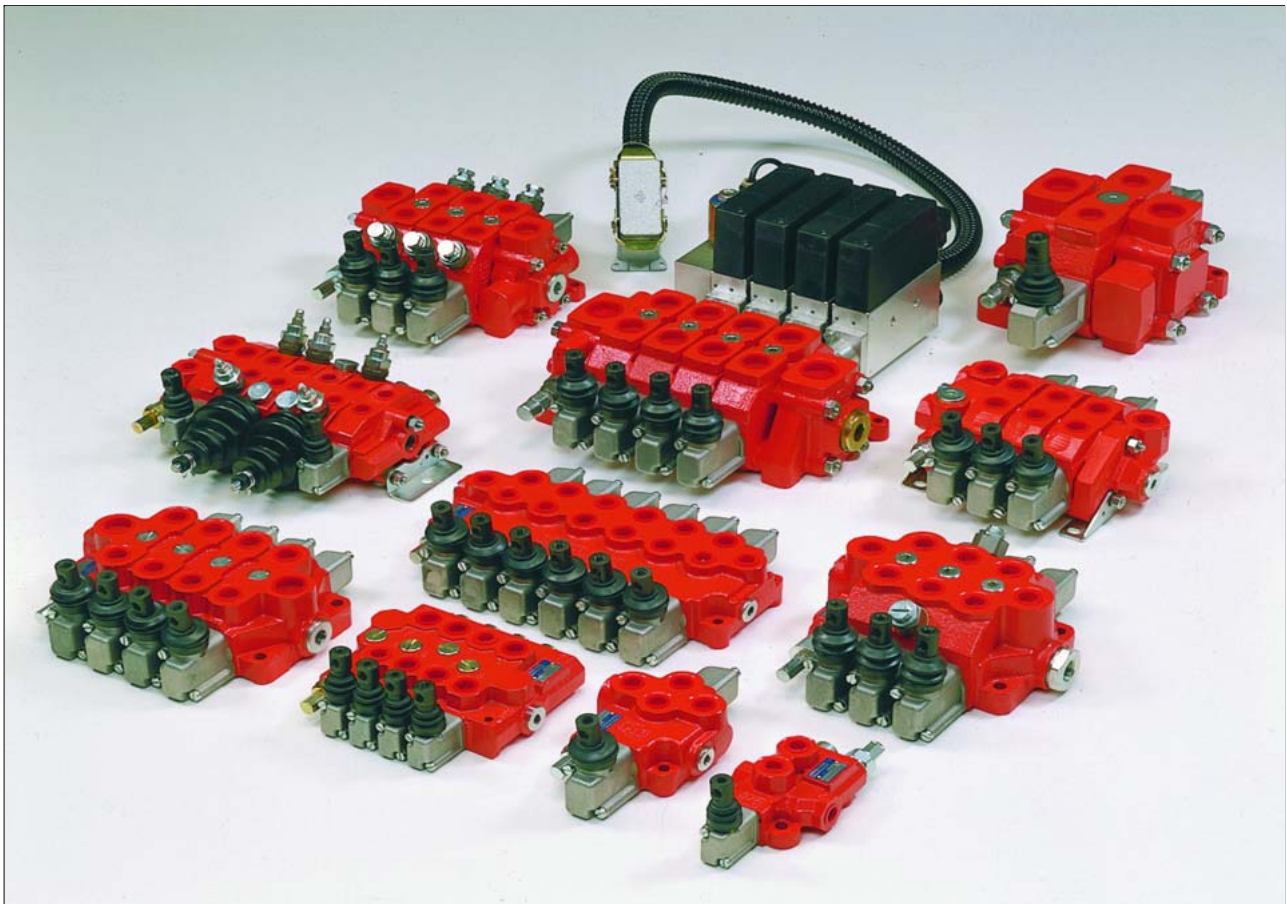


Monobloc and Sectional Directional Control Valves



HDM11P

3 Monobloc directional control valves HDM11P**Contents**

3.1	General specifications	19
3.2	Dimensional data	20
3.3	Performances curves	21
3.4	Adjustable Direct Acting - Relief Valve RV	22
3.5	Monobloc bodies	22
3.6	Spool charts	24
3.7	Schemes	24
3.8	Spool positioners	24
3.9	Lever styles	28

HDM11P

3.1 General specifications

Technical specification		
Max flow rate	l/min U.S.G.P.M.	45 12
Max continuous operating pressure supply port P	bar PSI	250 3600
Max intermittent peak pressure Work port A/B	bar PSI	320 4600
Max back pressure	bar PSI	30 430
Oil temperature	° C ° F	-10 to 80 14 to 180
Oil viscosity	mm ² /s	16 to 75
Oil filtration	μ	≤ 30

Spool leakage at 100 bar (1450 PSI), Temp. 50° C (120° F), viscosity 27 mm ² /s:		
Maximum	cm ³ /min Cu. In./min	12 0.732
Middle	cm ³ /min Cu. In./min	6 0.366
Lower values on demand (to be agreed with our Sales Dept..)		

Number of spools	2 to 6
Adjustable direct operated relief valve (tamper-proof seal available on request)	RV
Single load hold check valve	LC

3.1.1 Weight (standard version without options)

Version	kg	lb
HDM11P/2	4	8.81
HDM11P/3	5.20	11.45
HDM11P/4	6.40	14.10
HDM11P/5	7.60	16.74
HDM11P/6	8.80	19.38

3.1.2 Material specification:

Body: High strength cast-iron.
Spool: Hardened steel and chrome plated
Seals: Buna "N".

3.1.3 Standard features:

- 1) Parallel circuit
- 2) Balanced interchangeable spools (provides minimum leakage, smooth operation)
- 3) Wide selections inlets, work ports, and outlets threaded ports.
- 4) Negative overlapping of the spool.

