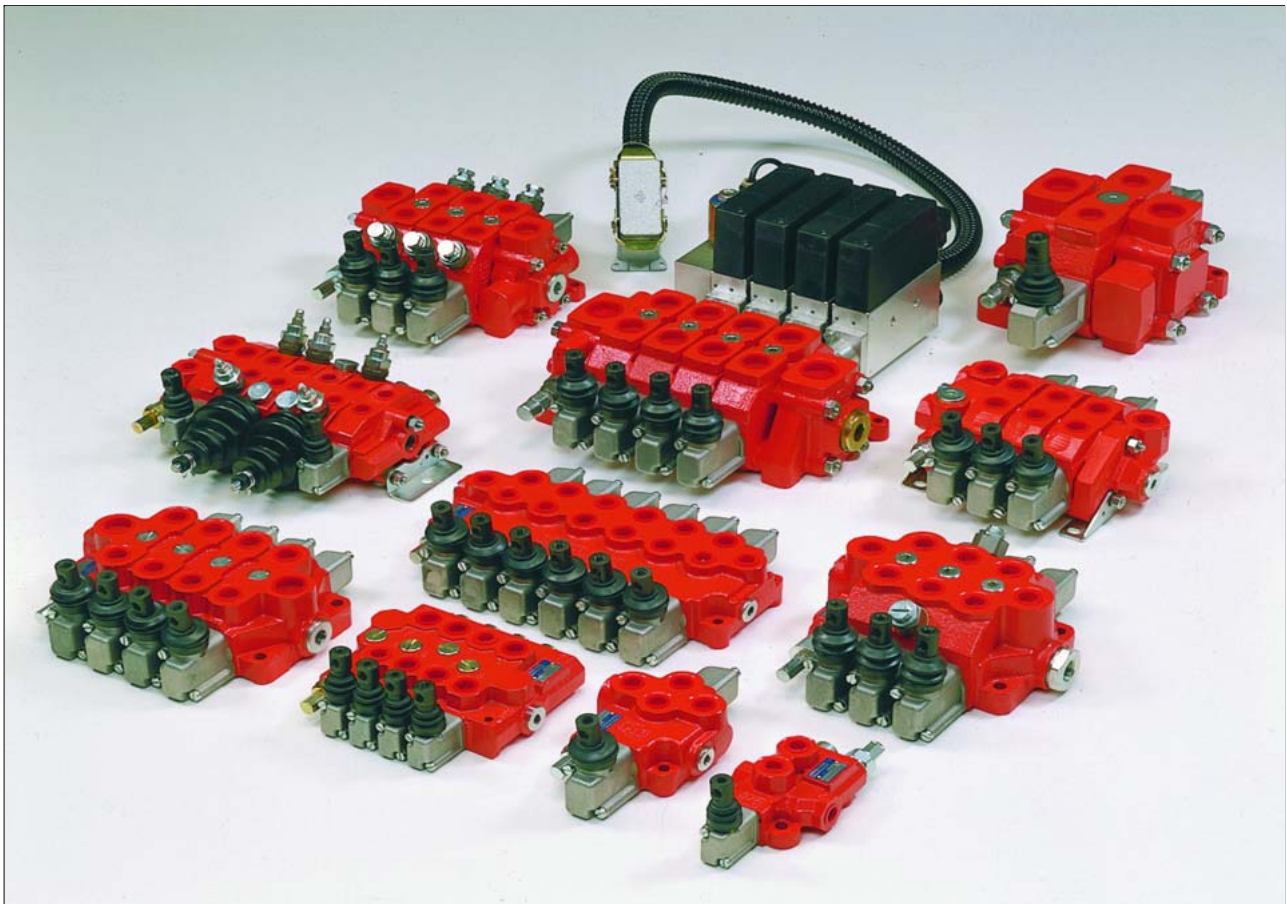


Monobloc and Sectional Directional Control Valves



motion and progress

3 Monobloc directional control valves HDM11P



Contents

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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.

