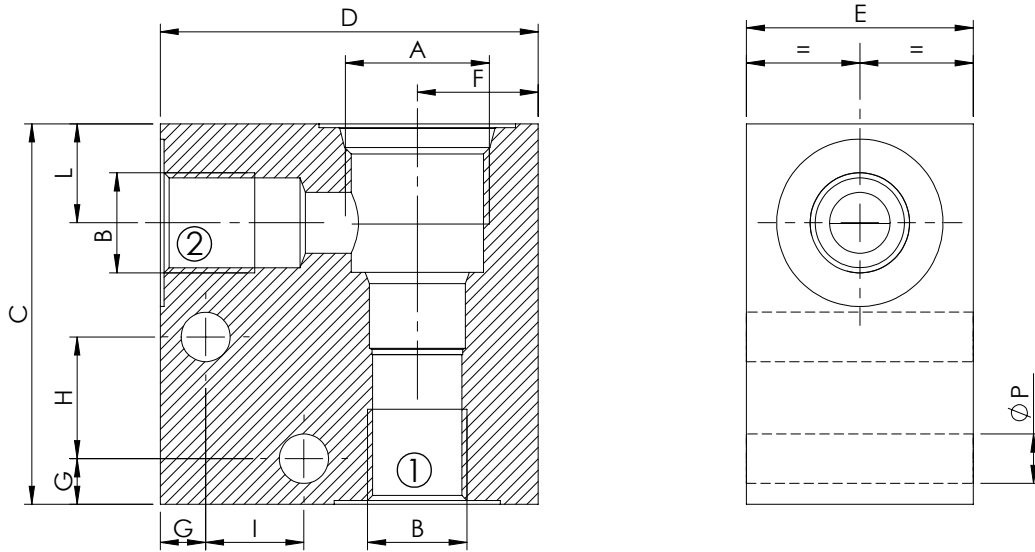
SAE-XX-2N



CAVITY	DIMENSIONS (mm)											QUICK CODE			
	A	B	C	D	E	F	G	H	I	L	M	N	P	Steel	Aluminium
SAE-08-2N	G 1/4"	50	50	30	21	12	35	9	15				7	LK000018	LK000017
	G 3/8"	50	50	30	21	12	35	9	15				7	LK000020	LK000019
	7/16-20	50	50	30	21	12	35	9	15				7		
	9/16-18	50	50	30	21	12	35	9	15				7		
SAE-10-2N	G 3/8"	60	60	35	25	15	45	7	19				7	LK000022	LK000021
	G 1/2"	60	60	35	25	15	45	7	19				7	LK000024	LK000023
	G 3/4"	60	60	40	27,5	15	45	9	20				7	LK000047	LK000046
SAE-12-2N	G 1/2"	75	80	40	35	20	60	10	26,5				9	LK000207	LK000208
	G 3/4"	75	80	40	35	20	60	10	26,5				9	LK000205	LK000206
SAE-16-2N	G 3/4"	80	90	50	37	22	60	20	26				9	LK000156	LK000157
	G 1"	80	90	50	37	22	60	20	26				9	LK000154	LK000155
SAE-20-2N															

STANDARD MANIFOLDS

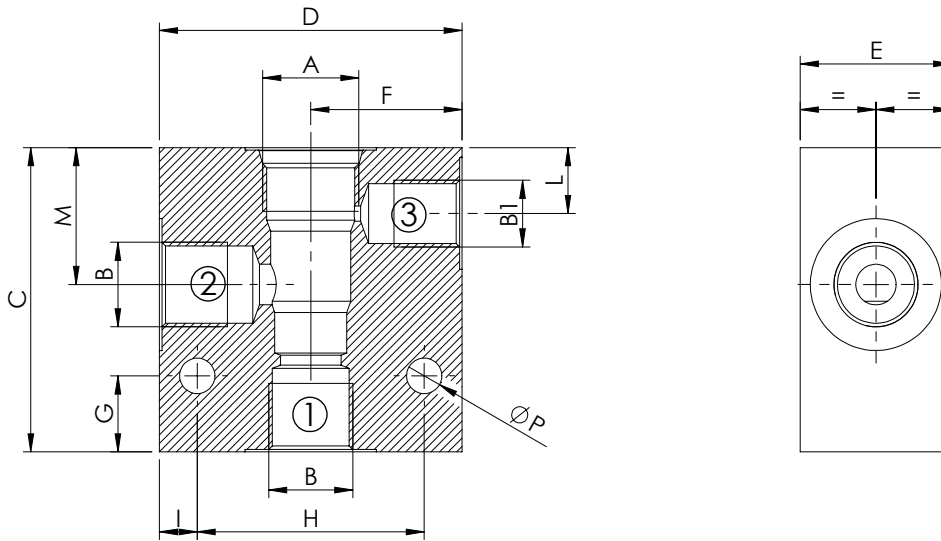
SAE-XX-2N



CAVITY	DIMENSIONS (mm)													QUICK CODE	
	A	B	C	D	E	F	G	H	I	L	M	N	P	Steel	Aluminium
SAE-08-2N		G 1/4"	50	50	30	16	6	16	13	13			6,5	LK000086	LK000005
		G 3/8"	50	50	30	16	6	16	13	13			6,5	LK000085	LK000077
		7/16-20	50	50	30	16	6	16	13	13			6,5	LK000277	LK000148
		9/16-18	50	50	30	16	6	16	13	13			6,5	LK000076	LK000278
SAE-10-2N															
SAE-12-2N															
SAE-16-2N															
SAE-20-2N															

STANDARD MANIFOLDS

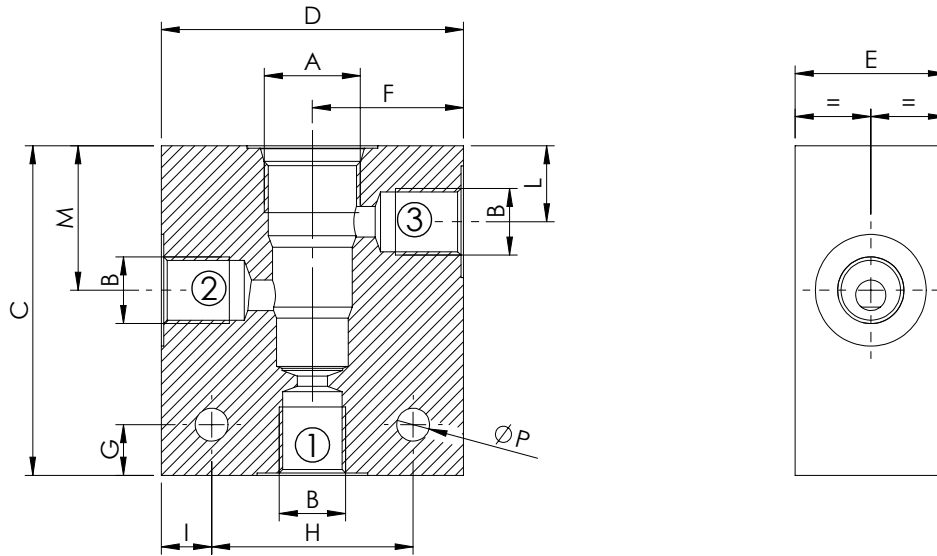
SAE-XX-3C



CAVITY	DIMENSIONS (mm)												QUICK CODE	
	A	B	B1	C	D	E	F	G	H	I	L	M	P	Steel
SAE-08-3C	G 3/8"	G 1/4"	60	60	30	30	15	45	7,5	13	27	7	LK000279	LK000033
SAE-10-3C	G 3/8"	G 1/4"	70	60	35	30	15	45	7,5	15	32	7	LK000280	LK000034
SAE-12-3C	G 1/2"	G 1/4"	80	75	40	35	15	55	10	24	42	7	LK000165	LK000164
	G 3/4"	G 1/4"	90	75	40	35	15	55	10	24	42	7	LK000210	LK000211
	7/8-14	9/16-18	80	75	40	35	15	55	10	24	42	9	LK000263	LK000262
SAE-16-3C	G 1"	G 1/4"	90	90	50	40	22	70	10	18,5	39	9	LK000212	LK000213
	G 3/4"	G 1/4"	90	80	50	38	22	60	10	18,5	39	9	LK000264	LK000265
	1 5/16-12	7/16-20	90	90	50	40	22	70	10	18,5	39	9	LK000266	LK000267
SAE-20-3C	G 1"	G 1/4"	110	100	60	45	25	75	12,5	21	51	11	LK000268	LK000269
	G 1-1/4"	G 1/4"	110	100	60	45	25	75	12,5	21	51	11	LK000270	LK000271
	1 5/8-12	7/16-20	110	100	60	45	25	75	12,5	21	51	11	LK000272	LK000273

STANDARD MANIFOLDS

SAE-XX-3N

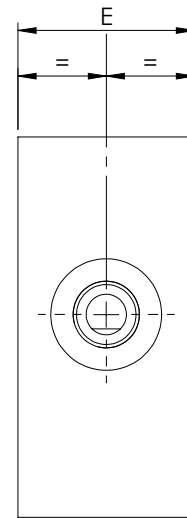
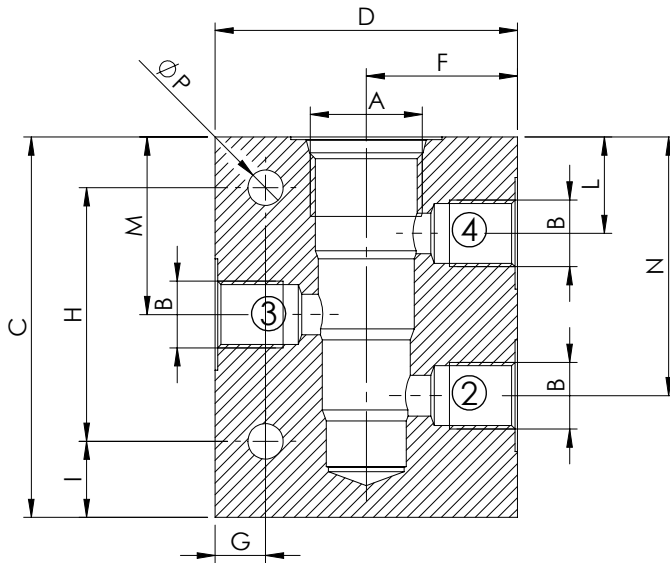


CAVITY	DIMENSIONS (mm)												QUICK CODE		
	A	B	C	D	E	F	G	H	I	L	M	N	P	Steel	Aluminium
SAE-08-3N	G 1/4"	65	60	30	30	10	40	10	15	28,5			6,5	LK000089	LK000008
	G 3/8"	65	60	30	30	10	40	10	15	28,5			6,5	LK000090	LK000009
SAE-10-3N	G 1/4"	65	65	35	32,5	10	50	7,5	18	35			6,5	LK000035	LK000012
	G 3/8"	65	65	35	32,5	10	50	7,5	18	35			7	LK000027	LK000013
	G 1/2"	70	70	35	35	15	50	10	18	34,5			7	LK000131	LK000057
SAE-12-3N	G 1/2"	100	80	40	42,5	15	55	12,5	29	54			7	LK000100	LK000281
	G 3/4"	100	80	40	40	15	55	12,5	29	54			7	LK000294	LK000295
SAE-16-3N	G 3/4"	100	90	50	45	20	60	15	26	54,5			10,5	LK000256	LK000257
SAE-20-3N															

STANDARD MANIFOLDS

SAE-XX-4N 3P

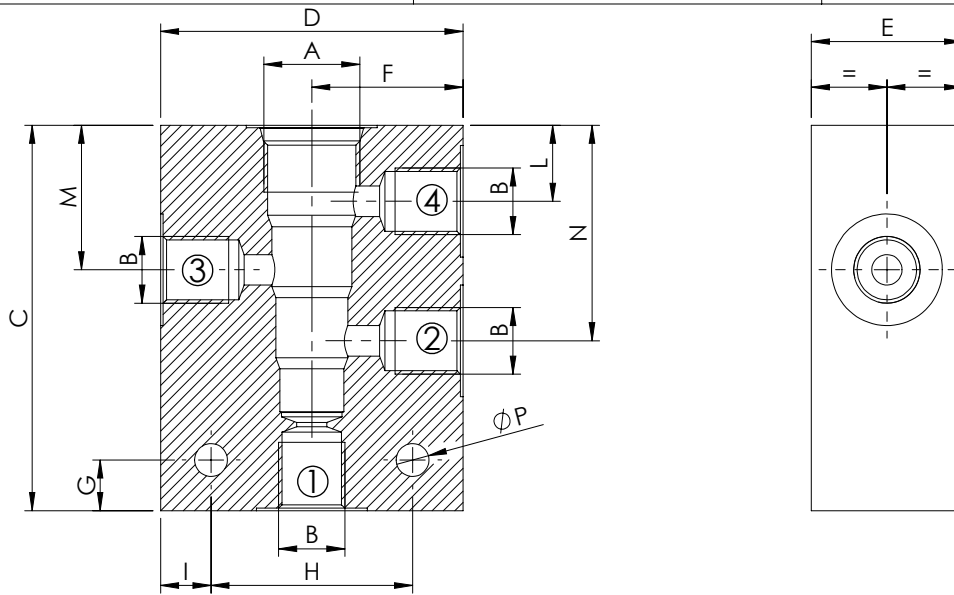
THREE PORTS



CAVITY	DIMENSIONS (mm)												QUICK CODE		
	A	B	C	D	E	F	G	H	I	L	M	N	P	Steel	Aluminium
SAE-08-4N															
SAE-10-4N	G 1/4"	75	60	35	30	10	50	15	19	35	51	7	LK000040	LK000038	
	G 3/8"	75	60	35	30	10	50	15	19	35	51	7	LK000016	LK000037	
	G 1/2"	85	65	35	32,5	10	50	15	19	35	51	7	LK000041	LK000039	
	9/16-18	75	60	35	30	10	50	15	19	35	51	7	LK000331	LK000330	
	1/4 JIS	75	60	35	30	10	50	15	19	35	51	7	LK000249	LK000367	
SAE-12-4N															
SAE-16-4N	G 3/4"	120	90	50	45	12	90	15	25,5	54	82,5	8,5	LK000222	LK000225	
	1 1/16 JIS	120	90	50	45	12	90	15	25,5	54	82,5	8,5	LK000223	LK000224	
SAE-20-4N															

STANDARD MANIFOLDS

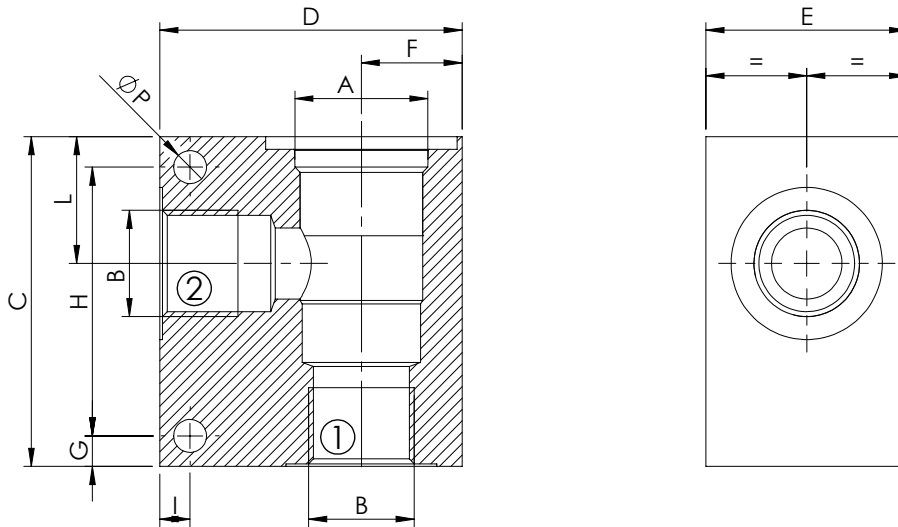
SAE-XX-4N



CAVITY	DIMENSIONS (mm)												QUICK CODE	
	A	B	C	D	E	F	G	H	I	L	M	N	P	Steel
SAE-08-4N	G 1/4"	76	60	30	30	10	40	10	15	28,5	42,5	6,5	LK000282	LK000015
	G 3/8"	76	60	30	30	10	40	10	15	28,5	42,5	6,5	LK000276	LK000014
SAE-10-4N	G 1/4"	80	65	35	32,5	10	50	7,5	18	35	50	6,5	LK000231	LK000010
	G 3/8"	85	60	35	30	15	45	7,5	19	35	51	7	LK000043	LK000011
SAE-12-4N														
SAE-16-4N														
SAE-20-4N														