3.1.4 Optional features available:

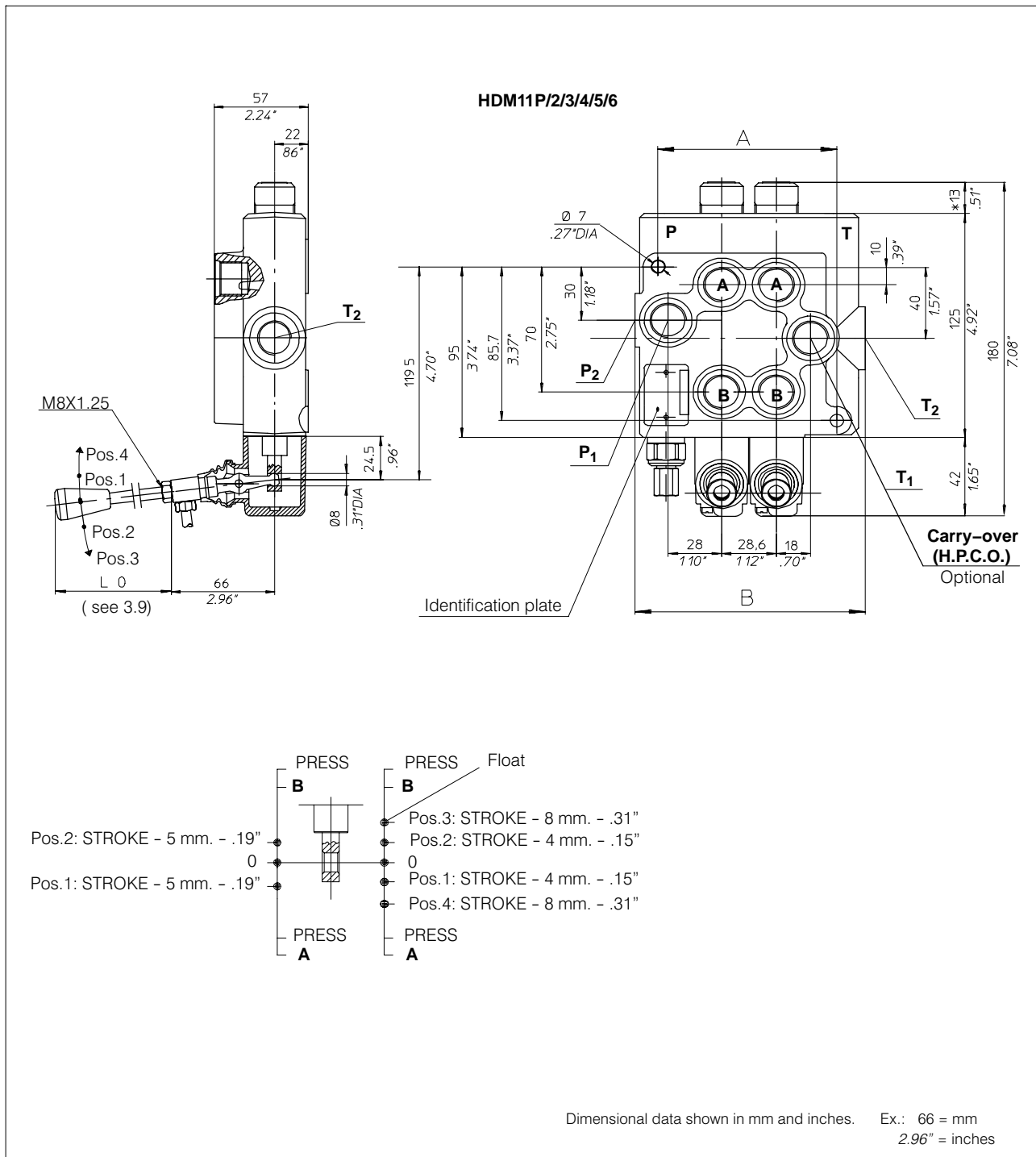
- 1) Open or closed centre positions, 3 or 4 way operations, 3 or 4 position (float position), full open centre (motoring spool) and other spool options.
- 2) Carry over.
- 3) Complete lever assembly
- 4) Wide range of positioners

3.1.5 Symbols:

P: inlet port
T: outlet port
A/B: work ports
H.P.C.O.: carry-over
RV: relief valve
P₁T₁: top inlet and outlet ports
P₂: side inlet
T₂: side outlet
 3.1.0.2: spool position
 P: pressure line
 T : exhaust line
 E: centre line (by pass).

HDM11P

3.2 Dimensional data

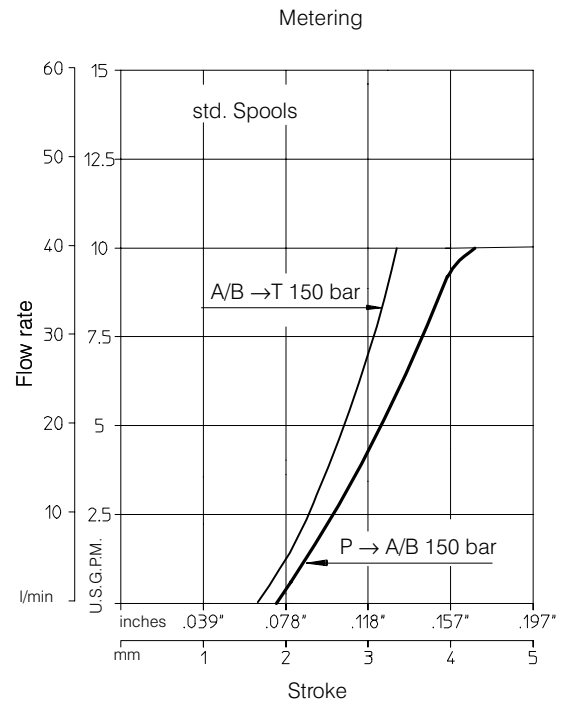
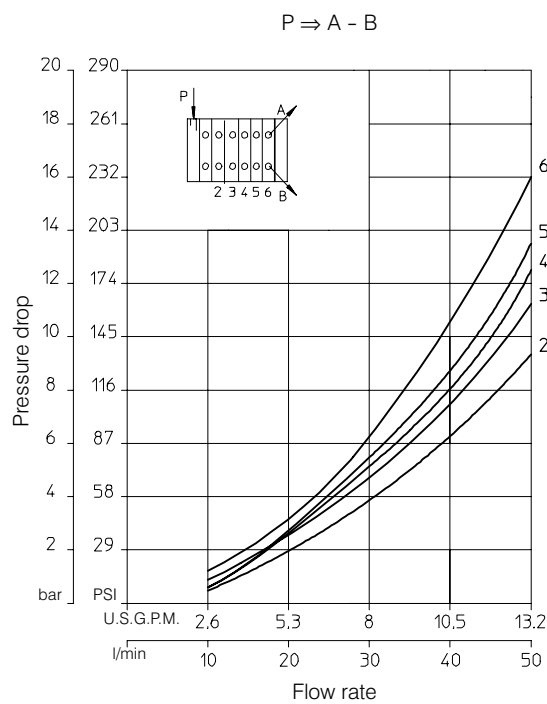
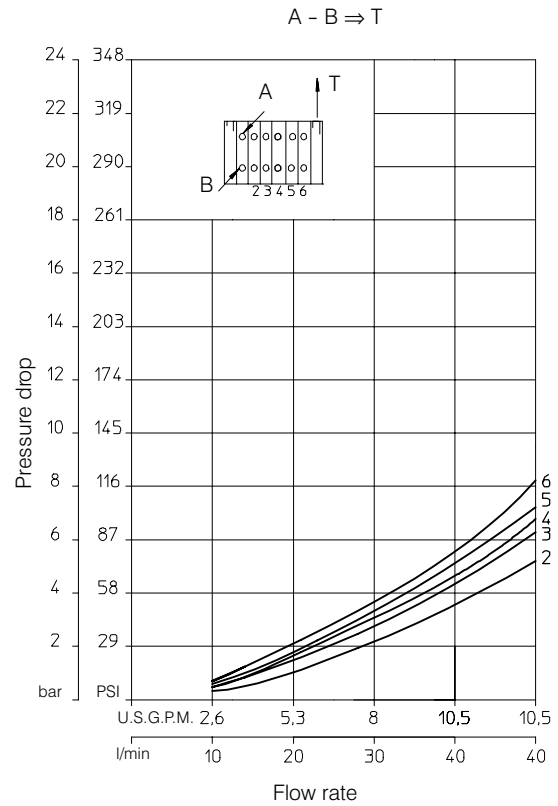
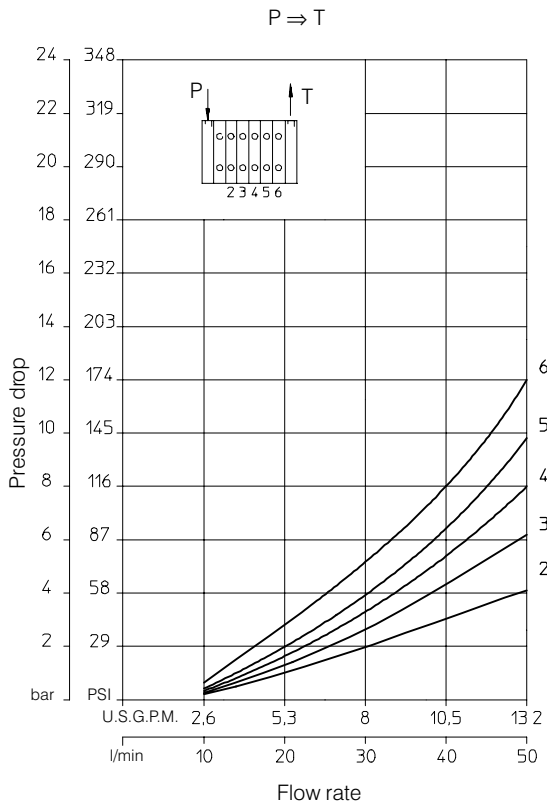