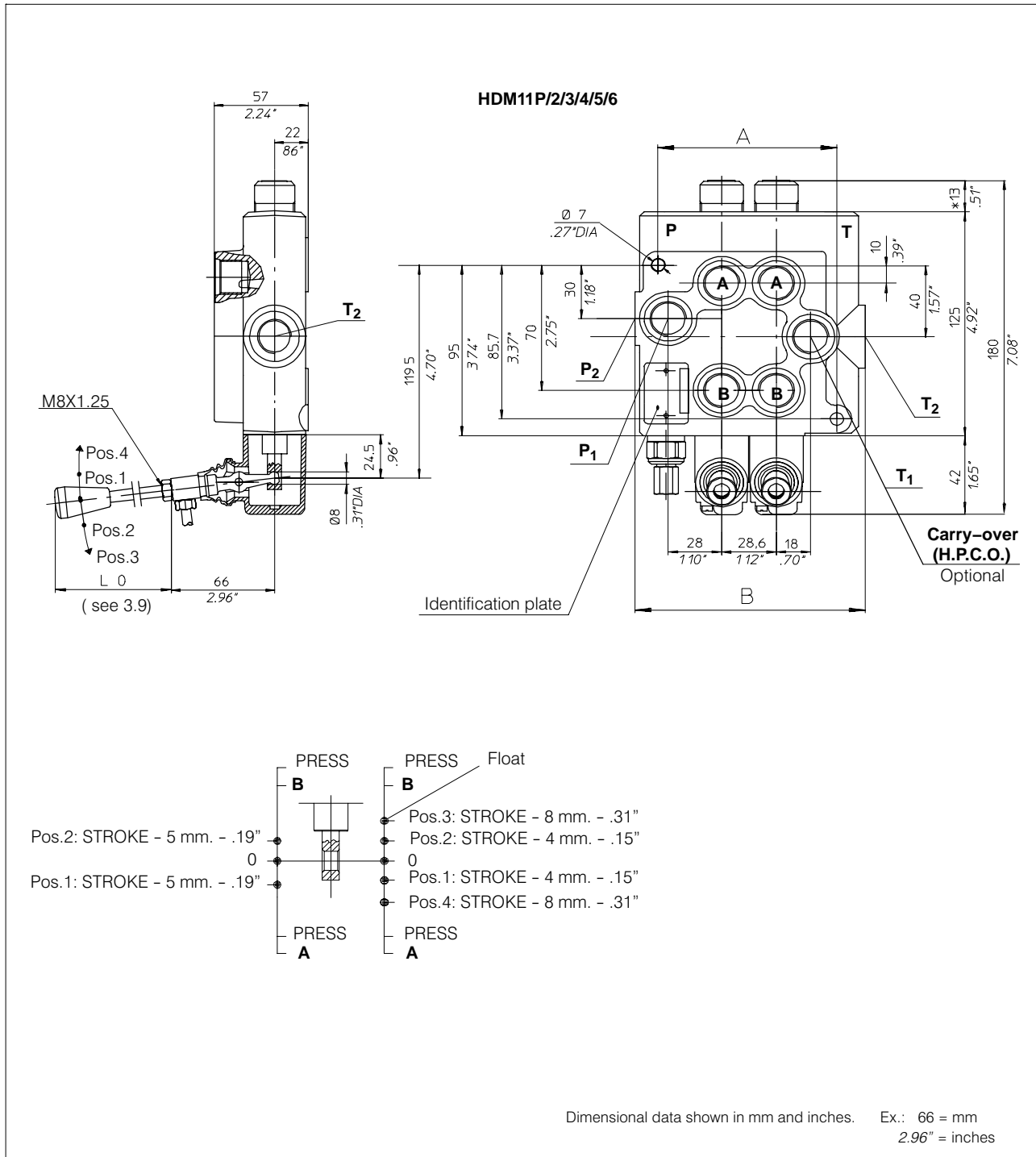
3.1.4 Optional features available:

- 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).

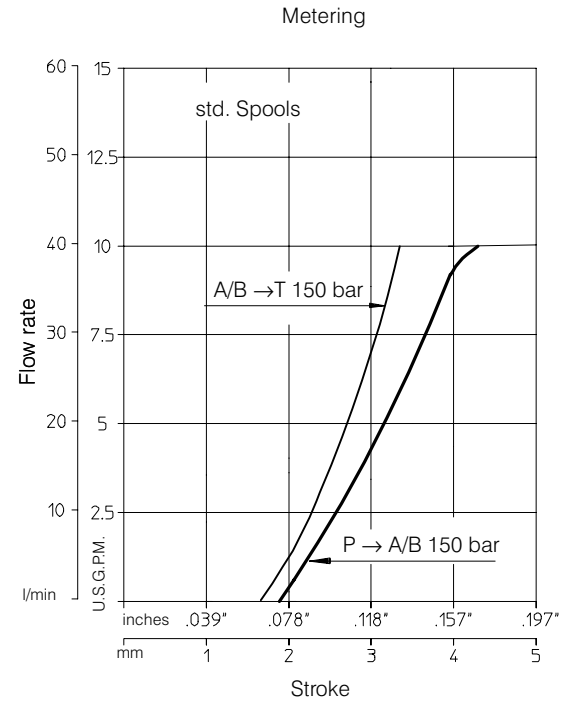
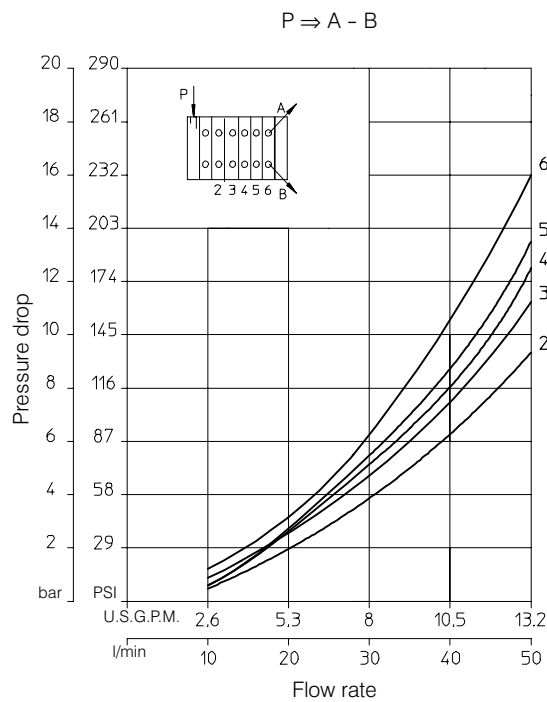
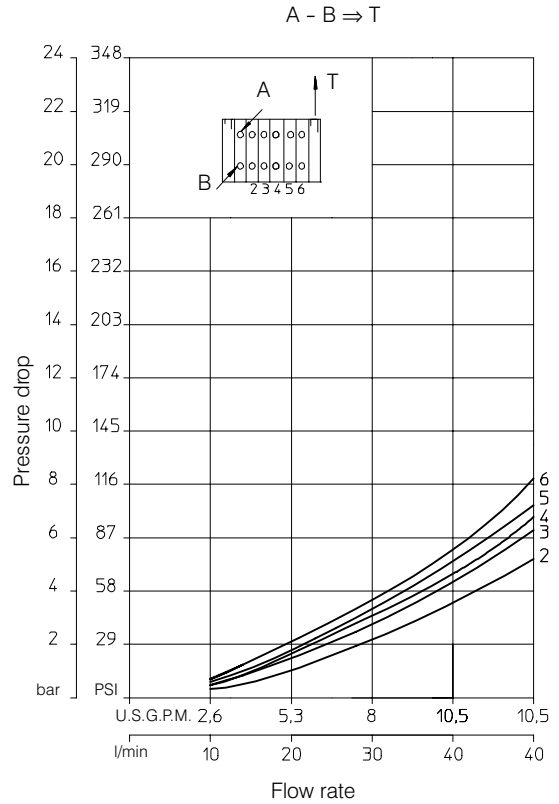
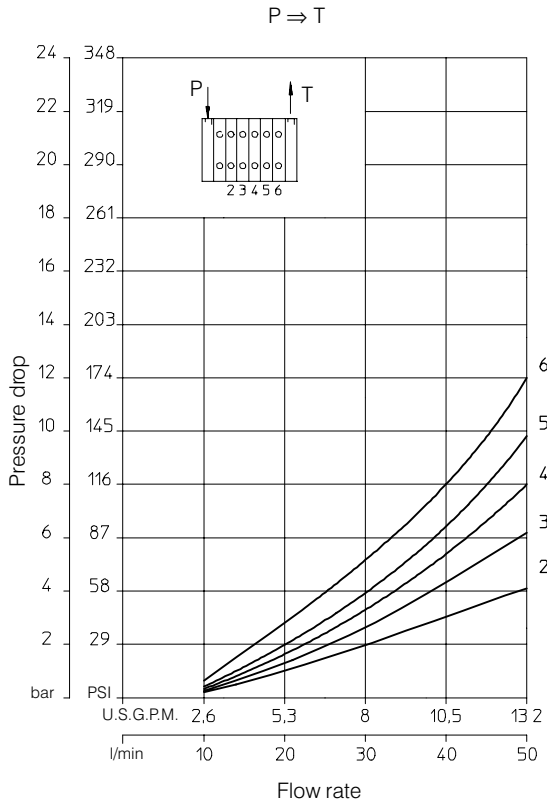
3.2 Dimensional data



