

MONOBLOCK DIRECTIONAL
CONTROL VALVE

SD5



 **walvoil**
HYDRAULIC CONTROL SYSTEMS

Features

Simple, compact and heavy duty designed monoblock valves from 1 to 7 sections for open and closed centre hydraulic systems..

- Fitted with a main pressure relief valve and a load check valve.
- Available with parallel, series or tandem circuit.
- Optional carry-over port (only for parallel or tandem circuit).
- Diameter 16 mm - 0.63 in interchangeable spools.
- A wide variety of service port valve options.
- Actuation is manual, pneumatic, electro-pneumatic, hydraulic, electro-hydraulic, with solenoid and remote with flexible cables spool control kits.

Additional information

This catalogue shows the product in the most standard configurations.
Please contact Sales Dpt. for more detailed information or special request.

WARNING!

All specifications of this catalogue refer to the standard product at this date.
Walvoil, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications, without notice.

WALVOIL IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN
INCORRECT USE OF THE PRODUCT.

1st edition April 2005

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Working conditions

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

Nominal flow rating		45 l/min	
Operating pressure (max.)	<i>parallel pr tandem circuit</i>	315 bar	4600 psi
	<i>series circuit</i>	250 bar	3600 psi
Max. back pressure	<i>on outlet port T</i>	25 bar	360 psi
Internal leakage A(B)→T	$\Delta p=100 \text{ bar} - 1450 \text{ psi}$ with fluid and valve at 40°C	3 cm ³ /min	0.18 in ³ /min
Hydraulic fluid		Mineral base oil	
Fluid temperature	<i>with NBR seals</i>	from -20° to 80°C	
	<i>with FPM seals</i>	from -20° to 100°C	
Viscosity	<i>operating range</i>	from 15 to 75 mm ² /s	from 15 to 75 cSt
	<i>minimum</i>	12 mm ² /s	12 cSt
	<i>maximum</i>	400 mm ² /s	400 cSt
Max. level of contamination		19/16 - ISO 4406	
Ambient temperature	<i>with mechanical, pneumatic and hydraulic devices</i>	from -40° to 60°C	
	<i>with electric devices</i>	from -20° to 60°C	

NOTE - For different conditions please contact Sales Dept.

Standard threads

REFERENCE STANDARDS

		BSP	UN-UNF	METRIC	NPTF
THREAD ACCORDING TO		ISO 228/1	ISO 263	ISO 262	ANSI B1.20.3
		BS 2779	ANSI B1.1 unified		
CAVITY ACCORDING TO	ISO	1179	11926	9974-1	
	SAE		J1926	J2244	J476a
	DIN	3852-2 shape X o Y		3852-1 shape X o Y	

PORTS THREAD

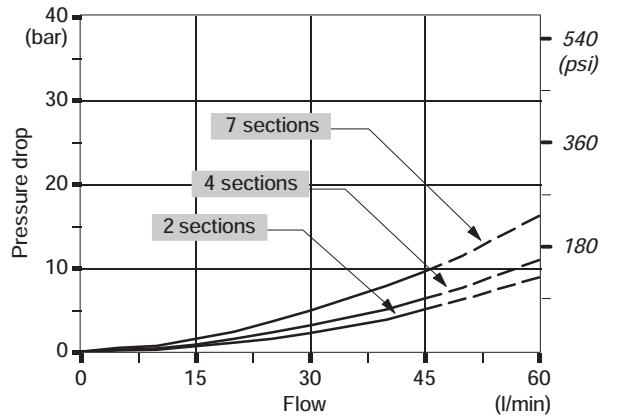
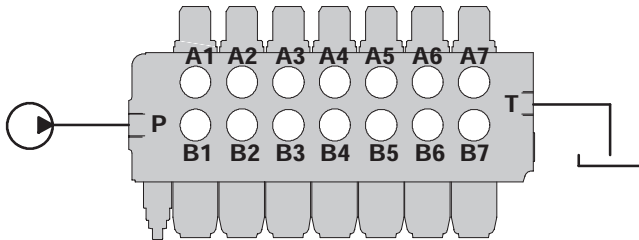
MAIN PORTS	BSP	UN-UNF	METRICA
Inlet P and carry-over C	G 3/8	3/4-16 (SAE 8)	M18x1,5
Ports A and B	G 3/8	9/16-18 (SAE 6)	M18x1,5
Outlet T	G 3/8 G 1/2 *	3/4-16 (SAE 8)	M18x1,5 M22x1,5 *
CONTROL PILOT PORTS			
Pneumatics	NPTF 1/8-27	NPTF 1/8-27	NPTF 1/8-27
Hydraulics	G 1/4	9/16-18 (SAE 6)	G 1/4

(*) - Only for series circuit..

Performance data (pressure drop vs. flow)

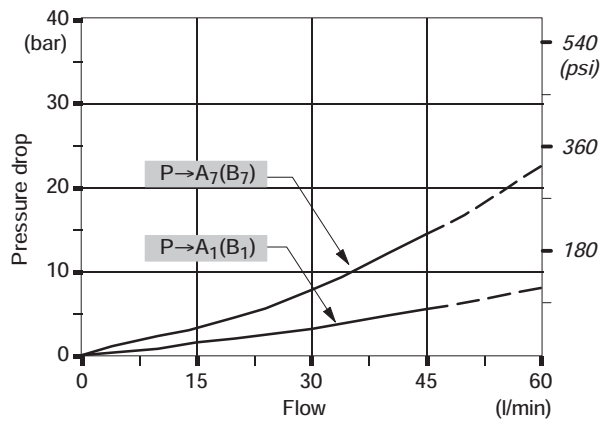
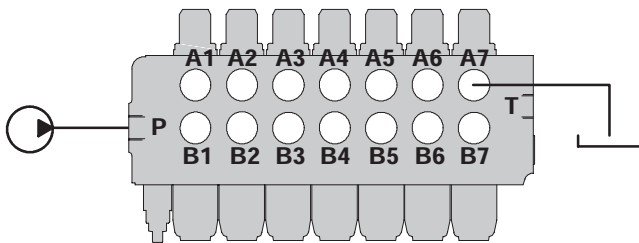
Open centre

From side inlet to side outlet.



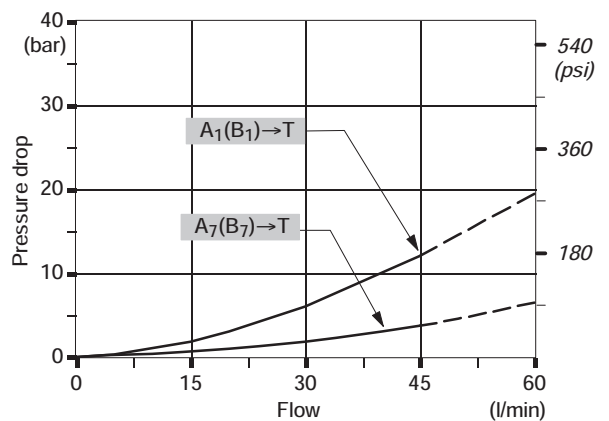
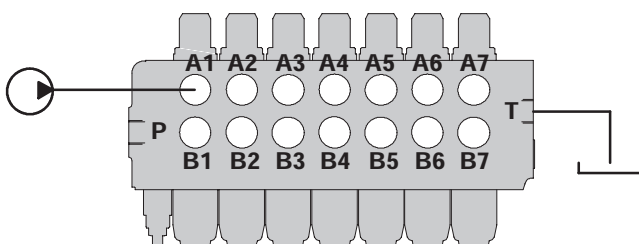
Inlet to work port

From side inlet to A port (spool in position 1) or B port (spool in position 2).



Work port to outlet

From A port (spool in position 2) or B port (spool in position 1) to side outlet.



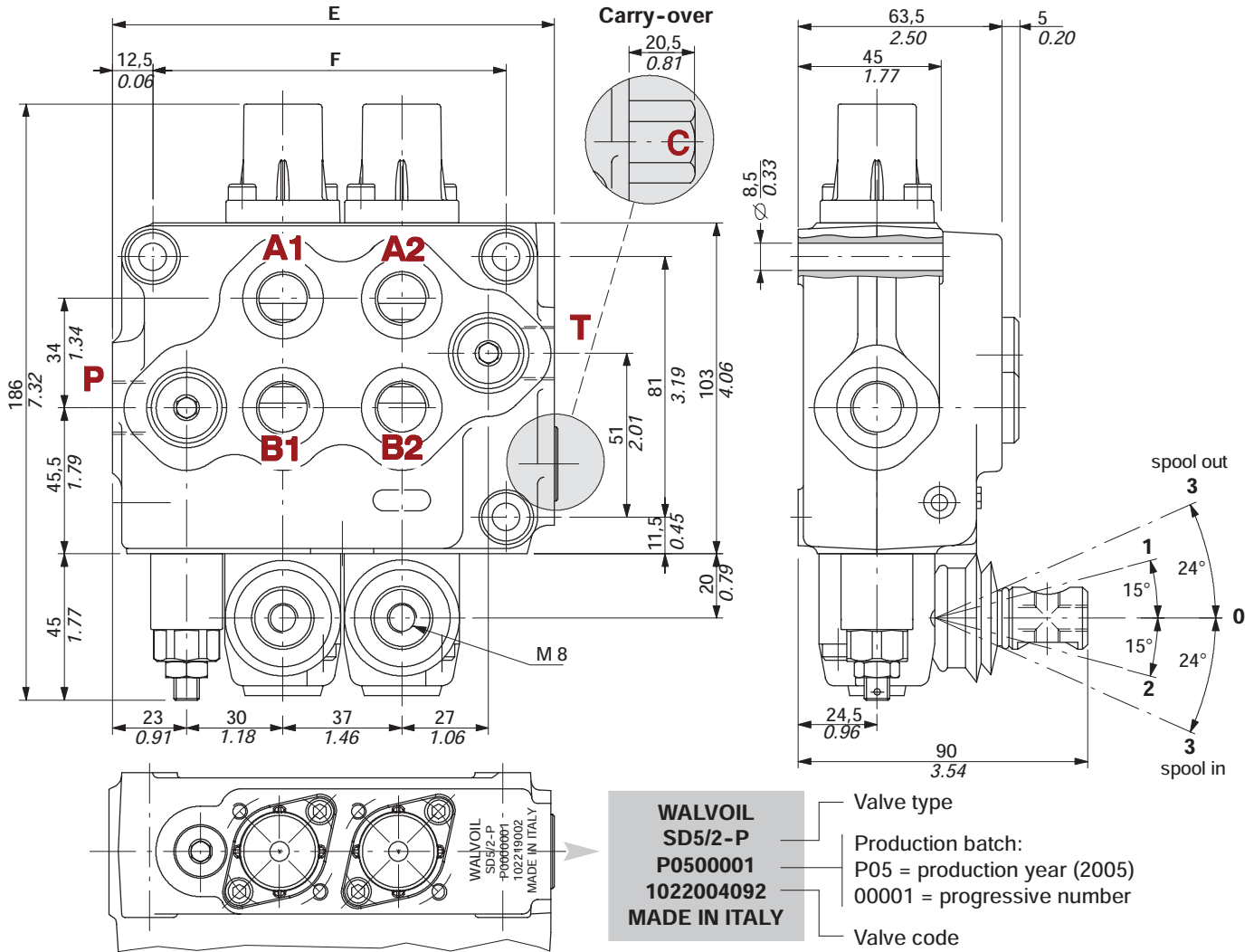
NOTE - Measured with spool type 1.



Directional valve with parallel circuit

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Dimensional data (parallel circuit)

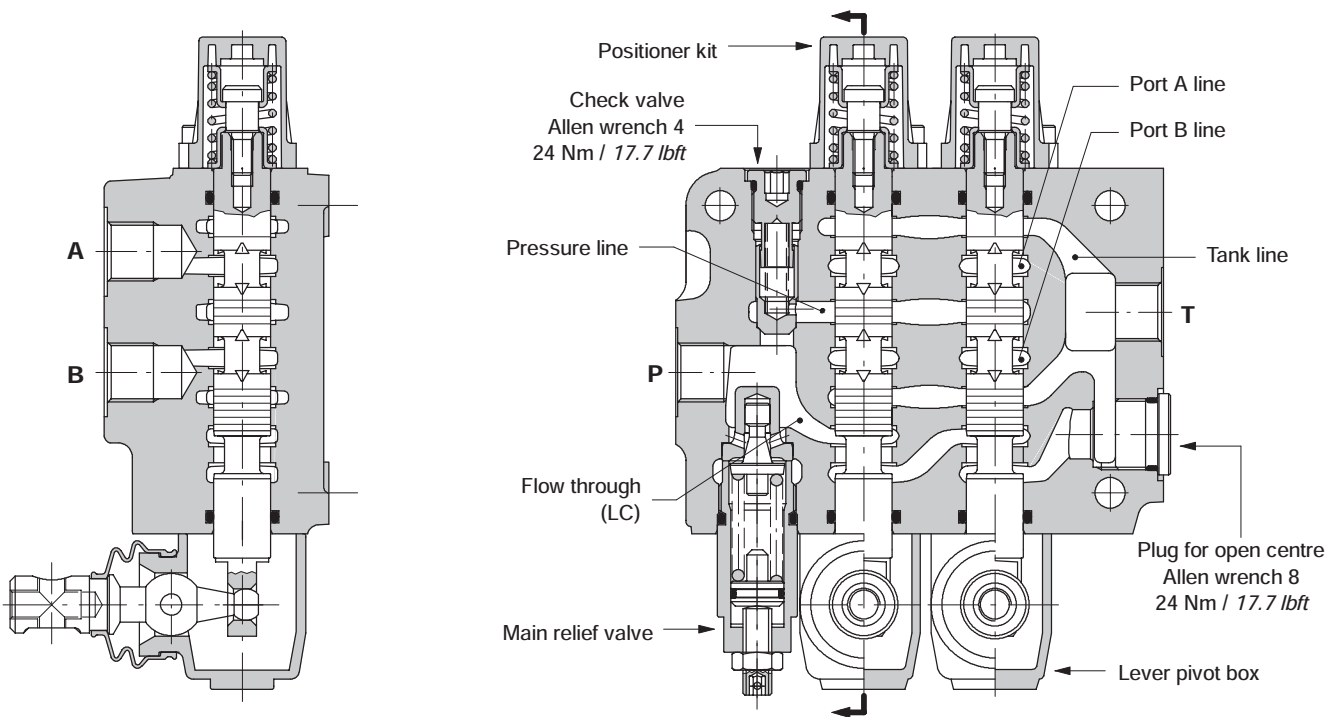


TYPE	E		F		Weight	
	mm	in	mm	in	kg	lb
SD5/1-P	100.5	3.96	73	2.87	3.5	7.7
SD5/2-P	137.5	5.41	110	4.33	5.2	11.5
SD5/3-P	174.5	6.87	147	5.79	6.9	15.2
SD5/4-P	211.5	8.33	184	7.24	8.1	17.9

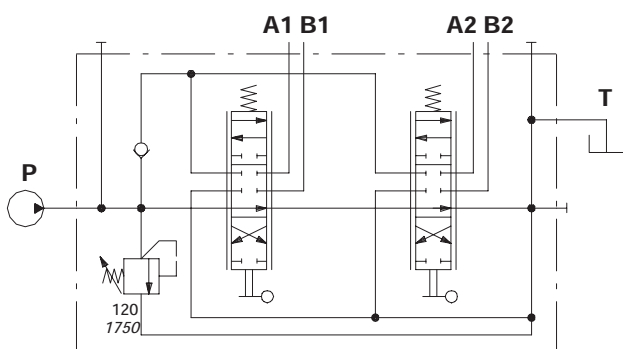
TYPE	E		F		Weight	
	mm	in	mm	in	kg	lb
SD5/5-P	248.5	9.78	221	8.70	10.1	22.3
SD5/6-P	285.5	11.24	258	10.16	11.7	25.8
SD5/7-P	322.5	12.70	295	11.61	13.2	29.1

Parallel

Standard configuration with side inlet and outlet and open centre (AET execution).

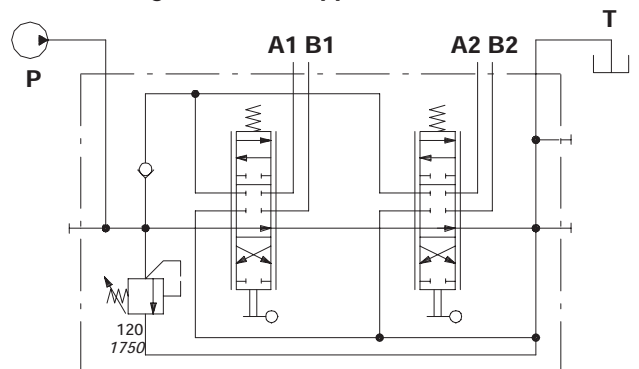


Standard configuration



Description example
SD5/2-P(JG3-120)/18L/18L/AET

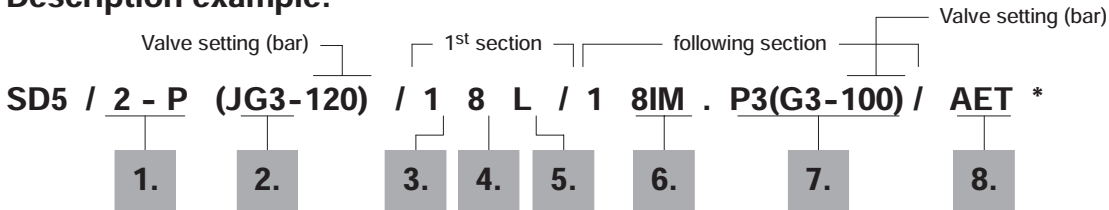
Configuration with upper inlet and outlet



Description example:
SD5/2-P(JG3-120)/18L/18L/AET-PSA

Ordering codes

Description example:



1. Body kits *

TYPE	CODE	DESCRIPTION
1-P	5KC1193000	Parallel, 1 section
2-P	5KC1223000	Parallel, 2 sections
3-P	5KC1243000	Parallel, 3 sections
4-P	5KC1273000	Parallel, 4 sections
5-P	5KC1313000	Parallel, 5 sections
6-P	5KC1353000	Parallel, 6 sections
7-P	5KC13E3000	Parallel, 7 sections

Include bobby, seals and load check valve.