N. of sections		HDM11P/2	HDM11P/3	HDM11P/4	HDM11P/5	HDM11P/6
Dimension	A	93.6	122.2	150.8	179.4	208
		3.68"	4.81"	5.93"	7.06"	8.18"
Dimension	B	128.6	157.2	185.8	214.4	243
		5.06	6.19"	7.31"	8.44"	9.56"

HDM11P

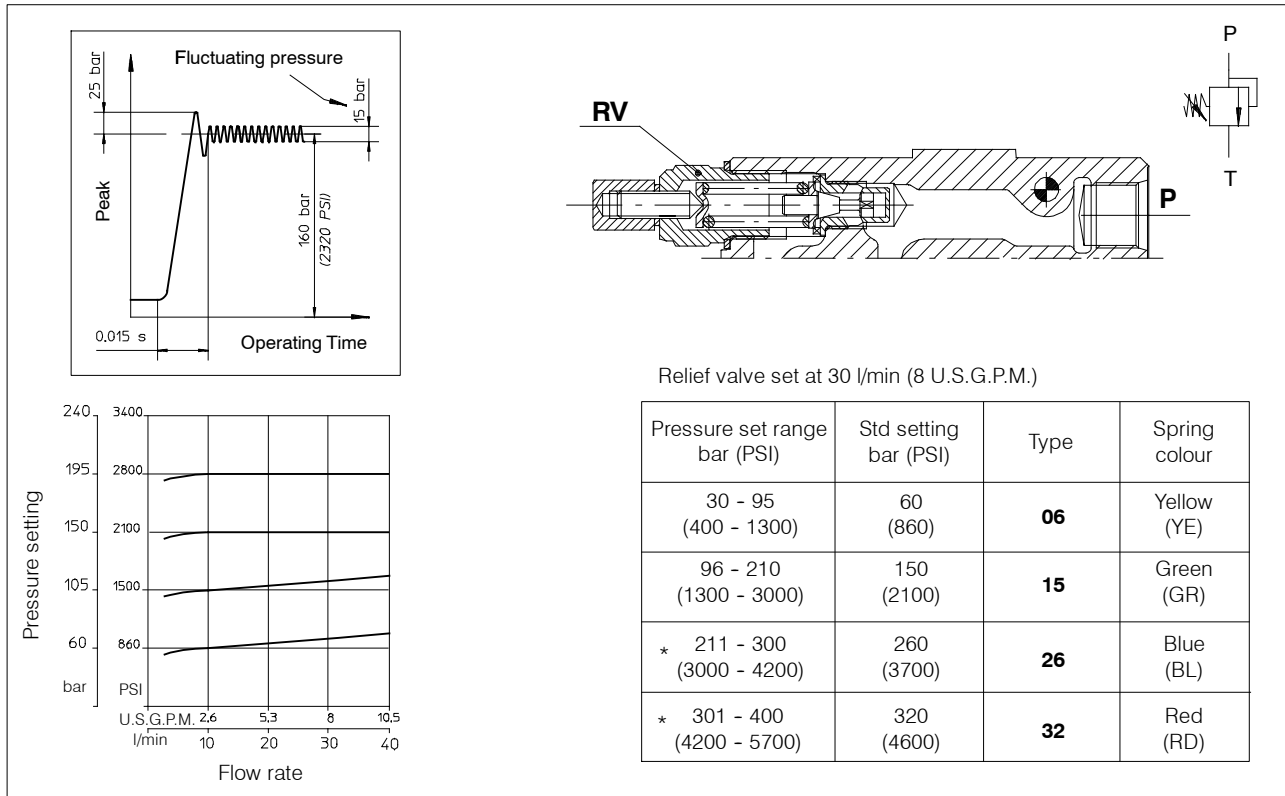
3.3 Performance curves

Oil: Shell Tellus T37
Temperature: 50° C (120° F)
Viscosity: 27 mm²/s



HDM11P

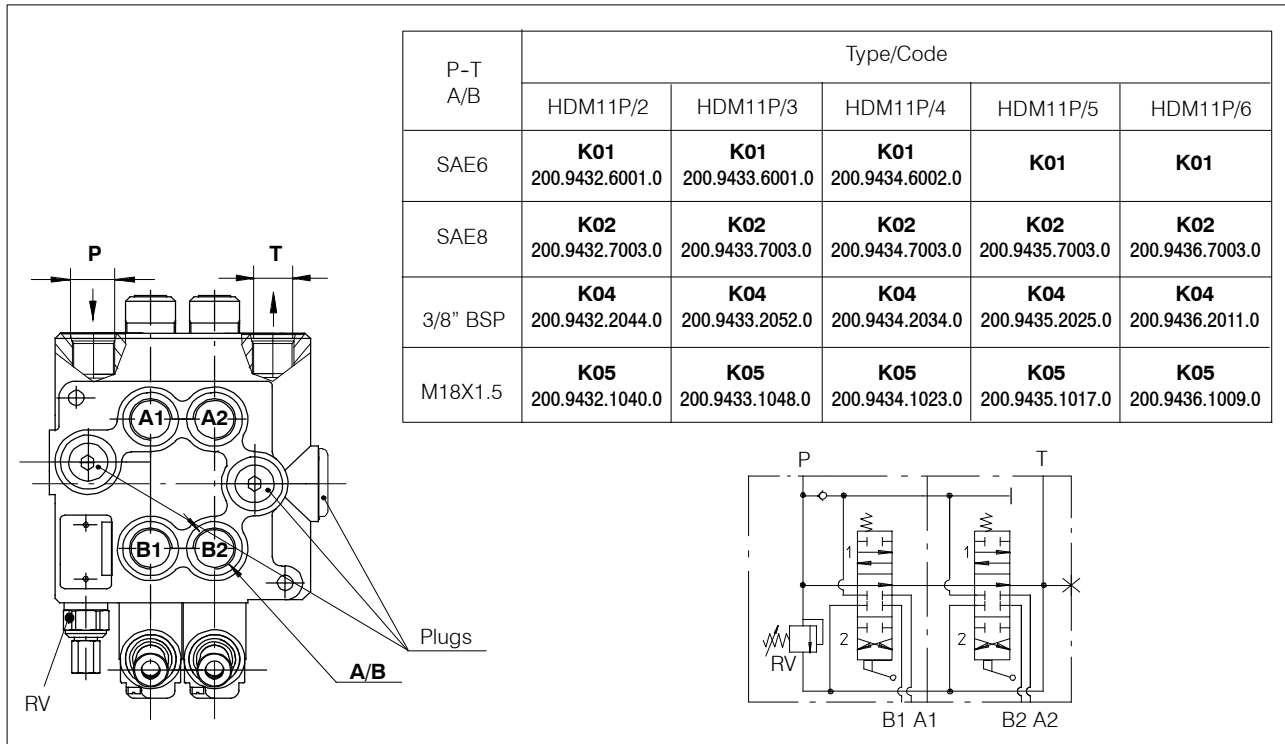
3.4 Adjustable direct acting Relief Valve RV



* The maximum operating pressure for each valve series is indicated in the "Technical specification" at the first page of each valve section.

