



Q35

Monoblock directional valve

- Simple, compact and heavy duty designed monoblock valve
- Only one section for open center hydraulic systems
- Only mechanical controls available

Working conditions

This catalogue shows technical specifications and diagrams measured through mineral oil of 46mm²/s - 46 cSt viscosity at 40°C - 104°F temperature.

Nominal flow rating		40 l/min - (10.6 Us gpm)
Max. pressure		300 bar (4300 psi)
Max. back pressure on outlet T port (*)		25 bar (360 psi)
Number sections		1
Internal leakage A(B)⇒T	$\Delta p = 100 \text{ bar (1450 psi)}$	5 cm ³ /min (0.30 in ³ /min)
Fluid		Mineral oil
Fluid temperature	with NBR (BUNA-N) seals	from -30°C to 80°C - from -22 °F to 176 °F
Viscosity	operating range	from 10 to 400 mm ² /s - from 10 to 400 cSt
Max. contamination level		16/14/12 - ISO 4406 - NAS1638 class 6
Ambient temperature		from -20°C to 50°C - from -4 °F to 122 °F

NOTE - For different conditions please contact our Sales Department.

(*): On request max back pressure allowable is 180 bar (2610 psi)

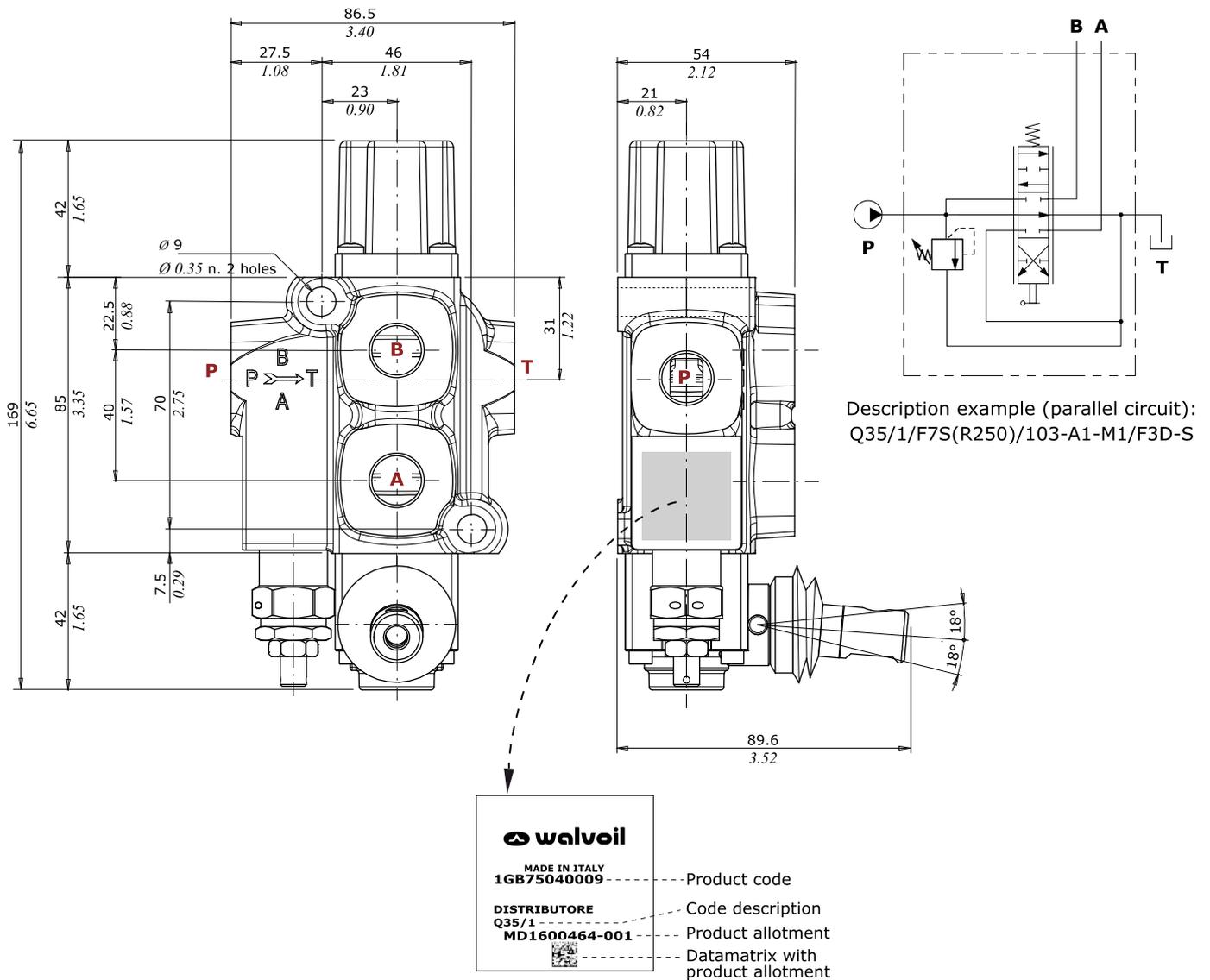
REFERENCE STANDARD

		BSP	UN-UNF
THREAD ACCORDING TO		ISO 228/1	ISO 263
		BS 2779	ANSI B1.1 unified
CAVITY DIMENSION ACCORDING TO	ISO	1179	11926
	SAE		J11926
	DIN	3852-2 shape X or Y	

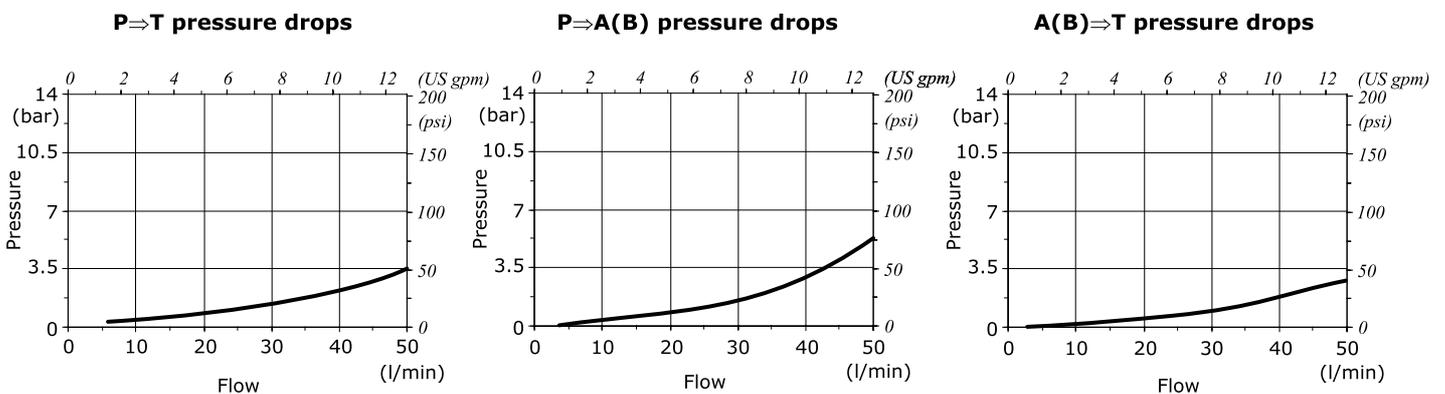
PORT THREADING

PORTS	BSP	UN-UNF
P Inlet	G 3/8	3/4-16 (SAE 8)
A and B ports	G 3/8	3/4-16 (SAE 8)
T Outlet	G 3/8	3/4-16 (SAE 8)

Dimensional data and hydraulic circuit



Performance data



NOTE: Drawings and dimensions are referred to a **BSP** threading configuration.

