



# Hydraulic pilot control valves and feed units

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#### **Additional information**

This catalogue shows the product in the most standard configurations.  
Please contact our Sales Department for more detailed information or special requests.

#### **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.**

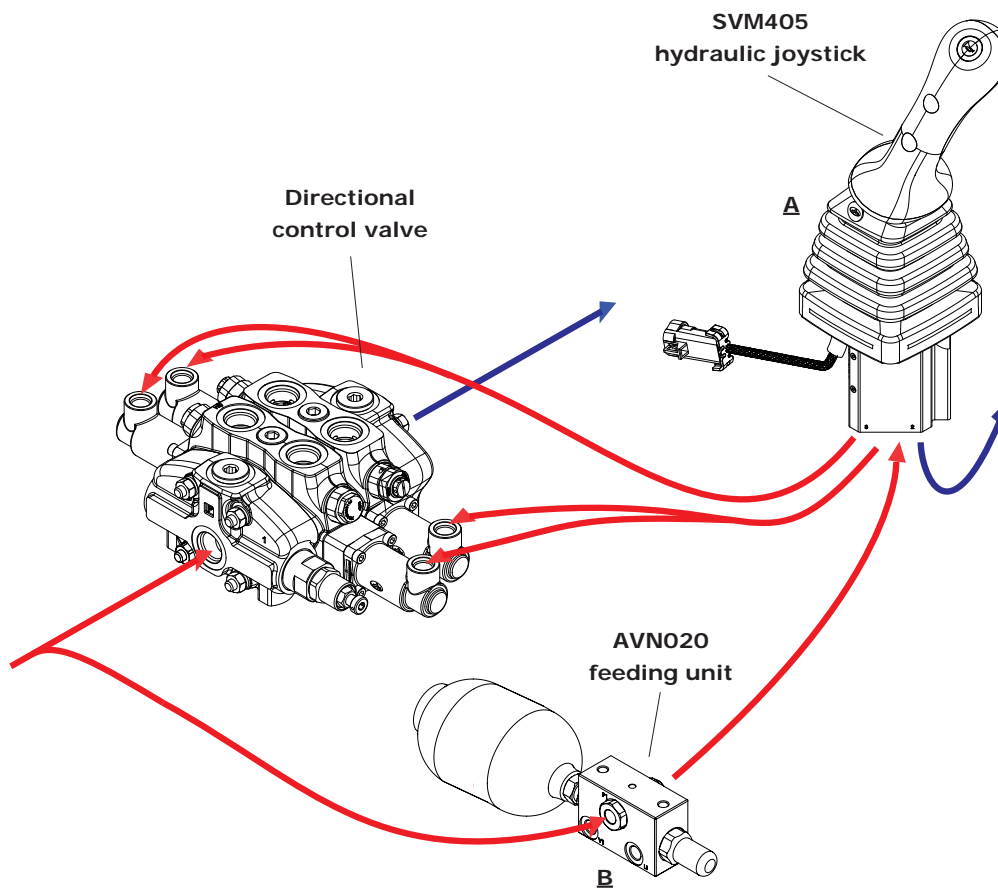
1<sup>st</sup> edition April 2014

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## System description

This is an ideal hydraulic proportional remote control system when max. movement precision and long-lasting reliability are required.

The system needs a secondary circuit with low pressure pilotage, fed separately by a dedicated pump and in derivation to the primary one. In this last case, it is necessary to include a feeding unit with eventual accumulator for emergency interventions into the circuit.



### A - SVM hydraulic pilot control valve

Walvoil offers a wide range of hydraulic control valves.

The main product lines are:

#### 1) Hydraulic joysticks

##### - SVM100 - SVM101

Hydraulic joysticks, single function available with wide range of handles. Hydraulic control valves available single or assembled from 1 to 10 sections.

##### - SVM400

Hydraulic joystick, double function available with wide range of handles. Single lever joystick to control two directional control valve working sections.

##### - SVM430 series (SVM430 - SVM431 - SVM432)

Special version operation of hydrostatic transmission.

##### - SVM400-EMD

Single electromagnetic detent on all ports or double on opposite ports.

##### - SVM405

Configuration with damping system.

#### 2) Hydraulic joysticks with electromagnetic detent

##### - SVM150

Hydraulic joystick, single axis with electromagnetic detent available in every acting directions. It can be assembled up to 5 sections.

##### - SVM450

Hydraulic joystick, double axis available with a wide range of handles. It can be configured with up to 3 electromagnetic detents.

##### - SVM600

Combined joystick single axis-double axis for three working sections. It can be configured with up to 4 electromagnetic detents.

#### 3) Hydraulic joysticks with pedal and other actuations

##### - SVM510 - SVM520 - SVM521

Pedal joystick to control one or two directional control valve working sections, reduced dimensions and weight.

##### - SVM500 series

Pedal hydraulic pilot valves, available in different configurations. High sensitivity and low force, reduced weight. For agricultural machines and earth moving machines.

##### - SVM540

Double pedal hydraulic pilot valves for mini-excavator application.

##### - SVM701 - SVM710

Unit with single work port, handweel or pusher operating.

### B - Feed unit and accessories

Feed unit can be chosen between two distinct series available:

#### 1) AVN020

2 way series with or without unloader valve

#### 2) FU series

Range from 1 to 4 stages, with or without hydraulic accumulator.





## SVM hydraulic joysticks

### SVM100-SVM101 / SVM400 / SVM430 series

- Single and double function
- Special configuration for hydrostatic transmission
- Wide range of handles available

### Working conditions

This catalogue shows technical specifications and diagrams measured through mineral oil of 46mm<sup>2</sup>/s - 46 cSt viscosity at 40°C - 104°F temperature.

Nominal flow rating		from 5 to 20 l/min - from 1.32 to 5.28 USgpm
Max. feeding pressure	on P inlet port	from 30 to 100 bar - from 435 to 1450 psi
Max. backpressure	on T outlet port	3 bar - 43.5 psi
Max. hysteresis		0.5 bar - 7.25 psi
Internal leakage (all ports)	at 30 bar - 435 psi, P⇒T	from 2.5 to 4.5 cm <sup>3</sup> /min - from 0.15 to 0.27 in <sup>3</sup> /min
Fluid		Mineral oil
Fluid temperature	with NBR (BUNA-N) seals	from -10 °C to 80 °C - from 14 °F to 176 °F
	operating range	from 15 to 75 mm <sup>2</sup> /s - from 15 to 75 cSt
Viscosity	min.	12 mm <sup>2</sup> /s - 12 cSt
	max.	400 mm <sup>2</sup> /s - 400 cSt
Max. contamination level		-/15/12 - ISO 4406 - NAS1638 class 6
Ambient temperature	without electric devices	from -40 °C to 60 °C - from 40 °F to 140 °F
	with electric devices	from -20 °C to 50 °C - from -4 °F to 122 °F
Tie rod tightening torque (wrench 13)	only for SVM100-101	24 Nm - 17.7 lbft

NOTE - for different conditions please contact our Sales Dpt.

### 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	Threads		Fitting tightening torque	
	UNI EN ISO 1179	UNI EN ISO 11926-2	Nm	lbft
P Inlet	G 1/4	7/16-20 (SAE 4)	30	22.13
Ports	G 1/4	7/16-20 (SAE 4)	30	22.13
T Outlet	G 1/4	7/16-20 (SAE 4)	30	22.13

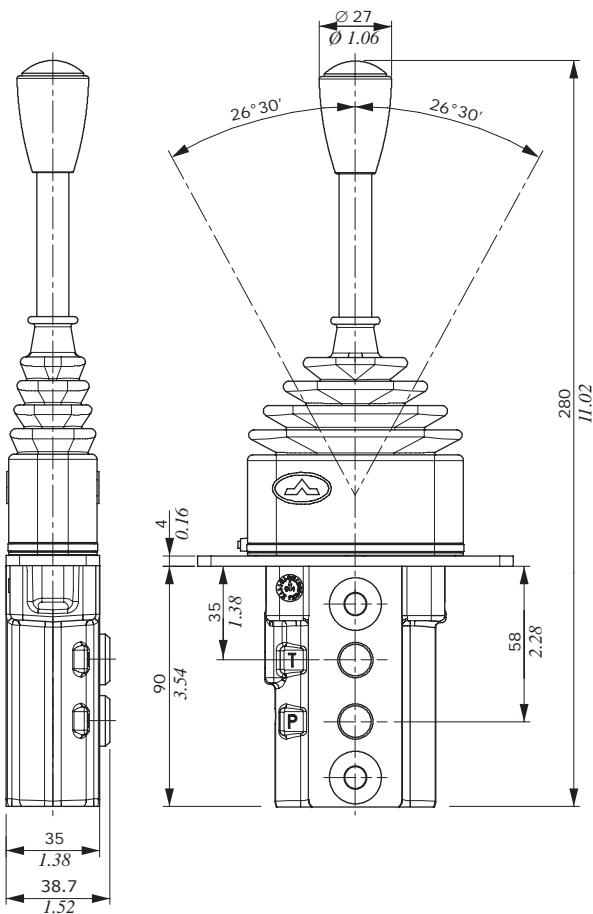
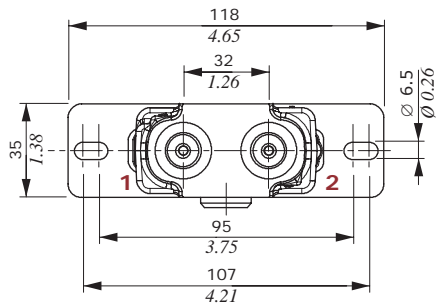
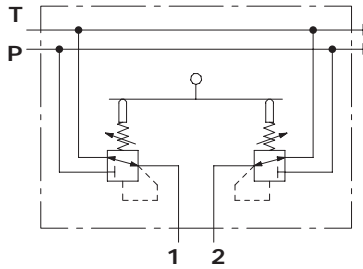
NOTE - These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The manufacturer has to be consulted.

## Dimensions and hydraulic circuit

### Single acting version

Single function configuration with side P and T ports.

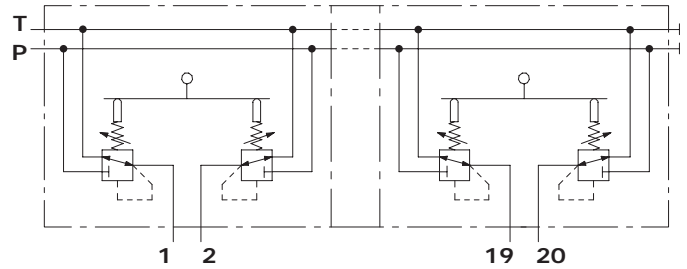
Hydraulic circuit



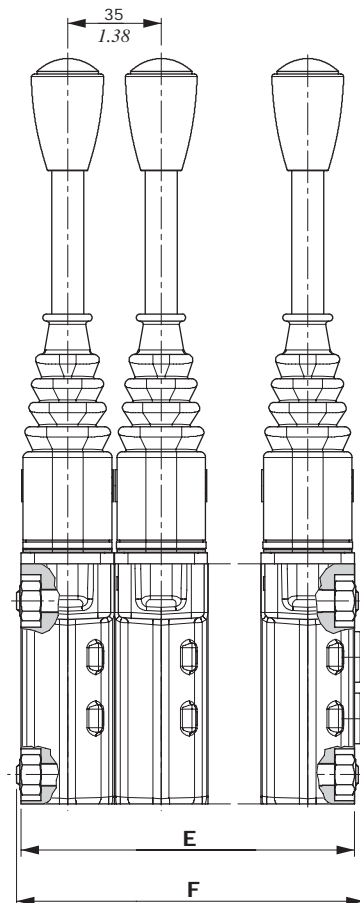
### SVM100/n version

Multiple function configuration with side P and T ports.

Hydraulic circuit



TYPE	E		F		TYPE	E		F	
	mm	in	mm	in		mm	in	mm	in
SVM100/2	70	2.76	75.2	2.96	SVM100/7	245	9.65	250.2	9.85
SVM100/3	105	4.13	110.2	4.34	SVM100/8	280	11.02	285.2	11.23
SVM100/4	140	5.51	145.2	5.72	SVM100/9	315	12.40	320.2	12.61
SVM100/5	175	6.89	180.2	7.09	SVM100/10	350	13.78	355.2	13.98
SVM100/6	210	8.27	215.2	8.27					



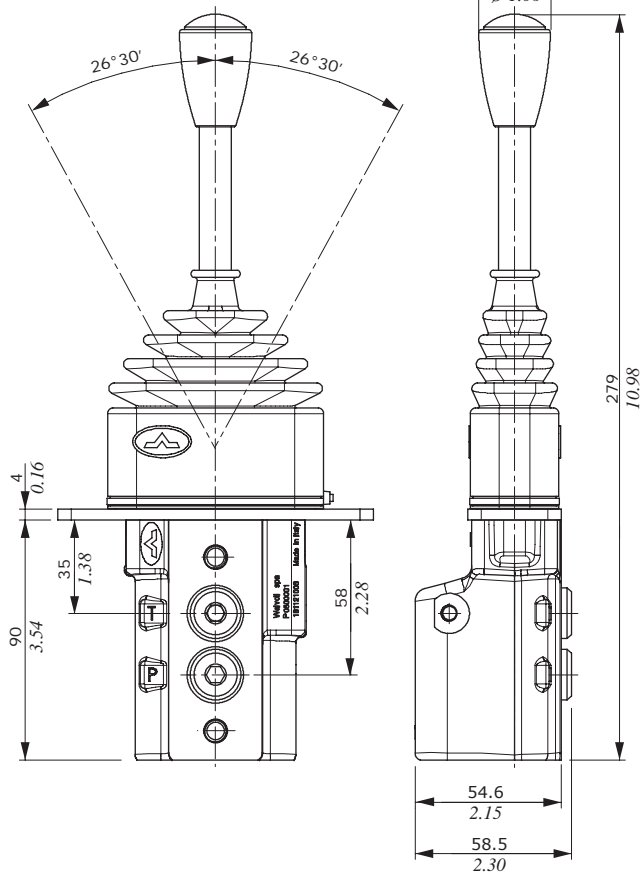
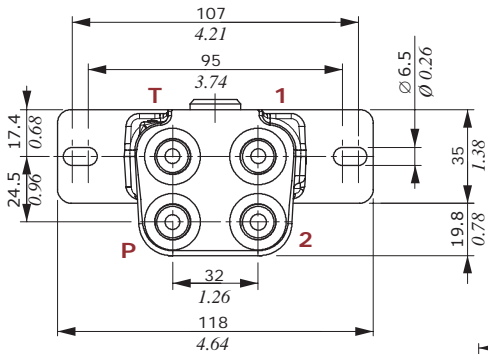
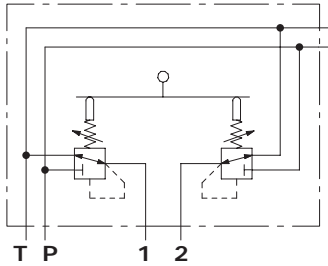


Dimensions and hydraulic circuit

SVM101 version

Single function configuration with bottom P and T ports.

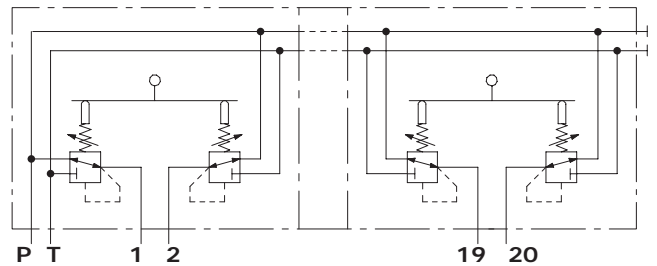
Hydraulic circuit



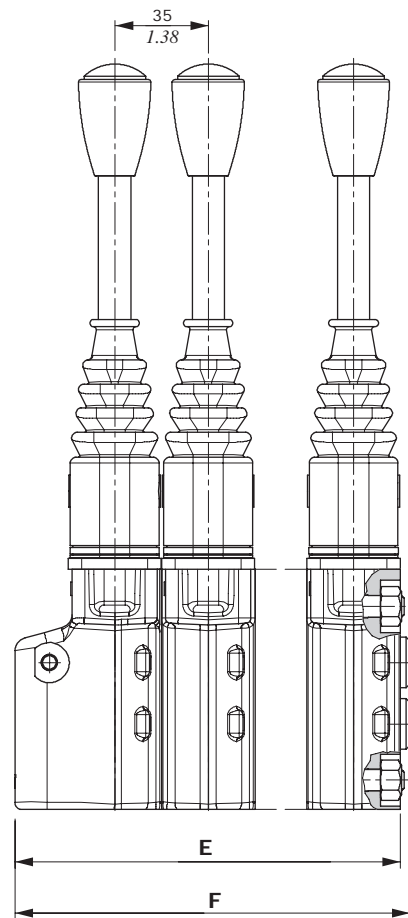
SVM101/n version

Multiple function configuration with bottom P and T ports.

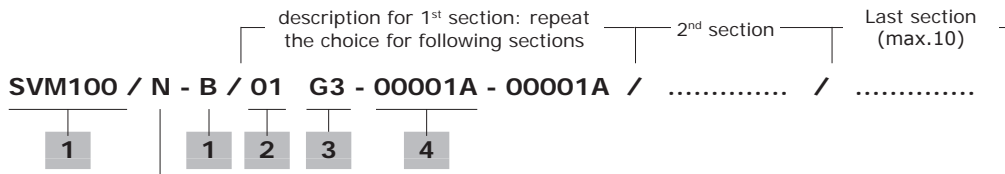
Hydraulic circuit



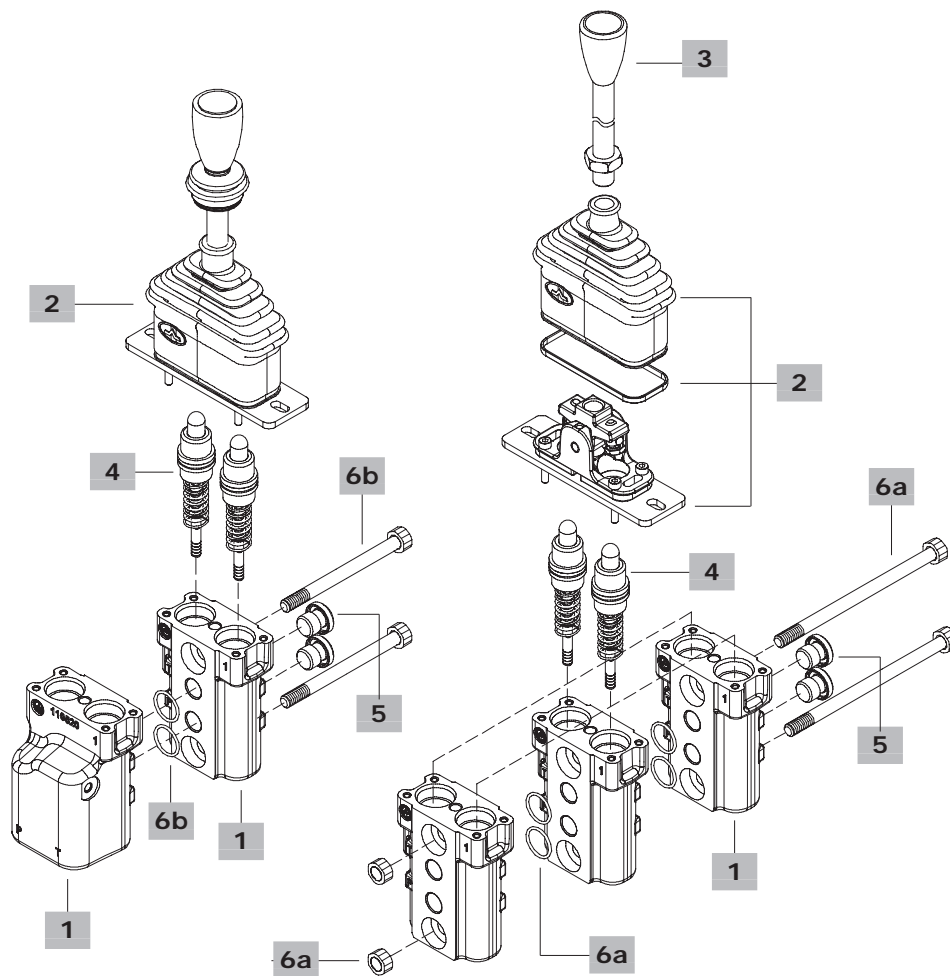
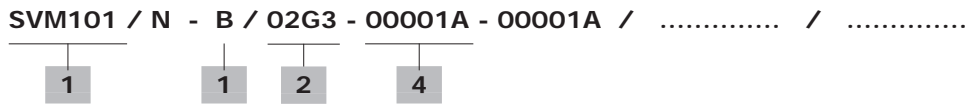
TYPE	E		F		TYPE	E		F	
	mm	in	mm	in		mm	in	mm	in
SVM101/2	89.6	3.53	93.3	3.67	SVM101/7	264.6	10.42	268.3	10.56
SVM101/3	124.6	4.91	128.3	5.05	SVM101/8	299.6	11.79	303.3	11.94
SVM101/4	159.6	6.28	163.3	6.43	SVM101/9	334.6	13.17	338.3	13.32
SVM101/5	194.6	7.66	198.3	7.81	SVM101/10	369.6	14.55	373.3	14.70
SVM101/6	229.6	9.04	233.3	9.18					



## Ordering codes



Substitute with number of sections



**1 Body kit \***

TYPE	CODE	DESCRIPTION
<b>SVM100-B</b>	3CO3122300	With side P and T ports
<b>SVM101-B</b>	3CO3122310	With bottom P and T ports

**2 Control option**

Complete with rubber bellow and fixing wrapper

**Without handlever (for standard handlever see 3)**

TYPE	CODE	DESCRIPTION
<b>01</b>	5CIN101000	Spring return to neutral position
<b>03S</b>	5CIN103008	With friction and neutral sensing, for 10, V, H, P and S series handles
<b>05</b>	5CIN105000	With detent in pos. 1 and spring return in neutral position
<b>06</b>	5CIN106000	With detent in pos. 2 and spring return in neutral position
<b>07</b>	5CIN107000	With detent in pos. 1 and 2; spring return in neutral position

**Controls with handlevers**

For assembling reasons, the under listed control kits must be supplied complete with handle. Please contact our Sales Department for use with different handles.

TYPE	CODE	DESCRIPTION
<b>02G3</b>	5CIN102000	With detent in neutral position, spring return in neutral position and type G knob; can not be used on two adjacent sections
<b>03G3</b>	5CIN103000	With friction and neutral sensing, G knob
<b>03E3</b>	5CIN103005	As previous, E knob, 15° bending rod
<b>03JL3</b>	5CIN103004	As previous, L knob with version microswitch
<b>10G3</b>	5CIN110000	With friction and detent in neutral, G knob; can not be used on two adjacent sections
<b>11G3</b>	5CIN111000	Detent in 3 positions, G knob; can not be used on two adjacent sections
<b>16G3</b>	5CIN116000	With operation microswitch (NO), neutral sensing, spring return in neutral position, G knob
<b>20G3</b>	5CIN120000	Detent in position 1 and 2, friction, neutral sensing, G knob
<b>22G3</b>	5CIN122000	With operation microswitch (NO), friction, G knob

**3 Standard handlevers page 13**

The pilot control valve is fitted with G3 handlever (less switches). Here below are listed the available handlevers configurations.

**Without switch:**

TYPE	CODE	DESCRIPTION
<b>G3</b>	5AST271218G	Ogival with portlight, straight rod (Standard)
<b>G3(15)</b>	5AST371227G	Ogival with portlight, 15° bending rod
<b>G3(30)</b>	5AST371228G	Ogival with portlight, 30° bending rod
<b>E</b>	5AST371214E	Spherical with portlight, 15° bending rod

**With switch:**

CAUTION: Not available with pilot control valve type 07-16-20-22

TYPE	CODE	DESCRIPTION
<b>JJ3</b>	5AST271218J	With spring return push-button switch
<b>JM3</b>	5AST271218M	With 3 pos. detent rocker switch

For J handle specifications see the "handles and handlevers" catalogue

**4 Pressure control curves**

For configuration and list available see from page 31 on

**5 Closing plugs \***

CODE	DESCRIPTION
3XTAP719150	G1/4 plug for upper ports (n. 2 plugs)

**6a Assembling kit for SVM100**

Only for SVM100/2 or higher: this kit contains tie rods, nuts and O-ring seal.

CODE	DESCRIPTION
5TIR108073	Assembling kit for SVM100/2
5TIR108108	Assembling kit for SVM100/3
5TIR108143	Assembling kit for SVM100/4
5TIR108178	Assembling kit for SVM100/5
5TIR108213	Assembling kit for SVM100/6
5TIR108248	Assembling kit for SVM100/7
5TIR108283	Assembling kit for SVM100/8
5TIR108319	Assembling kit for SVM100/9
5TIR108353	Assembling kit for SVM100/10

**6b Assembling kit for SVM101**

Only for SVM101/2 or higher: this kit contains tie rods, nuts and O-ring seal.

CODE	DESCRIPTION
5TIR108050	Assembling kit for SVM101/2
5TIR108085	Assembling kit for SVM101/3
5TIR108122	Assembling kit for SVM101/4
5TIR108156	Assembling kit for SVM101/5
5TIR108190	Assembling kit for SVM101/6
5TIR108225	Assembling kit for SVM101/7
5TIR108261	Assembling kit for SVM101/8
5TIR108295	Assembling kit for SVM101/9
5TIR108330	Assembling kit for SVM101/10

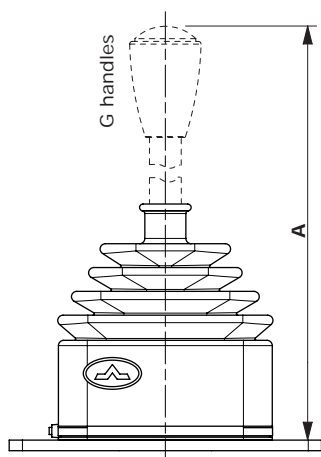
NOTE (\*) – Codes are referred to **BSP** thread.

## Configuration option

### Controls without handlevers

#### Controls type

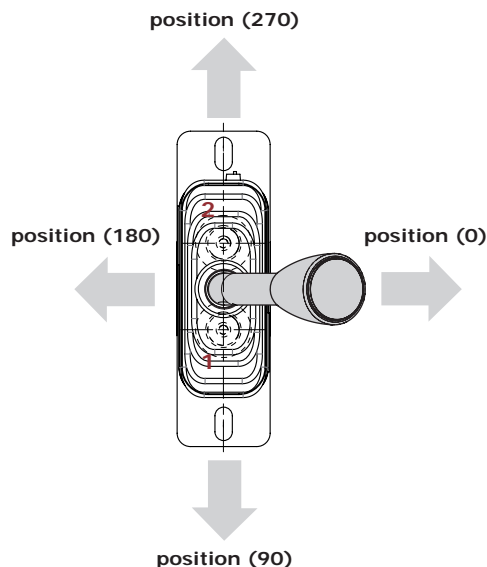
- 01: Spring return to neutral position
- 05: With detent in pos. 1 and spring return in neutral position
- 06: With detent in pos. 2 and spring return in neutral position
- 07: With detent in pos. 1 and 2; spring return in neutral position



handlever type	A	
	mm	in
G3 straight rod	186	7.32
G3 15° bending rod	184	7.24
G3 30° bending rod	176	6.93
E 15° bending rod	186	7.32
JJ3 straight rod	190	7.48

#### Controls type

- 03S: With friction and neutral sensing, for 10, V, H, P and S series handles



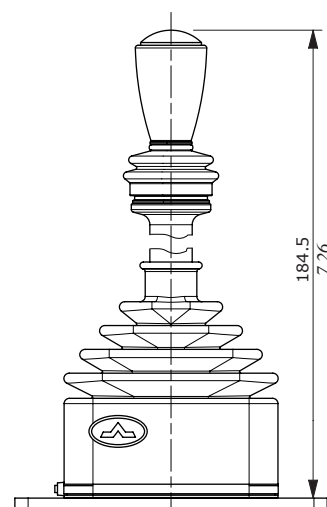
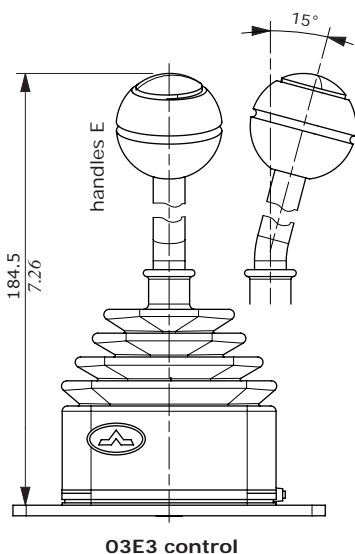
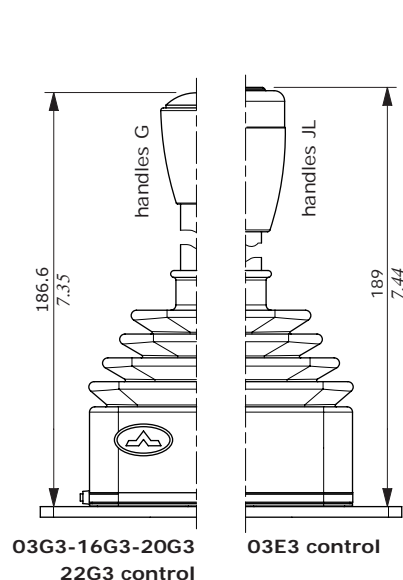
### Controls with handlevers

#### Controls type

- 03G3: With friction and neutral sensing, ogival with portlight, G knob
- 03E3: As 03G3 control, E knob and 15° bending rod
- 03JL3: As 03G3 control, L knob with operation microswitch
- 16G3: With operation microswitch (NO), neutral sensing, spring return in neutral position, G knob
- 20G3: Detent in position 1 and 2, friction, neutral sensing, G knob
- 22G3: With operation microswitch (NO), friction, G knob

#### Controls type

- 02G3: With detent and spring return in neutral position, type G knob; can not be used on two adjacent sections
- 10G3: With friction and detent in neutral position, G knob; can not be used on two adjacent sections
- 11G3: Detent in 3 positions, G knob; can not be used on two adjacent sections

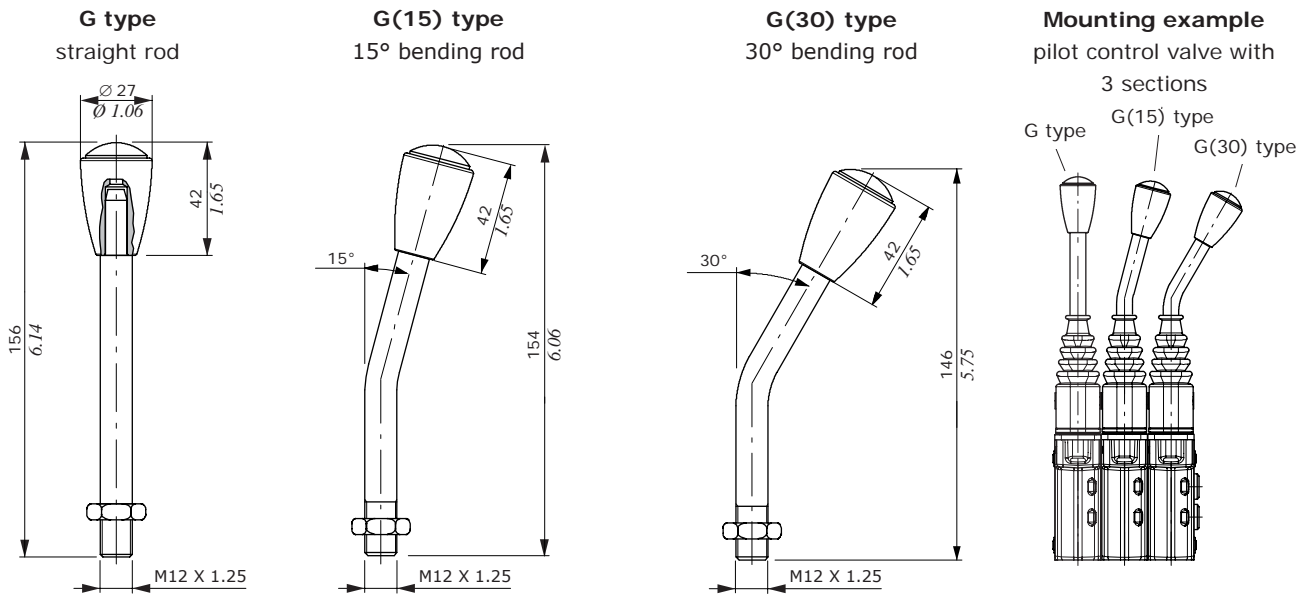


Configuration option

Standard handlevers without microswitch

G type

Ogival handles with customizable portlight. It's possible to insert labels with specific machine functions (for example: lifting function).



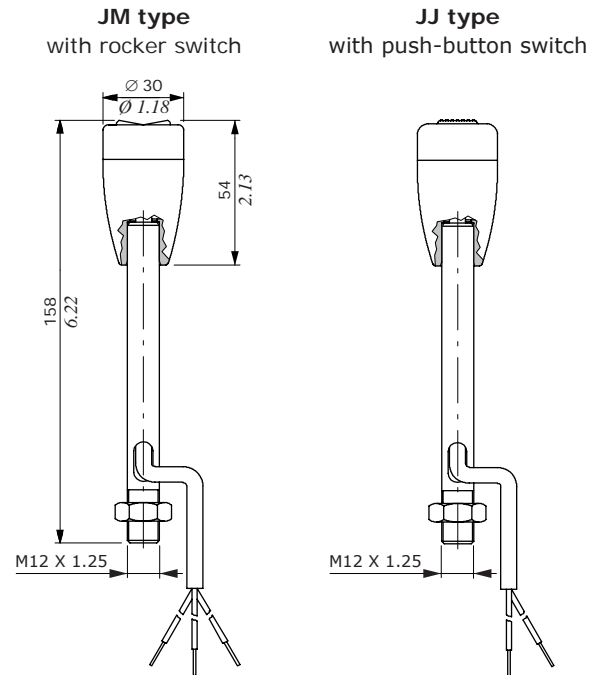
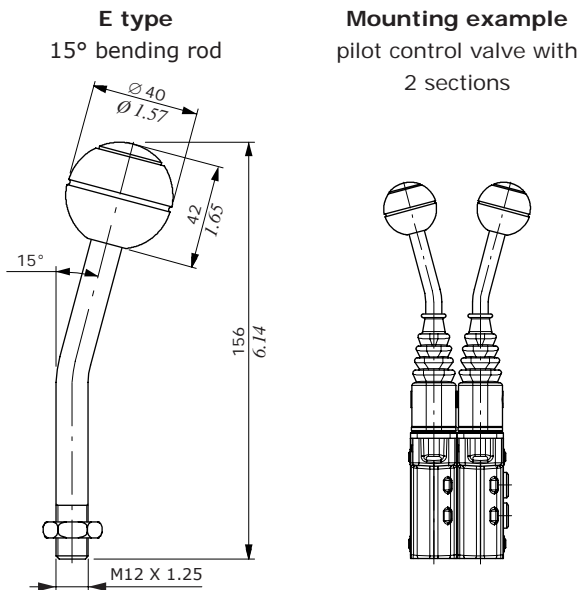
Standard handlevers with microswitch

E type

Customizable handle as type G.

J type

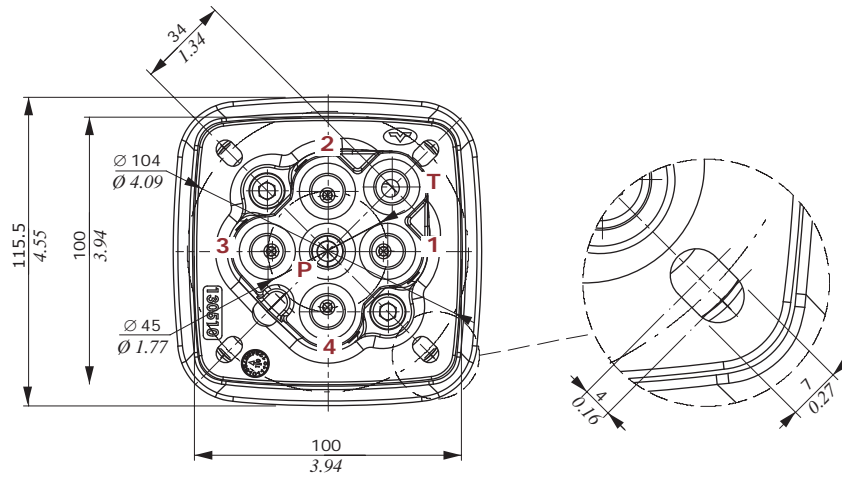
Ogival handle, small dimensions, available with rocker switch and push-button.