STANDARD MANIFOLDS

VP000XXX

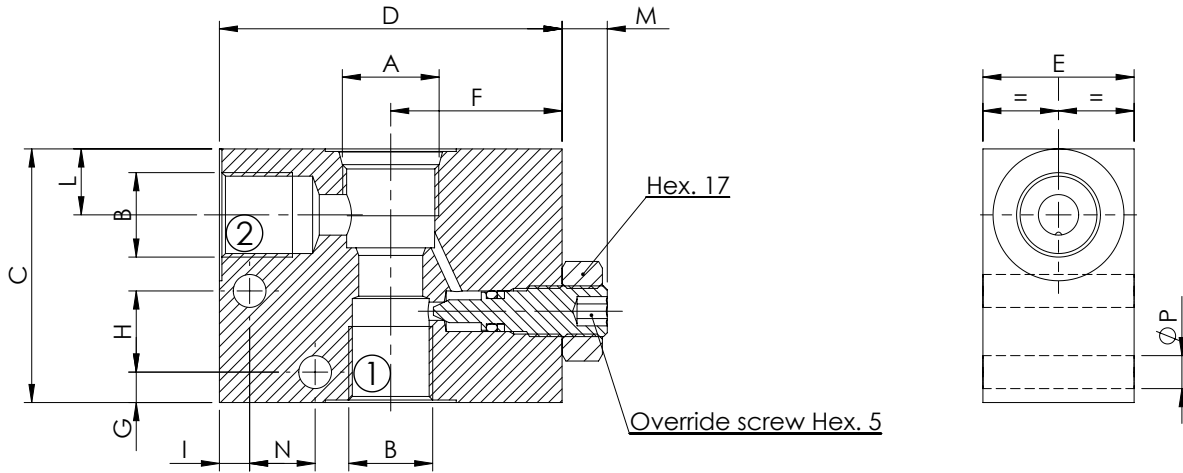


CAVITY	DIMENSIONS (mm)													QUICK CODE	
	A	B	C	D	E	F	G	H	I	L	M	N	P	Steel	Aluminium
VP000057	G 1/2"	65	60	40	20	6	53	6	25				6,5	LK000071	LK000055
	G 3/4"	65	60	40	20	6	53	6	25				6,5	LK000075	LK000065
	3/4-16	65	60	40	20	6	53	6	25				6,5	LK000275	LK000283
	7/8-14	65	60	40	20	6	53	6	25				6,5	LK000363	LK000366
VP000013	G 3/4"	80	80	50	26	7,5	65	7,5	31				8,5	LK000078	LK000066
	G 1"	80	80	50	26	7,5	65	7,5	31				8,5	LK000061	LK000042
VP000180	G 1-1/4"	100	90	70	35	17	75	15	39				8,5	LK000087	LK000094

STANDARD MANIFOLDS

SAE-XX-2N

WITH OVERRIDE SCREW

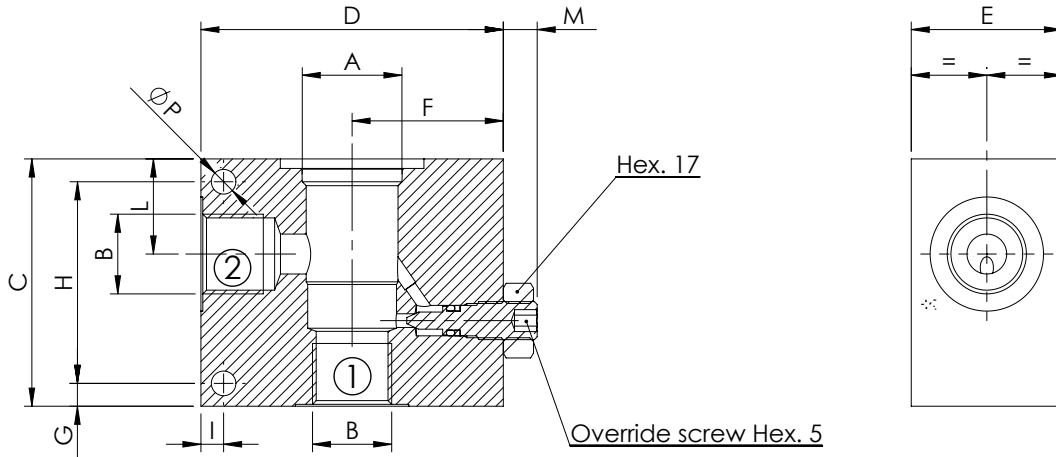


CAVITY	DIMENSIONS (mm)												QUICK CODE		
	A	B	C	D	E	F	G	H	I	L	M	N	P	Steel	Aluminium
SAE-08-2N		G 1/4"	50	68	30	34	6	16	6	13	9	13	6,5	KS000009	KS000003
		G 3/8"	50	68	30	34	6	16	6	13	9	13	6,5	KS000008	KS000002

STANDARD MANIFOLDS

VP0000XX

WITH OVERRIDE SCREW

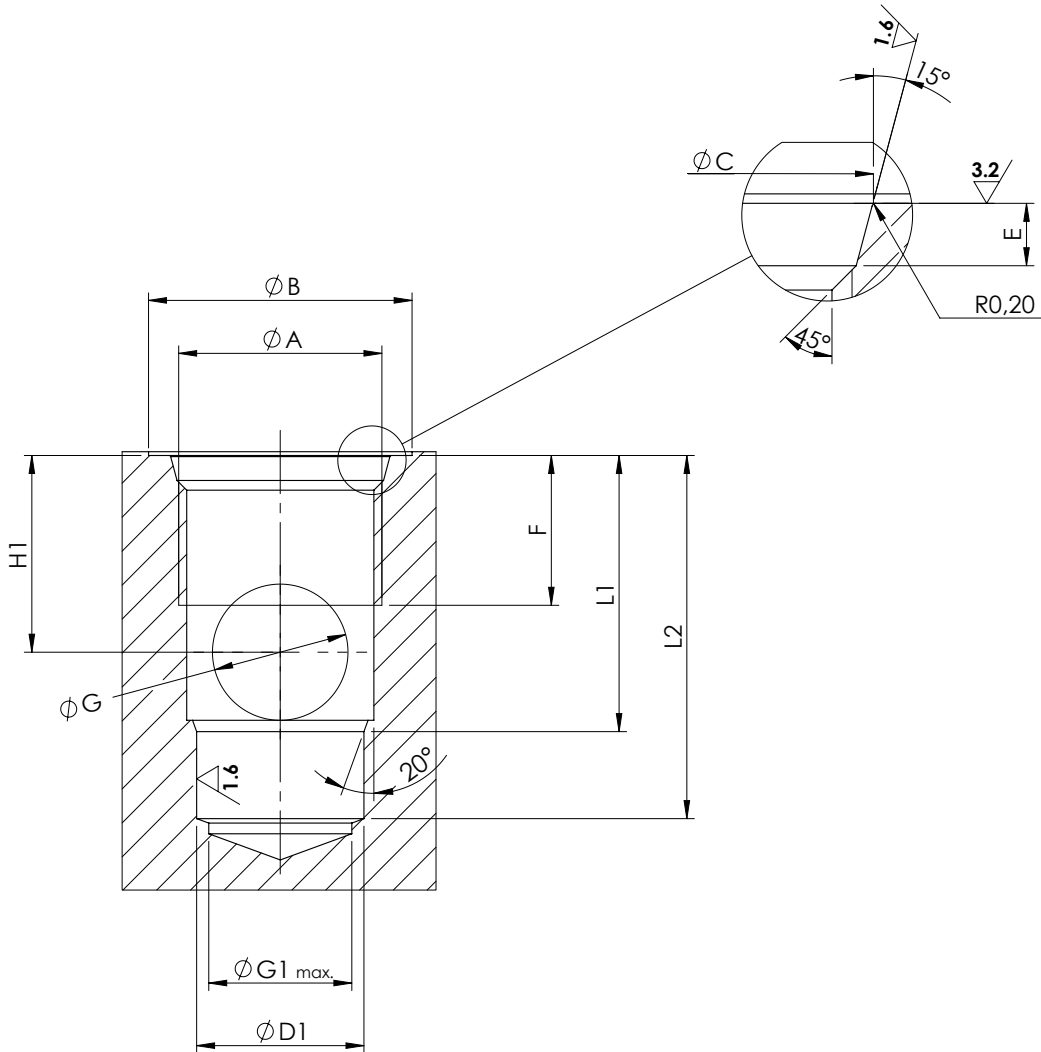


CAVITY	DIMENSIONS (mm)												QUICK CODE		
	A	B	C	D	E	F	G	H	I	L	M	N	P	Steel	Aluminium
VP000057	G 1/2"	65	80	40	40	6	53	6	25	9			6,5	KS000007	KS000001
	G 3/4"	65	80	40	40	6	53	6	25	9			6,5	KS000010	KS000004
VP000013	G 3/4"	80	90	50	47	7,5	65	7,5	31	9			8,5	KS000012	KS000005
	G 1"	80	90	50	47	7,5	65	7,5	31	9			8,5	KS000011	KS000006

SECTION 24

CAVITIES AND TECHNICAL DRAWINGS



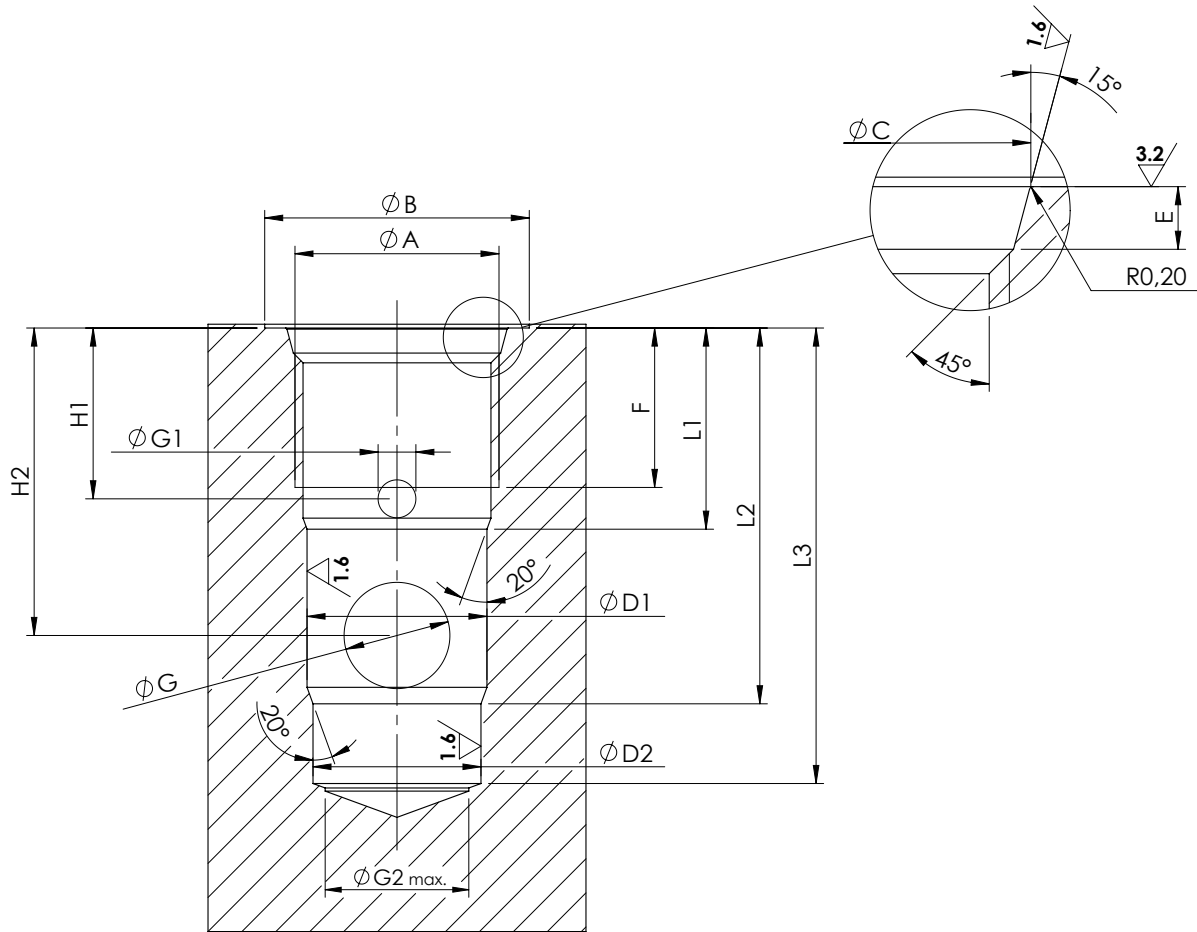


General tolerances : 0.3mm

⊙	0.03
⊥	0.02

	SAE-08-2N	SAE-10-2N	SAE-12-2N	SAE-16-2N	SAE-20-2N
A	3/4-16 UNF	7/8-14 UNF	1-1/16 12 UNF	1-5-16 12 UNF	1-5/8 12 UNF
B	26	30	35	42	48
C	20.6 ^{+0.1} ₀	23.9 ^{+0.1} ₀	29.2 ^{+0.1} ₀	35.5 ^{+0.1} ₀	43.5 ^{+0.1} ₀
D1	12.7 ^{+0.05} ₀	15.87 ^{+0.05} ₀	22.22 ^{+0.05} ₀	28.60 ^{+0.05} ₀	36.52 ^{+0.05} ₀
E	2.6 ^{+0.3} ₀	2.6 ^{+0.3} ₀	3.3 ^{+0.3} ₀	3.3 ^{+0.3} ₀	3.4 ^{+0.3} ₀
F	13	15	20	20	22
G	9	12	18	19	25
G1	12	15	19	24	30
H1	14	18	26	25	32
L1	20.5	25.5	36.5	36	44.5
L2	29	34.5	48	49	59

SAE-XX-3C

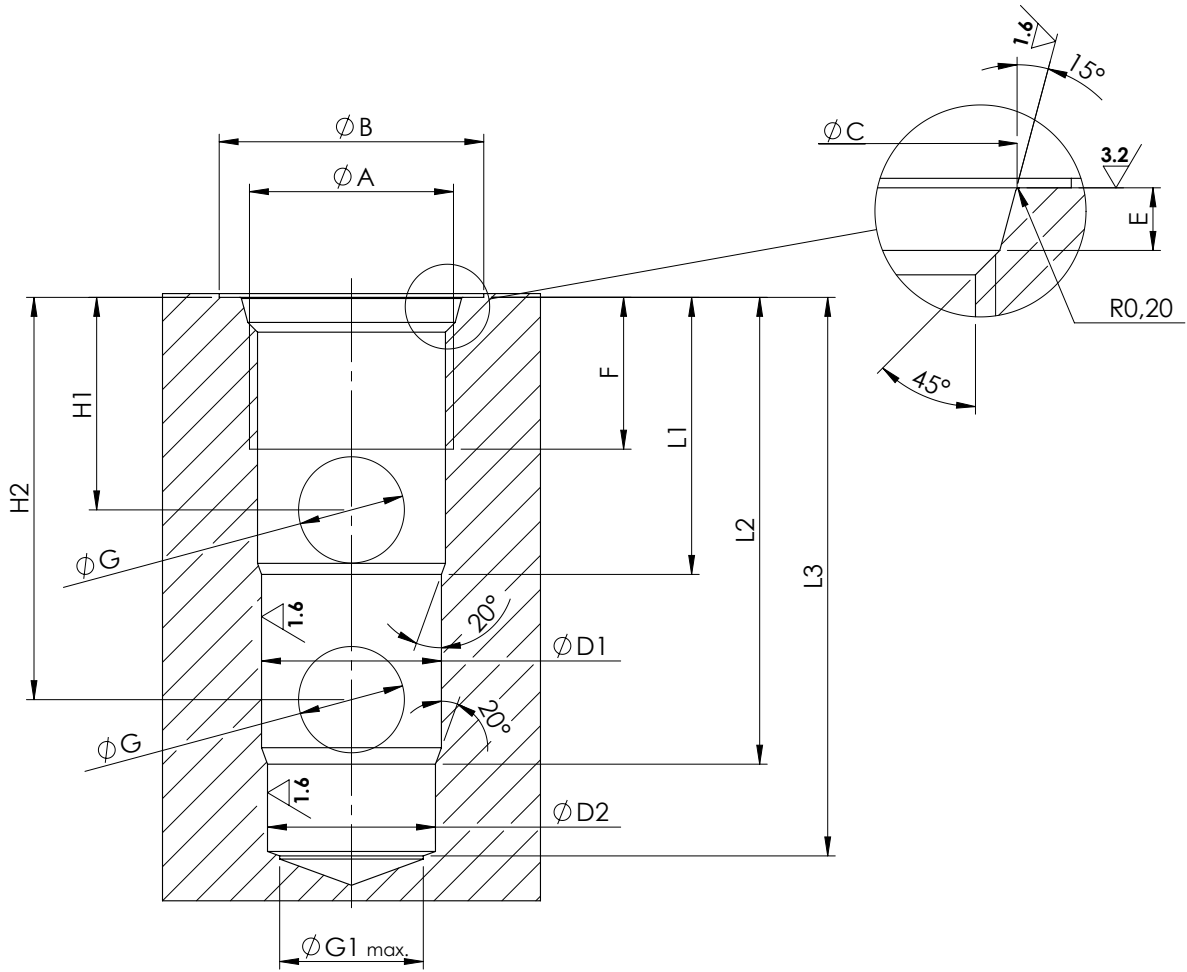


General tolerances : 0.03 mm

⊙	0.03
⊥	0.02

	SAE-08-3C	SAE-10-3C	SAE-12-3C	SAE-16-3C	SAE-20-3C
A	3/4-16 UNF	7/8-14 UNF	1-1/16 12 UNF	1-5/16 12 UNF	1-5/8 12 UNF
B	26	30	35	42	48
C	20.6 ^{+0.1} ₀	23.9 ^{+0.1} ₀	29.2 ^{+0.1} ₀	35.5 ^{+0.1} ₀	43.5 ^{+0.1} ₀
D1	15.87 ^{+0.05} ₀	19.05 ^{+0.05} ₀	23.80 ^{+0.05} ₀	28.6 ^{+0.05} ₀	36.52 ^{+0.05} ₀
D2	14.27 ^{+0.05} ₀	17.47 ^{+0.05} ₀	22.22 ^{+0.05} ₀	25.42 ^{+0.05} ₀	33.35 ^{+0.05} ₀
E	2.6 ^{+0.3} ₀	2.6 ^{+0.3} ₀	3.3 ^{+0.3} ₀	3.3 ^{+0.3} ₀	3.4 ^{+0.3} ₀
F	12	13	21	16.5	20
G	8	14	14	15	28
G1	3	4	5	5	7
G2	12	15	19	24	30
H1	12.5	14	22.5	17.5	20
H2	26.5	31.5	40.5	38	50
L1	16	18	26.5	22	25.5
L2	32	40	49.5	47.5	65.5
L3	40	49	60	58	78