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"
	B	128.6	157.2	185.8	214.4	243
		5.06	6.19"	7.31"	8.44"	9.56"

3.3 Performance curves

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



3.4 Adjustable direct acting Relief Valve RV

Relief valve set at 30 l/min (8 U.S.G.P.M.)

Pressure set range bar (PSI)	Std setting bar (PSI)	Type	Spring colour
30 - 95 (400 - 1300)	60 (860)	06	Yellow (YE)
96 - 210 (1300 - 3000)	150 (2100)	15	Green (GR)
211 - 300 (3000 - 4200)	260 (3700)	26	Blue (BL)
301 - 400 (4200 - 5700)	320 (4600)	32	Red (RD)

3.5 Monobloc bodies

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

P-T A/B	Type/Code				
	HDM11P/2	HDM11P/3	HDM11P/4	HDM11P/5	HDM11P/6
SAE6	K01 200.9432.6001.0	K01 200.9433.6001.0	K01 200.9434.6002.0	K01	K01
SAE8	K02 200.9432.7003.0	K02 200.9433.7003.0	K02 200.9434.7003.0	K02 200.9435.7003.0	K02 200.9436.7003.0
3/8" BSP	K04 200.9432.2044.0	K04 200.9433.2052.0	K04 200.9434.2034.0	K04 200.9435.2025.0	K04 200.9436.2011.0
M18X1.5	K05 200.9432.1040.0	K05 200.9433.1048.0	K05 200.9434.1023.0	K05 200.9435.1017.0	K05 200.9436.1009.0

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.

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.