3.5 Monobloc bodies

3.5.1 Open center with P - T - RV (Standard)

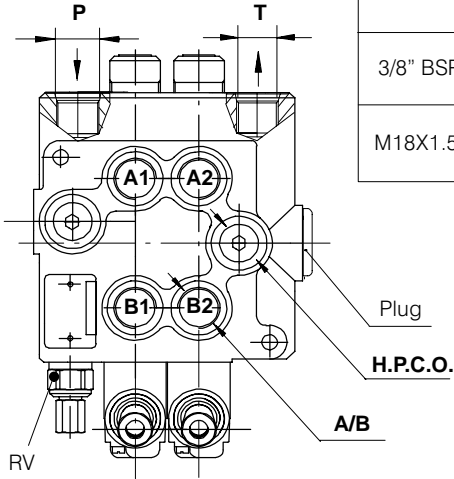


Note 1: Body codes consist of: machined casting, seals, plugs and check valve only. Not to be used for complete valve order.

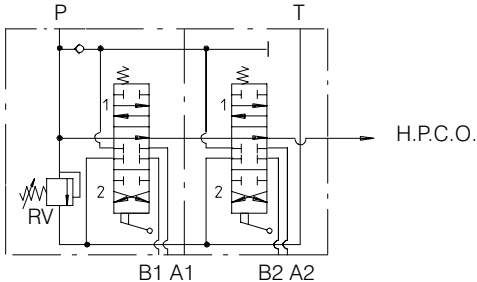
Note 2: For availability of -K- bodies without code please contact our Sales Department.

HDM11P

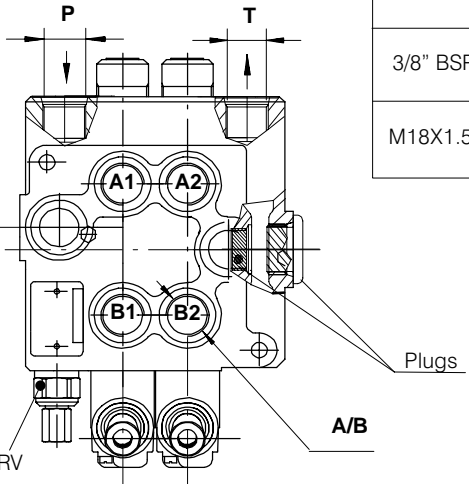
3.5.2 Power beyond with P – T – RV – H.P.C.O.



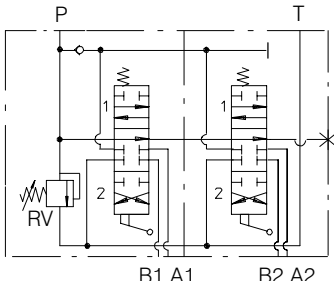
P-T A/B H.P.C.O.	Type/Code				
	HDM11P/2	HDM11P/3	HDM11P/4	HDM11P/5	HDM11P/6
SAE6	K11 200.9432.6002.0	K11 200.9433.6002.0	K11 200.9434.6003.0	K11	K11
SAE8	K12 200.9432.7004.0	K12 200.9433.7004.0	K12 200.9434.7004.0	K12 200.9435.7004.0	K12 200.9436.7004.0
3/8" BSP	K14 200.9432.2045.0	K14 200.9433.2053.0	K14 200.9434.2035.0	K14 200.9435.2026.0	K14 200.9436.2012.0
M18X1.5	K15 200.9432.1041.0	K15 200.9433.1049.0	K15 200.9434.1024.0	K15 200.9435.1018.0	K15 200.9436.1010.0



3.5.3 Closed center with P – T – RV



P-T A/B	Type/Code				
	HDM11P/2	HDM11P/3	HDM11P/4	HDM11P/5	HDM11P/6
SAE6	K21 200.9432.6003.0	K21 200.9433.6003.0	K21 200.9434.6004.0	K21	K21
SAE8	K22 200.9432.7005.0	K22 200.9433.7005.0	K22 200.9434.7005.0	K22 200.9435.7005.0	K22 200.9436.7005.0
3/8" BSP	K24 200.9432.2043.0	K24 200.9433.2051.0	K24 200.9434.2033.0	K24 200.9435.2024.0	K24 200.9436.2013.0
M18X1.5	K25 200.9432.1042.0	K25 200.9433.1050.0	K25 200.9434.1025.0	K25 200.9435.1019.0	K25 200.9436.1011.0



Note 1: Body codes consist of: machined casting, seals, plugs and check valve only. Not to be used for complete valve order.

Note 2: For availability of -K- bodies without code please contact our Sales Department.

HDM11P

3.6 Spool charts

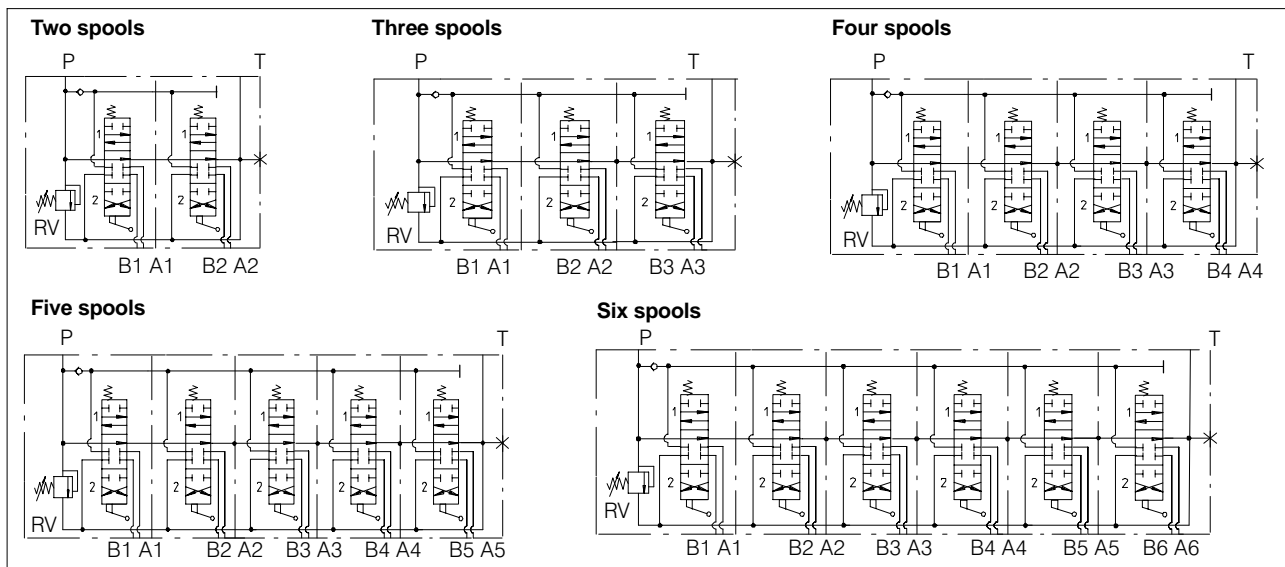
Spool scheme	Spool features	Type
	4 way - 3 position A/B closed E open by pass	A
	4 way - 3 position A/B closed E open by pass High metering spool (max flow suggested 15 l/min.)	AS
	4 way - 3 position A/B-E closed	B
	4 way - 3 position A/B to tank in neutral E open by pass	C
	3 way - 3 position B closed E open by pass	G
	3 way - 3 position A closed E open by pass	S