2. Inlet relief options page 12

TYPE	CODE	DESCRIPTION
<u>VMD5 direct pressure relief valve type J</u>		
Standard setting is referred to 10 l/min flow.		
(JG2-63)	5KIT105412	Range 40 to 63 bar / 580 to 900 psi standard setting 63 bar / 900 psi
(JG3-120)	5KIT105413	Range 50 to 200 bar / 725 to 2900 psi standard setting 120 bar / 1750 psi
(JG4-220)	5KIT105414	Range 160 to 315 bar / 2300 to 4600 psi standard setting 220 bar / 3200 psi
SV	XTAP623282	Relief valve blanking plug

NOTE (*) - Codes are referred to **BSP** threads.

3. Spool options page 13

TYPE	CODE	DESCRIPTION
1	3CU1210130	Double acting, 3 positions, with A and B closed in neutral position
1A	3CU1221130	Double acting, 3 positions, with A open to tank in neutral position
1B	3CU1222130	Double acting, 3 positions, with B open to tank in neutral position
2	3CU1225130	Double acting, 3 positions, with A and B open to tank in neutral position
2H	3CU1225225	Double acting, 3 positions, with A e B partially open to tank in neutral position
3	3CU1231130	Single acting on A, 3 positions, B plugged requires G3/8 plug (see part I)
<u>Special spools for particular positioner kits</u> page 16		
5DY	3CU1242220	Double acting, 4 positions, floating circuit in 4 th position with spool in
5PY	3CU1245620	Double acting, 4 positions, floating circuit in 4 th position with spool out, with check valve
8	3CU1262120	Double acting, 4 positions, regenerative circuit in 4 th position with spool in
<u>Special spools for standard positioner kits</u> page 19		
8F	3CU1261100	Double acting, 3 positions, regenerative circuit in 2 nd position with spool out

4. "A" side spool positioners *page 20*

TYPE	CODE	DESCRIPTION
8	5V08105000	With spring return in neutral position
8D	5V08105200	With spring return in neutral position and pin with M6 female thread for dual control
8D2	5V08105220	With spring return in neutral position and pin with M8 male thread for dual control
8F2	5V08105101	With spring return in neutral position and adjustable flow limiter
19	5V19105000	2 positions, with spring return in neutral position from position 1
20	5V19105000	2 positions, with spring return in neutral position from position 2
9	5V09105010	With detent in position 1 and spring return in neutral position
10	5V10105010	With detent in position 2 and spring return in neutral position
11	5V11105000	Detent in positions neutral, 1 and 2
12	5V12105000	Detent in positions 1 and 2
15	5V15105000	2 positions, detent in positions 1 and neutral
16	5V16105000	2 positions, detent in positions 2 and neutral
9BZ	5V09202010	With detent in position 1 and spring return in neutral position
10BZ	5V10202010	With detent in position 2 and spring return in neutral position
11BZ	5V11202010	Detent in positions 1 and 2 and spring return in neutral position
8K	5V08705112	With spring return in neutral position and 12 VDC spool solenoid lock device
	5V08705124	As previous, 24VDC
8RM2	5V08105590	With spring return in neutral position and 12VDC electromagnetic detent in pos. 2
	5V08105595	As previous, 24VDC
8MHE3(NO)	5V08106541	With spring return in neutral position and spool positioning ON/OFF electric signal circuit normally closed
8MHE3(NO)	5V08106540	As previous, with circuit normally open
8MS3	5V08105553	With spring return in neutral position, operation signalling in position 1 and 2, prearranged for centralized microswitch control: need KM connection kit
8MG3(NO)	5V08105660	With spring return in neutral position and microswitch in positions 1 and 2
8P	5V08105701	ON/OFF pneumatic kit
8EP3	5V08105735	ON/OFF 12 VDC electro-pneumatic kit
	5V08105740	ON/OFF 24 VDC electro-pneumatic kit
8ED3	5V08105350	ON/OFF 12 VDC electro-hydraulic kit
	5V08105351	ON/OFF 24 VDC electro-hydraulic kit

II Optional handlevers

TYPE	CODE	DESCRIPTION
AL01/M8x120	170011012	For lever L: height 120 mm / 4.72 in
AL01/M10x150	170012015	For lever LM10: height 150 mm / 5.91 in
AL08/M12x150	170013115	For joystick LCB: height 150 mm / 5.91 in

4. "A" side spool positioners

Particular positioner kits for special spools *page 36*

13NZ	5V13305010	4 pos. with spring return in neutral pos. and detent in 4 th pos.: for spool 5DY
13QN	5V13405020	4 pos. with spring return in neutral pos. and detent in 4 th pos.: for spool 5PY
13FZ	5V13505400	4 positions with spring return in neutral position: for spool 8
13QNMG3(NO)	5V13405660	As type 13QN with microswitch in positions 1 and 2: for spool 5PY

5. "B" side options *page 39*

TYPE	CODE	DESCRIPTION
L	5LEV105000	Standard lever box
LM10	5LEV205000	Lever box for M10 handlever
LF1	5LEV105102	Lever box with adjustable flow limiter
LEB	5LEV605000	Safety lever box, vertical configuration
LUP	5LEV805005	Safety lever box, horizontal configuration
SLP	5COP105000	Without lever box, with dust-proof plate
SLC	5COP205000	Without lever box, with endcap
TQ	5TEL105110	Flexible cable connection
LCB	5CLO205100	Joystick lever for 2 sections operation

6. Complete controls *page 44*

Proportional hydraulic control type **8IM** and ON/OFF solenoid controls type **8ES** and **8ESN**.

7. Service valves *page 52*

Port relief, anti-shock, pilot operated check and flow regulation valves.

8. Outlet port options *page 49*

TYPE	CODE	DESCRIPTION
AET	XTAP623170	Open centre plug
AEK	3XTAP522282	Closed centre plug
AE	3XGIU522460*	G3/8 carry-over sleeve
AET-L	XCAR405300	With hydraulic pilot unloader valve
AET-EL	YCAR405305	With 12VDC electric control unloader valve; normally open circuit
	YCAR405310	As previous 24VDC
AET-ELC	5CAR405330	With 12VDC electric control unloader valve; normally closed circuit
	5CAR405331	As previous 24VDC
AET-LT	XTAP523370	Prearranged for unloader valve, with blanking plug

9. Inlet and outlet selection * *page 9*

TYPE	CODE	DESCRIPTION
PSL	3XTAP722160	Side ports; need n.2 G 3/8 plugs, standard configuration (omit in valve description)
PSA	3XTAP722160	Upper ports; need n.2 G 3/8 plugs

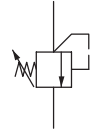
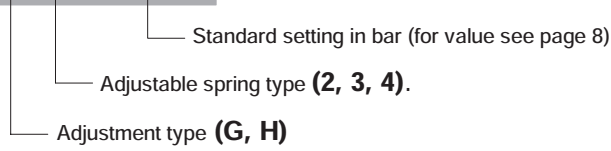
I "A" and "B" ports plugs *

TYPE	CODE	DESCRIPTION
G3/8	3XTAP722160	for single acting spool type 3

Inlet relief options

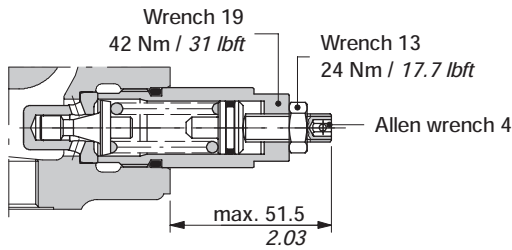
Direct pressure relief vave

VMD5 (J G 3 - 120)

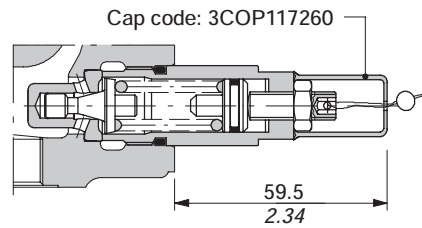


Adjustment type

G: with screw

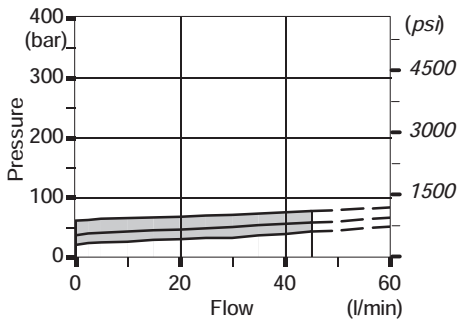


H: valve set and locked

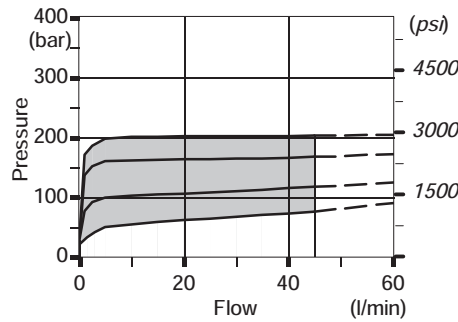


Performance data

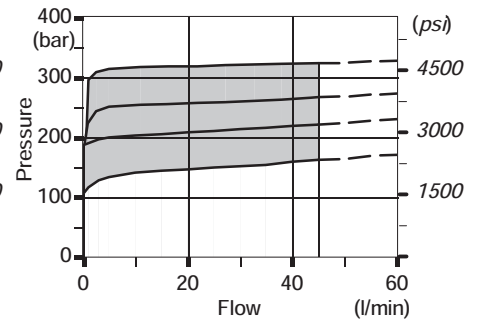
Spring nr. 2 (green band)



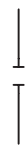
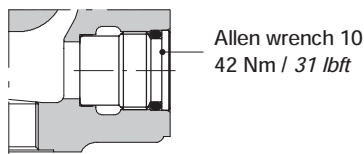
Spring nr. 3 (blue band)



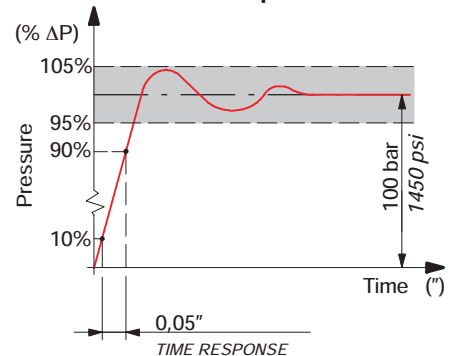
Spring nr. 4 (red band)



SV: relief valve blanking plug

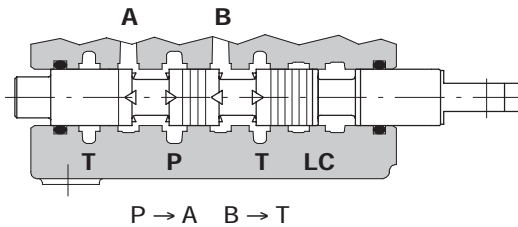


Time response

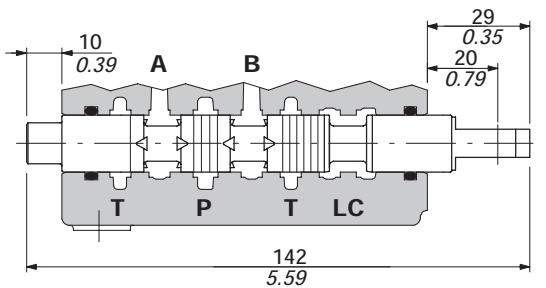
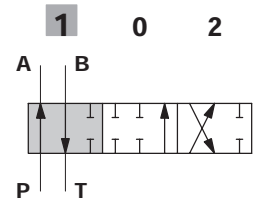


Type 1

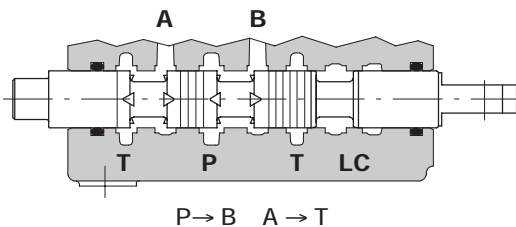
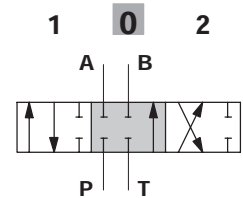
For special requirement, spool 1CS code 3CU1210200 suggested for flow from 15 to 30 l/min and spool 1CEX code 3CU1210230 suggested for flow up to 15 l/min, are available.



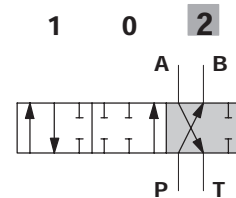
stroke:
+ 5.5 mm / 0.22 in



P-A-B-T closed, with flow through line (LC) open

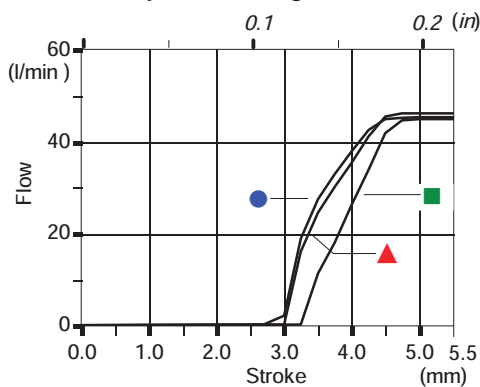


stroke:
+ 5.5 mm / 0.22 in



Performance data

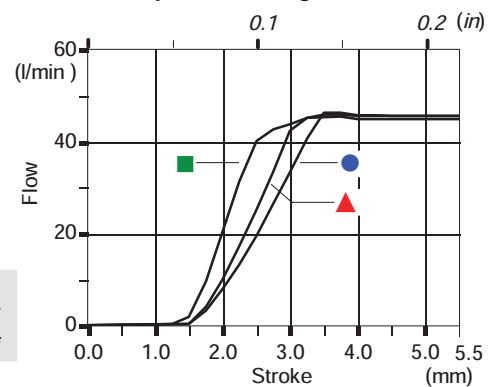
Spool metering P → A(B)



Q_{in} = 45 l/min

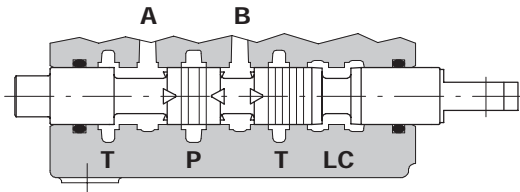
- P_(on ports) = 63bar / 900 psi
- ▲ P_(on ports) = 100bar / 1450 psi
- P_(on ports) = 250bar / 3600 psi

Spool metering A(B) → T

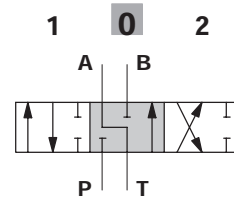
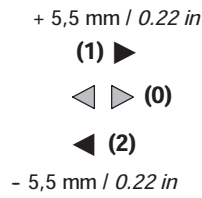


Spool options

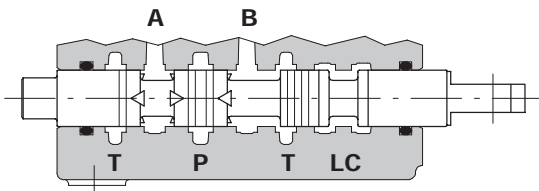
Type 1A



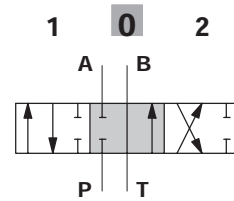
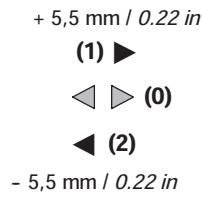
P-B closed, A→T, flow through line (LC) open



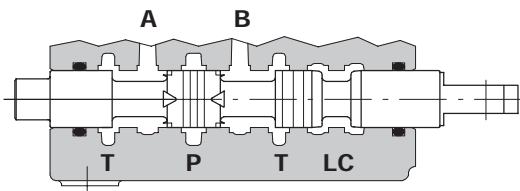
Type 1B



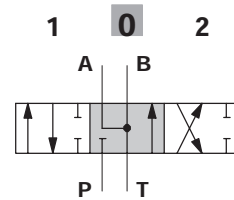
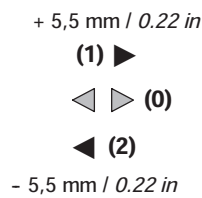
P-A closed, B→T, flow through line (LC) open



