



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

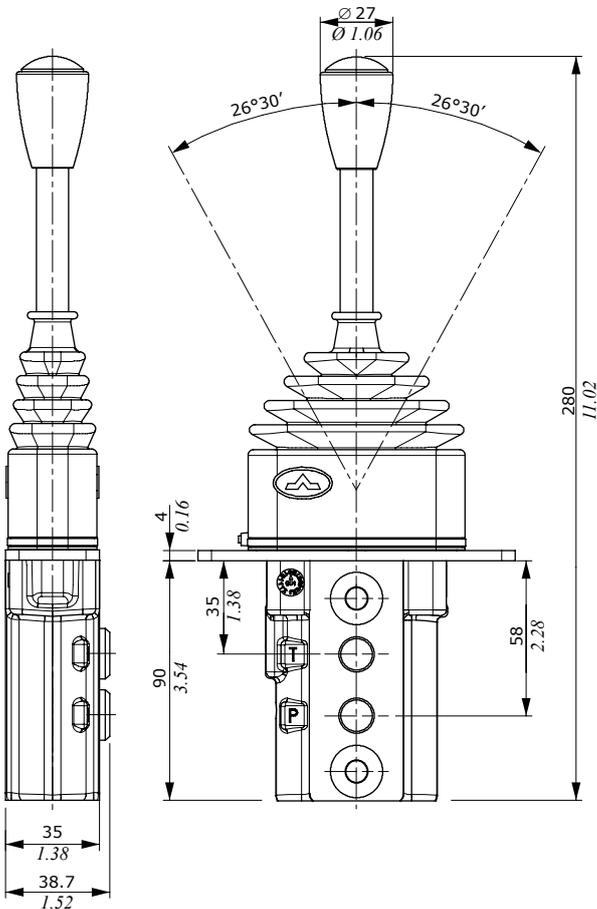
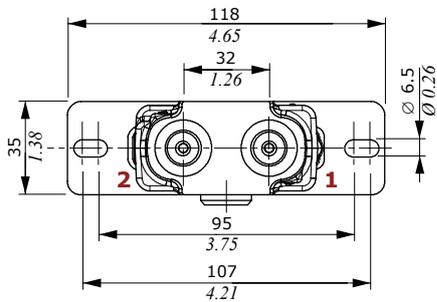
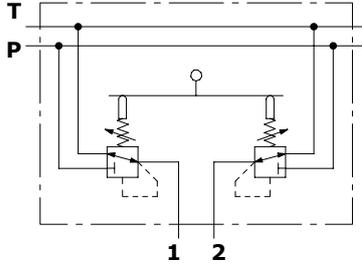
NOTE - These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The manufacturer has to be consulted.

Dimensions and hydraulic circuit

Single acting version

Single function configuration with side P and T ports.

