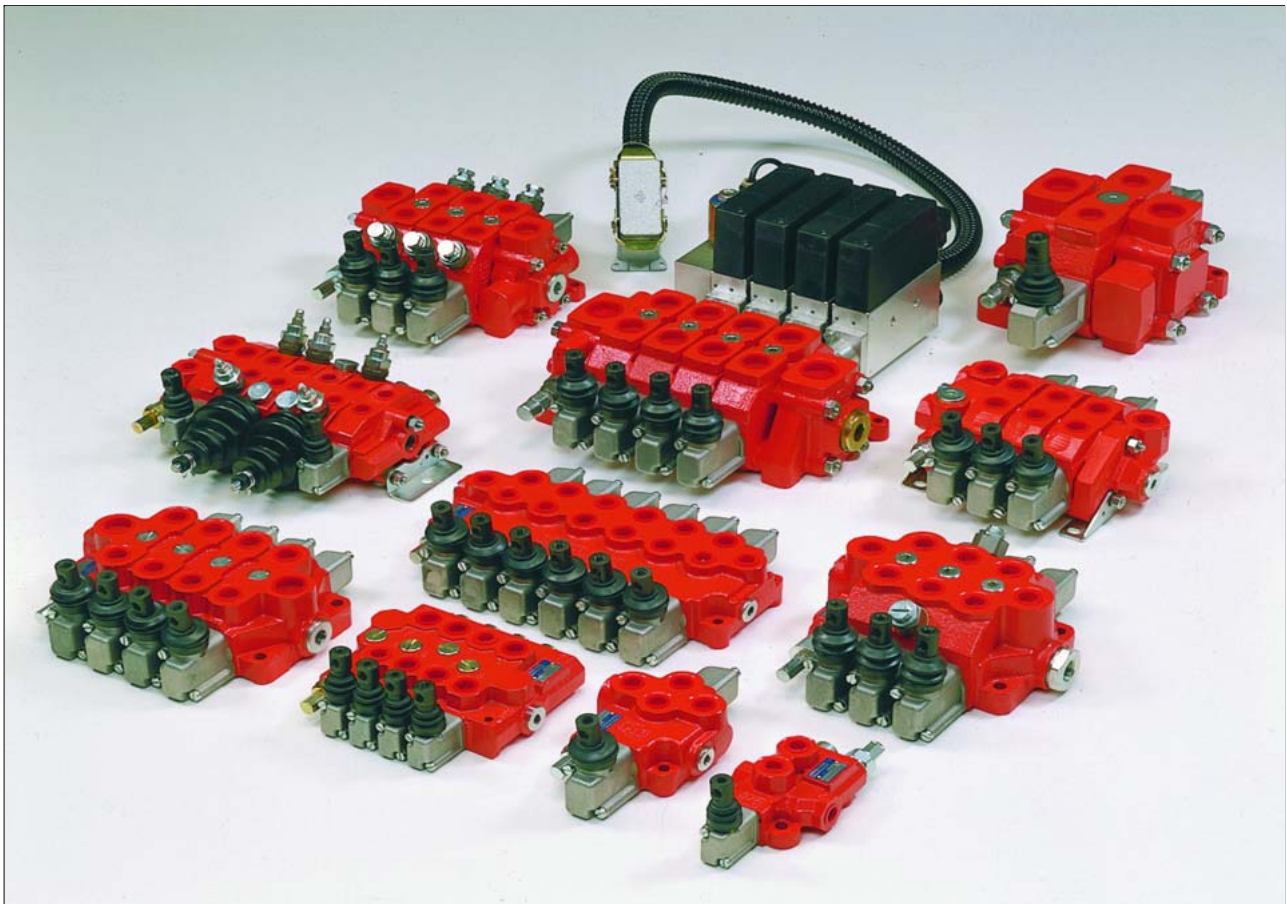


## Monobloc and Sectional Directional Control Valves



motion and progress

## 2 Monobloc directional control valves HDM140



### Contents

2.1	General specifications	9
2.2	Dimensional data	10
2.3	Performances curves	11
2.4	Monobloc bodies	12
2.5	Adjustable direct acting Relief Valve	12
2.6	Spool positioners	13
2.7	Spool charts	15
2.8	Lever styles	16
2.9	Hydraulic-Pneumatic control ON-OFF	17