SAE-XX-3N

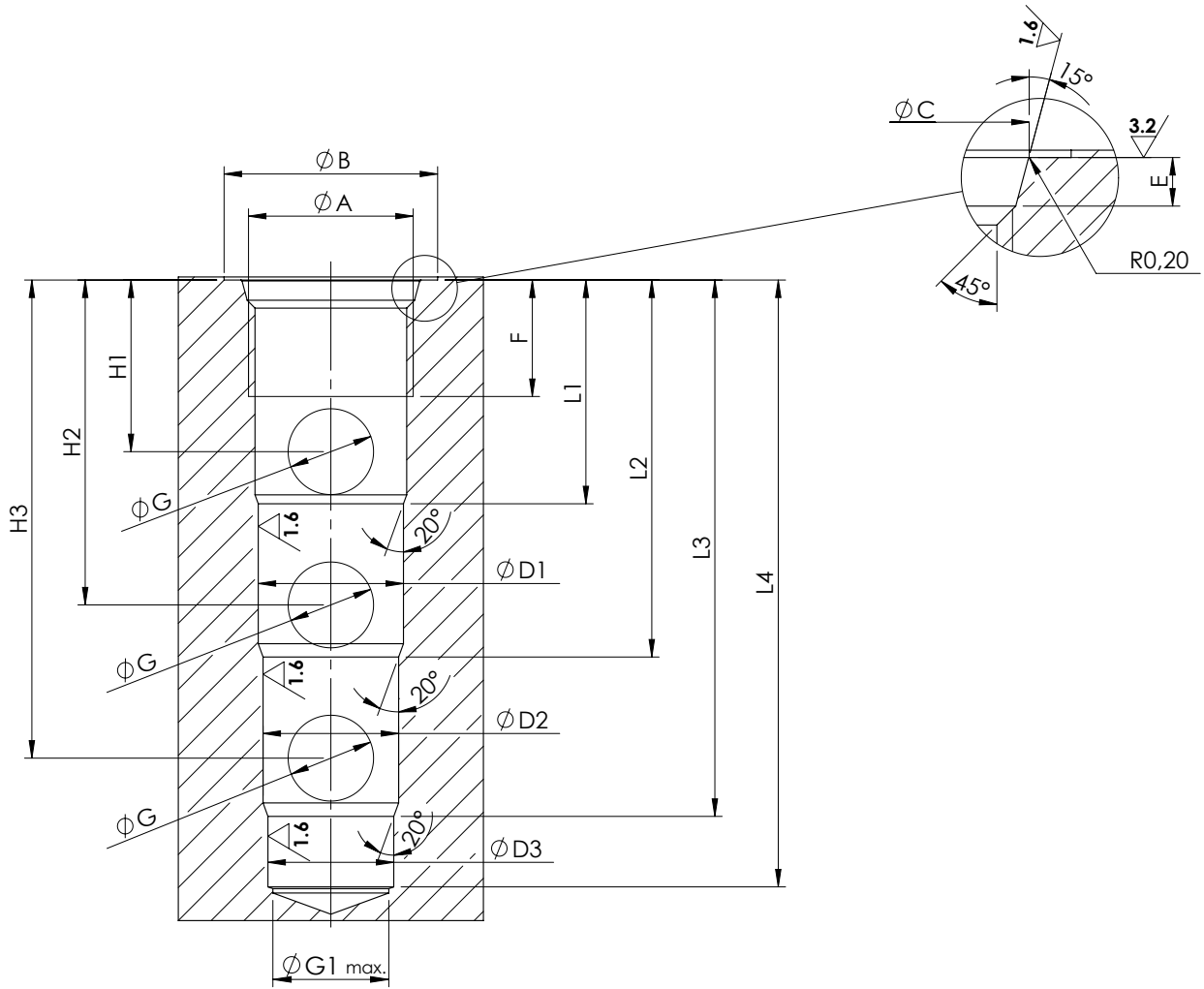


General tolerances : 0.03 mm

⊙	0.03
⊥	0.02

	SAE-08-3N	SAE-10-3N	SAE-12-3N	SAE-16-3N	SAE-20-3N
A	3/4-16 UNF	7/8-14 UNF	1-1/16 12 UNF	1-5/16 12 UNF	1-5/8 12 UNF
B	26	30	35	42	54
C	20.60 ^{+0.1} ₀	23.90 ^{+0.1} ₀	29.20 ^{+0.1} ₀	35.50 ^{+0.1} ₀	43.5 ^{+0.1} ₀
D1	15.87 ^{+0.05} ₀	17.47 ^{+0.05} ₀	23.80 ^{+0.05} ₀	28.60 ^{+0.05} ₀	36.52 ^{+0.05} ₀
D2	14.27 ^{+0.05} ₀	15.87 ^{+0.05} ₀	22.22 ^{+0.05} ₀	27.00 ^{+0.05} ₀	33.35 ^{+0.05} ₀
E	2.6 ^{+0.3} ₀	2.6 ^{+0.3} ₀	3.3 ^{+0.3} ₀	3.3 ^{+0.3} ₀	3.4 ^{+0.3} ₀
F	13	14	20	20	22
G	6	8	14	17	25
G1	12	15	19	24	30
-	-	-	-	-	-
H1	15	18	28	25.5	32
H2	29	34	53	54	72
L1	19.50	23.5	36.5	35.5	46
L2	33.50	39.50	61.50	64	86
L3	43	48.50	73	75	100

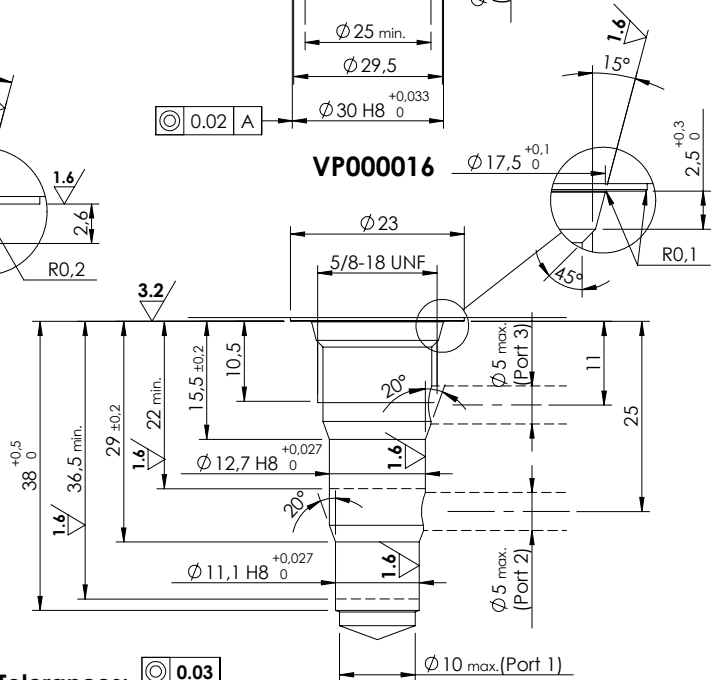
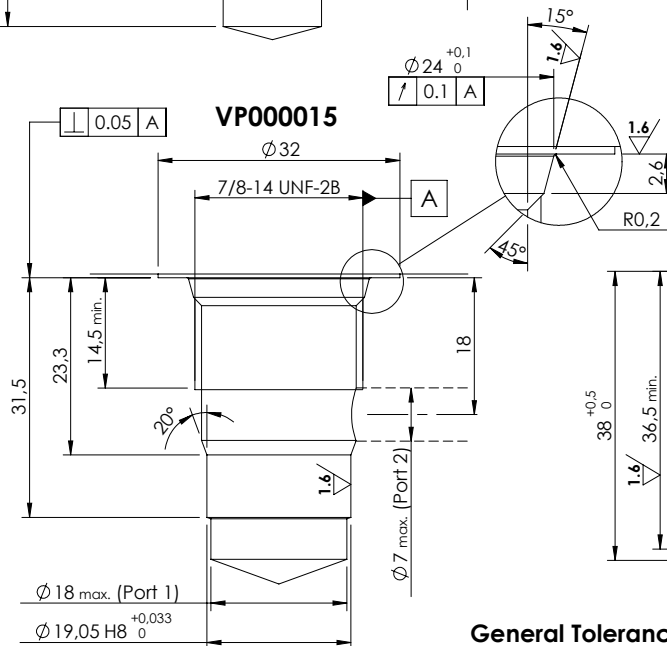
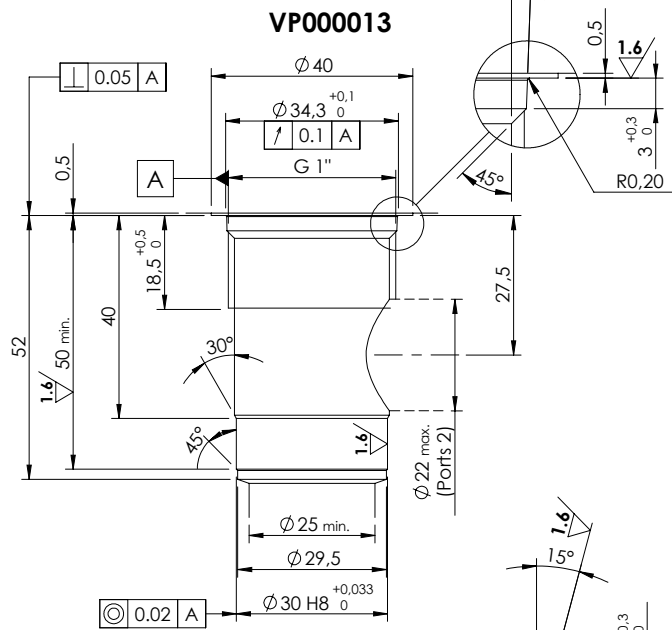
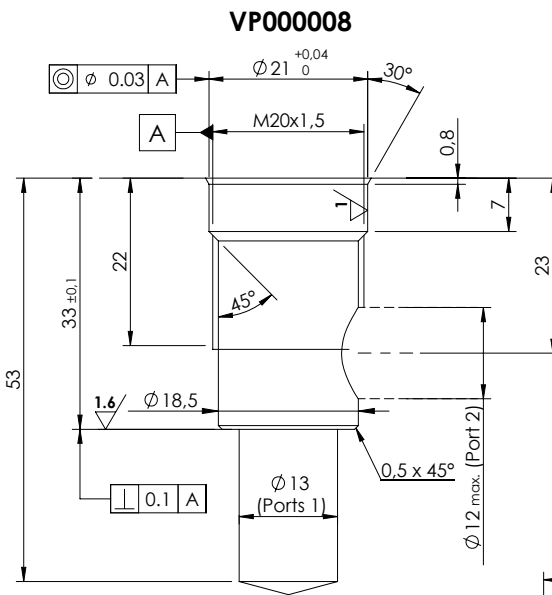
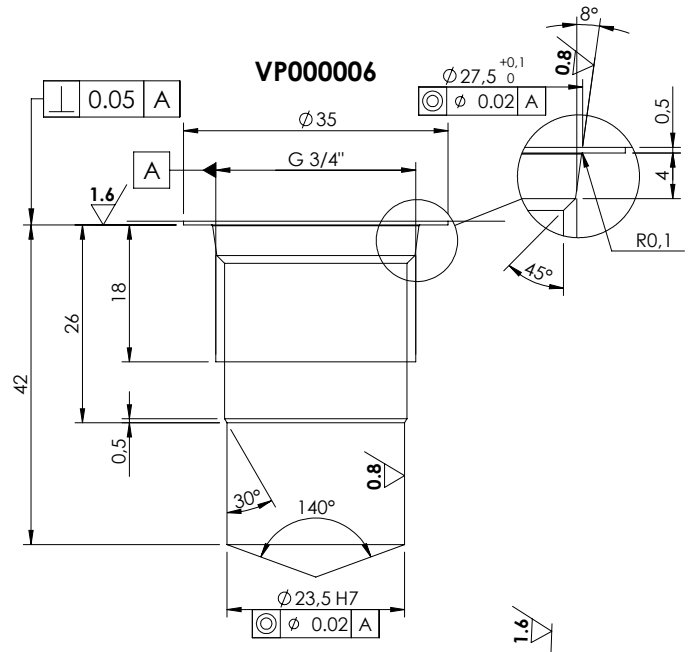
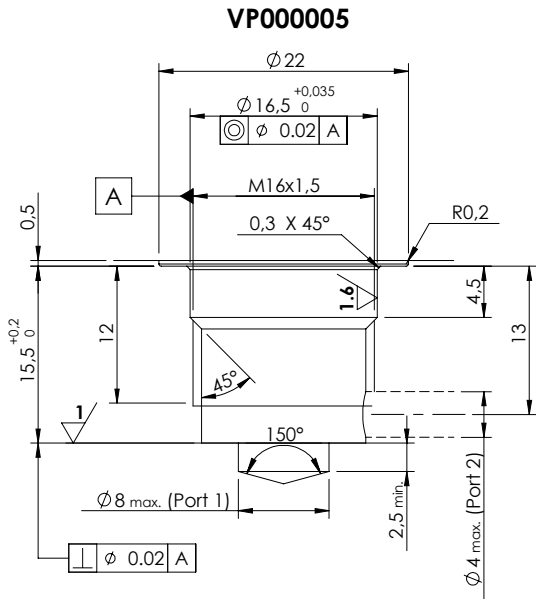
SAE-XX-4N



General tolerances: 0.03 mm

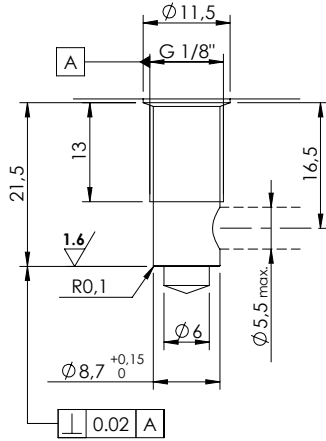
⊙	0.03
⊥	0.02

	SAE-08-4N	SAE-10-4N	SAE-12-4N	SAE-16-4N	SAE-20-4N
A	3/4-16 UNF	7/8-14 UNF	1-1/16 12 UNF	1-5/16 12 UNF	1-5/8 12 UNF
B	26	30	35	42	48
C	20.60 ^{+0.1} ₀	23.90 ^{+0.1} ₀	29.20 ^{+0.1} ₀	35.50 ^{+0.1} ₀	43.5 ^{+0.1} ₀
D1	15.87 ^{+0.05} ₀	19.05 ^{+0.05} ₀	23.80 ^{+0.05} ₀	28.60 ^{+0.05} ₀	36.52 ^{+0.05} ₀
D2	14.27 ^{+0.05} ₀	17.47 ^{+0.05} ₀	22.22 ^{+0.05} ₀	27.00 ^{+0.05} ₀	33.35 ^{+0.05} ₀
D3	12.7 ^{+0.05} ₀	15.87 ^{+0.05} ₀	20.62 ^{+0.05} ₀	25.42 ^{+0.05} ₀	31.75 ^{+0.05} ₀
E	2.6 ^{+0.3} ₀	2.6 ^{+0.3} ₀	3.3 ^{+0.3} ₀	3.3 ^{+0.3} ₀	3.4 ^{+0.3} ₀
F	13	15	19	20	22
G	6	8	14	16	25
G1	12	15	19	24	30
H1	15	18	28	25	32
H2	29	34	53	53.5	72
H3	43	50	78	82	114
L1	19.5	23.5	36.5	35.5	46
L2	33.5	39.5	61.5	64	87
L3	47.5	55.5	87.5	92.5	128.5
L4	56	64.5	99	104	142