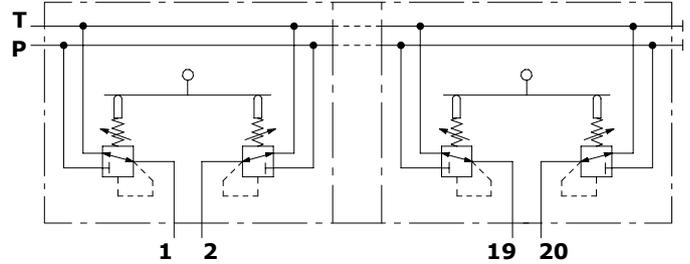
Hydraulic circuit



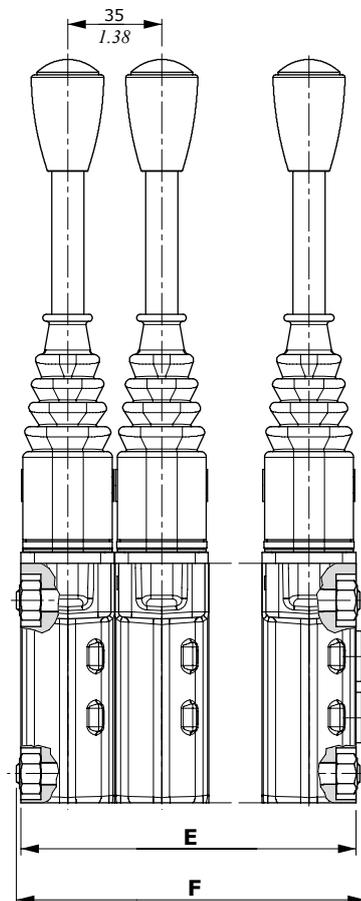
SVM100/n version

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					

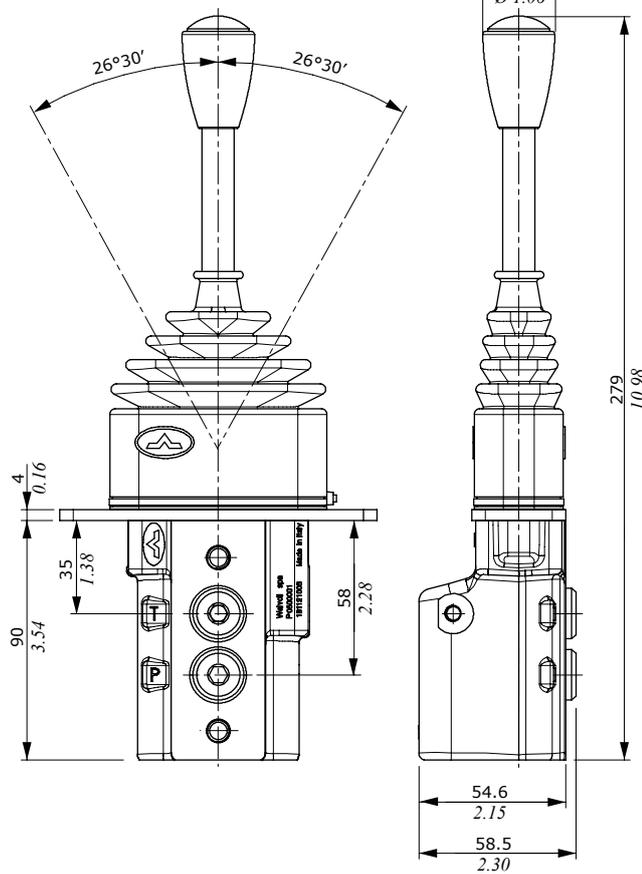
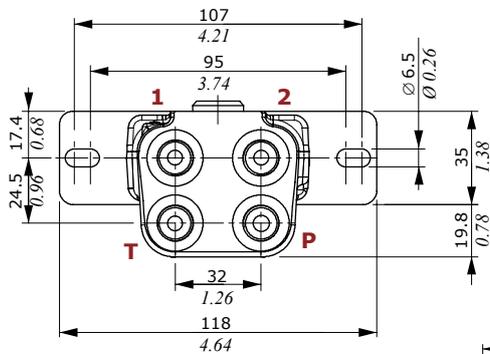
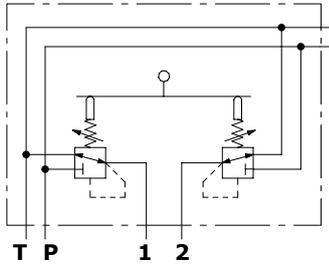


Dimensions and hydraulic circuit

SVM101 version

Single function configuration with bottom P and T ports.