## 2.1 General specifications

Technical specification		
Max flow rate	l/min. U.S.G.P.M.	40 10
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 tank port T	bar PSI	30 430
Oil temperature	° C ° F	-10 to +80 14 to 180
Oil viscosity	mm <sup>2</sup> /s	16 to 75
Oil filtration	μ	≤ 30

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

Number of spools	1
Adjustable direct operated relief valve (tamper-proof seal available on request)	RV
Single load hold check valve	LC

### 2.1.1 Weight

Version	kg	lb
HDM140	1.75	3.85

### 2.1.2 Material specification:

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

### 2.1.3 Standard features:

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

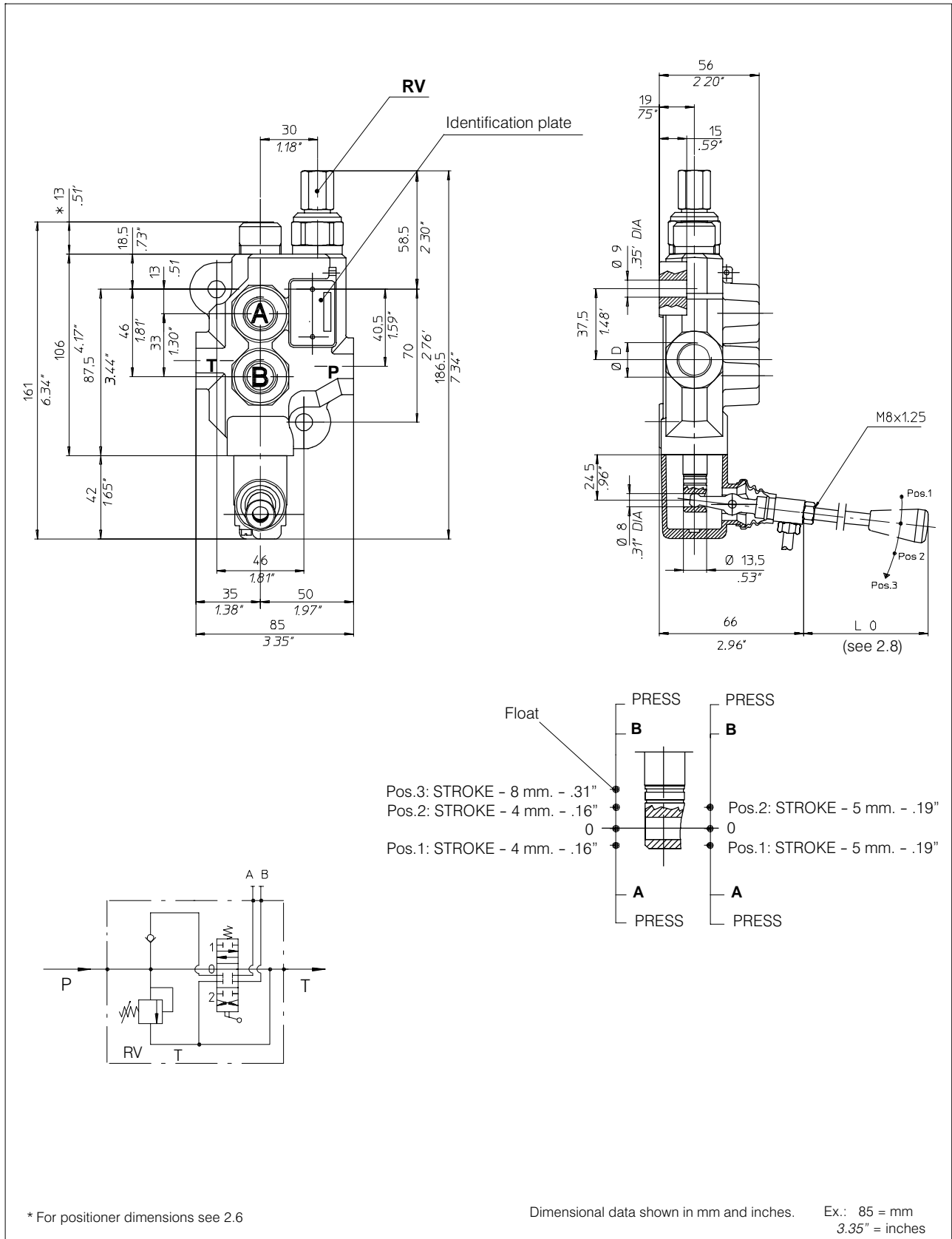
### 2.1.4 Optional features available:

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

### 2.1.5 Symbols:

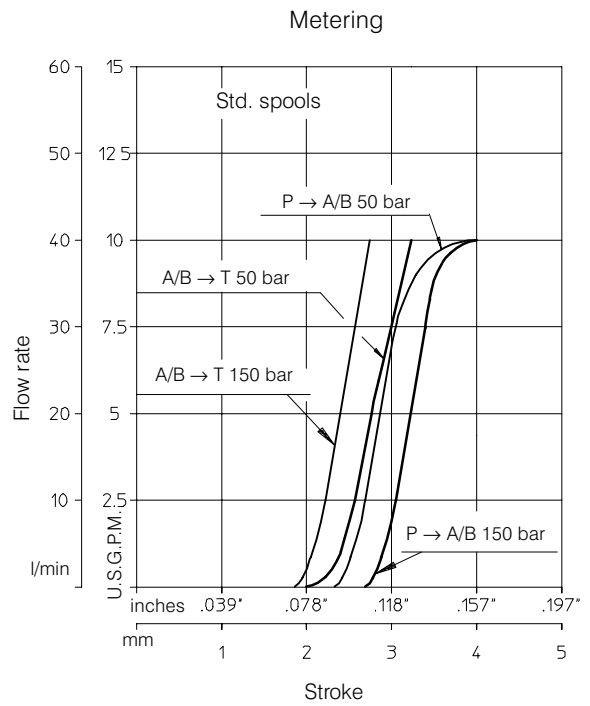
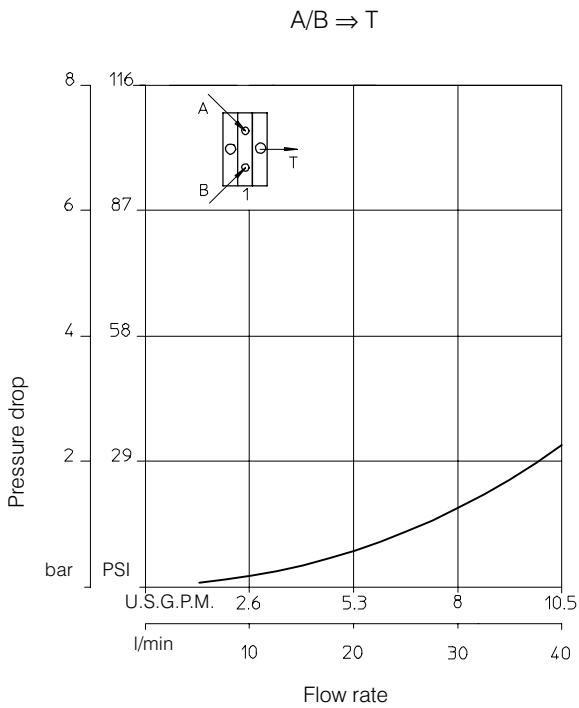
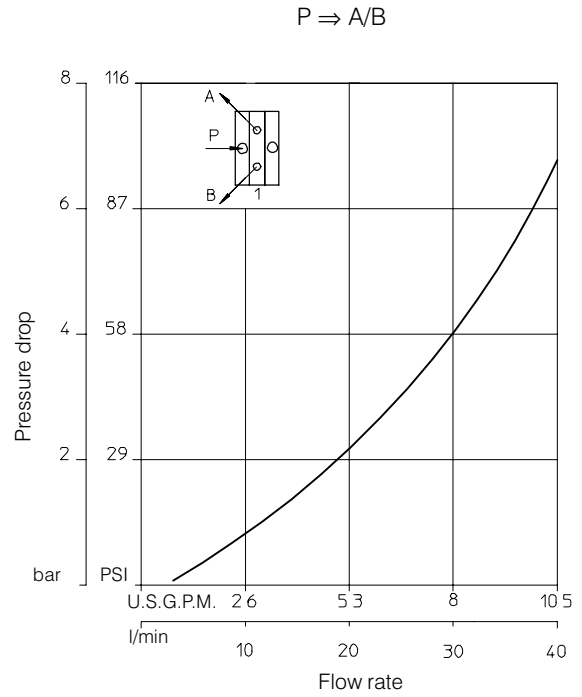
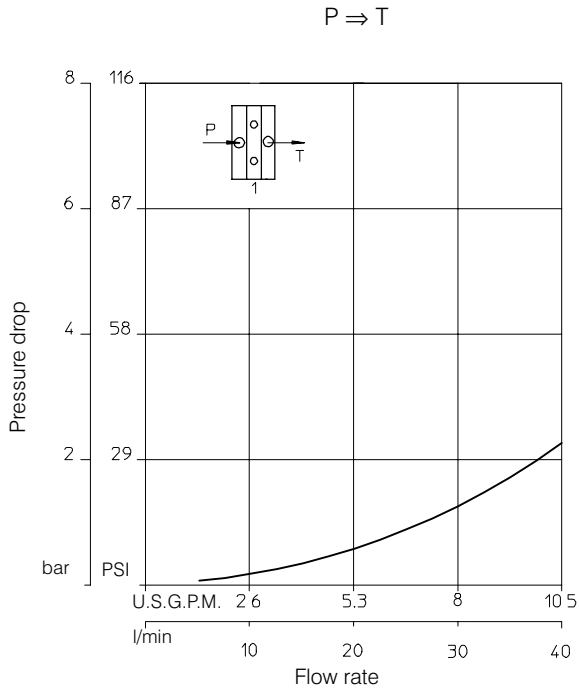
**P**: inlet port  
**T**: outlet port  
**A/B**: work ports  
**RV**: relief valve  
3.1.0.2: spool position  
**P**: pressure line  
**T**: exhaust line  
**E**: center line (by pass).