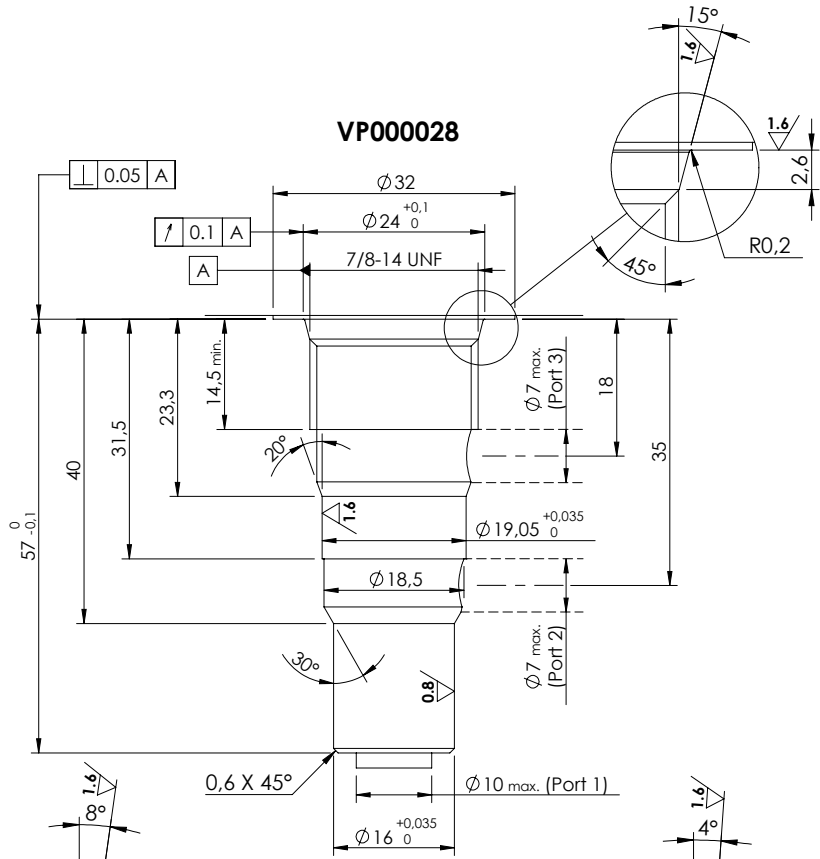


General Tolerances: $\text{◎} 0.03$
 $\text{⊥} 0.02$

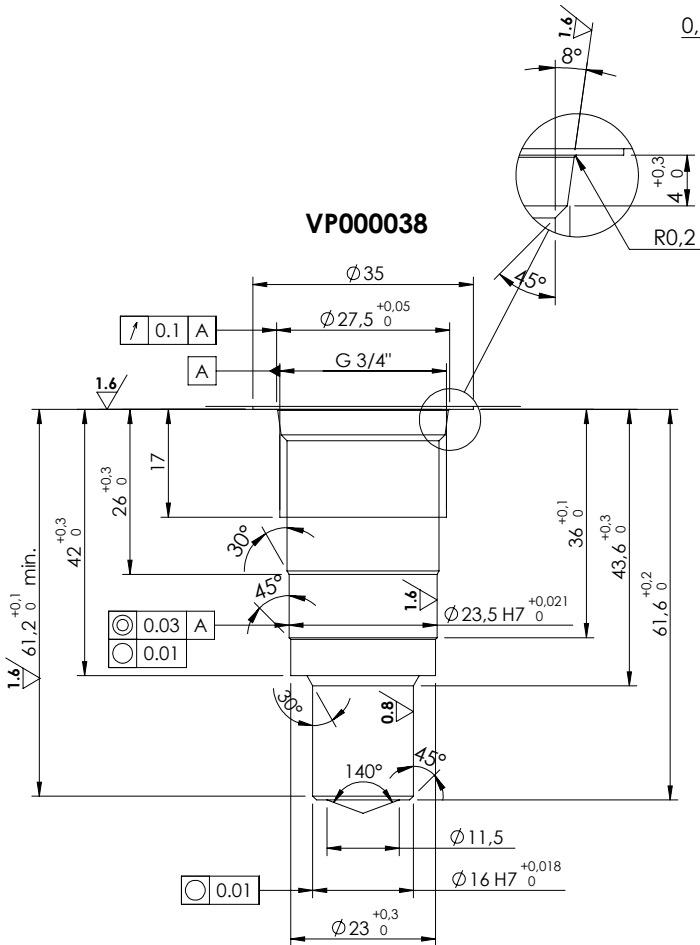
VP000018



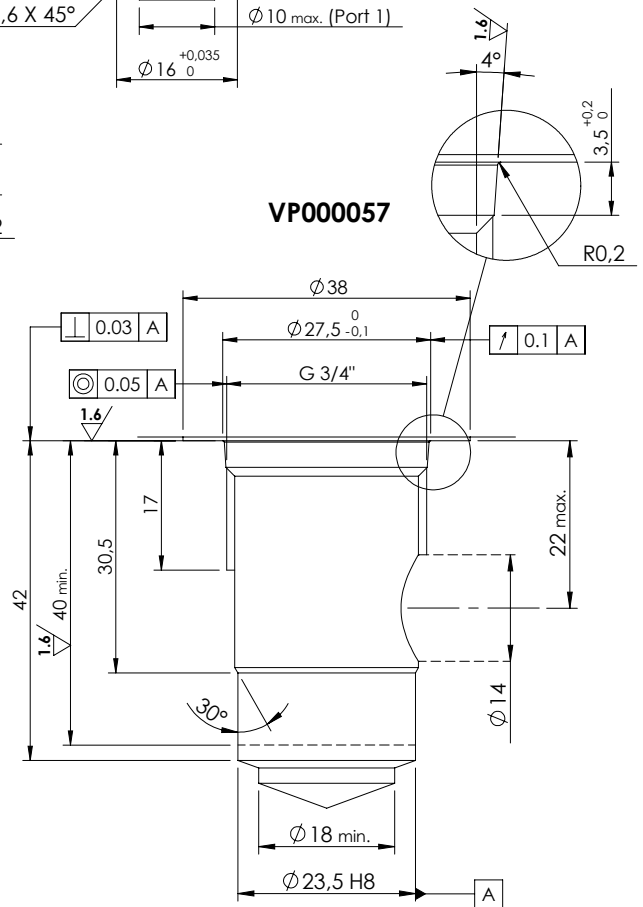
VP000028



VP000038



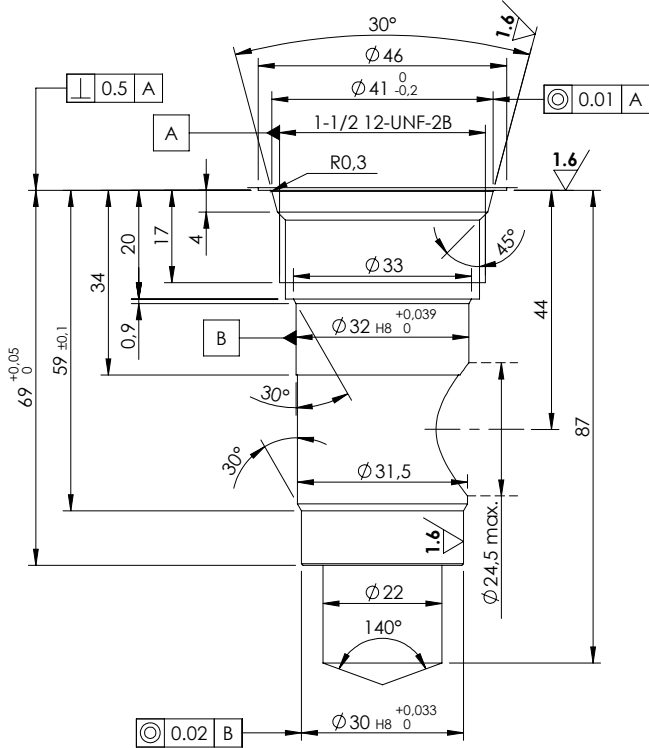
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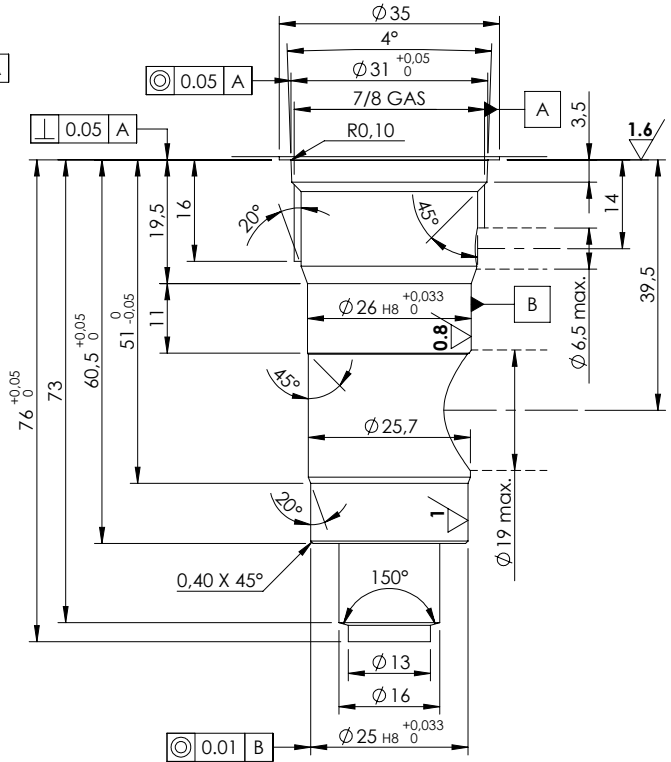
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⊥	0.02

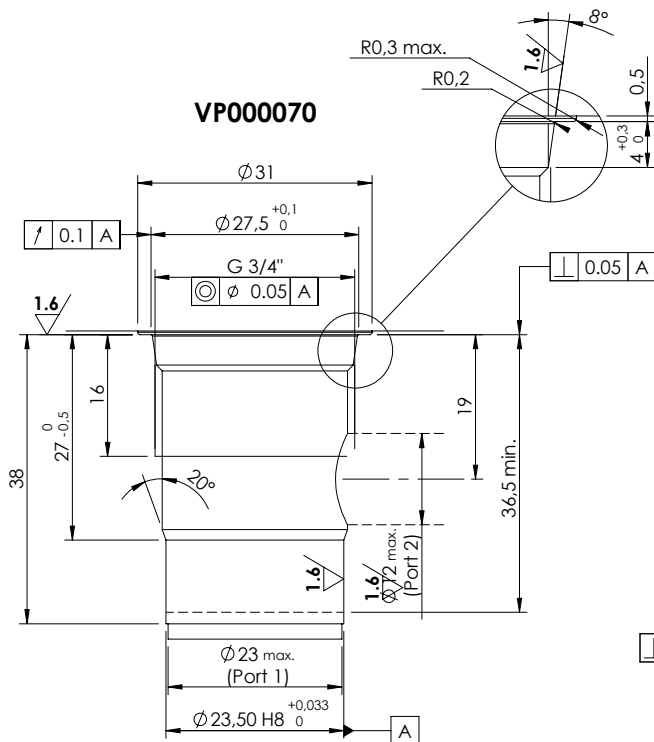
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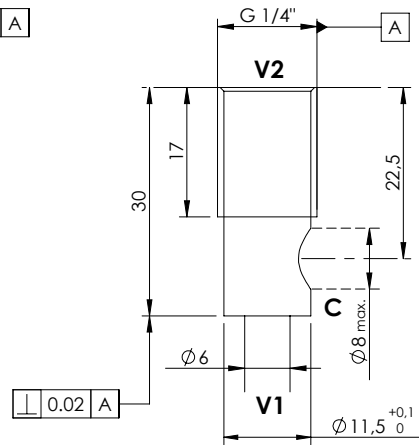
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VP000070



VP000079

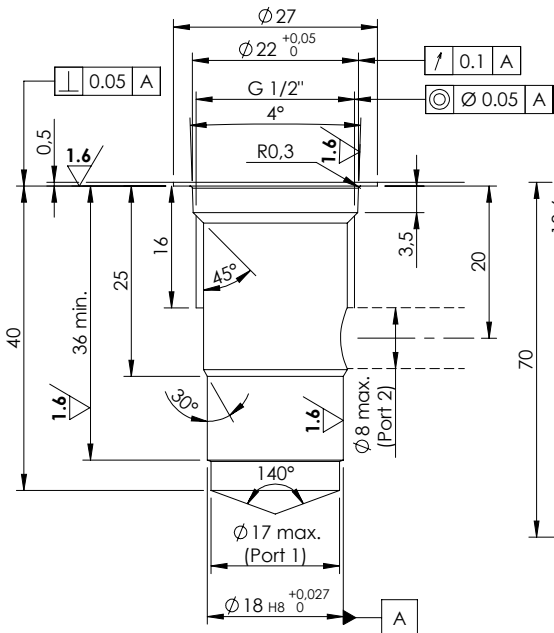


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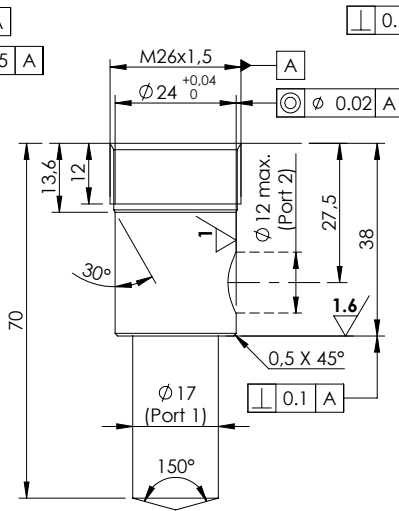
⊙	0.03
⏏	0.02

SPECIAL CAVITIES

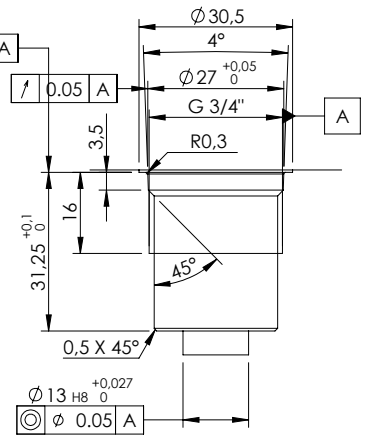
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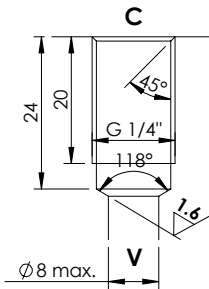
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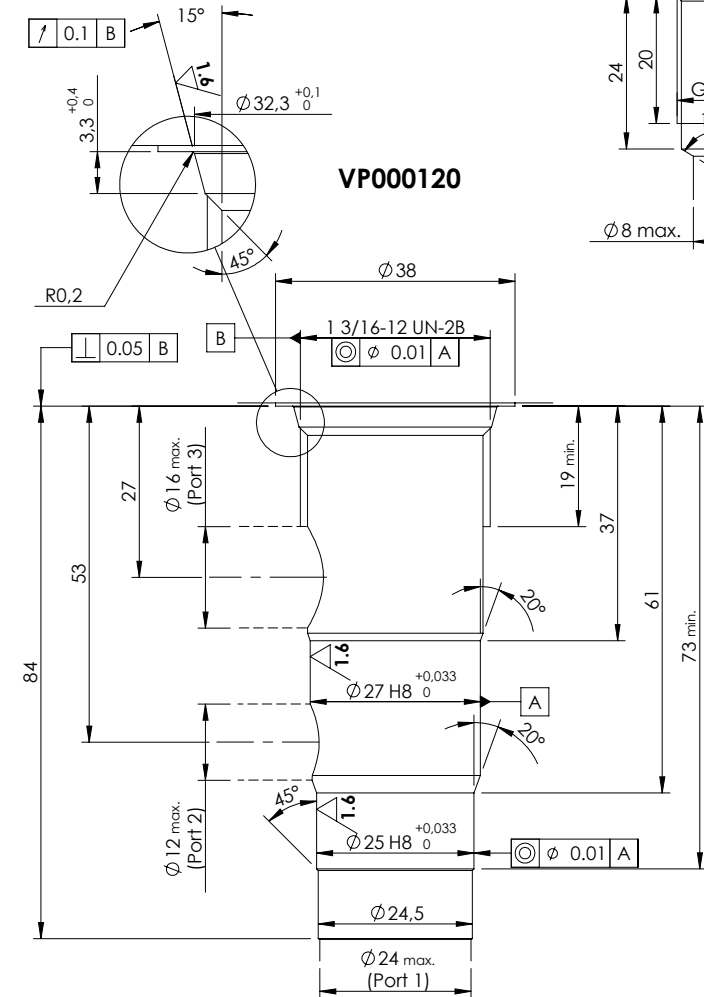
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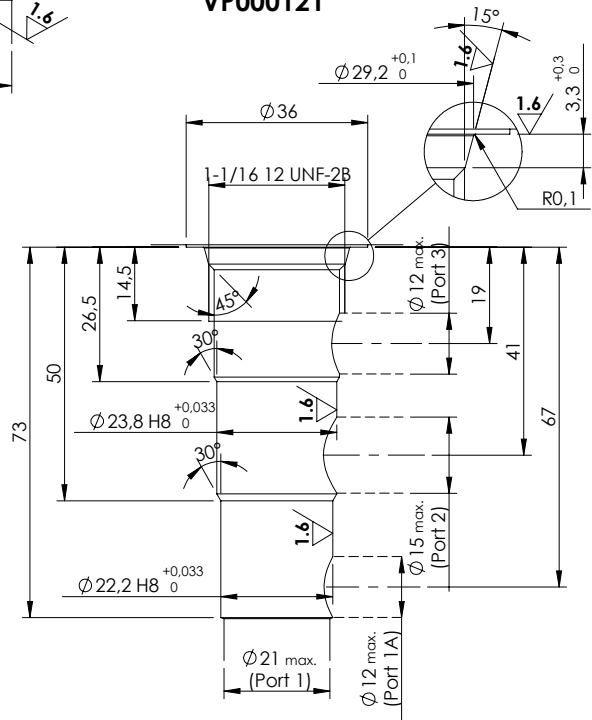
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VP000120