3.6 Spool charts

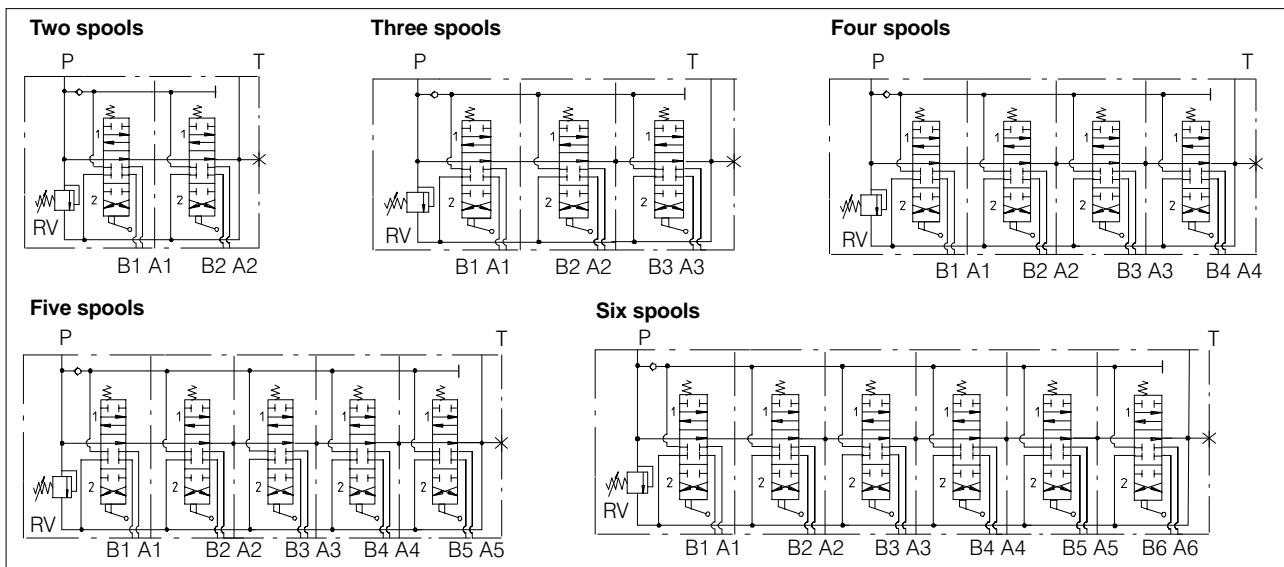
Spool scheme	Spool features	Type
	4 way - 3 position A/B closed E open by pass	A
	High metering spool (max flow suggested 15 l/min.)	AS
	4 way - 3 position A/B-E closed	B
	4 way - 3 position A/B to tank in neutral E open by pass	C
	3 way - 3 position B closed E open by pass	G
	3 way - 3 position A closed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

F (N)**	Type	Code*
200	01 standard	200.7685.1001.0
140	79	200.7685.1092.0

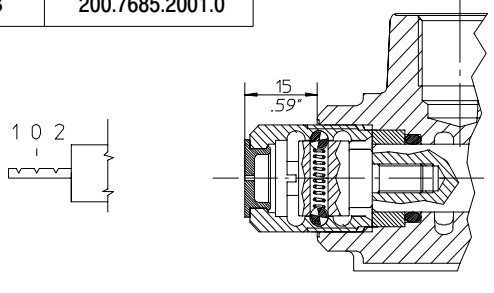
3 position spring return to neutral

Type	Code*
02	200.7685.3001.0

2 position detent - spring center

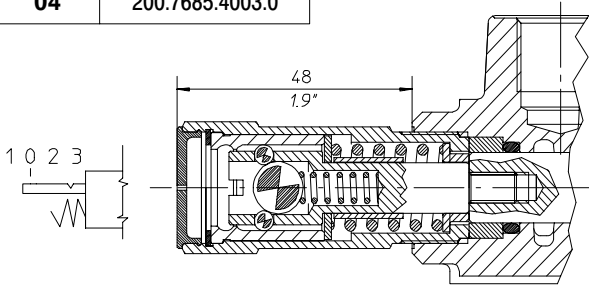
* : code without plastic plug; plastic plug code: 200.6780.0008.0
Code F (N)**: force in Newton (N) needed to operate the spool

Type 03	Code* 200.7685.2001.0
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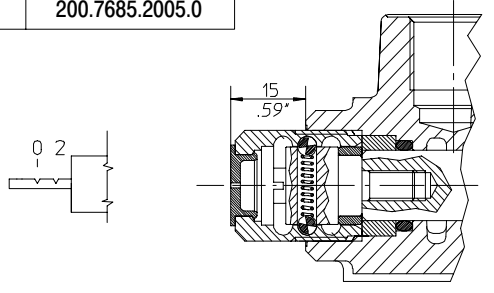
3 position detent

Type 04	Code 200.7685.4003.0
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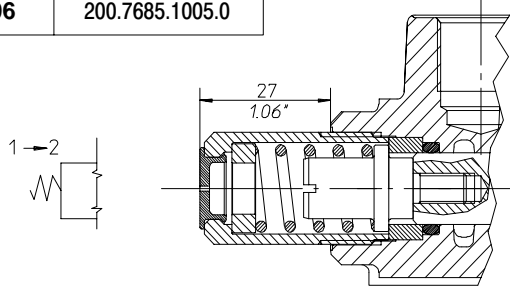
4 position float Plastic plug code: 200.6780.0009.0

Type 05	Code* 200.7685.2005.0
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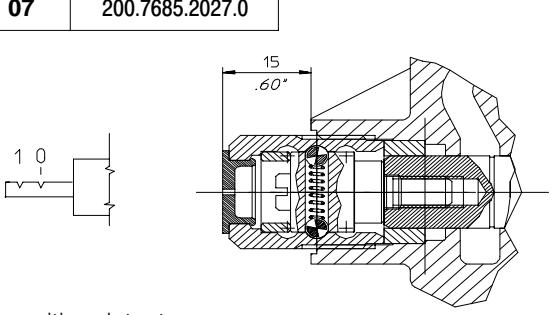
2 position detent

Type 06	Code* 200.7685.1005.0
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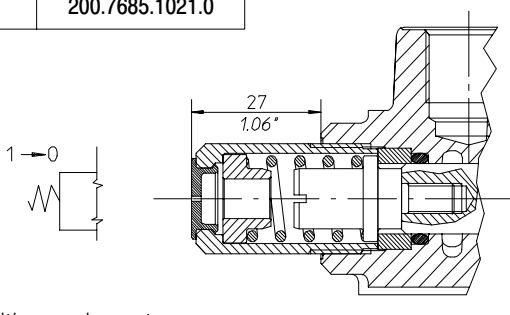
2 position spring return