2.2 Dimensional data

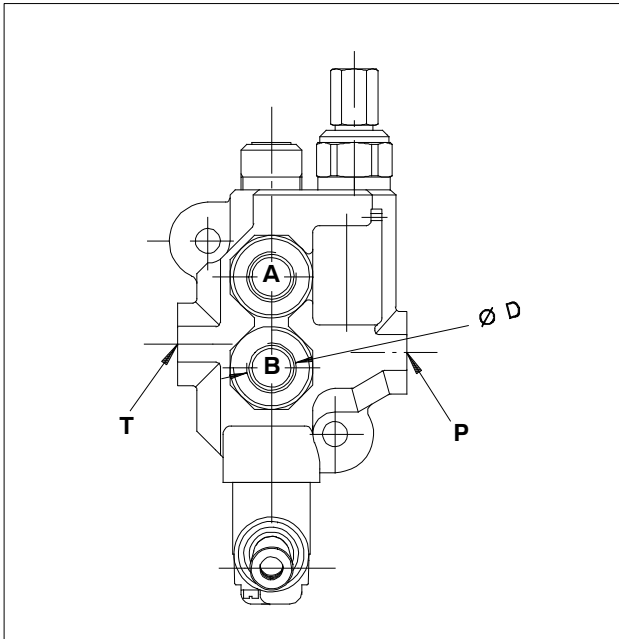


**2.3 Performance curves**

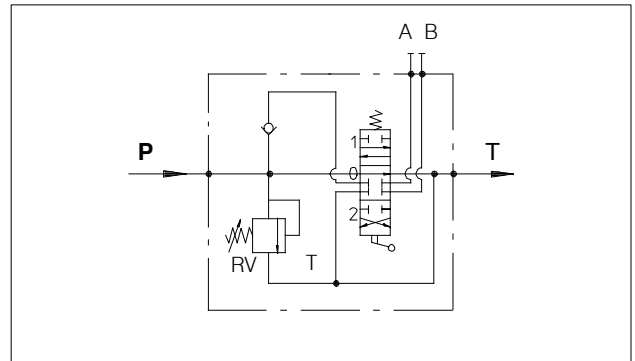
Oil: Shell Tellus T37  
 Temperature: 50° C (120° F)  
 Viscosity: 27 mm<sup>2</sup>/s