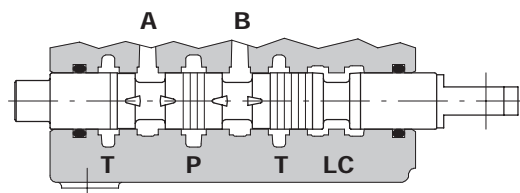
Type 2



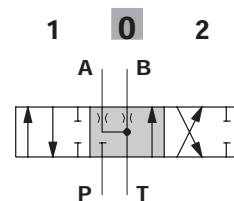
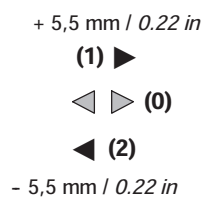
P closed, A-B→T, flow through line (LC) open



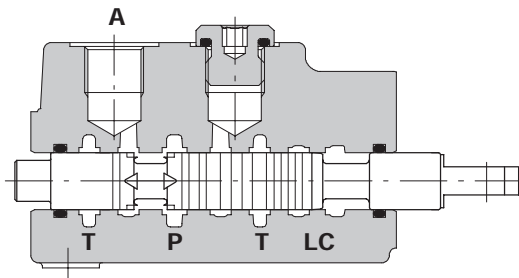
Type 2H



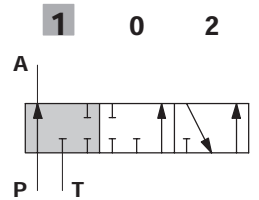
P closed, A-B partially open to tank, flow through line (LC) open



Type 3

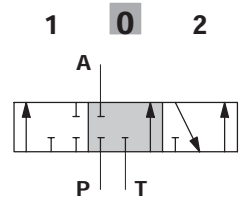
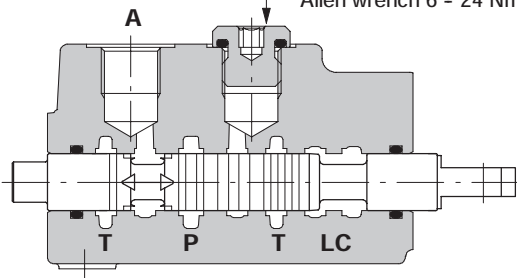


stroke:
+ 5.5 mm / 0.22 in

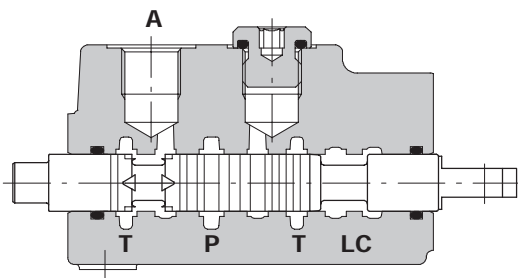


P → A

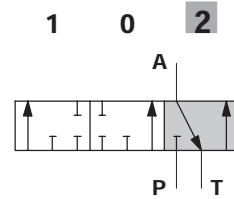
Port B plugged
Allen wrench 6 - 24 Nm / 17.7 lbft



P-B-T closed, flow through line (LC) open



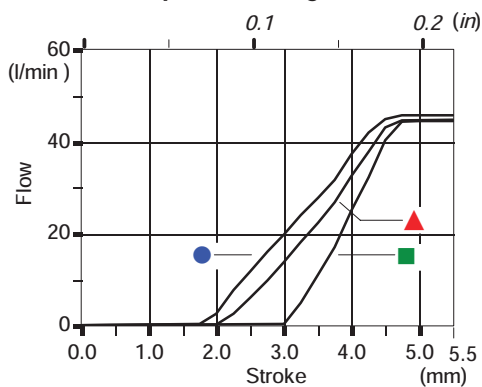
stroke:
- 5.5 mm / 0.22 in



A → T

Performance data

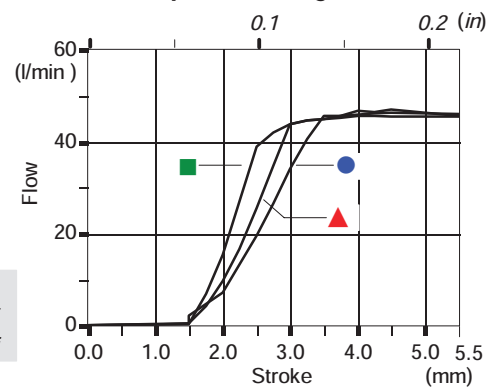
Spool metering P→A



Q_{in} = 45 l/min

- P(on ports) = 63bar / 900 psi
- ▲ P(on ports) = 100bar / 1450 psi
- P(on ports) = 250bar / 3600 psi

Spool metering A→T



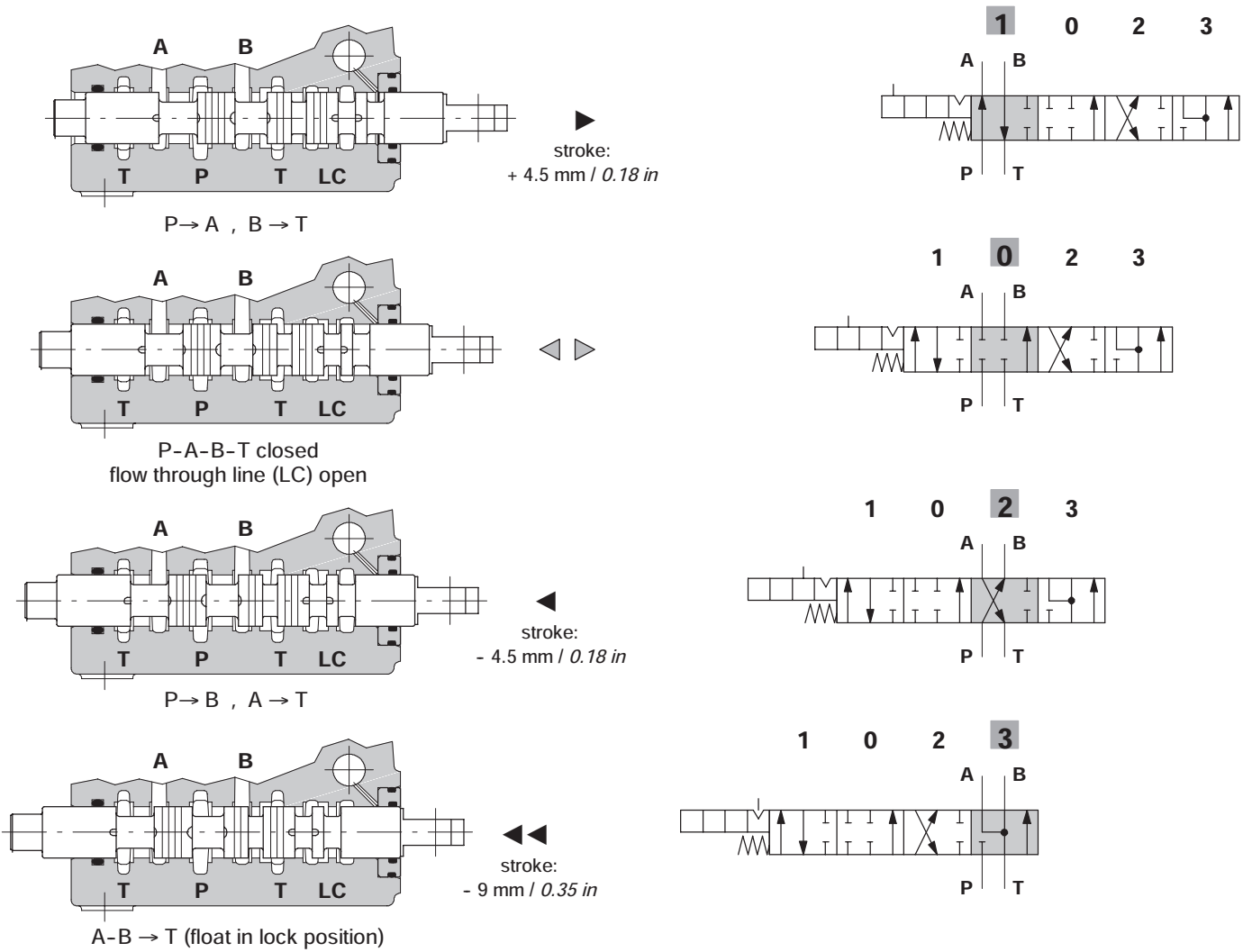
Spools

Type 5DY

It needs special body with extra machining: for information please contact Sales Department.

This spool must be coupled with positioner type 13NZ (see page 36).

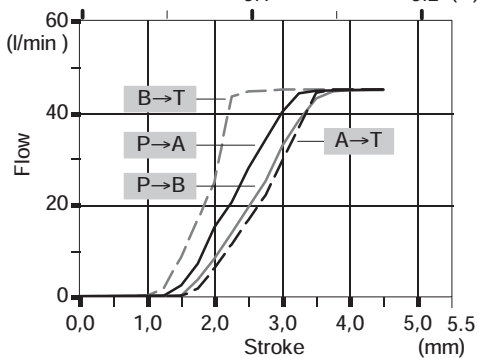
Also available spool with check valve on A port; type 5WY code 3CU1242320.



Performance data

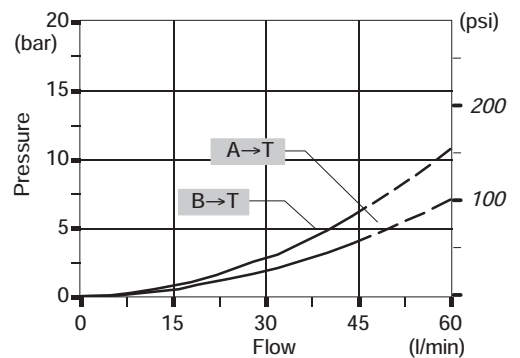
Spool metering

Q_{in} = 45 l/min / P_(on ports) = 100 bar - 1450 psi



Pressure drop in position 3

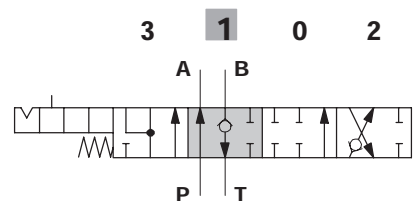
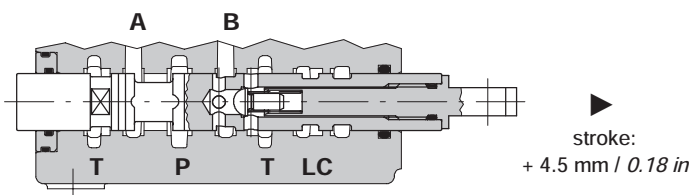
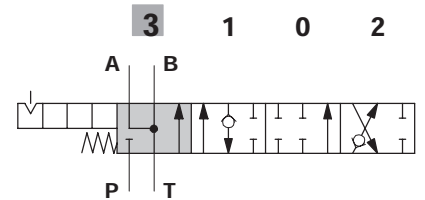
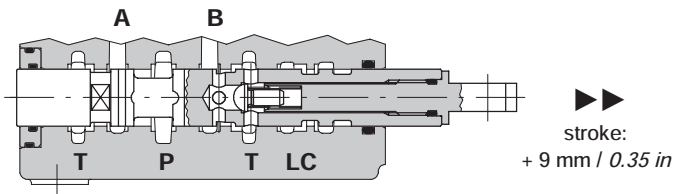
(last section)



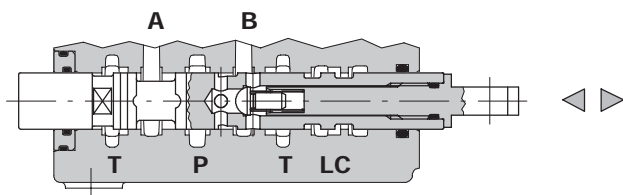
Type 5PY

It needs special body with extra machining: for information please contact Sales Department.

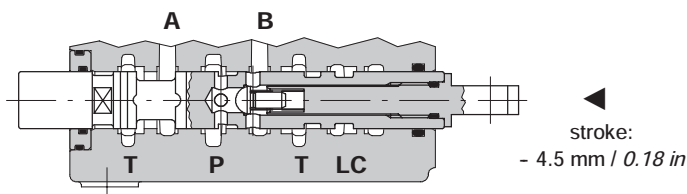
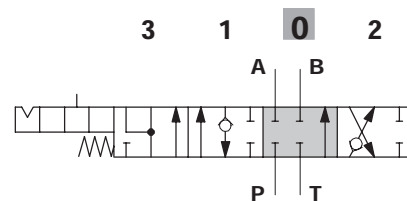
This spool must be coupled with positioner type 13QN (see page 36) and 13QNMG3 (see page 37).



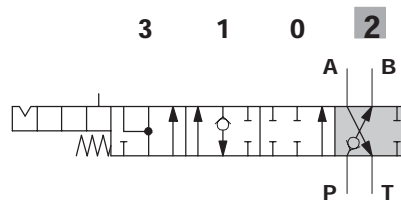
P → A , B → T



P-A-B-T closed,
with flow through line (LC) open



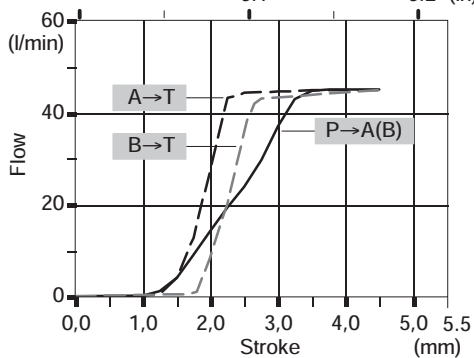
P → B , A → T



Performance data

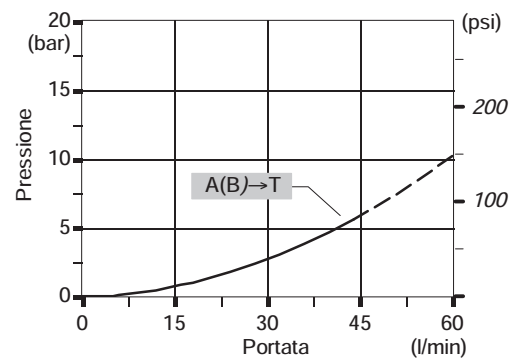
Spool metering

Q_{in} = 45 l/min / P_(on ports) = 100 bar - 1450 psi
0.1 0.2 (in)



Pressure drop in position 3

(last section)

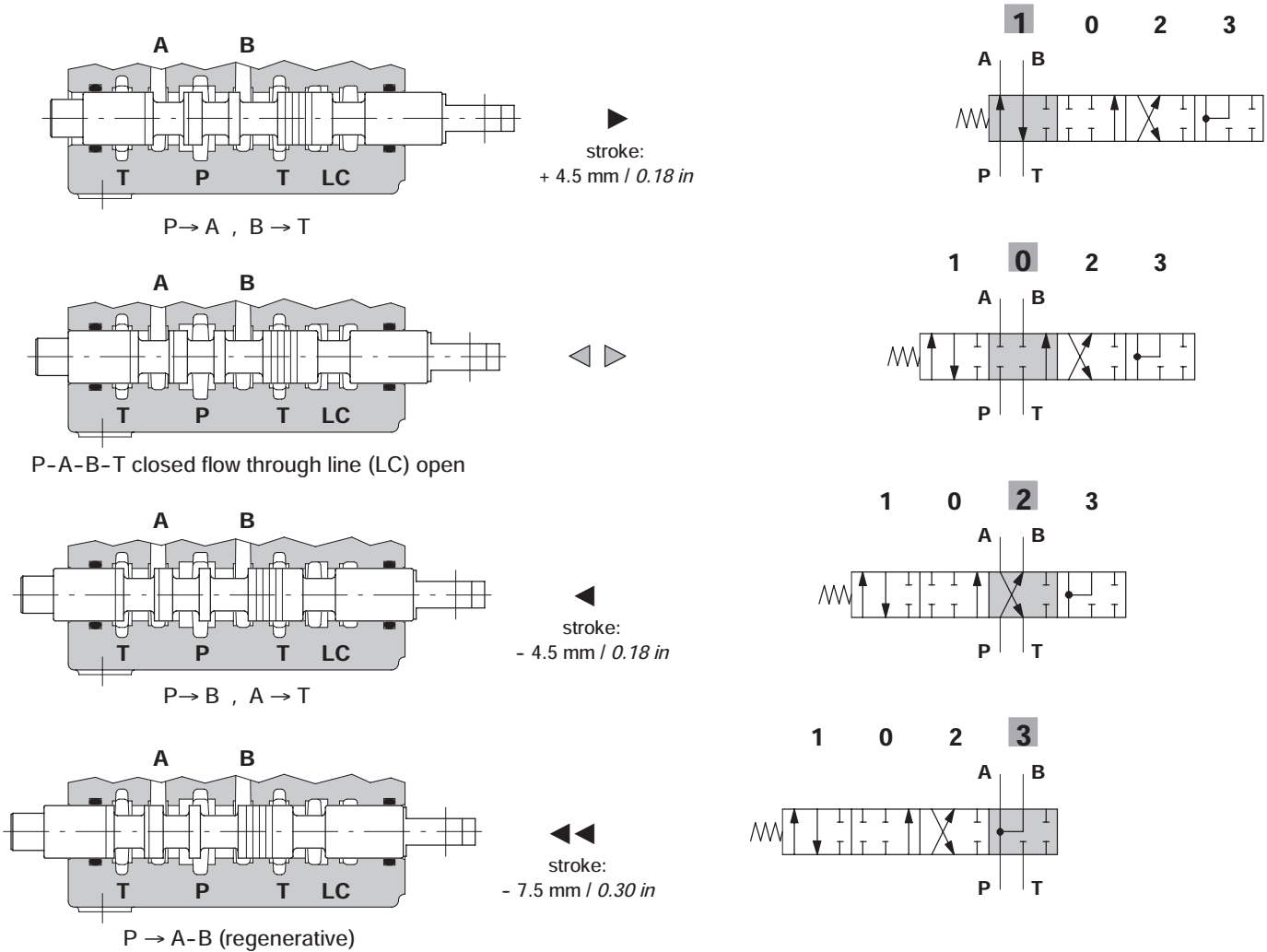


Spools

Type 8

It needs special body with extra machining: for information please contact Sales Department.

