



INTRODUZIONE

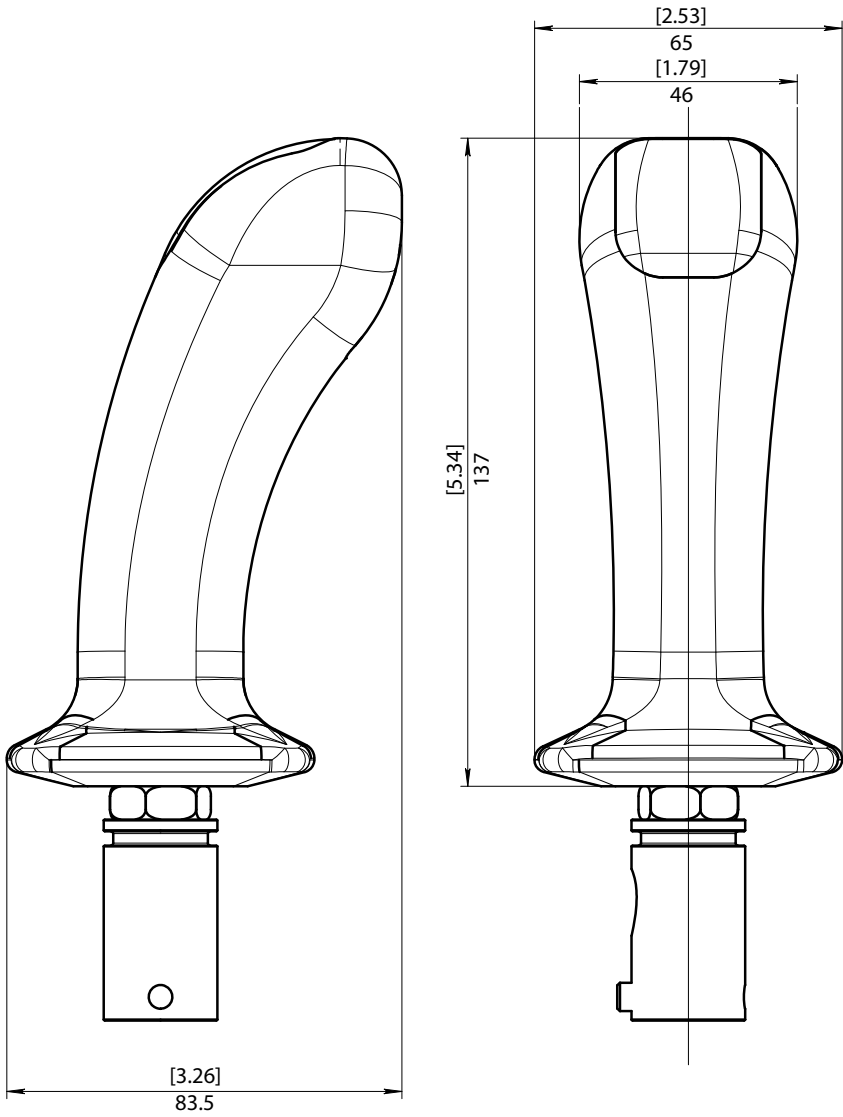
OMFB Hydraulic Components produces a full range of hand grips designed for use on working vehicles in earthmoving applications, on building sites, and also in the farming industry.

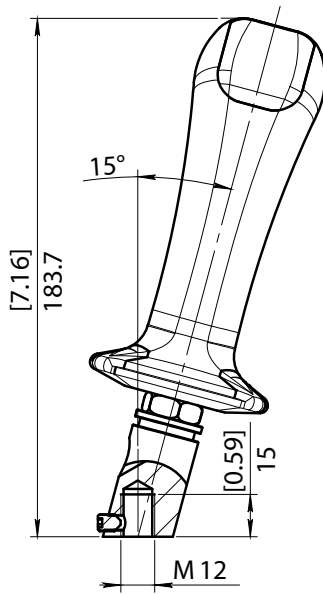
To find the right grip for each application, the characteristics and a standard configurations are indicated for each one.