2.4 Monobloc bodies



Ø D	Type	Code
M18X1.5	<b>K01</b>	200.9421.1001.0
3/8" BSP	<b>K02</b>	200.9421.2001.0
SAE8	<b>K05</b>	200.9421.7001.0



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

2.5 Adjustable direct acting Relief Valve RV

Fluctuating pressure

Peak

Operating Time

0,015 s

25 bar (362 PSI)

15 bar (125 PSI)

160 bar (2320 PSI)

RV

P

T

Pressure setting

Flow rate

U.S.G.P.M. 2,6 5,3 8 10,5

I/min 10 20 30 40

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)	<b>06</b>	Yellow (YE)
96 - 210 (1300 - 3000)	150 (2100)	<b>15</b>	Green (GR)
* 211 - 320 (3000 - 4600)	260 (3700)	<b>26</b>	Blue (BL)

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

## 2.6 Spool positioners

F (N)**	Type	Code*
200	<b>01</b> standard	200.7685.1001.0
140	<b>79</b>	200.7685.1092.0

3 position spring return to neutral

Type	Code*
<b>02</b>	200.7685.3001.0

2 position detent - spring centre

Type	Code*
<b>03</b>	200.7685.2001.0

3 position detent

Type	Code
<b>04</b>	200.7685.4003.0

4 position float  
Plastic plug code: 200.6780.0009.0

Type	Code*
<b>05</b>	200.7685.2005.0

2 position detent

Type	Code*
<b>06</b>	200.7685.1005.0

2 position spring return

Type	Code*
<b>07</b>	200.7685.2027.0

2 position detent

Type	Code*
<b>12</b>	200.7685.1021.0

2 position spring return

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

F (N)\*\*: Force in Newton (N) needed to operate the spool.

Type <b>15</b>	Code* 200.7685.1109.0
-------------------	--------------------------

2 position spring return

Type <b>16</b>	Code* 200.7685.1110.0
-------------------	--------------------------

2 position spring return

Type <b>17</b>	Code* 200.7685.1040.0
-------------------	--------------------------

2 position spring return

Type <b>20</b>	Code* 200.7685.3010.0
-------------------	--------------------------

2 position detent + spring return

Type <b>38</b>	Code* 200.7685.2029.0
-------------------	--------------------------

4 position detent

Type <b>84</b>	Code 200.9686.1097.0
-------------------	-------------------------

3 position spring return

Type <b>88</b>	Code 200.9686.1010.0
-------------------	-------------------------

3 position spring return to neutral

Type <b>106</b>	Code* 200.7685.2028.0
--------------------	--------------------------