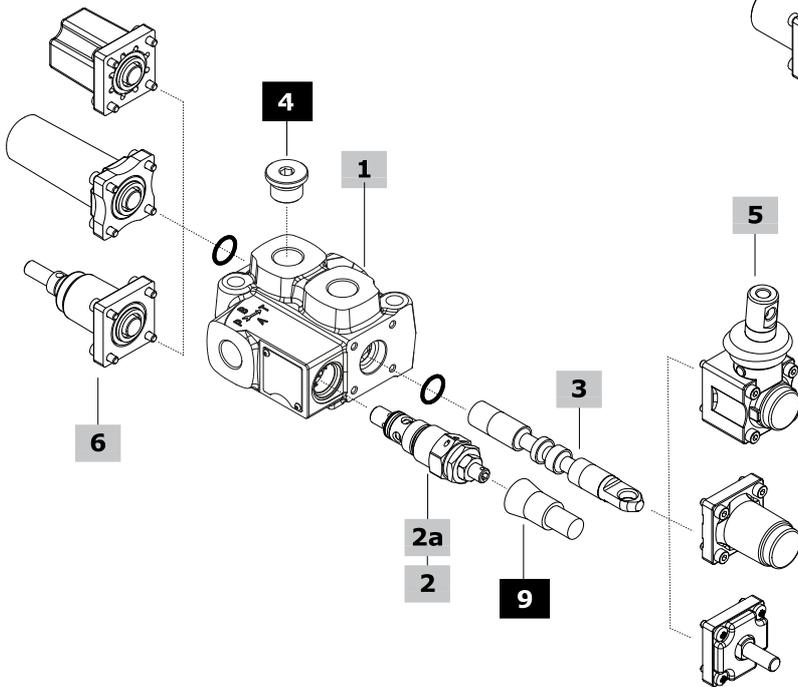
Parts ordering codes

Mechanical control valve configuration example

valve setting (bar)
Q35 / 1 / F7S (R250) / 103 - A1 - M1 / F3D - S

1 2 2a 3 5 6 open center aluminium controls

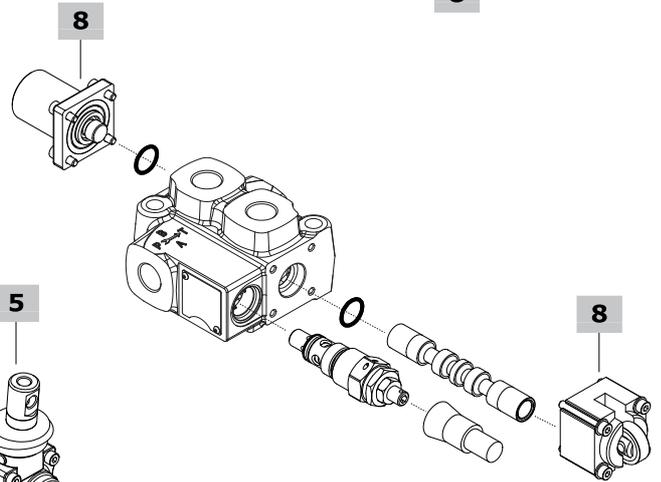
N. of section



C2/C3 complete mechanical controls valve configuration example

Q35 / 1 / F7S (R250) / 103 - C3 / F3D - S

8

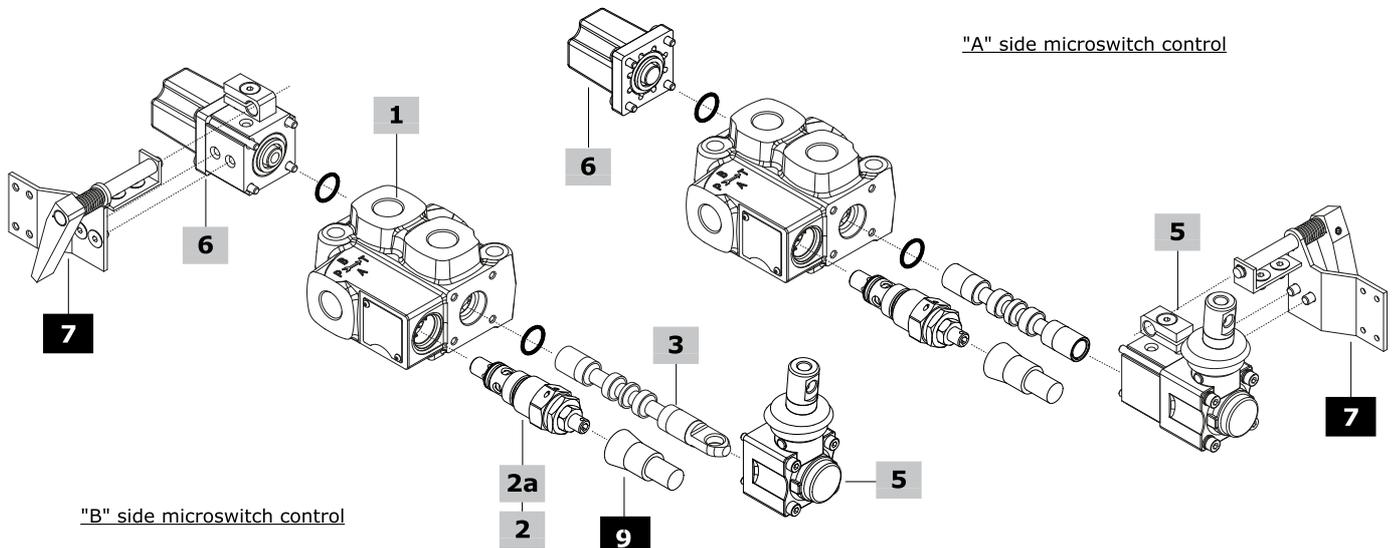


Microswitch control valve configuration example

valve setting (bar)
Q35 / 1 / F7S (R250) / 103 - A1 - M1-N1 / F3D - S **Q35 / 1 / F7S (R250) / 103 - N1-A1 - M1 / F3D - S**