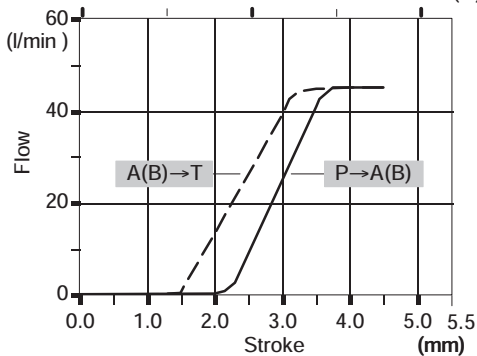
This spool must be coupled with positioner type 13FZ (see page 37).



Performance data

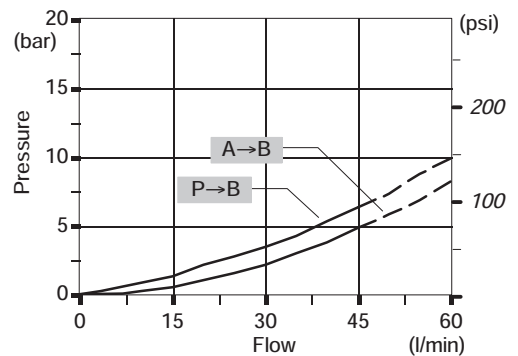
Spool metering

$Q_{in} = 45 \text{ l/min} / P_{(on ports)} = 100 \text{ bar} - 1450 \text{ psi}$
 0.1 0.2 (in)



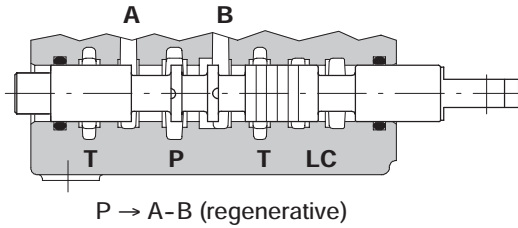
Pressure drop in position 3

(last section)

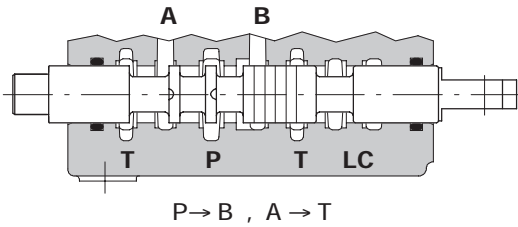
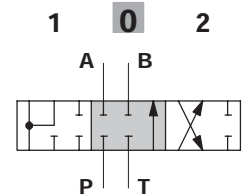
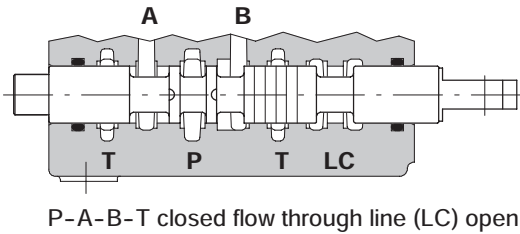
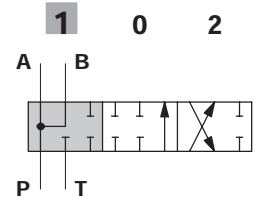


Type 8F

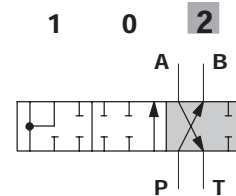
It needs special body with extra machining: for information please contact Sales Department.



stroke:
+ 5.5 mm / 0.22 in



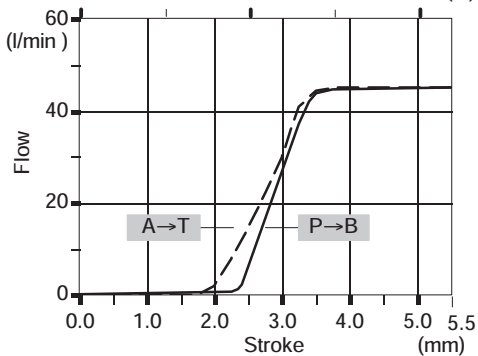
stroke:
- 5.5 mm / 0.22 in



Performance data

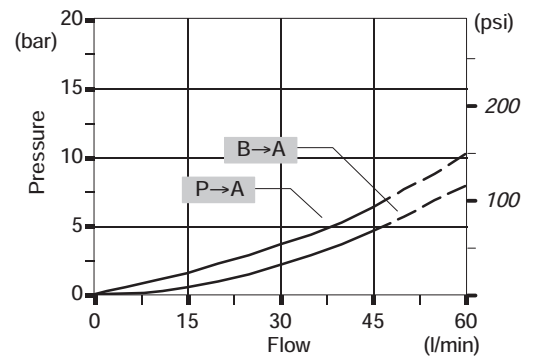
Spool metering

$Q_{in} = 45 \text{ l/min} / P_{(on ports)} = 100 \text{ bar} - 1450 \text{ psi}$
0.1 0.2 (in)



Pressure drop in position 1

(in first section)

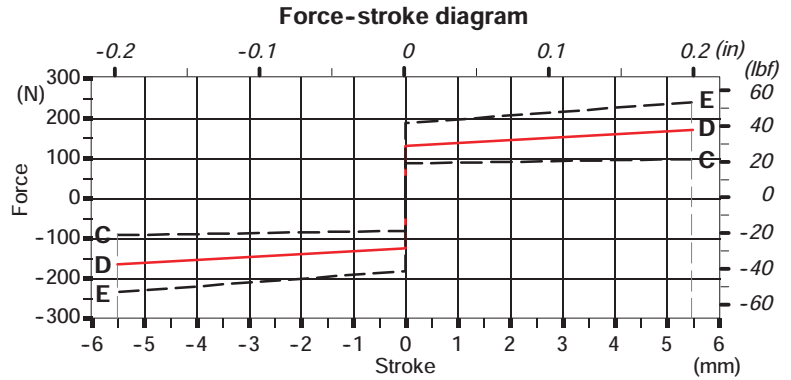
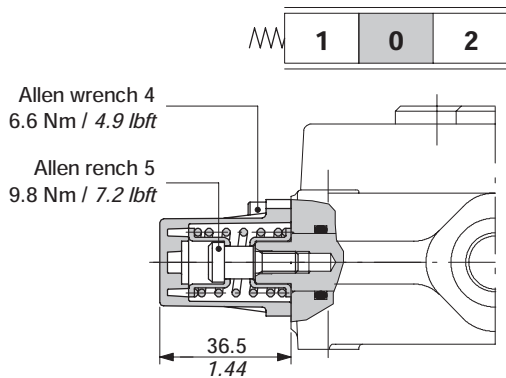


"A" side spool positioners

With spring return in neutral position

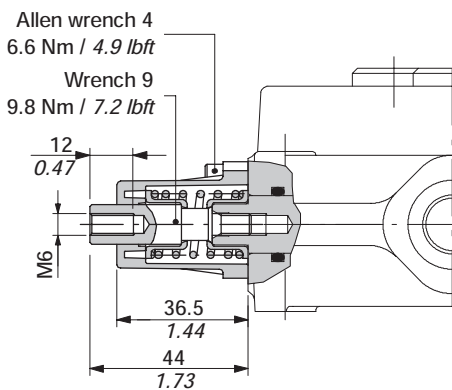
8 kit

It's supplied with standard spring type D (see force-stroke diagram) and available with lighter spring type C (8MC code: 5V08205000) or heavier type E (8ME code: 5V08405000).

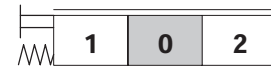
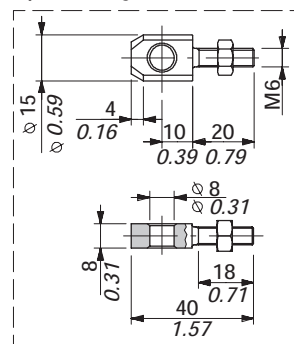


8D kit

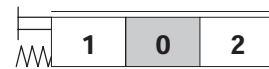
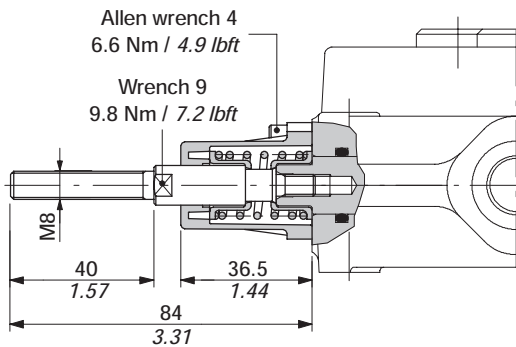
Spool end joint code XPER315400, is available on request in order to screw onto pin.



Spool end joint dimensions

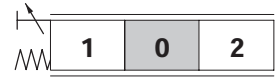
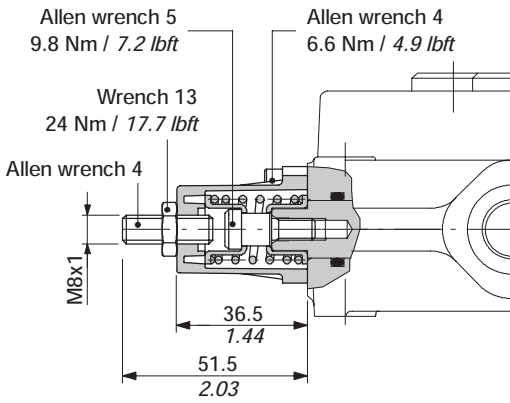


8D2 kit

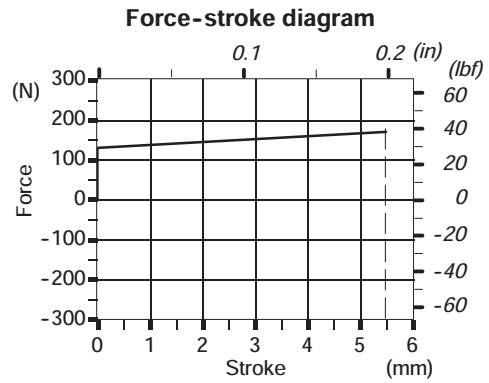
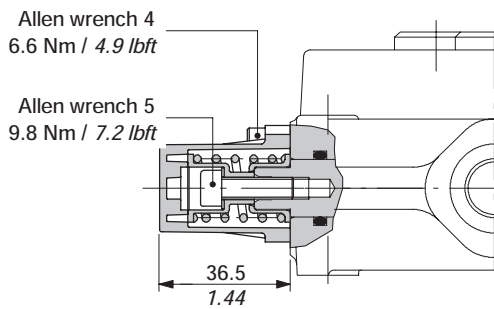
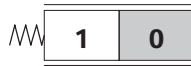


With spring return in neutral position

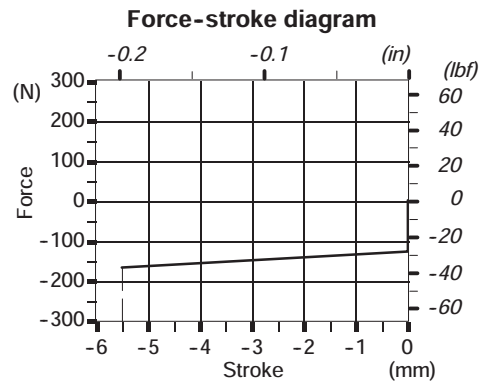
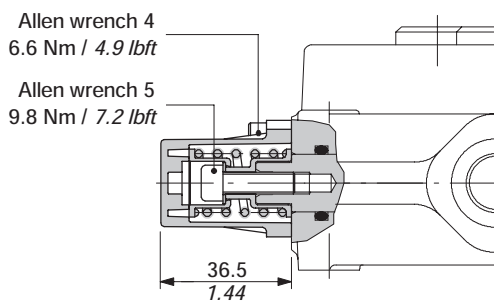
8F2 kit



19 kit



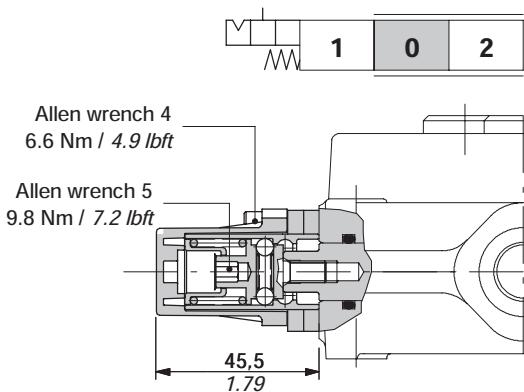
20 kit



"A" side spool positioners

With detent

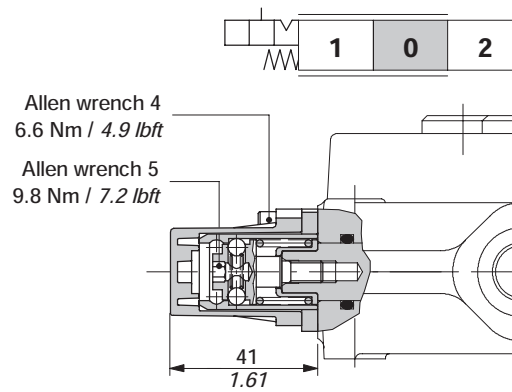
9 kit



Operating features

Locking force (from pos. 0 to 1) . . . : 150 N / 33.7 lbf ±10%
 Release force (from pos. 1 to 0) . . . : 140 N / 31.5 lbf ±10%

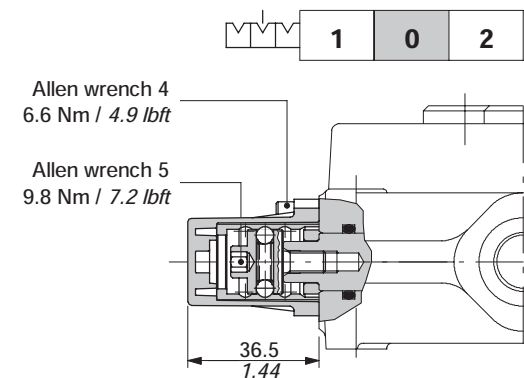
10 kit



Operating features

Locking force (from pos. 0 to 2) . . . : 150 N / 33.7 lbf ±10%
 Release force (from pos. 2 to 0) . . . : 140 N / 31.5 lbf ±10%