2 position detent - spring return to pos.1

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



2.6.1 Microswitch control

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

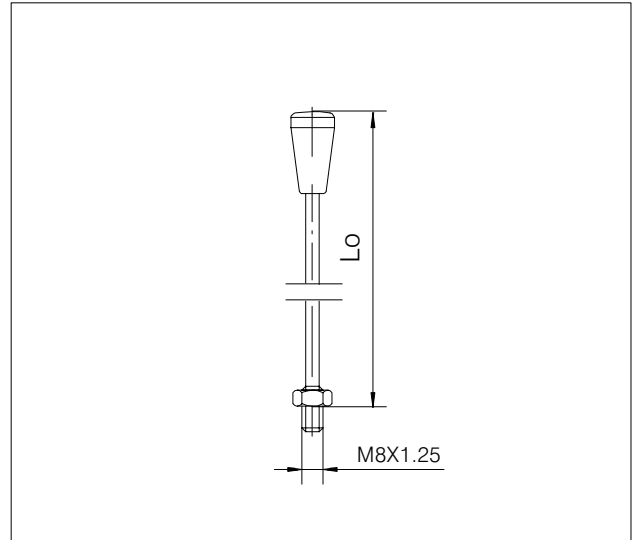
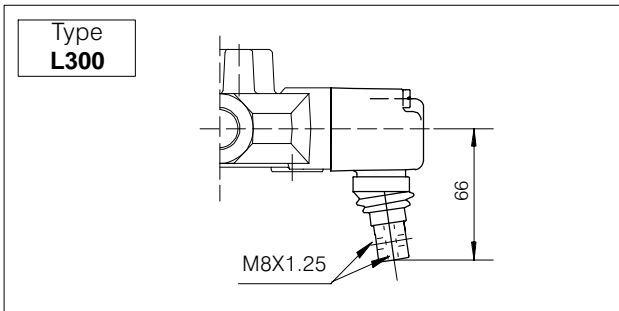
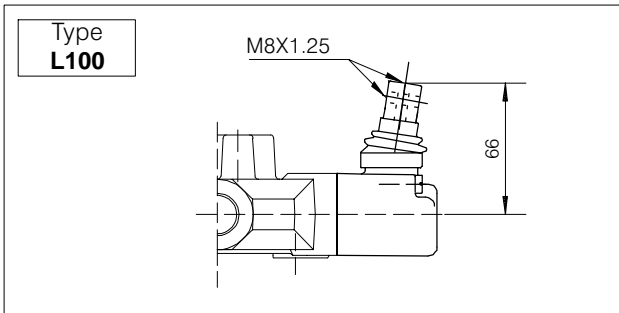
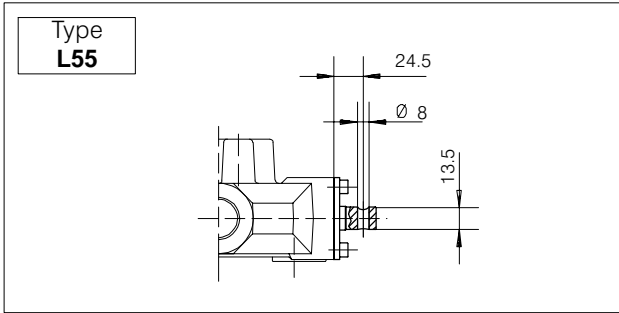
\* The microswitch is supplied only on customer's request.

2.7 Spool charts

Spool scheme	Spool features	Type
	4 way - 3 position A/B closed E open by pass	<b>A</b>
	4 way - 3 position A/B-E closed	<b>B</b>
	4 way - 3 position A/B to tank in neutral E open by pass	<b>C</b>
	3 way - 3 position B closed E open by pass	<b>G</b>
	4 way - 3 position with regenerative spool in 1 <sup>st</sup> position	<b>R**</b>
	3 way - 3 position A closed E open by pass	<b>S</b>
	4 way - 4 position 4 <sup>th</sup> floating position	<b>Z</b>

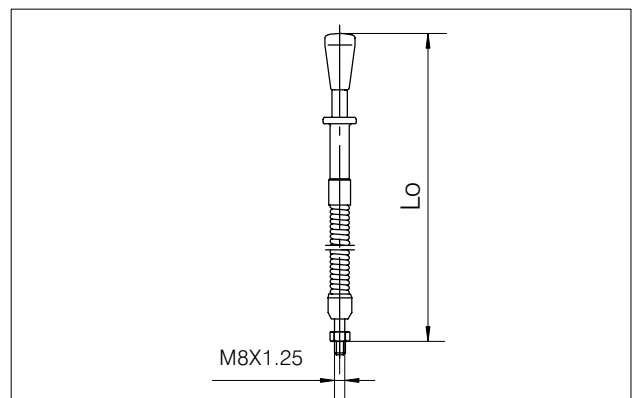
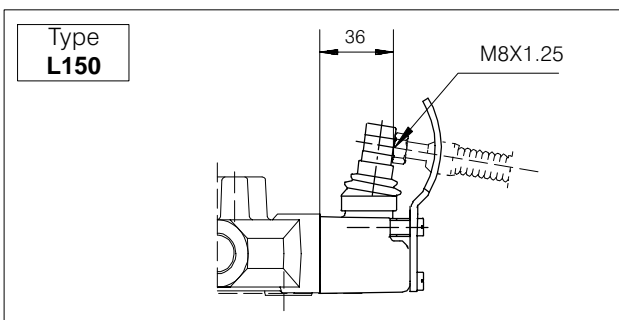
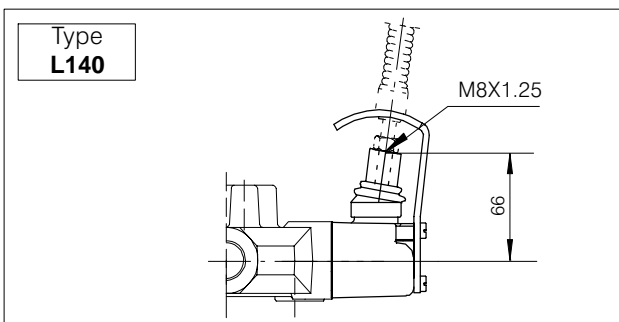
\*\* : special body required