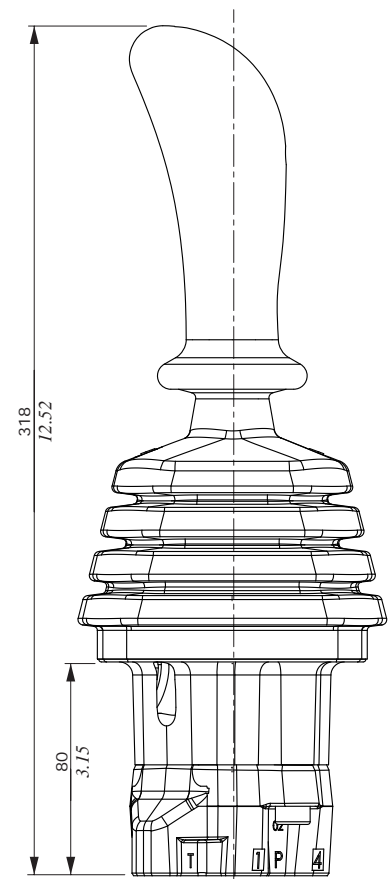
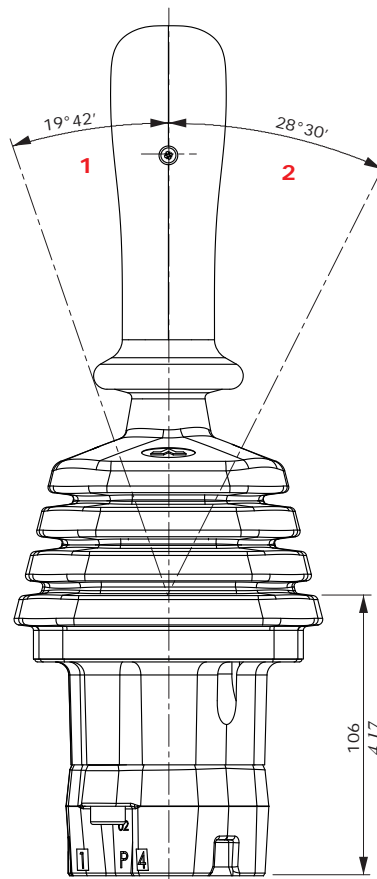
Note: for J Handle features see "handles and handlevers" catalog

Dimensions and hydraulic circuit

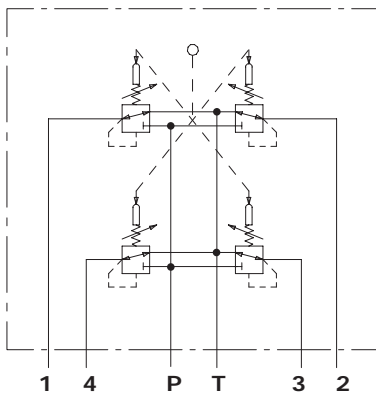
SVM400



NOTE: normally the pilot control valve is supplied with the handle oriented towards port nr. 4 (see page 20)



Hydraulic circuit

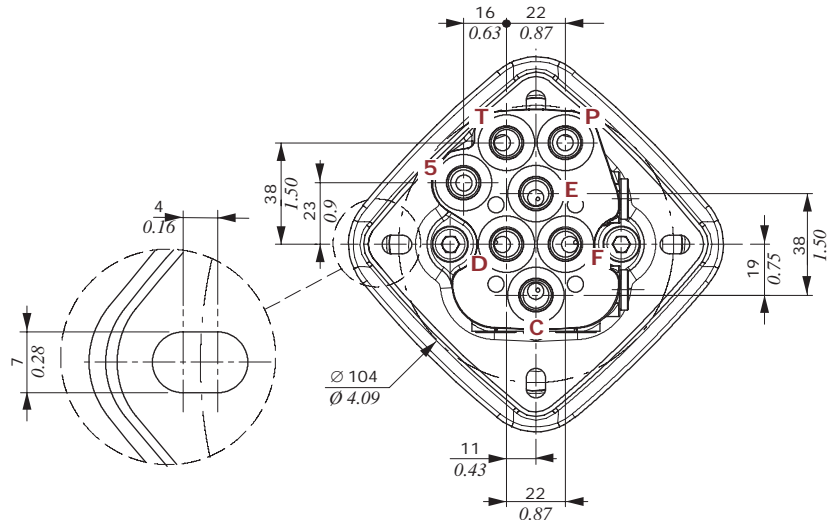


- 1 : Single work port
- 2 : Two simultaneous work ports

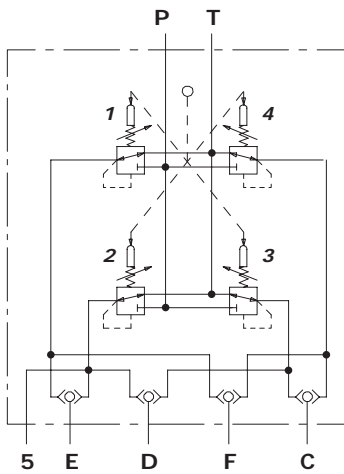
Dimensions and hydraulic circuit

SVM430

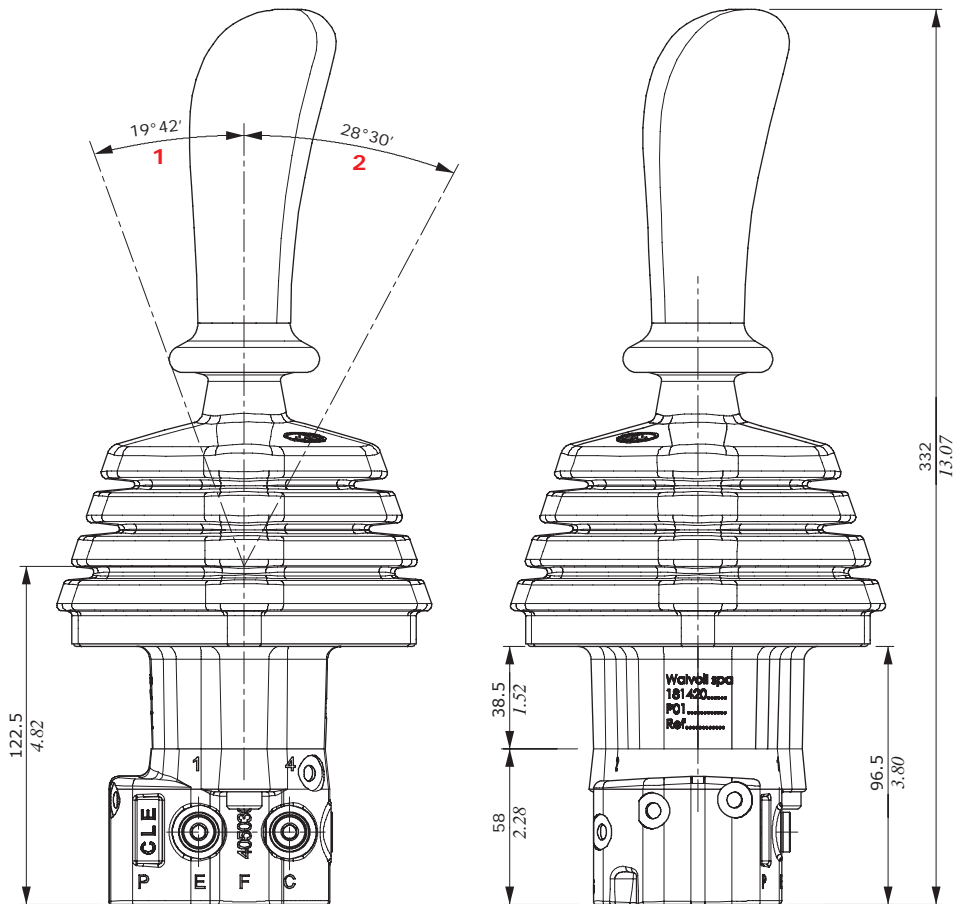
It's configured with pressure gauges (5) to get an additional output signal (ex. back-up alarm).



Hydraulic circuit



- Work port 1 ⇒ EF port ⇒ right
- Work port 2 ⇒ ED port ⇒ back
- Work port 3 ⇒ CD port ⇒ left
- Work port 4 ⇒ CF port ⇒ forward

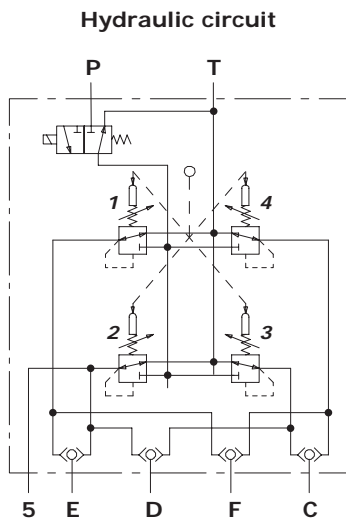
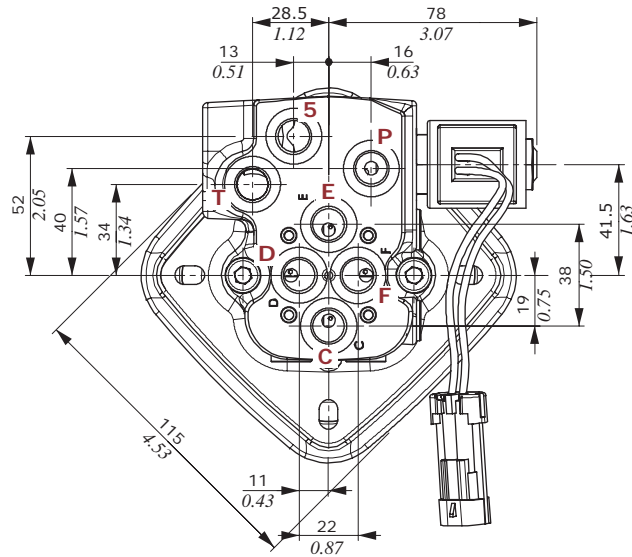


- 1 : Single work port
- 2 : Two simultaneous work ports

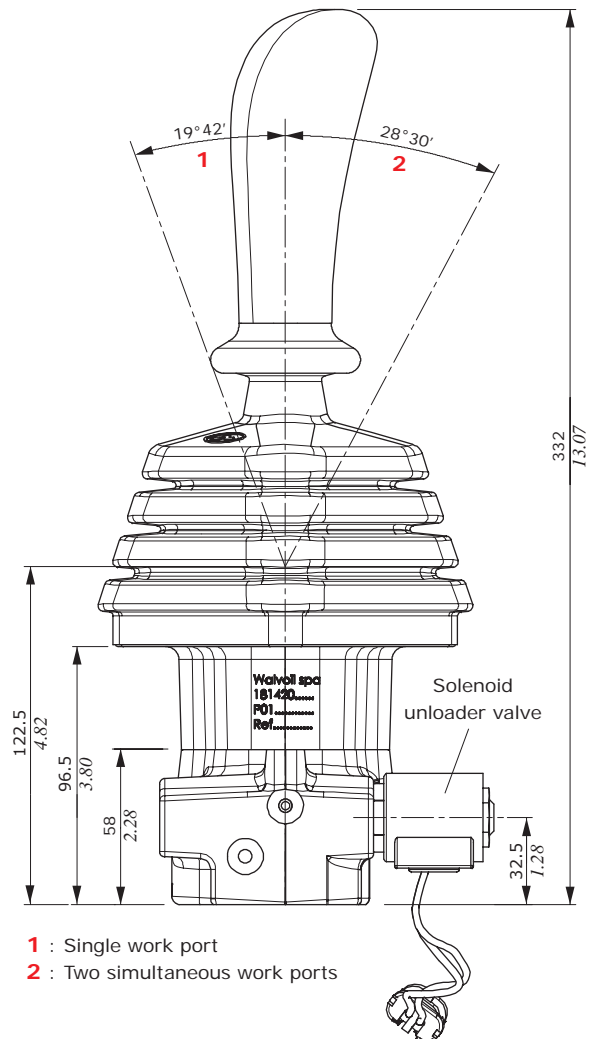
## Dimensions and hydraulic circuit

### SVM431

SVM431 it's configured with pressure gauges (5) to get an additional output signal with safety solenoid valve.



- Work port 1 ⇒ EF port ⇒ right
- Work port 2 ⇒ ED port ⇒ back
- Work port 3 ⇒ CD port ⇒ left
- Work port 4 ⇒ CF port ⇒ forward



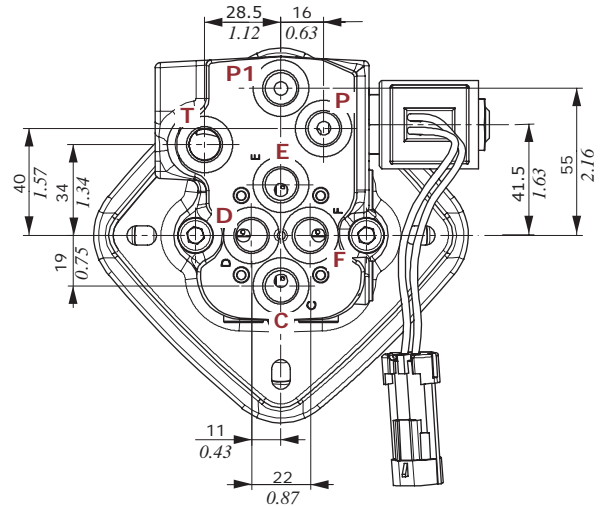
- 1 : Single work port
- 2 : Two simultaneous work ports



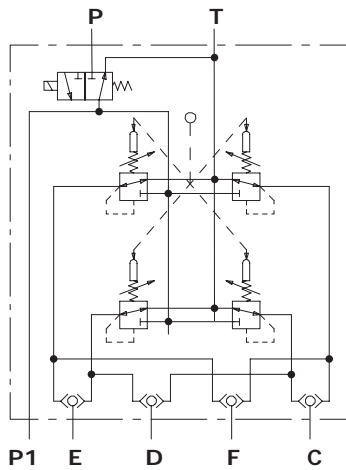
Dimensions and hydraulic circuit

SVM432

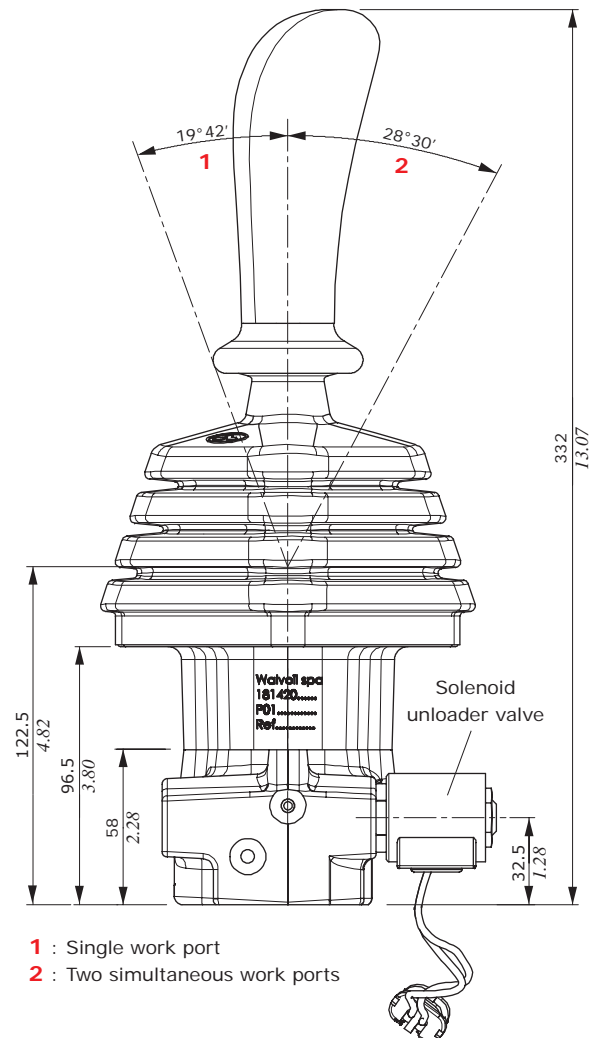
SVM432 it's configured with solenoid unloader valve and auxiliary under safety pressure gauge port (P1).



Hydraulic circuit



- Work port 1 ⇒ EF port ⇒ right
- Work port 2 ⇒ ED port ⇒ back
- Work port 3 ⇒ CD port ⇒ left
- Work port 4 ⇒ CF port ⇒ forward



- 1 : Single work port
- 2 : Two simultaneous work ports

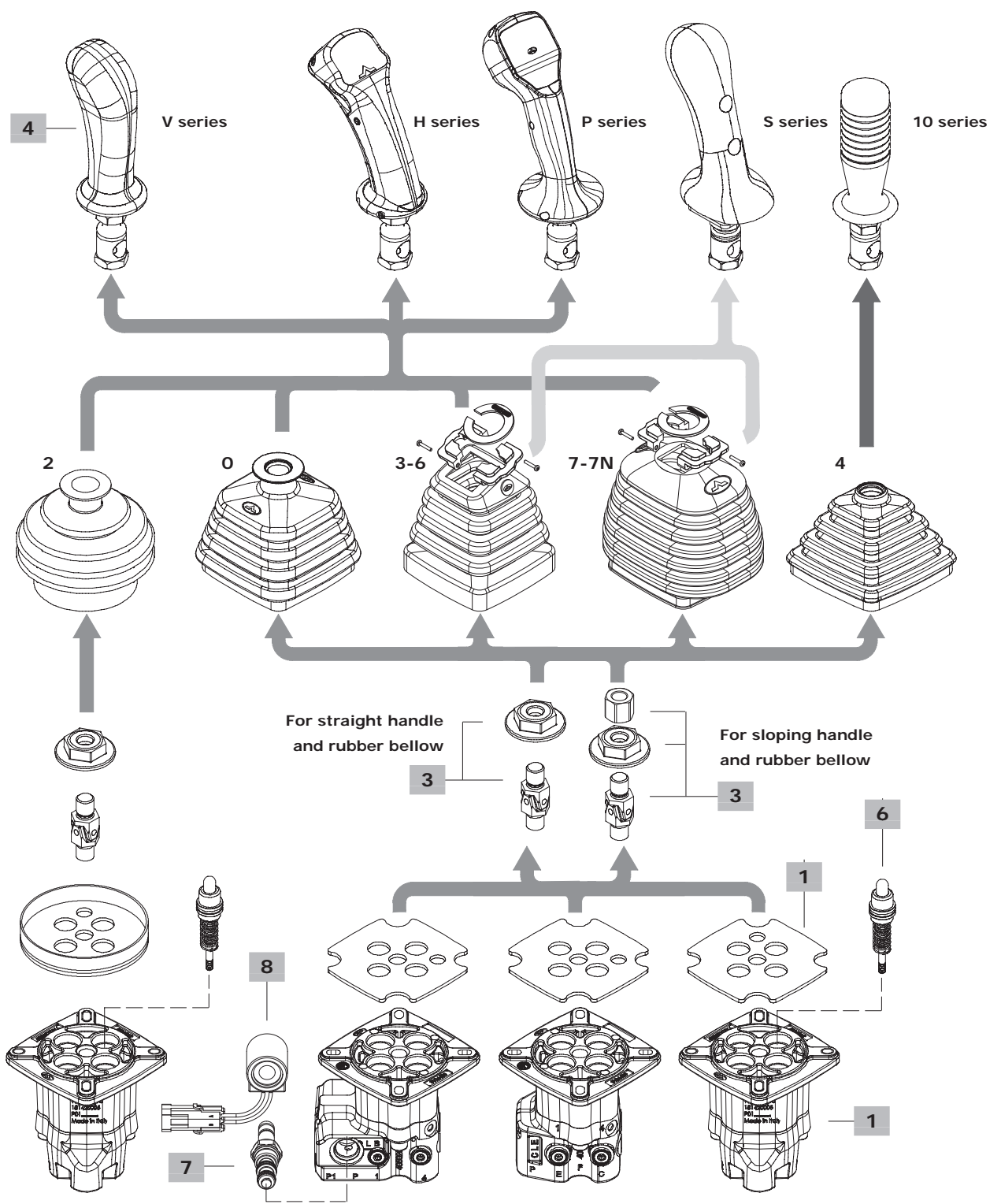
## Ordering codes

SVM400 / 0 1 - B / 01 V009 (90) - 00001A X 4 - <CRVN>

1 2 1 3 4 5 6 Body is painted as standard, with one coat of primer black antirust paint

SVM431 / 0 1 - B / 01 V009 (90) - 00001A x4 - ELN (W1F02)-12VDC - <CRVN>

7 8



**1 Body kit \***

TYPE	CODE	DESCRIPTION
<b>SVM400/1-B</b>	5CO3422300	For rubber bellow square base
<b>SVM400/3-B</b>	5CO3422300C	For rubber bellow circular base
<b>SVM430/1-B</b>	5CO34327302	With auxiliary pressure gauge port, for rubber bellow square base
<b>SVM431/1-B</b>	5CO3432310	With solenoid unloader valve and auxiliary pressure gauge port, for rubber bellow square base
<b>SVM432/1-B</b>	5CO3432320	With solenoid unloader valve and auxiliary under-safety pressure gauge port, for rubber bellow square base

**2 Rubber bellow****For V, H, P series handles**

TYPE	CODE	DESCRIPTION
<b>0</b>	3SOF111130	Straight type, square base with logo
<b>2</b>	3SOF110100	Straight type, circular base; it can be used with sloping handles
<b>3</b>	5SOF111113	Sloping type, square base; only for 19° sloping handles. Fitted with adapter. Not available for type 16 control.
<b>6</b>	5SOF111114	As type 3 without logo. Not available for type 16 control.
<b>7</b>	5SOF111135	Universal type, rectangular base. It's fitted with adapter and it can be used straight and 30° sloping in all directions
<b>7N</b>	5SOF111137	As type 7 without logo
<b>9</b>	3SOF111131	As type 0 without logo

**For S series handles**

TYPE	CODE	DESCRIPTION
<b>3</b>	3SOF111113	Sloping type, square base; only for 19° sloping handles. Not available for type 16 control.
<b>6</b>	3SOF111114	As type 3 without logo. Not available for type 16 control.
<b>7</b>	3SOF111135	Universal type, rectangular base. It's fitted with adapter and it can be used straight and 30° sloping in all directions
<b>7N</b>	3SOF111137	As type 7 without logo

**For 10 series handles**

TYPE	CODE	DESCRIPTION
<b>4</b>	3SOF111100	Straight type, square base

**3 Control option****Spring return in neutral position**

TYPE	CODE	DESCRIPTION
<b>01</b>	5CIN4003	For V, H, P, S series handles and straight rubber bellow
	5CIN4001	For V, H, P, S series handles and sloping rubber bellow
<b>01GP</b>	5CIN4002	For 10 series handles

**With microswitches for movement detection on each port.**

It needs type 7 rubber bellow and special body: please contact our Sales Department.

TYPE	CODE	DESCRIPTION
<b>16</b>	5CIN4023	For V, H, P, S series handles and straight rubber bellow
	5CIN4021	For V, H, P, S series handles and sloping rubber bellow
<b>16GP</b>	5CIN4022	For 10 series handles

**4 Handles**

The pilot control valve can be configured with different types of handles (V, H, P, S series) with straight joint type 9 or sloping joint type 7 and 8.

Below are listed some pre-configured handles.

For technical specifications and full range of handles and other types of joint see the "Handles and hand levers" catalogue.

**V series handles**

TYPE	CODE	DESCRIPTION
<b>V000</b>	5IMP030000	Without switches with standard connection
<b>V009</b>	5IMP030011	Without switches with straight joint
<b>V007</b>	5IMP030070	Without switches with sloping 19° left joint (needs types 2 or 3 rubber bellow)
<b>V008</b>	5IMP030080	Without switches with sloping 19° right joint (needs types 2 or 3 rubber bellow)

**S series handles**

<b>S007</b>	2IM5000000	Without switches with sloping 19° left joint
<b>S108-045</b>	2IM5100000	Without switches with sloping 19° right joint
<b>S117-045</b>	2IM5110000	With proportional rocker switch and front trigger with sloping 19° left joint
<b>S218-045</b>	2IM5210002	With upper push-button and horn symbol and front trigger with sloping 19° right joint
<b>S21A7-045</b>	2IM5210003	With upper push-button without horn symbol and front trigger with sloping 19° left

**5 Handle position**

TYPE	DESCRIPTION
<b>(-)</b>	STANDARD configuration, cable operation on work port 4: <b>omitted in description</b>
<b>(90)</b>	Mounted with 90° rotation step: cable operation on work port 1
<b>(180)</b>	Mounted with 180° rotation step: cable operation on work port 2
<b>(270)</b>	Mounted with 270° rotation step: cable operation on work port 3

**6 Pressure control curves**

For configuration and list available see from page 31 on

**7 Solenoid unloader valve**

TYPE	CODE	DESCRIPTION
<b>ELN</b>	2X4800100	Without emergency operation
<b>ELT</b>	2X4800200	With emergency operation

**8 Coil**

TYPE	CODE	DESCRIPTION
<b>(D1F02)-12VDC</b>	4SL6001200	12VDC, Deutsch connector integrated
<b>(D1F02)-24VDC</b>	4SL6002400	As previous 24VDC
<b>(W1F02)-12VDC</b>	4SL6001204	12VDC, Packard connector Weatherpack with wire (L = 210 mm wire + connector)

NOTE (\*) – Codes are referred to **BSP** thread.



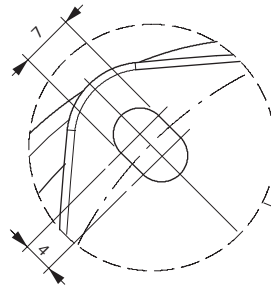
Dimensions and hydraulic circuit

Configuration with electromagnetic detent

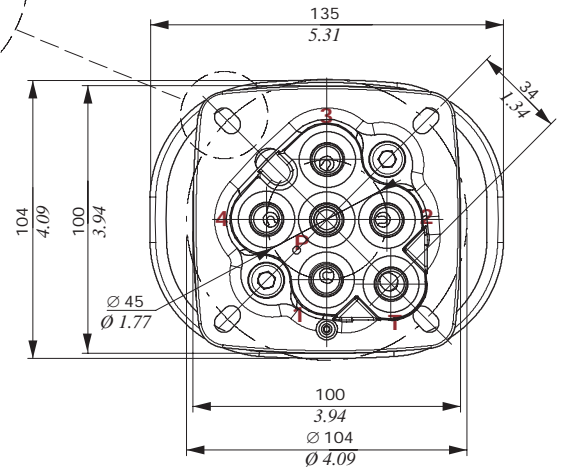
Features

ELECTROMAGNET

- Nominal voltage tolerance . . . . . : ±10%
- Power rating . . . . . : 8 W - 12 VDC  
: 7.4 W - 24 VDC
- Nominal current . . . . . : 0.66 A - 12 VDC  
: 0.3 A - 24VDC
- Coil insulation . . . . . : Class H
- Weather protection . . . . . : IP65
- Insertion . . . . . : 100%

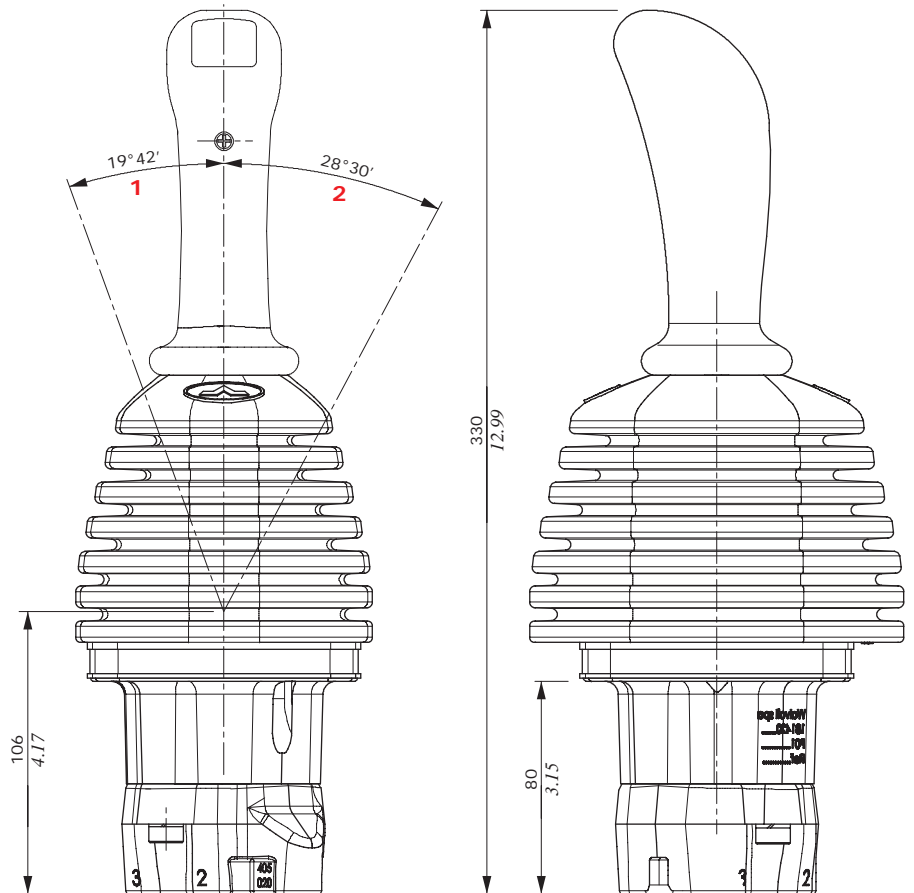
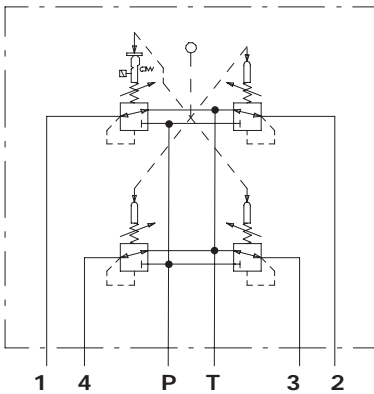


NOTE: normally the pilot control valve is supplied with the handle oriented towards port nr. 4 (see page 24)



Hydraulic circuit

Example detent on working port 1



- 1 : Single work port
- 2 : Two simultaneous work ports

## Ordering codes

SVM400-EMD1 / 7 1 - B / 01E15 (...) V00G (90) (...) - E0001M - 00001M X 3 - 12VDC - <CRVN>

1

2

1

3

8

4

5

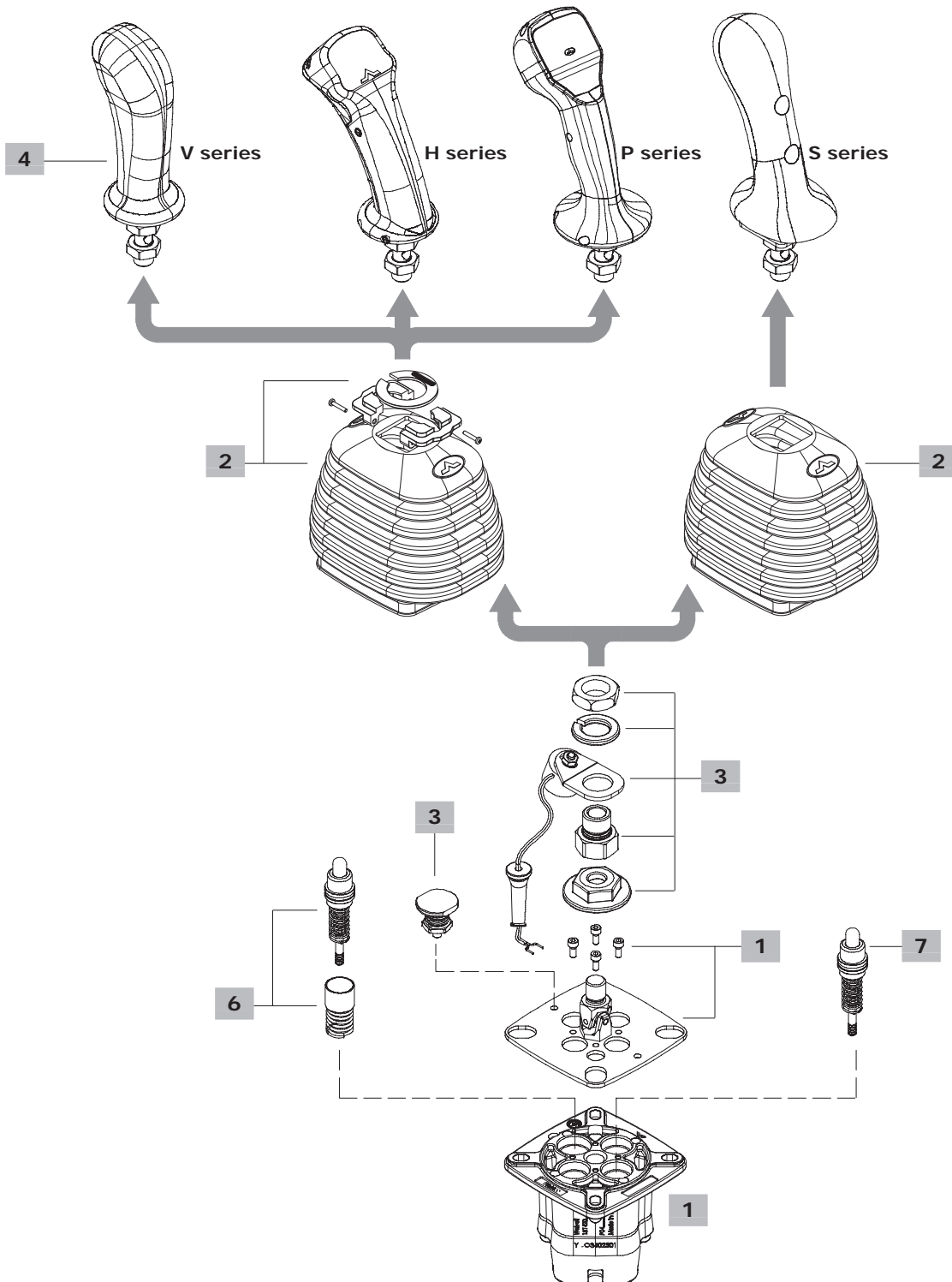
8

6

7

3

Body is painted as standard, with one coat of primer black antirust paint



**1 Body kit \***

TYPE: **SVM400-EMD0/1-B** CODE: 5CO3422300  
 DESCRIPTION: Without detent arrangement  
 TYPE: **SVM400-EMD1/1-B** CODE: 5CO3402301  
 DESCRIPTION: With detent arrangement on port 1  
 TYPE: **SVM400-EMD(2-4)/1-B** CODE: 5CO3402306  
 DESCRIPTION: With detent arrangement on ports 2 and 4

**2 Rubber bellow****For V, H, P series handles**

TYPE	CODE	DESCRIPTION
<b>7</b>	5SOF111135	Universal type, rectangular base. It's fitted with adapter and it can be used straight and 30° sloping in all directions
<b>7N</b>	5SOF111137	As type 7 without logo

**For S series handles**

TYPE	CODE	DESCRIPTION
<b>7</b>	3SOF111135	Universal type, rectangular base. It's fitted with adapter and it can be used straight and 30° sloping in all directions
<b>7N</b>	3SOF111137	As type 7 without logo

**3 Detent configuration**

Cables are supplied with wires with tin-plate terminals

TYPE	CODE	DESCRIPTION
<b>01E0</b>	5CIN401E00	Spring return, without detent

**Detent on port 1**

<b>01E15</b>	5CIN401E12	12 VDC - Spring return
<b>01E15</b>	5CIN4E401100	24 VDC - Spring return

**Detent on ports 2 and 4**

<b>01E25</b>	5CIN401E22	12 VDC - Spring return
<b>01E25</b>	5CIN4E401200	24 VDC - Spring return

NOTE: For detent on different ports please contact our Sales Department.

**4 Handles**

The pilot control valve can be configured with different types of handles (V, H, P, S series) with straight joint type 9 or sloping joint type 7 and 8.

Below are listed some pre-configured handles.

For technical specifications and full range of handles and other types of joint see the "Handles and hand levers" catalogue.

**V series handles**

TYPE	CODE	DESCRIPTION
<b>V00G</b>	51MP030014	Without switches with straight joint
<b>V007</b>	51MP030070	Without switches with sloping 19° left joint (types 2 or 3 rubber bellow needed)
<b>V008</b>	51MP030080	Without switches with sloping 19° right joint (types 2 or 3 rubber bellow needed)

**S series handles**

<b>S007</b>	21M5000000	Without switches with sloping 19° left joint
<b>S108-045</b>	21M5100000	Without switches with sloping 19° right joint
<b>S117-045</b>	21M5110000	With proportional rocker switch and front trigger with sloping 19° left joint
<b>S218-045</b>	21M5210002	With upper push-button and horn symbol and front trigger with sloping 19° right joint
<b>S21A7-045</b>	21M5210003	With upper push-button without horn symbol and front trigger with sloping 19° left

**5 Handle position**

TYPE	DESCRIPTION
<b>(-)</b>	STANDARD configuration, operation to work port 4: <b>omitted in description</b>
<b>(90)</b>	Mounted with 90° rotation step: operation to work port 1
<b>(180)</b>	Mounted with 180° rotation step: operation to work port 2
<b>(270)</b>	Mounted with 270° rotation step: operation to work port 3

**6 Pressure control curves**

For electromagnetic detent (with pre-feeling) see from page 31 on

**7 Pressure control curves**

For standard type see from page 31 on

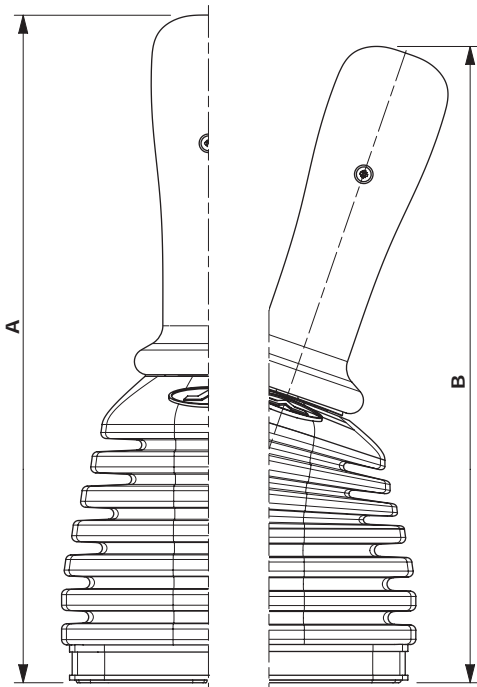
**8 Connector**

Configurations with detent or microswitch are provided with wires with tin-plate terminals. For connectors please contact our Sales Department

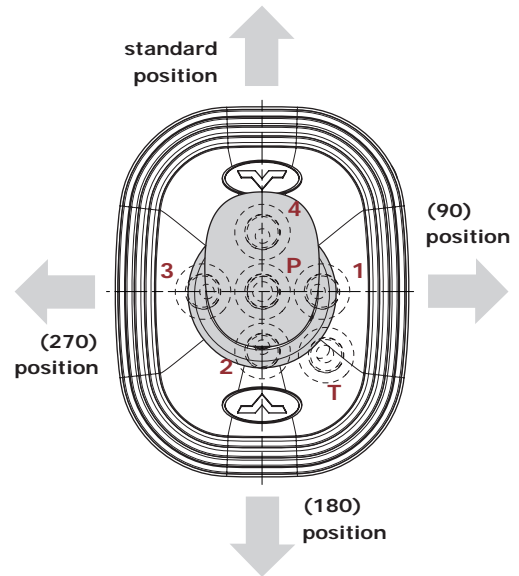
NOTE (\*) – Codes are referred to **BSP** thread.