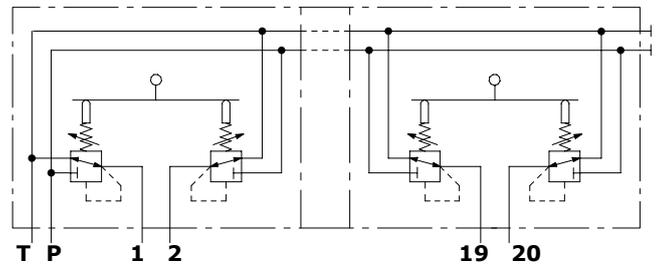
Hydraulic circuit



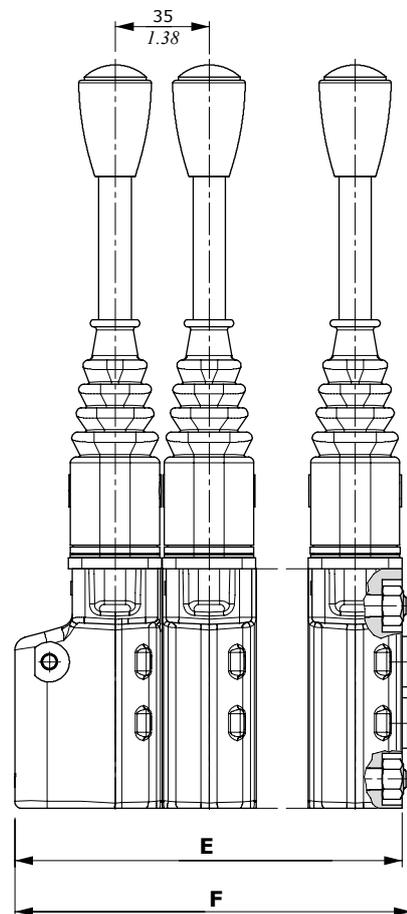
SVM101/n version

Multiple function configuration with bottom P and T ports.

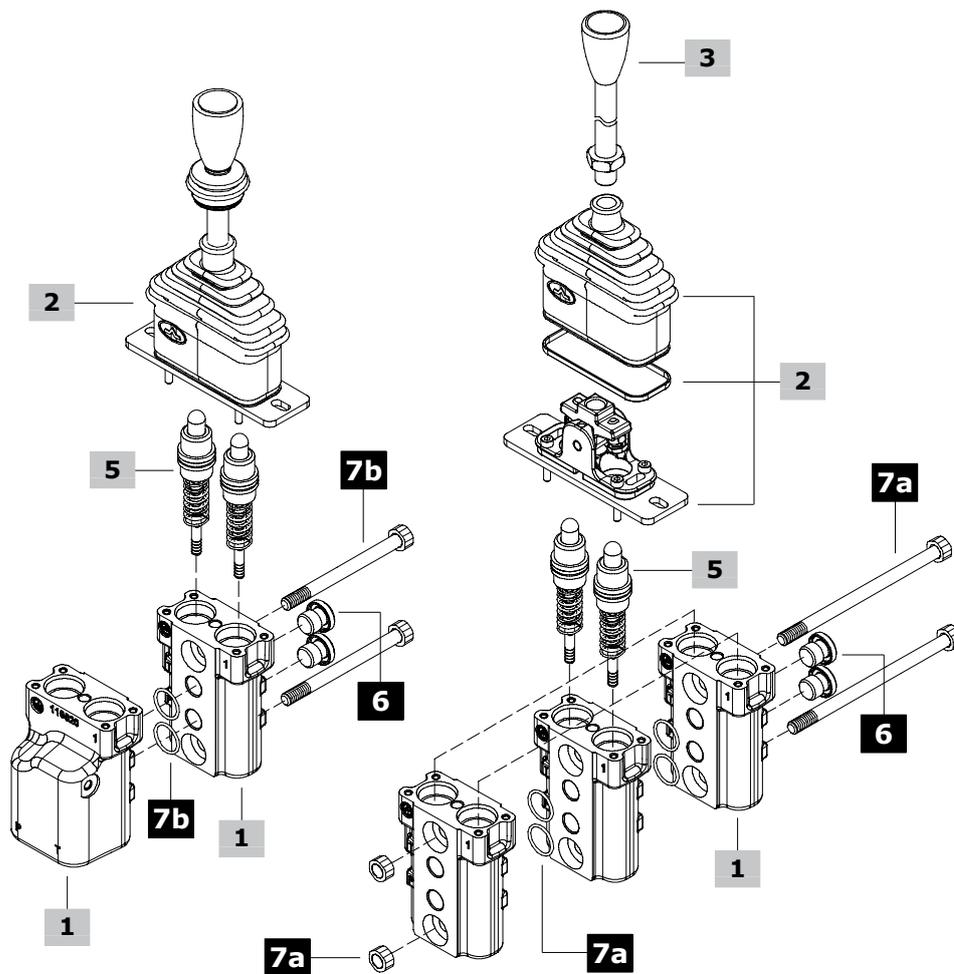
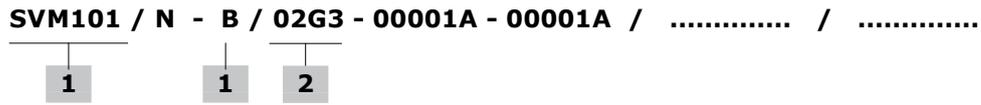
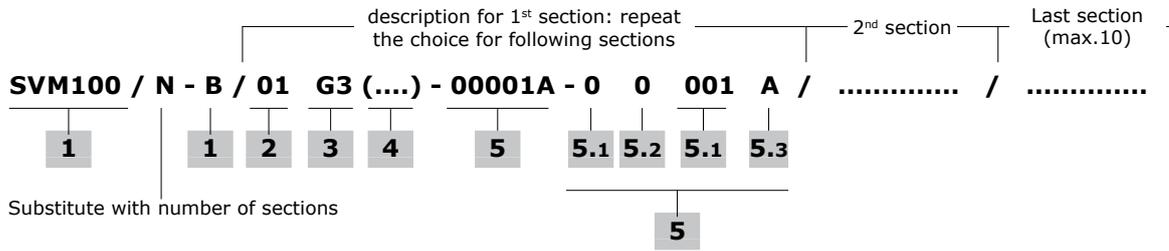
Hydraulic circuit