1 2 2a 3 5 6 open center aluminium controls 5 6

N. of section



Parts ordering codes

1 Body kit*

The code are referred to sections with O-ring seals

TYPE	CODE	DESCRIPTION
Q35/1	5KC0600127954	1 section

2 Inlet configuration* page 9

TYPE	DESCRIPTION
F7S	With pressure relief valve
F8S	Without valves (pressure relief valve plugged port)

2a Main pressure relief valve page 9

TYPE: B	CODE: 700035205000000
DESCRIPTION: VLP35S valve, setting range 10-100 bar (145-1450 psi)	
TYPE: N	CODE: 700035105000000
DESCRIPTION: VLP35S valve, setting range 101-200 bar (1460-2900 psi)	
TYPE: R	CODE: 700035305000000
DESCRIPTION: VLP35S valve, setting range 201-380 bar (2910-5500 psi)	
TYPE: -	CODE: 060002788899
DESCRIPTION: Without valves (pressure relief valve plugged port)	

3 Spool page 10

TYPE	CODE	DESCRIPTION
Standard spools		
103	KR35103	Double acting, A and B closed in neutral pos.
	KR35103N	As previous one, negative overlap
111	KR35111	Double acting, A and B to tank in neutral pos.
101	KR35101-102	Single acting on port A. G3/8 plug is required, see #4
102	KR35101-102	Single acting on port B. G3/8 plug is required, see #4

Special spools for cam, microswitch controls and other leverless controls

103	3CUG2800600	Double acting, A and B closed in neutral pos.
111	3CUG2807300	Double acting, A and B to tank in neutral pos.

4 Plug for single acting spool*

TYPE	CODE	DESCRIPTION
-	060002792199	G3/8 plug

5 A side control page 11

TYPE	CODE	DESCRIPTION
For standard spools		
<u>With lever control:</u>		
A1	03600A1-A2	M8 thread plastic lever box
A2	03600A1-A2	As A1 type, with lever box rotated 180°
A1/10	03610A1-A2/10	M8 thread aluminium lever box
A2/10	03610A1-A2/10	As A1/10 type, with lever box rotated 180°
A1/PM	03610A1-A2/PM	M10 thread aluminium lever box
A2/PM	03610A1-A2/PM	As A1/PM type, with lever box rotated 180°
A1/PMP	03610A1-A2/PMP	M10 thread plastic lever box
A2/PMP	03610A1-A2/PMP	As A1/PMP type, with lever box rotated 180°

With safety lever control:

A1/S⁽¹⁾	03624A1-A2/S	M8 thread aluminium lever box
A2/S⁽¹⁾	03624A1-A2/S	As A1/S type, with lever box rotated 180°

Without lever control:

A8	03622A8/03	Flexible cable control arrangement
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For types 103 and 111 special spools

With spool position microswitch:

Note: to complete the control you must use the assembly kit at #7

N1-A1	03641N1-A1/A2	Micro operation in pos. 1 and 2, with lever box
N1A-A1	03642N1A-A1/A2	Micro operation in pos. 1, with lever box
N1B-A1	03643N1BA1/A2L	Micro operation in pos. 2, with lever box
N1-A3	03648N1-A3L	Micro operation in pos. 1 and 2, without lever with cap
N1A-A3	03648N1A-A3L	Micro operation in pos. 1, without lever with cap
N1B-A3	03648N1B-A3L	Micro operation in pos. 2, without lever with cap

5 A side control (cont.) page 11

TYPE	CODE	DESCRIPTION
For types 103 and 111 special spools		
<u>Without lever control:</u>		
A3	03614A3	Without lever, with cap
	03614A3/03	As previous one, with aluminium cap
A4	03617A4	M8 male thread external pin with flange
	03617A4/03	As previous one, with aluminium flange
A5⁽²⁾	03619A5	Flange with spherical spool end

6 B side control page 15

TYPE	CODE	DESCRIPTION
<u>With spring return:</u>		
M1	03730M1	3 pos., spring return in neutral position
	03730M1/03	As previous one, with aluminium cap
M1-U1	03701M1-U1	As M1 type, with M8 male thread external pin
M2	03732M2	2 pos. (0-1), spring return in neutral position
	03732M2/03	As previous one, with aluminium cap
M2-U1	03702M2-U1	As M2 type, with M8 male thread external pin
M3	03733M3	2 pos. (0-2), spring return in neutral position
	03733M3/03	As previous one, with aluminium cap
M3-U1	03703M3-U1	As M3 type, with M8 male thread external pin
M4-U1	03704M4-U11-2	2 pos. (1-2), spring return in pos. 1, with M8 male thread external pin

With flexible cable control arrangement:

M1-U2	03715M1-U2	3 pos., spring return in neutral position
M2-U2	03716M2-U2	2 pos. (0-1), spring return in neutral position

With detent:

R1	03741R1	3 pos., detent in position 1
	03741R1/03	As previous one, with aluminium cap
R2	03742R2	3 pos., detent in position 2
	03742R2/03	As previous one, with aluminium cap
R3	03743R3	3 pos., detent in all position
	03743R3/03	As previous one, with aluminium cap

With spool position microswitch:

Note: to complete the control you must use the assembly kit at #7

M1-N1	03766M1-N1	3 pos., micro operation in pos. 1 and 2, spring return in neutral position
M1-N1A	03767M1-N1AL	As M1-N1 type, micro operation in pos. 1
M1-N1B	03768M1-N1BL	As M1-N1 type, micro operation in pos. 2
M2-N1	03769M2-N1L	2 pos. (0-1), spring return in neutral position
M3-N1	03772M3-N1L	2 pos. (0-2), spring return in neutral position

7 Microswitch assembling kit

CODE	DESCRIPTION
03650N1-01	Kit for 1 section

8 Complete controls A+B sides page 18

TYPE	CODE	DESCRIPTION
For types 103 and 111 special spools		
C2	03792C2-C3	Cam control from position 1 to 2
C3	03792C2-C3	Cam control from position 2 to 1

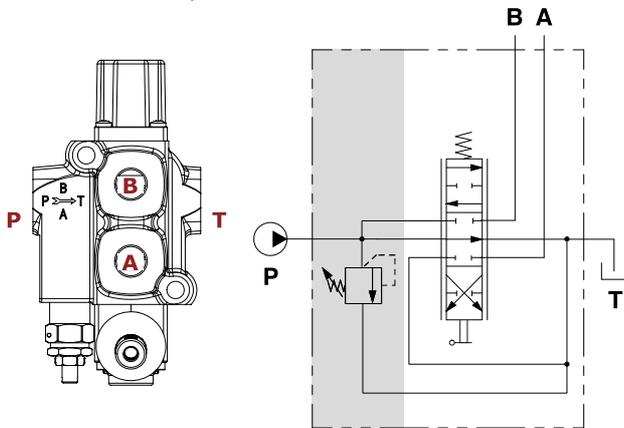
9 Accessory

TYPE	CODE	DESCRIPTION
-	4COP120420	Antitamper cap for pressure relief valve

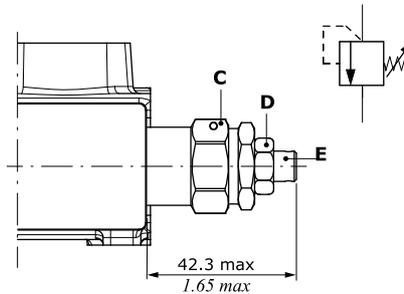
(*): Codes are referred to **BSP** thread
 (1): Always complete with lever knob
 (2): To be assembled only with M4 control