	4 way - 4 position 4 th floating position	Z
	4 way - 4 position 4 th floating position	* WW
	4 way - 3 position with regenerative spool in 2 nd position	R**
	4 way - 3 position A closed B \rightarrow T E open by pass	DP
	4 way - 3 position A to tank in neutral B closed E open by pass	LP

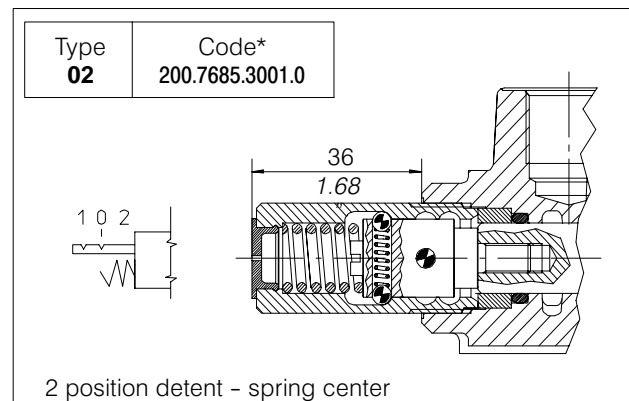
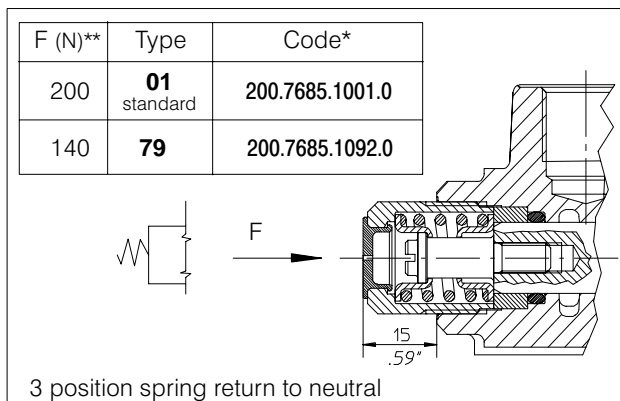
*: "WW" spool requires: special body (K...), positioner (240) and lever (L192)

** : special body required (please contact our Sales Dept.)

3.7 Schemes



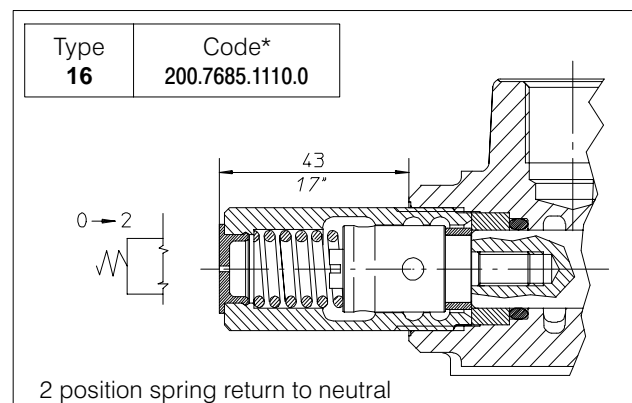
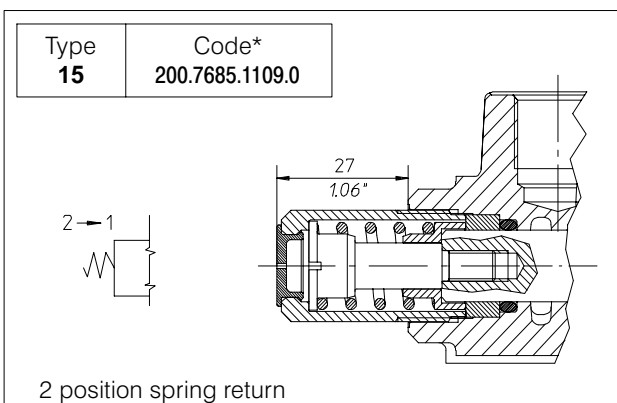
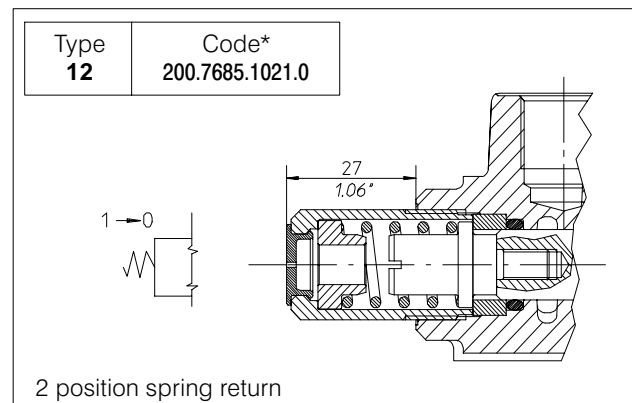
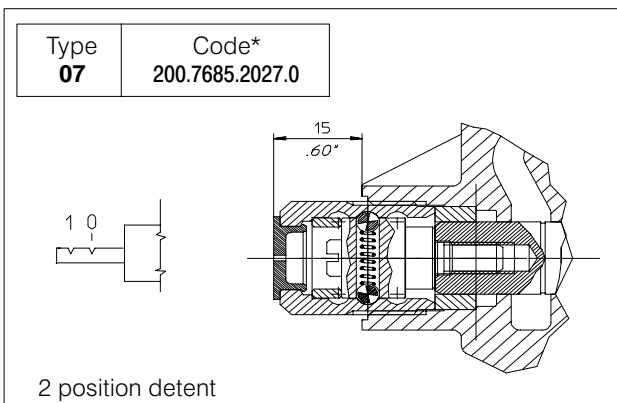
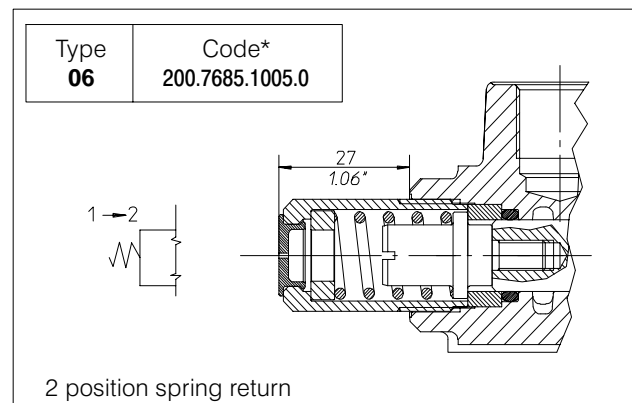
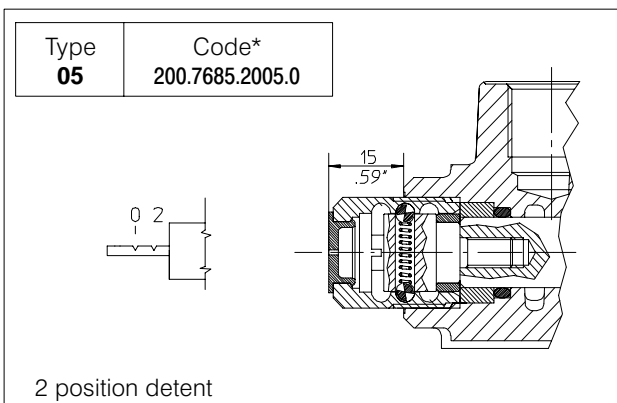
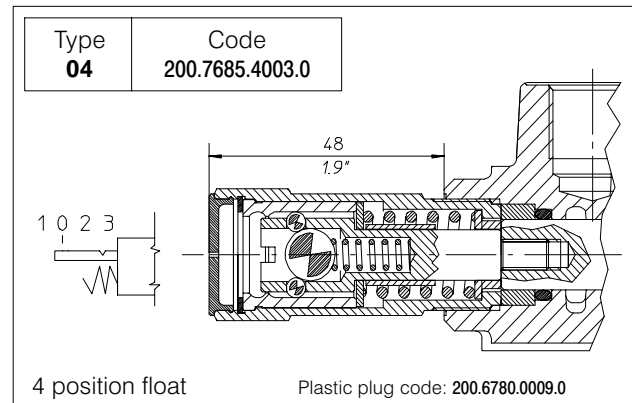
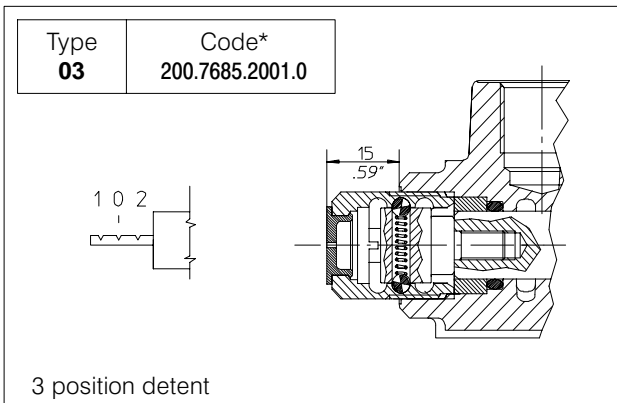
3.8 Spool positioners