## Configuration option

### Handle options



### Handle positions

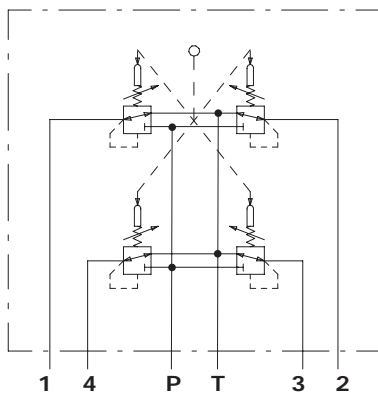


Type	A		B	
	mm	in	mm	in
V series	252	9.92	240	9.45
H series	250	9.84	240	9.45
P series	268	10.55	266	10.47
S series	266	10.47	261	10.27

## Detent configuration

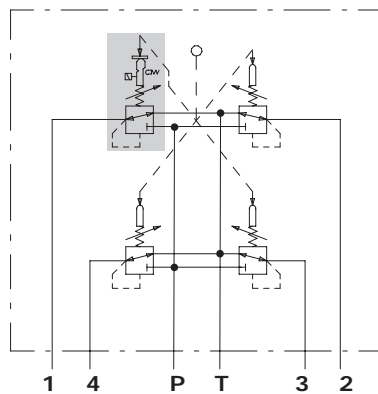
### 01E0 type

Spring return, without detent



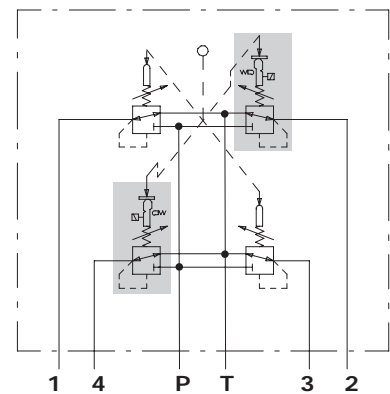
### 01E15 type

Single detent on port 1  
(detent on ports 2-3-4 on request),  
spring return



### 01E25 type

Detent on ports 2 and 4, spring return



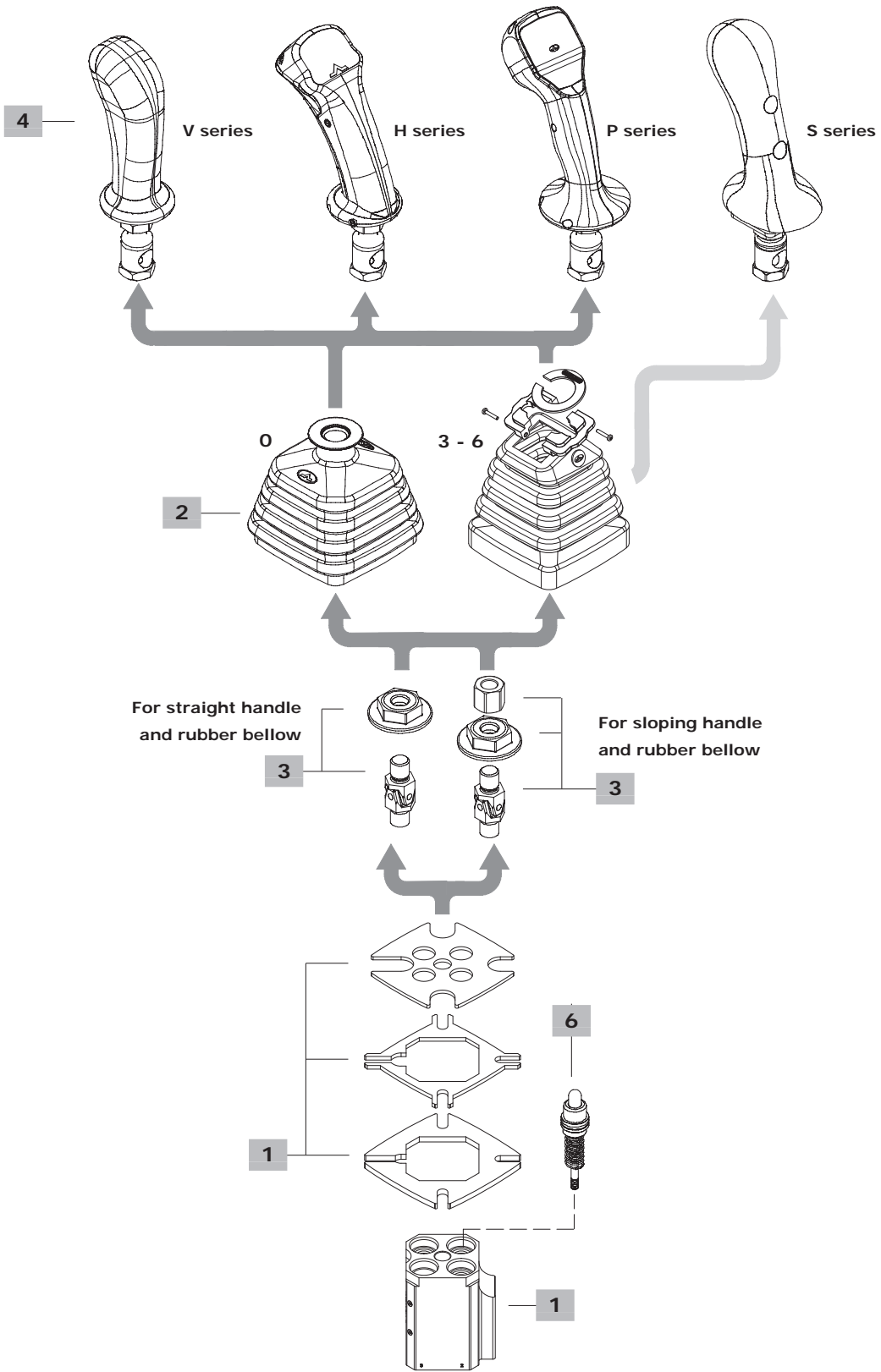




### Ordering codes

SVM405 / 3 1 - B / 01 S108 (90) - 045(TM1M) - 000089NM X 4 - <CRVN>

1 2 1 3 4 5 4 6 Body is painted as standard, with one coat of primer black antirust paint



## Ordering codes

**1 Body kit \***

TYPE	CODE	DESCRIPTION
<b>SVM405/1-B</b>	5CO3420305	For rubber bellow square base

**2 Rubber bellow****For V, H, P series handles**

TYPE	CODE	DESCRIPTION
<b>0</b>	3SOF111130	Straight type, square base with logo
<b>3</b>	5SOF111113	Sloping type, square base; only for 19° sloping handles. Fitted with adapter, not available for type 16 control
<b>6</b>	5SOF111114	As type 3 without logo, not available for type 16 control

**For S series handles**

TYPE	CODE	DESCRIPTION
<b>3</b>	3SOF111113	Sloping type, square base; only for 19° sloping handles. Not available for type 16 control
<b>6</b>	3SOF111114	As type 3 without logo. Not available for type 16 control

**3 Control option****Spring return in neutral position**

TYPE	CODE	DESCRIPTION
<b>01</b>	5CIN4003	For V, H, P, S series handles and straight rubber bellow
	5CIN4001	For V, H, P, S series handles and sloping rubber bellow

**With microswitches for movement detection on each port.**

It needs type 7 rubber bellow and special body: please contact our Sales Department.

TYPE	CODE	DESCRIPTION
<b>16</b>	5CIN4023	For V, H, P, S series handles and straight rubber bellow
	5CIN4021	For V, H, P, S series handles and sloping rubber bellow

**4 Handles**

The pilot control valve can be configured with different types of handles (V, H, P, S series) with straight joint type 9 or sloping joint type 7 and 8.

Below are listed some pre-configured handles.

For technical specifications and full range of handles and other types of joint see the "Handles and hand levers" catalogue.

**V series handles**

TYPE	CODE	DESCRIPTION
<b>V000</b>	5IMP030000	Without switches with standard connection
<b>V009</b>	5IMP030011	Without switches with straight joint
<b>V007</b>	5IMP030070	Without switches with sloping 19° left joint (needs types 2 or 3 rubber bellow)
<b>V008</b>	5IMP030080	Without switches with sloping 19° right joint (needs types 2 or 3 rubber bellow)

**S series handles**

<b>S007</b>	2IM5000000	Without switches with sloping 19° left joint
<b>S108-045</b>	2IM5100000	Without switches with sloping 19° right joint
<b>S117-045</b>	2IM5110000	With proportional rocker switch and front trigger with sloping 19° left joint
<b>S218-045</b>	2IM5210002	With upper push-button and horn symbol and front trigger with sloping 19° right joint
<b>S21A7-045</b>	2IM5210003	With upper push-button without horn symbol and front trigger with sloping 19° left

**5 Handle position**

TYPE	DESCRIPTION
<b>(-)</b>	STANDARD configuration, cable operation on work port 4: <b>omitted in description</b>
<b>(90)</b>	Mounted with 90° rotation step: cable operation on work port 1
<b>(180)</b>	Mounted with 180° rotation step: cable operation on work port 2
<b>(270)</b>	Mounted with 270° rotation step: cable operation on work port 3

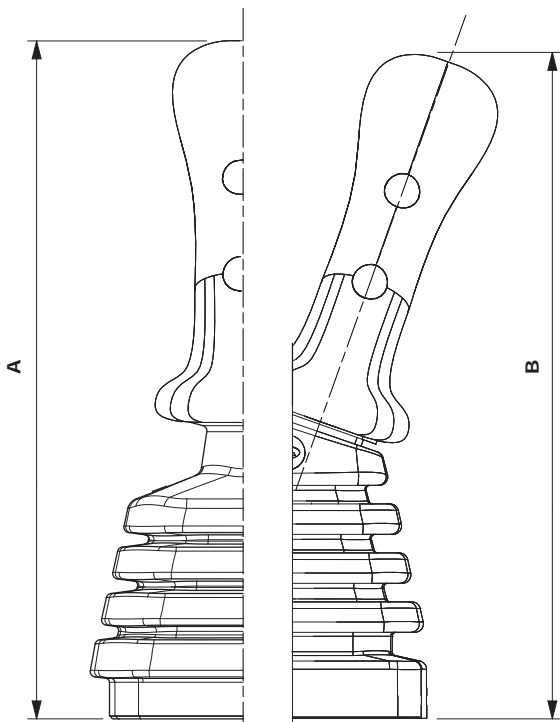
**6 Pressure control curves**

For configuration and list available see from page 31 on

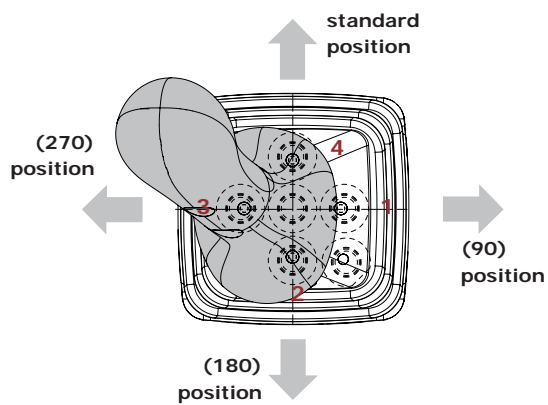
NOTE (\*) – Codes are referred to **BSP** thread.

## Configuration option

### Handle options



### Handle positions



Type	A		B	
	mm	in	mm	in
V series	239.2	9.42	237.2	9.34
H series	237.2	9.34	235.2	9.26
P series	256.2	10.09	254.2	10.01
S series	252.2	9.93	249.2	9.81

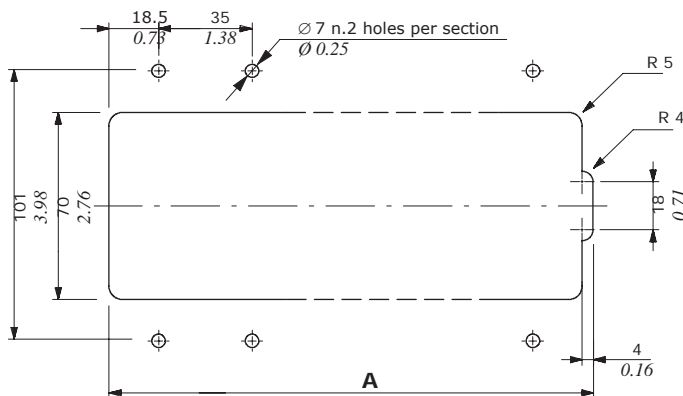
SVM pilot control valves assembled and tested as per the technical specification of this catalogue.

Before the final installation on your equipment, follow the below recommendations:

- the pilot valves must be assembled in horizontal position: considering the mass of the kinematic and control kit, a max. angle of 20° is allowed;
- the feeding unit can be assembled in any position; keep it away from heat sources when it is equipped with accumulator;
- fix the devices with suitable screw, use the appropriate flange or drilling, after tightening check the seal and the safety of the assembly;
- verify the integrity of the contact between devices and fittings and eliminate any impurities;
- correctly connect the devices, do not reverse the P and T ports (see dimensional pages to determine the initials of the ports);
- in order to prevent the possibility of water entering the rubber bellow, do not use high pressure wash directly on the valve;
- prior to painting, ensure plastic port plugs are tightly in place;
- the electrical cables have not to be submitted to mechanical forces (ex. tension or torsion);
- use original handles and hand levers.

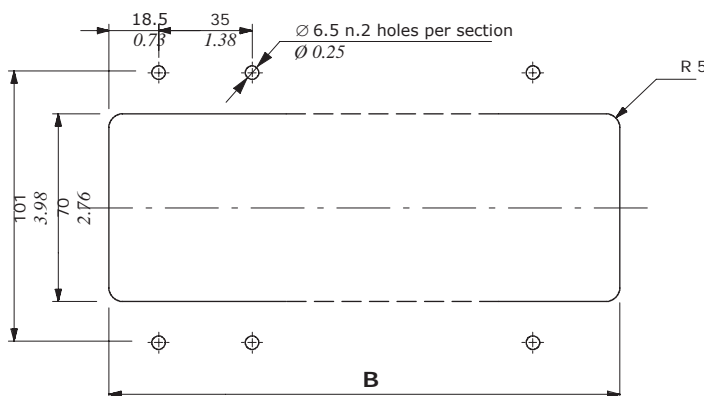
Panel cut out

SVM100 with side P and T ports  
Upper mounting



Type	A	
	mm	in
SVM100/1	41	1.61
SVM100/2	76	2.99
SVM100/3	111	4.37
SVM100/4	146	5.75
SVM100/5	181	7.12
SVM100/6	216	8.50
SVM100/7	251	9.88
SVM100/8	286	11.36
SVM100/9	321	12.64
SVM100/10	356	14.01

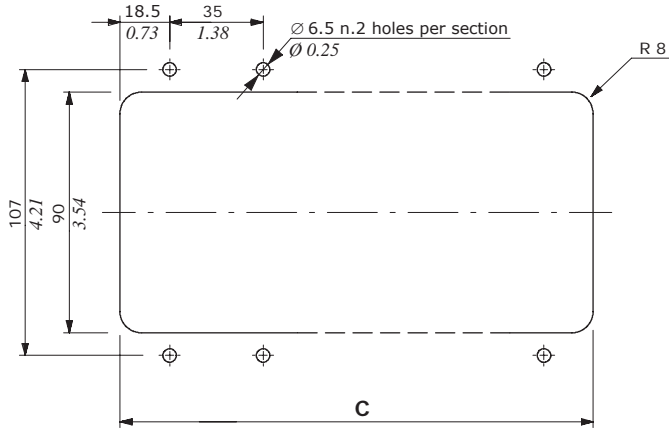
SVM101 with lower P and T ports  
Upper mounting



Type	B	
	mm	in
SVM101/1	61	2.40
SVM101/2	96	3.78
SVM101/3	129	5.08
SVM101/4	159	6.26
SVM101/5	191	7.52
SVM101/6	224	8.82
SVM101/7	257	10.12
SVM101/8	291	11.46
SVM101/9	325	12.79
SVM101/10	359	14.13

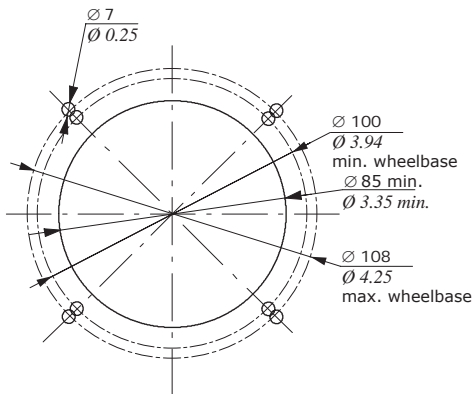
### Panel cut out

SVM100-101 with upper and lower P and T ports  
Upper mounting

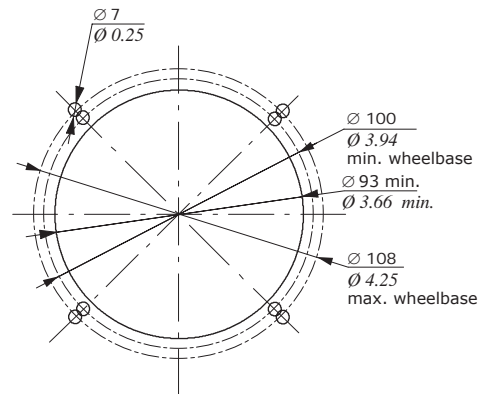


Tipo	C	
	mm	in
SVM100-101/1	37	1.46
SVM100-101/2	72	2.83
SVM100-101/3	107	4.21
SVM100-101/4	142	5.59
SVM100-101/5	177	6.97
SVM100-101/6	212	8.35
SVM100-101/7	247	9.72
SVM100-101/8	282	11.10
SVM100-101/9	317	12.48
SVM100-101/10	352	13.86

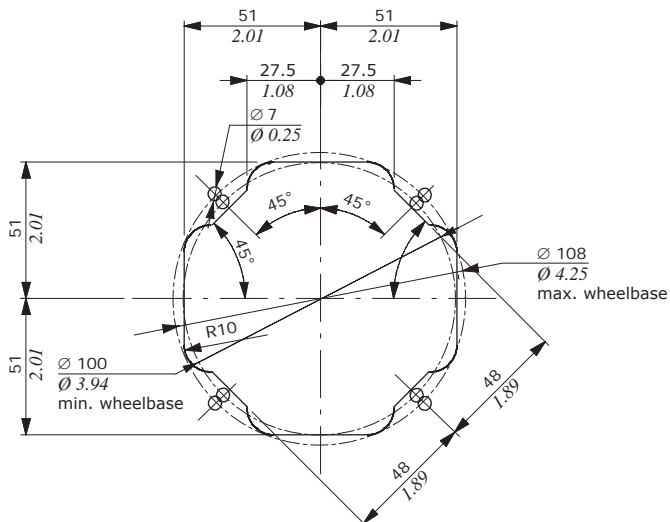
SVM400 - SVM400-EMD



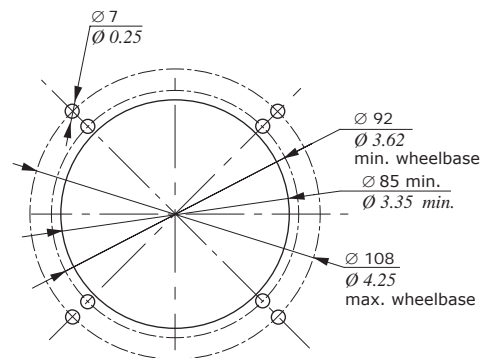
SVM430



SVM431 - SVM432



SVM405



SVM400 / ..... - 0 0 001 A

1
2
3
4

### 1 Curve type

TYPE	DESCRIPTION
<b>0</b>	Standard
<b>D</b>	With damping
<b>E</b>	With "pre-feeling"

### 2 Typology of curves

TYPE	DESCRIPTION
<b>0</b>	With step
<b>1</b>	Without step
<b>2</b>	Piecewise with step

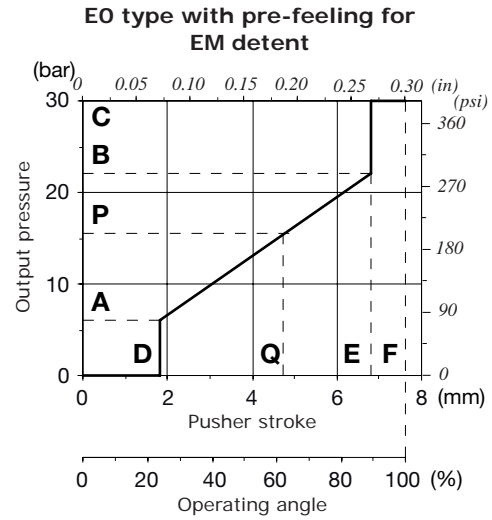
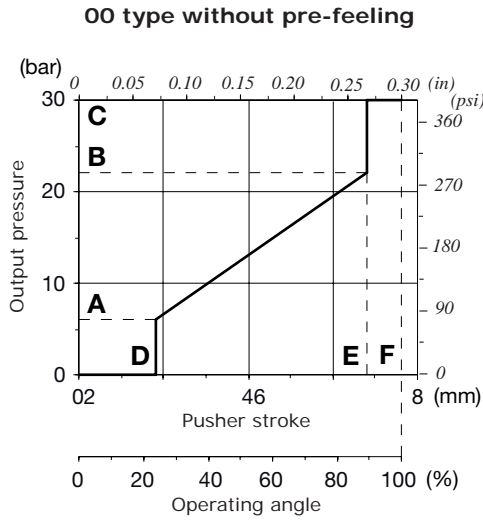
### 3 Identification curve

Progressive number, see tables on the following pages

### 4 Return springs

TYPE	DESCRIPTION
<b>M</b>	Operation range from 18 to 25.5 N - <i>from 4.04 to 5.73 lbf</i>
<b>A</b>	Operation range from 23 to 35.2 N - <i>from 5.17 to 7.91 lbf</i>
<b>B</b>	Operation range from 23 to 68.1 N - <i>from 5.17 to 15.31 lbf</i>
<b>C</b>	Operation range from 89 to 176 N - <i>from 20 to 39.56 lbf</i>
<b>D</b>	Operation range from 110 to 220 N - <i>from 24.73 to 49.46 lbf</i>
<b>E</b>	Operation range from 137.8 to 276.1 N - <i>from 30.98 to 62.07 lbf</i>

## Control curves with step

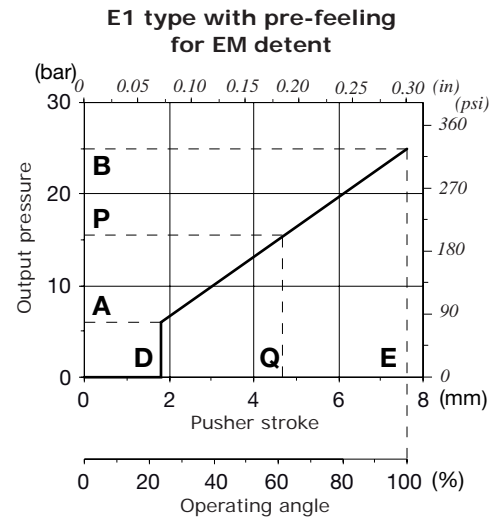
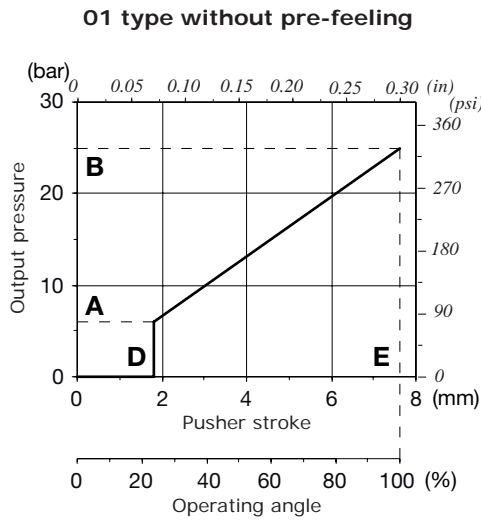


Curve description		Pressure						Stroke						CODE <sup>(1)</sup>				
Type	Nr	A		P		B		C		D		Q			E		F	
		bar (±toll)	psi (±toll)	bar (±toll)	psi (±toll)	bar (±toll)	psi (±toll)	bar	psi	mm	in	mm	in	mm	in	mm	in	
OO	023	2 (±0.5)	29 (±7.25)			11.5 (±1)	166.7 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40023A
EO	046	2 (±0.5)	29 (±7.25)	13 (±1)	188.5 (±14.5)	14.5 (±1)	210.2 (±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4E046M
OO	047	2 (+3/0)	29 (+43.5/0)			70 (±4.5)	1015 (±65.2)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40047A 5CUR40047C
OO	058	2 (±0.5)	29 (±7.25)	10.5 (±0.7)	152.2 (±10.5)	11.6 (±1)	168.2 (±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4F058A
OO	066	2 (±0.5)	29 (±7.25)			23 (±1.5)	333.5 (±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40066B 5CUR40066C
OO	110	2 (±0.5)	29 (±7.25)			15 (±1)	217.5 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400110A
OO	043	3.2 (±0.5)	46.4 (±7.25)			11.7 (±0.5)	169.6 (±7.2)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400043A
OO	010	3.25 (±0.5)	47.12 (±7.25)			14.8 (±1)	214.6 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40010A
EO	096	3.5 (±0.5)	50.7 (±7.25)	15 (±0.5)	217.5 (±14.5)	16.5 (±1)	239.2 (±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR4E0096B
OO	086	4 (±1)	58 (±14.5)			16.5 (±1)	239.2 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40086A 5CUR40086C
EO	094	4 (±0.5)	58 (±7.25)	12.7 (±0.5)	184.1 (±7.25)	13.8 (±1)	200.1 (±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4E094M 5CUR4E094B
OO	076	4.5 (±0.5)	65.2 (±7.25)			15 (±1)	217.5 (±14.5)	35	507.5	1.35	0.05			7	0.27	7.3	0.30	5CUR40076A
OO	017	5 (±0.5)	72.5 (±14.5)			12 (±1)	(±14.5)	35 - 507.5		0.85	0.03			7.25	0.28	7.6	0.30	5CUR40017A 5CUR40017C
OO	071	5 (±1)	72.5 (±14.5)			17 (±1)	246.5 (±14.5)	35	507.5	1.35	0.05			6	0.23	7.3	0.29	5CUR40071A
OO	104	5.5 (±1)	79.75 (±14.5)			17 (±1)	246.5 (±14.5)	35	507.5	0.85	0.03			3.1	0.12	3.5	0.14	5CR400104A
OO	120	5.7 (±0.5)	82.6 (±14.5)			16.8 (±1.5)	243.6 (±21.7)	35	507.5	0.45	0.02			7.25	0.28	7.6	0.30	5CR400120A
OO	001	5.8 (±1)	84.1 (±14.5)			22 (±2)	319 (±29)	35	507.5	1.55	0.06			7	0.27	7.5	0.29	5CUR40001A
OO	024	5.8 (±1)	84.1 (±14.5)			19 (±1.5)	275.5 (±21.7)	35	507.5	1.55	0.06			6.1	0.24	7.5	0.29	5CUR40024A 5CUR40024C
OO	025	5.8 (±1)	84.1 (±14.5)			19 (±1.5)	275.5 (±21.7)	35	507.5	0.75	0.029			5.2	0.20	7.6	0.30	5CUR40025A
OO	031	5.8 (±1)	84.1 (±14.5)			19 (±1)	275.5 (±14.5)	35	507.5	1.35	0.05			6.4	0.25	7.6	0.30	5CUR40031A
OO	085	6 (±1)	87 (±14.5)			25 (±1.5)	362.5 (±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40085A 5CUR40085B 5CUR40085C 5CUR40085M
OO	105	6 (±0.5)	87 (±7.25)			20 (±1)	290 (±14.5)	35	507.5	0.6	0.02			7.25	0.28	7.6	0.30	5CR400105B
OO	111	6 (±1)	87 (±14.5)			25 (±1)	362.5 (±14.5)	35	507.5	0.6	0.02			4.5	0.18	5.2	0.20	5CR400111B
OO	053	8 (±0.5)	116 (±7.25)			22.3 (±1)	323.3 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40053A
OO	036	12 (±0.5)	174 (±7.25)			25 (±1)	362.5 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40036A
OO	107	12 (±1)	174 (±14.5)			20 (±1)	290 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400107A

<sup>(1)</sup> indicates the curve with the specific return spring  
For different curves please contact our Sales Department



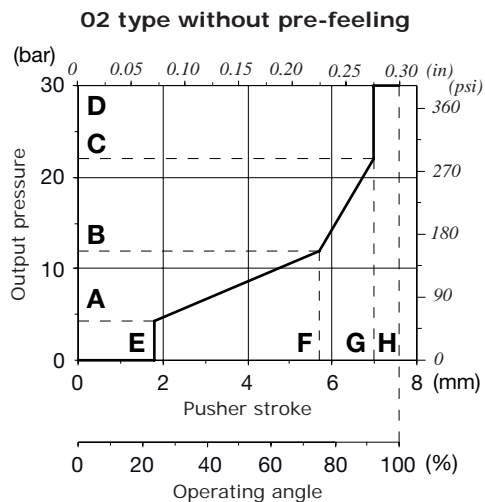
Control curves without step



Curve description		Pressure						Stroke						CODE <sup>(1)</sup>
Type	Nr	A		P		B		D		Q		E		
		bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar ( $\pm$ toll)	psi ( $\pm$ toll)	mm	in	mm	in	mm	in	
O1	148	0 ( $\pm$ 0.5)	0 ( $\pm$ 7.25)			13 ( $\pm$ 1)	188.5 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR40148B
O1	099	1 ( $\pm$ 0.5)	14.5 ( $\pm$ 7.25)			20 ( $\pm$ 1.5)	290 ( $\pm$ 21.7)	1.55	0.06			7.5	0.29	5CR401099A
O1	100	1.2 ( $\pm$ 0.5)	17.4 ( $\pm$ 7.25)			18.9 ( $\pm$ 1)	274 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR40100B 5CUR40100M
O1	105	2 ( $\pm$ 0.5)	29 ( $\pm$ 7.25)			8 ( $\pm$ 1)	116 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR40105A
O1	129	2 ( $\pm$ 0.5)	29 ( $\pm$ 7.25)			66 ( $\pm$ 4)	957 ( $\pm$ 58)	0.85	0.03			6.8	0.28	5CUR40129A
O1	154	2 ( $\pm$ 0.5)	29 ( $\pm$ 7.25)			15 ( $\pm$ 1)	217.5 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR40154A 5CUR40154M
O1	138	2.5 ( $\pm$ 0.5)	36.2 ( $\pm$ 7.25)			13 ( $\pm$ 1)	188.5 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR40138A
O1	143	3 ( $\pm$ 0.5)	43.5 ( $\pm$ 7.25)			25 ( $\pm$ 1)	362.5 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR40143A
O1	157	3.4 ( $\pm$ 1)	49.3 ( $\pm$ 14.5)			17.2 ( $\pm$ 1)	249.4 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR40157A 5CUR40157B
O1	096	4 ( $\pm$ 1)	58 ( $\pm$ 14.5)			18 ( $\pm$ 1)	261 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CR401096M
O1	126	4.5 ( $\pm$ 0.7)	65.2 ( $\pm$ 10.1)			30.7 ( $\pm$ 1.5)	445.1 ( $\pm$ 21.7)	0.85	0.03			7.6	0.30	5CUR40126A
O1	166	4.5 ( $\pm$ 0.5)	65.2 ( $\pm$ 7.25)			15 ( $\pm$ 1.5)	217.5 ( $\pm$ 21.7)	0.85	0.03			7.6	0.30	5CUR40166A 5CUR40166M
O1	167	5 ( $\pm$ 0.5)	72.5 ( $\pm$ 7.25)			18 ( $\pm$ 1)	261 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR40167M
O1	170	5 ( $\pm$ 0.5)	72.5 ( $\pm$ 7.25)			20 ( $\pm$ 1)	290 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR40170A 5CUR40170M
O1	175	5 ( $\pm$ 0.5)	72.5 ( $\pm$ 7.25)			16 ( $\pm$ 1.5)	232 ( $\pm$ 21.7)	0.85	0.03			7.6	0.30	5CUR40175A 5CUR40175D
O1	118	5.8 ( $\pm$ 1)	84.1 ( $\pm$ 14.5)			19.5 ( $\pm$ 1.5)	282.7 ( $\pm$ 21.7)	1.55	0.06			7.5	0.29	5CUR40118A
O1	135	5.8 ( $\pm$ 0.5)	84.1 ( $\pm$ 7.25)			23 ( $\pm$ 1.5)	333.5 ( $\pm$ 21.7)	0.85	0.03			7.6	0.30	5CUR40135A 5CUR40135M
O1	192	5.8 ( $\pm$ 0.5)	84.1 ( $\pm$ 14.5)			15 ( $\pm$ 1.5)	217.5 ( $\pm$ 21.7)	0.85	0.03			7.6	0.30	5CUR40192A 5CUR40192M
O1	103	6 ( $\pm$ 1)	87 ( $\pm$ 14.5)			30 ( $\pm$ 2.5)	435 ( $\pm$ 36.2)	0.85	0.03			7.6	0.30	5CUR40103A 5CUR40103M
E1	103	6 ( $\pm$ 1)	87 ( $\pm$ 14.5)	30 ( $\pm$ 1.5)	435 ( $\pm$ 21.7)	34.7 ( $\pm$ 2)	503.1 ( $\pm$ 29)	0.85	0.03	6.5	0.25	7.6	0.30	5CUR4E103M
O1	178	6.5 ( $\pm$ 0.5)	94.2 ( $\pm$ 7.25)			17.8 ( $\pm$ 1)	258.1 ( $\pm$ 14.5)	0.85	0.03			5.8	0.22	5CUR40178A
O1	115	8.3 ( $\pm$ 0.7)	120.3 ( $\pm$ 10.1)			22.5 ( $\pm$ 1)	326.2 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR40115M
O1	159	10 ( $\pm$ 0.5)	145 ( $\pm$ 7.25)			28 ( $\pm$ 1)	406 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CUR401159A
O1	144	35 ( $\pm$ 2)	507.5 ( $\pm$ 29)			70 ( $\pm$ 3.5)	1015 ( $\pm$ 50.7)	0.85	0.03			7.6	0.30	5CUR40144C

<sup>(1)</sup> indicates the curve with the specific return spring  
For different curves please contact our Sales Department

## Control curves piecewise with step



Curve description		Pressure								Stroke								CODE <sup>(1)</sup>
		A		B		C		D		E		F		G		H		
Type	Nr	bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar	psi	mm	in	mm	in	mm	in	mm	in	
O2	210	1.5 ( $\pm$ 1)	21.7 ( $\pm$ 14.5)	7 ( $\pm$ 1)	101.5 ( $\pm$ 14.5)	15 ( $\pm$ 1)	217.5 ( $\pm$ 14.5)	35	507.5	0.85	0.03	5.7	0.22	7.25	0.28	7.6	0.30	5CUR40210C
O2	204	4.3 ( $\pm$ 0.5)	62.3 ( $\pm$ 7.25)	12 ( $\pm$ 0.8)	174 ( $\pm$ 11.6)	20.5 ( $\pm$ 1)	297.2 ( $\pm$ 14.5)	35	507.5	0.85	0.03	5.7	0.22	7.25	0.28	7.6	0.30	5CUR40204C

