



SVM hydraulic joysticks

SVM100-SVM101 / SVM400 / SVM430 series/SVM405/ SVM320

- 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 46mm²/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 (12 l/min for SVM320 - 3.17 USgpm for SVM320)
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 ³ /min - from 0.15 to 0.27 in ³ /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 ² /s - from 15 to 75 cSt
Viscosity	min.	12 mm ² /s - 12 cSt
	max.	400 mm ² /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 lbf ^t

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	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	lbf ^t
P Inlet	G 1/4	7/16-20 (SAE 4)	30	22.1
Ports	G 1/4	7/16-20 (SAE 4)	30	22.1
T Outlet	G 1/4	7/16-20 (SAE 4)	30	22.1

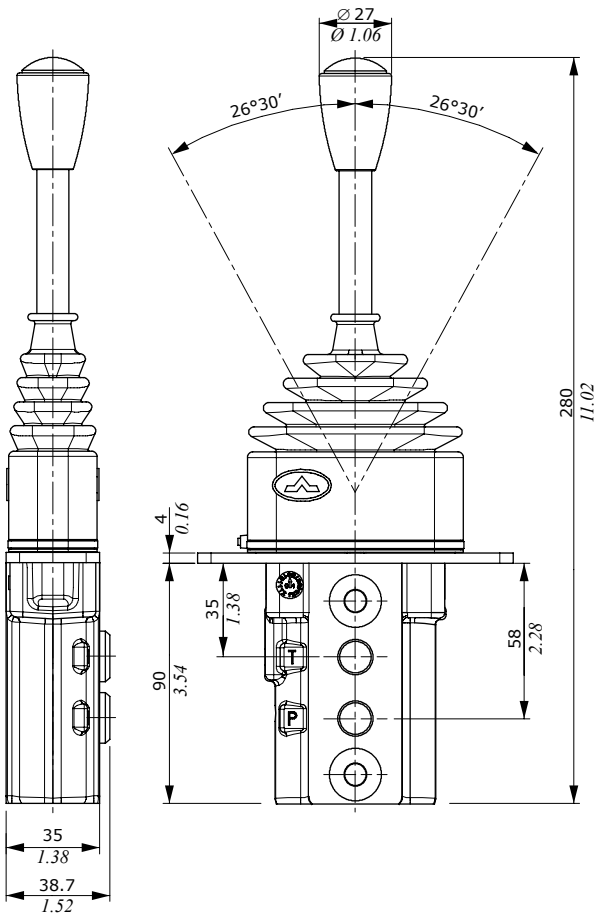
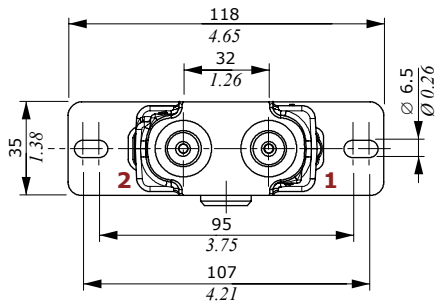
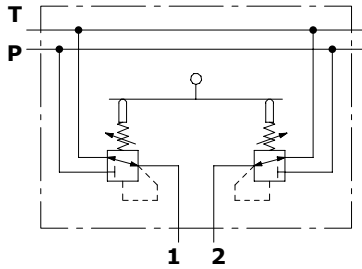
NOTE - These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The manufacturer has to be consulted.

Dimensions and hydraulic circuit

Single acting version

Single function configuration with side P and T ports.

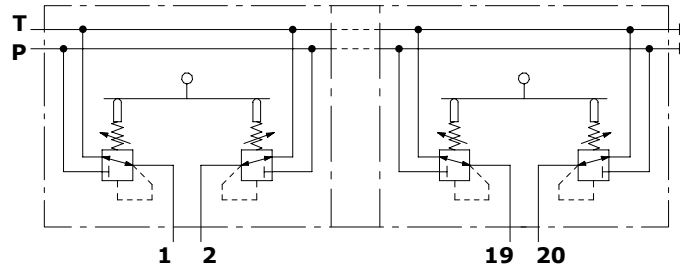
Hydraulic circuit



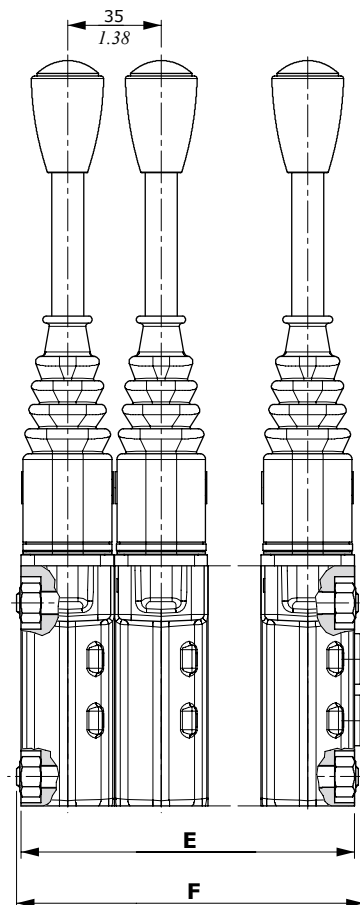
SVM100/n version

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					

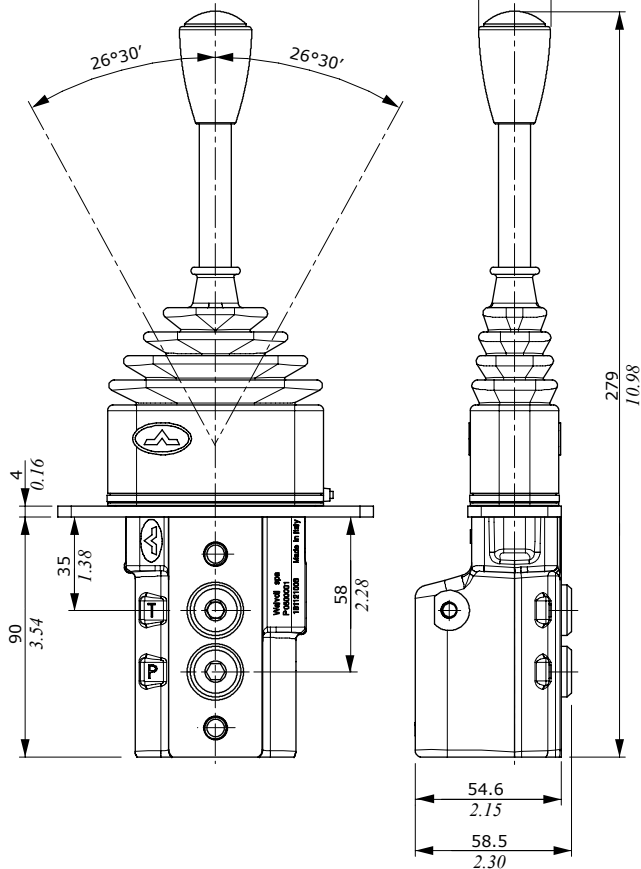
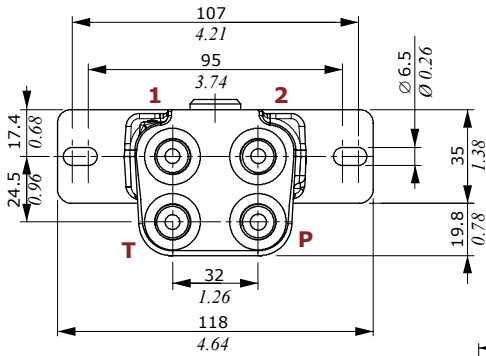
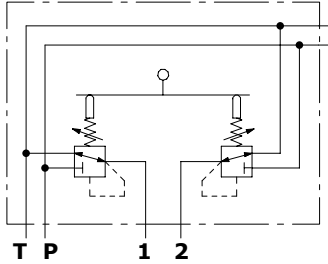


Dimensions and hydraulic circuit

SVM101 version

Single function configuration with bottom P and T ports.

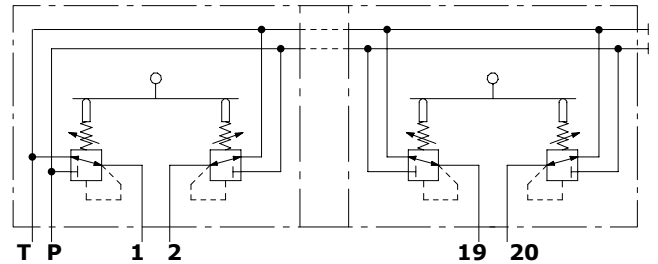
Hydraulic circuit



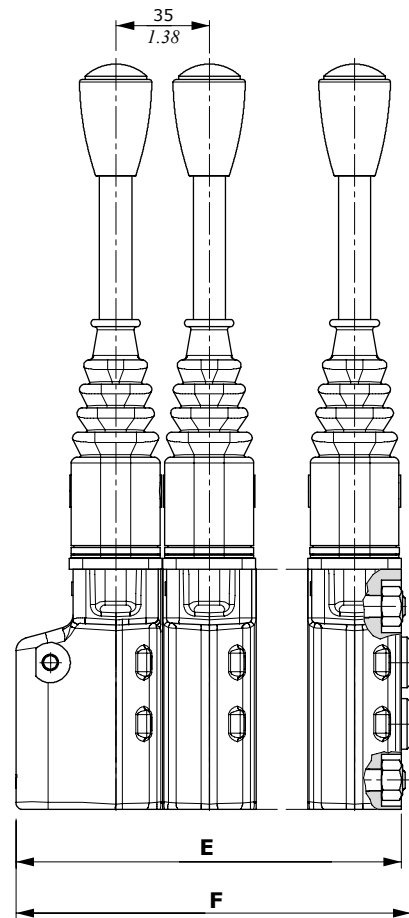
SVM101/n version

Multiple function configuration with bottom P and T ports.

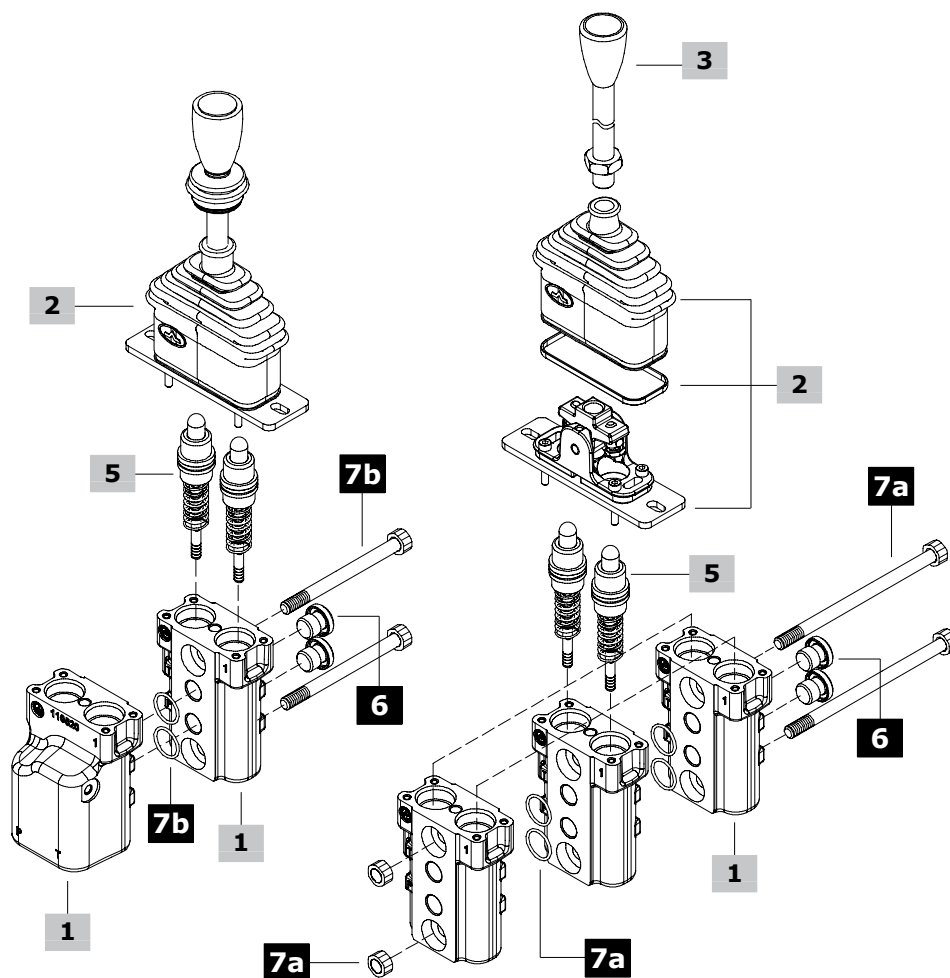
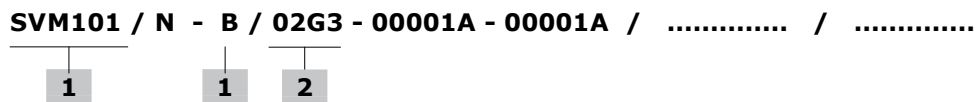
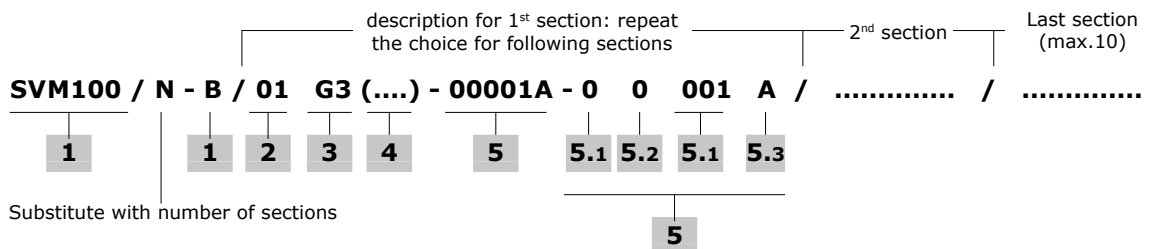
Hydraulic circuit



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



1 Body kit *

TYPE	CODE	DESCRIPTION
SVM100-B	3CO3122300	With side P and T ports
SVM101-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
01	5CIN101000	Spring return to neutral position
03S	5CIN103008	With friction and neutral sensing, for 10, V, H, P and S series handles
05	5CIN105000	With detent in pos. 1 and spring return in neutral position
06	5CIN106000	With detent in pos. 2 and spring return in neutral position
07	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
02G3	5CIN102000	With detent in neutral position, spring return in neutral position and type G knob; can not be used on two adjacent sections
03G3	5CIN103000	With friction and neutral sensing, G knob
03E3	5CIN103005	As previous one, E knob, 15° bending rod
03JL3	5CIN103004	As previous one, JL knob
10G3	5CIN110000	With friction and detent in neutral position, G knob; can not be used on two adjacent sections
11G3	5CIN111000	Detent in 3 positions, G knob; can not be used on two adjacent sections
16G3	5CIN116000	With (NO) microswitch operation in either directions, neutral sensing, spring return in neutral position, G knob
16TM3G3	5CIN116005	With (NC) microswitch operation in either directions, spring return in neutral position, G knob, Heavy Duty configuration
16TM1G3	5CIN116004	As 16TM3G3, microswitch operation with lever towards port 1
16TM2G3	5CIN116004	As 16TM3G3, microswitch operation with lever towards port 2
20G3	5CIN120000	Detent in position 1 and 2, friction, neutral sensing, G knob
22G3	5CIN122000	With (NO) microswitch operation in either directions, friction, G knob

3 Standard handlevers**Without microswitch:**

TYPE	CODE	DESCRIPTION
G3	5AST271218G	Ogival with portlight, straight rod (STANDARD)
G3(15)	5AST371227G	Ogival with portlight, 15° sloping rod
G3(30)	5AST371228G	Ogival with portlight, 30° sloping rod
E	5AST371215E	Spherical with portlight, 15° sloping rod

With microswitch: Not available with control type 07-16-20-22
CAUTION: for assembly requirements these handlevers, if ordered as a spare parts, will be supplied complete with rubber bellow

TYPE	CODE	DESCRIPTION
JJ3	5AST271218J	With spring return
JM3	5AST271218M	With detent rocker switch

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

4 Handle position**Only for sloping rod**

TYPE	DESCRIPTION
(0)	Handlever oriented towards plugged P and T ports
(90)	Handlever oriented towards port 1
(180)	Handlever oriented towards open P and T ports
(270)	Handlever oriented towards port 2

5 Pressure control curves

For list available see from page 27

5.1 Curve type

TYPE	DESCRIPTION
0	Standard

5.2 Typology of curves

TYPE	DESCRIPTION
0	With step
1	Without step
2	Piecewise with step
3	Piecewise without step