Main pressure relief valve

F7S configuration
With pressure relief valve



Main pressure relief valve

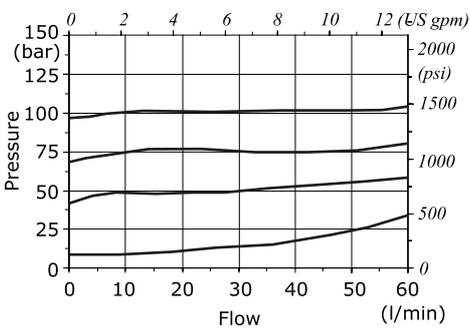


Wrenches and tightening torques

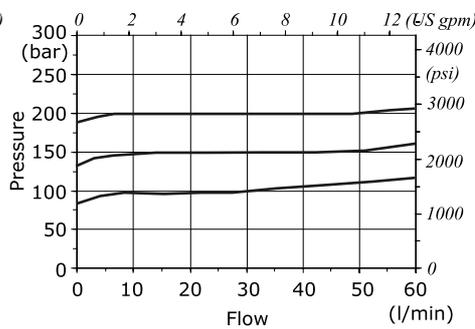
- C = wrench 22 - 42 Nm (30.9 lbf^t)
- D = wrench 13 - 24 Nm (17.7 lbf^t)
- E = allen wrench 4

Spring type	Setting ranges (bar - psi)
B (white)	From 10 to 100 - from 145 to 1450
N (black)	From 101 to 200 - from 1460 to 2900
R (red)	From 201 to 380 - from 2910 to 5500

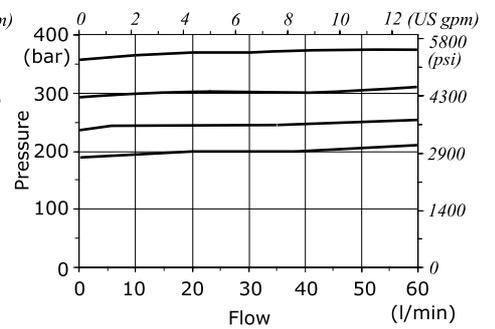
Setting example (B type spring)



Setting example (N type spring)

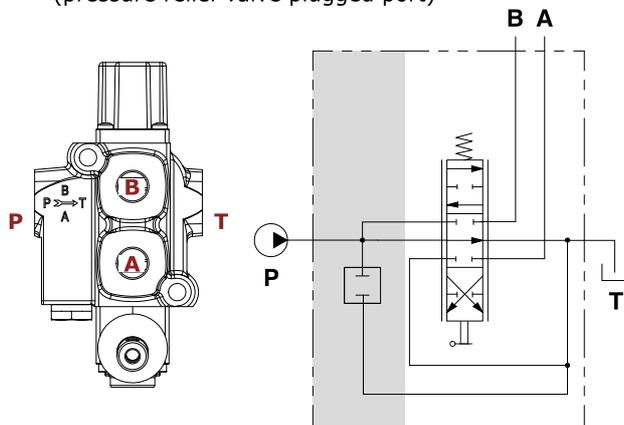


Setting example (R type spring)

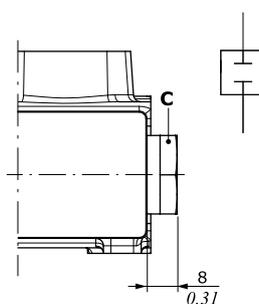


F8S configuration

Without valves
(pressure relief valve plugged port)



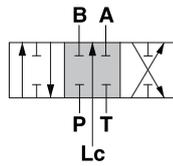
Relief valve blanking plug



Spool

103 type
A and B closed
in neutral position

2 0 1

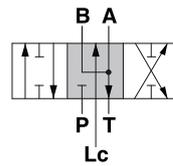


Stroke

Position 1: + 5 mm (+ 0.19 in)
Position 2: - 5 mm (- 0.19 in)

111 type
A and B to tank
in neutral position

2 0 1

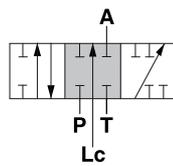


Stroke

Position 1: + 5 mm (+ 0.19 in)
Position 2: - 5 mm (- 0.19 in)

101 type
Single acting on A,
B plugged

2 0 1

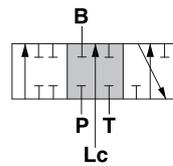


Stroke

Position 1: + 5 mm (+ 0.19 in)
Position 2: - 5 mm (- 0.19 in)

102 type
Single acting on B,
A plugged

2 0 1



Stroke

Position 1: + 5 mm (+ 0.19 in)
Position 2: - 5 mm (- 0.19 in)

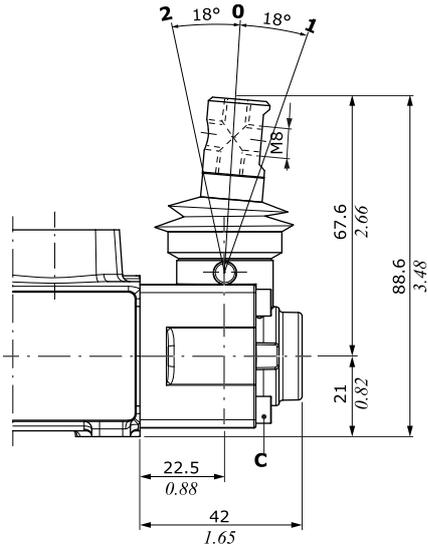
A side controls

Mechanical controls

With lever control

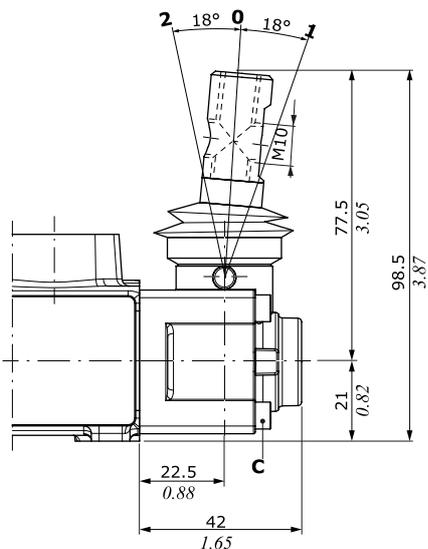
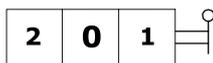
A1 type