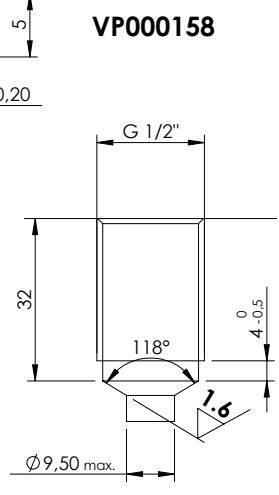
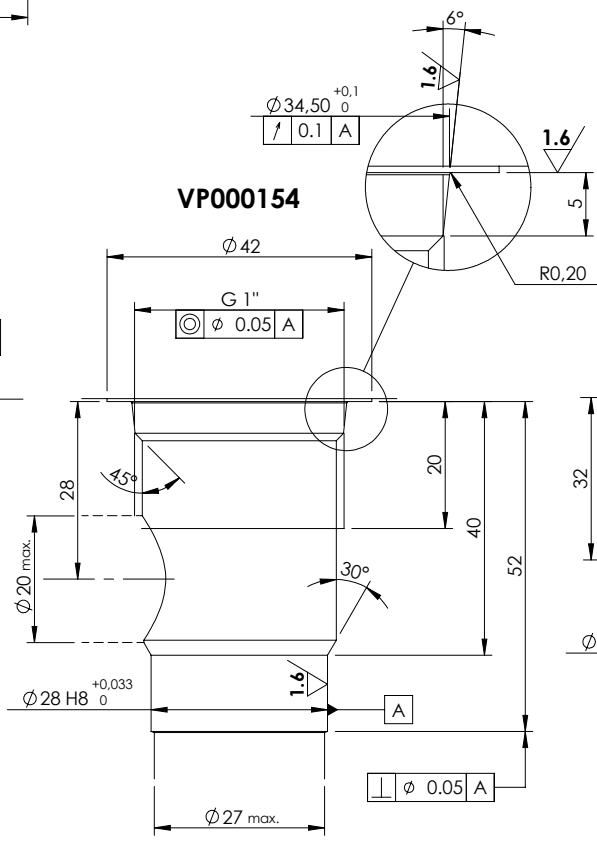
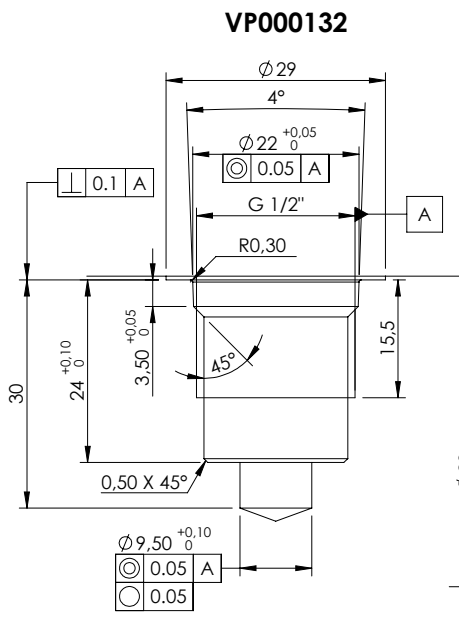
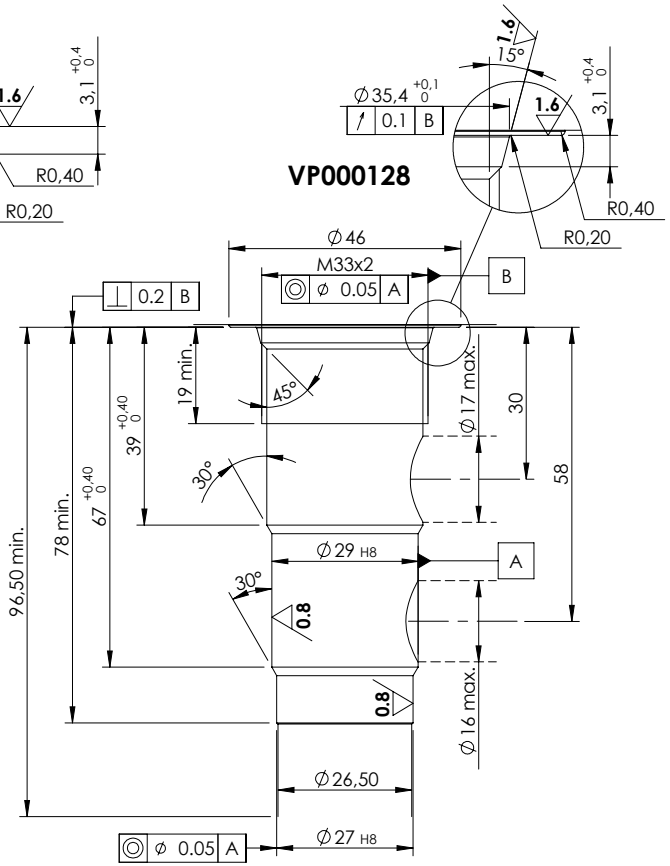
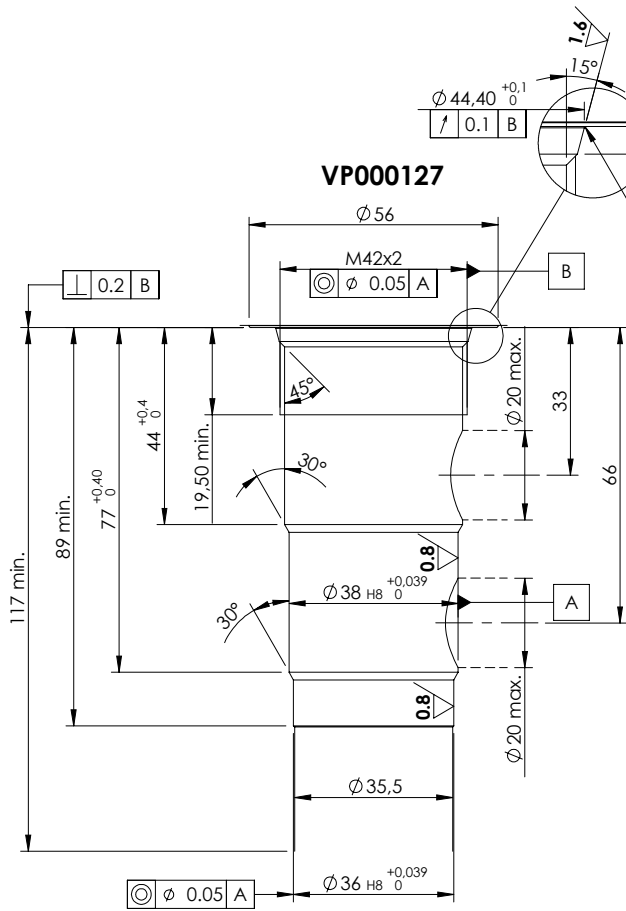


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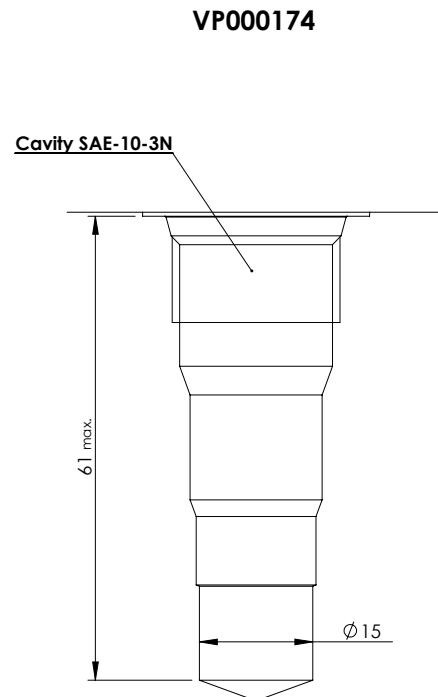
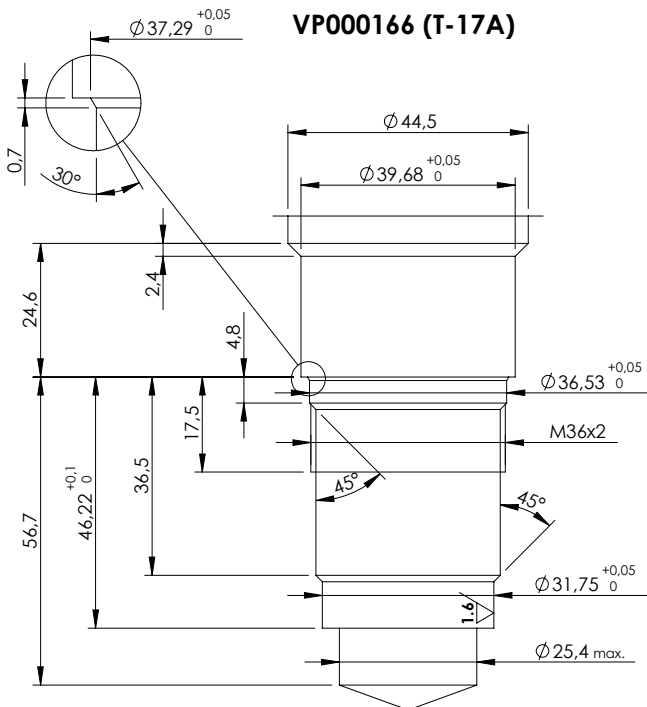
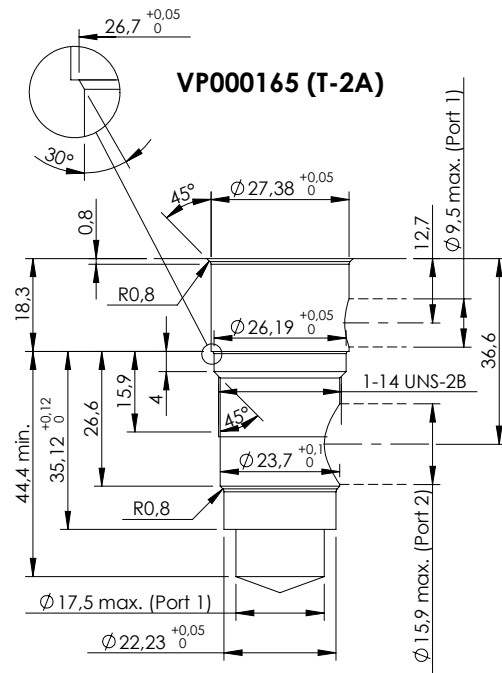
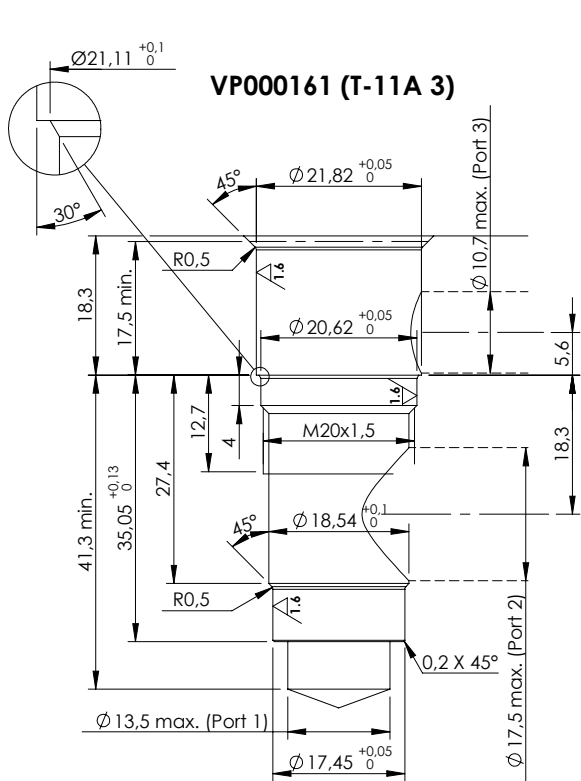


General Tolerances:

◎	0.03
⊥	0.02



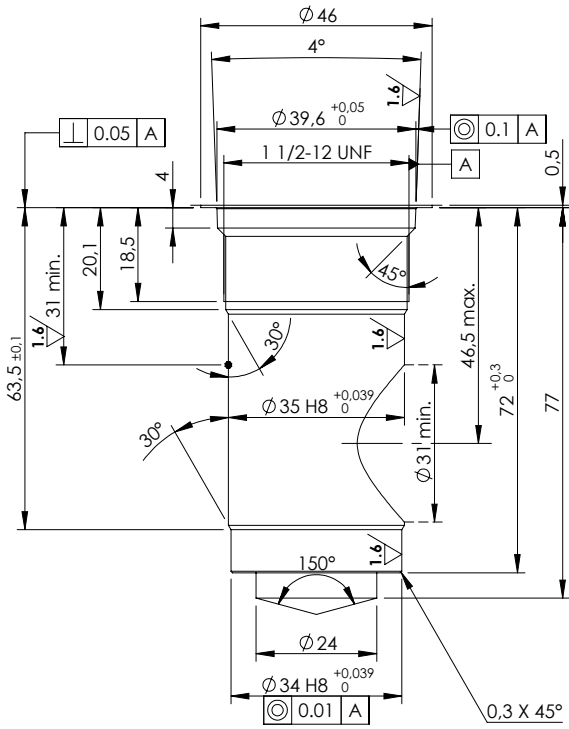
General Tolerances: $\text{Ⓢ} \text{ } 0.03$
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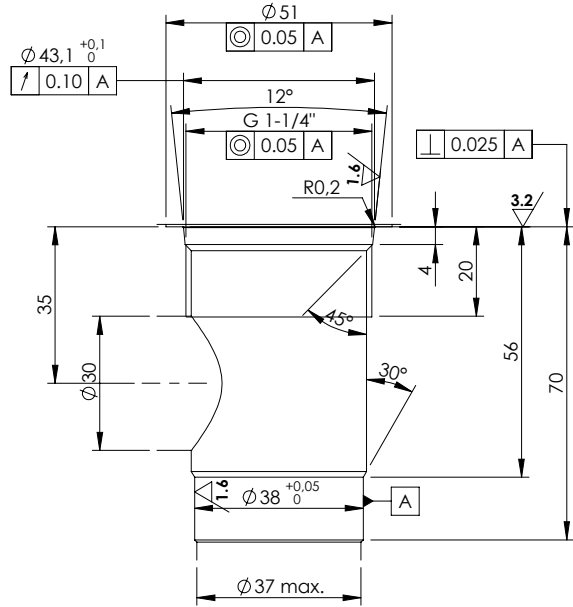
General Tolerances:

\varnothing	0.03
\perp	0.02

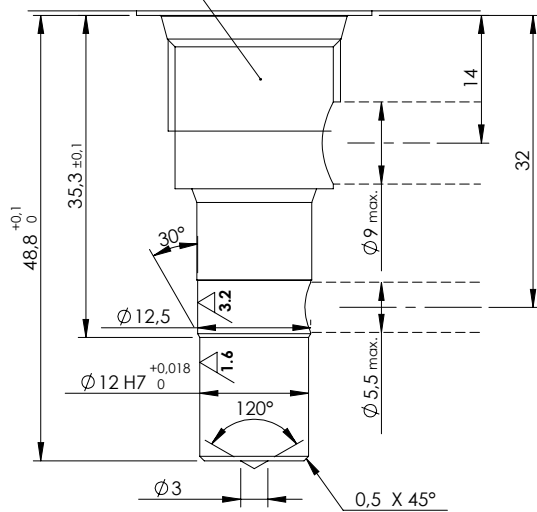
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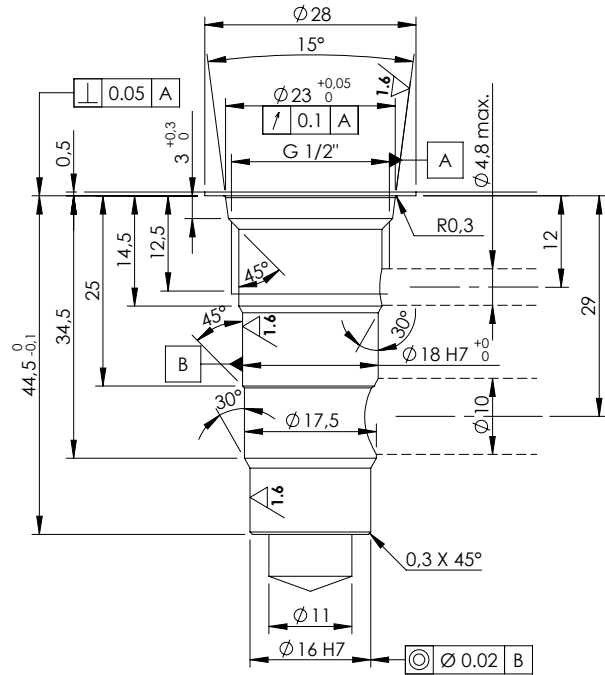
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Cavity SAE-08-2N VP000193