5.3 Curve identification

Progressive number

5.4 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 31 to 62.07 lbf</i>

6 Closing plugs *

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

7b Assembling kit for SVM100

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

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

7b Assembling kit for SVM101

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

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

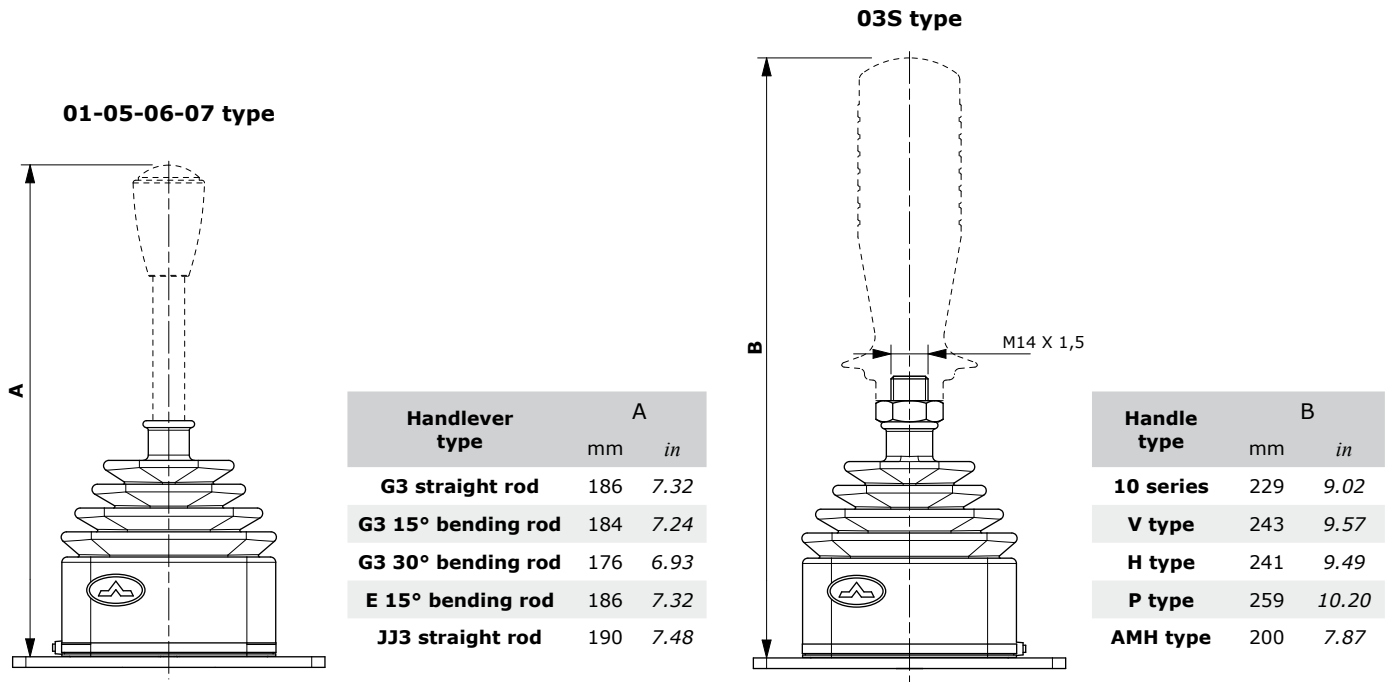
NOTE (*) – Codes are referred to **BSP** thread.

Configuration option

Controls without handlevers

Controls type

- 01:** Spring return to neutral position
- 05:** With detent in position 1 and spring return in neutral position
- 06:** With detent in position 2 and spring return in neutral position
- 07:** With detent in positions 1 and 2; spring return in neutral position
- 03S:** With friction and neutral sensing, arranged for handles with M14x1.5 thread (see the "handles and handlevers" catalogue)

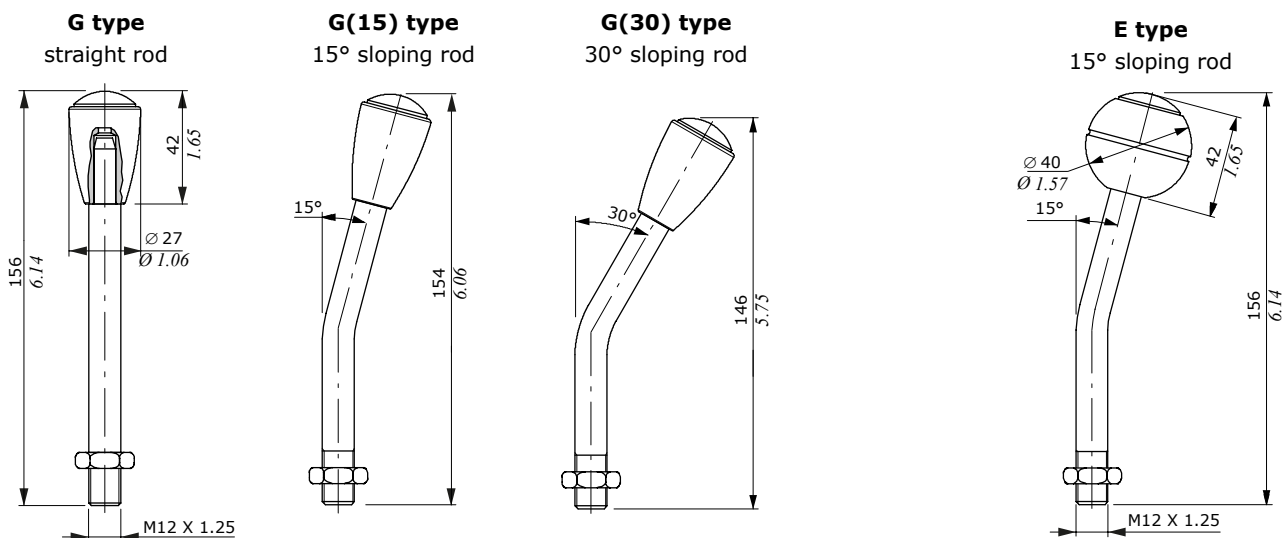


Handlevers

Without microswitch

G type: Ogival knob with customizable portlight. It's possible to insert labels with specific machine functions (for example: lifting function): please contact our Sales Department.

E type: Spherical handle customizable as G type.



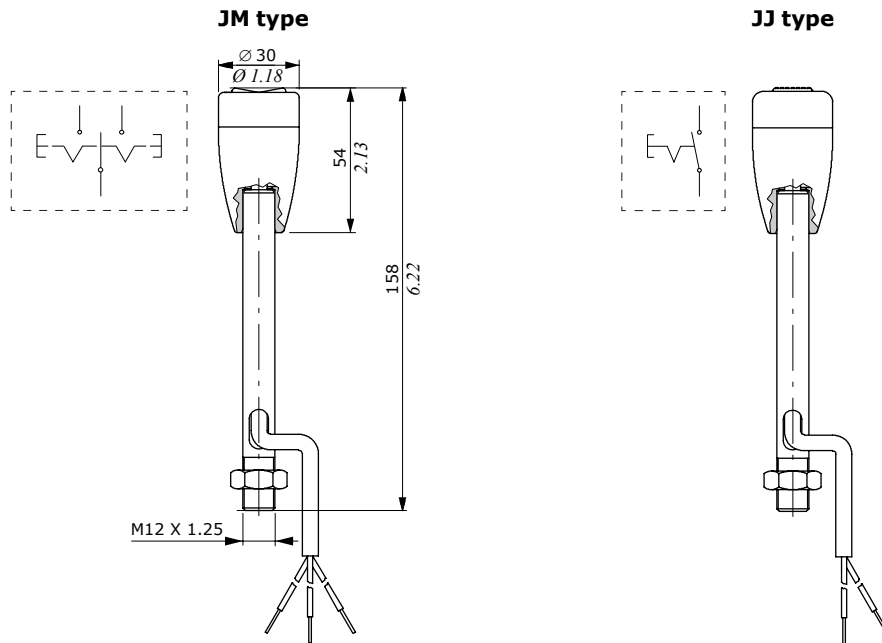
Handlevers

With microswitch

JM type: Ogival knob, small dimensions, available with detent rocker microswitch.

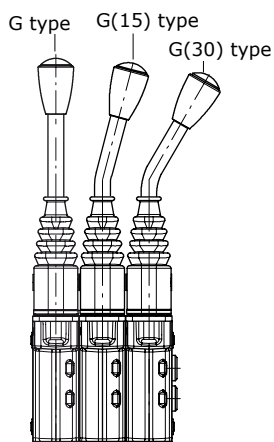
JJ type: As previous one, available with spring return push-button microswitch.

For technical features see catalogue D1WWEH01I.

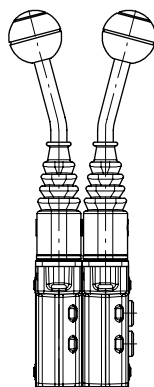


Mounting and orientation examples

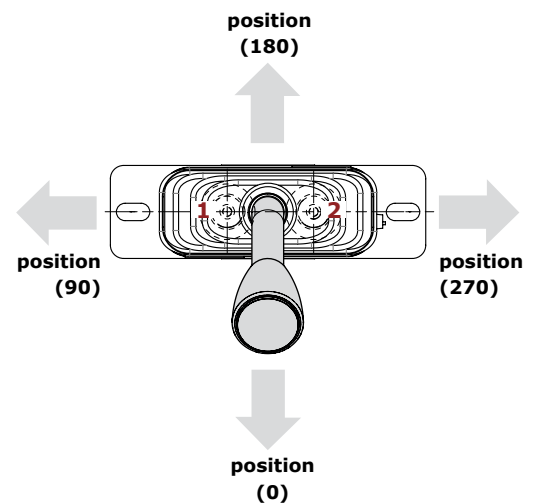
G type
on 3 sections
pilot control valve



E type
on 2 sections
pilot control valve



Sloping rod position



Configuration option

Controls with hand levers

Without microswitch

02G3: With detent in neutral position; it can not be used on two adjacent sections.

03G3: With friction: stop in any positions and neutral sensing. Ogival with portlight G type knob.

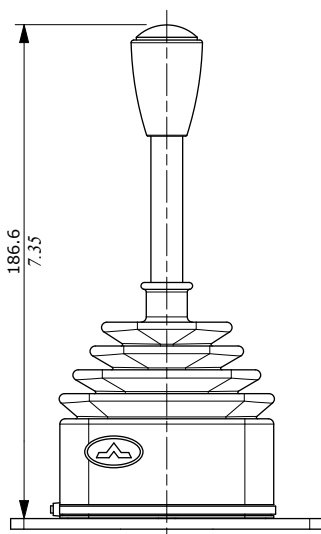
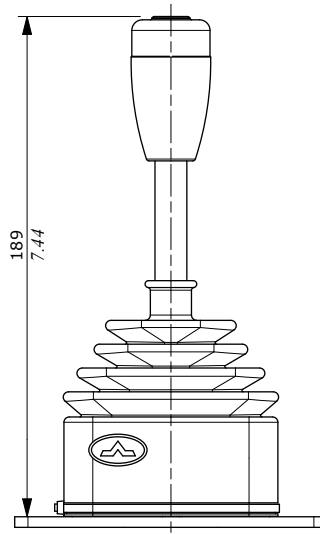
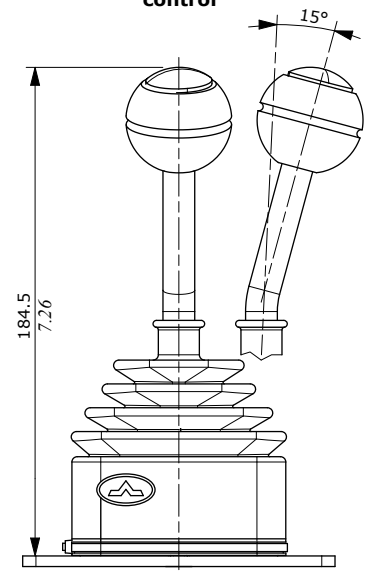
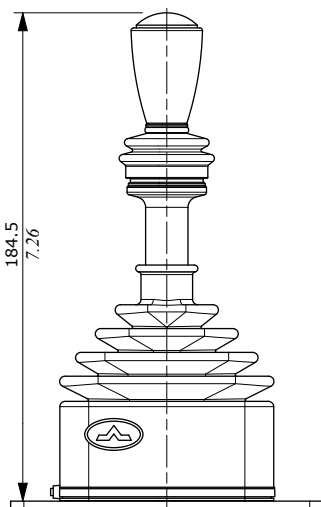
03E3: As type 03G3 control, E knob and 15° bending rod.

03JL3: As type 03G3 control, JL knob with spring return microswitch push-button.

10G3: With friction and detent in neutral position; it can not be used on two adjacent sections.

11G3: Detent in neutral position, 1 and 2; it can not be use in adjacent sections.

20G3: With friction, stop in any positions and neutral sensing, with detent in positions 1 and 2.

03G3-20G3
control03JL3
control03E3
control02G3-10G3-11G3
control

Controls with handlevers

Controls with microswitch

16G3(NO): With (NO) microswitch operation in either directions, neutral sensing, spring return in neutral position.

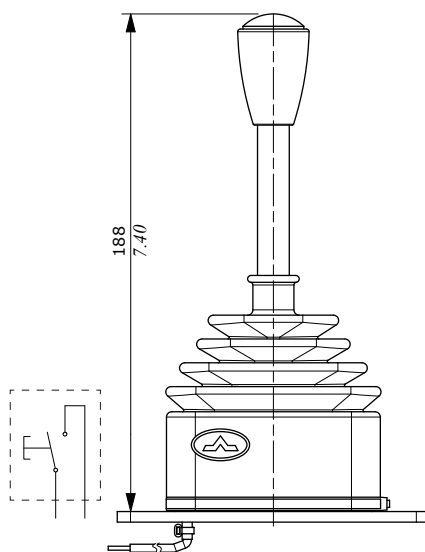
16TM3G3(NC): With (NC) microswitch operation in either directions, protective shell and dust-proof seals

16TM1G3(NC): With (NC) microswitch operation towards port 1, protective shell and dust-proof seals

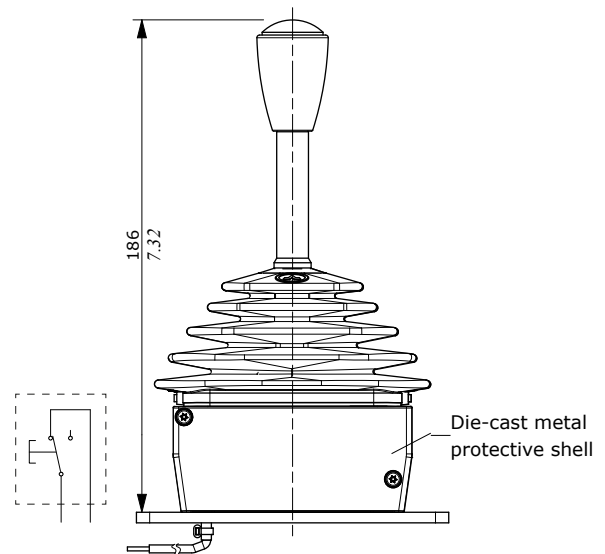
16TM2G3(NC): With (NC) microswitch operation towards port 2, protective shell and dust-proof seals

22G3(NO): With (NO) microswitch operation in either directions and friction (stop in any position)