M8 thread plastic lever box



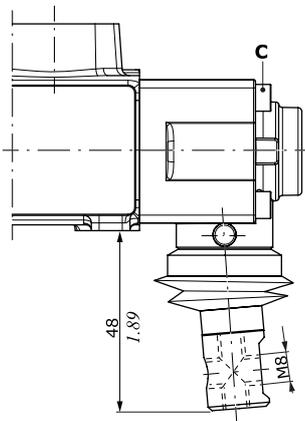
A1/PM type

M10 thread aluminium lever box



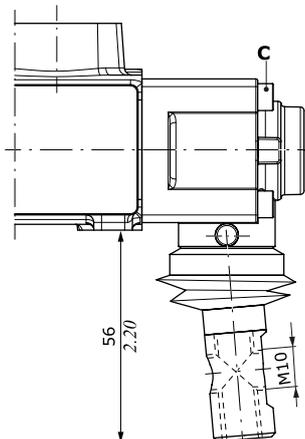
A2 type

As A1 type, rotated 180°



A2/PM type

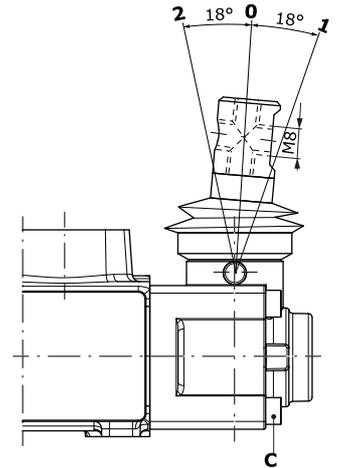
As A1/PM type, rotated 180°



A1/10 type

M8 thread aluminium lever box. Dimensions are the same of A1 type

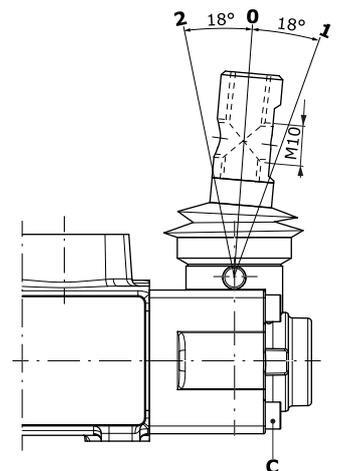
A2/10 type
As A1/10 type, rotated 180°



A1/PMP type

M10 thread plastic lever box. Dimensions are the same of A1/PM type

A2/PMP type
As A1/PMP type, rotated 180°



Wrenches and tightening torques

C = allen wrench 3 - 3 Nm (2.2 lbft)

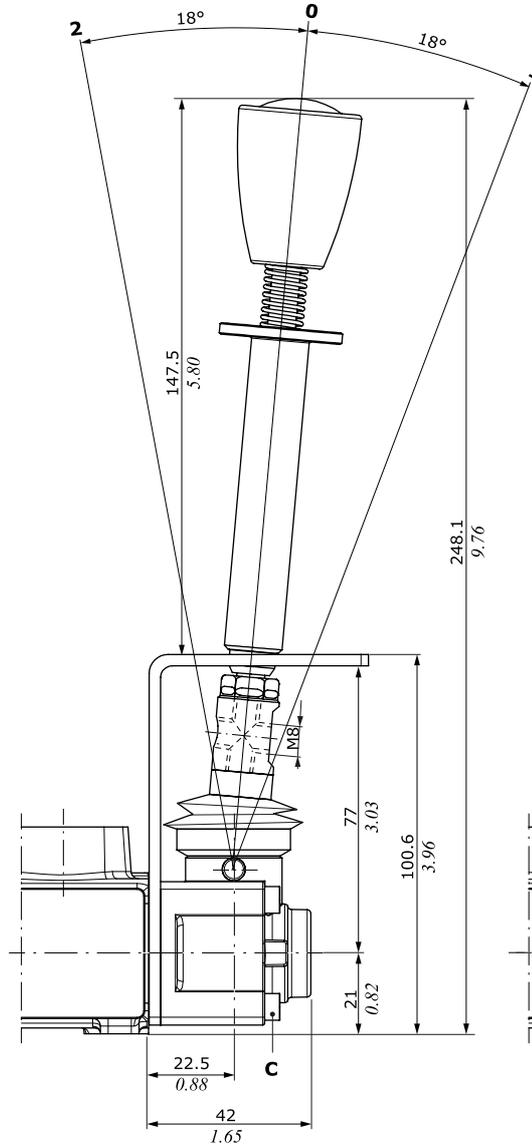
A side controls

Mechanical controls

With safety lever control

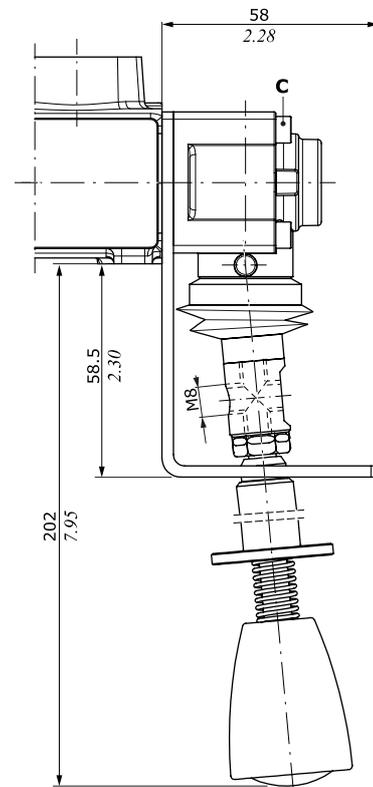
A1/S type

M8 thread, aluminium lever box



A2/S type

As A1/S type, rotated 180°



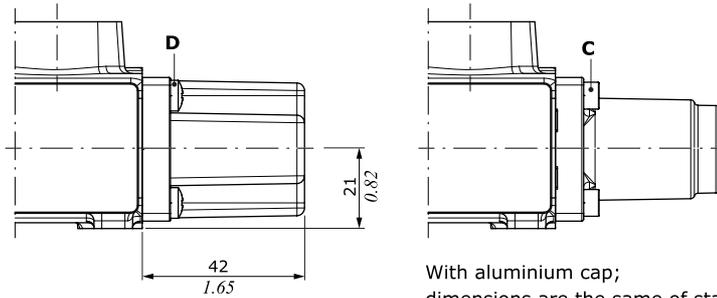
Wrenches and tightening torques

C = allen wrench 3 - 3 Nm (2.2 lbf^t)