Type 07	Code* 200.7685.2027.0
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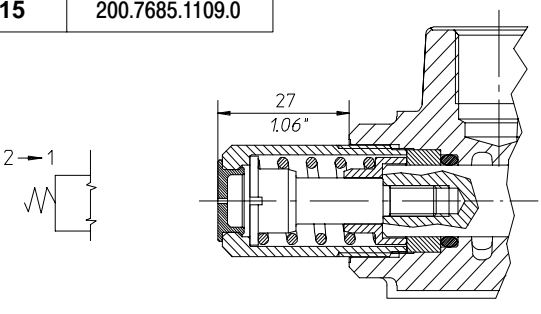
2 position detent

Type 12	Code* 200.7685.1021.0
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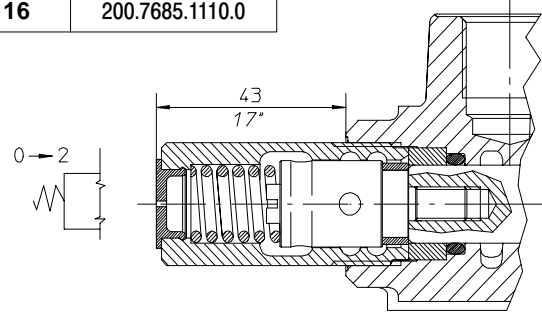
2 position spring return

Type 15	Code* 200.7685.1109.0
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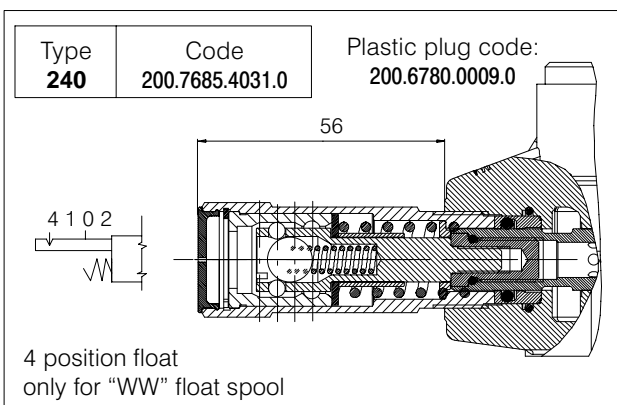
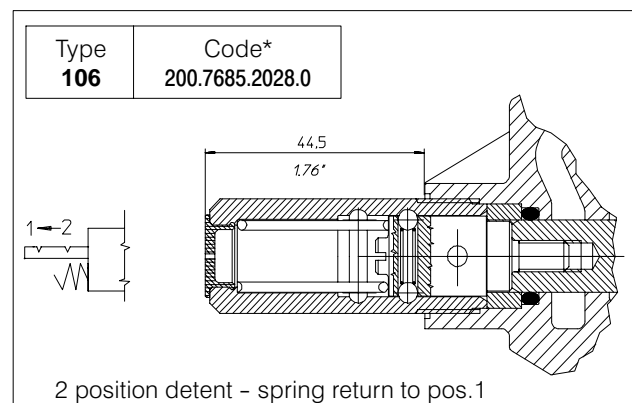
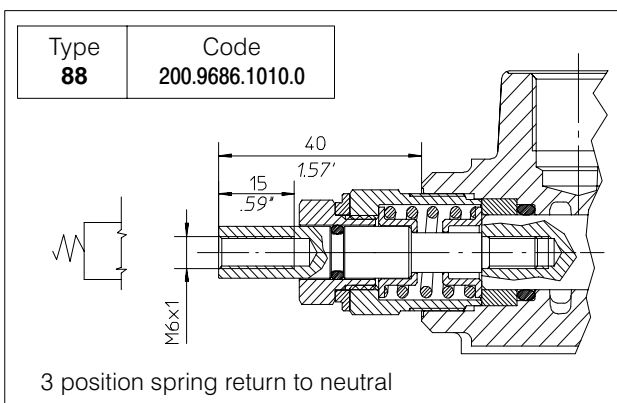
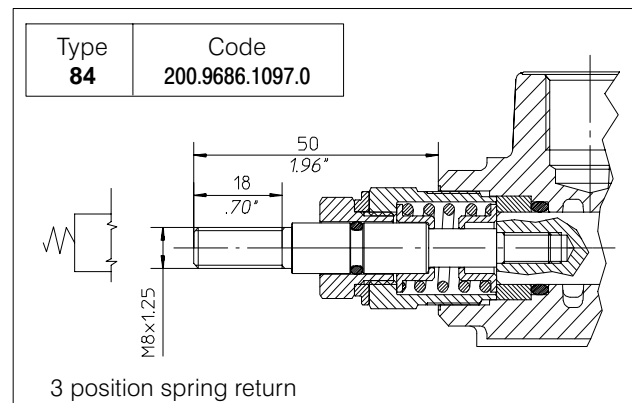
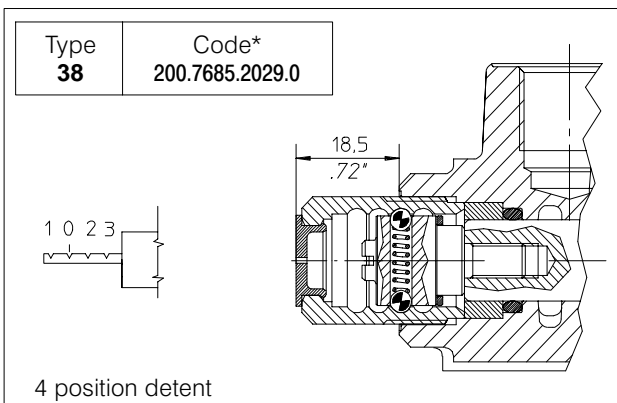
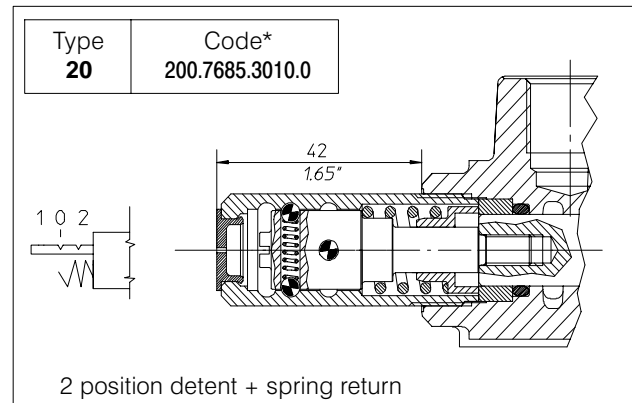
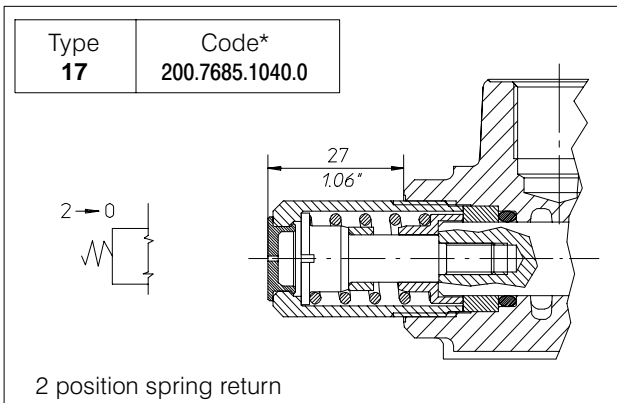
2 position spring return