*: code without plastic plug; plastic plug code: 200.6780.0008.0

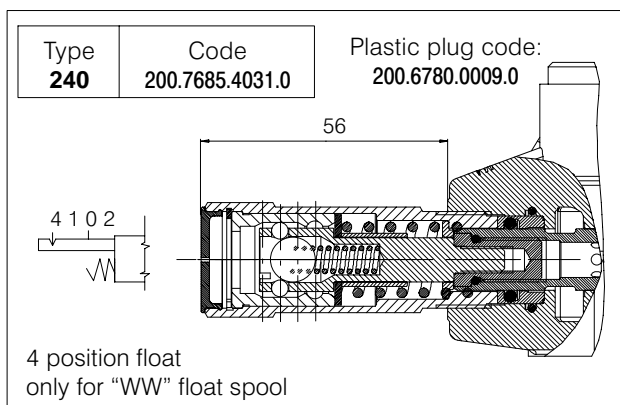
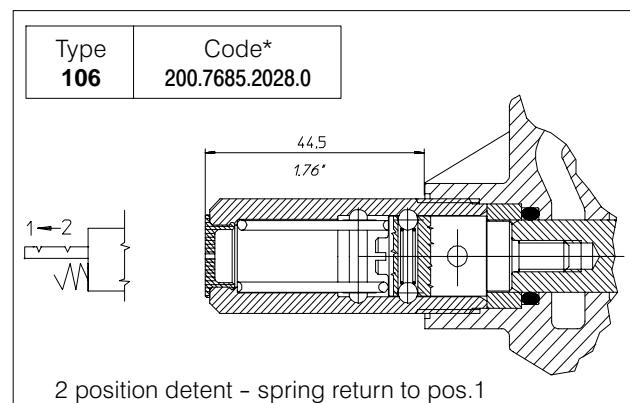
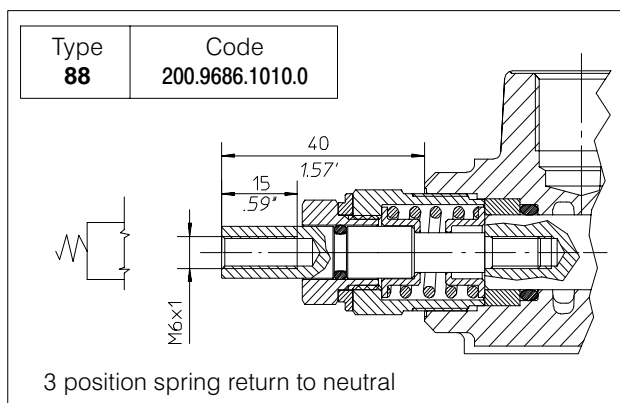
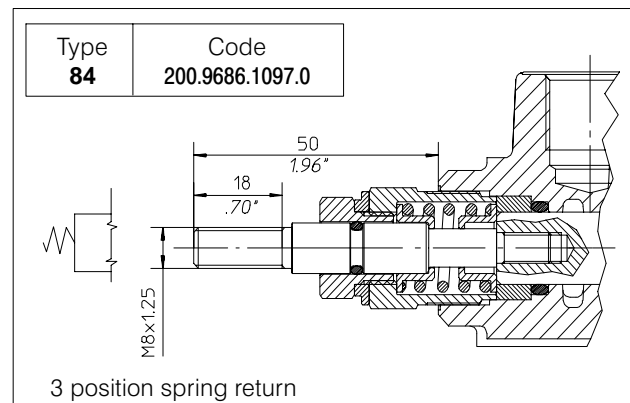
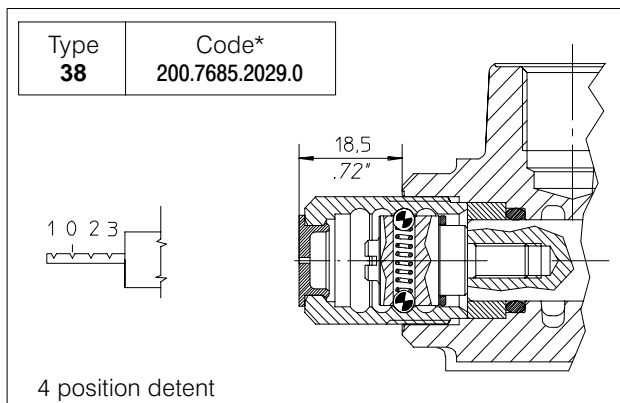
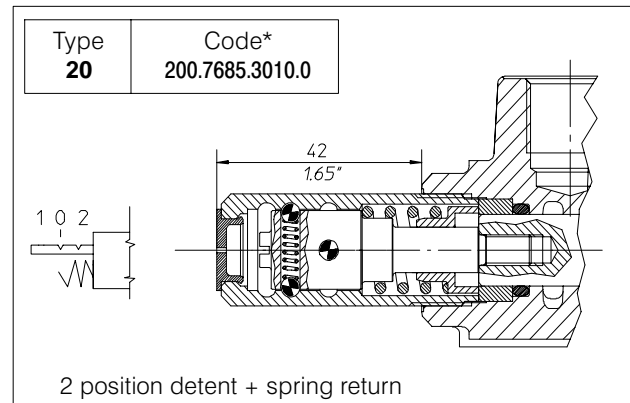
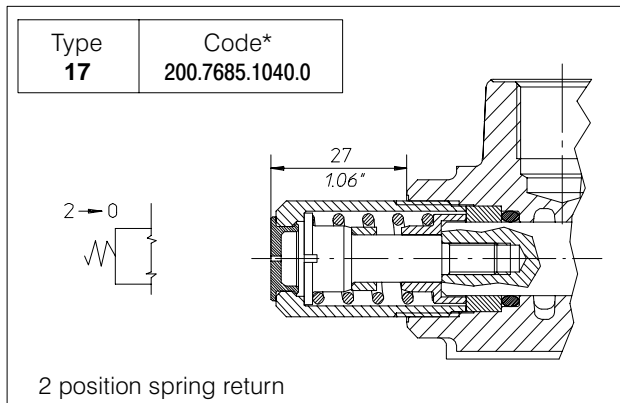
Code F (N)**: force in Newton (N) needed to operate the spool