Mechanical controls

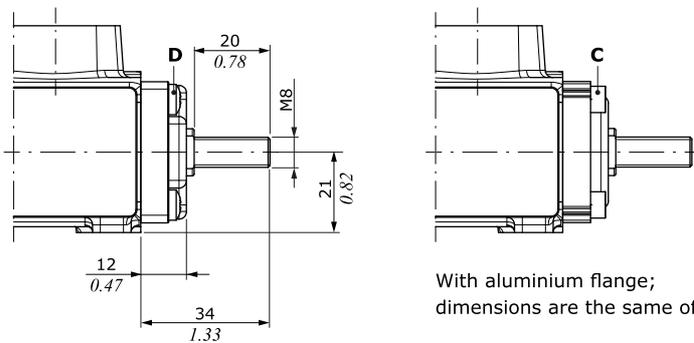
Without lever control

A3 type
With cap.
Available with aluminium cap



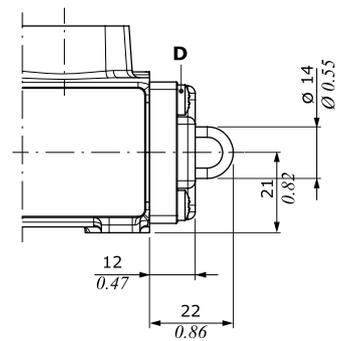
With aluminium cap;
dimensions are the same of standard type

A4 type
M8 male thread external pin with flange.
Available with aluminium flange



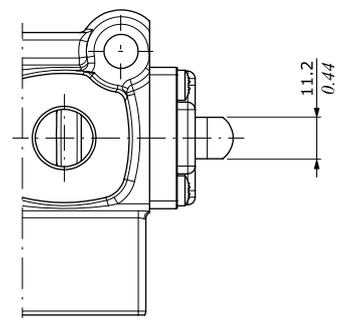
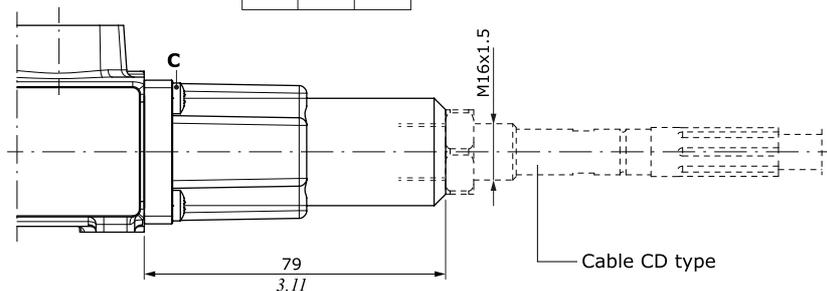
With aluminium flange;
dimensions are the same of standard type

A5 type
Flange with spherical pool end



With flexible cable control arrangement

A8 type
With flexible cable control
arrangement



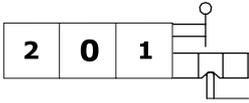
Wrenches and tightening torques
C = allen wrench 3 - 3 Nm (2.2 lbft)
D = cross-head - 3 Nm (2.2 lbft)

A side controls

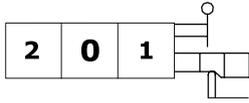
Spool position microswitch

With lever control

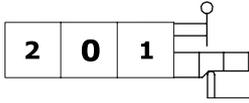
N1-A1 type
Micro operation
in position 1 and 2



N1A-A1 type
Micro operation in
position 1

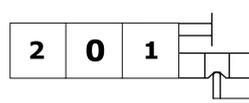


N1B-A1 type
Micro operation in
position 2

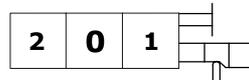


Without lever control, with cap

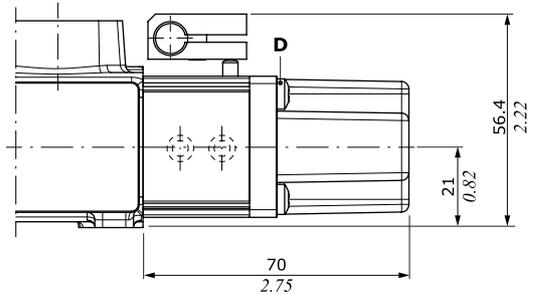
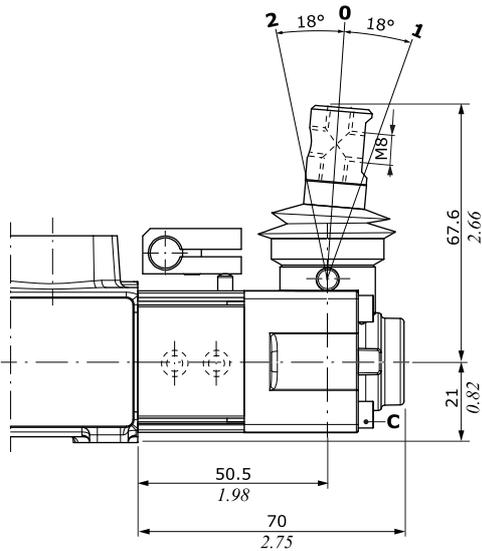
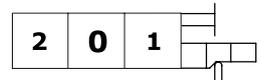
N1-A3 type
Micro operation
in position 1 and 2



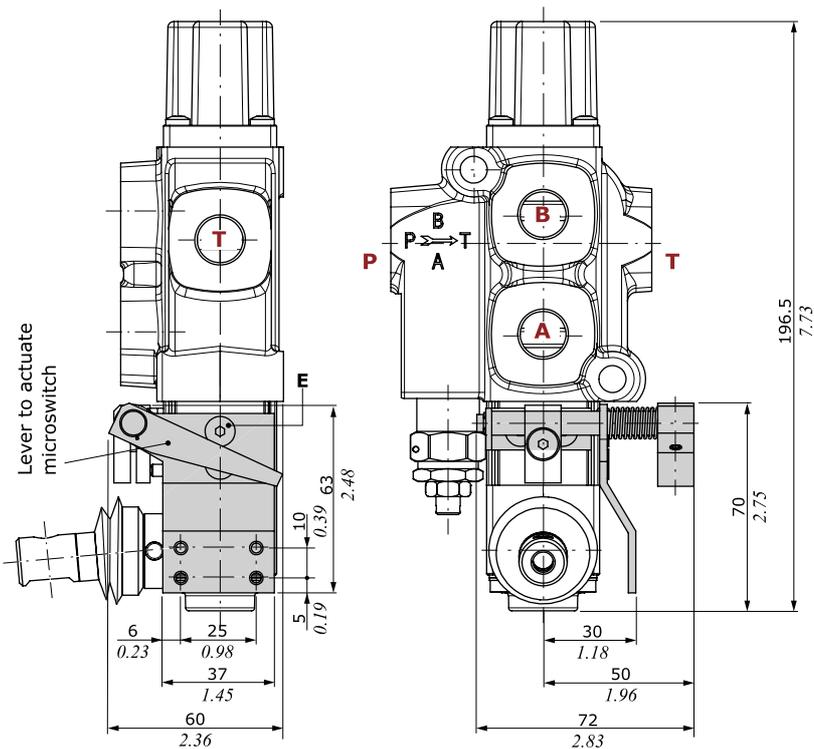
N1A-A3 type
Micro operation in
position 1