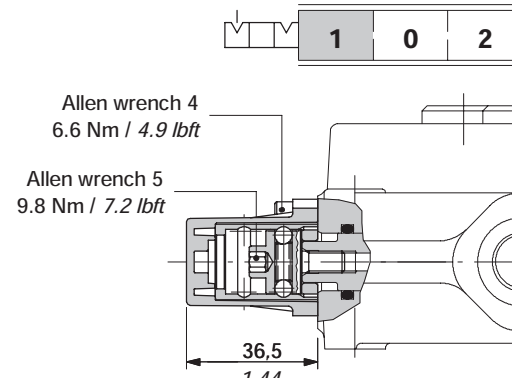
11 kit



Operating features

Locking and release force : 120 N / 27 lbf ±10%

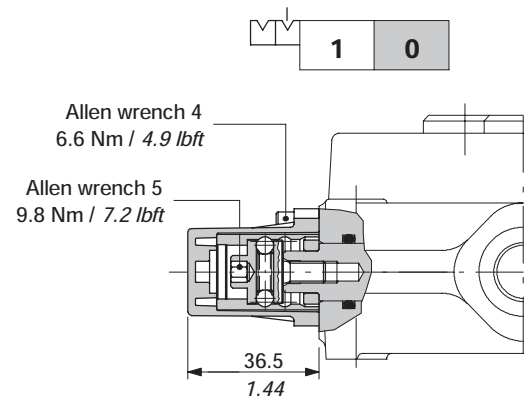
12 kit



Operating features

Locking and release force : 100 N / 22.5 lbf ±10%

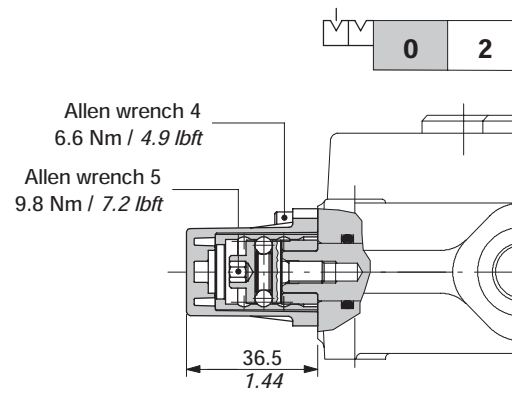
15 kit



Operating features

Locking and release force : 100 N / 22.5 lbf ±10%

16 kit

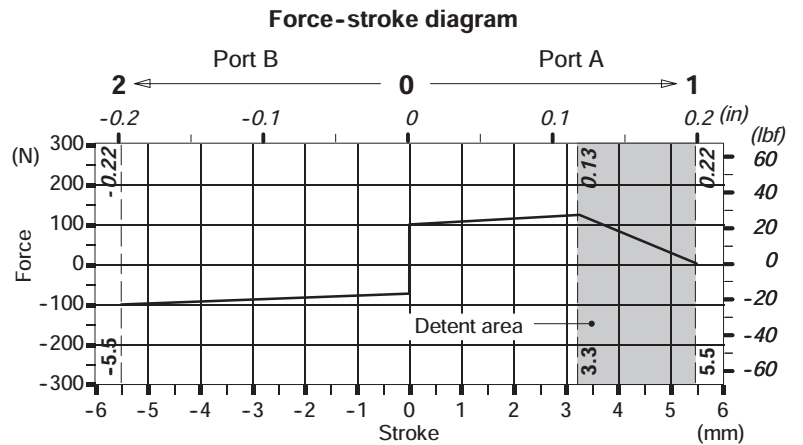
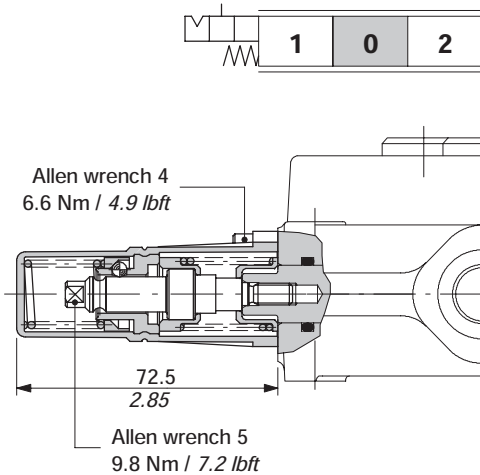


Operating features

Locking and release force : 100 N / 22.5 lbf ±10%

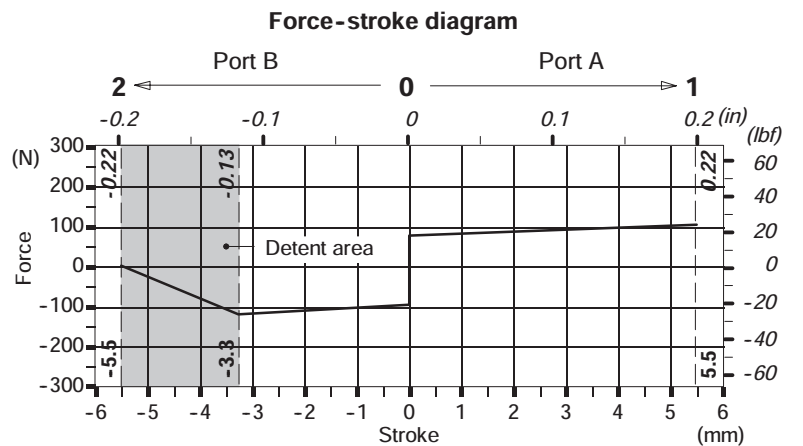
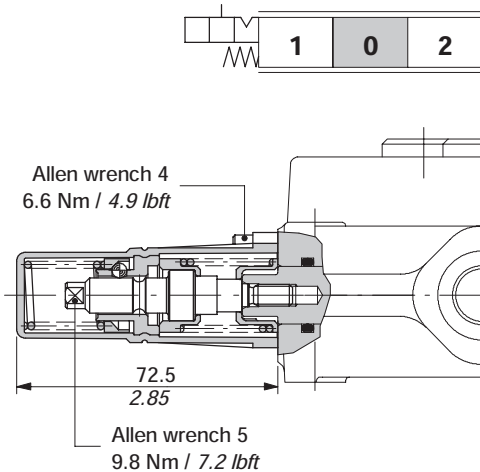
With detent and spring return to neutral position from either directions

9BZ kit



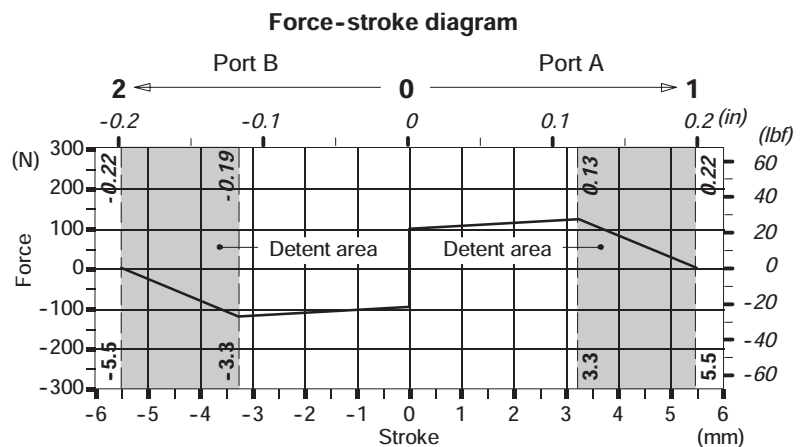
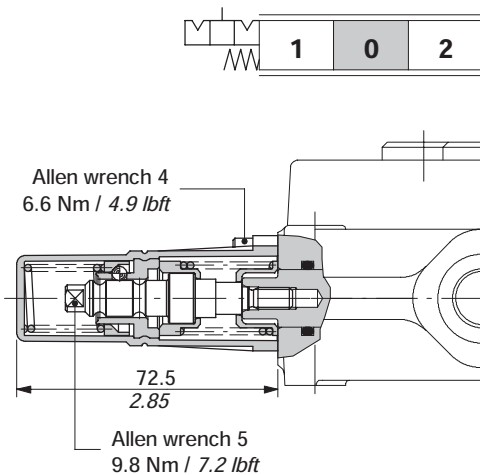
Locking force: 120 N / 27 lbf ±10% / Release force: 230 N / 51.7 lbf ±10%

10BZ kit



Locking force: 120 N / 27 lbf ±10% / Release force: 230 N / 51.7 lbf ±10%

11BZ kit

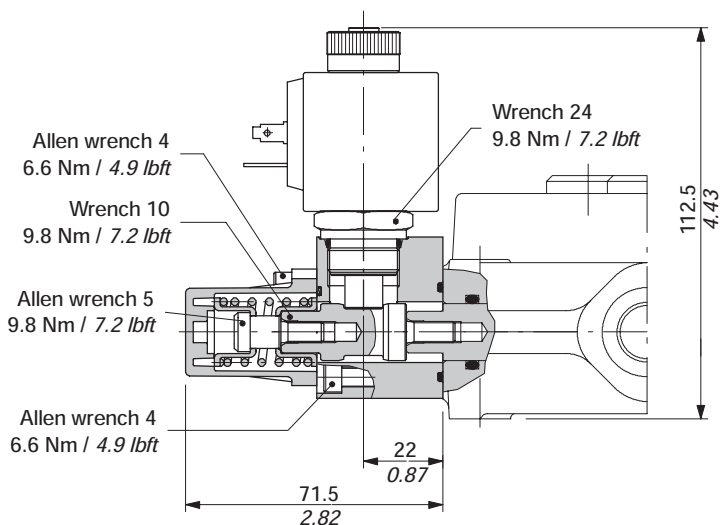
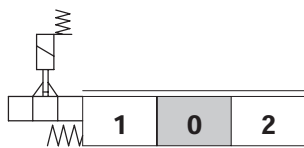


Locking force: 120 N / 27 lbf ±10% / Release force: 230 N / 51.7 lbf ±10%

"A" side spool positioners

Solenoid lock device type 8K

With spring return and spool electromechanical lock in neutral position; when coil is feeded the spool can be moved.



NOTE - The kit control must be turned at 180°. when pilot operated check valves are fitted.

COMPLETE CONTROLS CODES

Voltage	CONNECTION TYPE		
	ISO4400	Deutsch DT	Packard M-Pack
	CONTROL TYPE		
	8K	8K4	8K6
12 VDC	5V08705112	5V08705412	5V08705612
24 VDC	5V08705124	5V08705424	5V08705624
Need connector (see page 129)	C02	C19	C20

Operating features

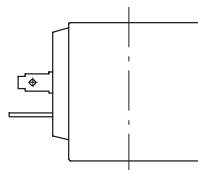
ACTUATOR

Lock stroke : 3.5 mm / 0.14 in

COIL

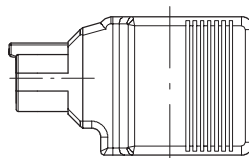
Depending on model: see following features

Coil with ISO4400 connector



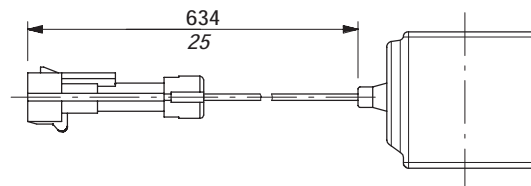
Nom. voltage tolerance : ±10%
 Power rating : 18 W
 Nominal current : 1.58 A - 12 VDC
 : 0.81 A - 24VDC
 Coil insulation : Class F
 Weather protection : IP65
 Duty cycle : 100%

Coil with Deutsch DT connector



Nom. voltage tolerance : ±10%
 Power rating : 22 W
 Nominal current : 1.9 A - 12 VDC
 : 0.95 A - 24VDC
 Coil insulation : Class H
 Weather protection : IP65
 Duty cycle : 100%

Coil with Packard M-Pack connector



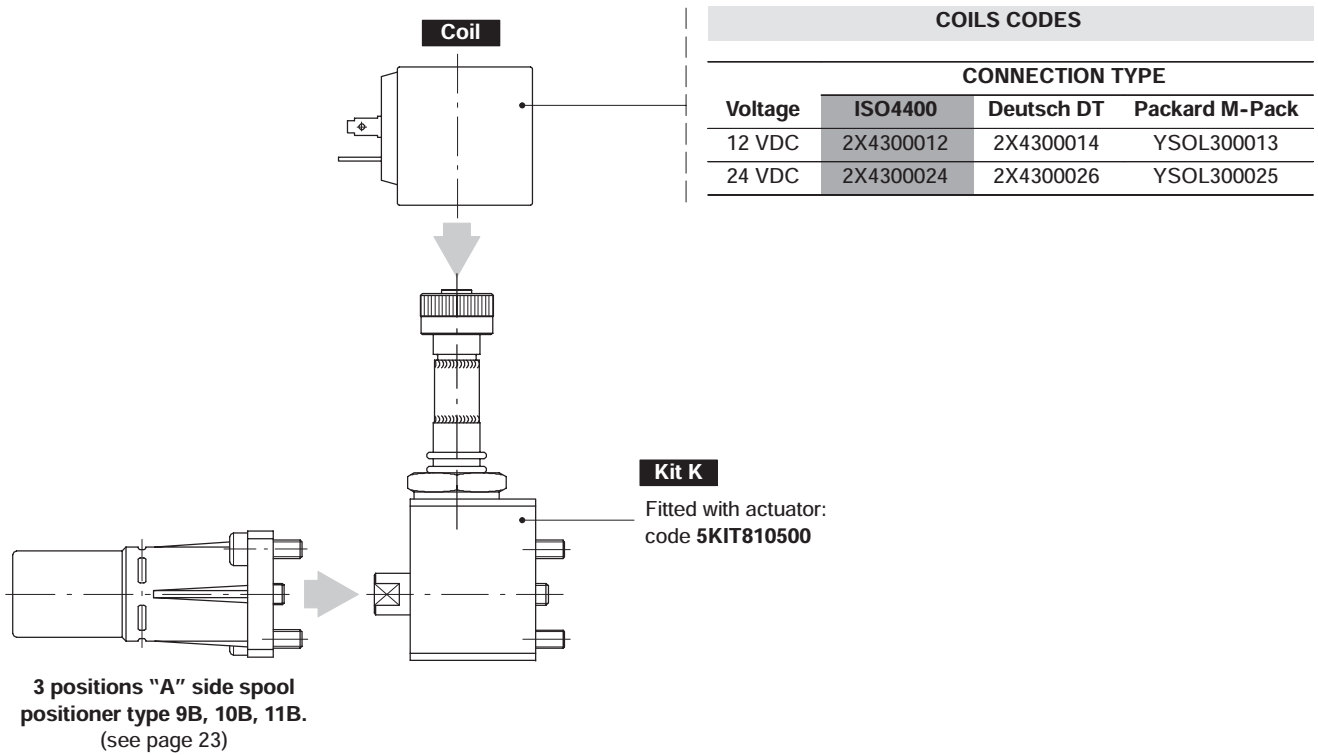
Nom. voltage tolerance : ±10%
 Power rating : 18 W
 Nominal current : 1.58 A - 12 VDC
 : 0.81 A - 24VDC
 Coil insulation : Class F
 Weather protection : IP65
 Duty cycle : 100%

"A" side spool positioner

Solenoid lock device type 8K

More configurations and spare parts

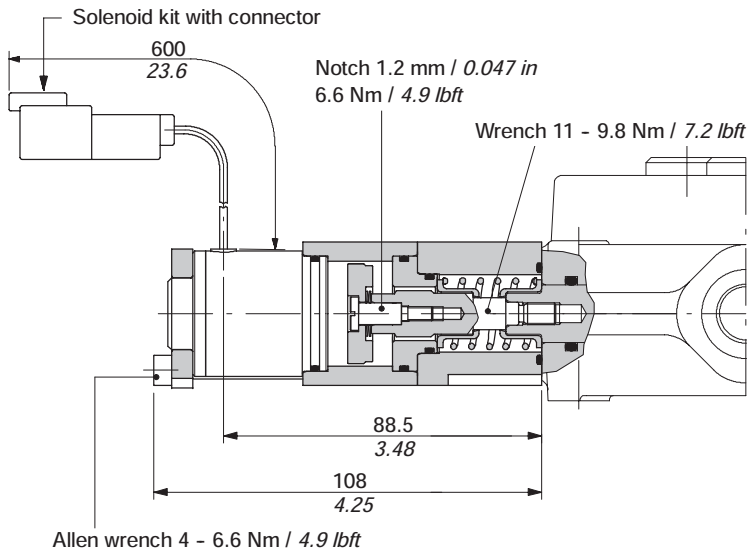
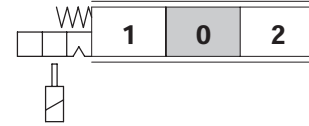
It's possible to obtain further configurations of complete control, using the K kit, coils and 3 positions "A" side spool positioner, as following draw: for information contact Sales Department.



"A" side spool positioners

Electromagnetic detent type 8RM2

With electromagnetic detent in position 2 and spring return to neutral position.