16G3(NO)-22G3(NO)
control

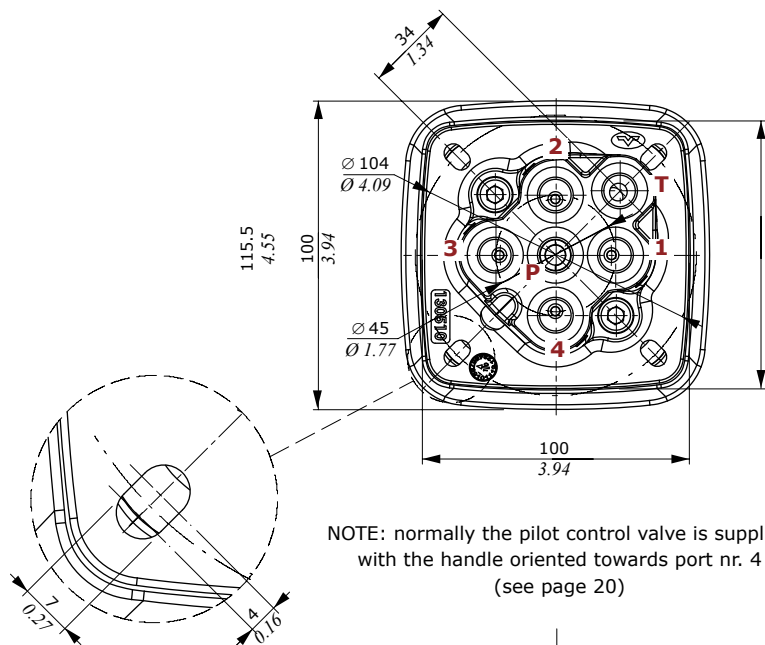


16TM3G3(NC)-16TM1G3(NC)-16TM2G3(NC)
control

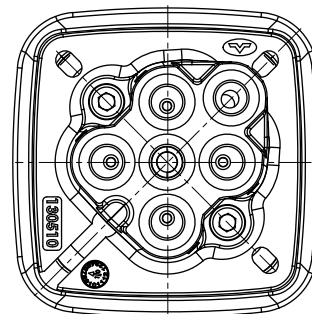


Dimensions and hydraulic circuit

SVM400

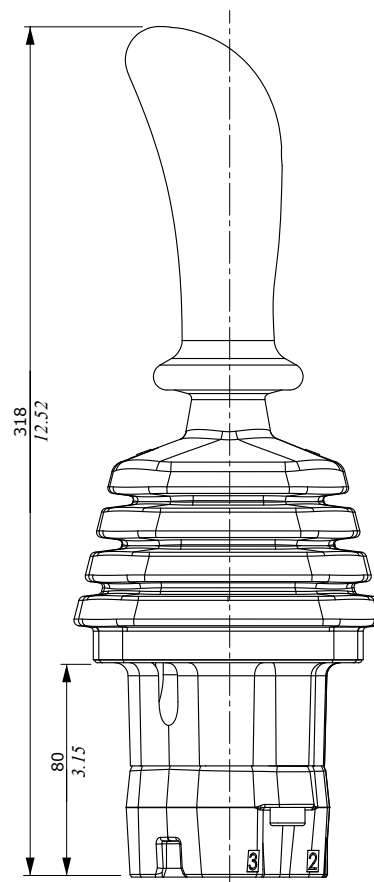
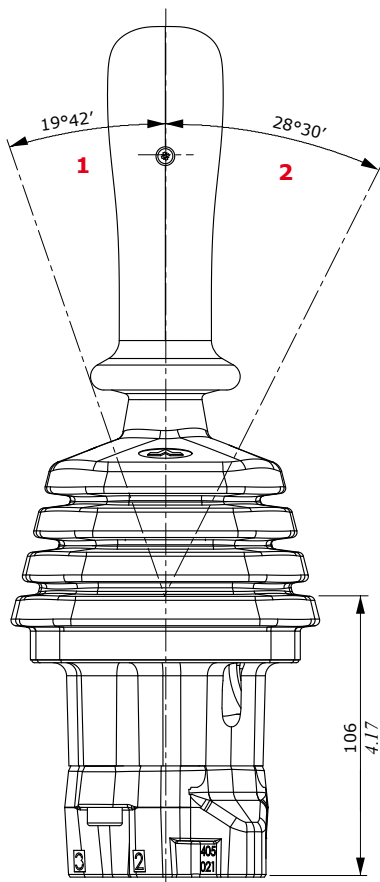
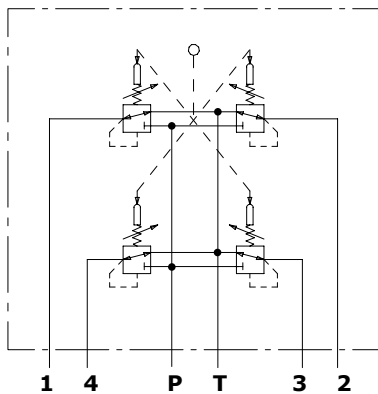


Configuration with one open ring



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

Hydraulic circuit

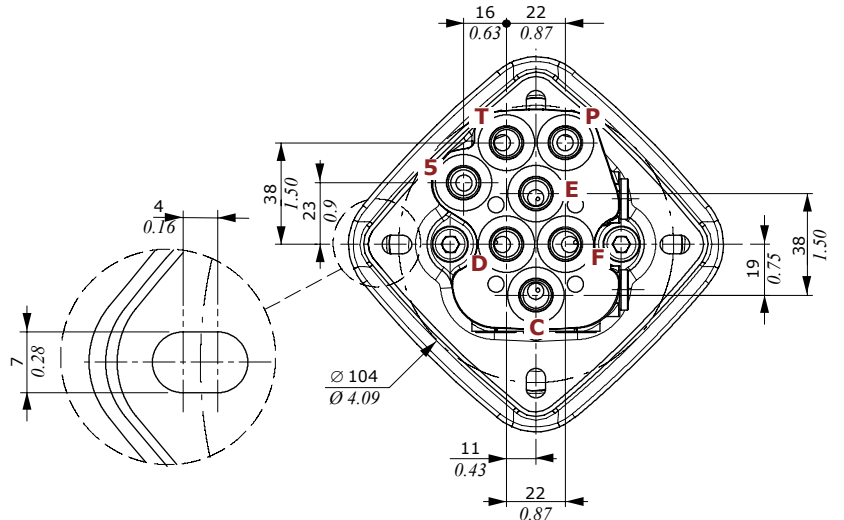


- 1** : Single work port
- 2** : Two simultaneous work ports

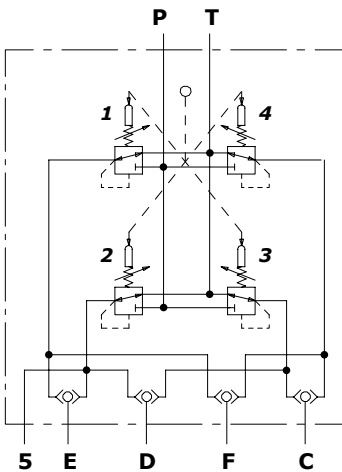
Dimensions and hydraulic circuit

SVM430

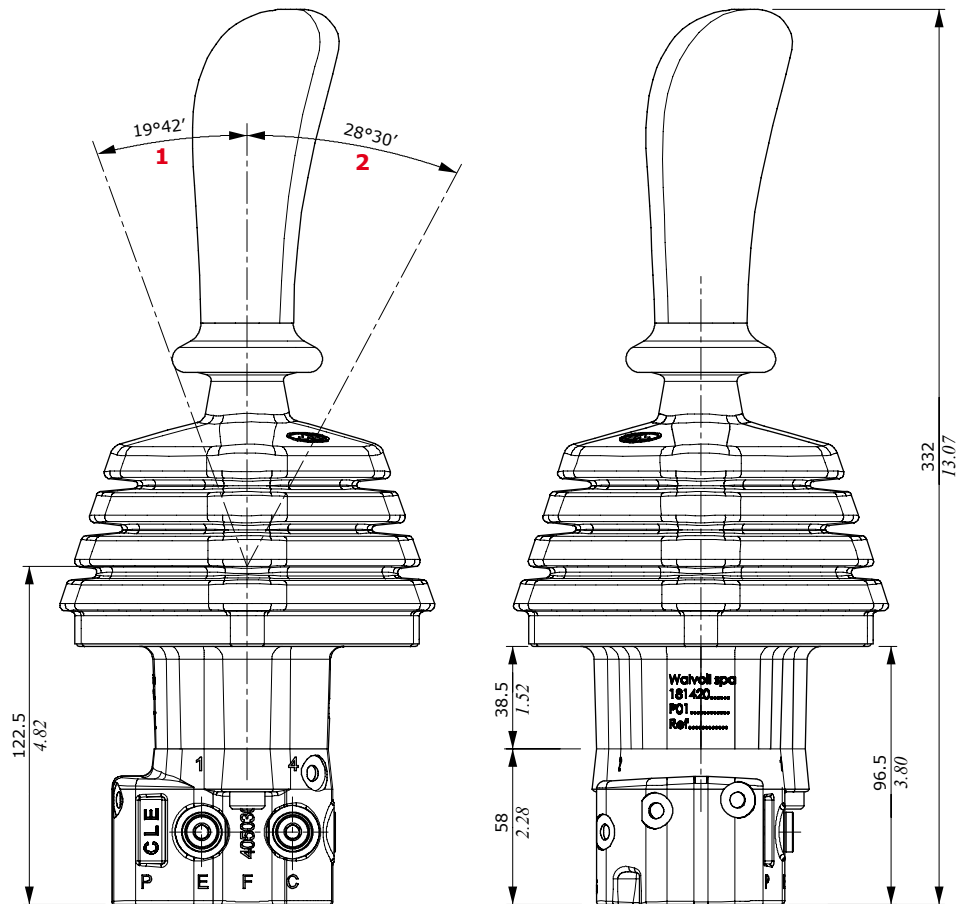
It's configured with pressure gauges (5) to get an additional output signal (ex. back-up alarm).



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

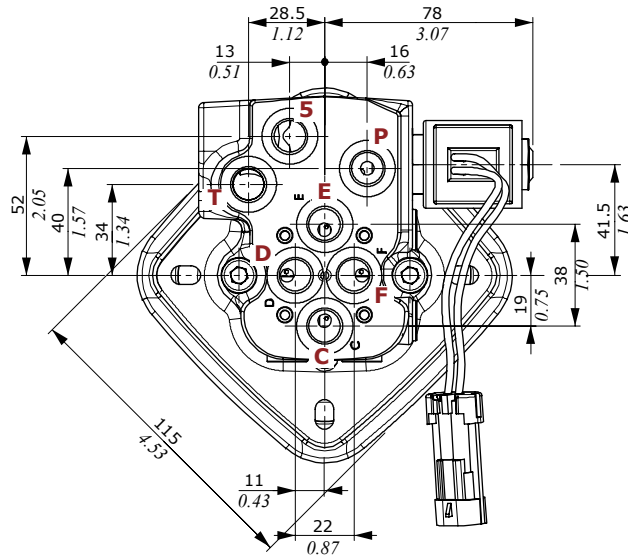


- 1 : Single work port
- 2 : Two simultaneous work ports

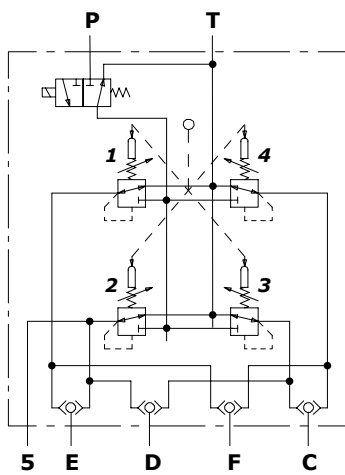
Dimensions and hydraulic circuit

SVM431

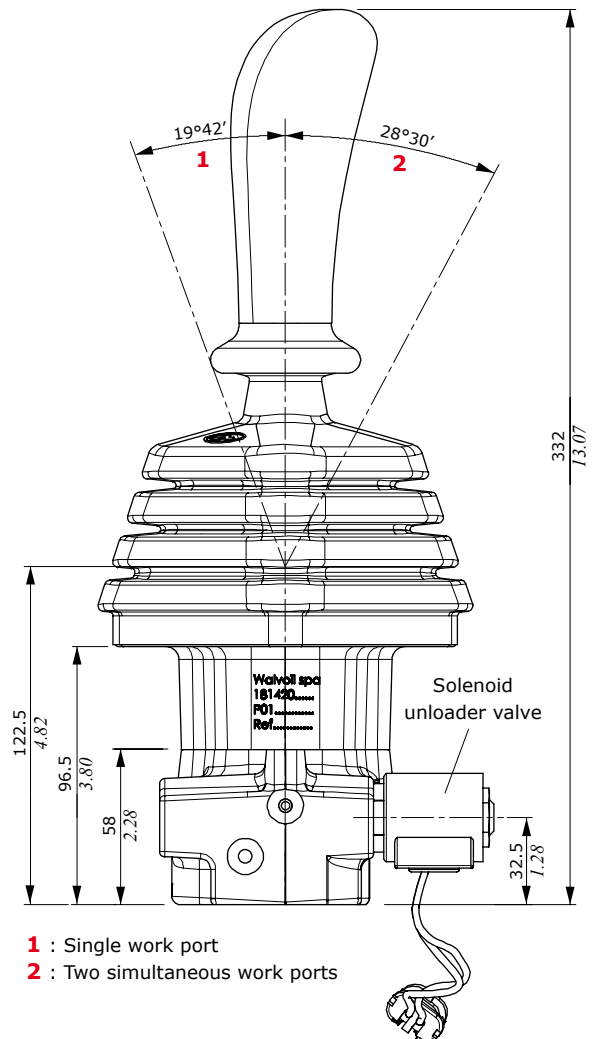
SVM431 it's configured with pressure gauges (5) to get an additional output signal with safety solenoid valve.



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

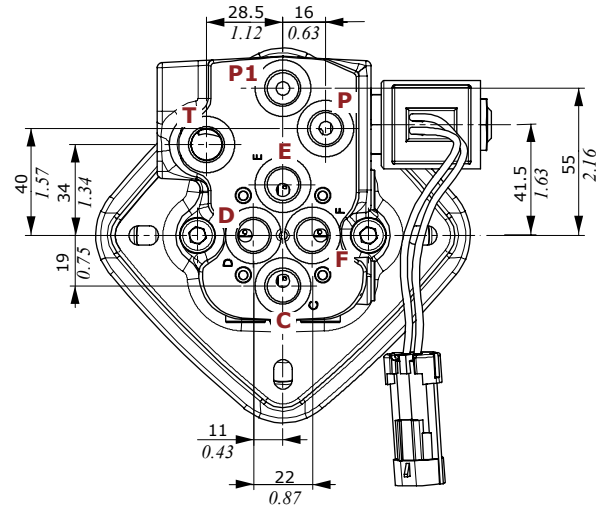


- 1 : Single work port
- 2 : Two simultaneous work ports

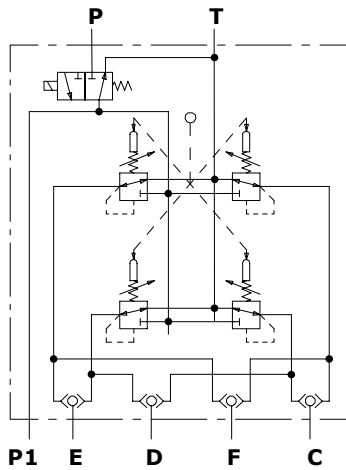
Dimensions and hydraulic circuit

SVM432

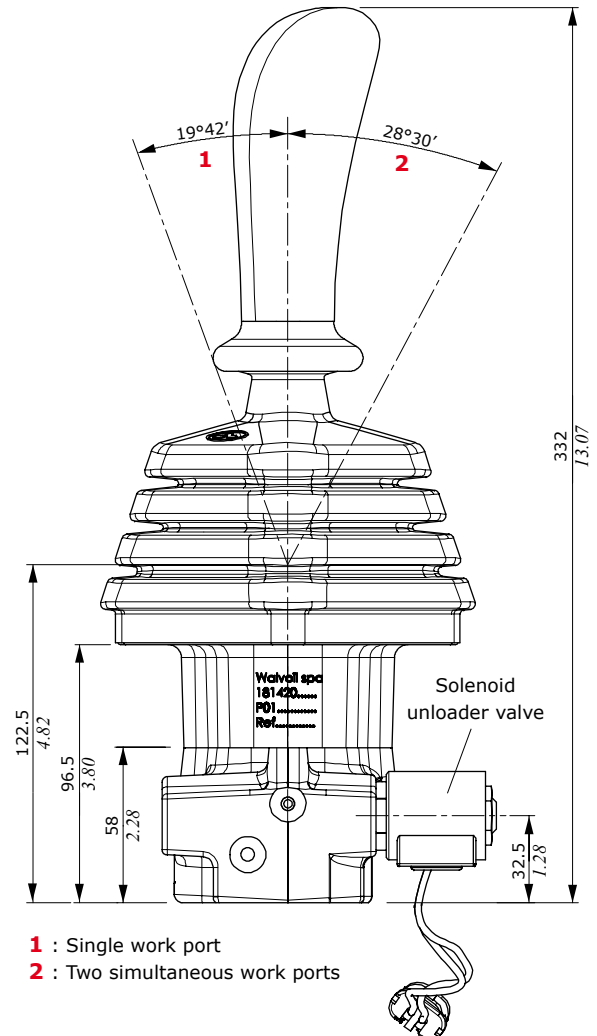
SVM432 it's configured with solenoid unloader valve and auxiliary under safety pressure gauge port (P1).