Type 16	Code* 200.7685.1110.0
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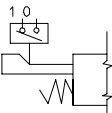
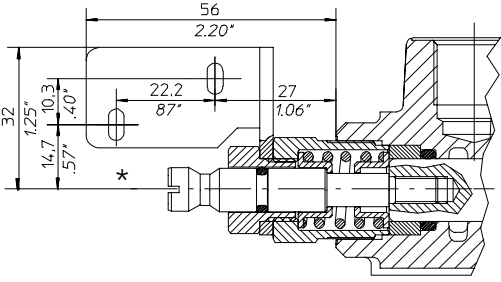
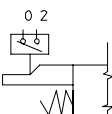
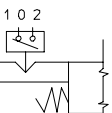
2 position spring return to neutral

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

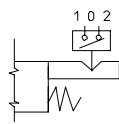
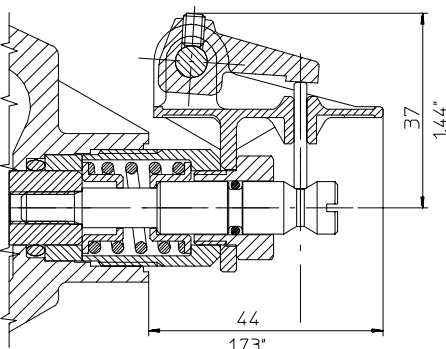


* : code without plastic plug; plastic plug code: 200.6780.0008.0

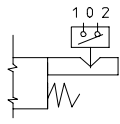
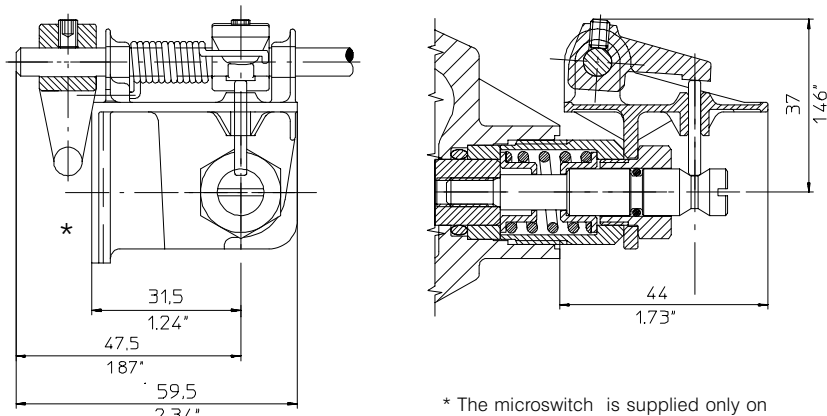
3.8.1 Microswitch control on each single element

Type 30	Code 200.9686.1050.0	Microswitch is operated when the spool is in pos. 1		 <p style="text-align: right; margin-top: 20px;">* The microswitch is supplied only on customer's request</p>
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		