<sup>(1)</sup> indicates the curve with the specific spring

For different curves please contact our Sales Department

Hydraulic control on directional valves and suggested control curves

Valve type	3 position controls		Control curve			Controls for floating		Control curve			
	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)	
<b>Monoblock valves</b>											
<b>SD5</b>	8IM	5IDR205021	<b>026</b>	5CUR40026	6.5-14	13IM	5IDR205330	<b>075</b>	5CUR40075	5-15	
<b>SDM110</b>				<i>5CR400026N</i>	<i>94.2-203</i>			<i>5CR400075N</i>	<i>72.5-217.5</i>		
<b>SDM100</b>	8IM	5IDR207300	<b>088</b>	5CUR40088	8-27	13IMS	5IDR207350	<b>E075</b>	5CUR4E075	5-15-16.3	
				<i>5CR400088N</i>	<i>116-391.5</i>			<i>5CR401125N</i>	<i>8-22.5</i>	<i>5CR401125N</i>	<i>116-326.2</i>
<b>SD11</b>	8IM	5IDR210000	<b>070</b>	5CUR40070	5.8-22.4			<b>E045</b>	5CR4E0045	6.5-15.5-16.5	
<b>SD14</b>				<i>5CR400070N</i>	<i>84.1-324.8</i>						
<b>SD18</b>				<i>5CR400070N</i>	<i>84.1-324.8</i>						
<b>SDM140</b>	8IM	5IDR208300	<b>033</b>	5CUR40033	5.8-19	13IM	5IDR208214	<b>075</b>	5CUR40075	5-15	
<b>DLM140</b>				<i>5CR400033N</i>	<i>84.1-275.5</i>			<i>5CR400075N</i>	<i>72.5-217.5</i>		
<b>SDM141</b>	8IM	5IDR208300	<b>033</b>	5CUR40033	5.8-19	13IM	5IDR208214	<b>075</b>	5CUR40075	5-15	
				<i>5CR400033N</i>	<i>84.1-275.5</i>			<i>5CR400075N</i>	<i>72.5-217.5</i>		
							13CIM	5IDR308313	<b>E075</b>	5CUR4E075	5-15-16.3
									<b>087</b>	5CUR40087	5.8-17
								<b>E087</b>	5CUR4E087	5.8-17-18.5	
										<i>84.1-246.5-268.2</i>	
<b>Sectional valves</b>											
<b>SD6</b>	8IM	5IDR206010	<b>075</b>	5CUR40075	5-15						
				<i>5CR400075N</i>	<i>72.5-217.5</i>						
	8IMP	5IDR206020	<b>033</b>	5CUR40033	5.8-19						
				<i>5CR400033N</i>	<i>84.1-275.5</i>						
<b>DLS7</b>	8IMF3	5IDR207000	<b>033</b>	5CUR40033	5.8-19						
				<i>5CR400033N</i>	<i>84.1-275.5</i>						
<b>SDS100</b>	8IM	5IDR207300	<b>088</b>	5CUR40088	8-27	13IMS	5IDR20350	<b>125</b>	5CUR40125	8-22.5	
				<i>5CR400088N</i>	<i>116-391.5</i>			<i>5CR401125N</i>	<i>116-326.2</i>		
								<b>E045</b>	5CR4E0045	6.5-15.5-16.5	
										<i>94.2-224.7-239.2</i>	
	8IMF3	5IDR207310	<b>088</b>	5CUR40088	8-27						
				<i>5CR400088N</i>	<i>116-391.5</i>						
<b>SD8</b>	8IM	5IDR208300	<b>033</b>	5CUR40033	5.8-19						
				<i>5CR400033N</i>	<i>84.1-275.5</i>						
<b>DLS8</b>	8IMF3	5IDR208220	<b>021</b>	5CR400021	6-16.3						
				<i>5CR400021N</i>	<i>87-236.3</i>						
<b>SDS150</b>	8IM	5IDR216300	<b>033</b>	5CUR40033	5.8-19						
				<i>5CR400033N</i>	<i>84.1-275.5</i>						
<b>SDS180</b>	8IM	5IDR216300	<b>033</b>	5CUR40033	5.8-19	13IMP	5IDR216014	<b>073</b>	5CUR40073	4-18	
				<i>5CR400033N</i>	<i>84.1-275.5</i>			<i>5CR400073N</i>	<i>58-261</i>		
								<b>E073</b>	5CUR4E073	4-18-19.9	
										<i>58-261-288.5</i>	
	8IMF3	5IDR216303	<b>033</b>	5CUR40033	5.8-19						
				<i>5CR400033N</i>	<i>84.1-275.5</i>						
	8IMSPSL4P	5IDR218012	<b>028</b>	5CUR40028	5-21						
				<i>5CR400028N</i>	<i>72.5-304.5</i>						
	8IMO	5IDR216000	<b>033</b>	5CUR40033	5.8-19						
				<i>5CR400033N</i>	<i>84.1-275.5</i>						
	8IMD	5IDR218300	V1= <b>028</b>	5CUR40028	5-21						
			V2= <b>073</b>	<i>5CR400028N</i>	<i>72.5-304.5</i>						
				5CUR40073	4-18						
				<i>5CR400073N</i>	<i>58-261</i>						
<b>DLS180</b>	8IM	5IDR216300	<b>033</b>	5CUR40033	5.8-19						
				<i>5CR400033N</i>	<i>84.1-275.5</i>						
	8IMF3	5IDR216303	<b>033</b>	5CUR40033	5.8-19						
				<i>5CR400033N</i>	<i>84.1-275.5</i>						
	8IMO	5IDR216000	<b>073</b>	5CUR40073	4-18						
				<i>5CR400073N</i>	<i>58-261</i>						
	8IMOHF3	5IDR216303-H	<b>073</b>	5CUR40073	4-18						
				<i>5CR400073N</i>	<i>58-261</i>						
<b>SD25</b>	8IM	5IDR225300	<b>004</b>	5CUR40004	4.9-18.9	13IM	5IDR225360	<b>156</b>	5CUR40156	3.4-14.5	
				<i>5CR400004N</i>	<i>71-274</i>			<i>5CR401156N</i>	<i>49.3-210.2</i>		
								<b>E0B09</b>	5CUR4EB09	3.5-13.7-14.3	
										<i>50.7-198.6-207.3</i>	
	8IMO	5IDR225000	<b>033</b>	5CUR40033	5.8-19	13IMO	5IDR225350	<b>156</b>	5CUR40156	3.4-14.5	
				<i>5CR400033N</i>	<i>84.1-275.5</i>			<i>5CR401156N</i>	<i>49.3-210.2</i>		
								<b>E0B09</b>	5CUR4EB09	3.5-13.7-14.3	
										<i>50.7-198.6-207.3</i>	
<b>SDS400</b>	8IM	5IDR208300	<b>028</b>	5CUR40028	5-21	13IM	5IDR208310	<b>028</b>	5CUR40028	5-21	
				<i>5CR400028N</i>	<i>72.5-304.5</i>			<i>5CR400028N</i>	<i>72.5-304.5</i>		
								<b>FO055</b>	5CUR4FO055	5-15-16.3	
										<i>72.5-217.5-236.3</i>	

<sup>(1)</sup> Codes listed show the control curve without return spring reference; for spring details see page 31. Control curve codes in "italic" are dedicated for SVM405 hydraulic pilot control valve.

### Hydraulic control on directional valves and suggested control curves

Valve type	3 position controls		Control curve			Controls for floating		Control curve		
	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)
<b>Distributori Load Sensing pre-compensati e Flow Sharing</b>										
<b>DPC130</b>	8IM	5V08130800	<b>020</b>	5CUR40020 <i>5CR400020N</i>	4.3-15.2 <i>62.3-220.4</i>					
<b>DPC200</b>	8IM	5V08200801	<b>020</b>	5CUR40020 <i>5CR400020N</i>	4.3-15.2 <i>62.3-220.4</i>					
<b>DPX050</b>	8IM	5IDR20A300	<b>089</b>	5CUR40089 <i>5CR400089N</i>	8-28 <i>116-406</i>	13IMP	5IDR20A310	<b>089</b>	5CUR40089 <i>5CR400089N</i>	8-28 <i>116-406</i>
								<b>E0086</b>	5CUR4E086	4-16.5-18.2 <i>58-239.2-263.9</i>
	8IMF3	5IDR20A302	<b>089</b>	5CUR40089 <i>5CR400089N</i>	8-28 <i>116-406</i>					
	8IMX	5IDR20A7301	<b>028</b>	5CUR40028 <i>5CR400028N</i>	5-21 <i>72.5-304.5</i>					
<b>DPX100</b>	8IMXF3	5IDR20A303	<b>028</b>	5CUR40028 <i>5CR400028N</i>	5-21 <i>72.5-304.5</i>					
	8IMN	5IDR204304	<b>089</b>	5CUR40089 <i>5CR400089N</i>	8-28 <i>116-406</i>	13IMS	5IDR207350	<b>098</b>	5CUR40098 <i>5CR400098N</i>	7-22.5 <i>101.5-326.2</i>
								<b>E0086</b>	5CUR4E086	4-16.5-18.2 <i>58-239.2-263.9</i>
	8IMF3N	5IDR204314	<b>089</b>	5CUR40089 <i>5CR400089N</i>	8-28 <i>116-406</i>					
<b>DPX160</b>	8IMXN	5IDR204303	<b>054</b>	5CUR40054 <i>5CR400054N</i>	6.2-24.5 <i>89.9-355.2</i>					
	8IMXF3N	5IDR204313	<b>054</b>	5CUR40054 <i>5CR400054N</i>	6.2-24.5 <i>89.9-355.2</i>					
	8IMN	5IDR209304	<b>089</b>	5CUR40089 <i>5CR400089N</i>	8-28 <i>116-406</i>	13IM	5IDR209303	<b>089</b>	5CUR40089 <i>5CR400089N</i>	8-28 <i>116-406</i>
<b>DPX160</b>								<b>E0033</b>	5CUR4E033	5.8-19-20.8 <i>84.1-275.5-301.6</i>
	8IMF3N	5IDR209305	<b>089</b>	5CUR40089 <i>5CR400089N</i>	8-28 <i>116-406</i>	13IMP	5IDR209014	<b>073</b>	5CR400073 <i>5CR400073N</i>	4-18 <i>58-261</i>
								<b>E0073</b>	5CR4E0073	4-18-19.9 <i>58-261-288.5</i>

<sup>(1)</sup> Codes listed show the control curve without return spring reference; for spring details see page 31.  
Control curve codes in "italic" are dedicated for SVM405 hydraulic pilot control valve.



## SVM hydraulic joysticks with electromagnetic detent

### SVM150 / SVM450 / SVM600

- Single, double and combined functions
- Wide range of handles available

### Working conditions

This catalogue shows technical specifications and diagrams measured through mineral oil of 46mm<sup>2</sup>/s - 46 cSt viscosity at 40°C - 104°F temperature.

Nominal flow rating		from 5 to 20 l/min - from 1.32 to 5.28 USgpm
Max. feeding pressure	on P inlet port	from 30 to 100 bar - from 435 to 1450 psi
Max. backpressure	on T outlet port	3 bar - 43.5 psi
Max. hysteresis		0.5 bar - 7.25 psi
Internal leakage (all ports)	at 30 bar - 435 psi, P⇒T	max 18 cm <sup>3</sup> /min - 1.10 in <sup>3</sup> /min
Fluid		Mineral oil
Fluid temperature	with NBR (BUNA-N) seals	from -10 °C to 80 °C - from 14 °F to 176 °F
	operating range	from 15 to 75 mm <sup>2</sup> /s - from 15 to 75 cSt
Viscosity	min.	12 mm <sup>2</sup> /s - 12 cSt
	max.	400 mm <sup>2</sup> /s - 400 cSt
Max. contamination level		-/15/12 - ISO 4406 - NAS1638 class 6
Ambient temperature	without electric devices	from -40 °C to 60 °C - from 40 °F to 140 °F
	with electric devices	from -20 °C to 50 °C - from -4 °F to 122 °F
Tie rod tightening torque (wrench 13)	only for SVM150	24 Nm - 17.7 lbft

NOTE - for different conditions please contact our Sales Department.

### REFERENCE STANDARD

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

### PORT THREADING

PORTS	Threads		Fitting tightening torque	
	UNI EN ISO 1179	UNI EN ISO 11926-2	Nm	lbft
P inlet	G 1/4	7/16-20 (SAE 4)	30	22.13
Ports	G 1/4	7/16-20 (SAE 4)	30	22.13
T outlet	G 1/4	7/16-20 (SAE 4)	30	22.13

NOTE - These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The manufacturer has to be consulted.

### Dimensions and hydraulic circuit

#### Single axes version

Without detent or with detent on single working port or both working ports

#### Features

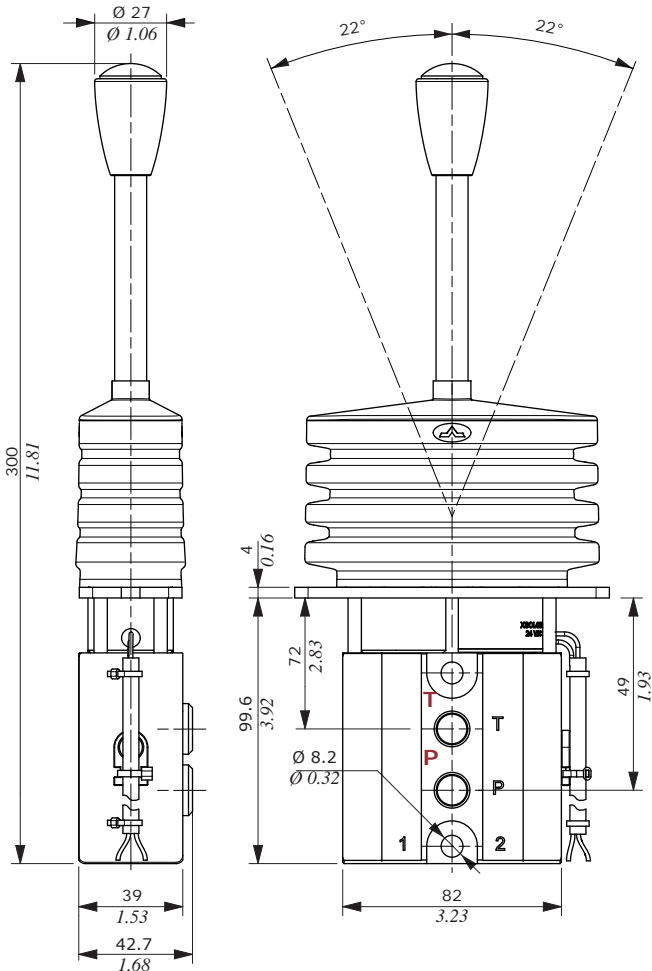
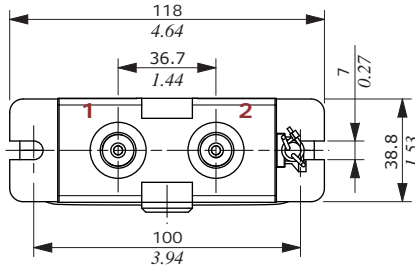
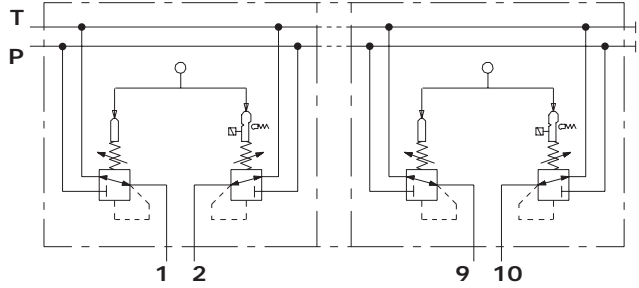
##### ELECTROMAGNET

- Nominal voltage tolerance . . . . . : ±10%
- Power rating . . . . . : 8.2 W
- Nominal current . . . . . : 0.69 A - 12 VDC  
: 0.345 A - 24VDC
- Coil insulation . . . . . : Class H
- Weather protection . . . . . : IP65
- Insertion . . . . . : 100%

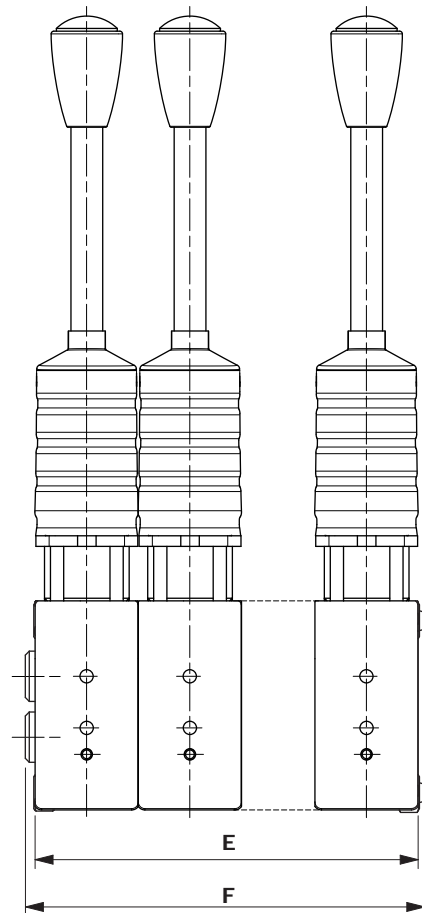
#### SVM150/n version

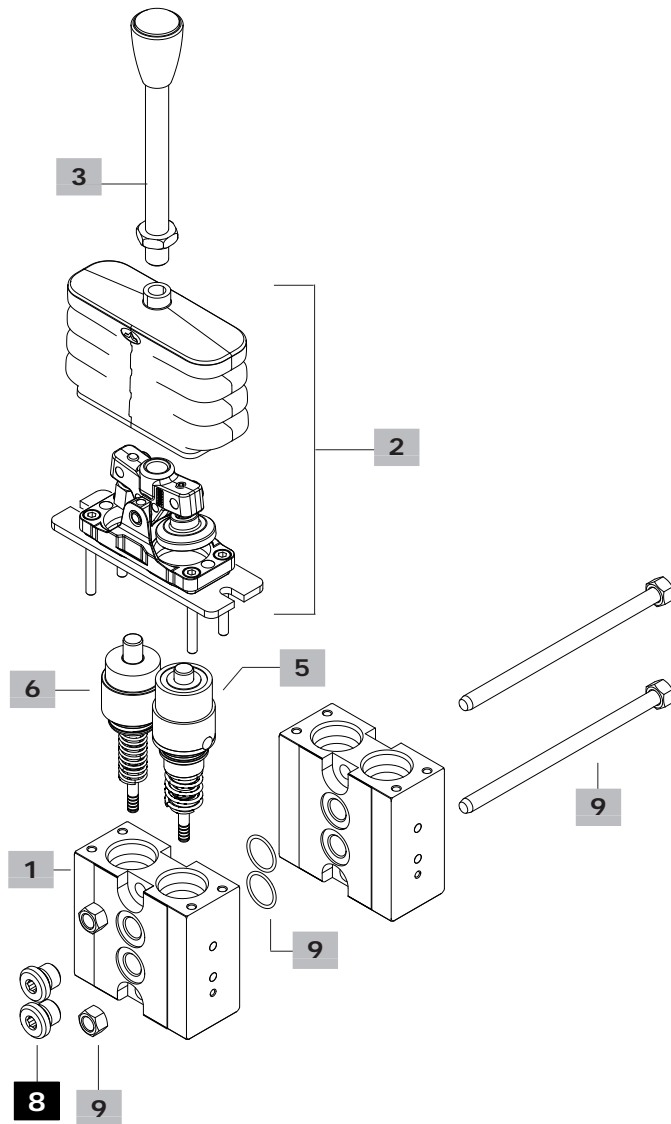
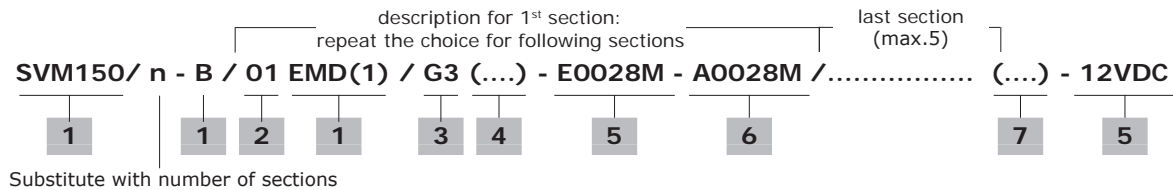
Configuration up to 5 sections

#### Hydraulic circuit



TIPO	E		F	
	mm	in	mm	in
SVM150/2	78	3.07	84	3.31
SVM150/3	117	4.61	123	4.84
SVM150/4	156	6.14	162	6.38
SVM150/5	195	7.68	201	7.91





<b>1</b>	<b>Body kit *</b>	
TYPE:	<b>SVM150-B/EMD(0)</b>	CODE: 3C03132300
DESCRIPTION:	Body without detent	
TYPE:	<b>SVM150-B/EMD(1)</b>	CODE: 3C03132301
DESCRIZIONE:	Body with detent arrangement on port 1	
TYPE:	<b>SVM150-B/EMD(2)</b>	CODE: 3C03132302
DESCRIPTION:	Body with detent arrangement on port 2	
TYPE:	<b>SVM150-B/EMD(1-2)</b>	CODE: 3C03132303
DESCRIPTION:	Body with detent arrangement on ports 1 and 2	

NOTE (\*) – Codes are referred to **BSP** thread

**2 Detent configuration**

Complete with rubber bellow and fixing wrapper

TYPE	CODE	DESCRIPTION
<b>01/(0D)</b>	5CIN10100D	Spring return to neutral position, without detent arrangement
<b>01/(1D)</b>	5CIN10110D	Spring return to neutral position, single detent arrangement; right or left position is defined by pressure control curve position
<b>01/(2D)</b>	5CIN10120D	Spring return to neutral position, double detent arrangement

NOTES: For detent arrangement on different ports, please contact our Sales Department.

The text between ( ) can be omitted from composition description.

**3 Standard handlevers**

TYPE	CODE	DESCRIPTION
<b>G3</b>	5AST271218G	Ogival with portlight, straight rod (standard)
<b>G3(15)</b>	5AST371217G	Ogival with portlight, 15° bending rod
<b>G3(30)</b>	5AST371226G	Ogival with portlight, 30° bending rod
<b>E</b>	5AST371215E	Spherical with portlight, 15° bending rod

For features see page 41

**4 Handle position**

Only for bending rod

TYPE	DESCRIPTION
<b>(0)</b>	Handlever oriented on P and T plugged ports
<b>(90)</b>	Handlever oriented on port 1
<b>(180)</b>	Handlever oriented on P and T open ports
<b>(270)</b>	Handlever oriented on port 2

**5 Pressure control curve**

For electromagnetic detent (with pre-feeling) see from page 50 on.

**6 Pressure control curve**

Without electromagnetic detent and without pre-feeling see from page 50 on.

**7 Connector**

Configurations with detent or microswitch are provided with wires with tin-plate terminals. For connectors please contact our Sales Department.

**8 Closing plugs \***

CODE	DESCRIPTION
3XTAP719150	G1/4 plug for rear ports closing (n. 2 plugs)

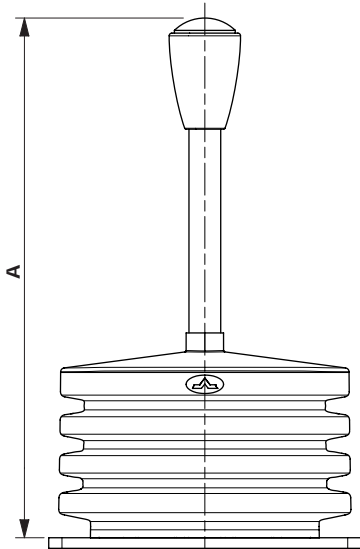
**9 Assembling kit**

This kit contains tie rods, nuts and O-ring seals.

CODE	DESCRIPTION
5TIR108081	Assembling kit for SVM150/2
5TIR108127	Assembling kit for SVM150/3
5TIR108159	Assembling kit for SVM150/4
5TIR108199	Assembling kit for SVM150/5

### Configuration option

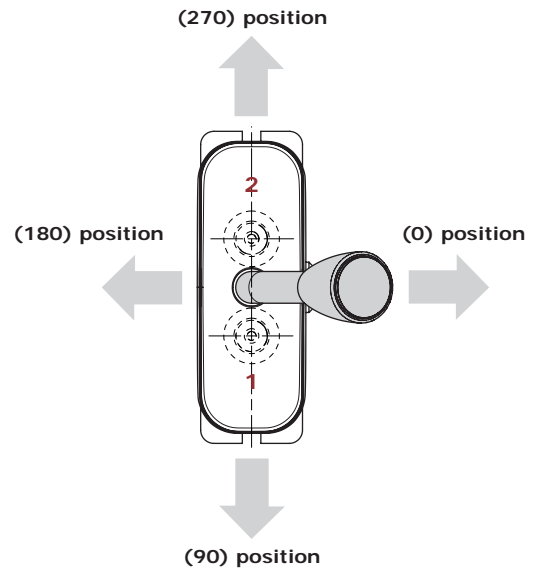
#### Handle option



Handlever Type	A	
	mm	in
G3 diritta	196	7.72
G3 incl. 15°	184	7.24
G3 incl. 30°	176	6.23
E incl. 15°	186	7.32

#### Handlever positions

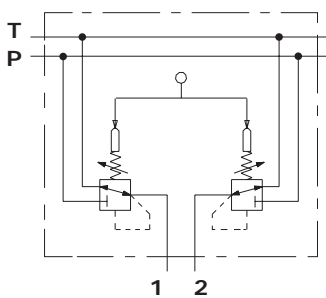
Orientation only for bending rod



### Detent configuration

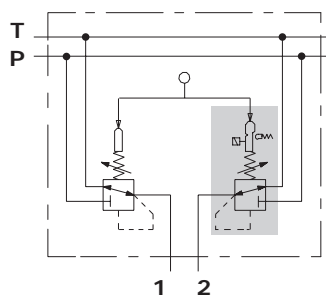
#### 01/0D type

Spring return, without detent



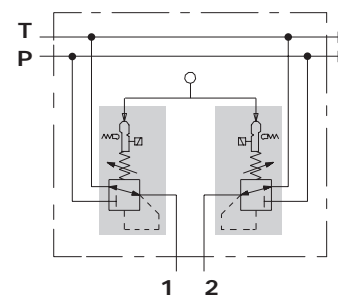
#### 01/1D type

Single detent on port 2 (detent on port 1 on request), spring return



#### 01/2D type

Double detent on ports 1 and 2, spring return



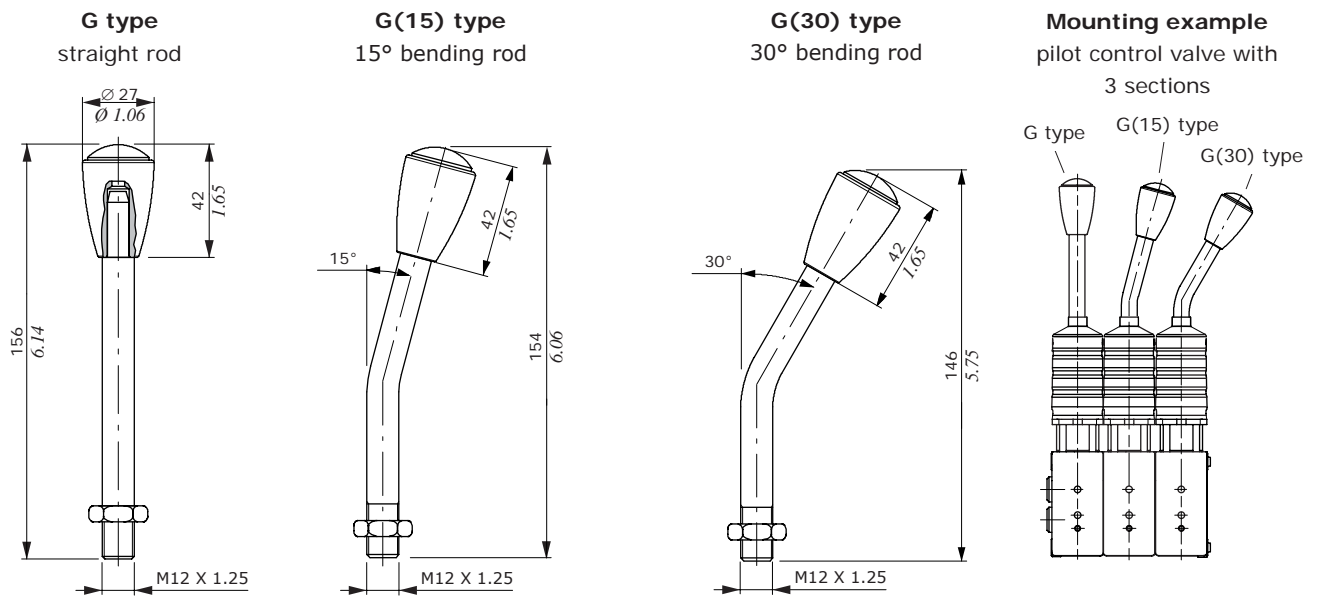


Configuration option

Standard hand levers without microswitch

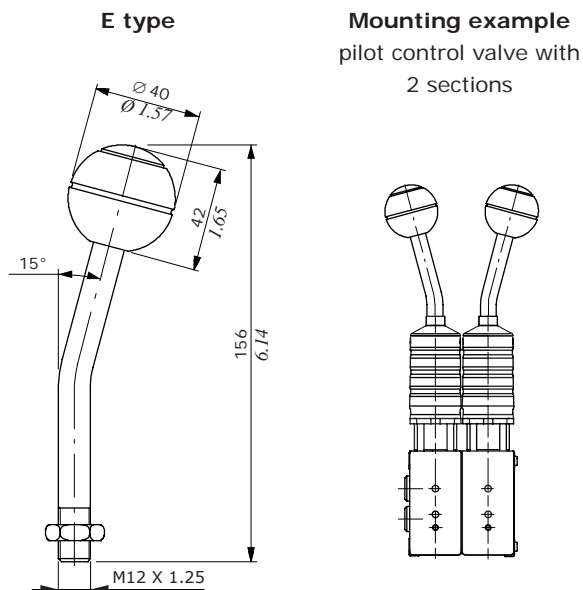
G type

Ogival handles with customizable portlight. It's possible to insert labels with specific machine functions (for example: lifting function).



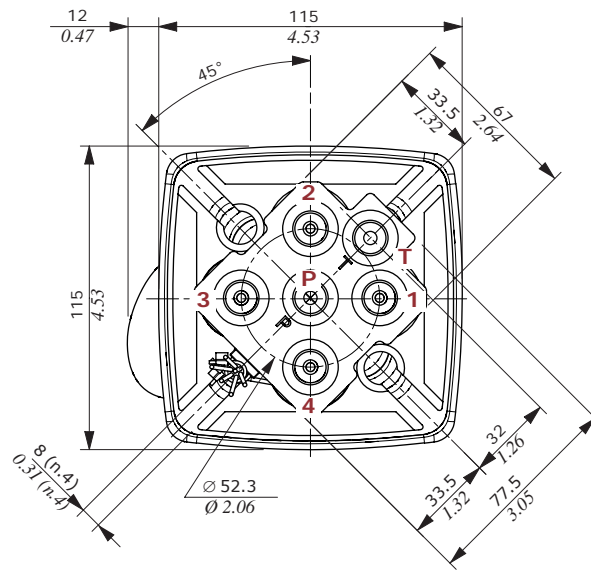
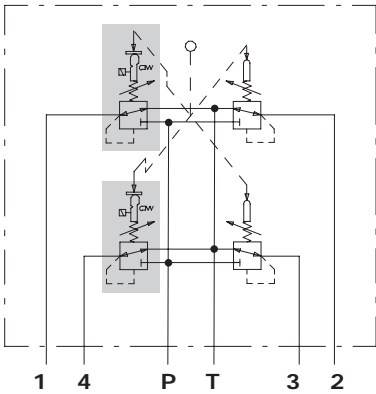
E type

Customizable handle as G type, 15° bending rod.



### Dimensions and hydraulic circuit

**hydraulic circuit**  
Example detent on working ports 1 e 4

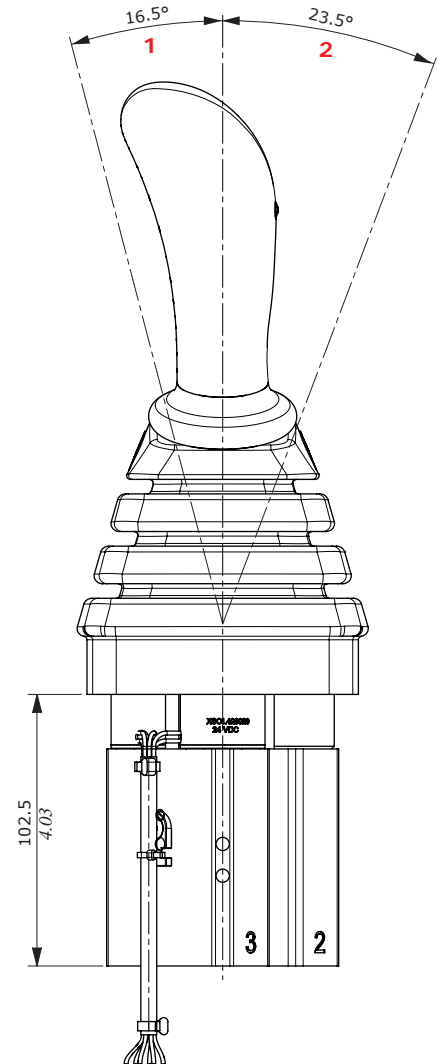
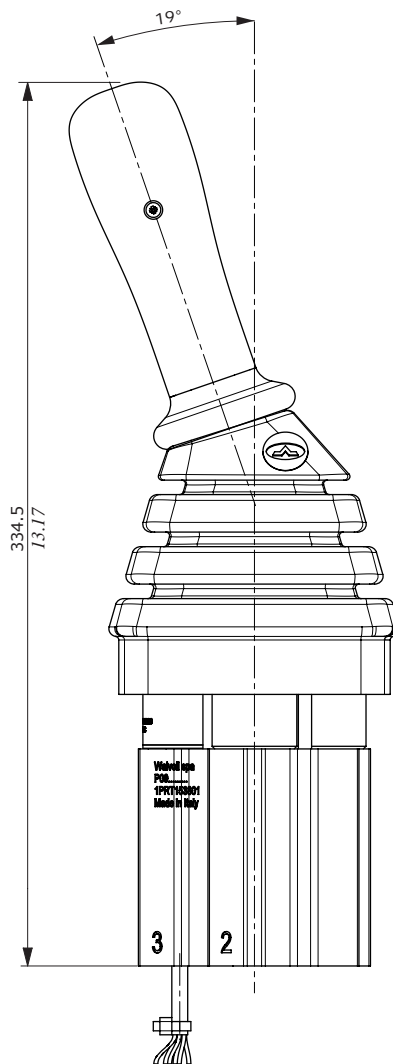


**1** : Single work port  
**2** : Two simultaneous work ports

### Features

#### ELECTROMAGNET

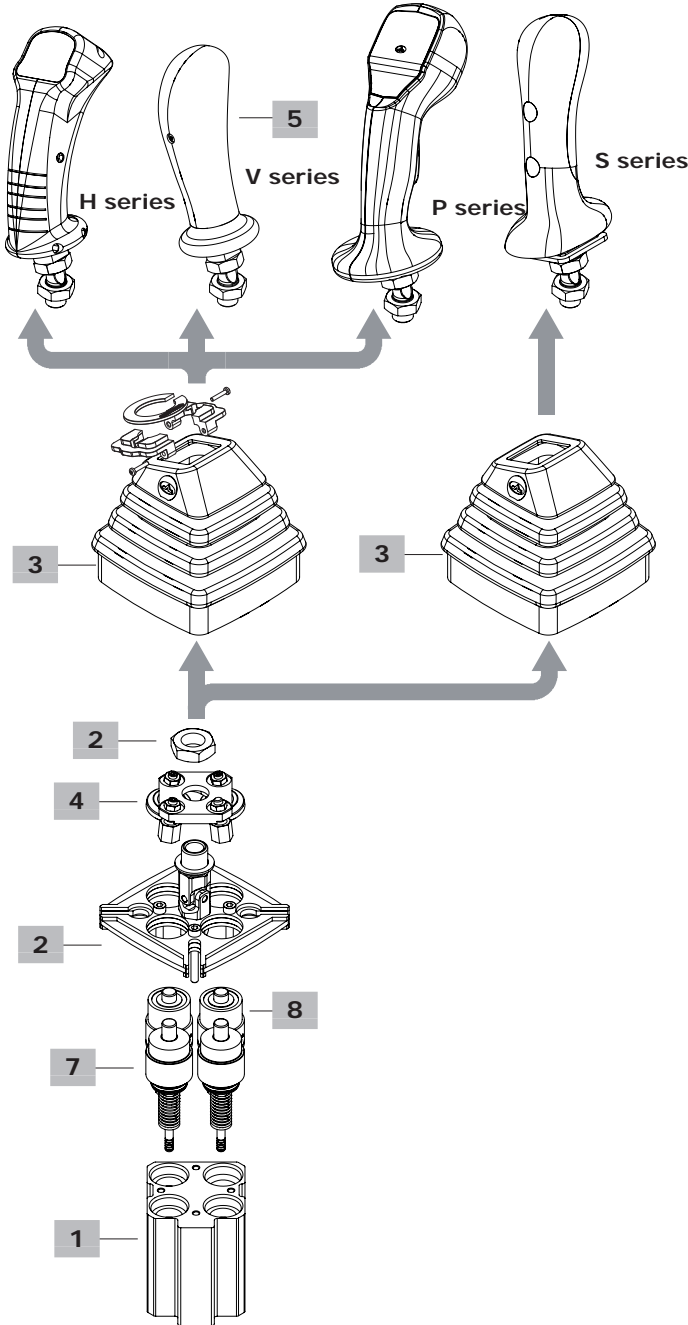
- Nominal voltage tolerance. : ±10%
- Power rating . . . . . : 8.2 W
- Nominal current . . . . . : 0.69 A - 12 VDC  
: 0.345 A - 24 VDC
- Coil insulation . . . . . : Class H
- Weather protection . . . . . : IP65
- Insertion . . . . . : 100%



Ordering codes

SVM450-EMD(3-4)/ 3 1 - B / 01 - V007 (....) (....) - A0020M-....-....-E0020M - (....) - 12VDC

1 3 2 1 4 5 6 9 7 8 9 8



**1 Body kit \***

TYPE: SVM450-EMD(4)/S CODE: 3CO3450303  
 DESCRIPTION: With detent arrangement on port 4  
 TYPE: SVM450-EMD(3-4)/S CODE: 3CO3450301  
 DESCRIPTION: With detent arrangement on ports 3 and 4  
 TYPE: SVM450-EMD(2-3-4)/S CODE: 3CO3450302  
 DESCRIPTION: With detent arrangement on ports 2, 3 and 4

**2 Flange kit**

TYPE CODE DESCRIPTION  
 1 5FLA410045 Flange

**3 Rubber bellow**

TYPE	CODE	DESCRIPTION
3	5SOF111111	Sloping type, square base with logo; only for 19° sloping handles, adapter for V, H, P type handles
3	3SOF111111	As previous for S type handles

**4 Detent configuration**

With spring return in neutral position

TYPE	CODE	DESCRIPTION
01/(1D)	5CIN8011D	Kinematic kit arranged for 1 detent
01/(2D)	5CIN8012D	Kinematic kit arranged for 2 detent
01/(3D)	5CIN8013D	Kinematic kit arranged for 3 detent

NOTE: The text between ( ) can be omitted from description of composition

**5 Handles**

The pilot control valve can be configured with different types of handles (V, H, P, S series) with straight joint type 9 or sloping joint type 7 and 8. Below are listed some handles pre-configured.