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) - 0 0 001 A 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) - 0 0 001 A - ELN (W1F02)-12VDC - <CRVN>

6.1

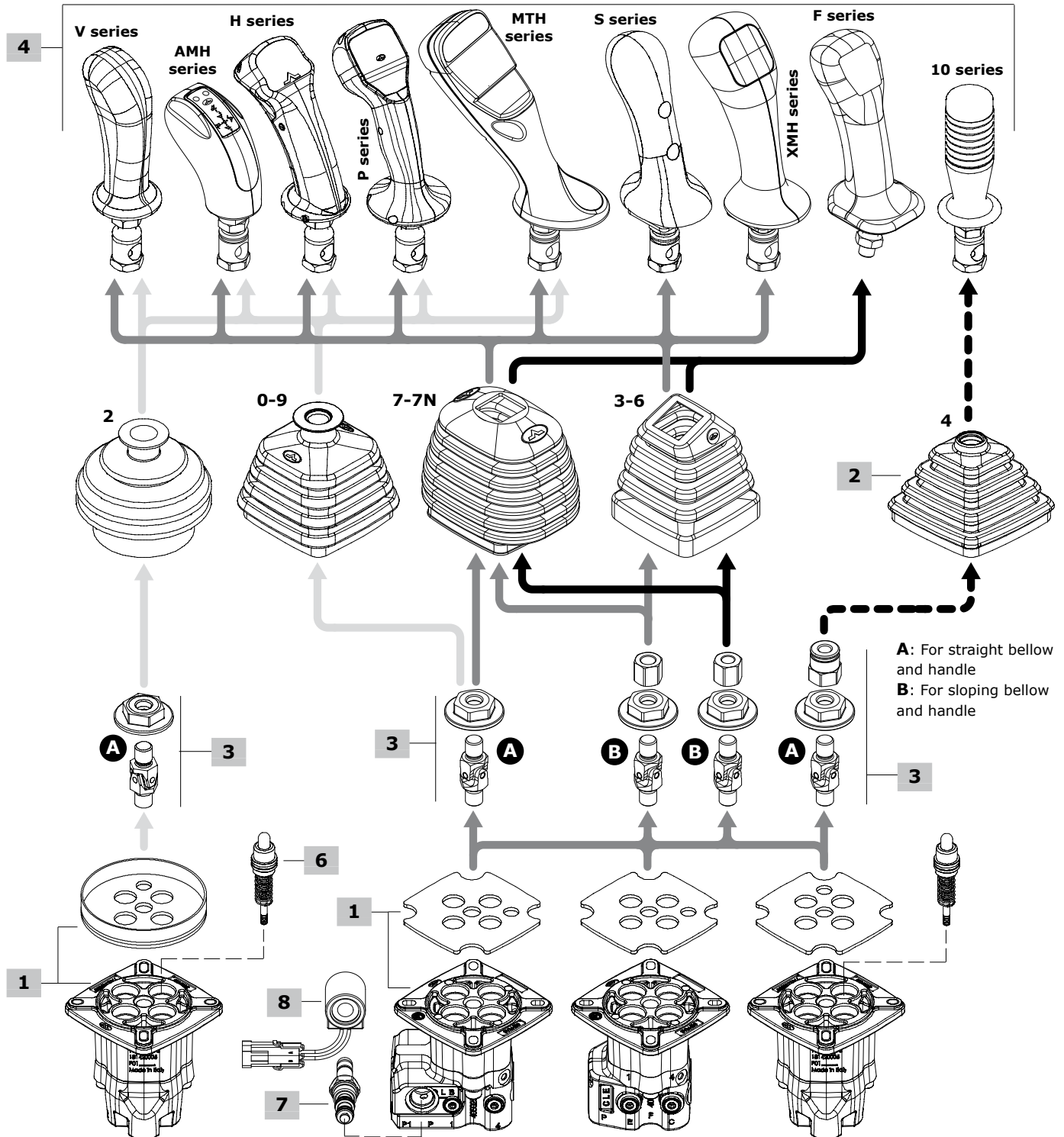
6.2

6.3

6.4

7

8



1 Body kit *

TYPE	CODE	DESCRIPTION
With arrangement for circular base rubber bellow		
SVM400/3-B	5CO3422300C	For circular base rubber bellow
With arrangement for square base rubber bellow		
SVM400/1-B	5CO3422300	For square base rubber bellow
SVM400/1-B	5CO3422301	As previous one, arranged for control type 16
SVM400/1A-B	5CO3422305	For square base rubber bellow, with one open ring
SVM430/1-B	5CO3432302	With auxiliary pressure gauge port
SVM431/1-B	5CO3432310	With auxiliary pressure gauge port and solenoid unloader valve
SVM432/1-B	5CO3432320	With auxiliary under-safety pressure gauge port and solenoid unloader valve

2 Rubber bellow

TYPE	CODE	DESCRIPTION
Circular base type		
2	3SOF110100	Straight type; it can be used with sloping handles
Square base type		
0	3SOF111130	Straight type with logo
3	3SOF111113	Sloping type with logo, only for 19° sloping handles. Not available for type 16 control
6	3SOF111114	As type 3, without logo. Not available for type 16 control
7	3SOF111135	General purpose type with logo; it can be used straight or up to 30° sloping in all directions
7N	3SOF111137	As type 7 without logo.
9	3SOF111131	As type 0 without logo.
4	3SOF111100	Straight type

3 Control option

TYPE	CODE	DESCRIPTION
With spring return in neutral position		
01	5CIN4003	For handles with straight rubber bellow (not for Series 10 and F handles)
	5CIN4001	For handles with sloping rubber bellow (not for Series 10 and F handles)
01GP	5CIN4002	For series 10 handles
01	5CIN401F00	For series F handles
With microswitches for movement detection on each port: It needs type 7/7N rubber bellow and dedicated body kit (see ch.1)		
16	5CIN4023	For handles with straight rubber bellow (not for Series 10 and F handles)
	5CIN4021	For handles with sloping rubber bellow (not for Series 10 and F handles)

4 Handles

Some handles as examples are listed below: for technical specifications and full range of handles and other types of joint see the "Handles and hand levers" catalogue.

V series handle

TYPE: **V007-(Q)** CODE: 5IMP030071
DESCRIPTION: Without switches, with sloping 19° left joint and square seat bellow adapter

AMH series handle

TYPE: **AMH0400A9-6R2035(T)-7R2035(T)-8R2035(T)-9R2035(T)-(E2)** CODE: 2IM3000004
DESCRIPTION: 4 spring return push-buttons, protection diode, flying leads, straight joint and square seat bellow adapter

H series handle

TYPE: **HA029-ORD040-2RD040-4RD040** CODE: 2IM4100109
DESCRIPTION: 2 microswitch push-buttons on the operator side, "dead man" switch, flying leads, straight joint, for circular seat bellow

P series handle

TYPE: **PZTA4100D9-ORD035-3R1D035-4R1D035-5R1D035-6R1D035-WN130035** CODE: 2IM8600007
DESCRIPTION: 1 proportional roller and 4 spring return push-buttons on operator side, "dead man" switch, flying leads, straight joint for circular seat bellow

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

4(bis) Handles**MTH series handle**

TYPE: **MTH-R00-ZTM31009-00-3N2035-5R2035-6N2035-7N2035-8N2035-DY2035-WG130035-(D2F12)**
CODE: 2IM2000012

DESCRIPTION: 1 proportional roller and 3 spring return push-buttons on the operator side, 3 push buttons on the opposite side, straight joint, for circular seat bellow, Deutsch connector

XMH series handle

TYPE: **XMHZTA21008-2G2035-4G2035-7G2035-VG171035**
CODE: 2IM1000004

DESCRIPTION: 1 proportional roller and 2 spring return push-buttons on the operator side, 1 push button with spring return on the opposite side, Deutsch connector, 19° sloping right joint, for square seat bellow

S series handle

TYPE: **SZTA8-0G4045-XG122045** CODE: 2IM5310003

DESCRIPTION: With prop. roller on the operator side and spring return push-button on the opposite side, 19° sloping right joint, for square seat bellow

F series handle

TYPE: **F02F-02R(1=8)** CODE: 320000251
DESCRIPTION: 2 microswitch push-buttons on the operator side and 2 on the opposite side, flying leads, 15° sloping joint, square seat bellow adapter, requires dedicated control

5 Handle position

TYPE	DESCRIPTION
(-)	STANDARD configuration, forward operation to port 4: omitted in description
(90)	Mounted with 90° rotation step: forward operation towards port 1
(180)	Mounted with 180° rotation step: forward operation towards port 2
(270)	Mounted with 270° rotation step: forward operation towards port 3

6 Pressure control curves

For list available see from page 27

6.1 Curve type

TYPE	DESCRIPTION
0	Standard

6.2 Typology of curves

TYPE	DESCRIPTION	TYPE	DESCRIPTION
0	With step	2	Piecewise with step
1	Without step	3	Piecewise without step

6.3 Curve identification

Progressive number

6.4 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 31 to 62.07 lbf</i>

7 Solenoid unloader valve

TYPE	CODE	DESCRIPTION
ELN	2X4800100	Without emergency operation
ELT	2X4800200	With emergency operation

8 Coil

TYPE	CODE	DESCRIPTION
(D1F02)-12VDC	4SL6001200	12VDC, integrated Deutsch connector
(D1F02)-24VDC	4SL6002400	As previous one, 24VDC
(W1F02)-12VDC	4SL6001204	12VDC, WP Packard connector with flying leads (L= 210 mm - 8.27 in)

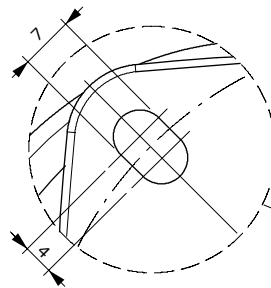
Dimensions and hydraulic circuit

Configuration with electromagnetic detent

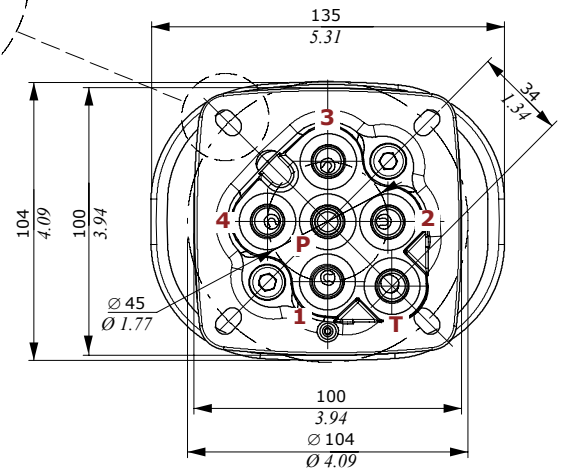
Features

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%

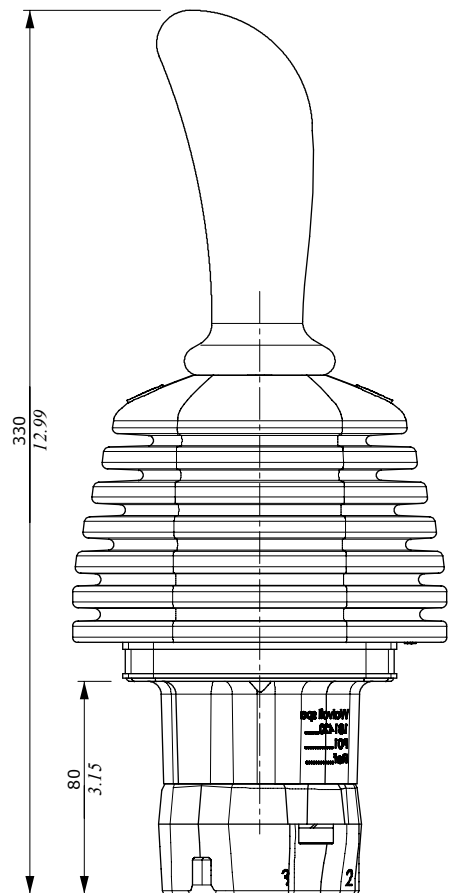
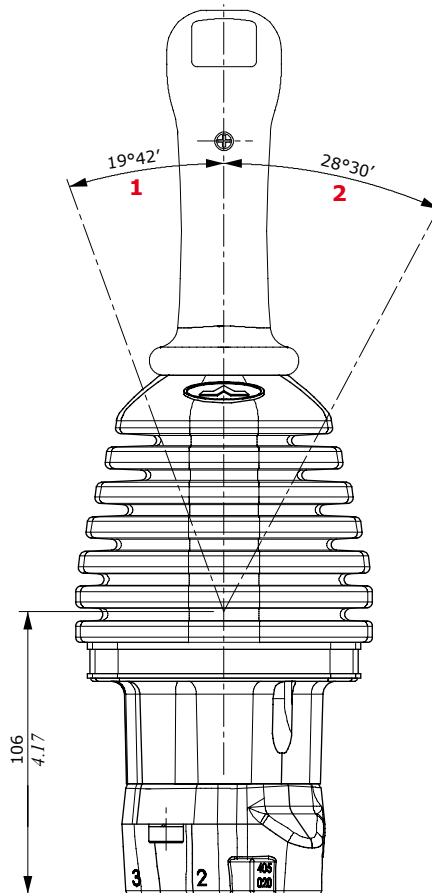
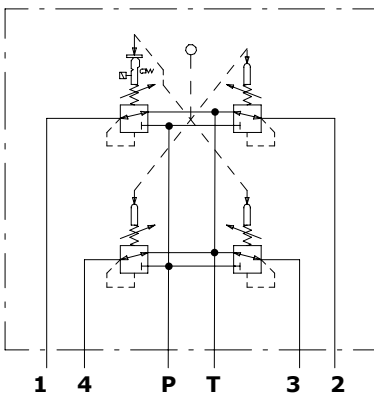


NOTE: normally the pilot control valve is supplied with the handle oriented towards port nr. 4 (see page 24)



Hydraulic circuit

Example detent on working port 1



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

Ordering codes

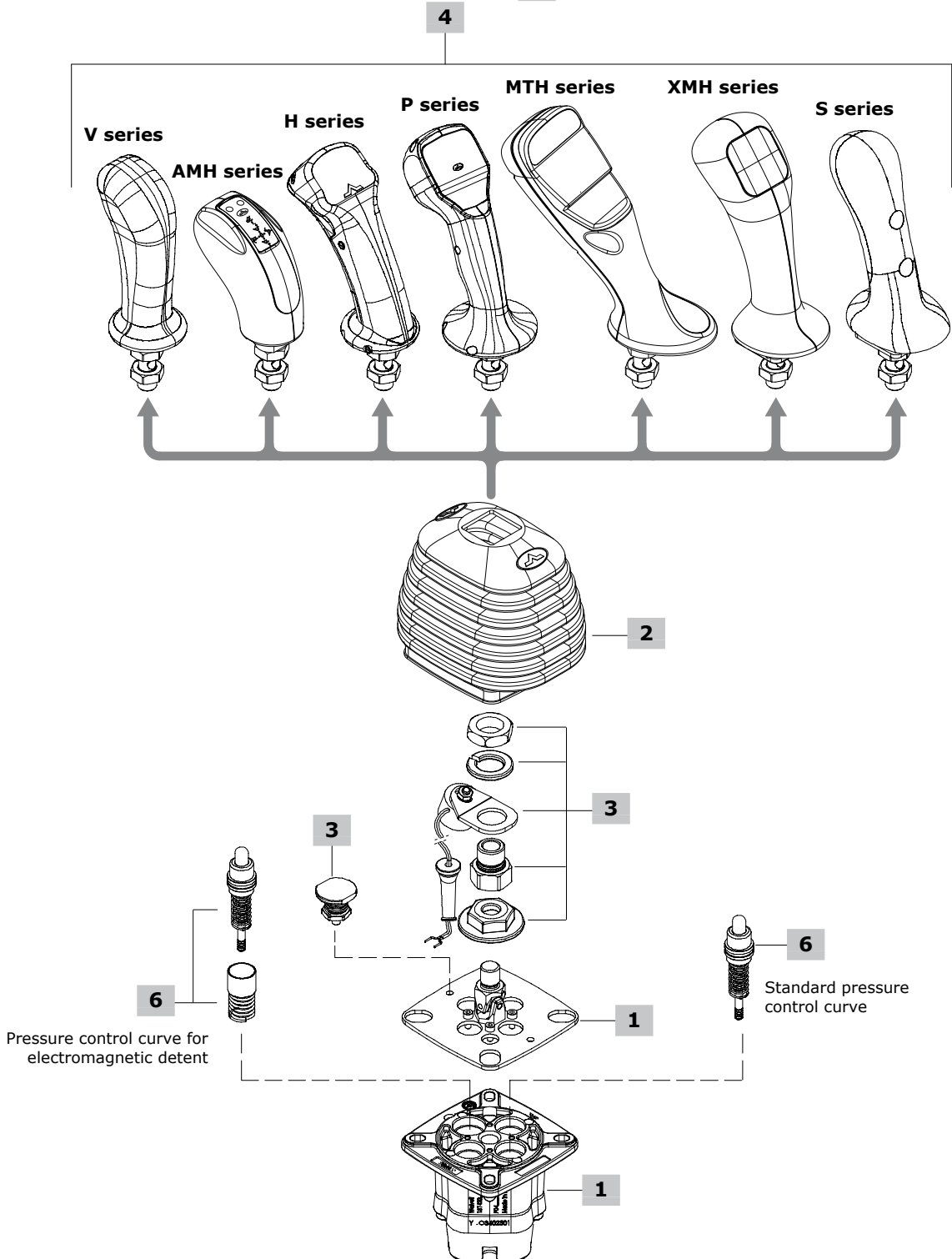
Pressure control curve for electromagnetic detent
Standard pressure control curve

SVM400-EMD1 / 7 1 - B / 01E15 (....) V00G (90) (....) - E 0 001 M - 00001M X 3 - 12VDC - <CRVN>

1 2 1 3 7 4 5 7 6.1 6.2 6.3 6.4 6 3

4

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-EMD6/1-B	CODE: 5CO3402306
DESCRIPTION: With detent arrangement on ports 2 and 4	

2 Rubber bellow

7	3SOF111135	Universal type, rectangular base. With logo and it can be used straight and 30° sloping in all directions
7N	3SOF111137	As type 7 without logo

3 Detent configuration

Cables are supplied with wires with tin-plate terminals

TYPE	CODE	DESCRIPTION
01E0	5CIN401E00	Spring return, without detent

Detent on port 1

01E15	5CIN401E12	12 VDC - Spring return
01E15	5CIN4E401100	24 VDC - Spring return

Detent on ports 1, 3 or 2, 4

01E25	5CIN401E22	12 VDC - Spring return
01E25	5CIN4E401200	24 VDC - Spring return

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

6 Pressure control curves

For list available see from page 27

6.1 Curve type

TYPE	DESCRIPTION
0	Standard, without electromagnetic detent
E	For electromagnetic detent, with pre-feeling

6.2 Typology of curves

TYPE	DESCRIPTION
0	With step
1	Without step
2	Piecewise with step
3	Piecewise without step

6.3 Curve identification

Progressive number

6.4 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>

7 Connector

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

4 Handles

Some handles as examples are listed below: for technical specifications and full range of handles and other types of joint see the "Handles and handlevers" catalogue.