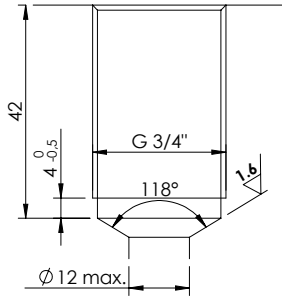


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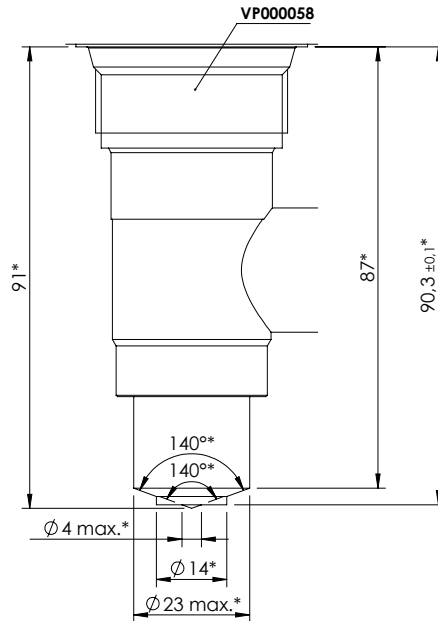


General Tolerances: \varnothing 0.03
 \perp 0.02

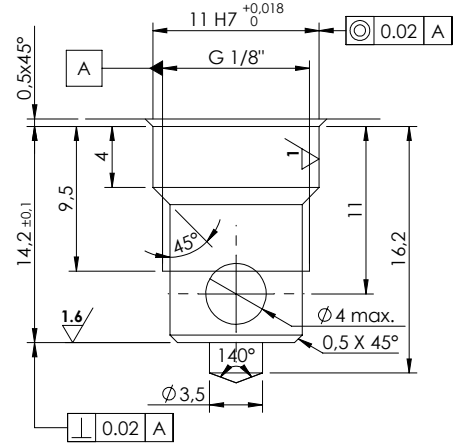
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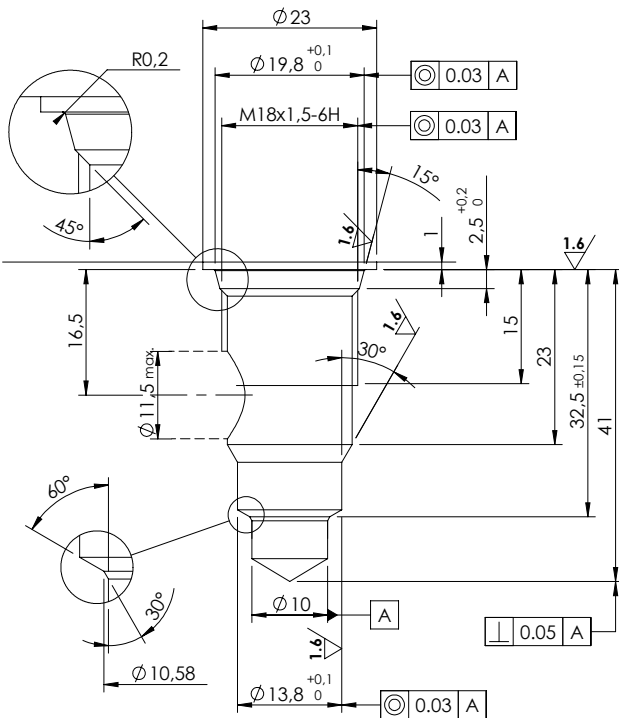
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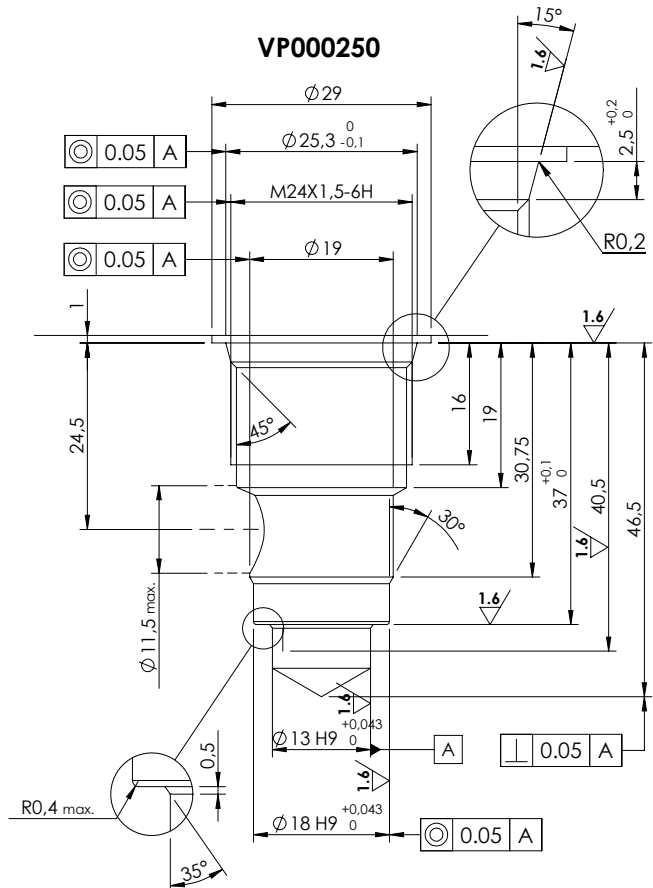
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VP000249

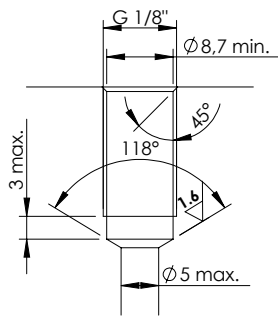


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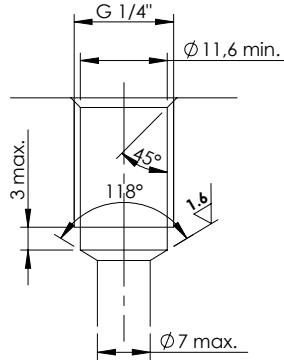


General Tolerances: $\text{◎ } 0.03$
 $\text{┘ } 0.02$

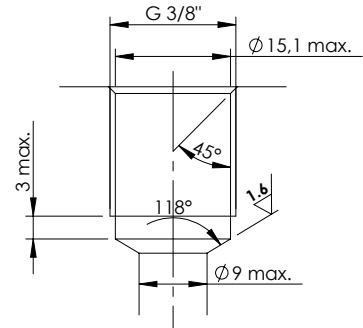
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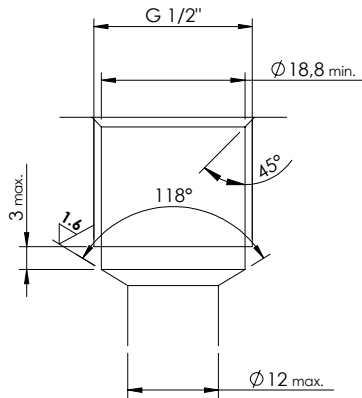
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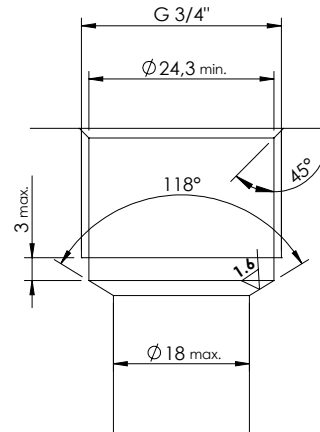
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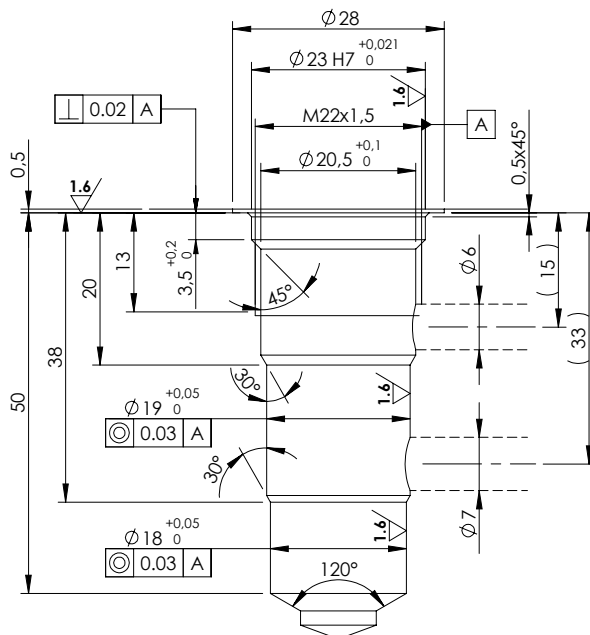
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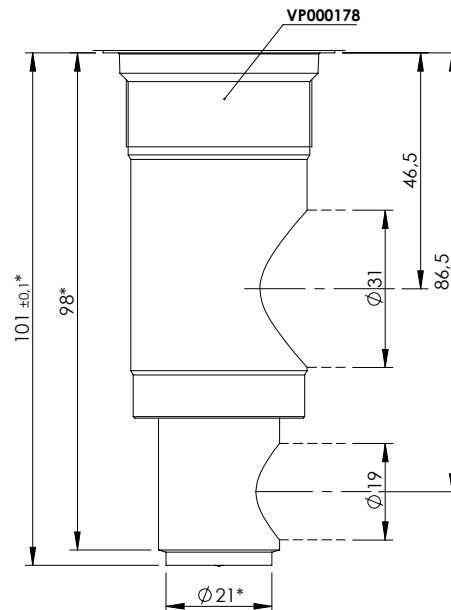
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VP000314



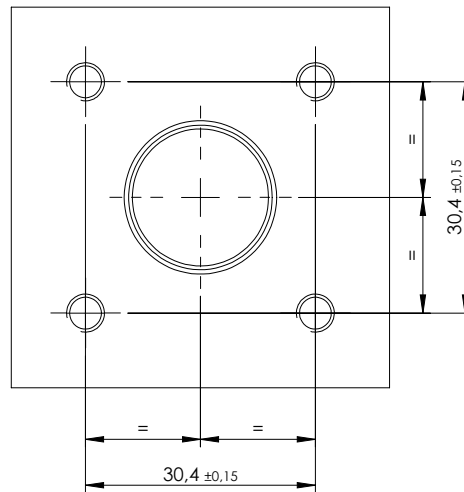
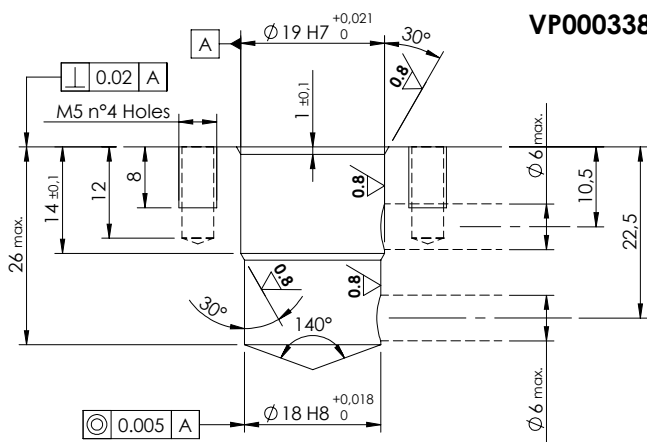
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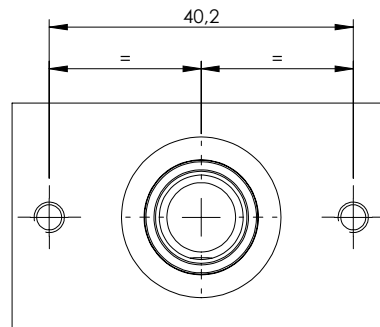
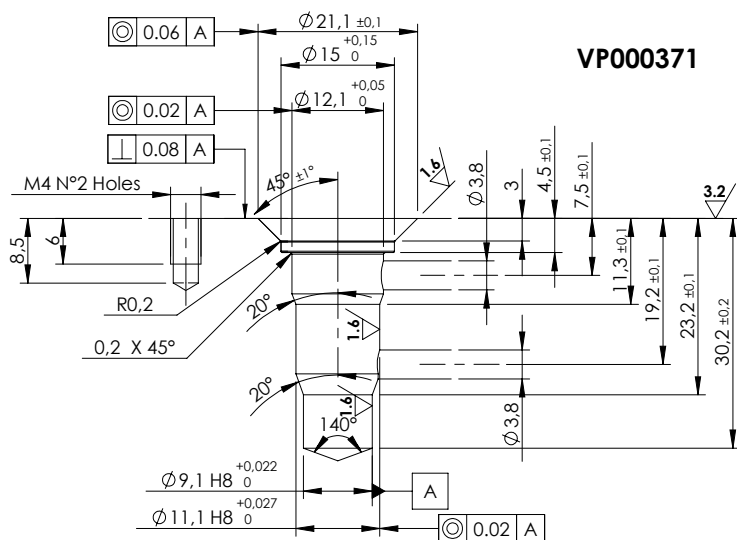
General Tolerances: $\text{Ⓞ} 0.03$
 $\text{Ⓜ} 0.02$

SPECIAL CAVITIES

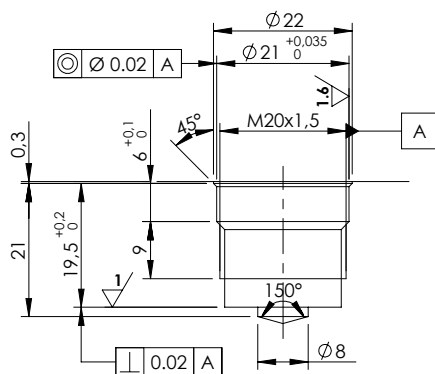
VP000338



VP000371

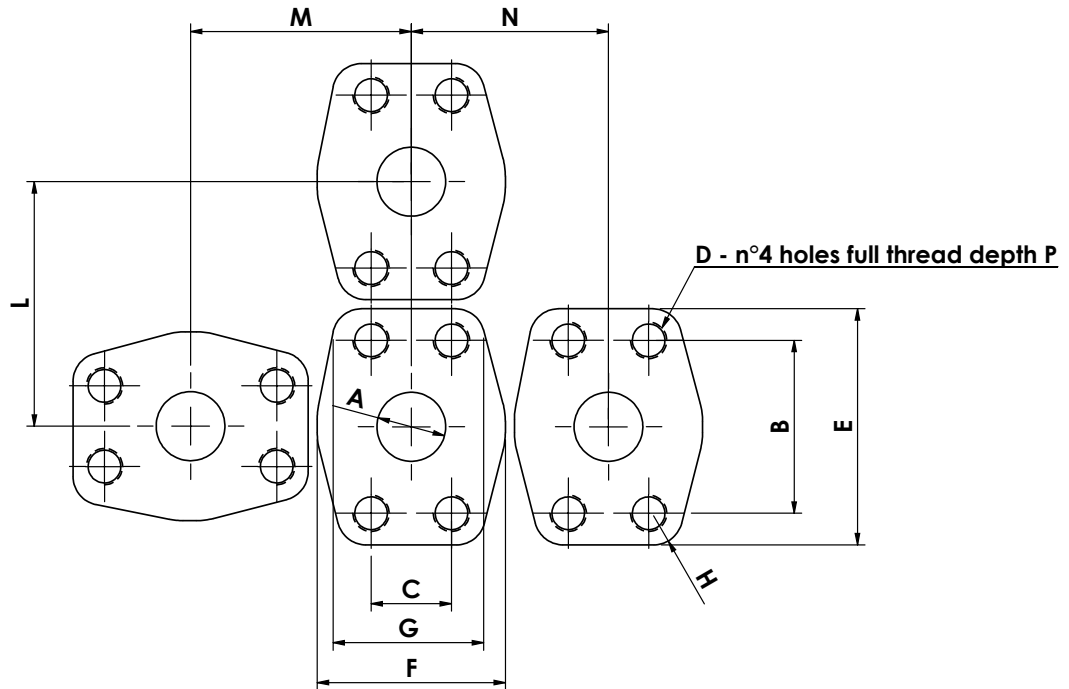


VP000445



General Tolerances:  0.03
 0.02

SAE FLANGE



FLANGE SAE 3000 PSI (MEDIUM PRESSURE)

		1/2	3/4	1"	1" 1/4	1" 1/2
A	∅ max.	13	19	25,5	32	38
B	-	38,1	47,6	52,4	58,7	69,9
C	-	17,5	22,2	26,2	30,2	35,7
D	unc-2B	5/16-18	3/8-16	3/8-16	7/16-14	1/2-13
	metric	M8	M10	M10	M10	M12
E	-	54	65	70	79	94
F	-	46	52	59	73	83
G	min.	33	41	48	54	64
H	radius	8	9	9	10	12
L	min.	56	68	72	82	96
M	min.	52	61	67	78	90
N	min.	49	55	61	75	85
P	min. mm	24	22	22	28	27

FLANGE SAE 6000 PSI (HIGH PRESSURE)

		1/2	3/4	1"	1" 1/4	1" 1/2
A	∅ max.	13	19	25,5	32	38
B	-	40,50	50,80	57,2	66,7	79,4
C	-	18,2	23,80	27,8	31,80	36,50
D	unc-2B	5/16-18	3/8-16	7/16-14	1/2-13	5/8-11
	metric	M8	M10	M12	M14	M16
E	-	56	71	81	95	113
F	-	48	60	70	78	95
G	min.	38	48	54	60	70
H	radius	8	10	12	14	17
L	min.	59	75	84	99	116
M	min.	56	70	80	90	108
N	min.	53	66	75	83	101
P	min. mm	21	24	27	25	35

TECHNICAL SPECIFICATIONS

Modena, 28/02/2011

MATERIALS

CARTRIDGES AND INTERNAL COMPONENTS: Cartridge bodies are manufactured from high grade cold drawn steel bar and all the external parts are zinc plated for a long durability also in difficult environments. Valve's internal working parts are hardened and ground or lapped for maximum performance and durability.