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

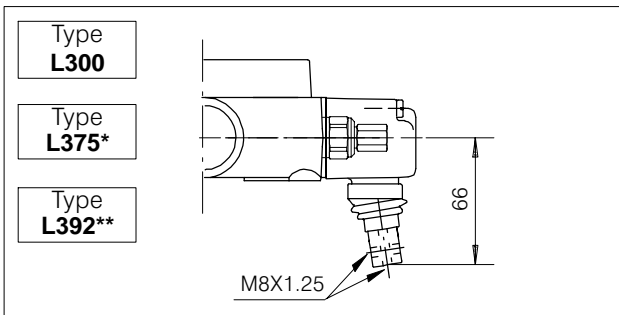
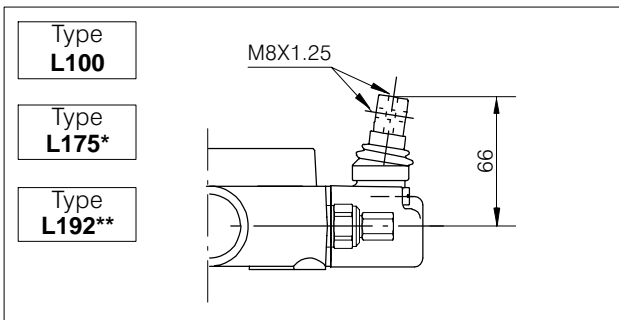
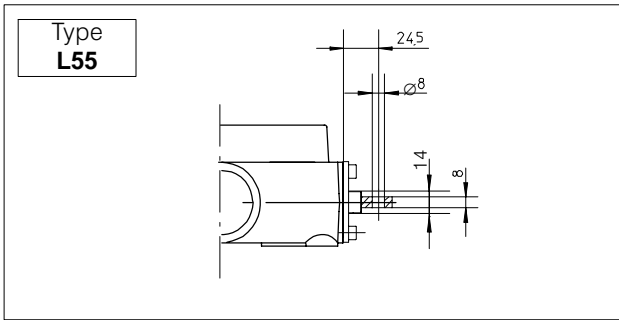
Type 39 (MSF)	Code 200.9686.1139.0	Microswitch is operated when the spool is in pos. 1 and 2		
-------------------------	-------------------------	---	---	--

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		 <p style="text-align: right; margin-top: 20px;">* The microswitch is supplied only on customer's request.</p>
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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

3.9 Lever styles

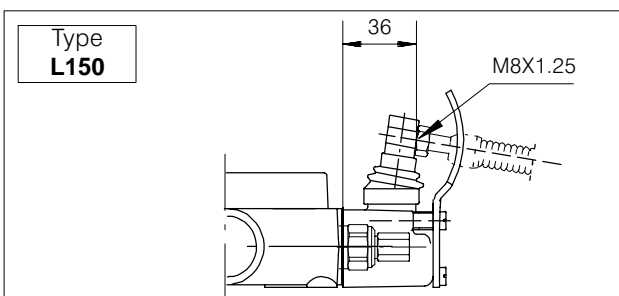
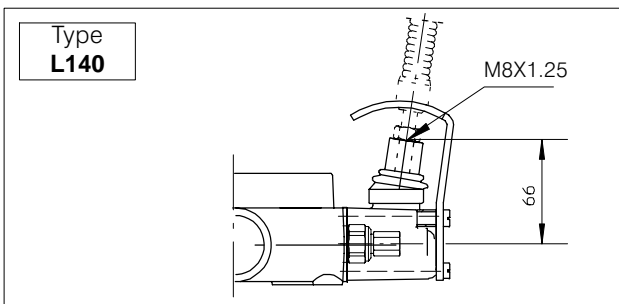


Lo		Type	Code
mm	inches		
150	5.90	AL001	200.7022.1019.0
200	7.87	AL002	200.7022.1003.0
250	9.84	AL003	200.7022.1005.0
300	11.81	AL004	200.7022.1006.0

* L175 - L375 only for "Z" spool application

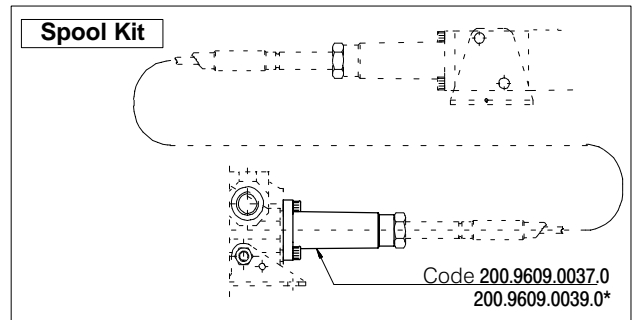
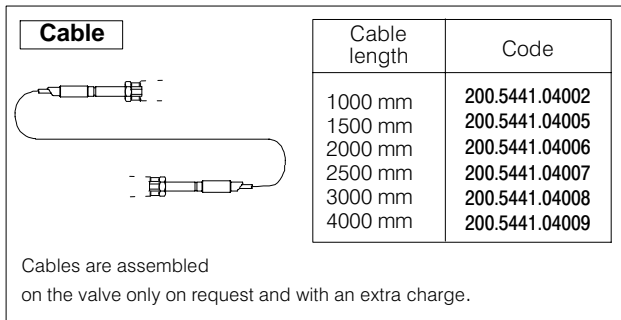
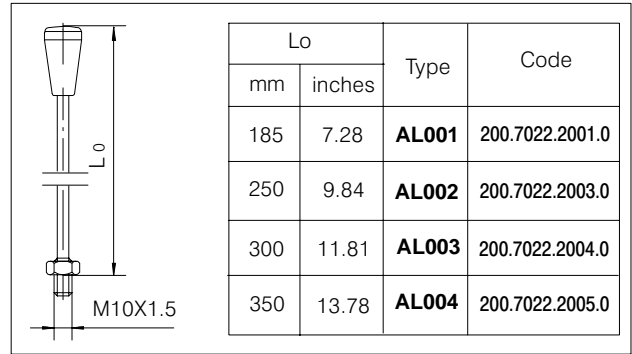
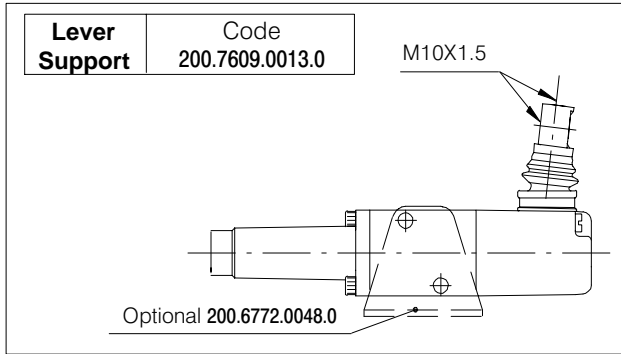
** L192 - L392 only for "WW" spool application