V series handle

TYPE: **V007-(Q)**
CODE: 5IMP030071
DESCRIPTION: Without switches, with 19° sloping left joint and square seat bellow adapter

AMH series handle

TYPE: **AMHT0300A8-(Q)-6N2D035-7R2D035-8N2D035-(E1)**
CODE: 2IM3000007
DESCRIPTION: 3 spring return push-buttons on the operator side, flying wires, 19° sloping right joint, square seat bellow adapter

H series handle

TYPE: **HMB03G-(Q)-1R4040-4R3040-5R2040-(12VDC)**
CODE: 2IM4600051
DESCRIPTION: 3 spring return push-buttons on the operator side, flying wires, straight joint, square seat bellow adapter

P series handle

TYPE: **PZMA1200B7-0R035-3Y2D035-WN130035-ZN130035-(SCHEDA 2PWM)-(TD2M)**
CODE: 2IM8700003

DESCRIPTION: 2 proportional rollers and 1 spring return push-button on the operator side, "dead man" switch, flying wires with Deutsch pins, 19° sloping left joint, square seat bellow adapter

MTH series handle

TYPE: **MTH-R00-ZTI4100(K)Y-00-1Y2035-2Y2035-3N2035-6N2035-ZN122035-MR2035-(5VDC)-D2F12**
CODE: 2IM2000005

DESCRIPTION: 1 proportional roller and 4 spring return push-buttons on operator side, 1 FNR rocker on the opposite side, Deutsch connector, 9° sloping left joint, square seat bellow adapter

XMH series handle

TYPE: **XMHZTA21008-2G2035-4G2035-7G2035-VG171035**
CODE: 2IM000004
DESCRIPTION: 1 proportional roller and 2 spring return-push buttons on the operator side, 1 spring return push button on the opposite side, Deutsch connector, 19° sloping right joint, for square seat bellow

S series handle

TYPE: **SZTA8-0G4045-XG122045**

CODE: 2IM5310003

DESCRIPTION: With proportional roller on the operator side and spring return push-button on the opposite side, 19° sloping right joint, for square seat bellow

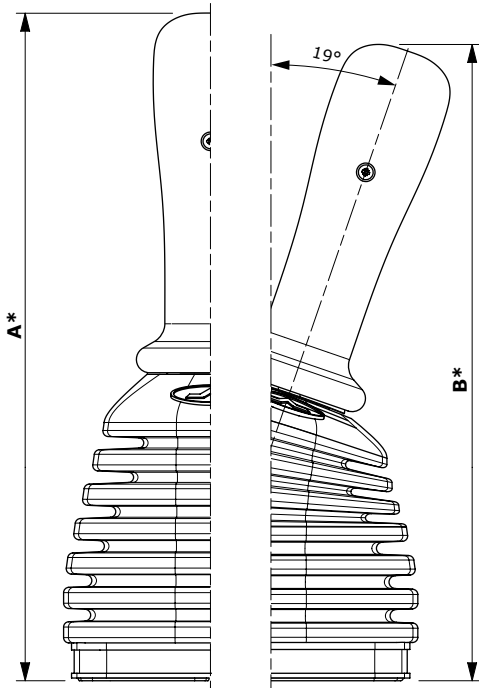
5 Handle position

TYPE	DESCRIPTION
(-)	STANDARD configuration, forward operation towards port 4: omitted in description
(90)	Mounted with 90° rotation step: forward operation towards port 1
(180)	Mounted with 180° rotation step: forward operation towards port 2
(270)	Mounted with 270° rotation step: forward operation towards port 3

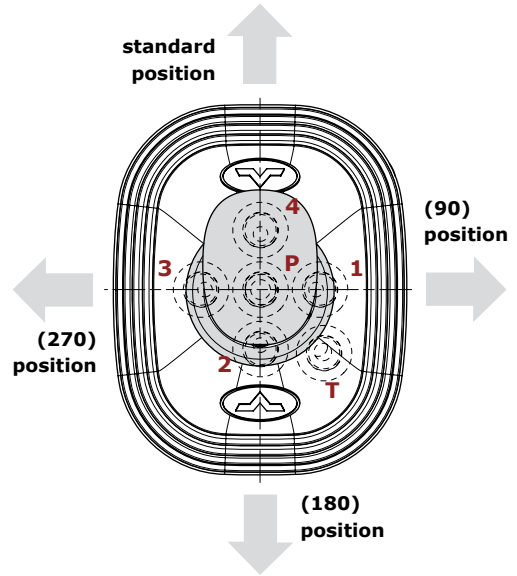
NOTE (*) – Codes are referred to **BSP** thread.

Configuration option

Handle options



Handle positions



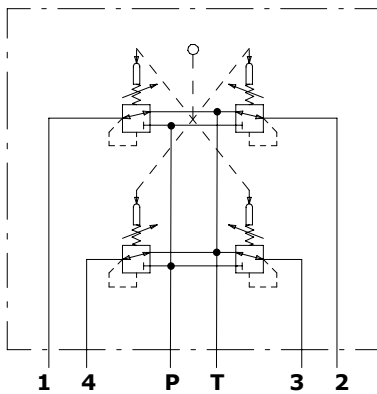
Type	A*		B*		Type	A*		B*	
	mm	in	mm	in		mm	in	mm	in
V series	252	9.92	240	9.45	MTH series	275	10.83	271	10.67
AMH series	209	8.23	201	7.91	S series	266	10.47	261	10.27
H series	250	9.84	240	9.45	XMH series	275	10.83	264	10.39
P series	268	10.55	266	10.47					

(*) The overall dimensions are indicative

Detent configuration

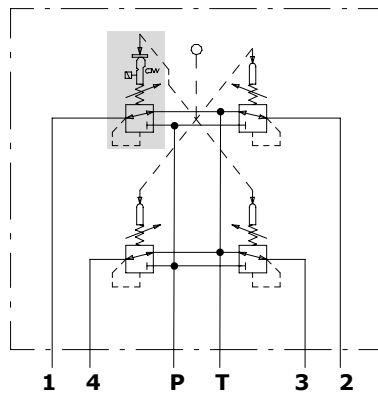
01E0 type

Spring return, without detent



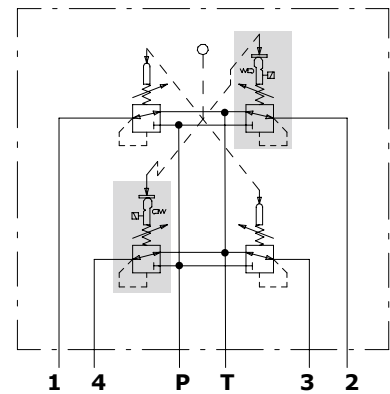
01E15 type

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



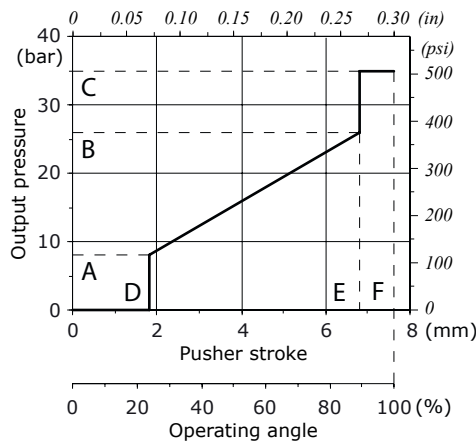
01E25 type

Detent on ports 2 and 4, spring return

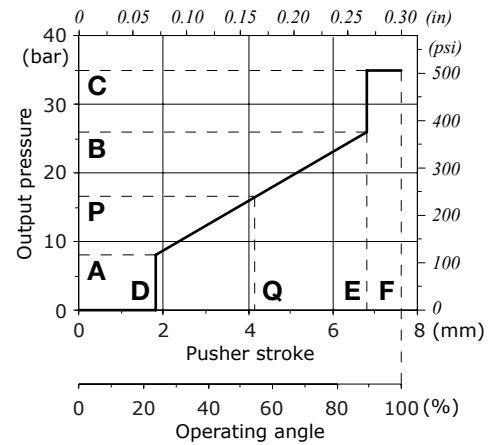


Control curves with step

00 type without pre-feeding



E0 type with pre-feeding for EM detent



Curve description		Pressure						Stroke								CODE ⁽¹⁾		
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	
Without pre-feeding																		
00	019	0.5 (+1, -0.5)	7.25 (+14.5, -7.25)			11.4 (±1)	165.3 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400019A
00	022	1 (±0.5)	14.5 (±7.25)			8 (±1)	116.3 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40022A
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)	75	1088	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40047A 5CUR40047C
00	065	2 (±0.5)	29 (±7.25)			20.5 (±1.5)	297.25 (±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40065A
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 (±7.25)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400043A
00	010	3.25 (±0.5)	74.13 (±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 5CUR40010M
00	032	3.4 (±0.5)	49.3 (±7.25)			29.4 (±1)	426.3 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40032A 5CUR40032B 5CUR40032C
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
00	073	4 (±0.5)	58 (±7.25)			18 (±1)	261 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400073A 5CR400073M
00	020	4.3 (±0.5)	63.3 (±7.25)			15.2 (±1)	220.4 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40020A 5CUR40020B 5CUR40020C
00	004	4.9 (±0.5)	72.5 (±7.25)			18.9 (±1)	274 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40004A 5CUR40004C 5CUR40004M
00	017	5 (±0.5)	72.5 (±7.25)			12 (±1)	174 (±14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40017A 5CUR40017C
00	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	5CUR40028A 5CUR40028B 5CUR40028C 5CUR40028M
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	075	5 (±0.5)	72.5 (±7.25)			15 (±1.5)	217.5 (±21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40075A 5CUR40075B 5CUR40075C 5CUR40075E 5CUR40075M
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	115	5.5				28.5				0.85	0.03			5.6	0.22	6.1	0.24	5CUR40115M
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

List continues in the next page

Control curves with step

Curve description		Pressure								Stroke								CODE ⁽¹⁾
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	
00	024	5.8 (\pm 1)	84.1 (\pm 14.5)			19 (\pm 1.5)	275.5 (\pm 21.7)	35	507.5	1.55	0.06			6.1	0.24	7.5	0.29	5CUR40024A 5CUR40024C
00	033	5.8 (\pm 0.5)	84.1 (\pm 7.25)			19 (\pm 1)	275.5 (\pm 14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40033A 5CUR40033B 5CUR40033C 5CUR40033M
00	070	5.8 (\pm 1)	84.1 (\pm 14.5)			22.4 (\pm 2)	324.8 (\pm 29)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40070A 5CUR40070B 5CUR40070D 5CUR40070M
00	087	5.8 (\pm 0.5)	84.1 (\pm 7.25)			17 (\pm 1.5)	246.5 (\pm 21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40087A
00	021	6 (\pm 0.5)	87 (\pm 7.25)			16.3 (\pm 1)	236.4 (\pm 14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400021A 5CR400021M
00	105	6 (\pm 0.5)	87 (\pm 7.25)			20 (\pm 1)	290 (\pm 14.5)	35	507.5	0.6	0.02			7.25	0.28	7.6	0.30	5CR400105B
00	054	6.2 (\pm 1)	89.9 (\pm 14.5)			24.5 (\pm 2)	355.25 (\pm 29)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40054A
00	007	6.5 (\pm 1)	94.25 (\pm 14.5)			36 (\pm 2)	522 (\pm 29)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400007A
00	026	6.5 (\pm 0.5)	94.25 (\pm 7.25)			14 (\pm 1)	203 (\pm 14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40026A 5CUR40026B 5CUR40026C
00	053	8 (\pm 0.5)	116 (\pm 7.25)			22.3 (\pm 1)	323.3 (\pm 14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40053A
00	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	5CUR40088A 5CUR40088B 5CUR40088C 5CUR40088M
00	089	8 (\pm 0.5)	116 (\pm 7.25)			28 (\pm 1)	406 (\pm 14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40089A 5CUR40089C 5CUR40089D 5CUR40089M
00	112	8 (\pm 1.5)	116 (\pm 21.7)			54 (\pm 3.5)	783 (\pm 50.75)	60	870	0.85	0.03			7.25	0.28	7.6	0.30	5CR400112A
00	122	10 (\pm 1)	145 (\pm 14.5)			27 (\pm 2)	391.5 (\pm 29)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400122C
00	124	10 (\pm 1)	145 (\pm 14.5)			25 (\pm 1.5)	362.5 (\pm 21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400124A
00	036	12 (\pm 0.5)	174 (\pm 7.25)			25 (\pm 1)	362.5 (\pm 14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40036A
00	107	12 (\pm 1)	174 (\pm 14.5)			20 (\pm 1)	290 (\pm 14.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400107A
00	012	14 (\pm 1)	203 (\pm 14.5)			28.5 (\pm 1.5)	413.25 (\pm 21.7)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CR400012A
00	038	22 (\pm 2)	319 (\pm 29)			37 (\pm 3)	536.5 (\pm 43.5)	35	507.5	0.85	0.03			7.25	0.28	7.6	0.30	5CUR40038C 5CUR40038M