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.

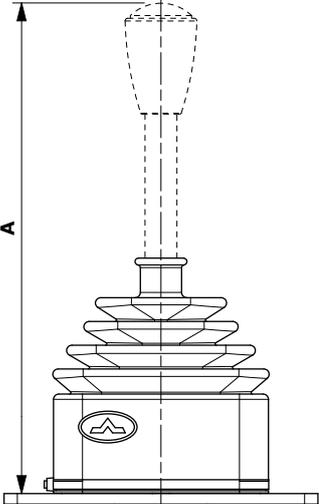
Configuration option

Controls without handlevers

Controls type

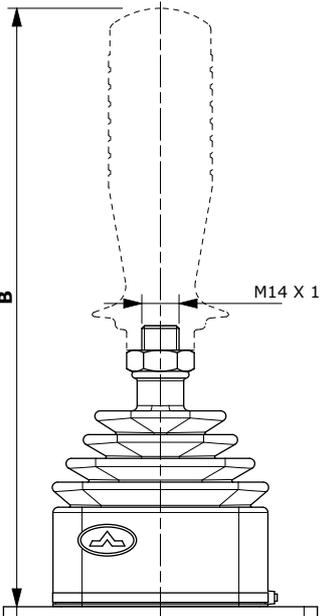
- 01:** Spring return to neutral position
- 05:** With detent in position 1 and spring return in neutral position
- 06:** With detent in position 2 and spring return in neutral position
- 07:** With detent in positions 1 and 2; spring return in neutral position
- 03S:** With friction and neutral sensing,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

01-05-06-07 type



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

03S type



Handle type	B	
	mm	in
10 series	229	9.02
V type	243	9.57
H type	241	9.49
P type	259	10.20
AMH type	200	7.87

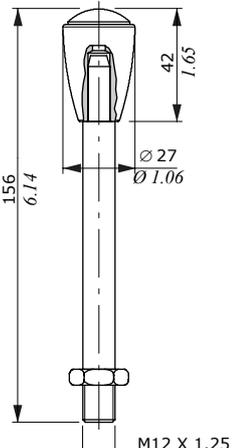
Handlevers

Without microswitch

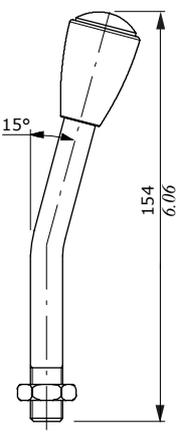
G type: Ogival knob with customizable portlight. It's possible to insert labels with specific machine functions (for example: lifting function): please contact our Sales Department.

E type: Spherical handle customizable as G type.