Operating features

COIL

- Nominal voltage : 12 / 24 VDC ± 10%
- Power rating : 5,5 W
- Resistance (20 °C) : 26,5 / ??? Ohm
- Min unlocking force : 45 N / 49.5 lbf
- Duty cycle : 100%

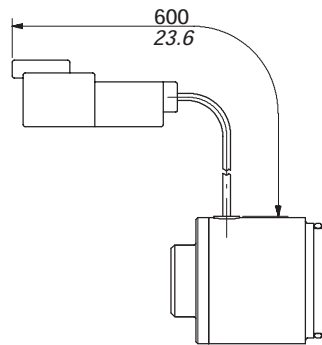
COMPLETE CONTROLS CODES

	CONNECTION TYPE		
	Deutsch DT	AMP	Packard M-Pack
	CONTROL DESCRIPTION		
Voltage	8RM2	8RM2A(200)	
12 VDC	5V08105590	5V08105591	5V08105593
24 VDC	5V08105595	5V08105596	5V08105598
Need connector (see page 129)	C19	C21	C20

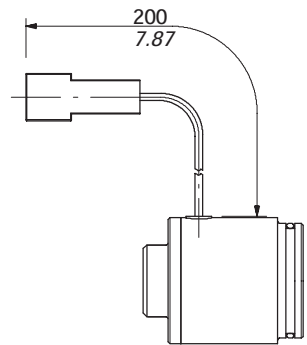
COILS CODES

Voltage	CONNECTION TYPE		
	Deutsch DT	AMP	Packard M-Pack
12 VDC	YSOL532455	YSOL532452	YSOL532451
24 VDC	YSOL532456	YSOL532458	YSOL532457

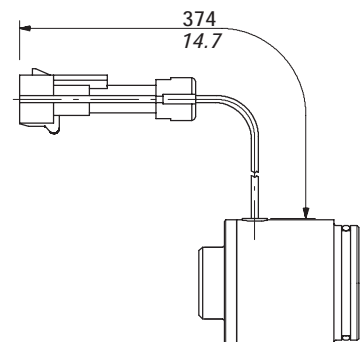
Coil with Deutsch DT connection



Coil with AMP Fastin-Faston connection



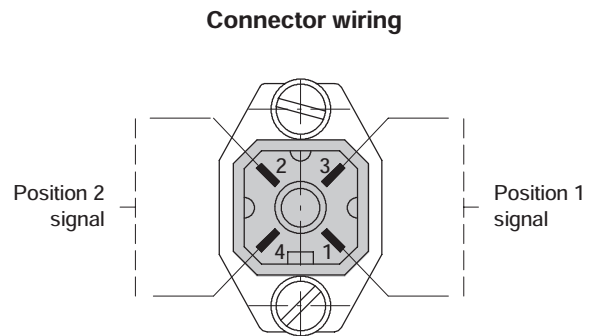
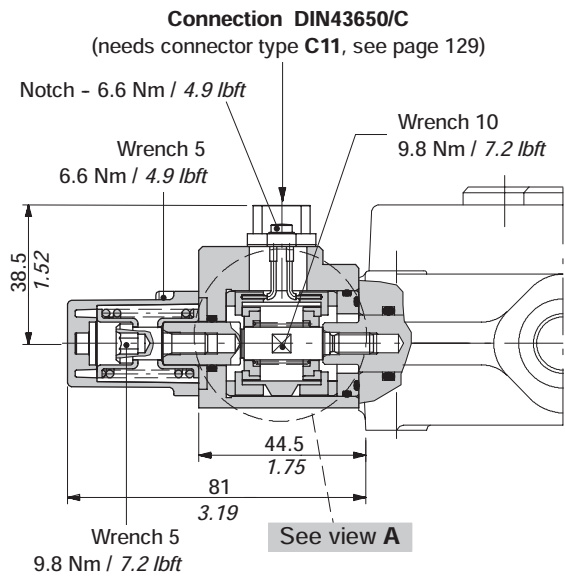
Coil with Packard M-Pack connection



"A" side spool positioners

8MHE3 kit: with spring return in neutral position and spool positioning ON/OFF signal

This module supplies two different ON/OFF signals, related to the direction of the spool. It has two separate contacts which can be normally open or normally closed.

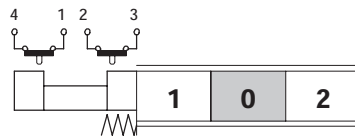


Operating features

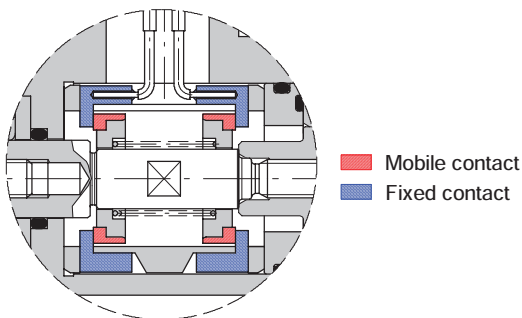
- Power supply range : from 3 da 28 VDC
- Max. output current : 500 mA
- Weather protection : IP65

8MHE3(NC) kit

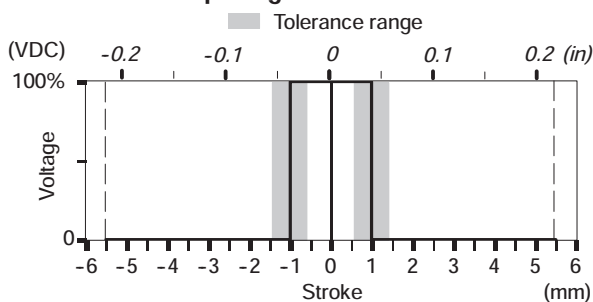
Configuration with normally closed circuit



View A

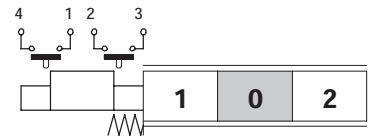


Output signal with NC circuit

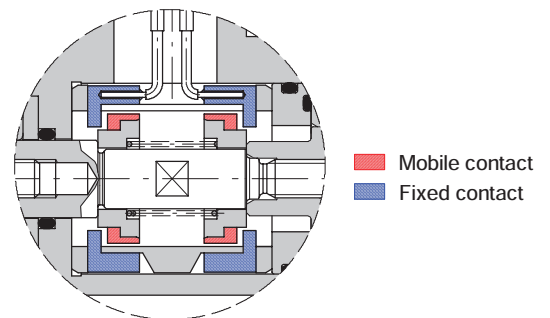


8MHE3(NO) kit

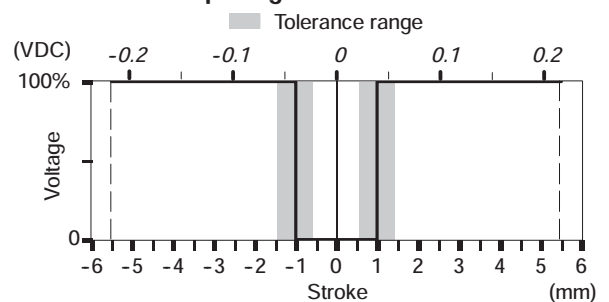
Configuration with normally open circuit



View A



Output signal with NO circuit

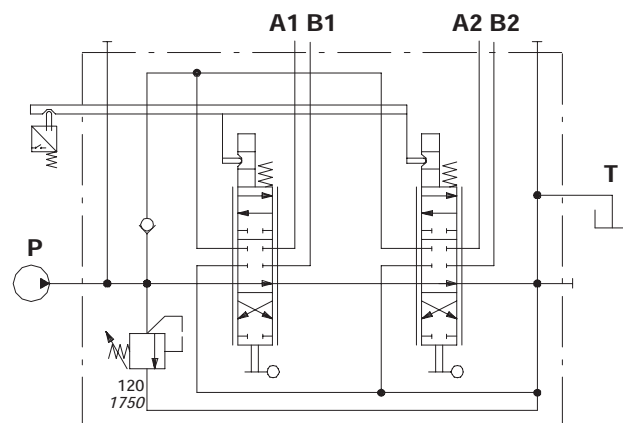
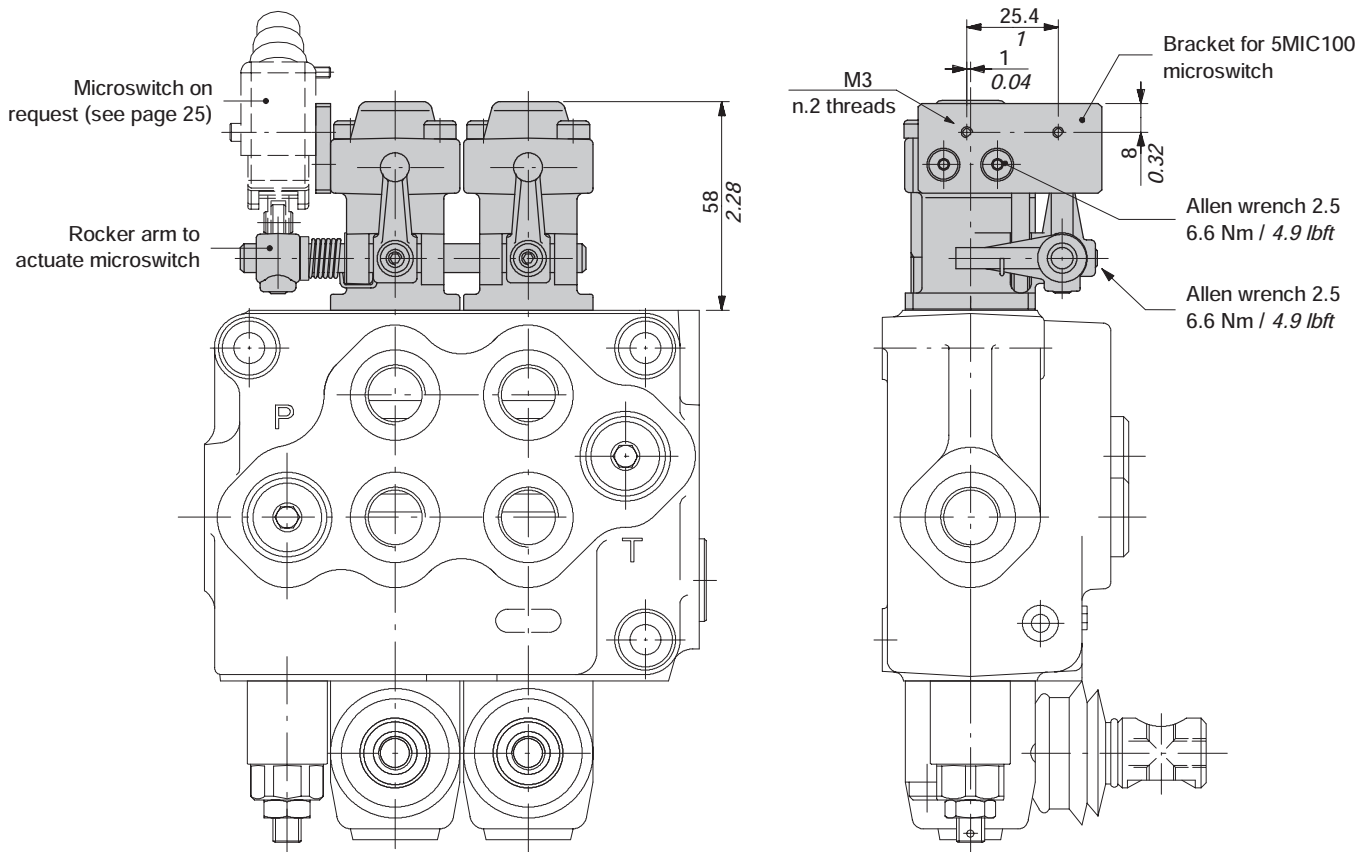


"A" side spool positioners

8MS3 kit: with centralized control for microswitch

Assembly example

It's shown an assembling on 2 section directional control valve, complete with connection kit KM.

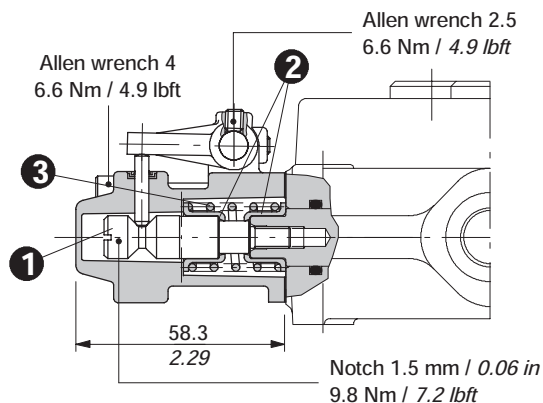


Es.: SD5/2-P(JG3-120)/18MS3L/18MS3L/AET - **KM 2 S 51**

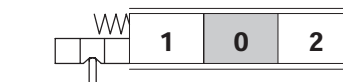
- Assembling kit
 - 51 = with bracket for M51 (IP51) microswitch fixing
 - 67 = with bracket for M67 (IP67) microswitch fixing
- Nr. of working sections
 - S = bracket placed on left
 - D = bracket placed on right

8MS3 kit: with centralized control for microswitch

The spool positioner is composed of actioning pin 1, bushes 2 and return spring 3.
The remaining items (cap, rocker arm, bracket, rod ecc..) are components of KM connection kit, which depends on nr of controlled section.

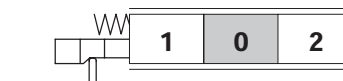


8MS3 kit
microswitch operation in positions 1 and 2

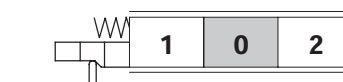


Other configurations

8MS1 kit
microswitch operation in position 1



8MS2 kit
microswitch operation in position 2



KM kit ordering codes

The codes below represent the kit with bracket for IP51 microswitch, assembled on the left

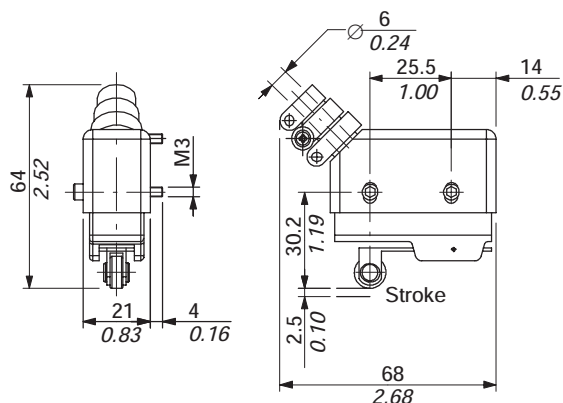
For other codes or information contact Sales Department.

TYPE	CODE	DESCRIPTION
KM1S51	5KM1S5102	Kit for 1 section
KM2S51	5KM2S5102	Kit for 2 sections
KM3S51	5KM3S5102	Kit for 3 sections
KM4S51	5KM4S5102	Kit for 4 sections
KM5S51	5KM5S5102	Kit for 5 sections
KM6S51	5KM6S5102	Kit for 6 sections
KM7S51	5KM7S5102	Kit for 7 sections

Microswitches for 8MS kits

It's complete with rubber cover and mounting screws: to order separately

M51 code: 5MIC100

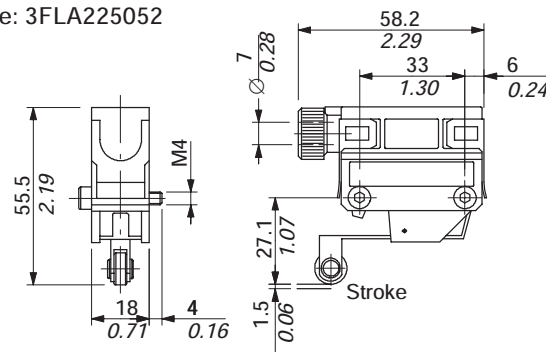


Operating features

Max. current / voltage : 15 A / 480 VAC
: 0.25 A / 250 VDC
Weather protection : IP51

M67 code: 5MIC200

Dedicated bracket is needed for the assembly
code: 3FLA225052



Operating features

Max. current / voltage : 5 A / 250 VAC
: 0.25 A / 230VDC
Weather protection : IP67

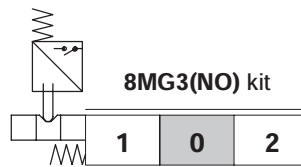
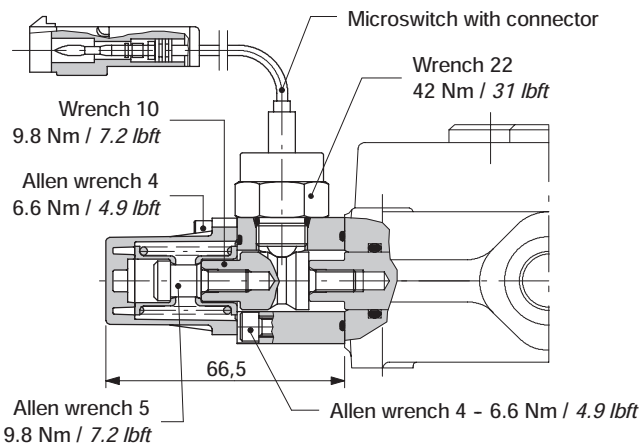
"A" side spool positioners

With microswitch type 8MG3(NO)

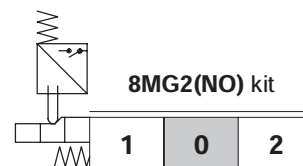
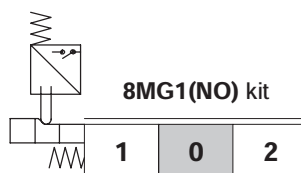
With spring return in neutral position and microswitch operated in both directions.

Also available **8MG1(NO)** configuration (microswitch operated in position 1) and **8MG2(NO)** configuration (microswitch operated in position 2); dimensions are the same of 8MG3 configuration.

Same configurations are available with normally closed (NC) contact.