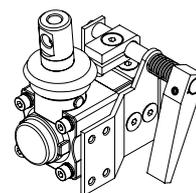
N1B-A3 type
Micro operation in
position 2



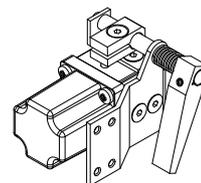
Microswitch assembly kit for 1 working section (N1-A1 type)



with lever box



with cap



Wrenches and tightening torques

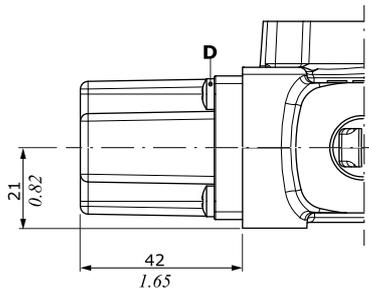
- C = allen wrench 3 - 3 Nm (2.2 lbf^t)
- D = cross-head - 3 Nm (2.2 lbf^t)
- E = allen wrench 3 - 6.6 Nm (4.8 lbf^t)

Mechanical controls

With spring return control

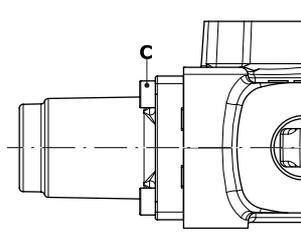
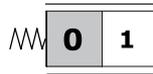
M1 type

3 position, spring return in neutral position.
Available with aluminium cap



M2 type

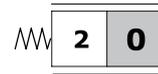
2 position (0-1), spring return in neutral position.
Available with aluminium cap



With aluminium cap;
dimensions are the same of standard type

M3 type

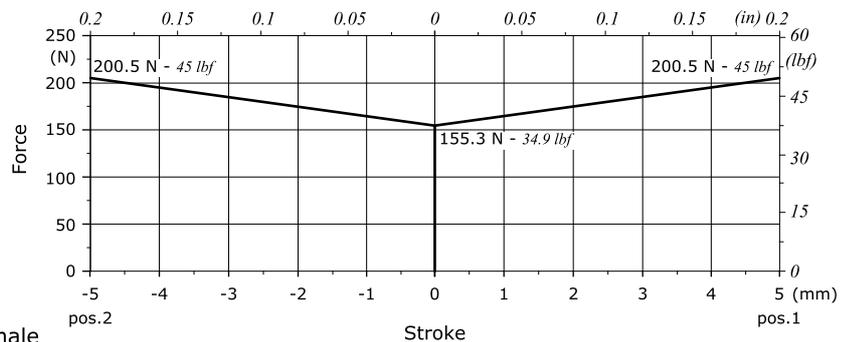
2 position (0-2), spring return in neutral position.
Available with aluminium cap



Wrenches and tightening torques

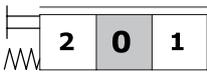
C = allen wrench 3 - 3 Nm (2.2 lbf)
D = cross-head - 3 Nm (2.2 lbf)

M1 control type - Force vs. Stroke diagram



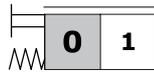
M1/U1 type

As M1 type, with M8 male thread external pin



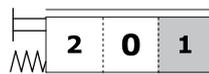
M2/U1 type

As M2 type, with M8 male thread external pin



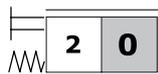
M4/U1 type

2 position (1-2), spring return in pos. 1, with M8 male thread external pin



M3/U1 type

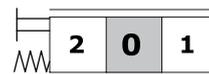
As M3 type, with M8 male thread external pin



With flexible cable control arrangement

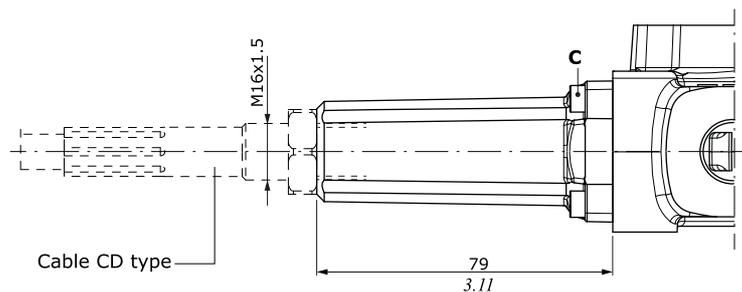
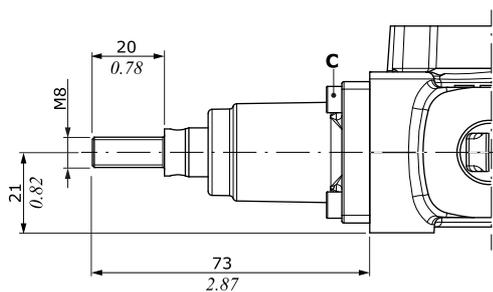
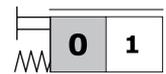
M1/U2 type

3 position, spring return in neutral position



M2/U2 type

2 position (0-1), spring return in neutral position



B side controls

Mechanical controls

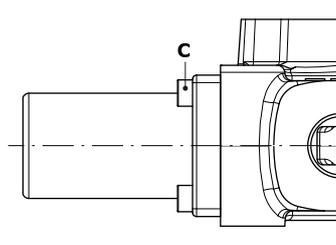
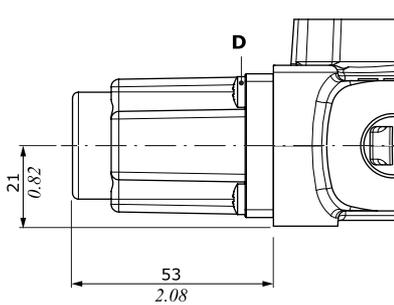
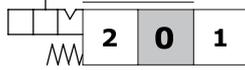
With detent control

R1 type

3 position, detent in position 1.
Available with aluminium cap

Wrenches and tightening torques

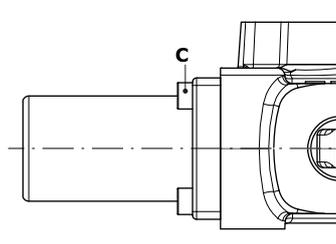
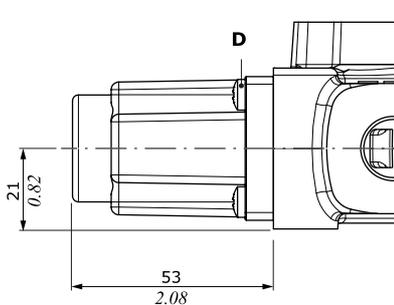
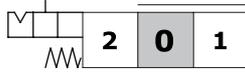
C = allen wrench 3 - 3 Nm (2.2 lbft)
D = cross-head - 3 Nm (2.2 lbft)