MANIFOLDS: Cartridge and parts in body valve manifolds and integrated circuit blocks are manufactured from high strength aluminum bar and high quality steel. As a standard, steel manifolds are always zinc plated (Crome 3 treatment) while aluminum bodies can be anodized on request. For complete specifications and compatibilities, please consult our Engineering department.

For pressures above 210 bar we recommend to use steel bodies. In most cases the aluminum bodies are strong enough, but if transient peak pressures are frequently encountered, there is a possibility of fatigue cracks.

COILS: external encapsulating material of our coils is made of class H thermoplastic compound as well as internal copper wire.

PORTS

Standard port dimension on our valves, when not flanged, is BSPP size, ranging normally between G1/4" and G1-14". SAE 'O' Ring and NPT ports are available on request, as well as special flange dimensions.

SEALS, BACK-UP RINGS AND SLIDE RINGS

We use Acryl-Nitrile Butadiene NBR (BUNA-N) seals as standard for temperatures between -30°C and +100°C. Viton seals or other compounds are available on request.

Back-up rings and slide rings are made of reinforced poly-tetrafluoroethylene (PTFE).

STORAGE OF NEW VALVES

The valves must be stored in their original plastic envelope or cartoon box in a dry, dust-free atmosphere, free of corrosive agents, with a low moisture content and no large variations in temperature and not exposed to direct sun light or sources of heat or ozone (this could cause fast wearing of valve seals). Storage temperature must be between -20°C and +50°C.

FLUIDS AND WORKING TEMPERATURE RANGE

Recommended fluid is mineral oil based fluid, such as HL type (DIN 51524 part 1) or HLP type (DIN 51524 part 2) with operating viscosity comprehended between 10 and 380 cSt. High viscosity and low temperatures may lead to a slower valves response than in warm oil conditions.

For water based fluids, such as 95/5 and 60/40 emulsions, please consult Factory.

Fluid working temperature should be comprehended between -30°C and +100°C. For other working conditions, please consult our Engineering dept.

FUNCTIONAL TEST

All the valves we sell are subjected to functional test. The tests are carried out using ISO VG 46 hydraulic oil (viscosity of 46cSt at 40°C) and with oil temperature comprehended between 30 and 40 °C.

FILTRATION

Our valves are made of precision machined mechanical components: hydraulic circuits contamination is the main cause of the majority of failures which occurs during normal working conditions. We recommend the following filtration levels:

SYSTEM WORKING PRESSURE:	NOM. FILTRATION	CONTAMINATION CLASS:	
> 250 BAR:	10 µm	ISO 4406: 17/14	NAS 1638: 8
BETWEEN 100-250 BAR:	15 µm	ISO 4406: 18/14	NAS 1638: 9
< 100 BAR:	25 µm	ISO 4406: 19/15	NAS 1638: 10-11

INTERNAL LEAKAGE

Many of our valves have a leak proof seat design: this means that the maximum allowed oil leakage value is 1 cc/min (about 15-20 drops/min) measured with 46cSt oil at 40°C and at the maximum allowed pressure. Anyway, normally leakage is found to be less than 10 drops/min and tends to decrease or disappear after few seconds of rest of the valve. These are the maximum acceptable limits, but anyway each type of valve has different performances according to its design: please refer to our Engineering dept. for information about each valve type.

VALVE SETTING AND TAMPERPROOF DEVICES

SETTING: Our valves are supplied Factory set as stated on the corresponding catalogue page. The adjustment range and maximum setting figures shown on the catalogue are the safe limits according to each valve specific design: in the majority of the cases higher or lower values could be attainable, but they should be used only with written approval of our Engineering dept. In any case, setting must always be carried out using an appropriate gauge or pressure/flow measuring equipment.

TAMPERPROOF: The majority of our cartridges and parts in body valves have the possibility to be equipped with a plastic tamperproof cap to prevent any undesired modification of valve setting: please refer to each catalogue page for the choice of the correct cap. On request, valve can be supplied already Factory set and sealed.

CARTRIDGE VALVE INSTALLATION

The correct machining of the cavities is critical to ensure best performance of our cartridges. Cavity tools are available for sale and cavity drawings can be found in the specific section of our catalogue or requested to our Engineering dept.

To correctly install cartridges into their cavity, please follow this procedure:

- Check that external seals and back-up ring are correctly fitted and without any damage;
- Ensure that cavity and cartridge body are clean and without any visible contamination;
- If necessary, immerge cartridge body into clean oil to take away any impurity and to lubricate the seals;
- Screw the cartridge into its cavity by hand, until mechanical contact is reached, being sure that during screwing there is no abnormal friction between cartridge and cavity;
- Tighten the cartridge with a calibrated torque wrench applying the correct torque as specified on the corresponding catalogue page.



TORQUE FIGURES

For correct cartridge behavior and to prevent any failure due to cartridge internal parts sticking together, the correct torque must always be applied when fitting cartridges into their cavities: the correct torque value can be found on each cartridge catalogue page.

COILS

ED RATE: All our coils are rated ED 100%, so they can stay energized during 100% period of the working cycle, provided that nominal voltage and maximum ambient temperature are not exceeded.

TEMPERATURE CLASS: As standard, encapsulating material and copper wire are rated CLASS H: this means that ambient temperature + temperature rise due to coil operation cannot exceed 180 °C. Class F coils are available on request (maximum 155 °C). External surface of the coil can easily reach very high temperature after long energizing period (80-100°C): particular care must be taken to avoid accidental injuries to workers and operators. To prevent premature burning of the coils, it is also requested that coils are installed in such a way to grant air circulation around them and to prevent excessive heating of the surrounding ambient.

IP PROTECTION CLASS: Standard insulation class of our coils is IP65, provided that all the seals between coil and solenoid cartridge tube/nut and between coil and connector are all properly fitted. Coil with Deutsch connector are rated for IP69K insulation class.

INLET VOLTAGE: Normally, our coils can accept fluctuations of inlet voltage comprehended between $\pm 10\%$ without compromising normal functionality, unless specified on each coil catalogue page. In case of different requirements, please refer to our Engineering dept.

POWER SUPPLY: Our solenoid operated cartridges are designed to operate only with DC (direct current) power supply: in case of AC (alternate current) applications, please apply between power supply and coil a current rectifier and use the proper RAC (rectified alternate current) coil.

Engineering Department



GENERAL TERMS OF SUPPLY – OUTLINE AGREEMENT

San Cesario Sul Panaro (MO): 31/10/2011

1 SUBJECT

The present general terms of supply (or outline agreement) have been drafted to regulate all the supply relations existing between Vendor and Customer, which will be conducted at the conditions hereinafter described and/or on the basis of any additional agreements specifically entered into between the parties.

If these general terms of supply should contain any clauses or prescriptions that conflict with specific conditions of supply agreed between the parts, these latter shall prevail.

2 CUSTOMER ORDERS

The Customer's orders must be transmitted to the Vendor in written form (also via fax, or using telecommunications and electronic means) and must contain the following information:

- a) date and place of issue of the order;
- b) exact denomination of the Customer company and its complete address;
- c) a reference to the relative offer made by the Vendor company (if such an offer exists);
- d) complete Vendor's identification code, with a description of the product ordered if necessary and the relative technical specifications of all the products to which the order refers;
- e) the required quantities;
- f) the agreed prices (if available);
- g) the quality requirements with which the Vendor must comply in execution of the order;
- h) the signature of an authorised representative;
- i) the required term of delivery;
- l) terms of payment;
- m) shipping agent.

Orders are intended as accepted when the relative order confirmation duly signed by the Vendor arrives at the registered address of the Customer, or if such a document is not forthcoming, orders will be considered to be confirmed by the Vendor at the terms of supply specified herein if they are not explicitly refused in writing within the term of 10 working days from the date of the order in question.

2.1 PRICES

The prices established by the Vendor and/or agreed upon with the Customer shall remain fixed for the entire period of the order or for the agreed period; said period shall not be subject to modification except in the presence of exceptional events and/or causes of force majeure (e.g. uncontrolled price increases of raw materials or energy, etc.); in such cases new agreements will be entered into with customers.

3 EXECUTION OF THE CONTRACT OF SUPPLY - AMENDMENTS

- The terms of the contract of Supply are intended as final and executive when:
- the Customer transmits to the Vendor the purchase order in written form relative to the ordered product, specifying the requirements set down in heading 2 above;
 - the Vendor has issued its Order confirmation and transmitted it to the Customer, or has failed to refuse the order in writing within 10 working days from the date of the order in question (See heading 2).

Registered Office, Head Office and Production Plant: Via della Meccanica, 50 - 41018 – San Cesario sul Panaro, Modena (Italy)
Tel. +39.059.5185400 - Fax. +39.059.924743 - E-mail: info@atlanticfluidtech.com - Web: www.atlanticfluidtech.com
P. IVA e C.F.: 00899540363

Once the contract has been signed, it must be fully and duly executed by the parties. Any amendments or cancellations of the contract can only take place further to the stipulation of agreements between the parties (Vendor and Customer) that take into account, on a reciprocal basis, any possible compensation for reimbursement of expenses sustained (materials, labour, etc.) to be paid to the more diligent party that receives such a request for amendment or cancellation.

In any event, the Customer is entitled to request modifications relative to orders it has already issued in relation to the quantity and/or characteristics of the ordered products, by means of the issue and transmission to the Vendor of a specific order variant, which shall be construed as implicitly accepted by the Vendor if this latter fails to raise any objections within the term of 10 working days from the receipt of such an order variant.

The execution of the contract of supply can be suspended and/or cancelled, also without notice to the customer, due to causes of force majeure (e.g. grave natural disasters, social unrest, epidemics, etc.) that are outside the Vendor's control.

4 TECHNICAL MODIFICATIONS

Except in the presence of contrary agreements with Customers, the Vendor can make technical modifications to the product specifications without notice; in any event, the Vendor undertakes to execute customer orders/contracts that are already confirmed without applying any modifications and/or anyway guaranteeing interchangeability of the relative products.

5 PRODUCT QUALITY AND VERIFICATION OF CONFORMITY

All the products are subject to the necessary checks/tests in the various production phases in order to guarantee conformity with the specifications and calibrations indicated in the catalogues, drawings, and/or technical datasheets; moreover, the Vendor's production process complies with the Quality System requirements defined by UNI EN ISO 9001, certified by an accredited Institute. The Customer is entitled make visits to and to carry out quality audits at the Vendor's plant after arranging an appointment for such occasions.

Because of the large range of technical features and operating conditions of the equipment manufactured by the Customer, the Vendor shall not assume any liability for the results of tests performed by third parties. The Customer is therefore responsible for the final choice of the valve and for the adoption of all the measures required to achieve the required functional and safety specifications on the system in which the valve is to be installed, in addition to the compliance with any specific standards applicable to the system in question.

In the event of nonconforming products the responsibility for which can be attributed to the Vendor, in addition to the warranty actions provided for in the following article 6, the Customer can demand that the Vendor perform the necessary corrective actions in order to improve its level of quality rapidly.

5.1 "FIRST SPECIMENS" CHECK

For new special products made to Customer's specifications or customised to a significant extent with respect to the equivalent standard products, when so requested by the Customer the Vendor can, further to prior agreement with the Customer, carry out checks on "First Specimens"; this procedure entails the supply of "Prototypes or Specimens" of Products accompanied by Test Certificates detailing dimensional checks and functional tests evaluating diverse technical aspects.

In this case the Customer's validation of subsequent supplies must be performed on the basis of the "First Specimens".

6 WARRANTY

The Vendor provides a warranty to the first Customer covering its valves against defects in material or workmanship for a period of 24 months from the time of first assembly, provided said first assembly takes place within 6 months from the date of manufacture as marked on the valve, and provided the valve is installed and utilised in accordance with the conditions of use prescribed by the Vendor and/or in compliance with the standards adopted in accordance with industrial best practices. Seals and O-rings are expressly excluded from the warranty.

This warranty is applicable exclusively to the first Customer/Purchaser of the Vendor's products and is not transferable.

In the event that the Customer considers that the goods or a part of the goods are defective for causes attributable to the Vendor, the Customer shall signal/protest the presence of the alleged defects by sending a detailed written report, thereby allowing the Vendor to verify the effective existence of the claimed defects/flaws by means of inspections performed by its technical personnel.

Having ascertained that the claimed defects are effectively present and having accepted that they are attributable to the fault of the Vendor, this latter undertakes to repair or replace the goods in question in a reasonable time interval and/or inform the Customer of the cause of such defects.

This warranty is not applicable to products that have been subject to conditions of contamination in the customer's hydraulic circuit, or to products that are incorrectly utilised or subject to tampering performed without the Vendor's supervision or authorisation.

The Vendor's warranty does not envisage pecuniary compensation or credit notes in respect of defective material; specifically, the Vendor shall not be held responsible under any circumstances for loss of earnings, costs of disassembly and reassembly of the product, for any damages connected with such an operation, and for any whatsoever cost relative to the installation of the repaired or replaced valves, including the costs arising in relation to system outages.

If the product supplied is to be assembled in plants potentially capable of causing third party damages of a magnitude that is significantly greater than the price of the product, it is the Customer's responsibility to adopt all the possible safety measures to avoid any such damage, since it is aware that series production of valves at market prices leads to the risk, albeit negligible, of the possible presence of defective parts.

If the Customer embarks on a recall or remediation campaign of its own machines, on any whatsoever market, in order to replace or repair parts that have been ascertained to be defective, this action will be undertaken on the basis of bilateral agreements to be defined.

If the Customer is subjected to legal proceedings for "civil product liability" or if it is accused of violation of legal prescriptions connected to the Vendor's products, the Customer must inform the Vendor immediately of such a situation, and the Vendor shall participate in the analysis of the problem in collaboration with the Customer.

Wherever considered necessary, specific agreements can be stipulated between Customer and Vendor as an alternative to the foregoing warranty procedures.

6.1 SUPPLY QUALITY OBJECTIVES

Specific supply quality objectives may be established in certain cases, to be agreed with Customers; in such cases the Vendor undertakes to cooperate with the Customer in order to define all the aspects necessary to fulfil the objectives in question, and the necessary actions that must be undertaken when such objectives are not achieved.

The possibility of economic recourse or penalties applied by the Customer in relation to the value of the supplies is not contemplated under any circumstances.

7 TECHNICAL ASSISTANCE

The Vendor guarantees to the Customer its availability to perform joint analyses, free of charge, of any defects reported by end users, also when such analyses are carried out on the Customer's site; in this case, if the defectiveness is attributable to the responsibility of the Customer, the Vendor will issue a debit note relative to its services rendered. When the Customer requires the assistance of the Vendor's technical personnel on its sites it must make a written request to this effect (which can be transmitted also by e-mail or fax).

8 PRESCRIPTIONS OF INTENDED USE.

The Customer is expressly prohibited from using the products sold by the Vendor for purposes other than those set down in the offer or in the catalogues. Specifically, the Vendor's Dealers or Agents are not authorised to approve the use of the products supplied for the following applications:

- systems for road vehicles for the transport of passengers or goods and subject to safety Standards and Directives, such as (without limitation) steering systems and brake systems
- aircraft or spacecraft;
- military equipment;
- rescue or emergency equipment or vehicles;
- systems to be used in conjunction with atomic installations;
- systems for use in explosive or otherwise hazardous environments.

If the Customer intends to use the goods supplied for any applications falling into one or more of the above categories or other similar categories, or for any applications other than those expressly described in the documentation, or in the presence of doubts concerning the intended application, it must seek prior specific approval directly from the Manufacturer and await the receipt of written authorisation for the intended application before proceeding.

Any damage suffered by the Customer or third parties arising from failure to comply with the terms of the prescriptions as at the foregoing subsections, or due to the failed observance of the specifications/directions for use supplied by the Vendor in the pages of its catalogue or in the assembly drawings, will be borne entirely by the Customer.