Other configurations



COMPLETE CONTROLS CODES

Contact	CONTROL TYPE			Need connector type	
	8MG3	8MG2	8MG1		
NO	5V08105660	5V08105680	5V08105670	C07	see page 129
NC	5V08105662	5V08105682	5V08105672	C17	

Operating features

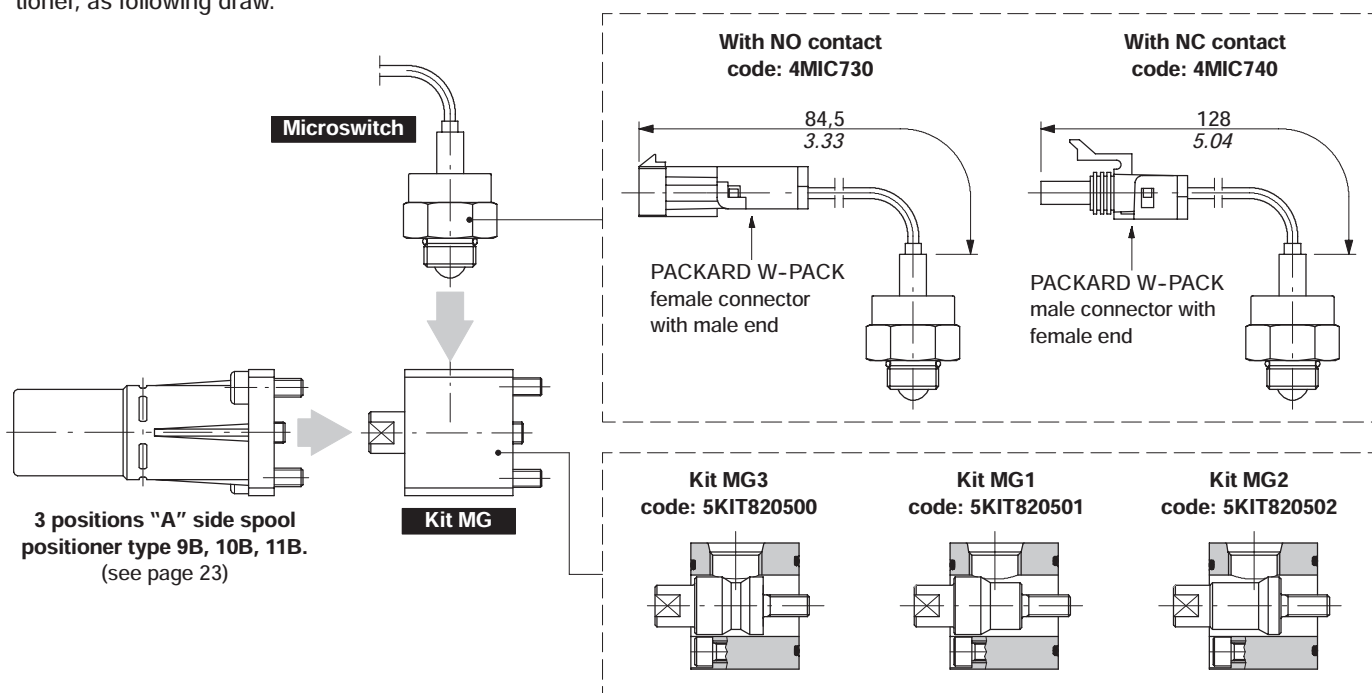
MICROSWITCH

Mechanical life : 5x10⁵ operations

Electrical life (resistive load) : 10⁵ oper. - 7A / 13.5VDC
 : 5x10⁴ oper. - 10A / 12VDC
 : 5x10⁴ oper. - 3A / 28VDC

More configurations and spare parts

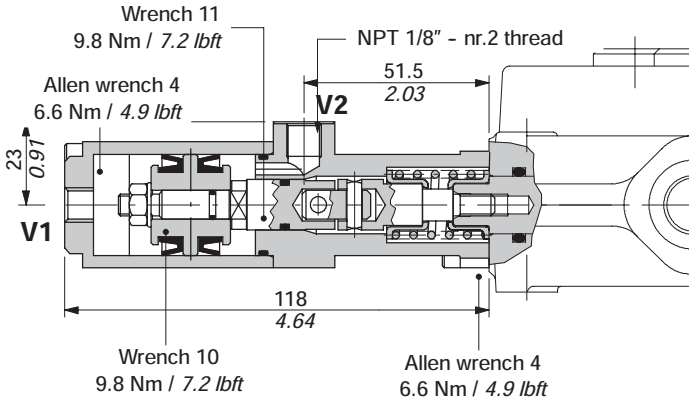
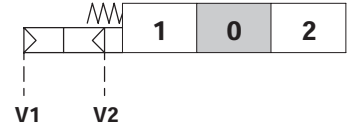
It's possible to obtain further configurations of complete control, using the MG kit, microswitches and 3 positions "A" side spool positioner, as following draw.



"A" side spool positioners

ON/OFF pneumatic kit type 8P

With spring return to neutral position.

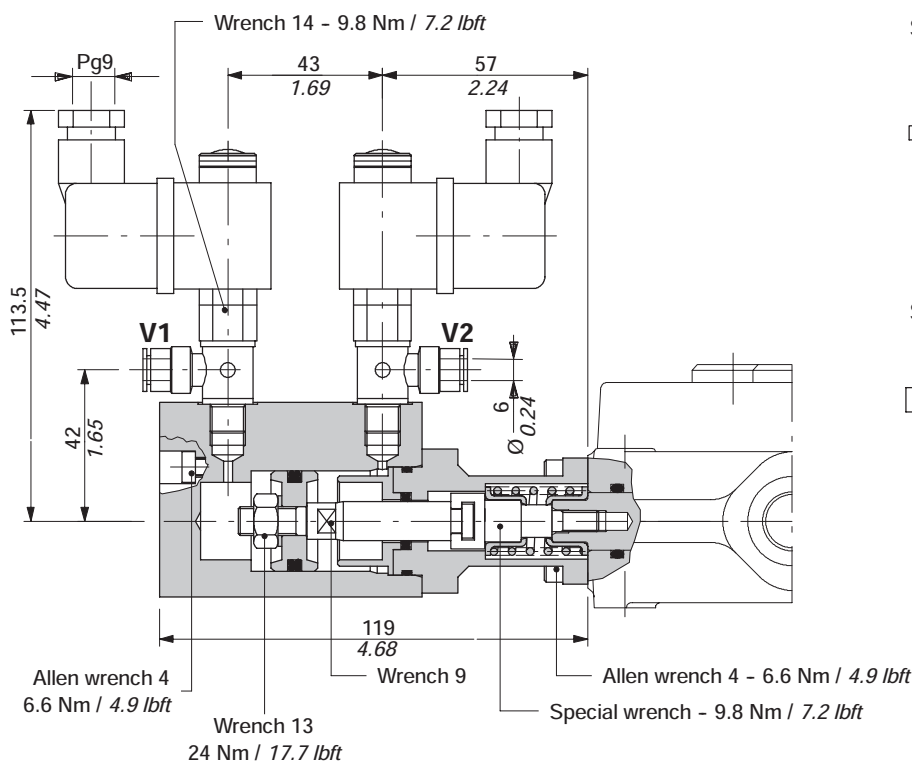


Operating features

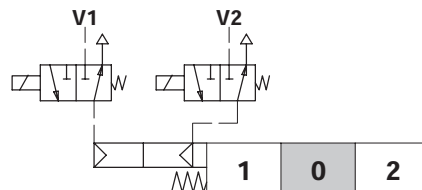
Pilot pressure : min. 5.5 bar / 80 psi
 : max. 10 bar / 145 psi

"A" side spool positioners

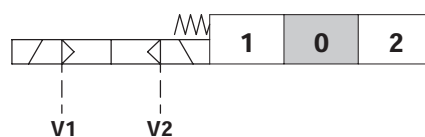
ON/OFF electropneumatic kit type 8EP3



Scheme



Scheme ISO 1219



COMPLETE CONTROL CODES

	CONNECTION TYPE	
	ISO6952	Flying leads
Voltage	CONTROL TYPE	
	8EP3	8EP35
12 VDC	5V08105735	5V08105736
24 VDC	5V08105740	5V08105741
Need connector type (see page 129)	C01 (compreso)	/

COIL CODES

Voltage	CONNECTION TYPE	
	ISO6952	Flying leads*
12 VDC	2X4000013	2XB1000120000
24 VDC	2X4000025	2XB1000240000

* Several type of connectors can be wired on request

Operating features

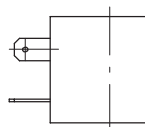
CONTROL

Pilot pressure : 6 bar / 87 psi
(max.10 bar / 145 psi)

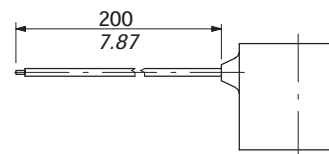
COIL

Nominal voltage tolerance : ±10%
Power rating : 8 W
Nominal current : 0.67 A - 12 VDC
: 0.33 A - 24VDC
Coil insulation : Class F
Weather protection : IP65
Duty cycle : 100%

Coil with ISO6952 connector



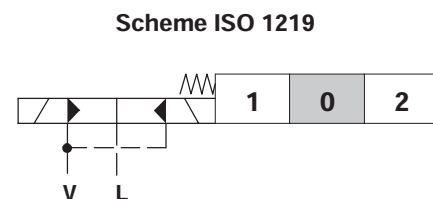
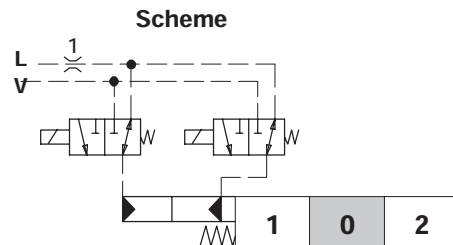
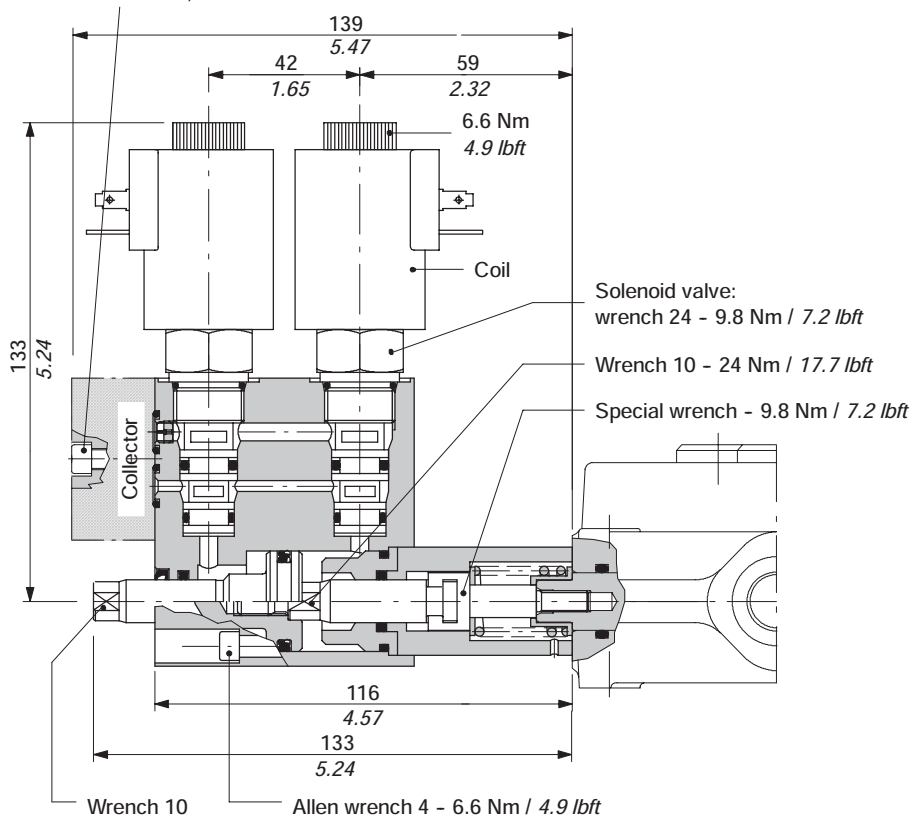
Coil with flying leads



ON/OFF electrohydraulic kit type 8ED3

With external pilot and drain.

Allen wrench 4 - 6,6 Nm / 4.9 lbft



Operating features

CONTROL

Pilot pressure : min. 10 bar / 145 psi
 : max. 50 bar / 725 psi
 Max backpressure on drain L : 25 bar / 360 psi

COIL

Nominal voltage tolerance : ±10%
 Power rating : 21 W
 Nominal current : 1.75 A - 12 VDC / 0.87 A - 24VDC
 Coil insulation : Class F
 Weather protection : IP65
 Duty cycle : 100%

COMPLETE CONTROL CODES

	CONNECTION TYPE			
	ISO4400	AMP JPT		Deutsch DT
		without diode	with diode	
	CONTROL TYPE			
Voltage	8ED3	8ED32	8ED32D	8ED34
12 VDC	5V08105350	5V08105250	5V08105280	5V08105450
24 VDC	5V08105351	5V08105251	5V08105281	5V08105451
Need connector type (see page 129)	C02	C08	C08	C19

"A" side spool positioners

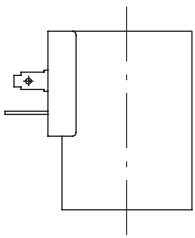
ON/OFF electrohydraulic kit type 8ED3

COIL CODES

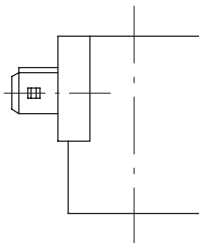
CONNECTION TYPE

Voltage	ISO4400	AMP JPT		Deutsch DT
		without diodo	with diodo	
12 VDC	2XB1400121100	2XB1400121200	2XB1400121210	2XB1400120400
24 VDC	2XB1400241100	2XB1400241200	2XB1400241210	2XB1400240400

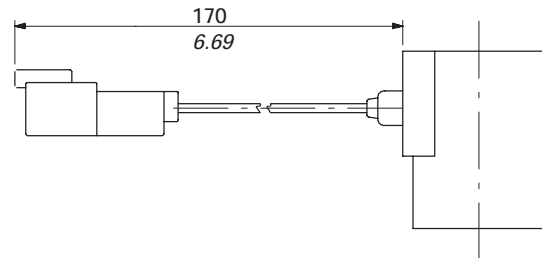
Coil with ISO4400 connection



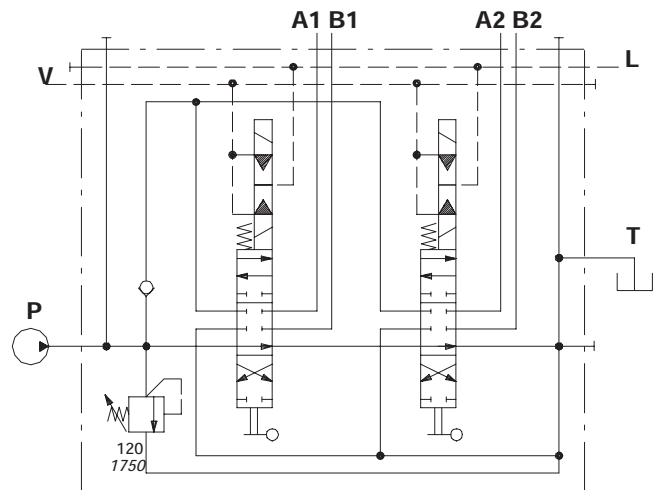
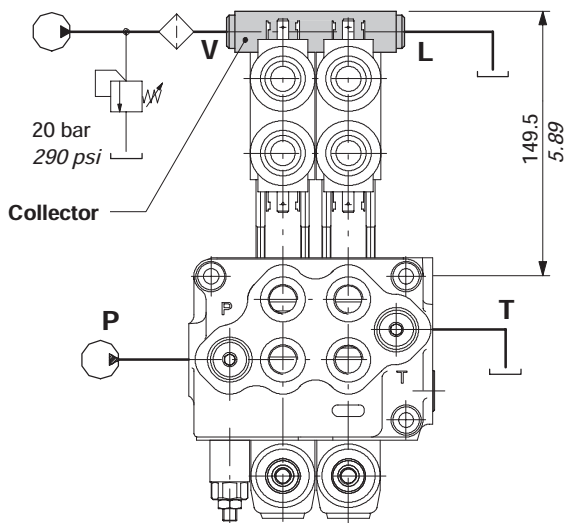
Coil with AMP JPT connection



Coil with Deutsch DT connection



Collector kit for external pilot and drain



COLLECTOR KIT CODES

Type	Code *	Description
KE1S0	5KE1S00030	Kit one section
KE2S0	5KE2S00230	Kit for 2 sections
KE3S0	5KE3S00230	Kit for 3 sections
KE4S0	5KE4S00230	Kit for 4 sections
KE5S0	5KE5S00230	Kit for 5 sections
KE6S0	5KE6S00230	Kit for 6 sections

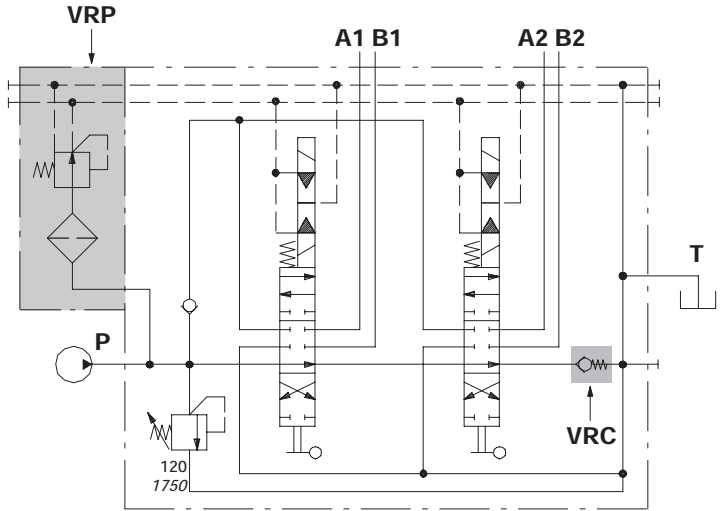
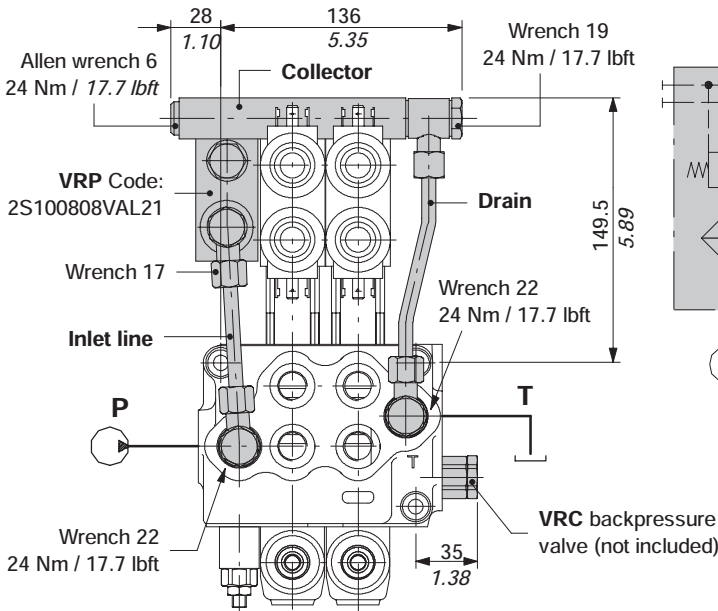
(*) codes are referred to BSP thread

Description example:
SD5/2-P(JG3-120)/18ED3L/18ED3L/AET-KE2S0-24VDC

ON/OFF electrohydraulic kit type 8ED3

Collector kit with pilot and drain lines

The kit is made of collector, VRP pressure reducing valve and pipes.