For technical specifications and full range of handles and other types of joint see the "Handles and handlelevers" catalogue.

**V series handles**

TYPE	CODE	DESCRIPTION
V007	5IMP030070	Without switches with sloping 19° left joint
V008	5IMP030080	Without switches with sloping 19° right joint
V109-045	5IMP031160	With upper push-button with protection, horn symbol and straight joint

**S series handles**

TYPE	CODE	DESCRIPTION
S007	2IM5000000	Without switches with sloping 19° left joint
S107-045	2IM5100002	With upper push-button and horn symbol with sloping 19° left joint
S118-045	2IM5110011	With proportional rocker switch, dead-man switch and sloping 19° right joint

**6 Handle position**

TYPE	DESCRIPTION
(-)	Standard configuration, operation to work port 4: <b>omitted in description</b>
(90)	Mounted with 90° rotation step: operation to work port 1
(180)	Mounted with 180° rotation step: operation to work port 2
(270)	Mounted with 270° rotation step: operation to work port 3

**7 Pressure control curves**

Without electromagnetic detent and without pre-feeling see from page 50 on

**8 Pressure control curves**

With electromagnetic detent and pre-feeling see from page 50 on

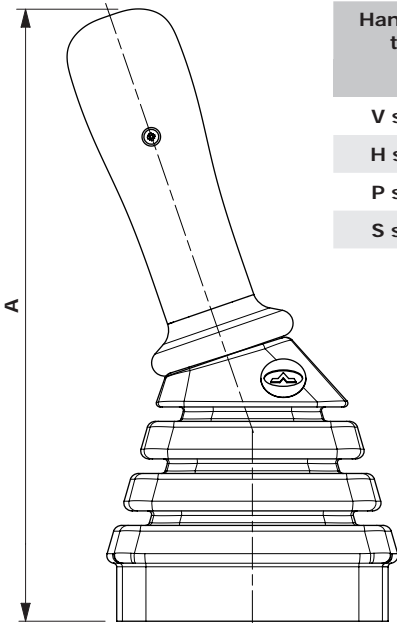
**9 Connector**

Configurations with detent or microswitch are provided with wires with tin-plate terminals. For connectors, please contact our Sales Department

NOTE (\*) – Codes are referred to **BSP** thread.

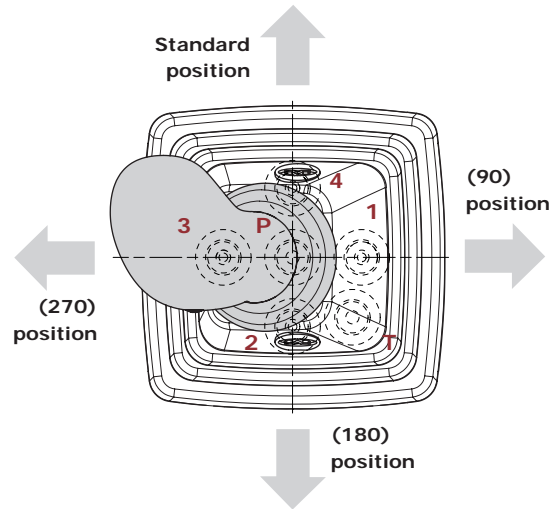
### Configuration option

#### Handle option



Handlever type	A	
	mm	in
V series	232	9.13
H series	250	9.84
P series	268	10.55
S series	266	10.47

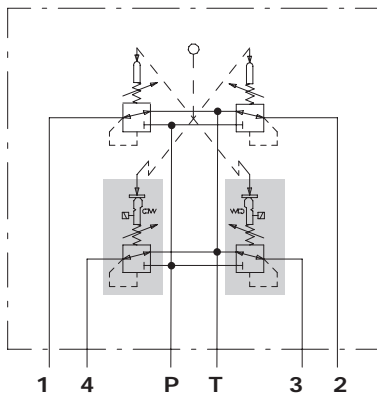
#### Handle positions



### Detent configuration

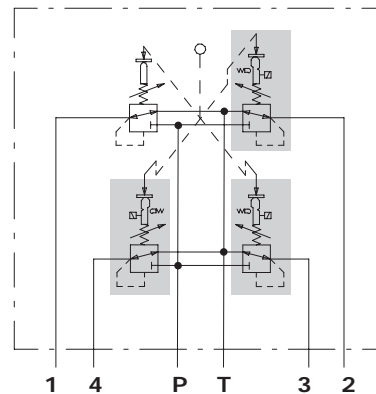
#### 01/2D type

Detent on ports 3 and 4, with spring return



#### 01/3D type

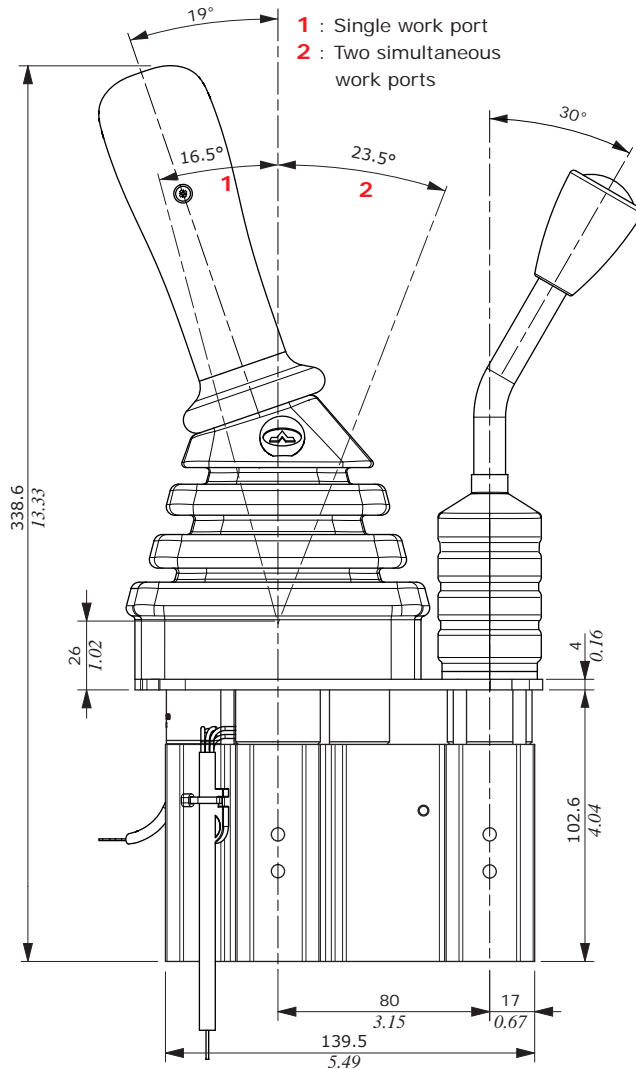
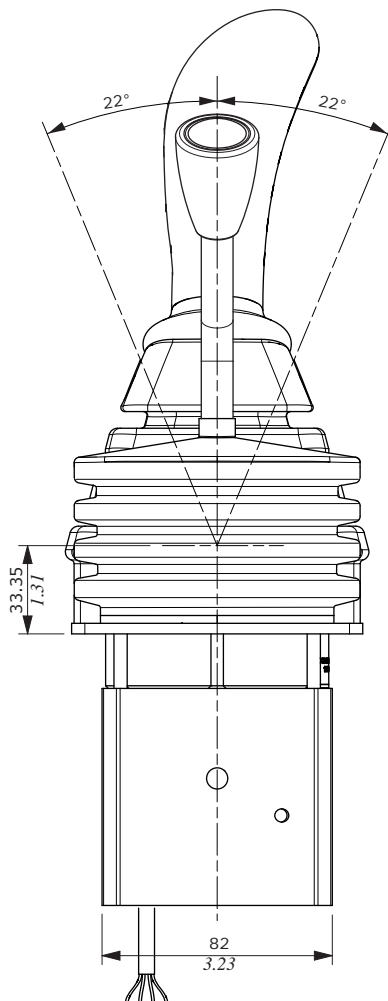
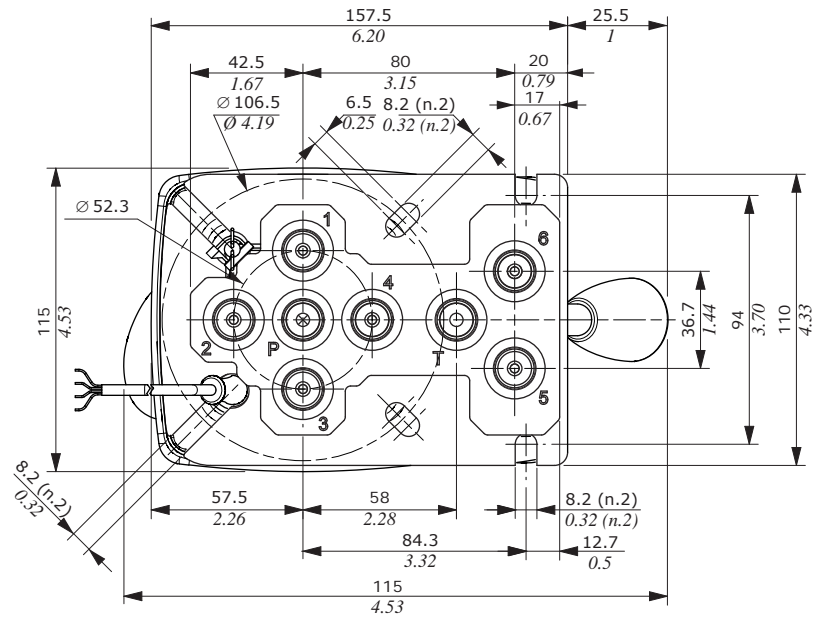
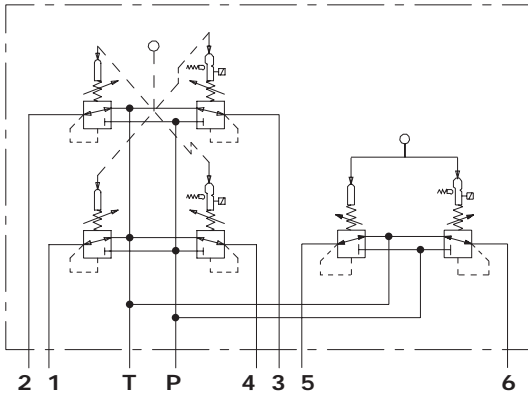
Detent on ports 2, 3 and 4 with spring return



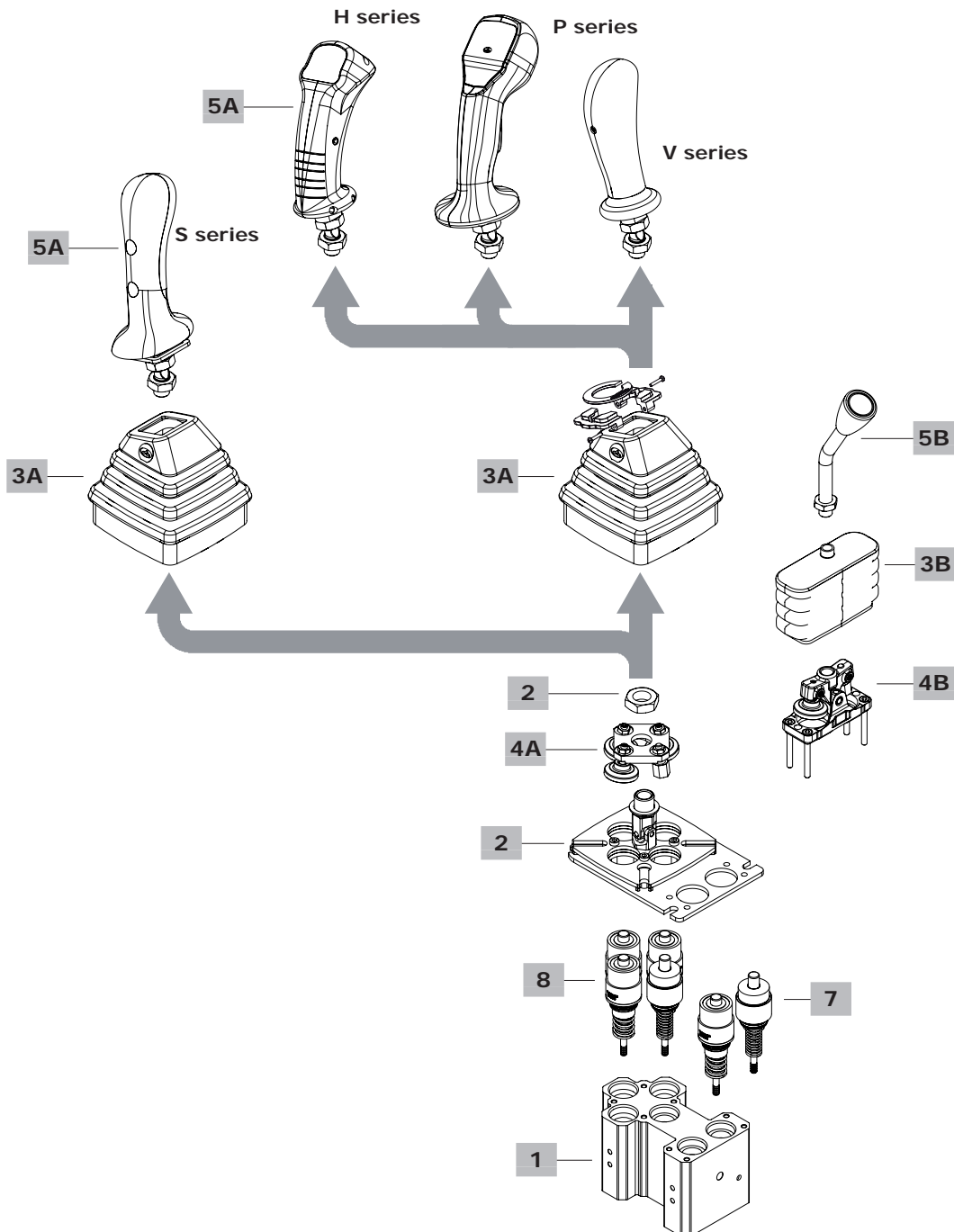
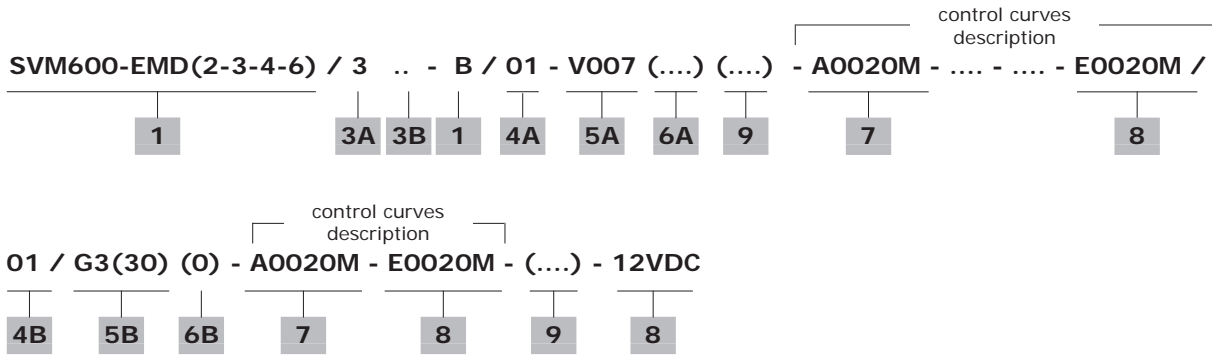
Dimensions and circuit hydraulic

Hydraulic circuit

Example detent on working ports 3, 4 and 6



### Ordering codes



**1 Body kit \***

TYPE: SVM600-EMD(2-3)/B	CODE: 3CO3600300
DESCRIPTION: With detent arrangement on ports 2 and 3	
TYPE: SVM600-EMD(1-2-3)/B	CODE: 3CO3600301
DESCRIPTION: With detent arrangement on ports 1, 2 and 3	
TYPE: SVM600-EMD(2-3-6)/B	CODE: 3CO3600302
DESCRIPTION: With detent arrangement on ports 2, 3 and 6	
TYPE: SVM600-EMD(1-2-3-6)/B	CODE: 3CO3600303
DESCRIPTION: With detent arrangement on ports 1, 2, 3 and 6	

**2 Flange kit**

TYPE	CODE	DESCRIPTION
1	5FLA411154	Assembling flange

**Joystick options****3A Rubber bellow**

TYPE	CODE	DESCRIPTION
3	5SOF111111	Sloping type, square base with logo; only for 19° sloping handles, adapter for V, H, P type handles
3	3SOF111111	As previous for handles S type

**4A Detent configuration****With spring return in neutral position**

TYPE	CODE	DESCRIPTION
01/(2D)	5CIN8012D	Kinematic kit arranged for 2 detents
01/(3D)	5CIN8013D	Kinematic kit arranged for 3 detents

**5A Handles**

The pilot control valve can be configured with different types of handles (V, H, P, S series) with straight joint type 9 or sloping joint type 7 and 8.

Below are listed some pre-configured handles.

For technical specifications and full range of handles and other types of joint see the "Handles and hand levers" catalogue.

**V series handles**

TYPE	CODE	DESCRIPTION
V007	5IMP030070	Without switches with sloping 19° left joint
V008	5IMP030080	Without switches with sloping 19° right joint
V109-045	5IMP031160	With upper push-button with protection, horn symbol and straight joint

**S series handles**

TYPE	CODE	DESCRIPTION
S007	2IM5000000	Without switches with sloping 19° left joint
S107-045	2IM5100002	With upper push-button and horn symbol with sloping 19° left joint
S118-045	2IM5110011	With proportional rocker switch, dead-man switch and sloping 19° right joint

**6A Handle position**

TYPE	DESCRIPTION
(-)	Standard configuration, operation to work port 4: <b>omitted in description</b>
(90)	Mounted with 90° rotation step: operation to work port 1
(180)	Mounted with 180° rotation step: operation to work port 2
(270)	Mounted with 270° rotation step: operation to work port 3

**7 Pressure control curves**

Without electromagnetic detent and without pre-feeling see from page 51 on

**8 Pressure control curves**

With electromagnetic detent and pre-feeling see from page 51 on

**9 Connector**

Configurations with detent or microswitch are provided with wires with tin-plate terminals. For connectors, please contact our Sales Department

**Single acting options****3B Rubber bellow**

TYPE	CODE	DESCRIPTION
-	3SOF190782	Standard rubber bellow (omitted in description)

**4B Control option**

Complete with rubber bellow and fixing wrapper

TYPE	CODE	DESCRIPTION
01/(0D)	5CIN1010D	Spring return to neutral position, without detent arrangement
01/(1D)	5CIN1011D	Spring return to neutral position, single detent arrangement; right or left position is defined by pressure control curve position
01/(2D)	5CIN1012D	Spring return to neutral position, double detent arrangement

The text between () can be omitted from composition description.

**5B Standard hand levers**

TYPE	CODE	DESCRIPTION
G3(30)	5AST371228G	Ogival with portlight, 30° bending rod

For features see page 48

**6B Handle position**

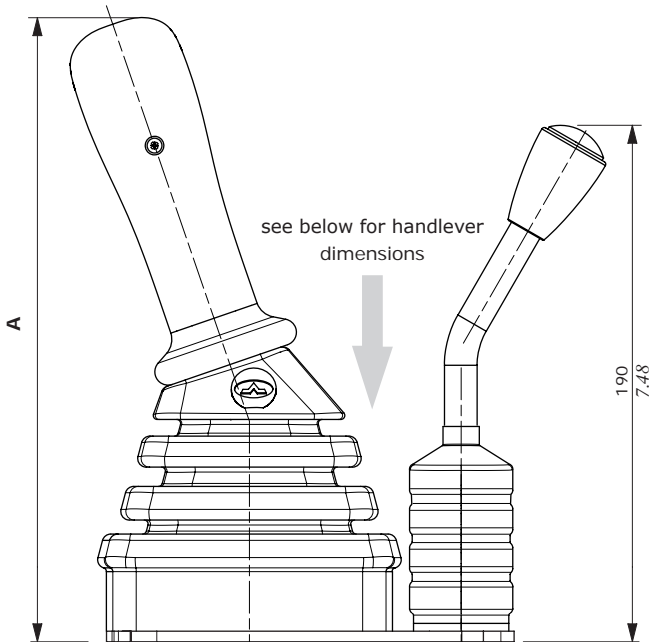
TYPE	DESCRIPTION
(0)	Hand lever oriented on P and T plugged ports
(90)	Hand lever oriented on port 5
(270)	Hand lever oriented on port 6

For different positions, please contact our Sales Department.

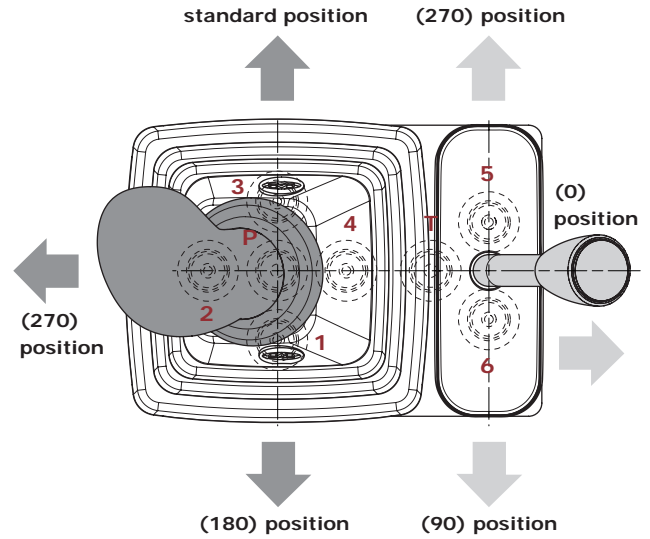
NOTE (\*) – Codes are referred to **BSP** thread.

### Configuration option

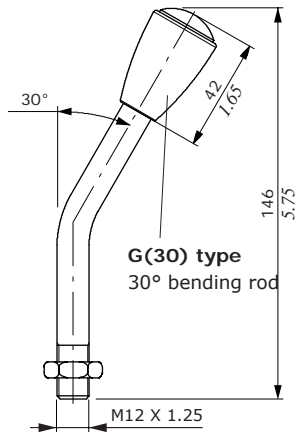
#### Handle and handlever option



#### Handle and handlever positions



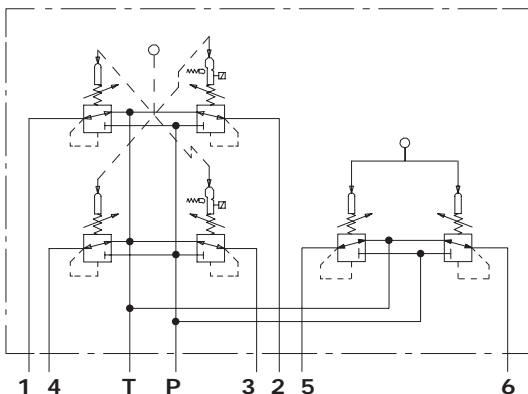
handlever type	A	
	mm	in
V series	232	9.13
H series	250	9.84
P series	268	10.55
S series	266	10.47



### Detent configuration: examples

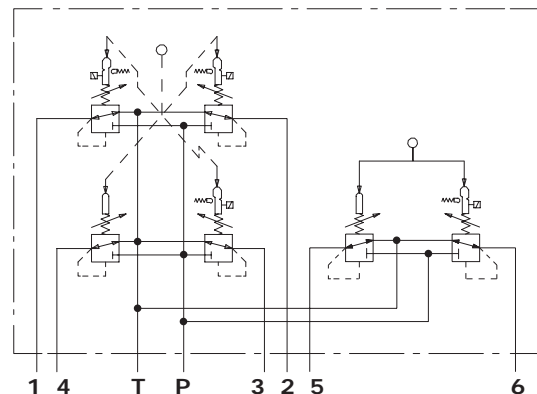
#### 01/2D type (joystick)

Detent on ports 2 and 3, with spring return



#### 01/3D type (joystick) + 01/1D (single acting)

Detent on ports 1, 2, 3 and 6, with spring return





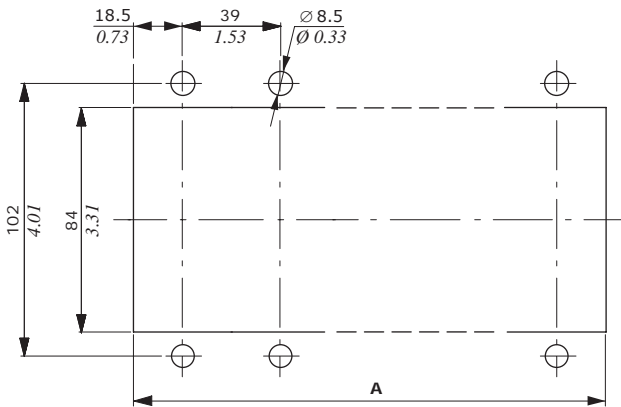
SVM pilot control valves assembled and tested as per the technical specification of this catalogue.

Before the final installation on your equipment, follow the below recommendations:

- the pilot valves must be assembled in horizontal position: considering the mass of the kinematic and control kit, a max. angle of 20° is allowed;
- the feeding unit can be assembled in any position; keep it away from heat sources when it is equipped with accumulator;
- fix the devices with suitable screw, use the appropriate flange or drilling, after tightening check the seal and the safety of the assembly;
- verify the integrity of the contact between devices and fittings and eliminate any impurities;
- correctly connect the devices, do not reverse the P and T ports (see dimensional pages to determine the initials of the ports);
- in order to prevent the possibility of water entering the rubber bellow, do not use high pressure wash directly on the valve;
- prior to painting, ensure plastic port plugs are tightly in place;
- the electrical cables have not to be submitted to mechanical forces (ex. tension or torsion);
- use original handles and hand levers.

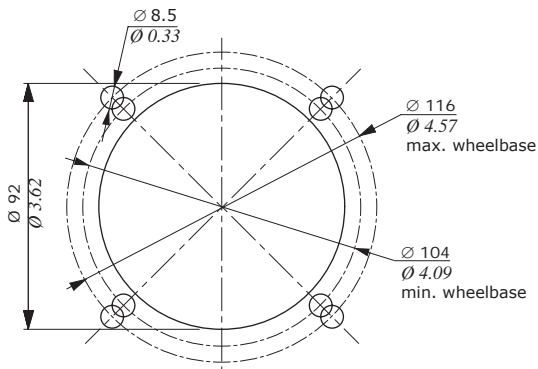
Panel cut out

SVM150

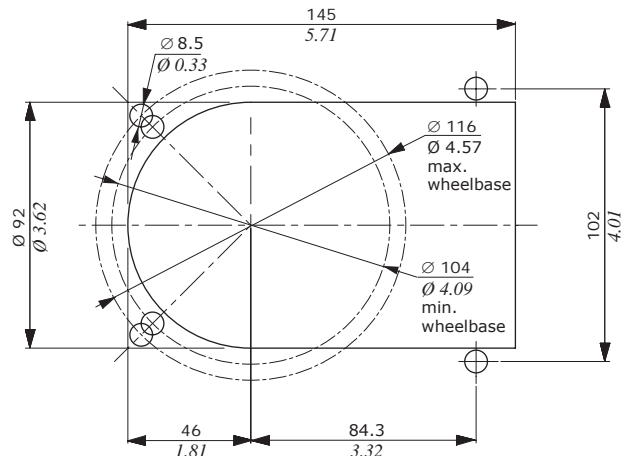


Type	A	
	mm	in
SVM150/1	37	1.46
SVM150/2	76	2.99
SVM150/3	115	4.53
SVM150/4	154	6.06
SVM150/5	193	7.6

SVM450



SVM600



### Control curves description

SVM450 - EMD ..... - **A** **0** **020** **M**

1
2
3
4

#### 1 Curve type

TYPE	DESCRIPTION
<b>A</b>	Without pre-feeling, without solenoid
<b>B</b>	With pre-feeling, without solenoid
<b>C</b>	With solenoid 24VDC and pre-feeling
<b>D</b>	With solenoid 24VDC, without pre-feeling
<b>E</b>	With solenoid 12VDC, with pre-feeling
<b>F</b>	With solenoid 12VDC, without pre-feeling
<b>G</b>	With solenoid 24VDC and pre-feeling after step

#### 2 Typology of curves

TYPE	DESCRIPTION
<b>0</b>	With step
<b>1</b>	Without step

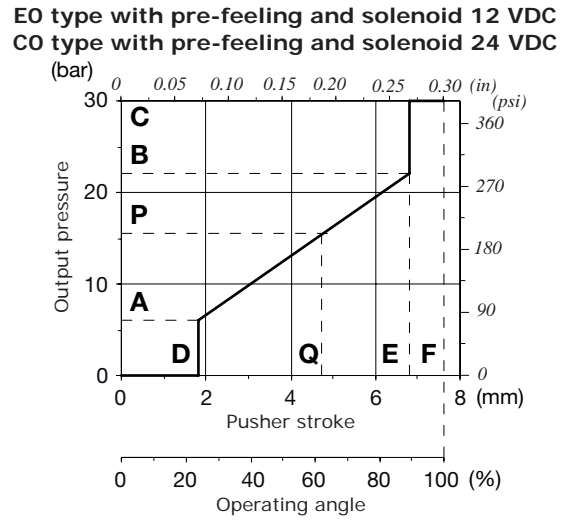
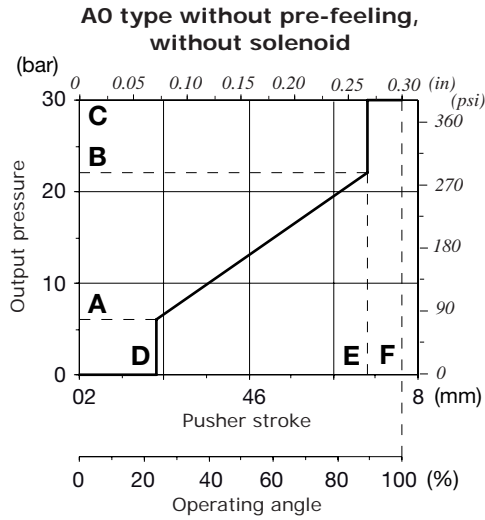
#### 3 Identification curve

Progressive number, see tables on the following pages

#### 4 Return springs

TYPE	DESCRIPTION
<b>M</b>	Operation range from 18 to 25.5 N - <i>from 4.04 to 5.73 lbf</i>
<b>A</b>	Operation range from 23 to 35.2 N - <i>from 5.17 to 7.91 lbf</i>
<b>B</b>	Operation range from 23 to 68.1 N - <i>from 5.17 to 15.31 lbf</i>
<b>C</b>	Operation range from 89 to 176 N - <i>from 20 to 39.56 lbf</i>
<b>D</b>	Operation range from 110 to 220 N - <i>from 24.73 to 49.46 lbf</i>
<b>E</b>	Operation range from 137.8 to 276.1 N - <i>from 30.98 to 62.07 lbf</i>

Control curves with step



Curve description		Pressure								Stroke								CODE <sup>(1)</sup>
Type	Nr	A		P		B		C		D		Q		E		F		
		bar (±toll)	psi (±toll)	bar (±toll)	psi (±toll)	bar (±toll)	psi (±toll)	bar	psi	mm	(in)	mm	(in)	mm	(in)	mm	(in)	
CO	B09	3.5 (± 0.5)	50.7(±7.25)	13.7 (± 1)	198.6(±14.5)	15.1 (± 1)	218.9(±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7C0B09M
AO	011	3.5 (± 1)	50.7(±14.5)			25 (± 1.5)	362.5(±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0011M
CO	011	3.5 (± 1)	50.7(±14.5)	25 (± 1.5)	362.5(±21.7)	27.9 (± 1.5)	41.8(±21.7)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7C0011M
E0	B09	3.5 (± 0.5)	50.7(±7.25)	13.7 (± 1)	198.6(±14.5)	15.1 (± 1)	218.9(±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7E0B09M
AO	099	3.6 (± 1)	52.2(±14.5)			15.8 (± 1)	229.1(±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0099M
CO	B47	3.8 (± 1)	55.1(±14.5)	15.3 (± 0.5)	221.8(±7.25)	16.8 (± 1)	243.6(±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7C0B47M
CO	B47	3.8 (± 1)	55.1(±14.5)	15.3 (± 0.5)	221.8(±7.25)	16.8 (± 1)	243.6(±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7C0347M
AO	086	4 (± 1)	58(±14.5)			16.5 (± 1)	239.2(±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0086M
E0	086	4 (± 1)	58(±14.5)	16.5 (± 0.5)	239.2(±7.25)	18.2 (± 1)	263.9(±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7E0086M
CO	118	4 (± 0.5)	58(±7.25)	13 (± 1)	188.5(±14.5)	16.1 (± 1)	233.4(±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7C0118M
AO	020	4.3 (± 0.5)	62.3(±7.25)			15.2 (± 1.5)	220.4(±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0020M
CO	020	4.3 (± 1)	62.3(±14.5)	15.2 (± 1)	220.4(±14.5)	16.6 (± 1)	240.7(±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7C0020M
AO	028	5 (± 1)	72.5(±14.5)			21 (± 1.5)	304.5(±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0028M
CO	028	5 (± 1)	72.5(±14.5)	20 (± 1.5)	290(±21.7)	22 (± 2)	319(±29)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7C0028M
AO	075	5 (± 0.5)	72.5(±7.25)			15 (± 1.5)	22.5(±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0075A
CO	075	5 (± 0.5)	72.5(±7.25)	15 (± 1)	217.5(±14.5)	16.3 (± 1.5)	236.3(±21.7)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7C0075A
CO	075	5 (± 0.5)	72.5(±7.25)	15 (± 1)	217.5(±14.5)	16.3 (± 1.5)	236.3(±21.7)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	8	0.31	5CR7C0075B
AO	077	5 (± 1)	72.5(±14.5)			27 (± 2)	391.5(±29)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0077M
AO	119	5 (± 1)	72.5(±14.5)			23.5 (± 2)	340.7(±29)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0119M
AO	001	5.8 (± 0.5)	84.1(±7.25)			22 (± 1.5)	319(±21.7)	30	435	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0001M
CO	001	5.8 (± 1)	84.1(±14.5)	22 (± 1.5)	319(±21.7)	24.2 (± 2)	350.9(±29)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7C0001M
AO	033	5.8 (± 0.5)	84.1(±7.25)			19.1 (± 1)	276.9(±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0033B
E0	033	5.8 (± 0.5)	84.1(±7.25)	19 (± 1)	275.5(±14.5)	20.8 (± 1)	301.6(±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7E0033B 5CR7E0033M
E0	033	5.8 (± 0.5)	84.1(±7.25)	19 (± 1)	275.5(±14.5)	20.8 (± 1)	301.6(±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7E0033M
CO	070	5.8 (± 1)	84.1(±14.5)	22.4 (± 1.5)	324.8(±21.7)	24.6 (± 1.5)	356.7(±21.7)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7C0070M
AO	085	6 (± 1)	87(±14.5)			25 (± 1.5)	362.5(±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0085A

<sup>(1)</sup> indicates the curve with the specific return spring  
For different curves, please contact our Sales Department

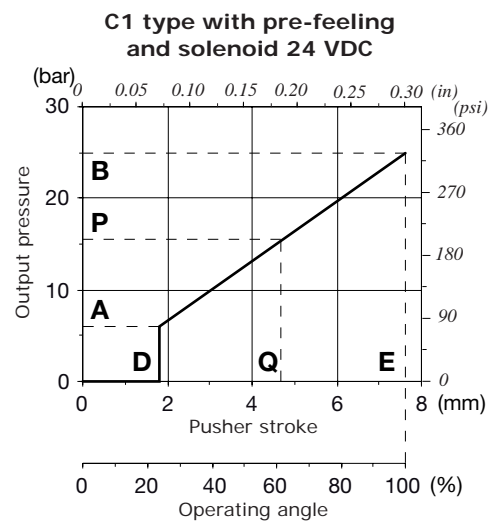
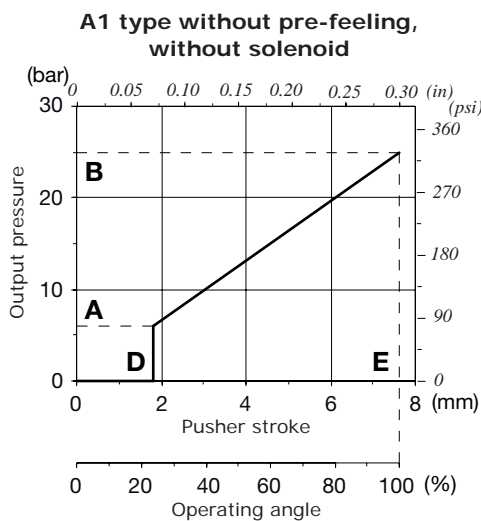
### Control curves with step