3.9.1 Safety levers

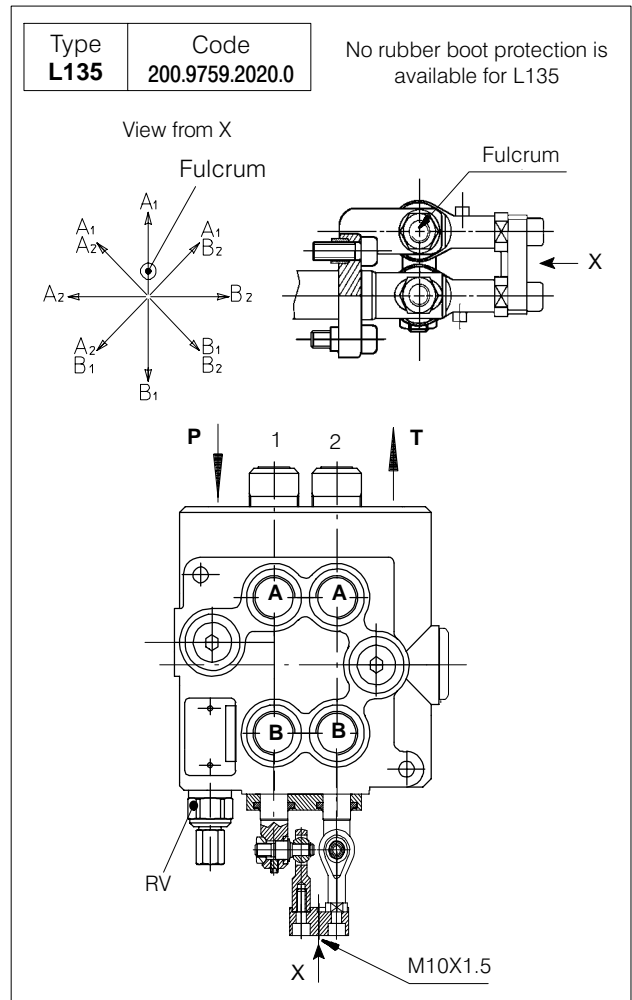
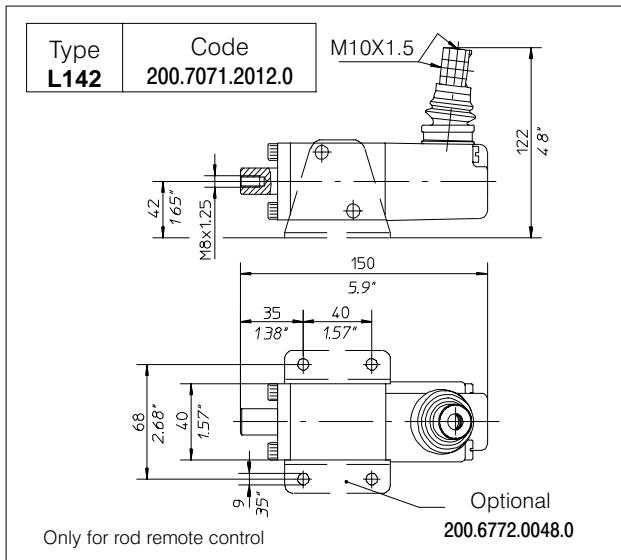


Lo		Type	Code
mm	inches		
160	6.30	AL014	200.7022.1009.0
180	7.08	AL018	200.7022.1011.0

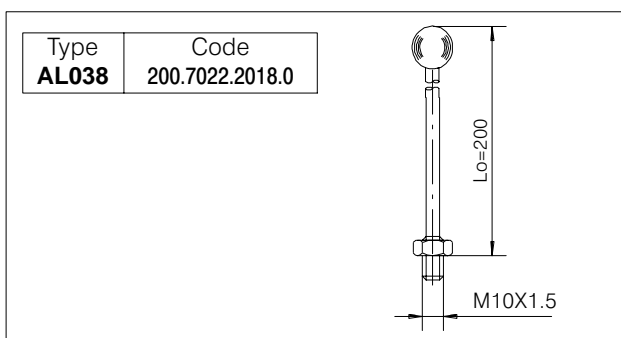
3.9.2 Remote cable control



* 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.