With Pre-feeling for electromagnetic detent

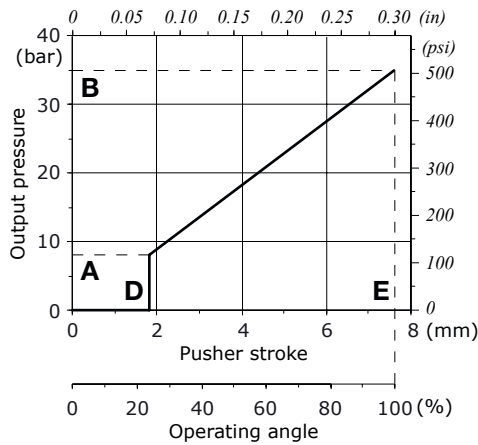
EO	063	1.4 (\pm 0.5)	20.3 (\pm 7.25)	11.5 (\pm 1)	166.75 (\pm 14.5)	12.8 (\pm 1)	185.6 (\pm 14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4E063M
EO	046	2 (\pm 0.5)	29 (\pm 7.25)	13 (\pm 1)	188.5 (\pm 14.5)	14.5 (\pm 1)	210.2 (\pm 14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4E046M
EO	096	3.5 (\pm 0.5)	50.7 (\pm 7.25)	15 (\pm 0.5)	217.5 (\pm 7.25)	16.5 (\pm 1)	239.2 (\pm 14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR4E0096B
EO	B09	3.5 (\pm 0.5)	50.7 (\pm 7.25)	13.7 (\pm 1)	198.65 (\pm 14.5)	15.1 (\pm 1)	219 (\pm 14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4EB09A 5CUR4EB09M
EO	073	4 (\pm 0.5)	58 (\pm 7.25)	18 (\pm 1)	261 (\pm 14.5)	19.9 (\pm 1)	288.55 (\pm 14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CR4E0073A
EO	086	4 (\pm 0.5)	58 (\pm 7.25)	16.5 (\pm 0.8)	239.3 (\pm 11.6)	18.2 (\pm 1)	263.9 (\pm 14.5)	30	435	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4E086A 5CUR4E086M
EO	094	4 (\pm 0.5)	58 (\pm 7.25)	12.7 (\pm 0.5)	184.1 (\pm 7.25)	13.8 (\pm 1)	200.1 (\pm 14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4E094M 5CUR4E094B
EO	075	5 (\pm 0.5)	72.5 (\pm 7.25)	15 (\pm 1)	217.5 (\pm 14.5)	16.3 (\pm 1.5)	236.35 (\pm 21.7)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4E075A 5CUR4E075M
EO	033	5.8 (\pm 0.5)	84.1 (\pm 7.25)	19 (\pm 1)	275.5 (\pm 14.5)	20.8 (\pm 1.5)	301.6 (\pm 21.7)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4E033B 5CUR4E033M
EO	087	5.8 (\pm 0.5)	84.1 (\pm 7.25)	17.8 (\pm 1)	258.1 (\pm 14.5)	19.4 (\pm 1)	281.3 (\pm 14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4E087M
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	5CR4E0085M
EO	088	8 (\pm 0.5)	116 (\pm 7.25)	27 (\pm 1)	391.5 (\pm 14.5)	29.5 (\pm 1)	427.75 (\pm 14.5)	35	507.5	0.85	0.03	6.5	0.25	7.25	0.28	7.6	0.30	5CUR4E088M

⁽¹⁾ Codes are referred to the curve with the specific return spring

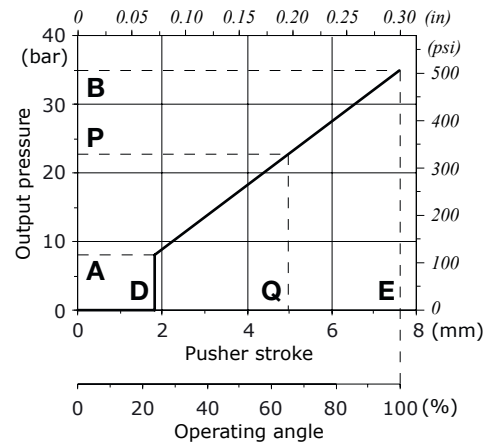
For different curves please contact our Sales Department

Control curves without step

01 type without pre-feeding



E1 type with pre-feeding for EM detent



Curve description		Pressure						Stroke						CODE ⁽¹⁾
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	
Without pre-feeding														
01	148	0 (+0.5)	0 (\pm 7.25)			13 (\pm 1)	188.5 (\pm 14.5)	0.85	0.03			7.6	0.30	5CUR40148B
01	151	0 (+1)	0 (\pm 14.5)			41 (\pm 2)	594.5 (\pm 29)	1	0.04			5.4	0.21	5CR401151C
01	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
01	131	1 (\pm 1)	14.5 (\pm 14.5)			15 (\pm 1)	217.5 (\pm 14.5)	0.85	0.03			7.6	0.30	5CUR40131A 5CUR40131C
01	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
01	163	1.4 (\pm 0.5)	20.3 (\pm 7.25)			11.5 (\pm 1)	166.8 (\pm 14.5)	0.85	0.03			7.6	0.30	5CUR40163A 5CUR40163M
01	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
01	129	2 (\pm 0.5)	29 (\pm 7.25)			66 (\pm 4)	957 (\pm 58)	0.85	0.03			6.8	0.28	5CUR40129A
01	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
01	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
01	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
01	127	3.4 (\pm 0.5)	49.3 (\pm 7.25)			12 (\pm 1)	174 (\pm 14.5)	0.85	0.03			7.6	0.30	5CUR40127A 5CUR40127B
01	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
01	114	4 (\pm 0.5)	58 (\pm 7.25)			10 (\pm 1)	145 (\pm 14.5)	0.85	0.03			7.6	0.30	5CUR40114A 5CUR40114B 5CUR40114M
01	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
01	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
01	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
01	111	5.5 (\pm 0.5)	88 (\pm 7.25)			25.5 (\pm 1)	370 (\pm 14.5)	0.85	0.03			7.6	0.30	5CUR40111A 5CUR40111B 5CUR40111C
01	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
01	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
01	167	6 (\pm 0.5)	87 (\pm 7.25)			18 (\pm 1)	261 (\pm 14.5)	0.85	0.03			7.6	0.30	5CUR40167M
01	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
01	106	6 (\pm 1)	87 (\pm 14.5)			40 (\pm 2)	580 (\pm 29)	0.85	0.03			7.6	0.30	5CUR40106A 5CUR40106B 5CUR40106C
01	095	6.5 (\pm 0.5)	94.25 (\pm 7.25)			17.8 (\pm 1)	258.1 (\pm 14.5)	0.85	0.03			7.6	0.30	5CR401095A
01	125	8 (\pm 0.5)	116 (\pm 7.25)			22.5 (\pm 1)	326.25 (\pm 14.5)	0.85	0.03			7.6	0.30	5CUR40125M

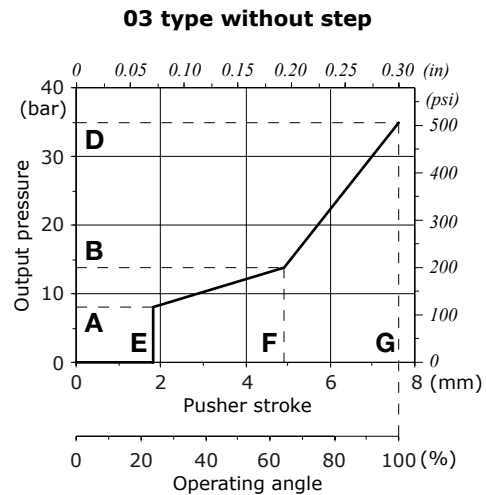
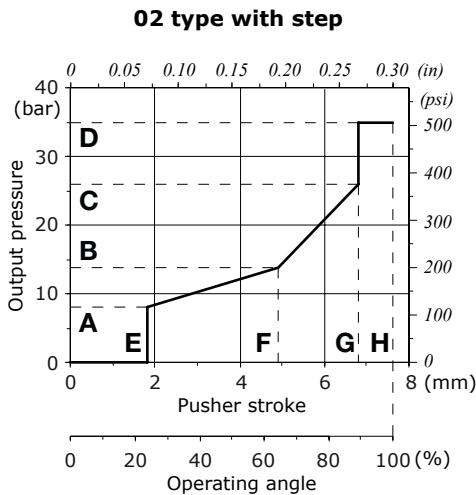
List continues in the next page

Control curves without step

Curve description		Pressure						Stroke						CODE ⁽¹⁾
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	
01	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
01	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
01	090	12 (\pm 1)	174 (\pm 14.5)			18 (\pm 1)	261 (\pm 14.5)	0.85	0.03			7.6	0.30	5CR401090A
01	195	14 (\pm 1)	203 (\pm 14.5)			29.5 (\pm 1.5)	427.75 (\pm 21.7)	0.85	0.03			7.6	0.30	5CR401195A
01	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
With Pre-feeling for electromagnetic detent														
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
E1	156	3.4 (\pm 0.5)	46.3 (\pm 7.25)	14.5 (\pm 1)	210.25 (\pm 14.5)	16.7 (\pm 1)	242.15 (\pm 14.5)	0.85	0.03	6.5	0.25	7.6	0.30	5CUR4E156M

⁽¹⁾ Codes are referred to the curve with the specific return spring
For different curves please contact our Sales Department

Control curves piecewise with and without step



Control curve with step

Curve description		Pressure						Stroke								CODE ⁽¹⁾		
Type	Nr	A		B		C		D		E		F		G			H	
		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	
02	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
02	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
02	200	7 (\pm 1)	101.5 (\pm 14.5)	13 (\pm 1)	188.5 (\pm 14.5)	22 (\pm 1)	319 (\pm 14.5)	30	435	0.85	0.03	5.7	0.22	7.25	0.28	7.6	0.30	5CUR40200A 5CUR40200M

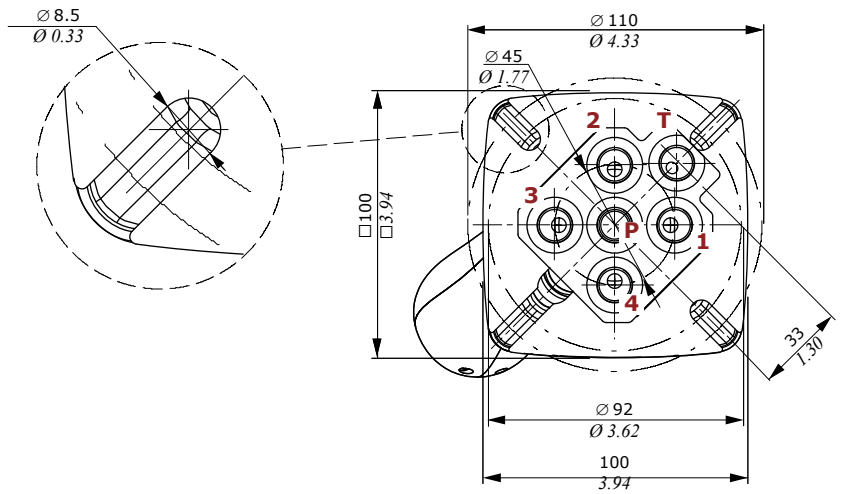
Control curve without step

Curve description		Pressure				Stroke				CODE ⁽¹⁾				
Type	Nr	A		B		D		E			F		G	
		bar (\pm toll)	psi (\pm toll)	bar (\pm toll)	psi (\pm toll)	bar	psi	mm	in	mm	in	mm	in	
03	311	1.2 (\pm 0.5)	17.4 (\pm 7.25)	14.7 (\pm 2.5)	213.15 (\pm 36.25)	22 (\pm 2)	319 (\pm 29)	0.85	0.03	6.6	0.26	7.6	0.30	5CUR40311B
03	300	5.1 (\pm 0.5)	73.95 (\pm 7.25)	16 (\pm 1.5)	232 (\pm 21.75)	20 (\pm 2)	290 (\pm 29)	0.85	0.03	6.6	0.26	7.6	0.30	5CUR40300A
03	302	6 (+0.5/-1.5)	87 (+7.25/-21.75)	12 (\pm 1)	175 (\pm 14.5)	22 (+2)	320 (+29)	0.85	0.03	6.6	0.26	7.6	0.30	5CUR40302A 5CUR40302C 5CUR40302D

⁽¹⁾ Codes are referred to the curve with the specific return spring
For different curves please contact our Sales Department

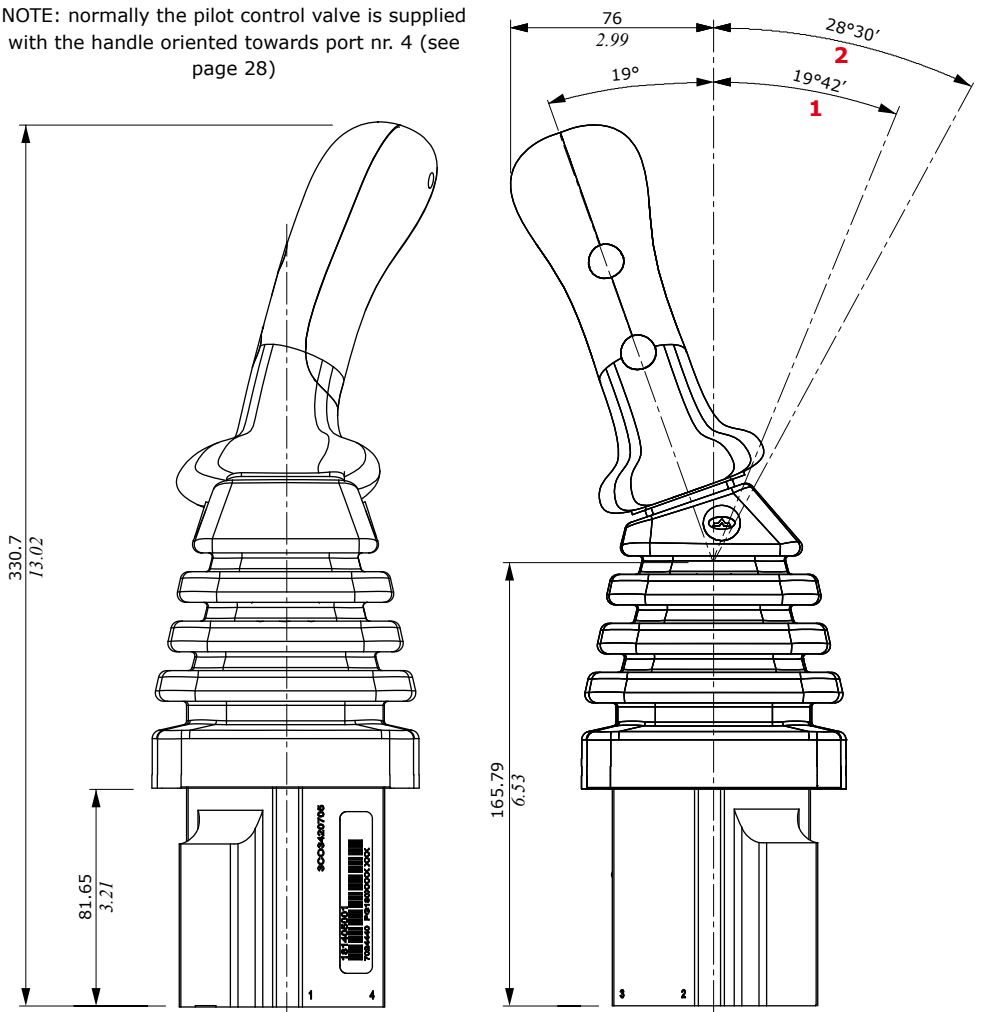
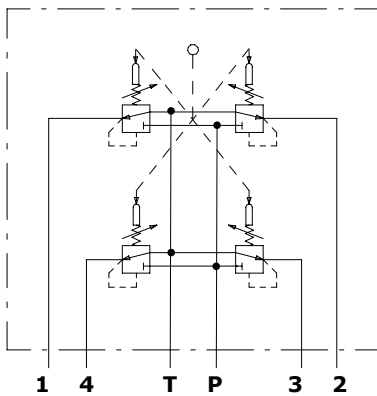
Dimensions and hydraulic circuit

Configuration with damping system.