9 OBLIGATION OF DILIGENCE OF THE CUSTOMER IN THE PREVENTION OF DAMAGE IN THE CONTEXT OF ITS OWN PRODUCTION PROCESS.

If the product is utilised in a production process in such a way that any defects in the supplied product could give rise to substantial damages to the Customer or third parties deriving from production plant downtimes, the Customer undertakes to acquire a sufficient number of the parts in question to replace any faulty parts, and further undertakes to engineer the production process in such a way that such replacements can be carried out quickly and easily. In any event, the Vendor undertakes to repair or replace any parts that are found to be defective due to causes for which it is ascertained to be responsible.

10 DISCREPANCIES BETWEEN THE CONTENTS OF THE CUSTOMER OFFER AND THE PRESCRIPTIONS OF THE PRESENT TERMS OF SUPPLY.

Any aspects or conditions specified in the Customer Order that depart from contents of the present of terms of supply will be disregarded and construed as automatically replaced by the terms and conditions stated herein.

11 EXECUTION OF SUPPLIES ARRANGED PRIOR TO THE ACCEPTANCE OF THESE GENERAL TERMS.

If the supply is executed before the present general terms have been accepted by the Customer, the contract of supply shall be construed as having been entered into at the general terms and conditions specified on the back of the invoice and the delivery note, unless the Customer returns the goods to the Vendor, carriage forward, in exactly the same condition in which they were shipped within the term of 5 working days from the date of their receipt.

12 DELIVERY - DOCUMENTATION

Except in the presence of contrary agreements entered into between the parties, reference must be made in respect of the terms of delivery, to the terms specified by the Vendor in its Order Confirmation. At the order confirmation stage the Vendor can propose changes to the requested delivery date on the basis of its internal production requirements. The Customer reserves the right to accept or refuse the proposed modifications on the basis of its own requirements.

Any delivery terms specified in the Customer's orders or in other written documents exchanged between the parties shall not be considered to be binding except in the presence of a specific written agreement to such effect.

If the Customer intends to rescind from the contract and/or advance claims for compensation for damages further to failed observance of the terms of delivery, it must notify the Vendor expressly of such intentions at the time it transmits the order, and it must request an explicit confirmation from the Vendor specifying that it accepts such conditions.

All shipments will be sent with an attached delivery note bearing the following information: the order number, vendor's product code and Customer code (when required and present), description, quantity, identity of the shipping agent, and details concerning the transport means, number of items of packing, gross weight, etc.; the availability of this information serves to allow rapid correlation of the incoming goods with the shipping documents.

The Customer undertakes to inspect the goods delivered within and no later than 10 (ten) days from the time of receipt and it will automatically waive its rights to claim for missing items or manifest defects of the goods if it fails to declare such circumstances within the same 10 (ten) days from the time of receipt.

13 TRANSPORT

Except in the presence of contrary written agreements between the parties, the means of transport and the carrier will be chosen by the Customer.

Transport costs are charged to the Customer, which is required to refund them to the Vendor in the event that this latter party is obliged to pay them in advance on the Customer's account.

If the Customer fails to specify the required carrier and means of transport, these aspects can be chosen freely at the discretion of the Vendor, which will stipulate the transport contract in the name of the Customer and on the account of this latter.

Whether the carrier is chosen by the Customer or whether it is chosen by the Vendor in the name of and on the account of the Customer, the goods will be transported entirely at the risk and responsibility of the Customer, which can recourse directly to the carrier in the event of damage sustained during transport. The Customer is not entitled to make any claims against Vendor in such respects

14 PAYMENT

The terms and methods of payment for the supplies are specified in the Vendor's Offers and in the Customer's orders; when such orders are accepted by means of an order confirmation they become an integral and essential part of the supply contract.

Unless otherwise agreed, payment of the price of the supply must be made using the domicile and methods indicated by the Vendor. In the case of a delayed payment arrears interest will be applied in the measure of the Euribor 365 days rate increased by 4% per annum.

The Customer is not entitled to withhold sums from payments due to the Vendor for any whatsoever reason unless such action has been previously agreed upon and approved in writing by the Vendor.

15 EXTENDED PAYMENT – OWNERSHIP RESERVATION

If the payment is extended, the sale shall be understood to have taken place with reserved ownership pursuant to the terms of articles 1523 et seq. of the Italian civil code without any further provisions having to be taken successively. The costs involved in establishing proof of reserved ownership as specified in art. 1524 of the Italian civil code shall be borne entirely by the Customer.

16 FORM OF THE PROPOSAL, THE ACCEPTANCE AND ANY WHATSOEVER OTHER LEGALLY SUBSTANTIAL COMMUNICATION

The proposal, acceptance, any possible claims, and any other legally substantial communications must be written and signed in a legible manner. Such communications can be transmitted by any means, including fax and e-mail. In this latter eventuality the e-mail message must bear the author's name at the foot of the page.

17 CIVIL LIABILITY INSURANCE

The Vendor undertakes to take out and maintain a "Civil Product Liability Insurance" policy. On the request of the Customer, the Vendor will produce the documents relative to such an insurance policy.

Any accidents resulting in damage to third parties in which the Vendor's products are involved and which could give rise to product civil liability claims for compensation, must be communicated with the maximum promptness to the Vendor so that this latter can participate in the relative inquiry, also through its appointed technical expert, starting from the stage of the initial investigations.

18 CONFIDENTIALITY

The Vendor and the Customer reciprocally guarantee the confidentiality of all the information, data, and all documents that they exchange during the course of their business relations.

In particular documents which are sent to the Customer like drawings, technical specifications, test reports, etc. and containing manufacturing or functional data of the



products, have to be considered property of the Vendor and they cannot be disclosed or passed to third parties without the written consent of Vendor's Management.

19 ACCEPTANCE OF THE GENERAL TERMS OF SUPPLY – AMENDMENTS OR CANCELLATIONS

These General Terms of Supply can be transmitted to the Customer in the following ways:

- DIRECTLY, during the stipulation of a bilateral agreement or contract;
- INDIRECTLY, attached to the Vendor's Order confirmations.

In both cases they are considered to have been TACITLY ACCEPTED by Customers when no contrary communication is received within the term of 15 days from the date of receipt of the terms.

If the Customer intends to amend or rescind from these terms of supply it must provide the Vendor with written notice to this effect at least 3 months before the relative amendments or withdrawal are to take effect.

20 APPLICABLE LAW.

For all matters that are omitted from the present agreement the terms of supply shall be understood as being regulated by the relevant provisions of Italian Law.

If the Customer's domicile is in a foreign country, or in any cases in which the contract includes aspects of an "international nature", the present agreement and any disputes that should arise in relation to the same shall be subject to the provisions of Italian Law, with sole jurisdiction held by the Italian ordinary courts in the competent law court of Modena.

Atlantic Fluid Tech S.r.l. General Management



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AB000002	pag. 21.00.010/19.90.200	AV000035	pag. 19.10/20/30.500	CB000011	pag. 6.03.130
AB000003	pag. 21.00.010/19.90.200	BD000034	pag. 18.01.010	CB000012	pag. 6.01.030
AB000004	pag. 21.00.010	BD000063	pag. 20.01.040	CB000013	pag. 6.03.170
AB000005	pag. 21.00.030/19.90.200	BD000065	pag. 20.01.110	CB000014	pag. 6.03.160
AB000007	pag. 21.00.010/19.90.200	BD000066	pag. 20.01.120	CB000015	pag. 6.01.060
AB000008	pag. 21.00.040	BD000081	pag. 20.01.060	CB000016	pag. 6.01.020
AB000010	pag. 21.00.030	BD000082	pag. 20.01.070	CB000017	pag. 6.03.170
AB000011	pag. 21.00.020/19.90.200	BD000083	pag. 20.01.080	CB000022	pag. 6.03.160
AB000012	pag. 21.00.020/19.90.200	BD000084	pag. 14.06.050	CB000023	pag. 6.01.010
AB000014	pag. 21.00.030/19.90.200	BD000087	pag. 14.06.020	CB000024	pag. 6.01.040
AB000015	pag. 21.00.090/19.90.220	BD000088	pag. 14.06.060	CB000025	pag. 6.01.120
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AB000021	pag. 19.90.200	BD000127	pag. 14.06.040	CB000027	pag. 6.01.120
AB000022	pag. 21.00.050/19.90.200	BD000131	pag. 20.05.040	CB000028	pag. 6.01.100
AB000023	pag. 21.00.050/19.90.200	BD000142	pag. 14.06.040	CB000029	pag. 6.01.070
AB000024	pag. 21.00.050/19.90.200	BD000197	pag. 14.06.030	CB000033	pag. 6.01.030
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AB000043	pag. 21.00.010/19.90.200	BD000199	pag. 14.02.020	CB000035	pag. 6.01.070
AB000046	pag. 19.90.200	BD000200	pag. 14.03.050	CB000043	pag. 6.01.190
AB000048	pag. 19.90.220	BD000201	pag. 14.06.060	CB000045	pag. 6.01.080
AB000092	pag. 19.90.220	BD000202	pag. 14.06.050	CB000051	pag. 6.03.140
AB000104	pag. 19.90.220	BD000203	pag. 14.06.070	CB000057	pag. 6.01.030
AB000105	pag. 19.90.220	BD000204	pag. 14.06.070	CB000058	pag. 6.01.030
AB000131	pag. 19.90.210	BD000205	pag. 14.06.020	CB000062	pag. 6.01.080
AB000132	pag. 21.00.070/19.90.210	BD000207	pag. 20.01.050	CB000066	pag. 6.01.080
AB000133	pag. 21.00.070/19.90.210	BF000004	pag. 18.02.020	CB000067	pag. 6.01.080
AB000136	pag. 19.90.210	BF000019	pag. 20.04.020	CB000070	pag. 6.03.130
AB000137	pag. 21.00.080/19.90.230	BF000020	pag. 20.04.010	CB000072	pag. 6.01.040
AB000138	pag. 21.00.080/19.90.230	BP000039	pag. 20.01.100	CB000073	pag. 6.01.040
AB000139	pag. 19.90.230	BP000081	pag. 13.15.290	CB000085	pag. 6.01.070
AB000140	pag. 19.90.230	BP000108	pag. 14.04.020	CB000093	pag. 6.01.070
AB000141	pag. 19.90.230	BP000109	pag. 14.04.010	CB000094	pag. 6.01.060
AB000142	pag. 19.90.230	CB000001	pag. 6.03.150	CB000102	pag. 6.03.150
AB000143	pag. 21.00.060/19.90.210	CB000002	pag. 6.01.050	CD000001	pag. 11.01.010
AB000144	pag. 21.00.060/19.90.210	CB000003	pag. 6.01.050	CD000003	pag. 11.12.200
AB000145	pag. 21.00.060	CB000004	pag. 6.01.090	CD000004	pag. 11.12.200
AB000149	pag. 21.00.100	CB000005	pag. 6.01.110	CD000019	pag. 4.01.040
AB000150	pag. 21.00.100	CB000007	pag. 6.01.010	CD000020	pag. 4.01.040
AB000158	pag. 21.00.070/19.90.220			CD000023	pag. 4.01.050
AB000159	pag. 21.00.090			CD000024	pag. 4.01.030
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CD000026	pag. 4.01.090	CD000106	pag. 4.01.130	CD000195	pag. 4.01.020
CD000027	pag. 5.01.010	CD000107	pag. 4.01.120	CD000212	pag. 4.03.150
CD000029	pag. 4.01.100	CD000109	pag. 5.01.020	CD000215	pag. 11.12.190
CD000039	pag. 4.01.030	CD000110	pag. 11.12.210	CD000216	pag. 11.12.190
CD000043	pag. 4.01.090	CD000113	pag. 5.01.020	CD000220	pag. 11.12.190
CD000045	pag. 11.01.020	CD000115	pag. 11.15.250	CD000224	pag. 5.01.030
CD000046	pag. 4.01.060	CD000119	pag. 11.05.070	CD000225	pag. 5.01.030
CD000051	pag. 11.11.160	CD000121	pag. 11.03.050	CD000226	pag. 5.01.030
CD000053	pag. 11.11.180	CD000122	pag. 11.06.080	CD000227	pag. 5.01.030
CD000054	pag. 4.01.020	CD000123	pag. 11.04.060	CD000229	pag. 5.01.030
CD000055	pag. 4.01.020	CD000132	pag. 4.01.020	CD000234	pag. 11.02.040
CD000056	pag. 4.01.020	CD000136	pag. 4.03.140	CD000235	pag. 5.02.040
CD000057	pag. 4.01.020	CD000139	pag. 4.03.140	CD000238	pag. 11.12.190
CD000058	pag. 4.01.100	CD000140	pag. 4.03.140	CD000248	pag. 11.11.160
CD000059	pag. 4.01.110	CD000141	pag. 4.03.140	CD000255	pag. 11.11.180
CD000061	pag. 5.01.010	CD000142	pag. 4.03.140	CD000260	pag. 11.08.100
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CD000066	pag. 11.12.200	CD000144	pag. 4.03.140	CD000262	pag. 11.09.110
CD000067	pag. 11.12.220	CD000145	pag. 4.03.140	CD000269	pag. 4.01.030
CD000070	pag. 4.01.030	CD000147	pag. 11.11.160	CD000276	pag. 11.09.110
CD000073	pag. 11.11.140	CD000148	pag. 4.04.160	CD000277	pag. 4.03.150
CD000075	pag. 4.01.040	CD000150	pag. 4.04.160	CD000278	pag. 4.03.150
CD000076	pag. 11.11.160	CD000151	pag. 4.04.160	CD000279	pag. 4.03.150
CD000078	pag. 11.14.240	CD000158	pag. 11.11.160	CD000280	pag. 4.03.150
CD000080	pag. 11.15.260	CD000167	pag. 13.02.040	CD000281	pag. 4.03.150
CD000081	pag. 11.12.200	CD000168	pag. 13.02.040	CD000282	pag. 4.03.150
CD000082	pag. 4.01.050	CD000169	pag. 4.01.050	CD000283	pag. 4.03.150
CD000084	pag. 13.02.040	CD000170	pag. 5.01.020	CD000284	pag. 4.03.150
CD000085	pag. 13.02.040	CD000171	pag. 5.01.020	CD000286	pag. 11.15.260
CD000086	pag. 13.02.040	CD000173	pag. 4.01.080	CD000287	pag. 4.03.150
CD000087	pag. 13.02.040	CD000174	pag. 4.01.080	CD000288	pag. 4.03.150
CD000089	pag. 13.02.040	CD000175	pag. 4.01.080/19.10.120	CD000289	pag. 4.03.150
CD000091	pag. 13.02.040	CD000176	pag. 4.01.080	CD000290	pag. 4.03.150
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CD000095	pag. 11.12.210	CD000179	pag. 4.02.070	CD000292	pag. 4.03.140
CD000096	pag. 11.11.170	CD000180	pag. 4.02.070	CD000293	pag. 4.03.140
CD000098	pag. 4.01.110	CD000181	pag. 4.02.070/19.10.120	CD000294	pag. 4.03.140
CD000099	pag. 4.01.030	CD000182	pag. 4.02.070	CD000295	pag. 11.10.120
CD000100	pag. 4.01.050	CD000183	pag. 4.02.070	CD000296	pag. 11.10.120
CD000101	pag. 4.01.050	CD000184	pag. 11.14.240	CD000298	pag. 11.16.280
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CD000304	pag. 4.01.020	CE000083	pag. 15.28.730	CE000230	pag. 15.11.320
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CD000317	pag. 4.03.150	CE000095	pag. 15.27.720	CE000235	pag. 15.13.450
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CD000335	pag. 11.12.220	CE000111	pag. 16.05.070	CE000242	pag. 15.15.550
CD000336	pag. 11.10.130	CE000112	pag. 16.05.070	CE000243	pag. 15.15.550
CD000343	pag. 11.09.110	CE000113	pag. 16.05.070	CE000244	pag. 15.15.550
CD000358	pag. 11.11.150	CE000119	pag. 16.04.040	CE000245	pag. 15.08.150
CD000376	pag. 11.13.230	CE000120	pag. 16.04.040	CE000247	pag. 15.08.150
CD000377	pag. 11.09.110	CE000121	pag. 16.04.040	CE000249	pag. 15.10.280
CD000423	pag. 4.03.140	CE000122	pag. 16.02.020	CE000251	pag. 15.10.280
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CD000444	pag. 4.01.060	CE000201	pag. 15.01.010	CE000266	pag. 15.11.330
CD000445	pag. 4.01.060	CE000202	pag. 15.02.030	CE000267	pag. 15.11.330
CE000006	pag. 15.25.700	CE000203	pag. 15.02.030	CE000268	pag. 15.13.460
CE000008	pag. 15.22.670	CE000204	pag. 15.03.050	CE000269	pag. 15.13.460
CE000009	pag. 15.19.640	CE000205	pag. 15.03.050	CE000270	pag. 15.13.460
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CE000068	pag. 15.21.660	CE000221	pag. 15.09.210	CE000289	pag. 15.09.230
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CP000116	pag. 1.03.230	CP000213	pag. 3.01.030	CR000030	pag. 2.03.070
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