HDM11P



* : code without plastic plug; plastic plug code: 200.6780.0008.0

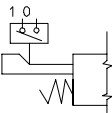
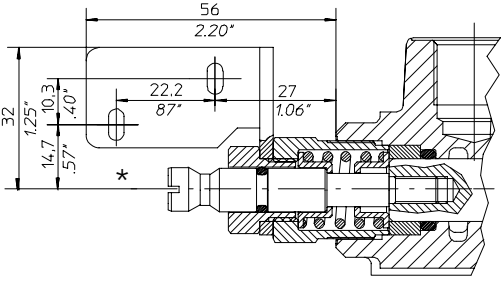
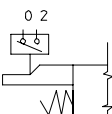
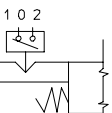
HDM11P



* : code without plastic plug; plastic plug code: 200.6780.0008.0

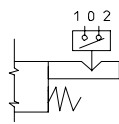
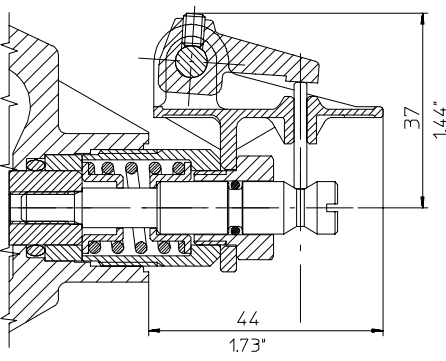
HDM11P

3.8.1 Microswitch control on each single element

Type 30	Code 200.9686.1050.0	Microswitch is operated when the spool is in pos. 1		
Type 32	Code 200.9686.1060.0	Microswitch is operated when the spool is in pos. 2		
Type 34	Code 200.9686.1064.0	Microswitch is operated when the spool is in pos. 1 and 2		

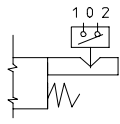
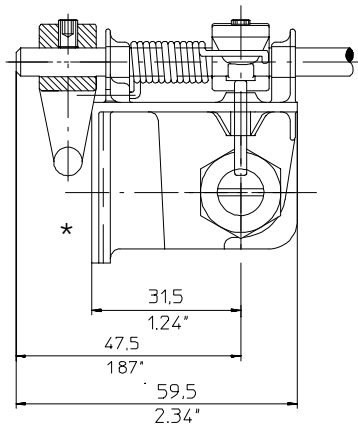
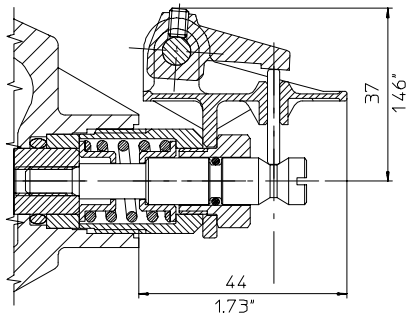
* The microswitch is supplied only on customer's request

3.8.2 Single microswitch control for multi-sectional valves (from 1st up to second-last element).

Type 39 (MSF)	Code 200.9686.1139.0			
-------------------------	-------------------------	--	---	--

Microswitch is operated when the spool is in pos. 1 and 2

3.8.3 Single microswitch control for multi-sectional valves (last element, T side).

Type 40 (MFL)	Code 200.9686.1140.0				
-------------------------	-------------------------	--	---	---	---

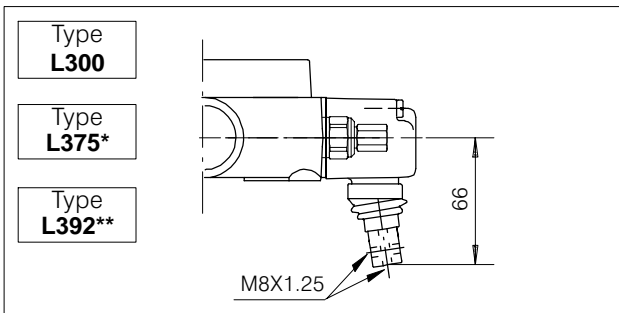
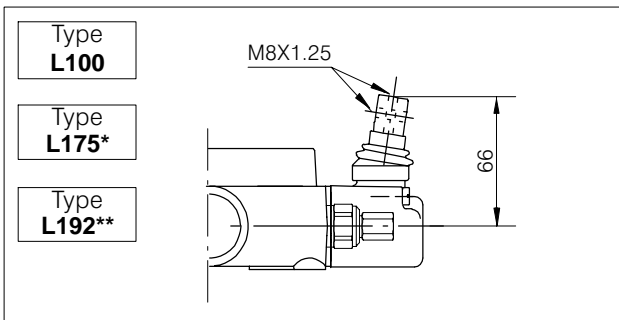
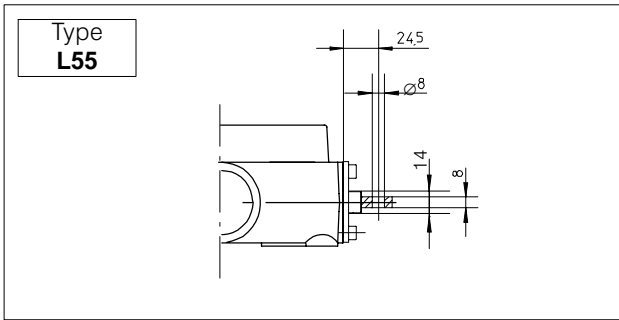
Microswitch is operated when the spool is in pos. 1 and 2

* The microswitch is supplied only on customer's request.

1 - Positioner 40 must be assembled only on the last element near T port
2 - Positioner 40 require T port plugged. Use T1 or T2 ports

HDM11P

3.9 Lever styles

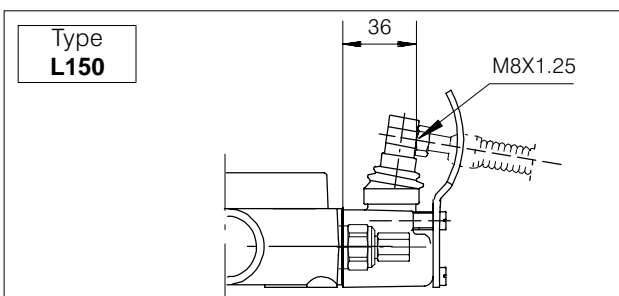
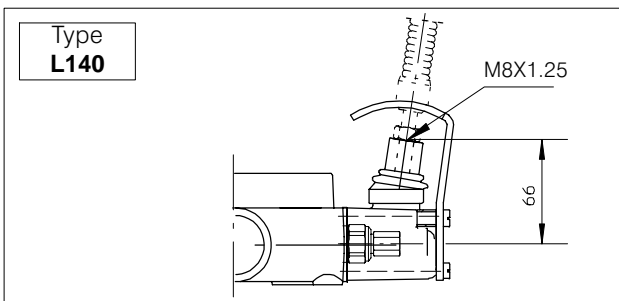