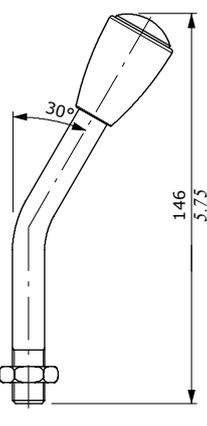
G type
straight rod



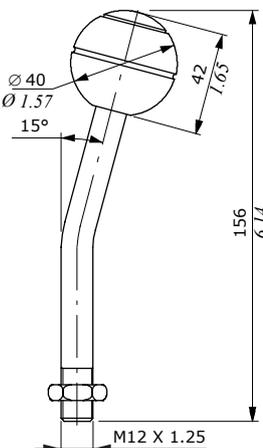
G(15) type
15° sloping rod



G(30) type
30° sloping rod



E type
15° sloping rod



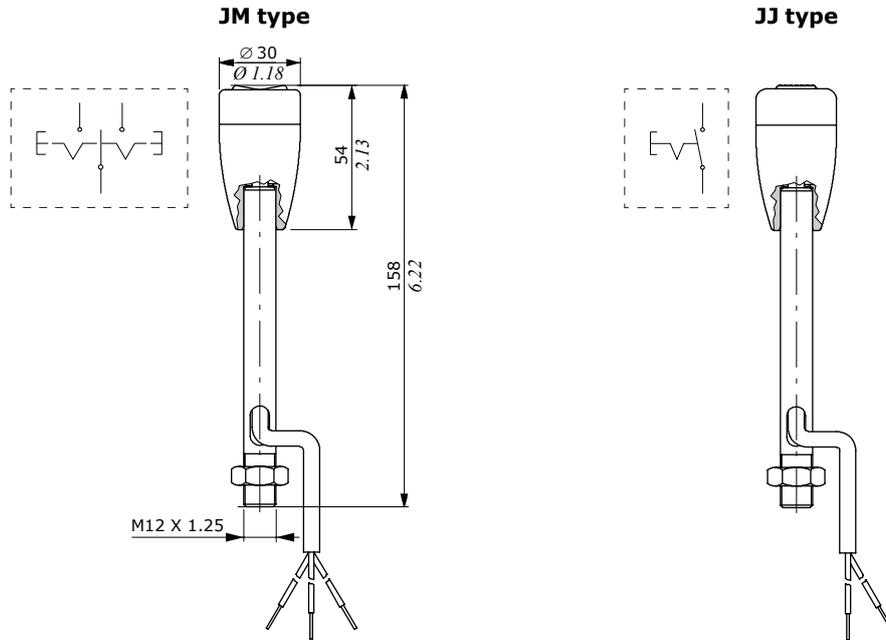
Handlevers

With microswitch

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

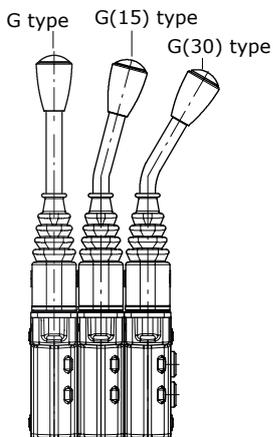
JJ type: As previous one, available with spring return push-button microswitch.

For technical features see catalogue D1WWEH01I.

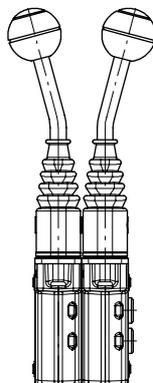


Mounting and orientation examples

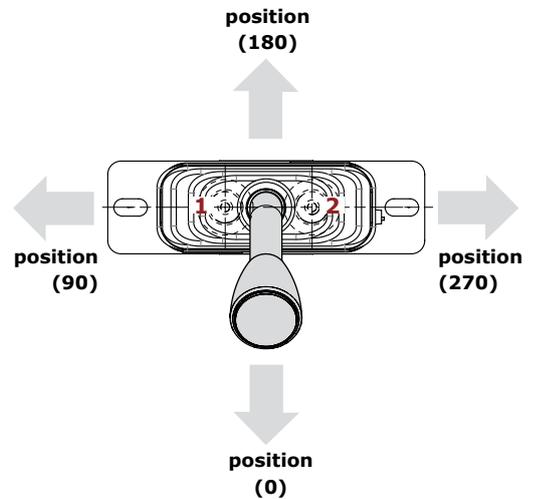
G type
on 3 sections
pilot control valve



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.