NOTE: normally the pilot control valve is supplied with the handle oriented towards port nr. 4 (see page 28)

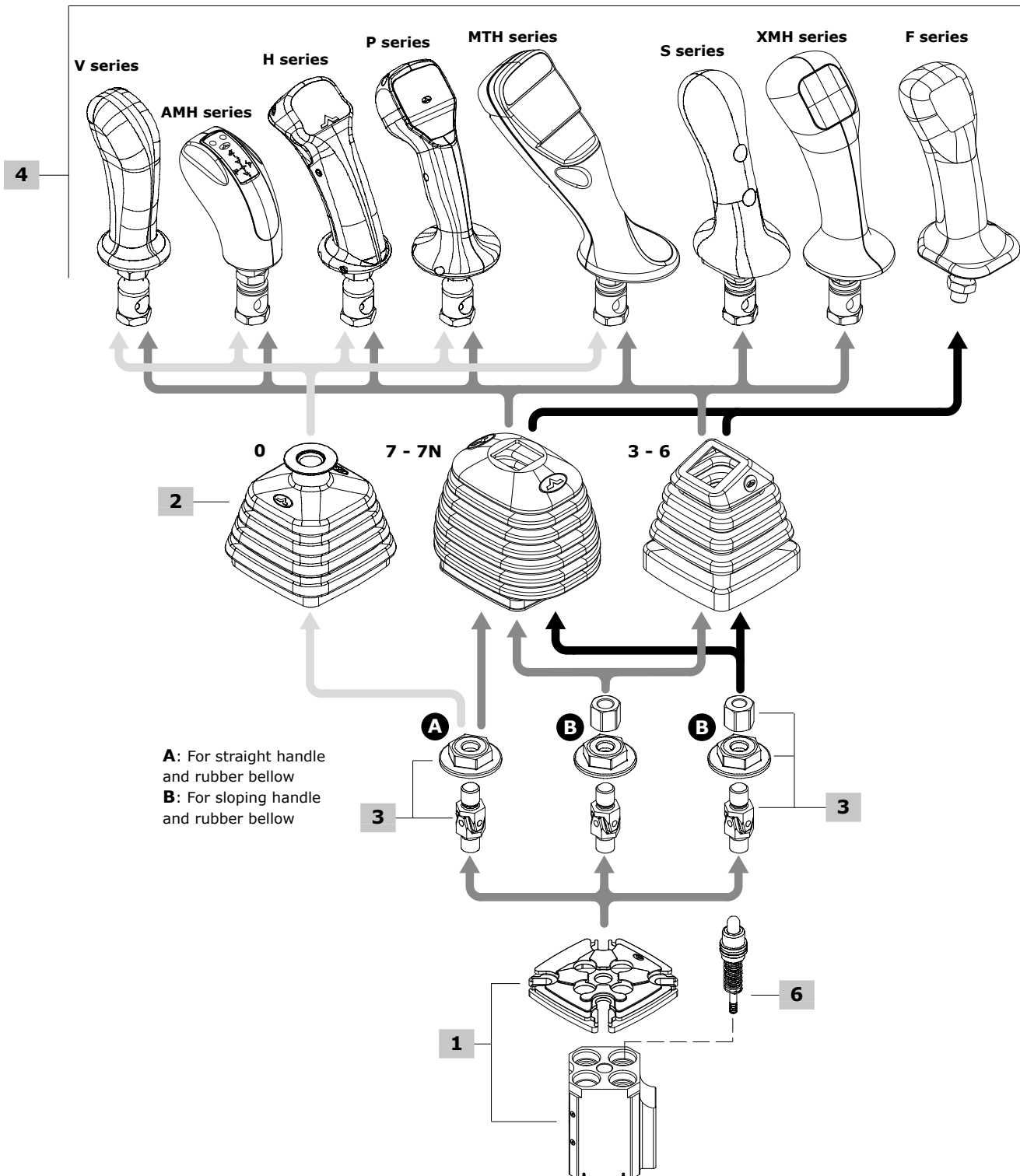
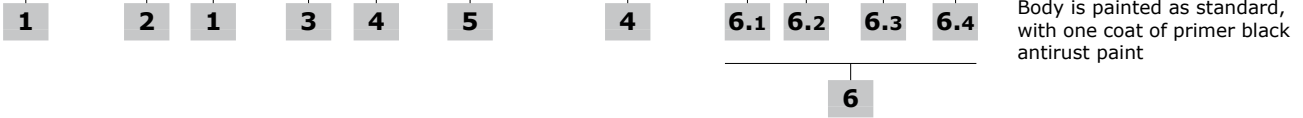
Hydraulic circuit



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

Ordering codes

SVM405 / 3 1 - B / 01 S108 (90) - 045(TM1M) - 0 0 089N M X 4 - <CRVN>



1 Body kit *

TYPE	CODE	DESCRIPTION
SVM405/1A-B	5CO3420309	For rubber bellow square base

2 Rubber bellow

TYPE	CODE	DESCRIPTION
0	3SOF111130	Straight type, square base with logo: not available for type S and F
3	3SOF111113	Sloping type, square base with logo; only for 9° sloping handles. Not available for type 16 control
6	3SOF111114	As type 3 without logo. Not available for type 16 control
7	3SOF111135	General purpose type with logo; it can be used straight or up to 30° sloping in all directions
7N	3SOF111137	As type 7 without logo.

3 Control option

TYPE	CODE	DESCRIPTION
Spring return in neutral position		
01	5CIN4003	For handles with straight rubber bellow (not available for 10 and F series)
	5CIN4001	For handles with sloping rubber bellow (not available for 10 and S series)
01F	5CIN401F00	For F series handles
With microswitches for movement detection on each port.		
It needs type 7 rubber bellow and special body: please contact our Sales Department.		
16	5CIN4023	For handles with straight rubber bellow (not available for 10 and F series)
	5CIN4021	For handles with sloping rubber bellow (not available for 10 and S series)

6 Pressure control curves

For list available see from page 35

6.1 Curve type

TYPE	DESCRIPTION
0	Standard

6.2 Typology of curves

TYPE	DESCRIPTION
0	With step
1	Without step

6.3 Curve identification

Progressive number

6.4 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 31 to 62.07 lbf</i>

4 Handles

Some handles as examples are listed below: for technical specifications and full range of handles and other types of joint see the "Handles and hand levers" catalogue.

V series handle

TYPE: **V007-(Q)** CODE: 5IMP030071
DESCRIPTION: Without switches, with sloping 19° left joint and square seat bellow adapter

AMH series handle

TYPE: **AMHT030008-(Q)-6N2D035-7R2D035-8N2D035-(E1)**
CODE: 2IM3000007

DESCRIPTION: 3 spring return push-buttons, flying leads, sloping 19° right joint and square seat bellow adapter

H series handle

TYPE: **HMB03G-(Q)-1R4040-4R3040-5R2040-(12VDC)**

CODE: 2IM4600051

DESCRIPTION: 3 spring return push-buttons on the operator side, flying leads, straight joint, for circular seat bellow

P series handle

TYPE: **PZMA1200B7-0R035-3Y2D035-WN130035-ZN130035-**

(SCHEDA 2PWM)-(TD2M)

CODE: 2IM8700003

DESCRIZIONE: 2 proportional roller and 1 spring return push-button on operator side, "dead man" switch, flying leads with Deutsch pins, sloping 19° left joint and square seat bellow adapter

MTH series handle

TYPE: **MTH-R00-ZTI4100(K)Y-00-1Y2035-2Y2035-3N2035-**

6N2035-ZN122035-MRZ035-(5VDC)-D2F12

CODE: 2IM2000005

DESCRIPTION: 1 proportional roller and 4 spring return push-buttons on the operator side, 1 FNR rocker switch on the opposite side, Deutsch connector, sloping 9° left joint and square seat bellow adapter

XMH series handle

TYPE: **XMHZTA21008-2G2035-4G2035-7G2035-VG171035**

CODE: 2IM1000004

DESCRIPTION: 1 proportional roller and 2 spring return push-buttons on the operator side, 1 push button with spring return on the opposite side, Deutsch connector, 19° sloping right joint, for square seat bellow

S series handle

TYPE: **SZTA8-0G4045-XG122045**

CODE: 2IM5310003

DESCRIPTION: With proportional roller on the operator side and spring return push-button on the opposite side, 19° sloping right joint, for square seat bellow

F series handle

TYPE: **F02F-02R(1=8)**

CODE: 320000251

DESCRIPTION: 2 microswitch push-buttons on the operator side and 2 on the opposite side, flying leads, 15° sloping joint, square seat bellow adapter, requires dedicated control

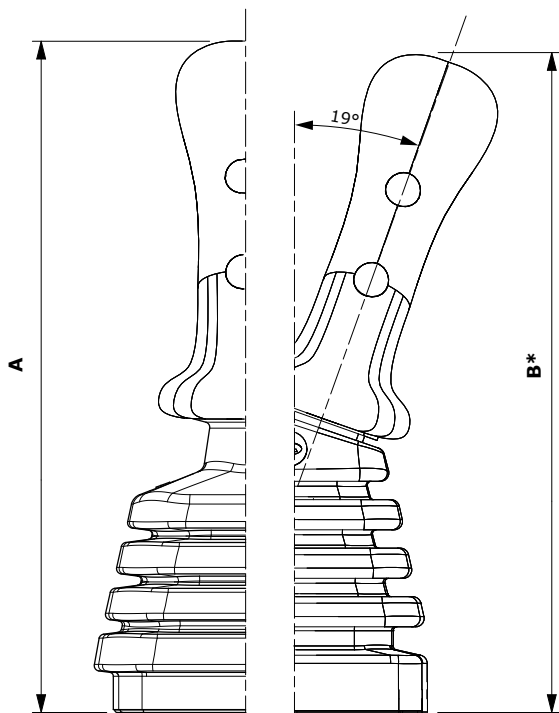
5 Handle position

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

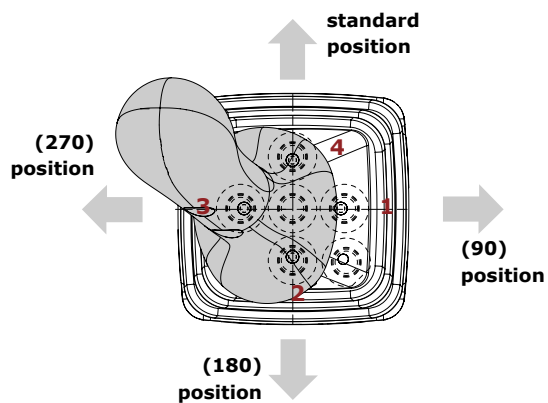
NOTE (*) – Codes are referred to **BSP** thread.

Configuration option

Handle options



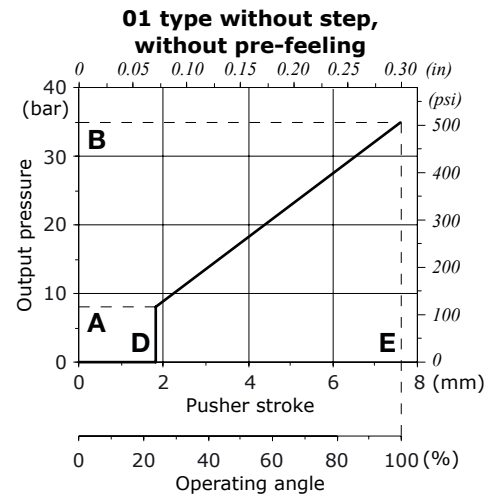
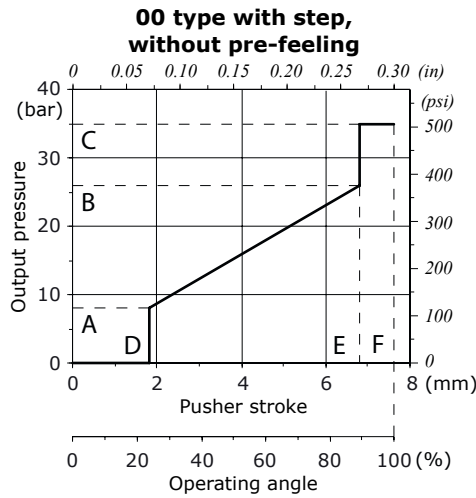
Handle positions



Type	A*		B*	
	mm	in	mm	in
Serie V	242	9.53	235.5	9.27
Serie AMH	193	7.60	195	7.68
Serie H	235	9.25	233	9.17
Serie P	254	10	252	9.92
Serie MTH	261	10.28	249	9.80
Serie S	250	9.84	247	9.72
Serie XMH	259	10.20	255	10.04
Serie F	241	9.49	237	9.33

(*) The overall dimensions are indicative

Control curves with and without step



With step

Curve description		Pressure						Stroke						CODE ⁽¹⁾
Type	Nr	A		B		C		D		E		F		
		bar (±toll)	psi (±toll)	bar (±toll)	psi (±toll)	bar	psi	mm	in	mm	in	mm	in	
00	073	4 (±1)	58 (±14.5)	18 (±1)	261 (±14.5)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400073NB 5CR010073NM
00	020	4.3 (±0.5)	62.35 (±7.25)	15.2 (±1)	220.4 (±14.5)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400020NM
00	004	4.9 (±0.5)	71.05 (±7.25)	18.9 (±1)	274.05 (±14.5)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400004NM
00	075	5 (±0.5)	72.5 (±7.25)	15 (±1.5)	217.5 (±21.75)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400075NA 5CR400075NM
00	028	5 (±1)	72.5 (±14.5)	21 (±1.5)	304.5 (±21.75)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400028NM
00	087	5.8 (±0.5)	84.1 (±7.25)	17 (±1.5)	246.5 (±21.75)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400087NM
00	033	5.8 (±0.5)	84.1 (±7.25)	19 (±1)	275.5 (±14.5)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400033NA 5CR400033NM
00	070	5.8 (±1)	84.1 (±14.5)	22.4 (±2)	324.8 (±29)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400070NM
00	021	6 (±0.5)	87 (±7.25)	16.3 (±1)	236.35 (±14.5)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400021NM
00	054	6.2 (±1)	89.9 (±14.5)	24.5 (±2)	355.25 (±29)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400054NM
00	026	6.5 (±0.5)	94.25 (±7.25)	14 (±1)	203 (±14.5)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400026NM
00	123	6.5 (±0.5)	94.25 (±7.25)	15.7 (±0.5)	227.65 (±7.25)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400123NB
00	098	7 (±0.5)	101.5 (±7.25)	22.6 (±1.5)	327.7 (±21.75)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400098NM
00	088	8 (±0.5)	116 (±7.25)	27 (±1.5)	391.5 (±21.75)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR400088NM
00	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	5CR400089NA 5CR400089NM

⁽¹⁾ Codes are referred to the curve with the specific return spring
For different curves please contact our Sales Department

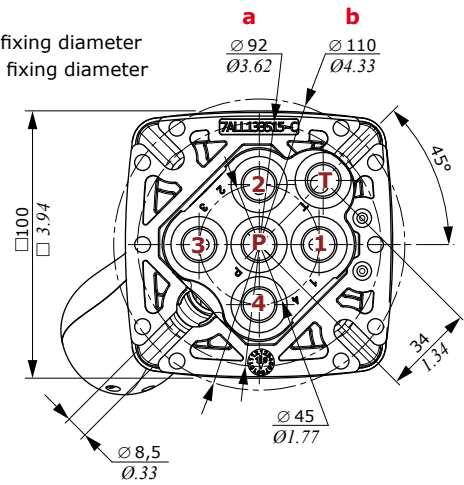
Without step

Curve description		Pressure				Stroke				CODE ⁽¹⁾
Tipo	Nr	A		B		D		E		
		bar (±toll)	psi (±toll)	bar (±toll)	psi (±toll)	mm	in	mm	in	
01	156	3.4 (±0.5)	49.3 (±7.25)	14.5 (±1.5)	210.25 (±21.75)	0.85	0.03	7.6	0.30	5CUR40156NM
01	111	5.5 (±1)	79.75 (±14.5)	25.5 (±2)	369.75 (±29)	0.85	0.03	7.6	0.30	5CUR40111NA

⁽¹⁾ Codes are referred to the curve with the specific return spring
For different curves please contact our Sales Department

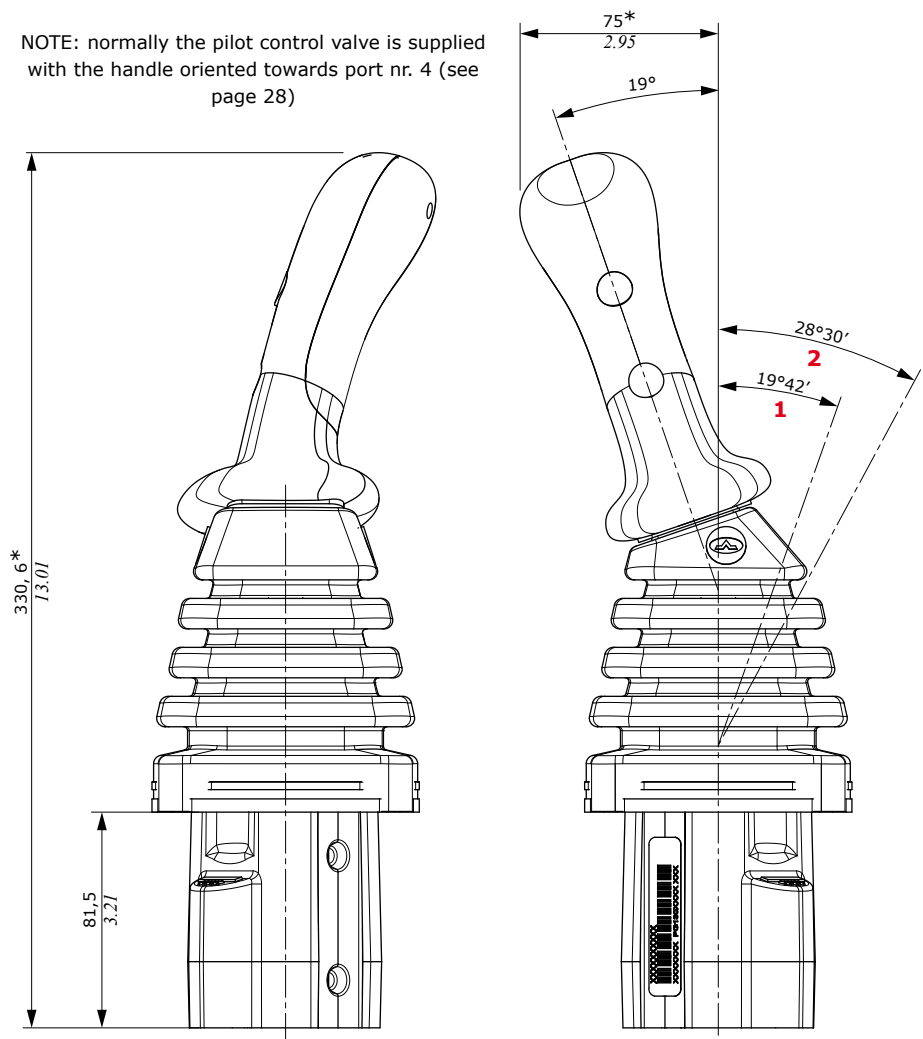
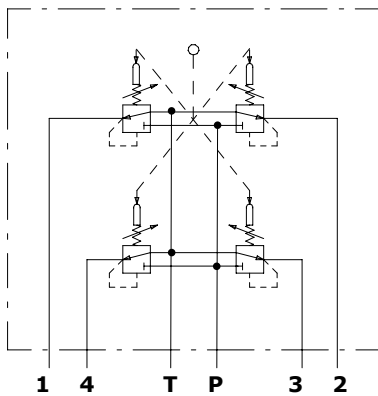
Dimensions and hydraulic circuit

a : Minimum fixing diameter
b : Maximum fixing diameter



NOTE: normally the pilot control valve is supplied with the handle oriented towards port nr. 4 (see page 28)