Curve description		Pressure								Stroke						CODE <sup>(1)</sup>		
Type	Nr	A		P		B		C		D		Q		E			F	
		bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar	psi	mm	(in)	mm	(in)	mm	(in)	mm	(in)	
EO	085	6 ( $\pm$ 1)	87 ( $\pm$ 14.5)	25 ( $\pm$ 2)	362.5 ( $\pm$ 29)	27.5 ( $\pm$ 2)	398.75 ( $\pm$ 29)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7E0085M
AO	085	6 ( $\pm$ 1)	87 ( $\pm$ 14.5)			25 ( $\pm$ 1.5)	362.5 ( $\pm$ 21.7)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7A0085A 5CR7A0085M
CO	085	6 ( $\pm$ 1)	87 ( $\pm$ 14.5)	25 ( $\pm$ 2)	362.5 ( $\pm$ 29)	27.5 ( $\pm$ 2)	398.75 ( $\pm$ 29)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7C0085A 5CR7C0085M
EO	085	6 ( $\pm$ 1)	87 ( $\pm$ 14.5)	25 ( $\pm$ 2)	362.5 ( $\pm$ 29)	27.5 ( $\pm$ 2)	398.75 ( $\pm$ 29)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7E0085M
AO	088	8 ( $\pm$ 0.5)	116 ( $\pm$ 7.25)			27 ( $\pm$ 1.5)	391.5 ( $\pm$ 21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR7A0088M
CO	088	8 ( $\pm$ 0.5)	116 ( $\pm$ 7.25)	27 ( $\pm$ 1)	391.5 ( $\pm$ 14.5)	29.5 ( $\pm$ 1)	427.7 ( $\pm$ 14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR7C0088M

<sup>(1)</sup> indicates the curve with the specific return spring

For different curves, please contact our Sales Department

### Control curves without step



Curve description		Pressure						Stroke						CODE <sup>(1)</sup>
Type	Nr	A		P		B		D		Q		E		
		bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar ( $\pm$ toll)	psi ( $\pm$ toll)	mm	in	mm	in	mm	in	
A1	096	4 ( $\pm$ 1)	58 ( $\pm$ 14.5)			18 ( $\pm$ 1)	261 ( $\pm$ 14.5)	0.85	0.03			7.6	0.30	5CR7A1096M
C1	099	4 ( $\pm$ 1)	58 ( $\pm$ 14.5)	12.8 ( $\pm$ 1)	185.6 ( $\pm$ 14.5)	18 ( $\pm$ 1)	261 ( $\pm$ 14.5)	1.55	0.06	5.1	0.2	7.5	0.29	5CR7C1141M

<sup>(1)</sup> indicates the curve with the specific spring

For different curves, please contact our Sales Department

Hydraulic control on directional valves and suggested control curves

Valve type	3 position controls		Control curve			Controls for floating			Control curve		
	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)	
<b>Monoblock valves</b>											
<b>SDM100</b>	8IM	5IDR207300	<b>088</b>	5CR7A0088	8-27 116-391.5	13IM	5IDR205330	<b>075</b> <b>C0075</b>	5CR7A0075 5CR7C0075	5-15 72.5-217.5 5-15-16.3 72.5-217.5-236.3	
<b>SD11</b> <b>SD14</b>	8IM	5IDR210000	<b>001</b>	5CR7A0001	5.8-22.4 84.1-324.8						
<b>SD18</b>	8IM	5IDR220000	<b>001</b>	5CR7A0001	5.8-22.4 84.1-324.8						
<b>SDM140</b> <b>DLM140</b>	8IM	5IDR208300	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5	13IM	5IDR208214	<b>075</b> <b>C0075</b>	5CR7A0075 5CR7C0075	5-15 72.5-217.5 5-15-16.3 72.5-217.5-236.3	
<b>SDM141</b>	8IM	5IDR208300	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5	13IM	5IDR208214	<b>075</b> <b>C0075</b>	5CR7A0075 5CR7C0075	5-15 72.5-217.5 5-15-16.3 72.5-217.5-236.3	
<b>Sectional valves</b>											
<b>SD6</b>	8IM	5IDR206010	<b>075</b>	5CR7A0075	5-15 72.5-217.5						
<b>DLS7</b>	8IMF3	5IDR207000	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5						
<b>SDS100</b>	8IM	5IDR207300	<b>088</b>	5CR7A0088	8-27 116-391.5						
	8IMF3	5IDR207310	<b>088</b>	5CR7A0088	8-27 116-391.5						
<b>SD8</b>	8IM	5IDR208300	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5						
<b>SDS150</b>	8IM	5IDR216300	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5						
<b>SDS180</b>	8IM	5IDR216300	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5						
	8IMF3	5IDR216303	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5						
	8IMSPSL4P	5IDR218012	<b>028</b>	5CR7A0028	5-21 72.5-304.5						
	8IMO	5IDR216000	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5						
<b>DLS180</b>	8IM	5IDR216300	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5						
	8IMF3	5IDR216303	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5						
<b>SD25</b>	8IMO	5IDR225000	<b>033</b>	5CR7A0033	5.8-19 84.1-275.5	13IM	5IDR225360	<b>COB09</b>	5CR7C0B09	3.5-13.7-15.1 50.7-198.6-219	
						13IMO	5IDR225350	<b>COB09</b>	5CR7C0B09	3.5-13.7-15.1 50.7-198.6-219	
<b>SDS400</b>	8IM	5IDR208300	<b>028</b>	5CR7A0028	5-21 72.5-304.5	13IM	5IDR208310	<b>C0075</b>	5CR7C0075	5-15-16.3 72.5-217.5-236.3	

<sup>(1)</sup> Codes listed show the control curve without return spring reference: for spring details see page 50.

### Hydraulic control on directional valves and suggested control curves

Valve type	3 position controls		Control curve			Controls for floating		Control curve		
	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)
<b>Pressure pre-compensated Load-Sensing and Flow Sharing valves</b>										
<b>DPC130</b>	8IM	5V08130800	<b>020</b>	5CR7A0020	4.3-15.2 62.3-220.4					
<b>DPC200</b>	8IM	5V08200801	<b>020</b>	5CR7A0020	4.3-15.2 62.3-220.4					
	8IM	5IDR20A300	<b>088</b>	5CR7A0088	8-27 116-391.5	13IMP	5IDR20A310	<b>088</b>	5CR7A0088	8-27 116-391.5
<b>DPX050</b>	8IMF3	5IDR20A302	<b>088</b>	5CR7A0088	8-27 116-391.5					
	8IMX	5IDR20A301	<b>028</b>	5CR7A0028	5-21 72.5-304.5					
	8IMXF3	5IDR20A303	<b>028</b>	5CR7A0028	5-21 72.5-304.5					
<b>DPX100</b>	8IMN	5IDR204304	<b>088</b>	5CR7A0088	8-27 116-391.5					
	8IMF3N	5IDR204314	<b>088</b>	5CR7A0088	8-27 116-391.5					
	8IMXN	5IDR204303	<b>085</b>	5CR5A0085	6-25 87-362.5					
	8IMXF3N	5IDR204313	<b>085</b>	5CR5A0085	6-25 87-362.5					
<b>DPX160</b>	8IMN	5IDR209304	<b>088</b>	5CR7A0088	8-27 116-391.5	13IM	5IDR209303	<b>088</b>	5CR7A0088	8-27 116-391.5
	8IMF3N	5IDR209305	<b>088</b>	5CR7A0088	8-27 116-391.5			<b>E0075</b>	5CR7E0075	5.8-19-20.8 84.1-275.5-301.6

<sup>(1)</sup> Codes listed show the control curve without return spring reference: for spring details see page 50.



## SVM hydraulic joysticks with pedal and other actuations

SVM510-SVM520-SVM521 / SVM500 series / SVM540 / SVM701-SVM710

- Single and double function
- Damping option
- High sensitivity and low force

### Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46mm<sup>2</sup>/s - 46 cSt viscosity at 40°C - 104°F temperature.

Nominal flow rating		from 5 to 20 l/min - from 1.32 to 5.28 USgpm
Max. feeding pressure	P on inlet port	from 30 to 100 bar - from 435 to 1450 psi
Max. backpressure	T on outlet port	3 bar - 43.5 psi
Max. hysteresis		0.5 bar - 7.25 psi
Internal leakage (all ports)	at 30 bar - 435 psi, P⇒T	from 2.5 to 4.5 cm <sup>3</sup> /min - from 0.15 to 0.27 in <sup>3</sup> /min
Fluid		mineral oil
Fluid temperature	with NBR (BUNA-N) seals	from -10 °C to 80 °C - from 14 °F to 176 °F
	operating range	from 15 to 75 mm <sup>2</sup> /s - from 15 to 75 cSt
Viscosity	min.	12 mm <sup>2</sup> /s - 12 cSt
	max.	400 mm <sup>2</sup> /s - 400 cSt
Max. contamination level		-/15/12 - ISO 4406 - NAS1638 class 6
Ambient temperature	without electric devices	from -40 °C to 60 °C - from 40 °F to 140 °F
	with electric devices	from -20 °C to 50 °C - from -4 °F to 122 °F

NOTE - for different conditions please contact Sales Dpt

### 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	

### PORTS THREADING

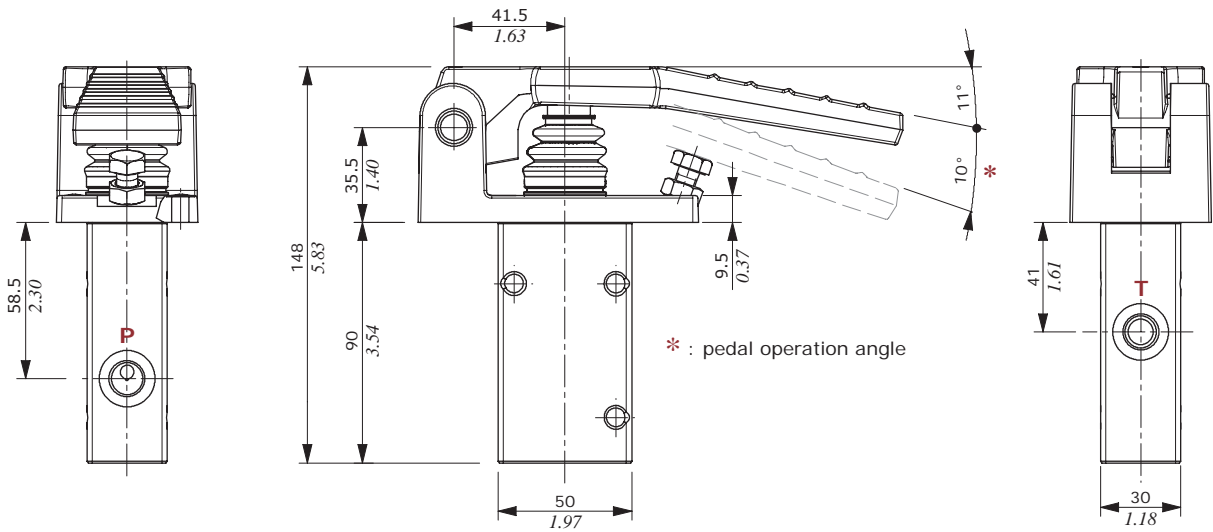
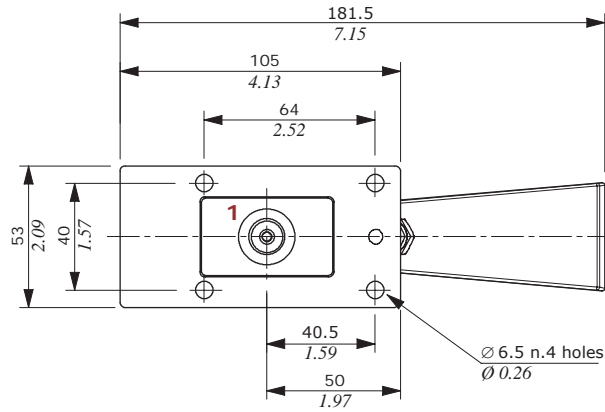
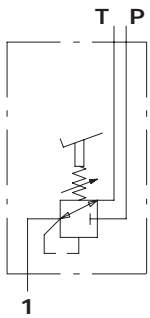
PORTS	Threads		Fitting tightening torque	
	UNI EN ISO 1179	UNI EN ISO 11926-2	Nm	lbf <sup>t</sup>
P inlet	G 1/4	7/16-20 (SAE 4)	30	22.13
Ports	G 1/4	7/16-20 (SAE 4)	30	22.13
T outlet	G 1/4	7/16-20 (SAE 4)	30	22.13

NOTE - These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The manufacturer has to be consulted.

## Dimensions and hydraulic circuit

### SVM510 version

#### Hydraulic circuit

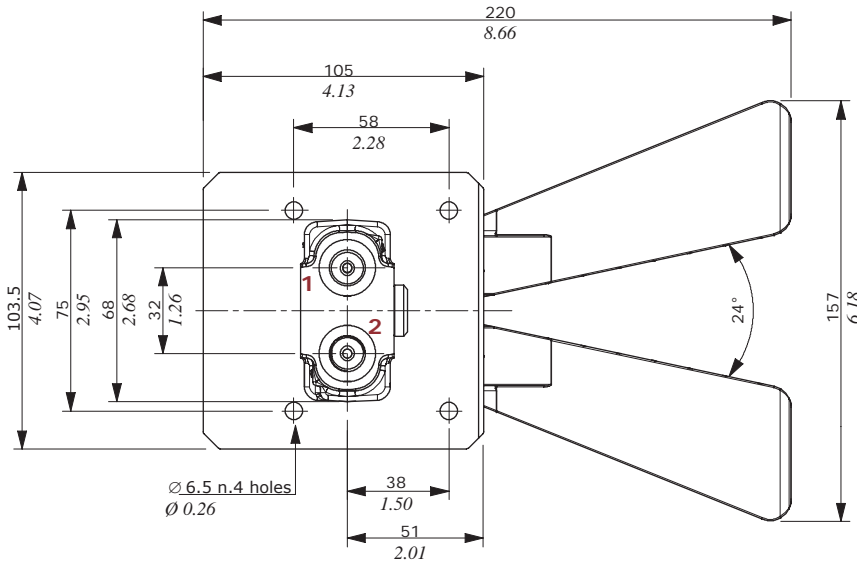




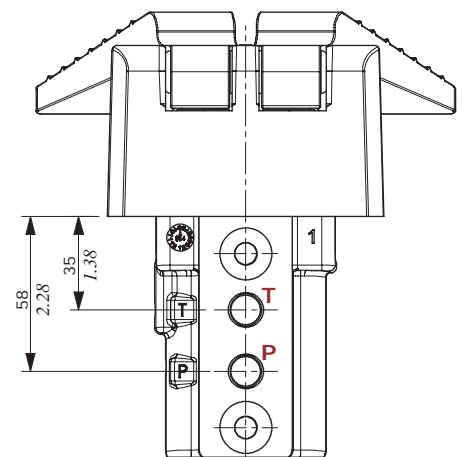
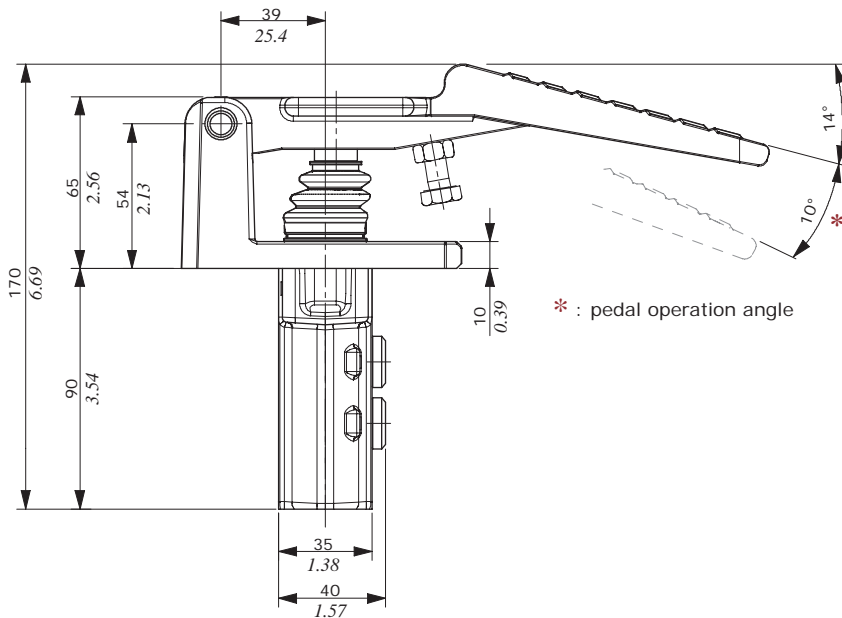
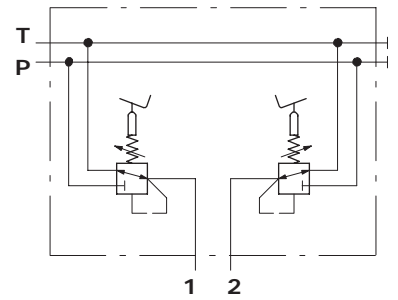
Dimensions and hydraulic circuit

SVM520 version

Configuration with side P and T ports.



Hydraulic circuit

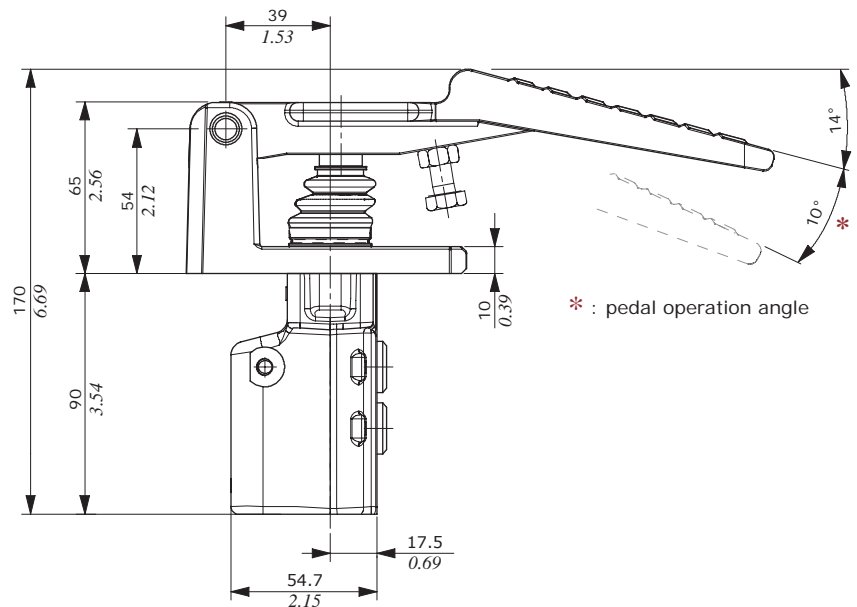
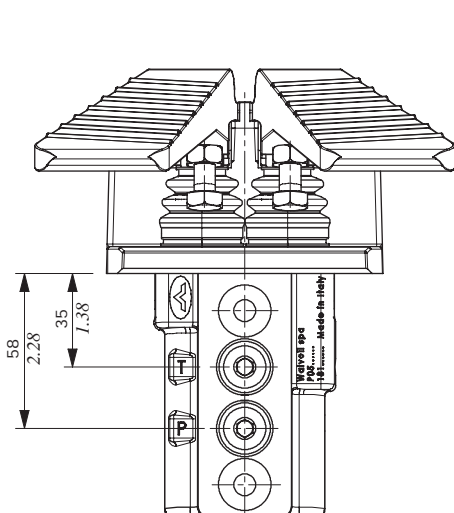
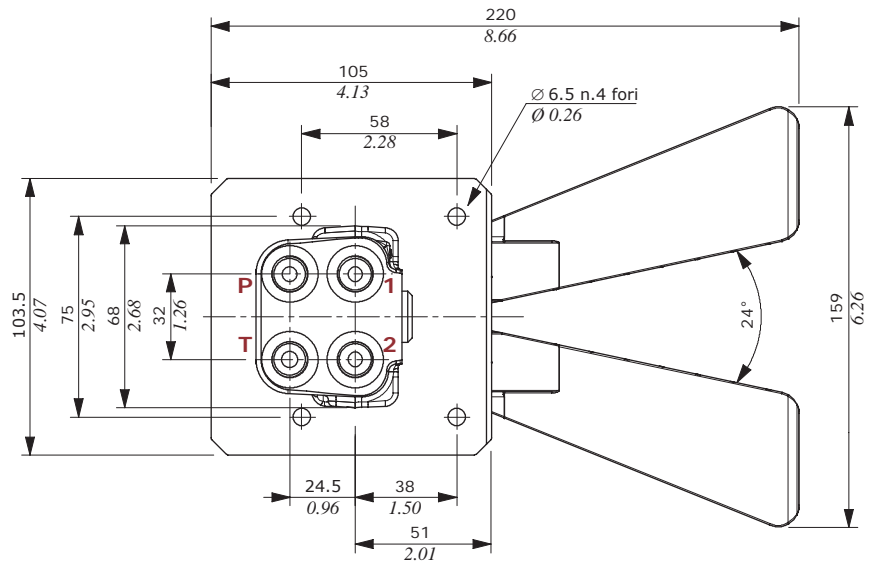
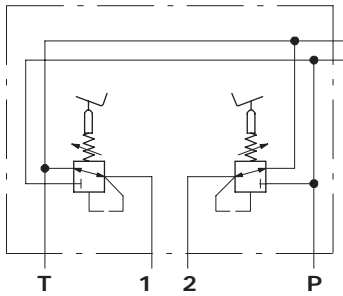


### Dimensions and hydraulic circuit

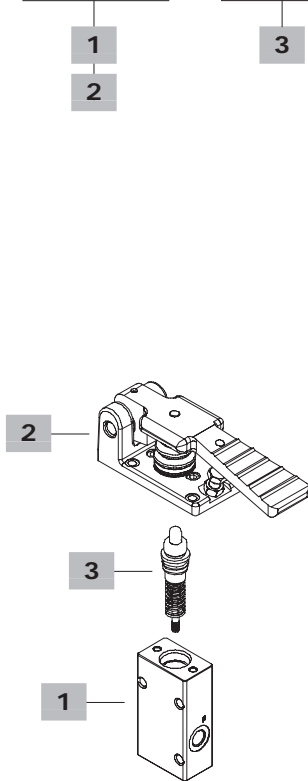
#### SVM521 version

Configuration with bottom P and T ports.

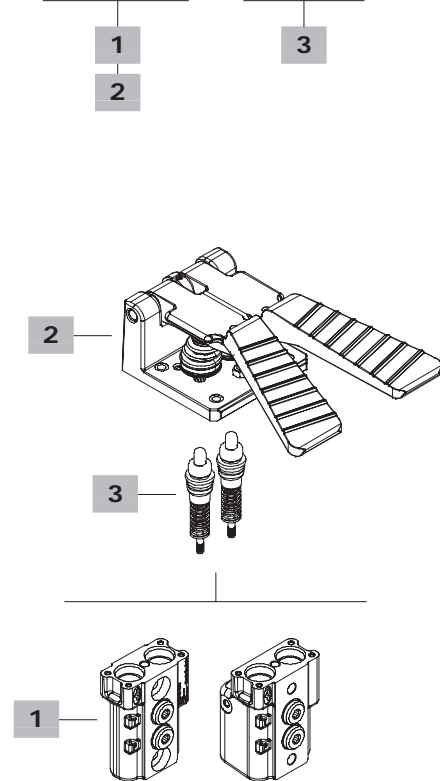
Hydraulic circuit



SVM510-B / 00001A



SVM520-B / 00001A x 2



### 1 Body kit \*

TYPE	CODE	DESCRIPTION
SVM510-B	3C03710300	Single pedal configuration
SVM520-B	3C03122300	Double pedal configuration with side P and T ports
SVM521-B	3C03122310	Double pedal configuration with bottom P and T ports

### 2 Operating pedal

TYPE	CODE	DESCRIPTION
SVM510	5CIN5003	Single pedal operating kit
SVM520	5CIN5002	Double pedal operating kit

### 3 Pressure control curves

For configuration and list available see from page 71

NOTE (\*) – Codes are referred to **BSP** thread.

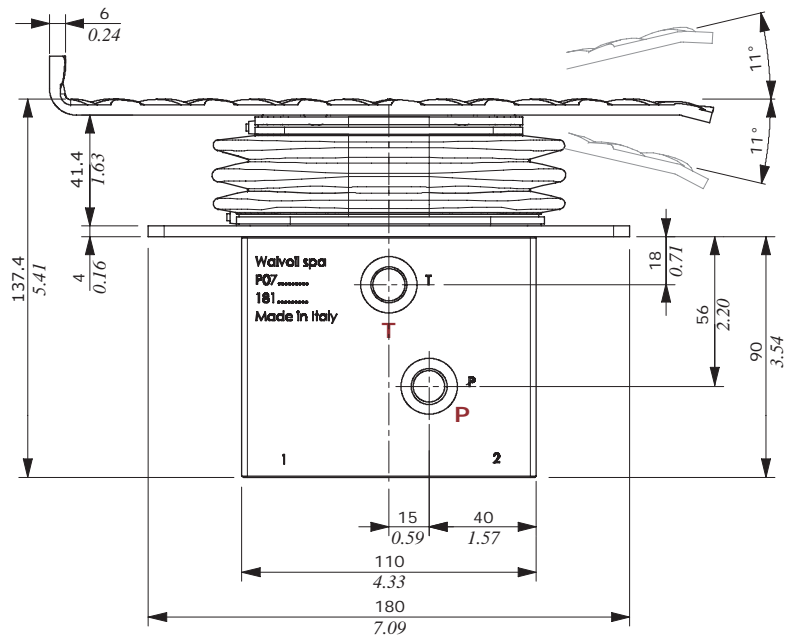
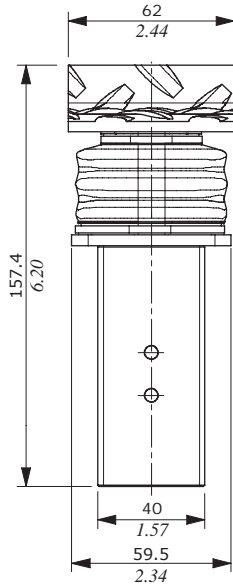
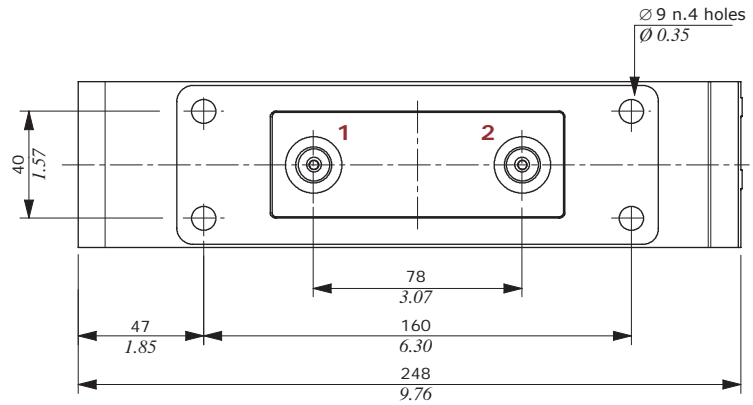
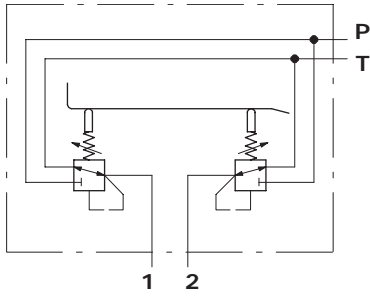


Dimensions and hydraulic circuit

SVM502 version

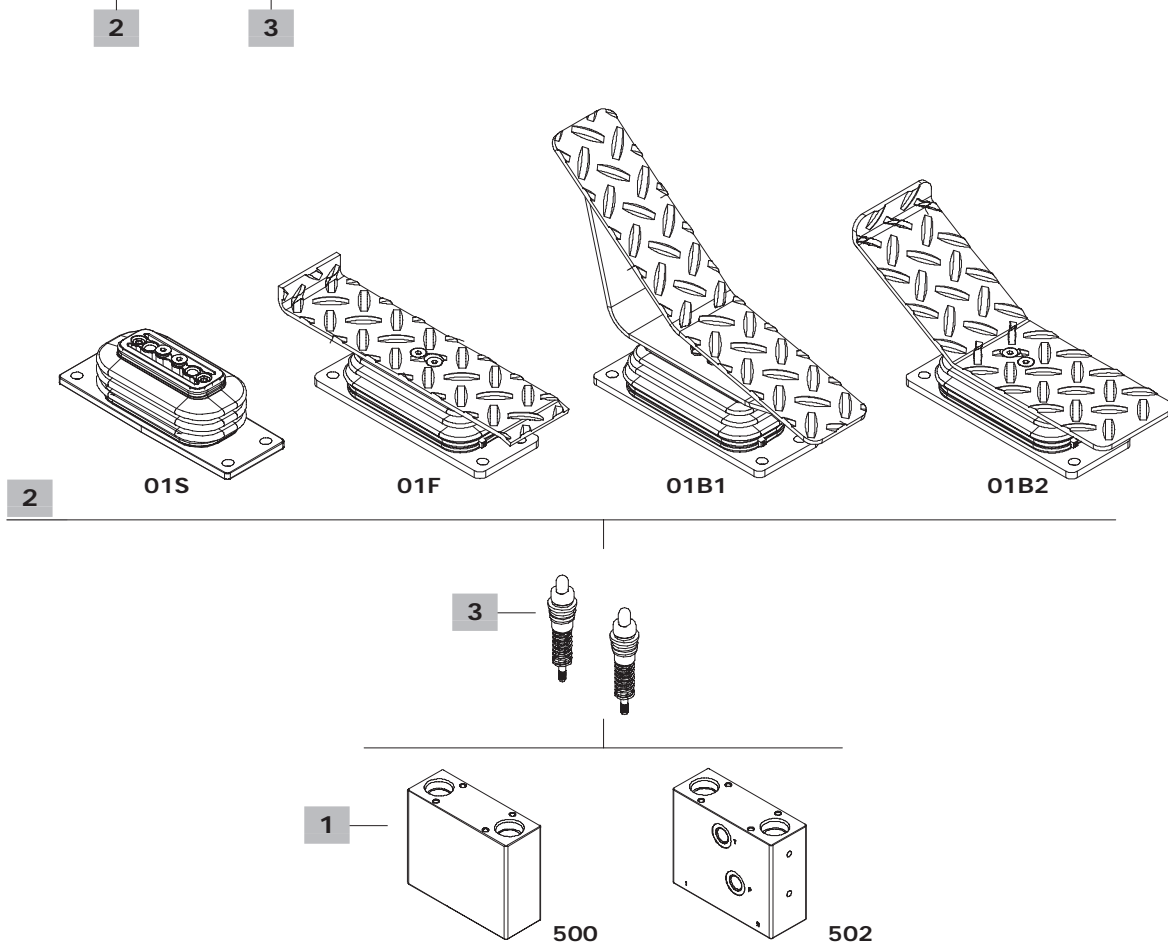
Configuration with side P and T ports, lower 1 and 2 ports.

Hydraulic circuit



### Ordering codes

SVM500-B / 01 F - 00001A x 2



#### 1 Body kit \*

TYPE	CODE	DESCRIPTION
SVM500-B	3C03510300	Configuration with lower ports
SVM502-B	3C03510320	Configuration with side P and T ports, lower 1 and 2 ports

#### 2 Pedal control options page 63

TYPE	CODE	DESCRIPTION
01S	5CIN5001S	With spring return in neutral position and with rubber bellow, without pedal
01F	5CIN5001F	As 01S flat pedal
01B1	5CIN5001B1	As 01S 154° sloping
01B2	5CIN5001B2	As 01S 150° sloping

#### 3 Pressure control curves

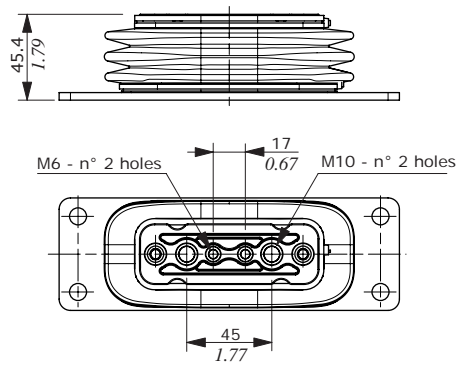
For configuration and list available see from page 71 on

NOTE (\*) – Codes are referred to **BSP** thread.

Control options

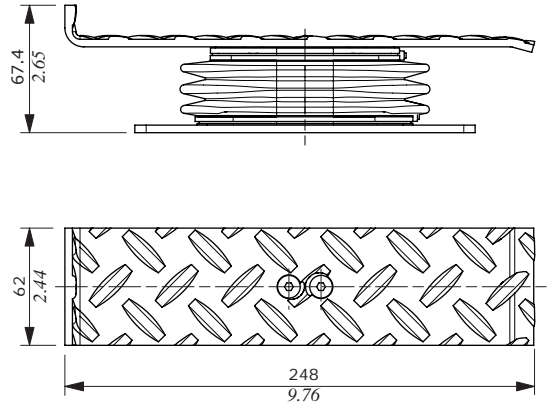
**01S type**

With spring return in neutral position, without pedal.



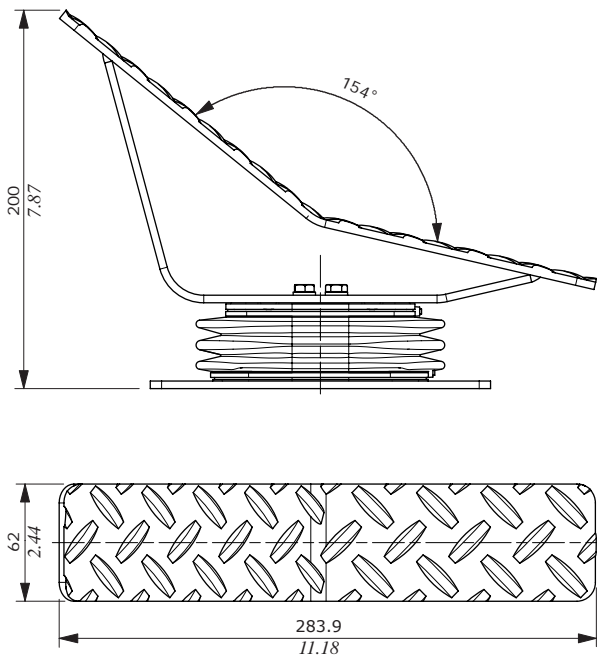
**01F type**

With spring return in neutral position.  
Flat pedal with corrugated sheet, white galvanized.



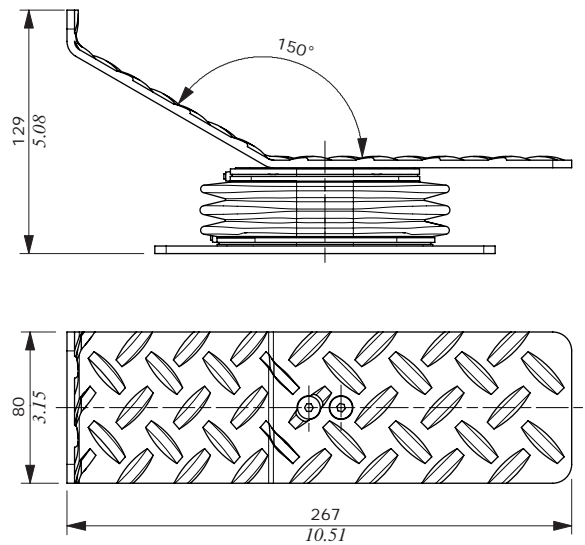
**01B1 type**

With spring return in neutral position.  
Profiled pedal with corrugated sheet, white galvanized.



**01B2 type**

With spring return in neutral position.  
Profiled pedal with corrugated sheet, white galvanized.