2.8 Lever styles



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

2.8.1 Safety levers



Lo		Type	Code
mm	inches		
160	6.30	<b>AL014</b>	200.7022.1009.0
180	7.08	<b>AL018</b>	200.7022.1011.0

2.8.2 Remote cable control

<b>Lever Support</b>	Code 200.7609.0013.0
----------------------	-------------------------

M10X1.5

Optional 200.6772.0048.0

Lo		Type	Code
mm	inches		
185	7.28	<b>AL001</b>	200.7022.2001.0
250	9.84	<b>AL002</b>	200.7022.2003.0
300	11.81	<b>AL003</b>	200.7022.2004.0
350	13.78	<b>AL004</b>	200.7022.2005.0

<b>Cable</b>	
--------------	--

Cable length	Code
1000 mm	200.5441.04002
1500 mm	200.5441.04005
2000 mm	200.5441.04006
2500 mm	200.5441.04007
3000 mm	200.5441.04008
4000 mm	200.5441.04009

Cables are assembled on the valve only on request and with an extra charge.

<b>Spool Kit</b>
------------------

Code: 200.9609.0037.0

2.9 Hydraulic-Pneumatic control ON-OFF

Type	Code
<b>HP 24</b>	200.9686.5049.0

Operating conditions  
 Hydraulic control:  
 Pressure range: (bar) Min. 6 - Max. 15  
 (PSI) Min. 85 - Max. 215  
 Pneumatic control:  
 Pressure range: (bar) Min. 6 - Max. 10  
 (PSI) Min. 85 - Max. 145

## **BUCHER HYDRAULICS**

[www.bucherhydraulics.com](http://www.bucherhydraulics.com)

### **Germany**

Phone +49 7742 85 20  
Fax +49 7742 71 16  
[info.de@bucherhydraulics.com](mailto:info.de@bucherhydraulics.com)

### **France**

Phone +33 389 64 22 44  
Fax +33 389 65 28 78  
[info.fr@bucherhydraulics.com](mailto:info.fr@bucherhydraulics.com)

### **Netherlands**

Phone +31 79 34 26 24 4  
Fax +31 79 34 26 28 8  
[info.nl@bucherhydraulics.com](mailto:info.nl@bucherhydraulics.com)

### **UK**

Phone +44 24 76 35 35 61  
Fax +44 24 76 35 35 72  
[info.uk@bucherhydraulics.com](mailto:info.uk@bucherhydraulics.com)

### **USA**

Phone +1 262 605 82 80  
Fax +1 262 605 82 78  
[info.wi@bucherhydraulics.com](mailto:info.wi@bucherhydraulics.com)

### **Switzerland**

Phone +41 33 67 26 11 1  
Fax +41 33 67 26 10 3  
[info.ch@bucherhydraulics.com](mailto:info.ch@bucherhydraulics.com)

### **Italy**

Phone +39 0522 92 84 11  
Fax +39 0522 51 32 11  
[info.it@bucherhydraulics.com](mailto:info.it@bucherhydraulics.com)

### **Austria**

Phone +43 6216 44 97  
Fax +43 6216 44 97 4  
[info.at@bucherhydraulics.com](mailto:info.at@bucherhydraulics.com)

### **China**

Phone +86 10 64 44 32 38  
Fax +86 10 64 44 32 35  
[info.bj@bucherhydraulics.com](mailto:info.bj@bucherhydraulics.com)

### **Product Center (Elevator)**

Phone +41 41 757 03 33  
Fax +41 41 755 16 49  
[info.nh@bucherhydraulics.com](mailto:info.nh@bucherhydraulics.com)

We reserve the right of modification without prior notice.