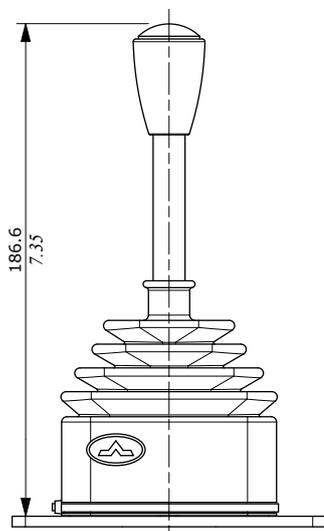
03JL3: As type 03G3 control, JL knob with spring return microswitch push-button.

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

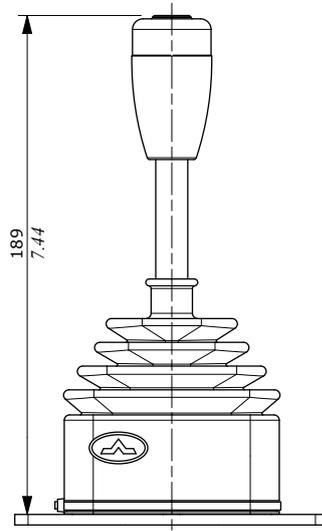
11G3: Detent in neutral position, 1 and 2; it can not be use in adjacent sections.

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

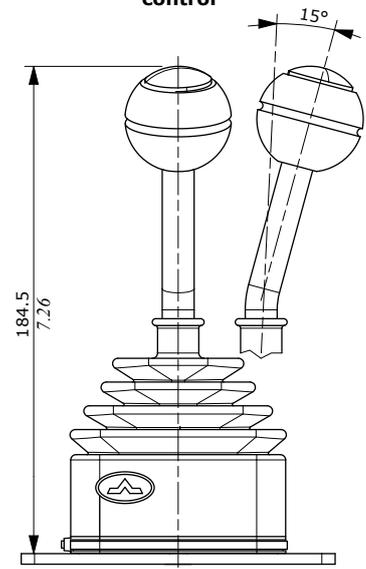
**03G3-20G3
control**



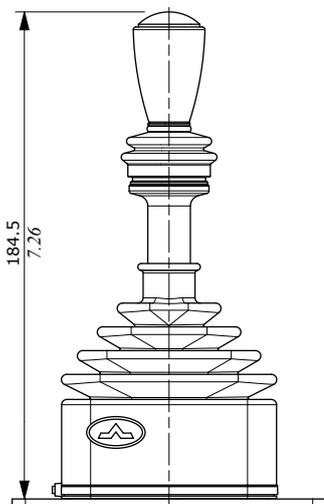
**03JL3
control**



**03E3
control**



**02G3-10G3-11G3
control**



Controls with handlevers

Controls with microswitch

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

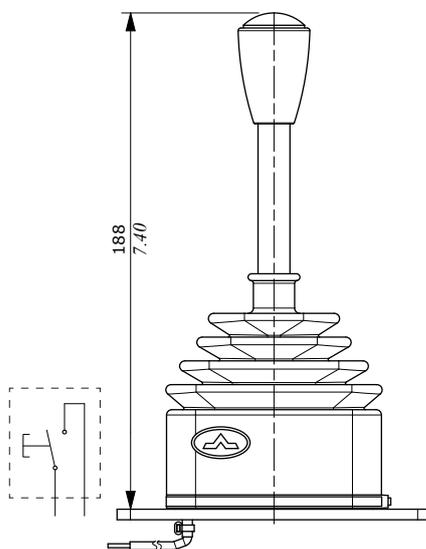
16TM3G3(NC): With (NC) microswitch operation in either directions, protective shell and dust-proof seals

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