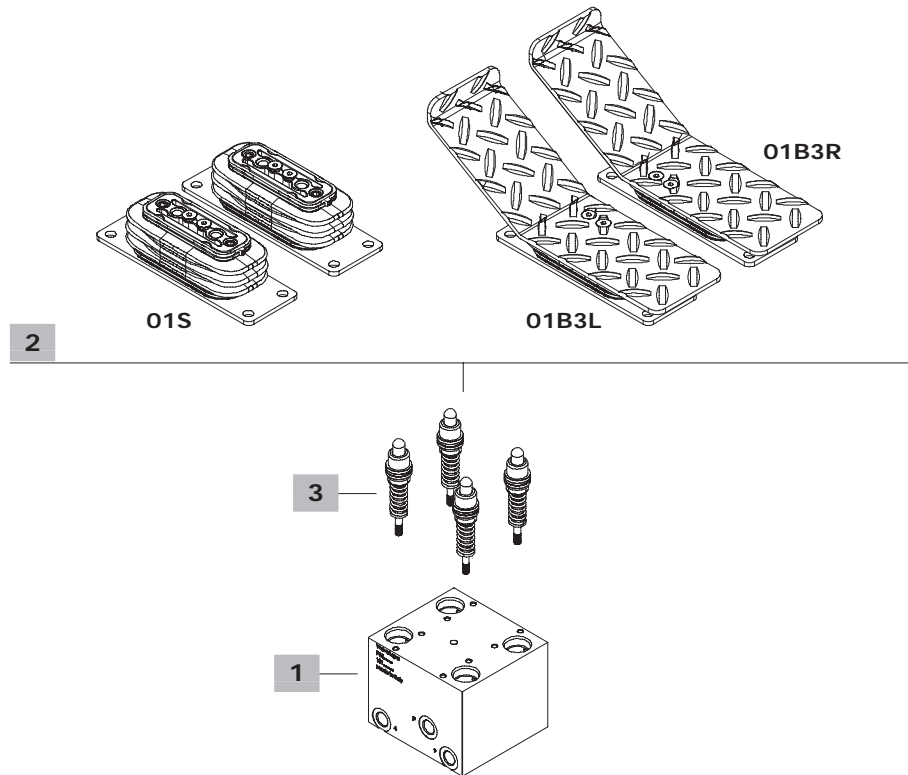






SVM540-B / 01 B3L - D001C X 2 / 01 B3R - D0001C X 2 - VR

1                      2                      3                      2                      3                      check valve  
 (always present)



**1 Body kit \***

TYPE	CODE	DESCRIPTION
SVM540-B	3C03540300	Pilot control valve body

**2 Control options** page 66

TYPE	CODE	DESCRIPTION
01S	5CIN5001S	With spring return in neutral position and with rubber bellow, without pedal
01B3L	5CIN5001B3L	As 01S 150° sloping, left pedal
01B3R	5CIN5001B3R	As 01S 150° sloping, right pedal

**3 Pressure control curves**

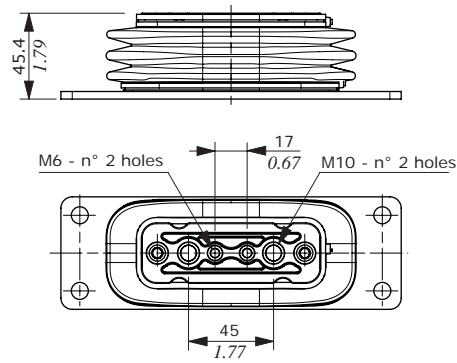
For configuration and list available see from page 71 on

NOTE (\*) – Codes are referred to **BSP** thread.

### Control options

#### 01S type

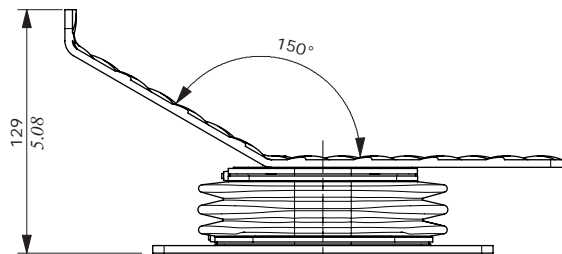
With spring return in neutral position without pedal.



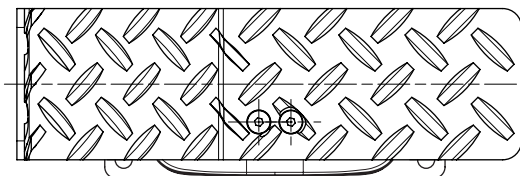
#### 01B3 type

With spring return in neutral position.

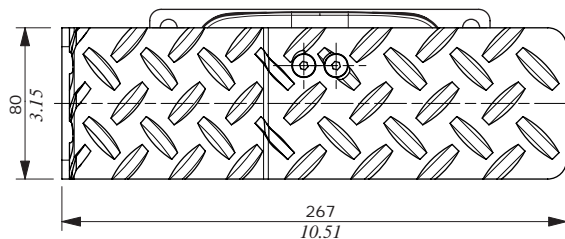
Sloping pedal with corrugated sheet, white galvanized.



Right pedal 01B3R type



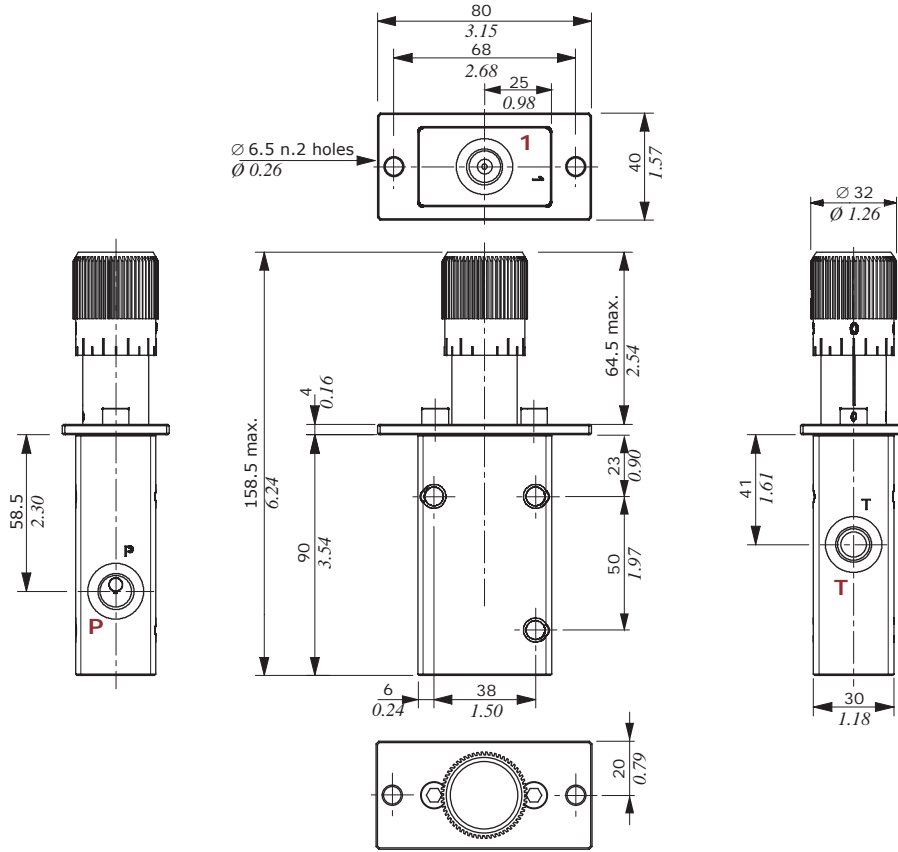
Left pedal 01B3L type



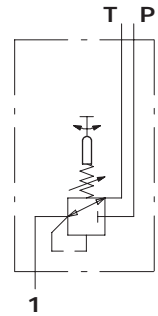
Dimensions and hydraulic circuit

SVM701 version

Configuration with handwheel operating.

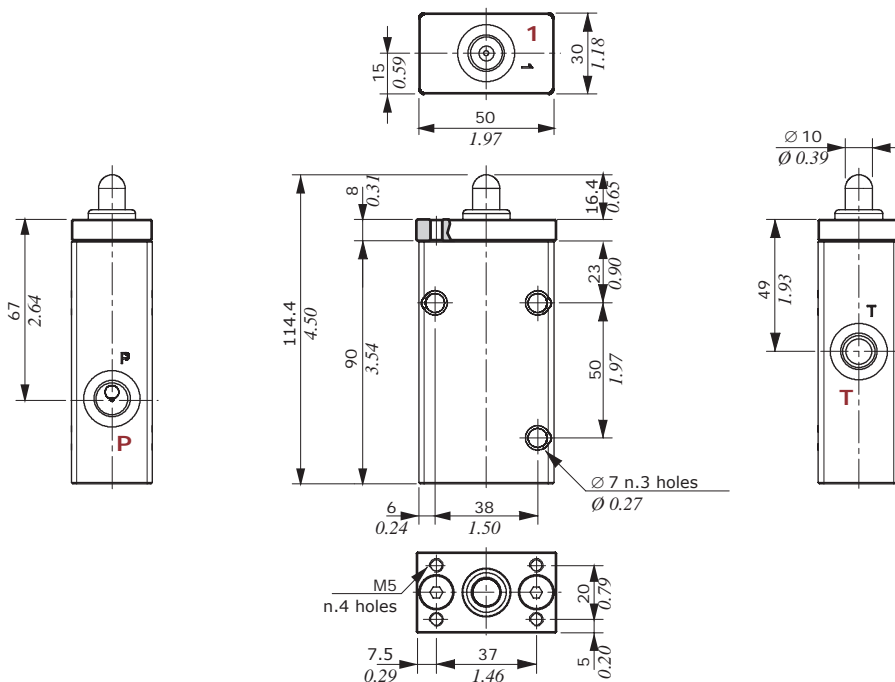


Hydraulic circuit

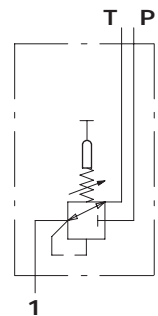


SVM710 version

Configuration with pusher operating.



Hydraulic circuit



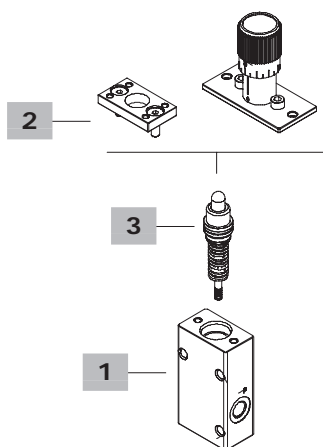
### Ordering codes

#### Description example

SVM701-B / 00001A

1  
2

3



#### 1 Body kit \*

TYPE	CODE	DESCRIPTION
<b>SVM701-710</b>	3CO3710300	Body kit

#### 2 Control option

TYPE	CODE	DESCRIPTION
<b>SVM701</b>	5CIN7002	Pusher operating and protection flange
<b>SVM710</b>	5CIN7011	With handweel operating

#### 3 Pressure control curves

For configuration and list available see from page 71 on

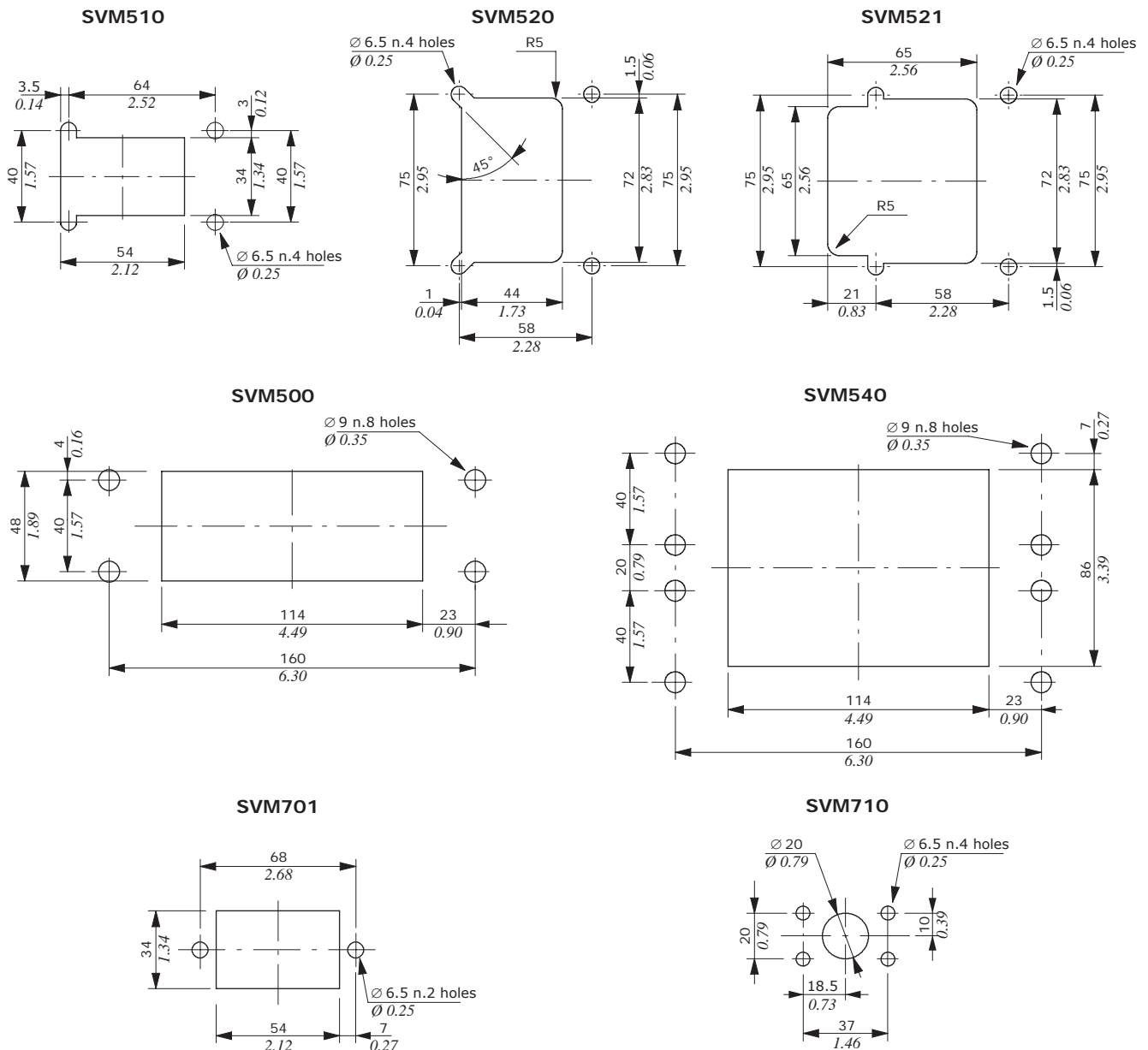
NOTE (\*) – Codes are referred to **BSP** thread.

SVM pilot control valves assembled and tested as per the technical specification of this catalogue.

Before the final installation on your equipment, follow the below recommendations:

- the pilot valves must be assembled in horizontal position: considering the mass of the kinematic and control kit, a max.angle of 20° is allowed;
- the feeding unit can be assembled in any position;keep it away from heat sources when it is equipped with accumulator;
- fix the devices with suitable screw, use the appropriate flange or drilling, after tightening check the seal and the safety of the assembly;
- verify the integrity of the contact between devices and fittings and eliminate any impurities;
- correctly connect the devices, do not reverse the P and T ports (see dimensional pages to determine the initials of the ports);
- in order to prevent the possibility of water entering the rubber bellow, do not use high pressure wash directly on the valve;
- prior to painting, ensure plastic port plugs are tightly in place;
- the electrical cables have not to be submitted to mechanical forces (ex. tension or torsion);
- use original handles and levers.

Panel cut out



### Control curves description

SVM500 / ..... - 0 0 001 A

1
2
3
4

#### 1 Curve type

TYPE	DESCRIPTION
0	Standard
D	With damping

#### 2 Typology of curves

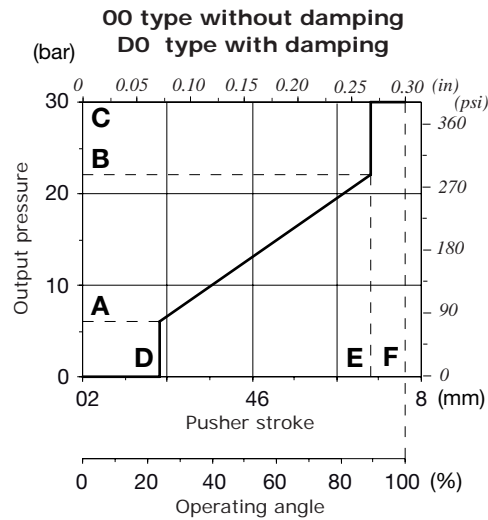
TYPE	DESCRIPTION
0	With step
1	Without step

#### 3 Identification curve

Progressive number, see tables on the following pages

#### 4 Return springs

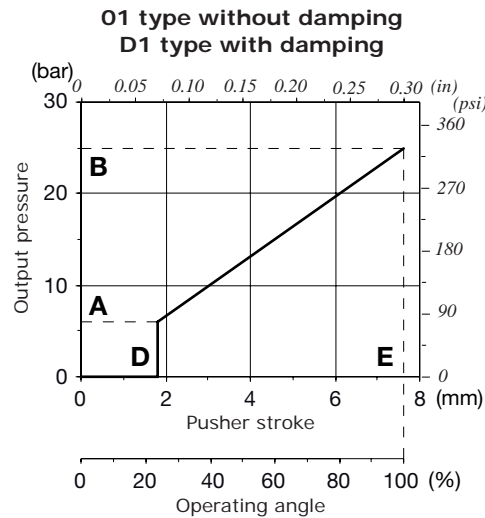
TYPE	DESCRIPTION
M	Operation range from 18 to 25.5 N - <i>from 4.04 to 5.73 lbf</i>
A	Operation range from 23 to 35.2 N - <i>from 5.17 to 7.91 lbf</i>
B	Operation range from 23 to 68.1 N - <i>from 5.17 to 15.31 lbf</i>
C	Operation range from 89 to 176 N - <i>from 20 to 39.56 lbf</i>
D	Operation range from 110 to 220 N - <i>from 24.73 to 49.46 lbf</i>
E	Operation range from 137.8 to 276.1 N - <i>from 30.98 to 62.07 lbf</i>



Curve description		Pressure								Stroke								CODE <sup>(1)</sup>
Type	Nr	A		P		B		C		D		Q		E		F		
		bar (±toll)	psi (±toll)	bar (±toll)	psi (±toll)	bar (±toll)	psi (±toll)	bar	psi	mm	in	mm	in	mm	in	mm	in	
00	023	2 (±0.5)	29 (±7.25)			11.5 (±1)	166.7 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40023A
00	047	2 (+3/0)	29 (+43.5/0)			70 (±4.5)	1015 (±65.2)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40047A 5CUR40047C
00	058	2 (±0.5)	29 (±7.25)	10.5 (±0.7)	152.2 (±10.5)	11.6 (±1)	168.2 (±14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4F058A
00	066	2 (±0.5)	29 (±7.25)			23 (±1.5)	333.5 (±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40066B 5CUR40066C
00	110	2 (±0.5)	29 (±7.25)			15 (±1)	217.5 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400110A
00	043	3.2 (±0.5)	46.4 (±7.25)			11.7 (±0.5)	169.6 (±7.2)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400043A
00	010	3.25 (±0.5)	47.12 (±7.25)			14.8 (±1)	214.6 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40010A
00	086	4 (±1)	58 (±14.5)			16.5 (±1)	239.2 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40086A 5CUR40086C
DO	020	4.3 (±0.5)	62.3 (±7.25)			15.2 (±1.5)	220.4 (±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR4D020C
00	076	4.5 (±0.5)	65.2 (±7.25)			15 (±1)	217.5 (±14.5)	35	507.5	1.35	0.05			7	0.27	7.3	0.30	5CUR40076A
00	017	5 (±0.5)	72.5 (±14.5)			12 (±1)	(±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40017A 5CUR40017C
00	071	5 (±1)	72.5 (±14.5)			17 (±1)	246.5 (±14.5)	35	507.5	1.35	0.05			6	0.23	7.3	0.29	5CUR40071A
00	104	5.5 (±1)	79.75 (±14.5)			17 (±1)	246.5 (±14.5)	35	507.5	0.85	0.03			3.1	0.12	3.5	0.14	5CR400104A
00	120	5.7 (±0.5)	82.6 (±14.5)			16.8 (±1.5)	243.6 (±21.7)	35	507.5	0.45	0.02			7.25	0.28	7.6	0.30	5CR400120A
00	001	5.8 (±1)	84.1 (±14.5)			22 (±2)	319 (±29)	35	507.5	1.55	0.06			7	0.27	7.5	0.29	5CUR40001A
00	024	5.8 (±1)	84.1 (±14.5)			19 (±1.5)	275.5 (±21.7)	35	507.5	1.55	0.06			6.1	0.24	7.5	0.29	5CUR40024A 5CUR40024C
00	025	5.8 (±1)	84.1 (±14.5)			19 (±1.5)	275.5 (±21.7)	35	507.5	0.75	0.029			5.2	0.20	7.6	0.30	5CUR40025A
00	031	5.8 (±1)	84.1 (±14.5)			19 (±1)	275.5 (±14.5)	35	507.5	1.35	0.05			6.4	0.25	7.6	0.30	5CUR40031A
00	085	6 (±1)	87 (±14.5)			25 (±1.5)	362.5 (±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40085A 5CUR40085B 5CUR40085C 5CUR40085M
DO	085	6 (±1)	87 (±14.5)			25 (±1.5)	362.5 (±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR4D085C
00	105	6 (±0.5)	87 (±7.25)			20 (±1)	290 (±14.5)	35	507.5	0.6	0.02			7.25	0.28	7.6	0.30	5CR400105B
00	111	6 (±1)	87 (±14.5)			25 (±1)	362.5 (±14.5)	35	507.5	0.6	0.02			4.5	0.18	5.2	0.20	5CR400111B
00	053	8 (±0.5)	116 (±7.25)			22.3 (±1)	323.3 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40053A
DO	089	8 (±0.5)	116 (±7.25)			28 (±1)	406 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR4D089C 5CUR4D089D
00	036	12 (±0.5)	174 (±7.25)			25 (±1)	362.5 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40036A
00	107	12 (±1)	174 (±14.5)			20 (±1)	290 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400107A

<sup>(1)</sup> indicates the curve with the specific spring  
For different curves, please contact our Sales Department

### Control curves with step



Curve description		Pressure				Stroke				CODE <sup>(1)</sup>
Type	Nr	A		B		D		E		
		bar ( $\pm$ toll)	psi ( $\pm$ toll)	bar ( $\pm$ toll)	psi ( $\pm$ toll)	mm	in	mm	in	
O1	148	0 ( $\pm$ 0.5)	0 ( $\pm$ 7.25)	13 ( $\pm$ 1)	188.5 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR40148B
O1	099	1 ( $\pm$ 0.5)	14.5 ( $\pm$ 7.25)	20 ( $\pm$ 1.5)	290 ( $\pm$ 21.7)	1.55	0.06	7.5	0.29	5CR401099A
O1	100	1.2 ( $\pm$ 0.5)	17.4 ( $\pm$ 7.25)	18.9 ( $\pm$ 1)	274 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR40100B 5CUR40100M
O1	105	2 ( $\pm$ 0.5)	29 ( $\pm$ 7.25)	8 ( $\pm$ 1)	116 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR40105A
O1	129	2 ( $\pm$ 0.5)	29 ( $\pm$ 7.25)	66 ( $\pm$ 4)	957 ( $\pm$ 58)	0.85	0.03	6.8	0.28	5CUR40129A
O1	154	2 ( $\pm$ 0.5)	29 ( $\pm$ 7.25)	15 ( $\pm$ 1)	217.5 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR40154A 5CUR40154M
O1	138	2.5 ( $\pm$ 0.5)	36.2 ( $\pm$ 7.25)	13 ( $\pm$ 1)	188.5 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR40138A
O1	143	3 ( $\pm$ 0.5)	43.5 ( $\pm$ 7.25)	25 ( $\pm$ 1)	362.5 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR40143A
O1	157	3.4 ( $\pm$ 1)	49.3 ( $\pm$ 14.5)	17.2 ( $\pm$ 1)	249.4 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR40157A 5CUR40157B
O1	096	4 ( $\pm$ 1)	58 ( $\pm$ 14.5)	18 ( $\pm$ 1)	261 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CR401096M
O1	126	4.5 ( $\pm$ 0.7)	65.2 ( $\pm$ 10.1)	30.7 ( $\pm$ 1.5)	445.1 ( $\pm$ 21.7)	0.85	0.03	7.6	0.30	5CUR40126A
O1	166	4.5 ( $\pm$ 0.5)	65.2 ( $\pm$ 7.25)	15 ( $\pm$ 1.5)	217.5 ( $\pm$ 21.7)	0.85	0.03	7.6	0.30	5CUR40166A 5CUR40166M
D1	155	4.8 ( $\pm$ 1)	69.6 ( $\pm$ 14.5)	21.5 ( $\pm$ 1.5)	311.7 ( $\pm$ 21.7)	0.85	0.03	7.6	0.30	5CUR40155A
O1	167	5 ( $\pm$ 0.5)	72.5 ( $\pm$ 7.25)	18 ( $\pm$ 1)	261 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR40167M
O1	170	5 ( $\pm$ 0.5)	72.5 ( $\pm$ 7.25)	20 ( $\pm$ 1)	290 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR40170A 5CUR40170M
O1	175	5 ( $\pm$ 0.5)	72.5 ( $\pm$ 7.25)	16 ( $\pm$ 1.5)	232 ( $\pm$ 21.7)	0.85	0.03	7.6	0.30	5CUR40175A 5CUR40175D
O1	118	5.8 ( $\pm$ 1)	84.1 ( $\pm$ 14.5)	19.5 ( $\pm$ 1.5)	282.7 ( $\pm$ 21.7)	1.55	0.06	7.5	0.29	5CUR40118A
O1	135	5.8 ( $\pm$ 0.5)	84.1 ( $\pm$ 7.25)	23 ( $\pm$ 1.5)	333.5 ( $\pm$ 21.7)	0.85	0.03	7.6	0.30	5CUR40135A 5CUR40135M
O1	192	5.8 ( $\pm$ 0.5)	84.1 ( $\pm$ 14.5)	15 ( $\pm$ 1.5)	217.5 ( $\pm$ 21.7)	0.85	0.03	7.6	0.30	5CUR40192A 5CUR40192M
O1	103	6 ( $\pm$ 1)	87 ( $\pm$ 14.5)	30 ( $\pm$ 2.5)	435 ( $\pm$ 36.2)	0.85	0.03	7.6	0.30	5CUR40103A 5CUR40103M
O1	178	6.5 ( $\pm$ 0.5)	94.2 ( $\pm$ 7.25)	17.8 ( $\pm$ 1)	258.1 ( $\pm$ 14.5)	0.85	0.03	5.8	0.22	5CUR40178A
D1	091	7 ( $\pm$ 1)	101.5 ( $\pm$ 14.5)	27 ( $\pm$ 1)	391.5 ( $\pm$ 14.5)	0.85	0.03	6.2	0.24	5CR4D1091C
O1	115	8.3 ( $\pm$ 0.7)	120.3 ( $\pm$ 10.1)	22.5 ( $\pm$ 1)	326.2 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR40115M
O1	159	10 ( $\pm$ 0.5)	145 ( $\pm$ 7.25)	28 ( $\pm$ 1)	406 ( $\pm$ 14.5)	0.85	0.03	7.6	0.30	5CUR401159A
O1	144	35 ( $\pm$ 2)	507.5 ( $\pm$ 29)	70 ( $\pm$ 3.5)	1015 ( $\pm$ 50.7)	0.85	0.03	7.6	0.30	5CUR40144C

<sup>(1)</sup> indicates the curve with the specific spring

For different curves, please contact our Sales Department



Hydraulic control on directional valves and suggested control curves

Valve type	3 position controls		Control curve			Controls for floating			Control curve	
	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)
<b>Monoblock valves</b>										
SD5 SDM110	8IM	5IDR205021	026	5CUR40026	6.5-14 94.2-203	13IM	5IDR205330	075	5CUR40075	5-15 72.5-217.5
SDM100	8IM	5IDR207300	088	5CUR40088	8-27 116-391.5	13IMS	5IDR207350	125	5CUR40125	8-22.5 116-326.2
SD11 SD14	8IM	5IDR210000	070	5CUR40070	5.8-22.4 84.1-324.8					
SD18	8IM	5IDR220000	070	5CUR40070	5.8-22.4 84.1-324.8					
SDM140 DLM140	8IM	5IDR208300	033	5CUR40033	5.8-19 84.1-275.5	13IM	5IDR208214	075	5CUR40075	5-15 72.5-217.5
SDM141	8IM	5IDR208300	033	5CUR40033	5.8-19 84.1-275.5	13IM	5IDR208214	075	5CUR40075	5-15 72.5-217.5
								E075	5CUR4E075	5-15-16.3 72.5-217.5-236.3
								13CIM	5IDR308313	087
<b>Sectional valves</b>										
SD6	8IM	5IDR206010	075	5CUR40075	5-15 72.5-217.5					
	8IMP	5IDR206020	033	5CUR40033	5.8-19 84.1-275.5					
DLS7	8IMF3	5IDR207000	033	5CUR40033	5.8-19 84.1-275.5					
SDS100	8IM	5IDR207300	088	5CUR40088	8-27 116-391.5	13IMS	5IDR207350	125	5CUR40125	8-22.5 116-326.2
	8IMF3	5IDR207310	088	5CUR40088	8-27 116-391.5					
SD8	8IM	5IDR208300	033	5CUR40033	5.8-19 84.1-275.5					
DLS8	8IMF3	5IDR208220	021	5CR400021	6-16.3 87-236.3					
SDS150	8IM	5IDR216300	033	5CUR40033	5.8-19 84.1-275.5					
	8IM	5IDR216300	033	5CUR40033	5.8-19 84.1-275.5	13IMP	5IDR216014	073	5CUR40073	4-18 58-261
	8IMF3	5IDR216303	033	5CUR40033	5.8-19 84.1-275.5					
SDS180	8IMSPSL4P	5IDR218012	028	5CUR40028	5-21 72.5-304.5					
	8IMO	5IDR216000	033	5CUR40033	5.8-19 84.1-275.5					
DLS180	8IMD	5IDR218300	V1=028	5CUR40028	5-21 72.5-304.5					
			V2=073	5CUR40073	4-18 58-261					
	8IM	5IDR216300	033	5CUR40033	5.8-19 84.1-275.5					
	8IMF3	5IDR216303	033	5CUR40033	5.8-19 84.1-275.5					
SD25	8IMO	5IDR216000	073	5CUR40073	4-18 58-261					
	8IMOHF3	5IDR216303-H	073	5CUR40073	4-18 58-261					
SDS400	8IM	5IDR225300	004	5CUR40004	4.9-18.9 71-274	13IM	5IDR225360	156	5CUR40156	3.4-14.5 49.3-210.2
	8IMO	5IDR225000	033	5CUR40033	5.8-19 84.1-275.5	13IMO	5IDR225350	156	5CUR40156	3.4-14.5 49.3-210.2
SDS400	8IM	5IDR208300	028	5CUR40028	5-21 72.5-304.5	13IM	5IDR208310	028	5CUR40028	5-21 72.5-304.5

<sup>(1)</sup> Codes listed show the control curve without return spring reference: for spring details see page 70.

### Hydraulic control on directional valves and suggested control curves

Valve type	3 position controls		Control curve			Controls for floating		Control curve		
	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)	Type	Code	Type	Code <sup>(1)</sup>	Range (bar/psi)
<b>Pressure pre-compensated Load-Sensing and Flow Sharing valves</b>										
<b>DPC130</b>	8IM	5V08130800	<b>020</b>	5CUR40020	4.3-15.2 62.3-220.4					
<b>DPC200</b>	8IM	5V08200801	<b>020</b>	5CUR40020	4.3-15.2 62.3-220.4					
<b>DPX050</b>	8IM	5IDR20A300	<b>089</b>	5CUR40089	8-28 116-406	13IMP	5IDR20A310	<b>089</b>	5CUR40089	8-28 116-406
	8IMF3	5IDR20A302	<b>089</b>	5CUR40089	8-28 116-406					
	8IMX	5IDR20A301	<b>028</b>	5CUR40028	5-21 72.5-304.5					
	8IMXF3	5IDR20A303	<b>028</b>	5CUR40028	5-21 72.5-304.5					
<b>DPX100</b>	8IMN	5IDR204304	<b>089</b>	5CUR40089	8-28 116-406	13IMS	5IDR207350	<b>098</b>	5CUR40098	7-22.5 101.5-326.2
	8IMF3N	5IDR204314	<b>089</b>	5CUR40089	8-28 116-406					
	8IMXN	5IDR204303	<b>054</b>	5CUR40054	6.2-24.5 89.9-355.2					
	8IMXF3N	5IDR204313	<b>054</b>	5CUR40054	6.2-24.5 89.9-355.2					
<b>DPX160</b>	8IMN	5IDR209304	<b>089</b>	5CUR40089	8-28 116-406	13IM	5IDR209303	<b>089</b>	5CUR40089	8-28 116-406
	8IMF3N	5IDR209305	<b>089</b>	5CUR40089	8-28 116-406	13IMP	5IDR209014	<b>073</b>	5CR400073	4-18 58-261

<sup>(1)</sup> Codes listed show the control curve without return spring reference: for spring details see page 70.



## Feed units and accessories

- 2 Way series with or without unloader valve (AVN020)
- Range from 1 to 4 stages with and without accumulator
- Diverter valve for pilot hydraulic control system

### AVN020 working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46mm<sup>2</sup>/s - 46 cSt viscosity at 40°C - 104°F temperature.

Max. pressure on inlet	on inlet, P port	350 bar - 5075 psi
Nominal secondary pressure		30 bar - 435 psi
Flow rating range		from 5 to 20 l/min - from 1.32 to 5.28 USgpm
Max. backpressure	to outlet, T port	3 bar - 43.5 psi
Fluid		mineral oil
Fluid temperature	with NBR (BUNA-N) seals	from -20°C to 80°C - from -4°F to 176°F
Viscosity	operating range	from 15 to 75 mm <sup>2</sup> /s - from 15 to 75 cSt
	min.	12 mm <sup>2</sup> /s - 12 cSt
	max.	400 mm <sup>2</sup> /s - 400 cSt
Max. contamination level		-/19/16 - ISO 4406 - NAS1638 class 10
Ambient temperature	without electric devices	from -40°C to 60°C - from 40°F to 140°F
	with electric devices	from -20°C to 50°C - from -4°F to 122°F

NOTE - for different conditions please contact Sales Dpt

### FU series working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46mm<sup>2</sup>/s - 46 cSt viscosity at 40°C - 104°F temperature.

		FU/1	FU/2	FU/33
Max. pressure on inlet	on inlet P port	350 bar - 5075 psi	210 bar - 3045 psi	350 bar - 5075 psi
Flow rating range		60 l/min - 15.85 USgpm	12 l/min - 3.17 USgpm	8 l/min - 2.11 USgpm
Fluid		mineral oil		
Fluid temperature	with NBR (BUNA-N) seals	from -20°C to 90°C - from -4°F to 194°F		
Viscosity	operating range	from 15 to 75 mm <sup>2</sup> /s - from 15 to 75 cSt		
	min.	20 mm <sup>2</sup> /s - 20 cSt		
	max.	200 mm <sup>2</sup> /s - 200 cSt		
Max. contamination level		18/16/13 - ISO 4406 - NAS1638 class 6		
Ambient temperature	without electric devices	from -40°C to 60°C - from 40°F to 140°F		
	with electric devices	from -20°C to 50°C - from -4°F to 122°F		

NOTE - for different conditions, please contact our Sales Dpt

### DHV080 working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46mm<sup>2</sup>/s - 46 cSt viscosity at 40°C - 104°F temperature.