Description example:
SD5/2-P(JG3-120)/18ED3L/18ED3L/VRC-KE2R3-24VDC

Operating features

VRP VALVE

- Output pressure : 20 bar / 290 psi
- Max flow : 8 l/min
- Filtering : 80 μ

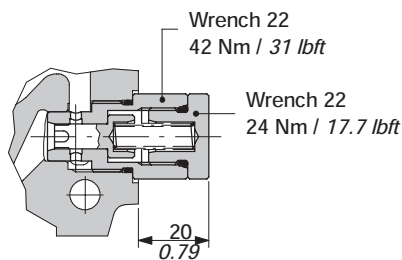
COLLECTOR KIT CODES

Tipo	Code *	Description
KE1R0	5KE1R30230	Kit one section
KE2R0	5KE2R30230	Kit for 2 sections
KE3R0	5KE3R30230	Kit for 3 sections
KE4R0	5KE4R30230	Kit for 4 sections
KE5R0	5KE5R30230	Kit for 5 sections
KE6R0	5KE6R30230	Kit for 6 sections

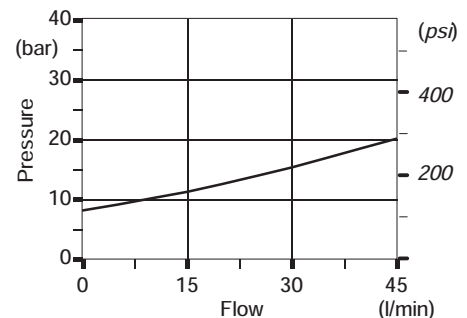
(*) Codes are referred to BSP thread

VRC valve: code X003600010

Valve assembled on flow through passage provides pilot pressure to the actuator.



Pressure drop P→T

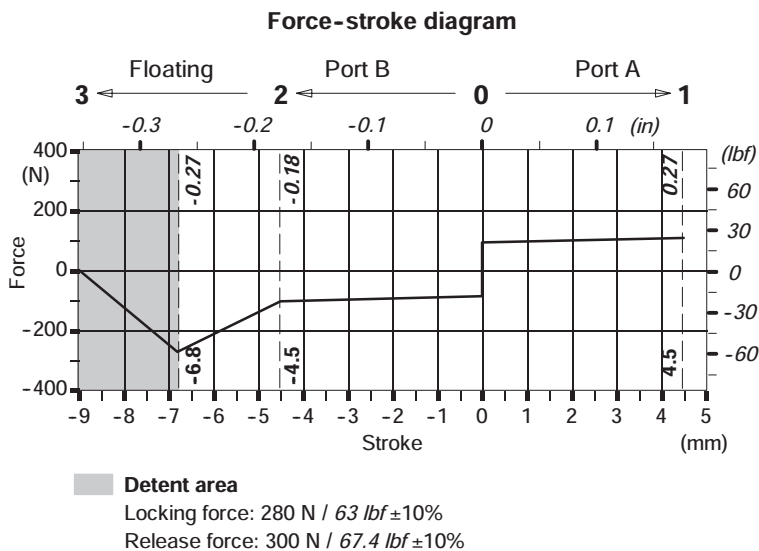
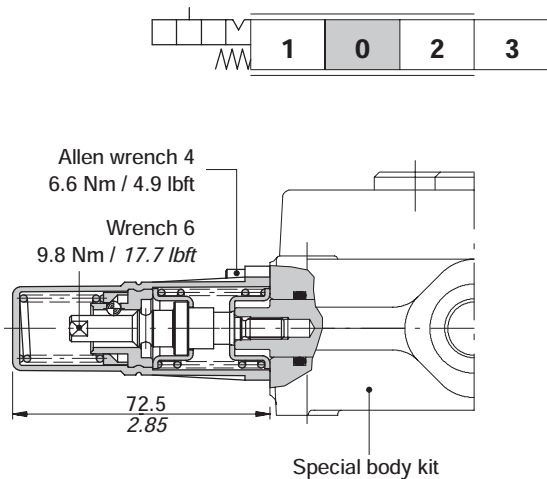


"A" side spool positioners

Particular positioner kits for special spools

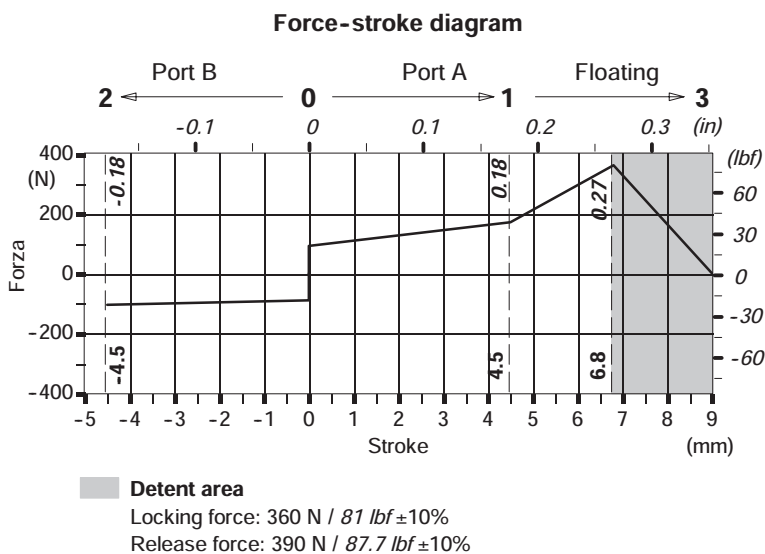
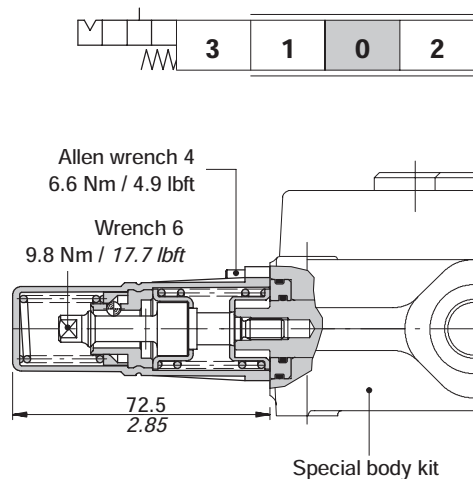
13NZ kit

Detent in 4th position with spool in: available only for spool type 5DY (see page 16).



13QN kit

Detent in 4th position with spool out: available only for spool type 5PY (see page 17).



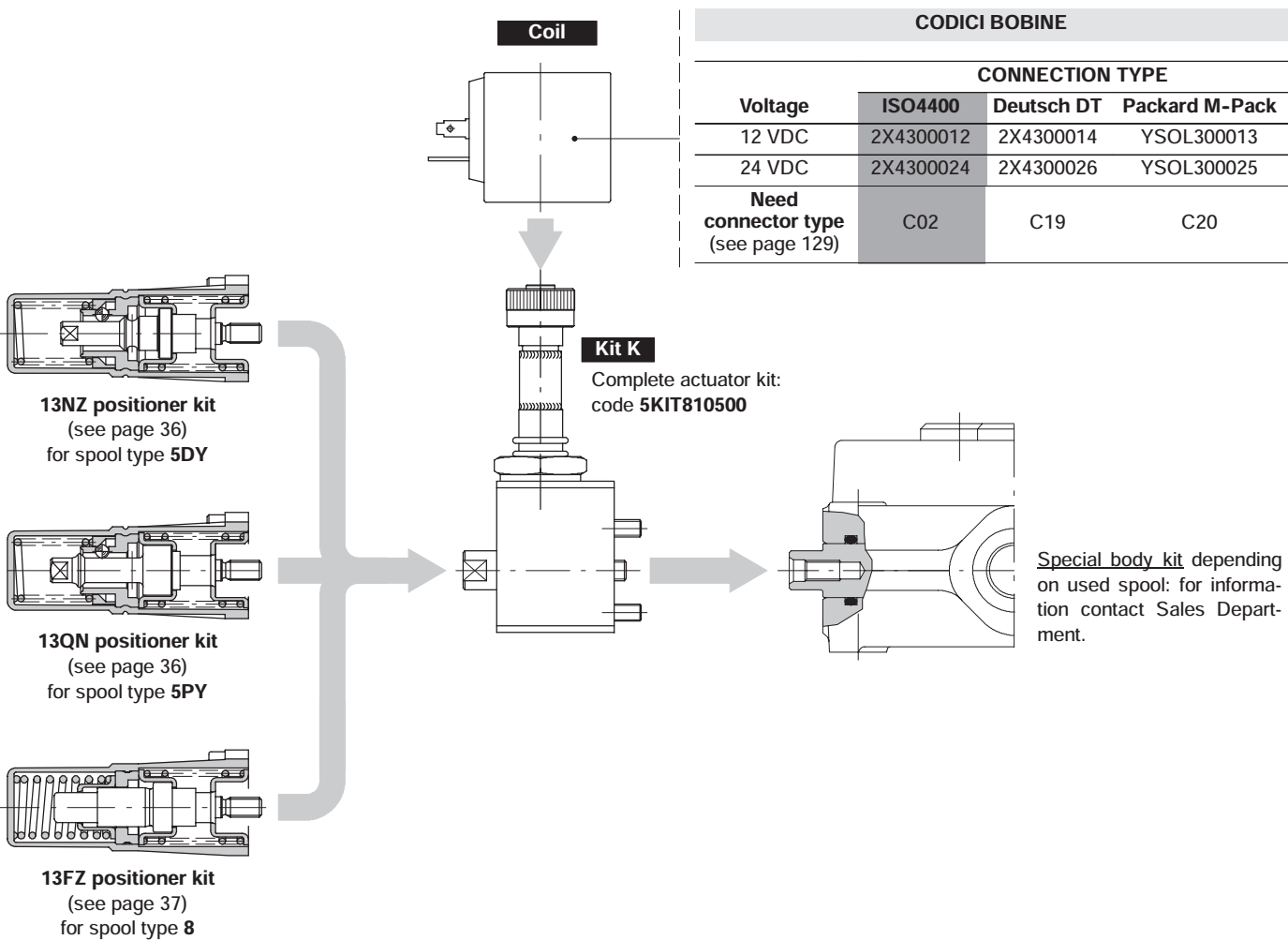
"A" side spool positioners

Particular positioner kits for special spools

With electromechanical lock

The positioners for special spools (13NZ, 13QN, 13FZ), are also available with spool electromechanical lock in neutral position; if coil is excited the spool can be operated.

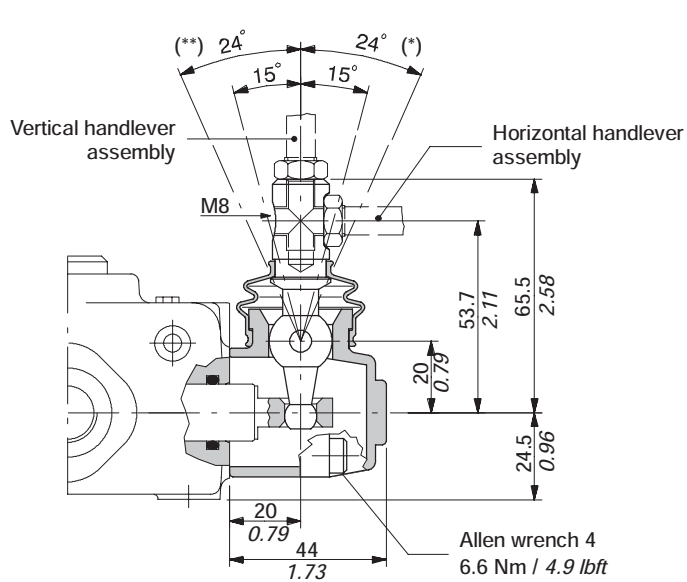
For kit K and coils features and dimensions, see page 24: for informations contact Sales Department.



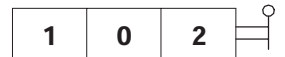
Lever control

Type L

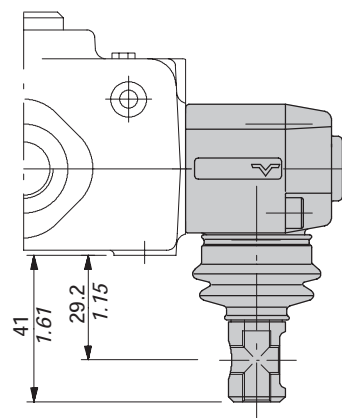
Alluminium with protection boot lever pivot box; it can be rotated 180° (execution L180).



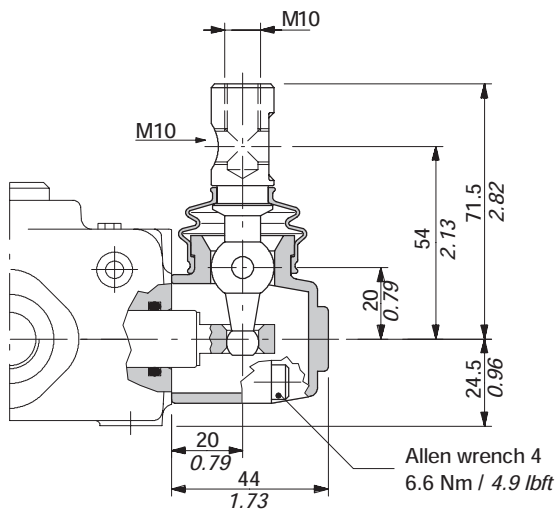
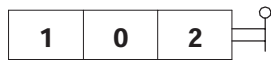
NOTE (*) - With spool type 5DY (see page 16)
(**) - With spool type 5PY (see page 17)



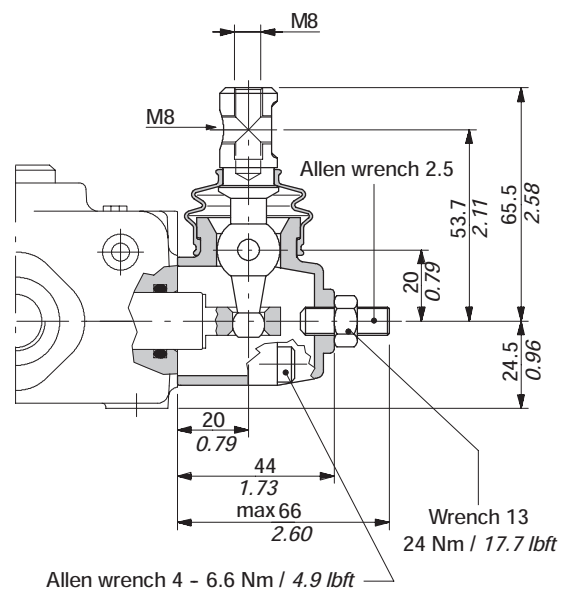
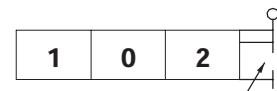
Execution L180



Type LM10



Type LF1



"B" side options

Special lever controls

Safety levers with lock in neutral complete with handlelever; lift handlelever knob to operate.

Type LEB

To be used with body valves without auxiliary relief valves flanged on the working ports.

Available with execution **LEBS**, code **5LEV605100**, for configurations with auxiliary valves type BP and BPS: it operates floating spool (4 positions) only by pulling the lever, with spool in (type **5DY**).