Hydraulic circuit

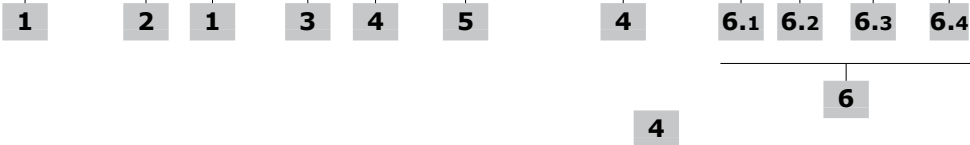


(*) S type handle

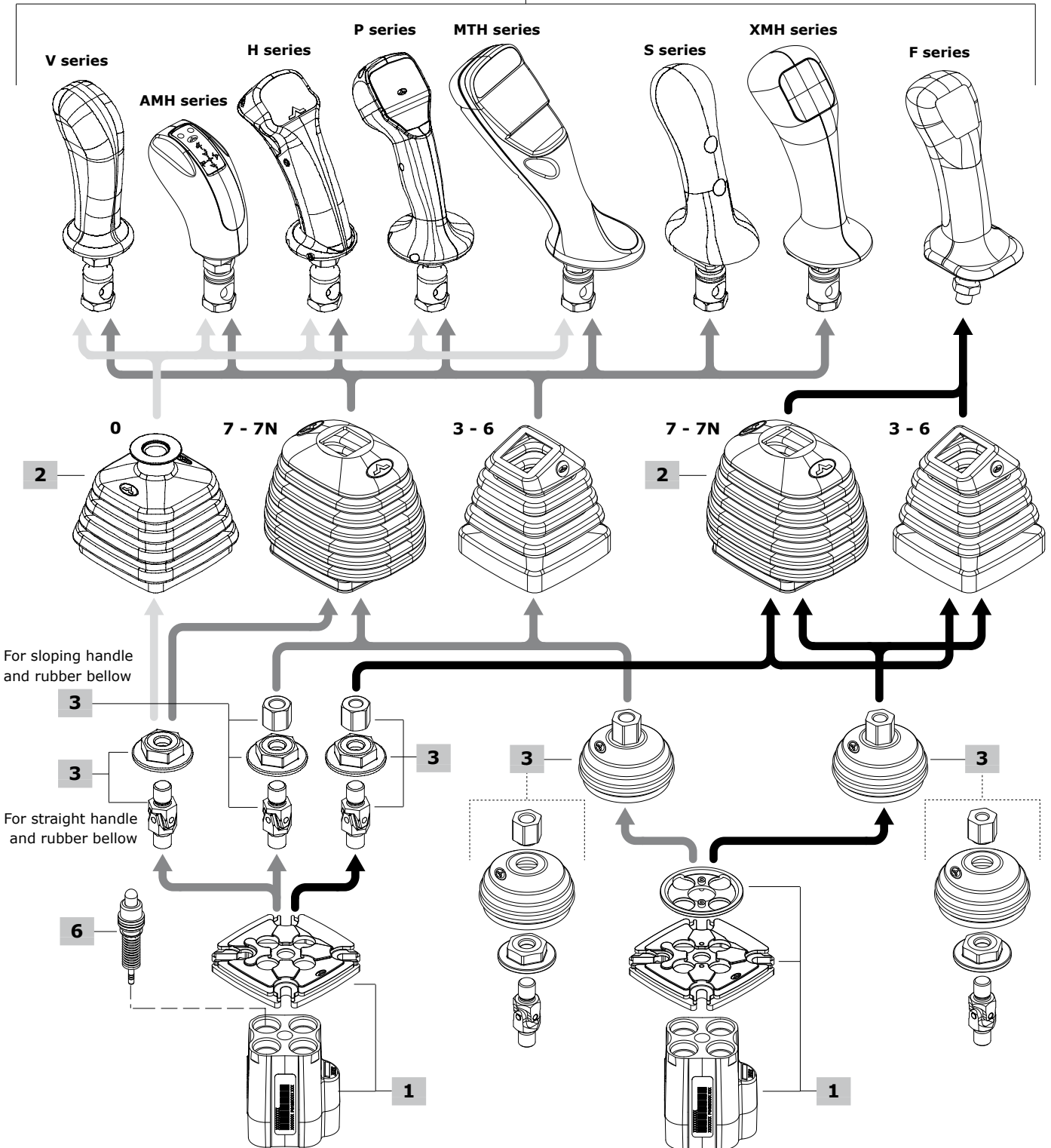
1 : Single work port
2 : Two simultaneous work ports

Ordering codes

SVM320 / 3 1 - B / 01 S108 (90) - 045(TM1M) - 0 0 089C M X 4 - <CRVN>



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



Ordering codes

1 Body kit*

TYPE	CODE	DESCRIPTION
SVM320/1-B	5CO3320300	Body kit with cast iron body.
SVM320/1-B	5CO3320300C	As previous one, double rubber bellow arrangement

2 Rubber bellow

TYPE	CODE	DESCRIPTION
For single bellow		
0	3SOF111130	Straight type, square base with logo: not available for and F type handles
3	3SOF111113	Sloping type, square base with logo; only for 19° sloping handles
6	3SOF111114	As previous one, without logo
7	3SOF111135	Universal type, rectangular base, with logo. It can be used straight and 30° sloping in all directions
7N	3SOF111137	As previous one, without logo
For double bellow		
7N	3SOF111137	As previous one, without logo

3 Control option

TYPE	CODE	DESCRIPTION
Spring return in neutral position		
01	5CIN4003	For V, AMH, H, P MTH series handles with straight rubber bellow
	5CIN4001	For handles with sloping (3-6) or tilting (7-7N) rubber bellow
01F	5CIN401F00	As type 01 for F type handle
01SC	5CIN4050	With additional protective rubber bellow. Available for handles with sloping(3-6) or tilting (7-7N) rubber bellow Dedicated body kit is required Not available for F type handle
01SCF	5CIN405F00	As previous one for F type handle

6 Pressure control curves

For list available see from page 40

6.1 Curve type

TYPE	DESCRIPTION
0	Standard

6.2 Typology of curves

TYPE	DESCRIPTION
0	With step
1	Without step

6.3 Curve identification

Progressive number

6.4 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 31 to 62.07 lbf</i>

4 Handles

Some handles as examples are listed below: for technical specifications and full range of handles and other types of joint see the "Handles and handlevers" catalogue.

V series handle

TYPE: **V007-(Q)** CODE: 5IMP030071
DESCRIPTION: Without switches, with sloping 19° left joint and square seat bellow adapter

AMH series handle

TYPE: **AMH0400A9-6R2035(T)-7R2035(T)-8R2035(T)-9R2035(T)-(E2)** CODE: 2IM3000004
DESCRIPTION: 4 spring return push-buttons, protection diode, flying leads, straight joint and square seat bellow adapter

H series handle

TYPE: **HA029-ORD040-2RD040-4RD040** CODE: 2IM4100109
DESCRIPTION: 2 microswitch push-buttons on the operator side, "dead man" switch, flying leads, straight joint, for circular seat bellow

P series handle

TYPE: **PZTA4100D9-ORD035-3R1D035-4R1D035-5R1D035-6R1D035-WN130035** CODE: 2IM8600007
DESCRIZIONE: 1 proportional roller and 4 spring return push-buttons on operator side, "dead man" switch, flying leads, straight joint for circular seat bellow

MTH series handle

TYPE: **MTH-R00-ZTM31009-00-3N2035-5R2035-6N2035-7N2035-8N2035-DY2035-WG130035-(D2F12)** CODE: 2IM2000012
DESCRIPTION: 1 proportional roller and 3 spring return push-buttons on the operator side, 3 push buttons on the opposite side, straight joint, for circular seat bellow, Deutsch connector

XMH series handle

TYPE: **XMHZTA21008-2G2035-4G2035-7G2035-VG171035** CODE: 2IM1000004
DESCRIPTION: 1 proportional roller and 2 spring return push-buttons on the operator side, 1 push button with spring return on the opposite side, Deutsch connector, 19° sloping right joint, for square seat bellow

S series handle

TYPE: **SZTA8-0G4045-XG122045** CODE: 2IM5310003
DESCRIPTION: With proportional roller on the operator side and spring return push-button on the opposite side, 19° sloping right joint, for square seat bellow

F series handle

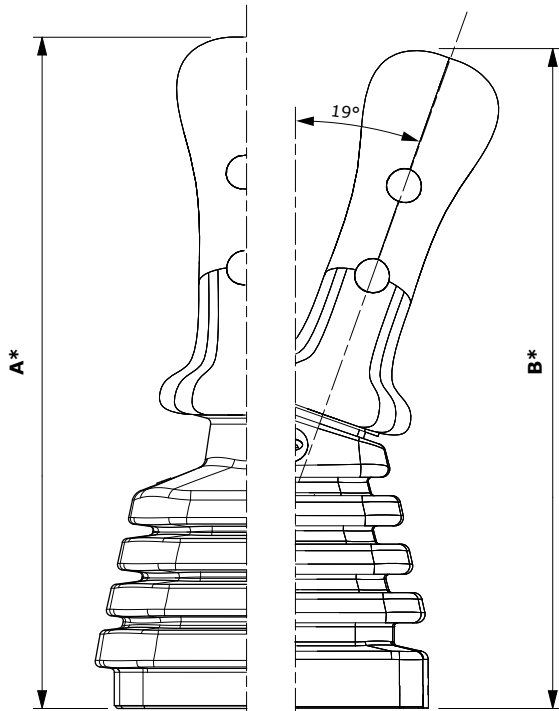
TYPE: **F02F-02R(1=8)** CODE: 320000251
DESCRIPTION: 2 microswitch push-buttons on the operator side and 2 on the opposite side, flying leads, 15° sloping joint, square seat bellow adapter, requires dedicated control

5 Handle position

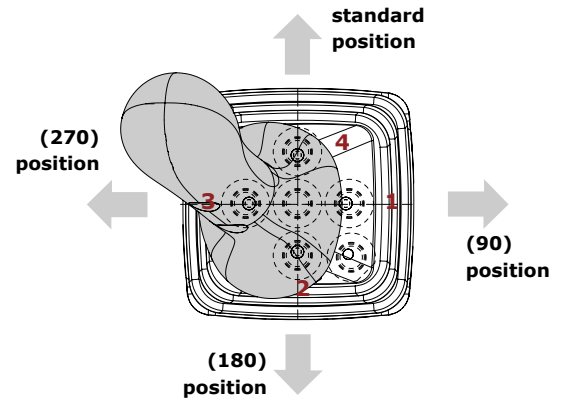
TYPE	DESCRIPTION
(-)	STANDARD configuration, forward operation towards port 4: omitted in description
(90)	Mounted with 90° rotation step: forward operation towards port 1
(180)	Mounted with 180° rotation step: forward operation towards port 2
(270)	Mounted with 270° rotation step: forward operation towards port 3

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

Handle options



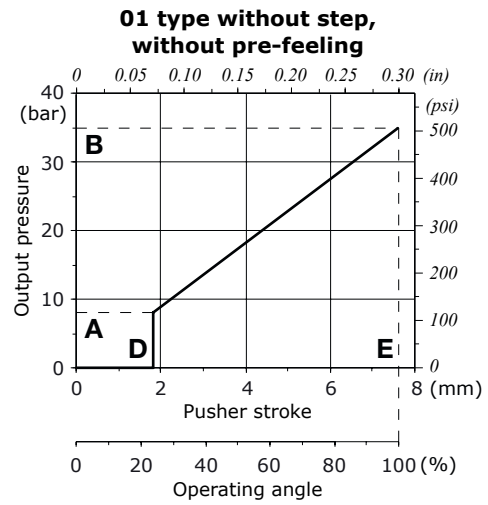
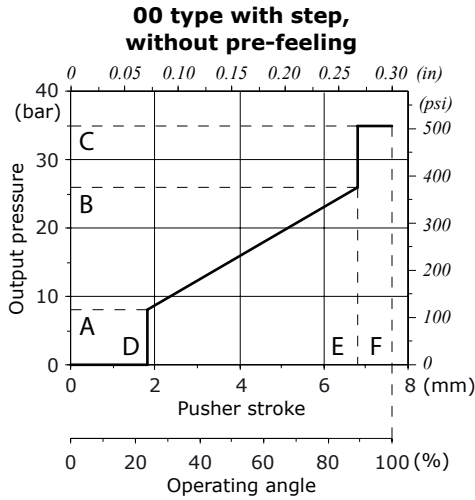
Handle positions



Type	A*		B*	
	mm	in	mm	in
V series	237	9.33	235	9.25
AMH series	193	7.60	193	7.60
H series	235	9.25	233	9.17
P series	254	10	252	9.92
MTH series	261	10.29	249	9.80
S series	250	9.84	247	9.72
XMH series	259	10.20	255	10.04
F series	241	9.49	237	9.33

(*) The overall dimensions are indicative

Control curves with and without step



With step

Curve description		Pressure						Stroke						CODE ⁽¹⁾
Type	Nr	A		B		C		D		E		F		
		bar (\pm toll)	psi (\pm toll)	bar (\pm toll)	psi (\pm toll)	bar	psi	mm	in	mm	in	mm	in	
00	020	4.3 (\pm 0.5)	62.4 (\pm 7.25)	15.2 (\pm 1.5)	220.4 (\pm 21.75)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR800020CA
00	033	5.8 (\pm 0.5)	84.1 (\pm 7.25)	19 (\pm 1.5)	275.5 (\pm 21.75)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR800033CM
00	053	8 (\pm 1)	116 (\pm 14.5)	22,3 (\pm 1.5)	323.35 (\pm 21.75)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR800053CM
00	085	6 (\pm 1)	87 (\pm 14.5)	25 (\pm 1.5)	362.5 (\pm 21.75)	35	507.5	0.85	0.03	7.2	0.28	7.6	0.30	5CR800085CM
00	088	8 (\pm 1)	116 (\pm 14.5)	27 (\pm 1.5)	391.5 (\pm 21.75)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR800088CA
00	089	7.5 (\pm 0.75)	108.75 (\pm 10.87)	28 (\pm 2)	84.1 (\pm 29)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR800089CM
00	036	12 (\pm 0.5)	174 (\pm 7.25)	25 (\pm 1)	362.5 (\pm 214.5)	35	507.5	0.85	0.03	7.25	0.28	7.6	0.30	5CR800036CA

⁽¹⁾ Codes are referred to the curve with the specific return spring
For different curves please contact our Sales Department

Without step

Curve description		Pressure				Stroke				Code ⁽¹⁾
Type	Nr	A		B		D		E		
		bar (\pm toll)	psi (\pm toll)	bar (\pm toll)	psi (\pm toll)	mm	in	mm	in	
01	111	5,5 (\pm 1)	79.75 (\pm 14.5)	25,5 (\pm 1,5)	369.75 (\pm 21.75)	0,85	0.03	7,6	0.30	5CR801111CA
01	197	6 (\pm 1)	87 (\pm 14.5)	24,5 (\pm 2)	355.25 (\pm 29)	0,85	0.03	7,6	0.30	5CR801197CM
01	198	6,2 (\pm 0,5)	89.9 (\pm 7.25)	23,2 (\pm 1)	336.4 (\pm 14.5)	0,85	0.03	7,6	0.30	5CR801198CM

⁽¹⁾ Codes are referred to the curve with the specific return spring
For different curves please contact our Sales Department