Nominal flow rating	10 l/min - 2.64 Usrpm
Nominal pressure	100 bar - 1450 psi
Internal leakage (100 bar - 1450 psi)	10 cm <sup>3</sup> /min - 0.61 in <sup>3</sup> /min
Fluid	mineral oil
Viscosity (operating range)	from 12 to 400 mm <sup>2</sup> /s - from 12 to 400 cSt
Max. contamination range	-/19/16 - ISO 4406 - NAS1638 class 10
Fluid temperature	from -20° C to 80° C - from -4° F to 176° F
Ambient temperature	from -40° C to 60° C - from 40° F to 140° F
Salt spray (fog) testing	(ISO9227) 70 h

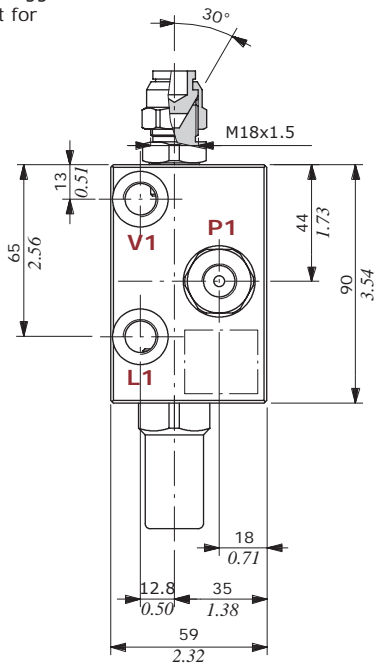
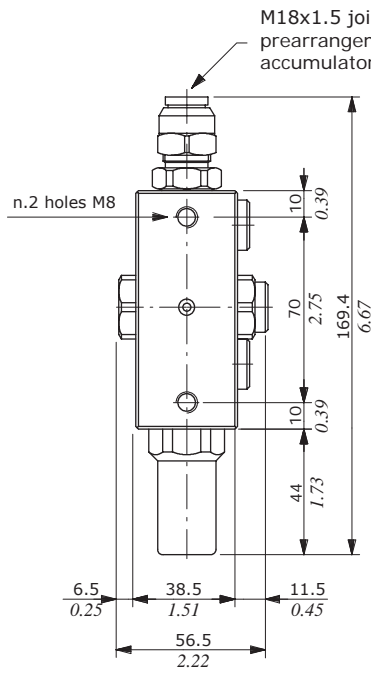
NOTE - for different conditions please contact Sales Dpt

### REFERENCE STANDARD

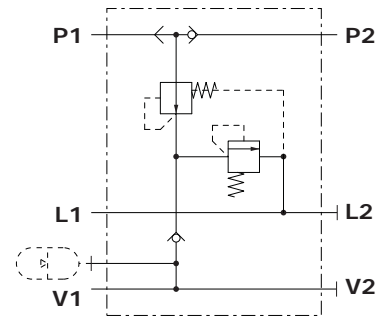
		BSP	UN-UNF
THREAD ACCORDING TO		ISO 228/1	ISO 263
		BS 2779	ANSI B1.1 unified
CAVITY DIMENSION ACCORDING TO	ISO	1179	11926
	SAE		J11926
	DIN	3852-2 X or Y shape	

AVN020 dimensions and hydraulic circuit

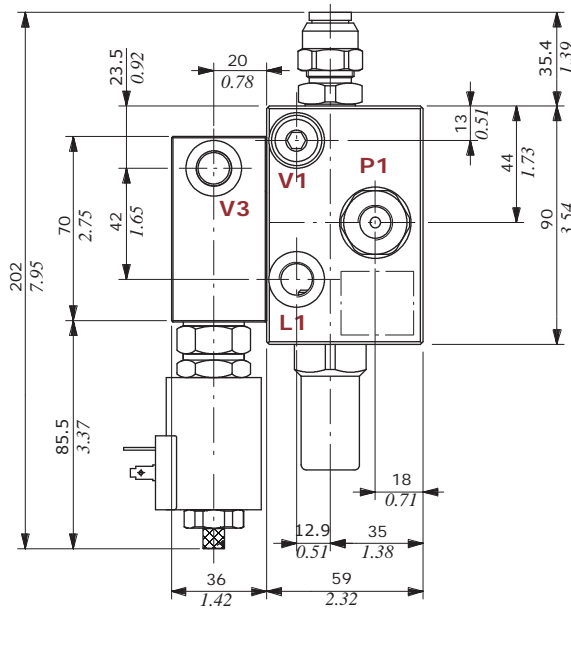
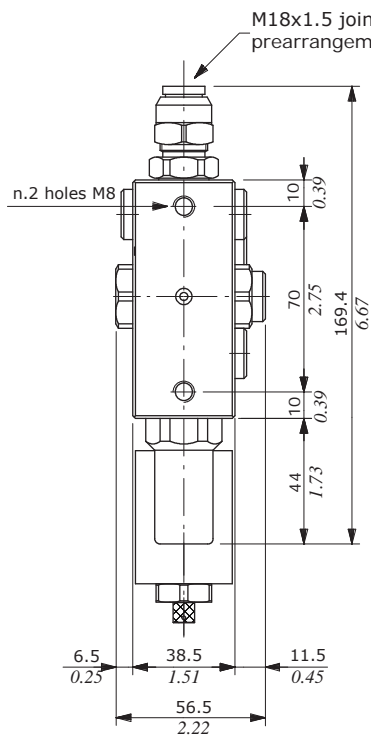
Version without unloader valve



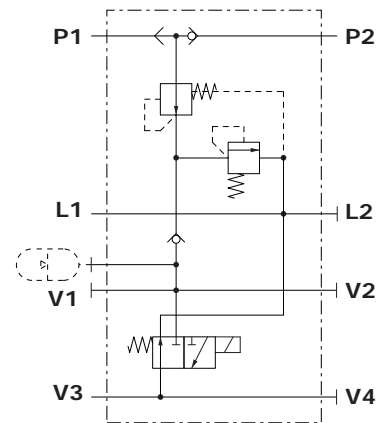
Hydraulic circuit



Version with unloader valve



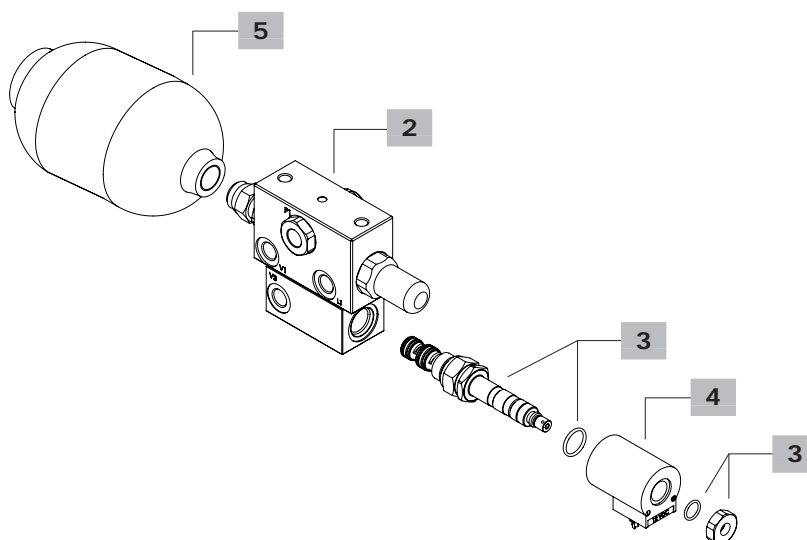
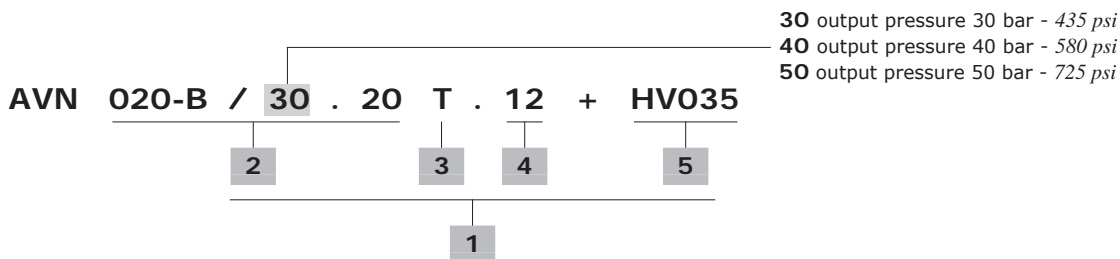
Hydraulic circuit



THREAD AND FITTING TIGHTENING TORQUES

Ports	Threads		Fitting tightening torque	
	BSP	UN-UNF	Nm	lbf <sup>t</sup>
P1 inlet	G 1/4	9/16-18 (SAE 6)	30	22.13
L1, L2, V1, V2, V3, V4 Ports	G 1/4	9/16-18 (SAE 6)	30	22.13

### AVN020 ordering codes



#### 1 Complete unit \*

##### Without unloader valve

TYPE: **AVN020-B/30.00** CODE: 180010001

DESCRIPTION: with 2 pressure ports, outlet pressure 30 bar - 435 psi

TYPE: **AVN020-B/40.00** CODE: 180010002

DESCRIPTION: with 2 pressure ports, outlet pressure 40 bar - 580 psi

TYPE: **AVN020-B/50.00** CODE: 180010003

DESCRIZIONE: with 2 pressure ports, outlet pressure 50 bar - 725 psi

#### 2 Body kit \*

TYPE	CODE	DESCRIPTION
<b>020-B/00.20</b>	5C02902201	with 2 pressure ports

NOTE: outlet pressure 30, 40 and 50 bar - 435, 580, 725 psi

#### 3 Unloader valve

TYPE	CODE	DESCRIPTION
<b>T</b>	0EJ08002043	With emergency screw

#### 4 Coil

TYPE	CODE	DESCRIPTION
<b>12</b>	4SL3000120	12VDC, ISO4400 connector
<b>24</b>	4SL3000240	As previous 24VDC
<b>12(JPT)</b>	4SL3000122	12VDC, AMP/JPT connector
<b>24(JPT)</b>	4SL3000248	As previous 24VDC
<b>12(JPT+DIODO)</b>	4SL3001200	12VDC, AMP/JPT connector with diode
<b>12(DT04)</b>	4SL3000130	12VDC, DEUTSCH/DT04 connector
<b>24(DT04)</b>	4SL3000249	As previous 24VDC
<b>12(DT04+DIODO)</b>	4SL3000132	12VDC, DEUTSCH/DT04 connector, with diode
<b>24(DT04+DIODO)</b>	4SL3000247	As previous 24VDC

#### 5 Optional accumulator

TYPE	CODE	DESCRIPTION
<b>HV035</b>	2X280020340S	Capacity 350 cm <sup>3</sup> - 21.36 in <sup>3</sup>
<b>HV050</b>	2X280020500S	Capacity 500 cm <sup>3</sup> - 30.51 in <sup>3</sup>
<b>HV075</b>	4AC7742000	Capacity 750 cm <sup>3</sup> - 45.77 in <sup>3</sup>
<b>HV090</b>	2X280020700S	Capacity 900 cm <sup>3</sup> - 54.92 in <sup>3</sup>
<b>HV150</b>	2X280021400S	Capacity 1500 cm <sup>3</sup> - 91.53 in <sup>3</sup>

NOTE (\*) – Codes are referred to **BSP** thread.



## FU series configuration examples

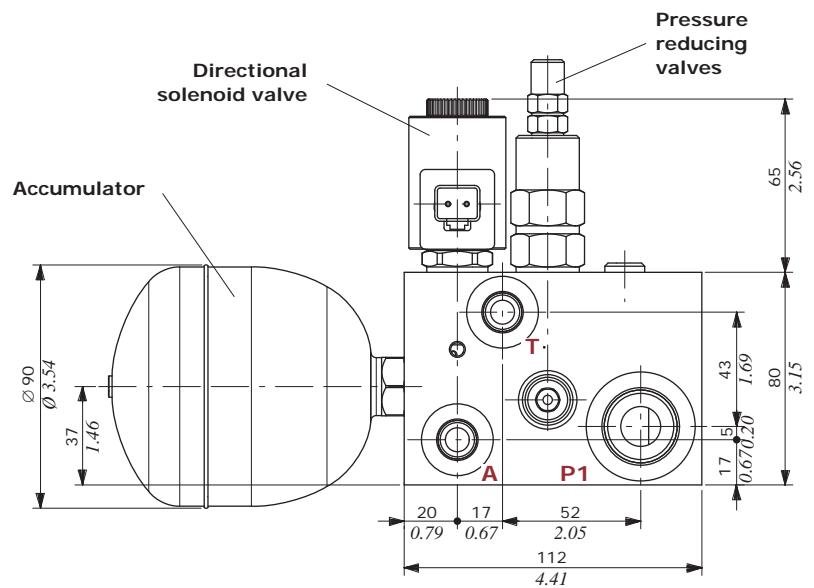
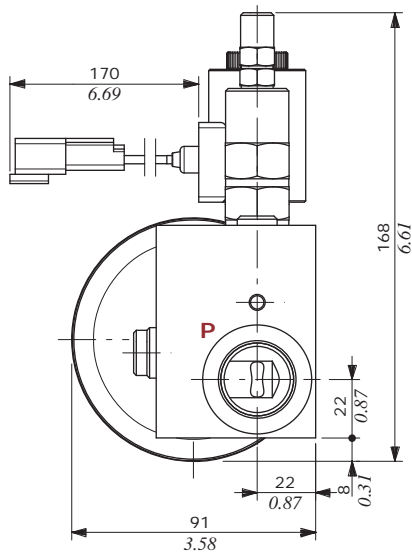
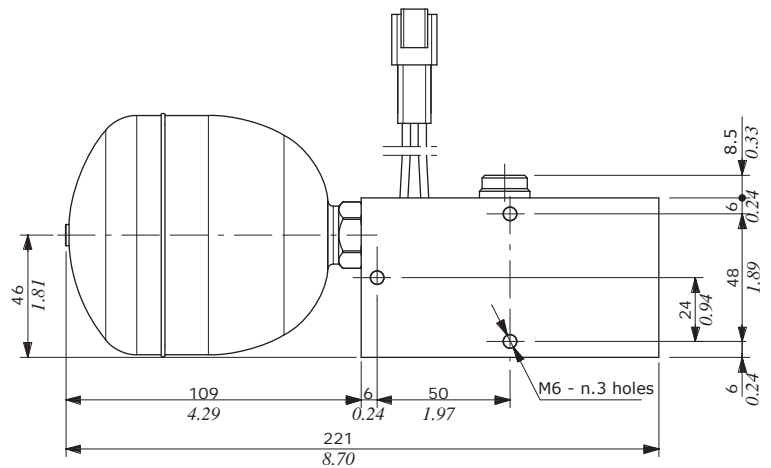
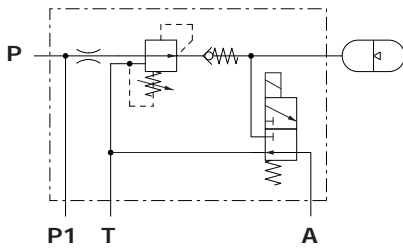
### Type FU/1 - one stage

CODE: 1992752200

TYPE: FU-AC(SAE6-11)-RB08A(35)-F-NV/1EJ08F4(L=170)/NPM-SAE6(AT)12(PP1)-12VDC

DESCRIPTION: one stage, with pressure reducing valve on inlet, 0.35 l accumulator and directional solenoid valve for the supply and control of the pressure line.

Hydraulic circuit



### PORTS THREADING AND FITTINGS TIGHTENING TORQUE

PORTS	Threads (different threads on request)	Fitting tightening torque	
		Nm	lbf <sup>t</sup>
P, P1 inlet	1 1/16-12 UN (SAE 12)	65	48
A port	9/16-18 UNF (SAE 6)	30	22
T outlet	9/16-18 UNF (SAE 6)	30	22
Accumulator connection	9/16-18 UNF (SAE 6)	30	22

NOTE – These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The fittings manufacturer has to be consulted.



FU series configuration examples

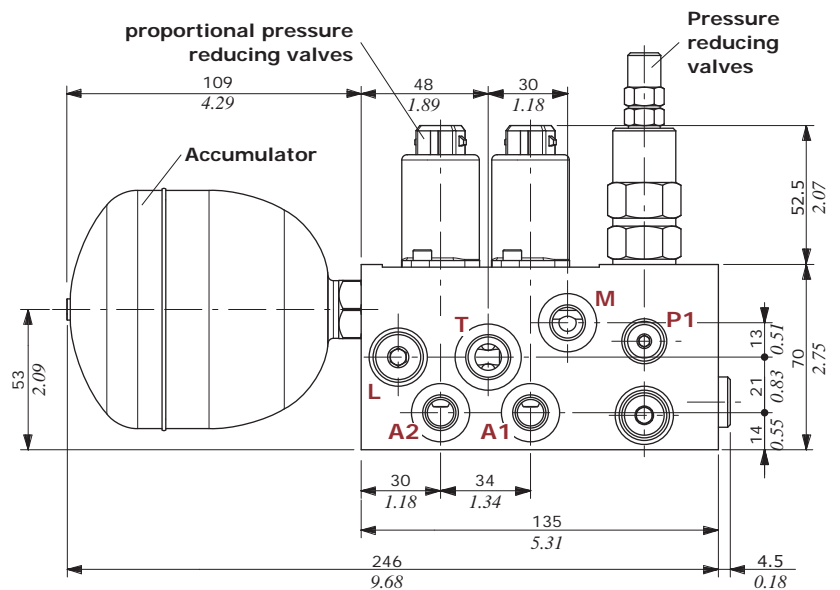
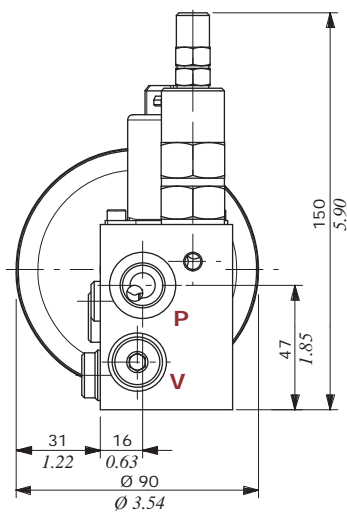
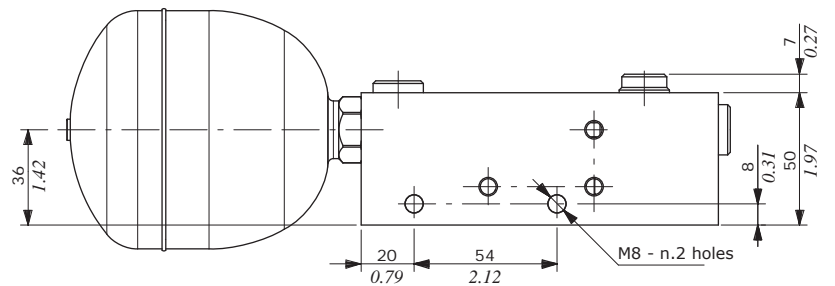
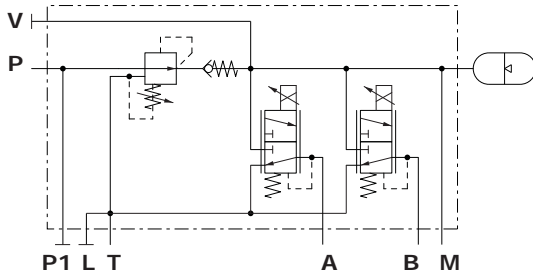
Type FU/2 - two stages

CODE: 1992820001

TYPE: FU-AC(SAE6-11)-RB08A(35)-F-NV/2RPT2/PMA-P1-L-V-BSP-24VDC-<TAP(P1LV)>

DESCRIPTION: two stages, with pressure reducing valve on inlet, 0.35 l accumulator and 2 proportional pressure reducing valves for the supply and control of the pressure lines.

Hydraulic circuit



PORTS THREADING AND FITTINGS TIGHTENING TORQUE

PORTS	Threads (different threads on request)	Fitting tightening torque	
		Nm	lbft
P Inlet	BSP G 3/8	42	31
P1 Inlet	BSP G 1/8	24	17.7
A, B, M, L, V Ports	BSP G 1/4	30	22
Outlet T	BSP G 3/8	42	31
Accumulator connection	9/16-18 UNF (SAE 6)	30	22

NOTE - These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The fittings manufacturer has to be consulted.

## FU series configuration examples

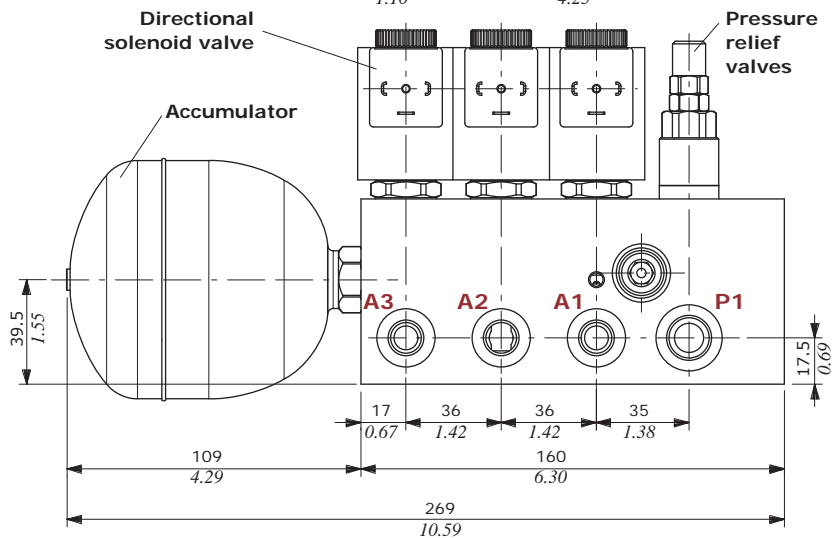
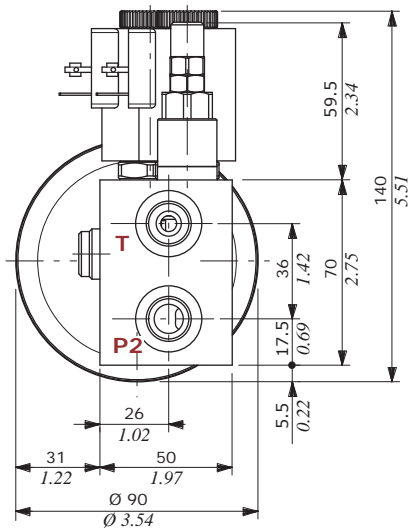
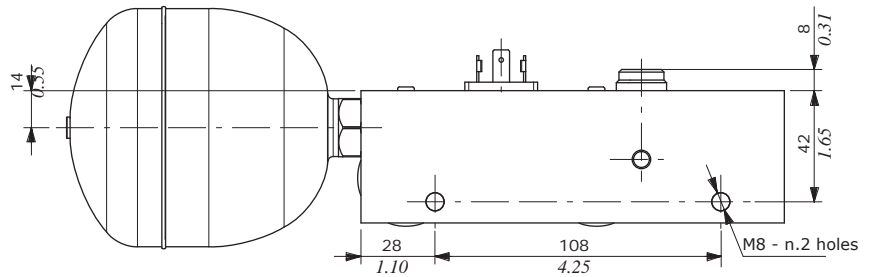
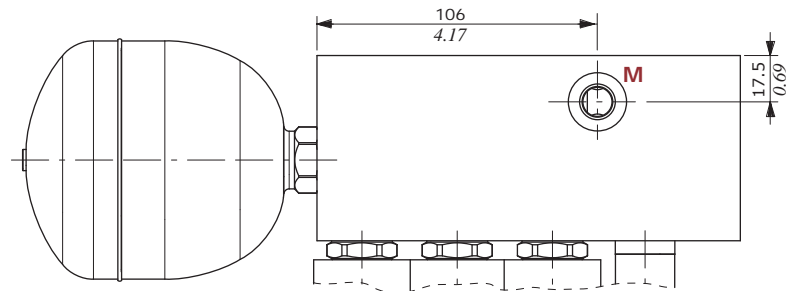
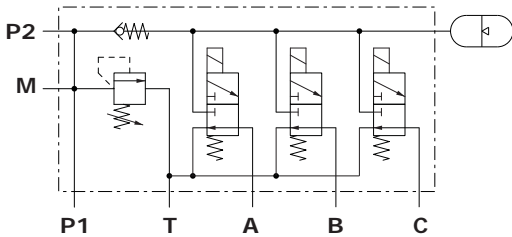
### Type FU/3 - three stages

CODE: 1992830000

TYPE: FU-AC(SAE6-11)-NR-A-VMP5JN(TB.S-35)/3-EJ08F/PMI-P2-BSP-12VDC

DESCRIPTION: three stages, with pressure relief valve on inlet, 0.35 l accumulator and 3 directional solenoid valves for the supply and control of the pressure lines.

Hydraulic circuit



### PORTS THREADING AND FITTINGS TIGHTENING TORQUE

PORTS	Threads (different threads on request)	Fitting tightening torque	
		Nm	lbft
P1 inlet	BSP G 3/8	42	31
P2 inlet	BSP G 3/8	42	31
A1, A2, A3, M ports	BSP G 1/4	30	22
T outlet	BSP G 3/8	42	31
Accumulator connection	9/16-18 UNF (SAE 6)	30	22

NOTE – These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The fittings manufacturer has to be consulted.

FU series configuration examples

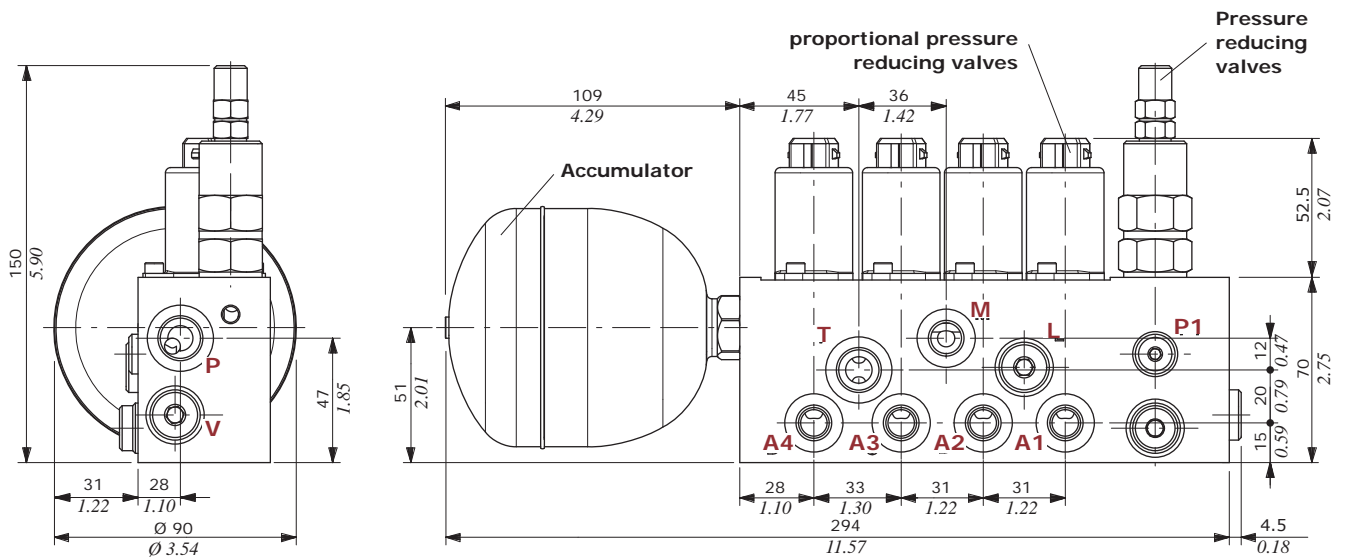
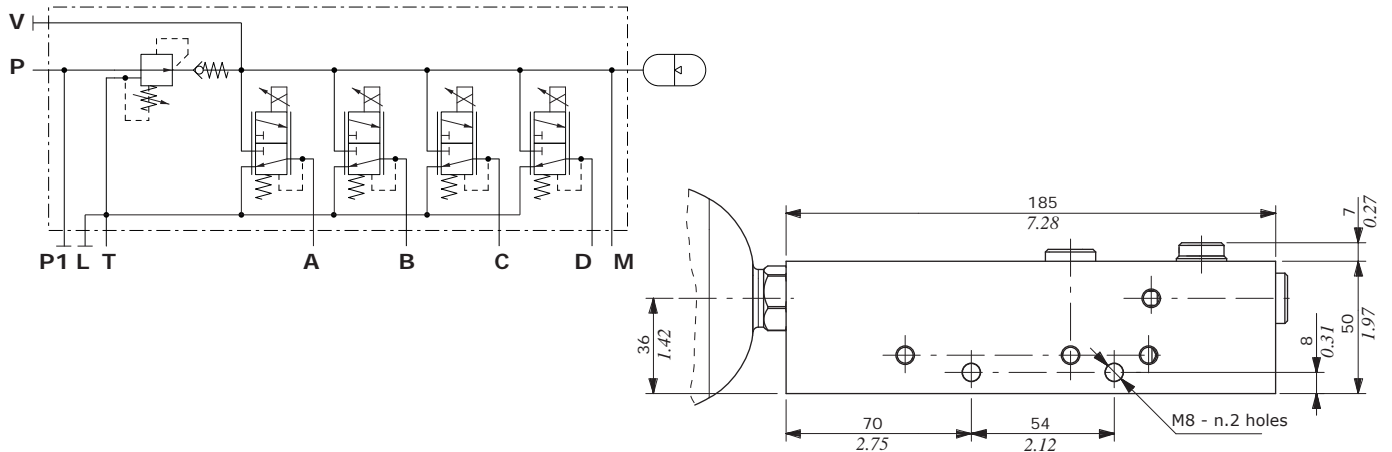
Type FU/4 - four stages

CODE: 1992840000

TYPE: FU-AC(SAE6-11)-RB08A(35)-F-NV/4RPT2/PMA-P1-L-V-BSP-24VDC-<TAP(P1LV)>

DESCRIPTION: four stages, with pressure reducing valve on inlet, 0.35 l accumulator and 4 proportional pressure reducing valves for the supply and control of the pressure lines.

Hydraulic circuit



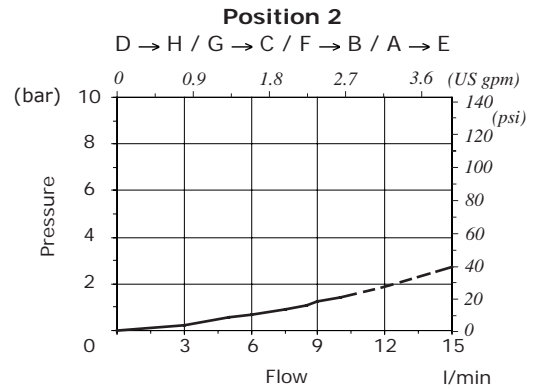
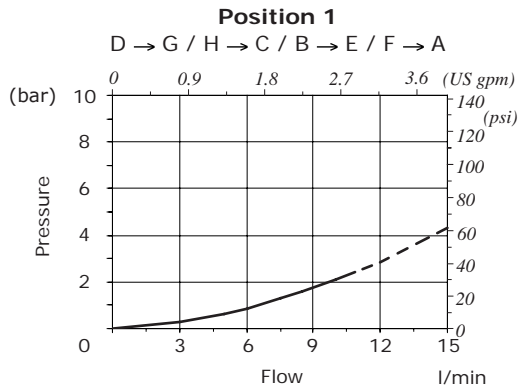
PORTS THREADINGS AND FITTING TIGHTENING TORQUE

PORTS	Threads (different threads on request)	Fitting tightening torque	
		Nm	lbft
P inlet	BSP G 3/8	42	31
P1 inlet	BSP G 1/8	24	17.7
A, B, C, D, M, L, V ports	BSP G 1/4	30	22
T outlet	BSP G 3/8	42	31
Accumulator connection	9/16-18 UNF (SAE 6)	30	22

NOTE - These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The fittings manufacturer has to be consulted.

### DHV080 diverter valve

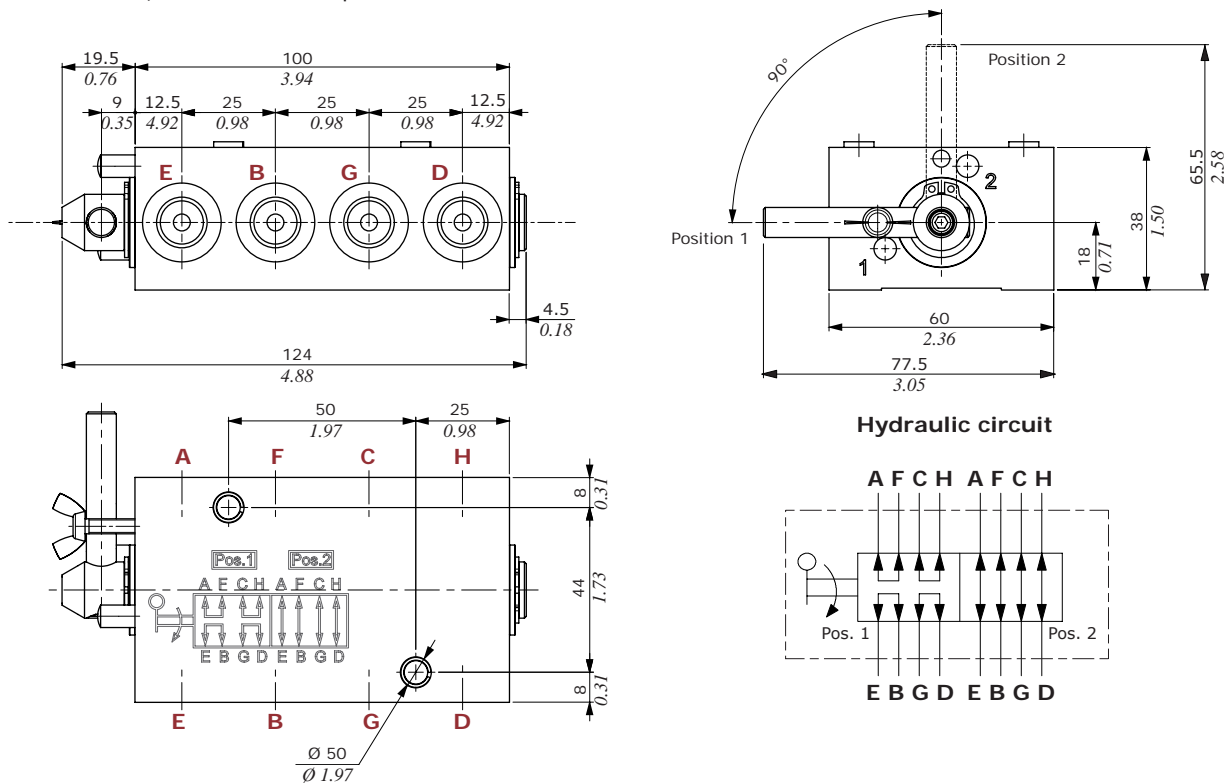
#### Pressure drop



#### Dimensions and hydraulic circuit

The diverter valve is available in this configuration: **DHV080/8LN-BSP-<CVN>** code **140080000**

Supplied as standard, with one coat of primer black antirust.



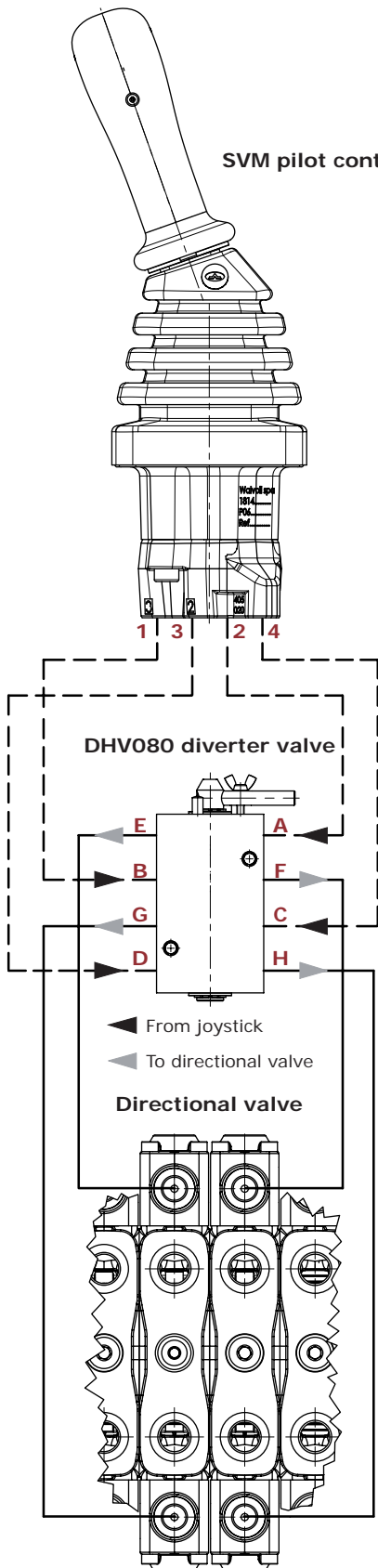
#### PORT THREADING AND FITTING TIGHTENING TORQUE

PORTS	Threads		Fitting tightening torque	
	BSP	UN-UNF	Nm	lbft
A, B, C, D, E, F, G, H ports	G 1/4	7/16-20 UNF-2B (SAE4)	30	22

NOTE – These torque are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finish. The manufacturer shall be consulted.

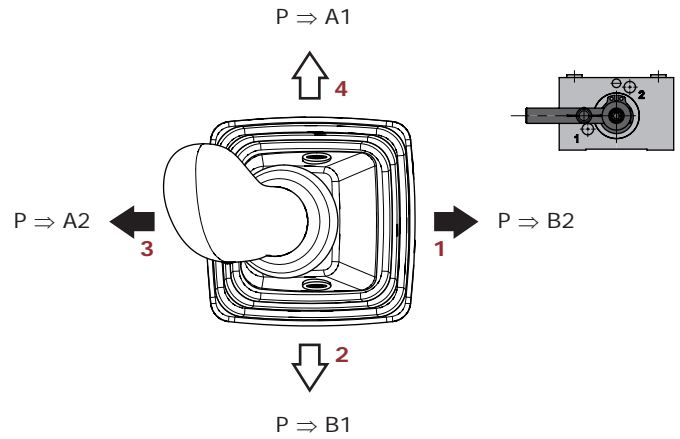
DHV080 diverter valve

Typical application

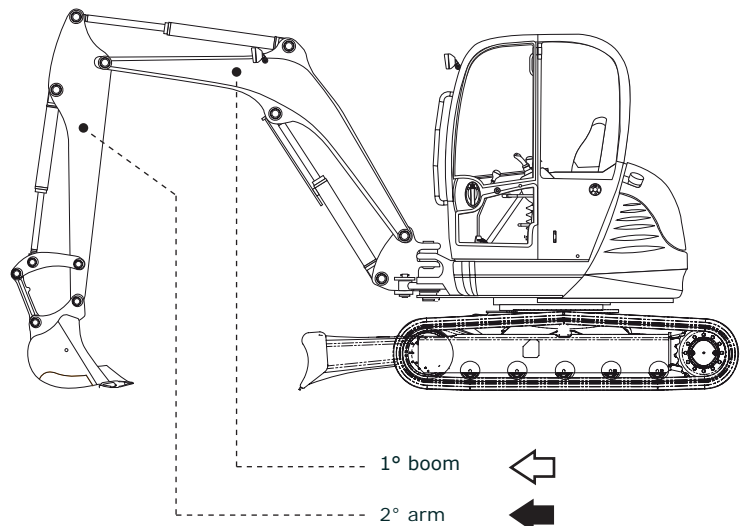
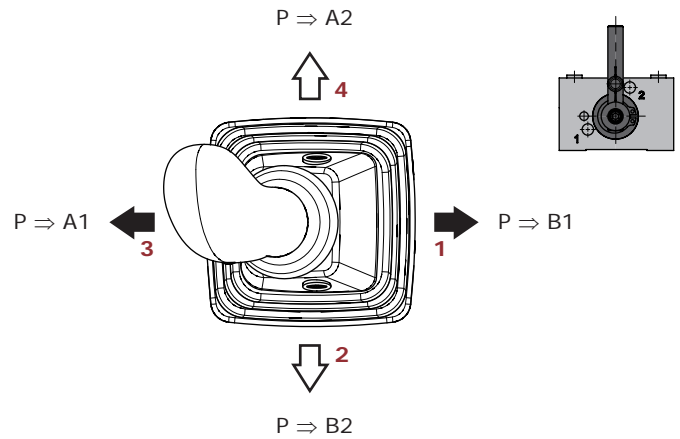


Joystick movement

**Diverter valve in position 1**  
Backhoe configuration



**Diverter valve in position 2**  
Mini-excavator configuration







1<sup>st</sup> edition April 2014

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