Lo		Type	Code
mm	inches		
150	5.90	AL001	200.7022.1019.0
200	7.87	AL002	200.7022.1003.0
250	9.84	AL003	200.7022.1005.0
300	11.81	AL004	200.7022.1006.0

* L175 - L375 only for "Z" spool application

** L192 - L392 only for "WW" spool application

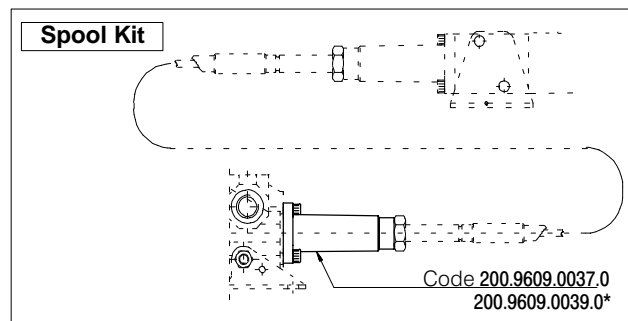
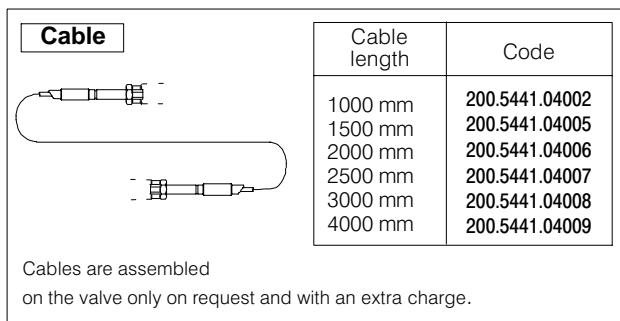
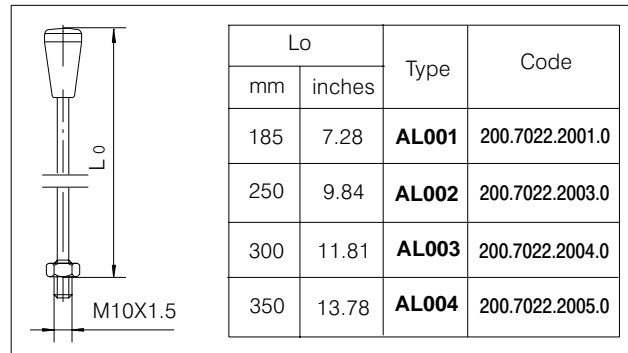
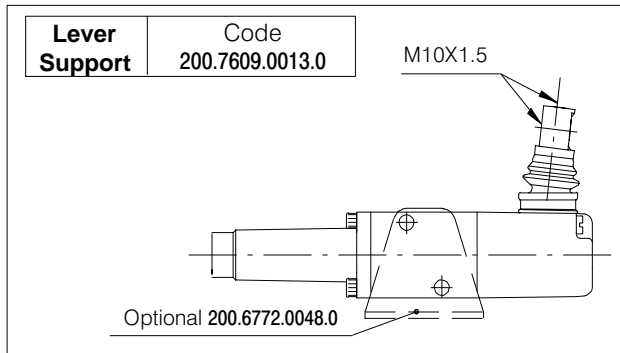
3.9.1 Safety levers



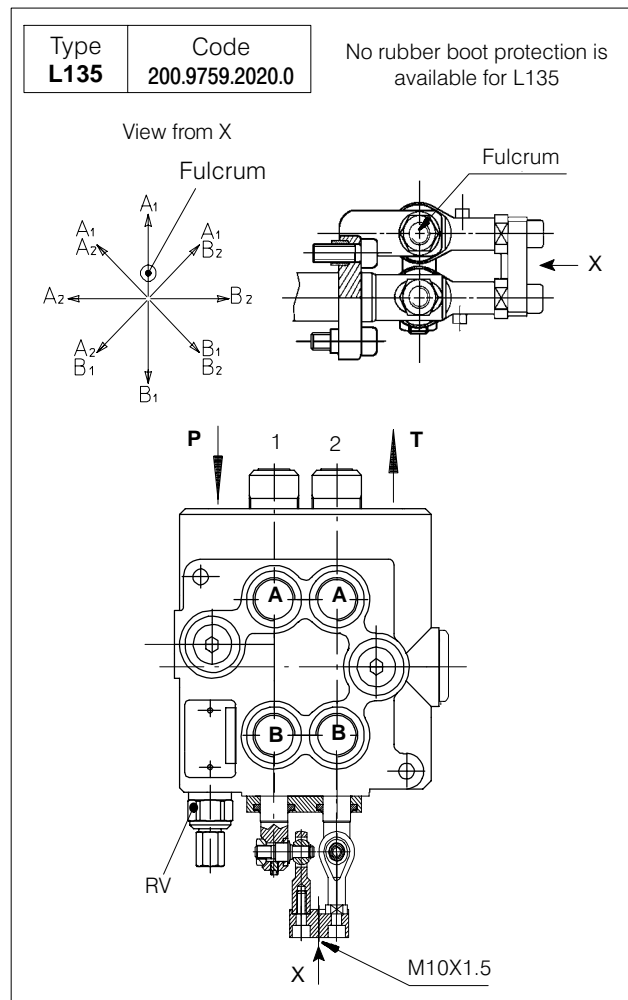
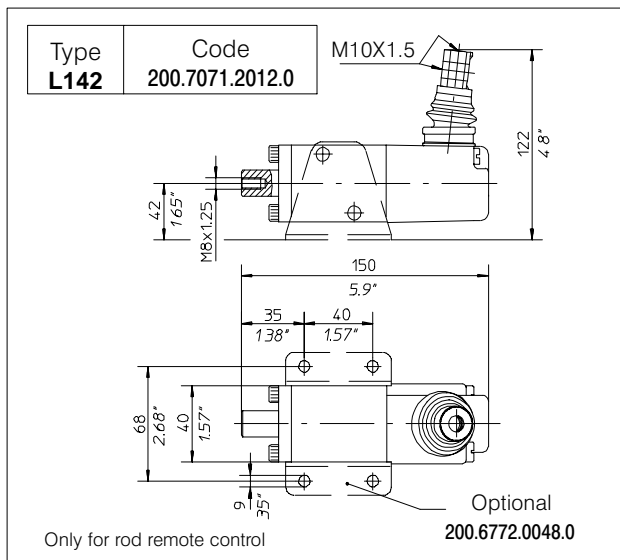
Lo		Type	Code
mm	inches		
160	6.30	AL014	200.7022.1009.0
180	7.08	AL018	200.7022.1011.0

HDM11P

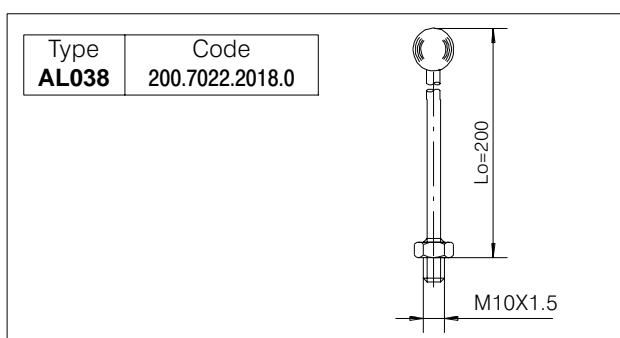
3.9.2 Remote cable control



* only for "Z" spool application



3.9.3 Cross joystick for dual axis spool control



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We reserve the right of modification without prior notice.