With aluminium cap;
dimensions are the same of standard type

R2 type

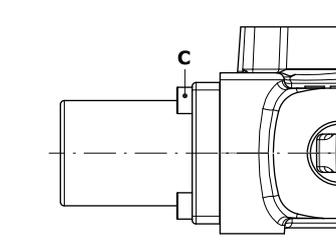
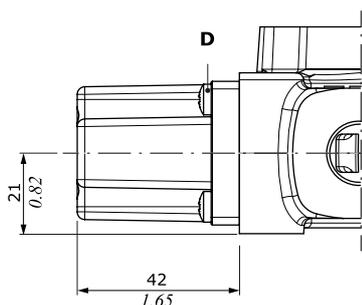
3 position, detent in position 2.
Available with aluminium cap



With aluminium cap;
dimensions are the same of standard type

R3 type

3 position, detent in all position.
Available with aluminium cap

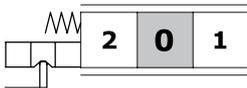


With aluminium cap;
dimensions are the same of standard type

Spool position microswitch

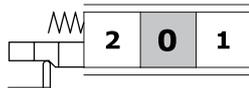
M1-N1 type

3 position, micro operation in position 1 and 2, spring return in neutral position



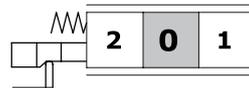
M1-N1A type

3 position, micro operation in position 1



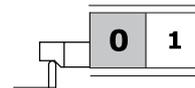
M1-N1B type

3 position, micro operation in position 2



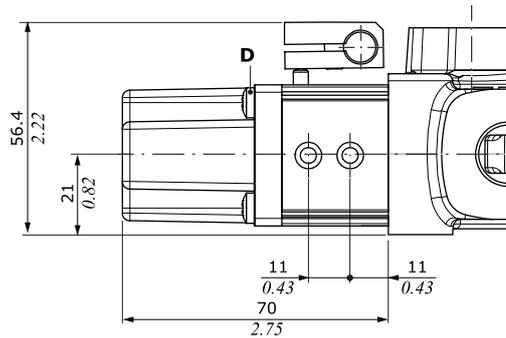
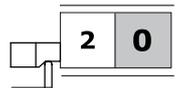
M2-N1 type

2 position (0-1), spring return in neutral position



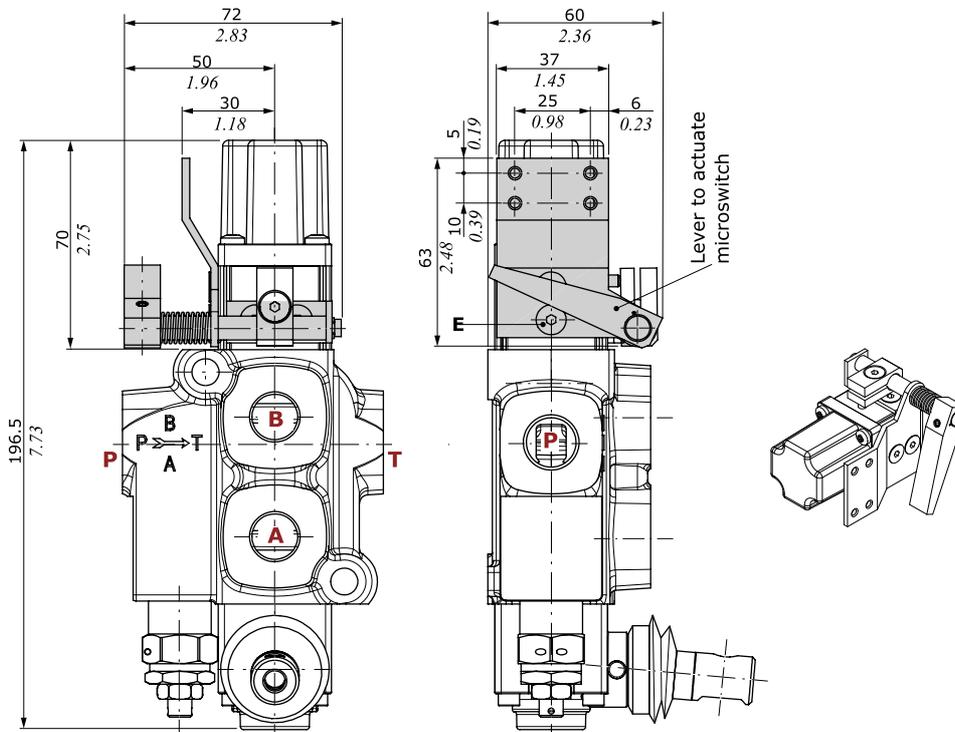
M3-N1 type

2 position (0-2), spring return in neutral position



Wrenches and tightening torques
 D = cross-head - 3 Nm (2.2 lbft)
 E = allen wrench 3 - 6.6 Nm (4.8 lbft)

Microswitch assembly kit for 1 working section (M1-N1 type)



A+B side controls

With cam control

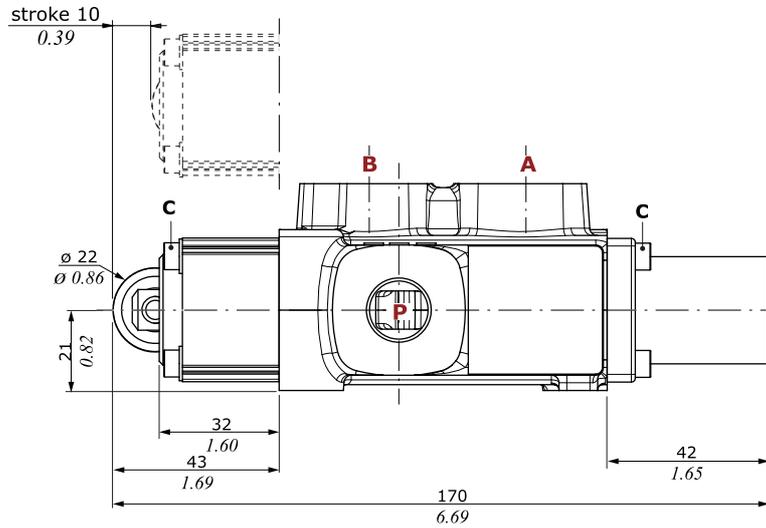
C2 type

From position 1 to position 2,
spring return in position 1



Wrenches and tightening torques

C = allen wrench 3 - 3 Nm (2.2 lbf^t)



C3 type

From position 2 to position 1,
spring return in position 2.
Dimensions are the same of C2 type