For special applications or configuration, please contact our offices

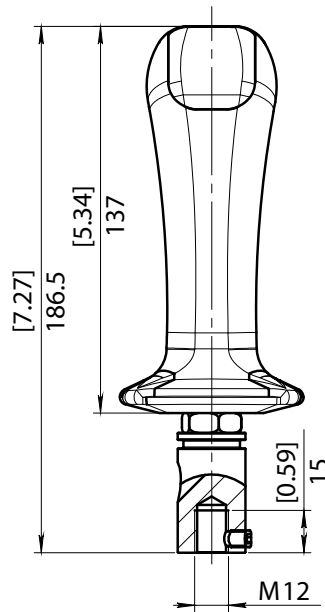


S

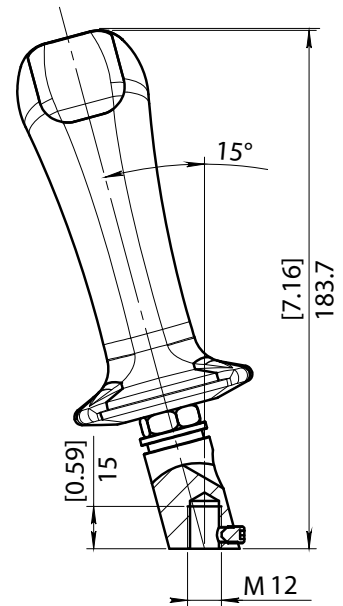




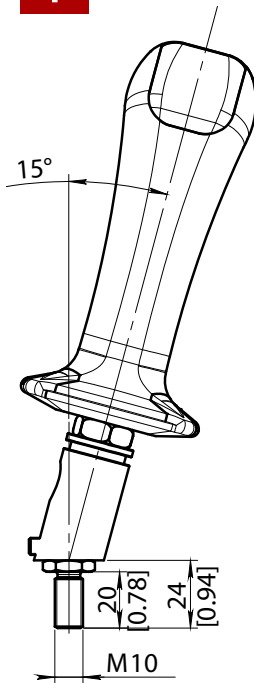
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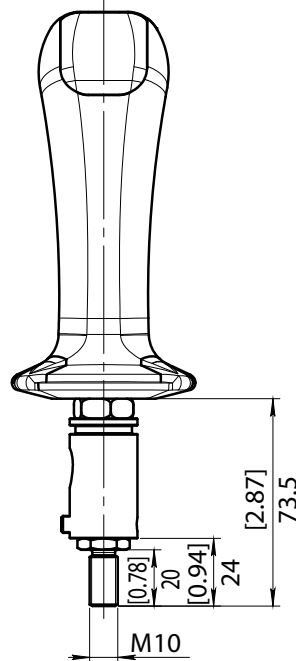
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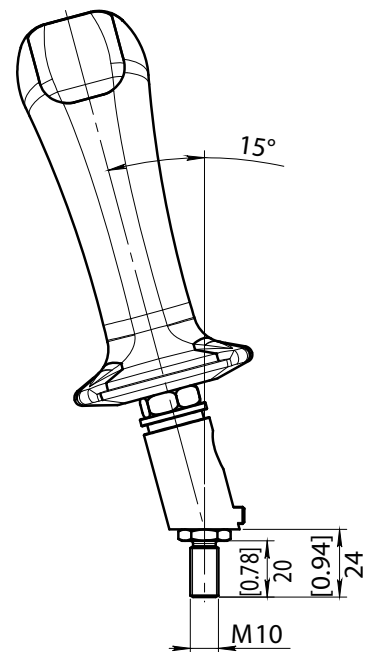
3



4



5



6

1 RIGHT TILTED 15° M12

4 RIGHT TILTED 15° M10

2 STRAIGHT M12

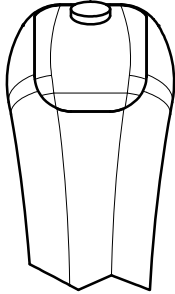
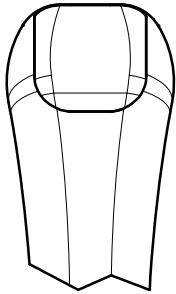
5 STRAIGHT M10

3 LEFT TILTED 15° M12

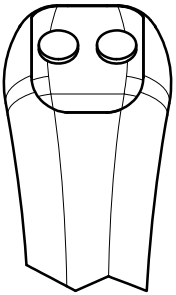
6 LEFT TILTED 15° M10

TOP CONFIGURATIONS

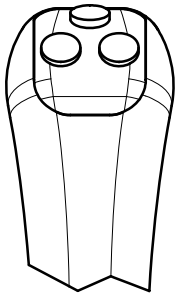
FRONT CONFIGURATIONS



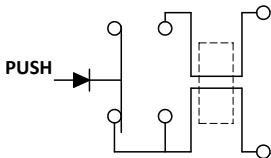
M1



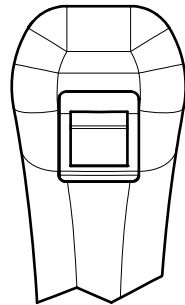
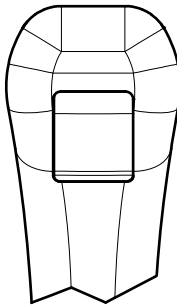
M2+M3



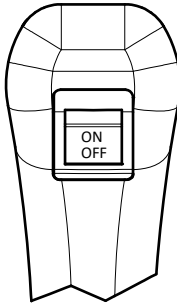
M1+M2+M3



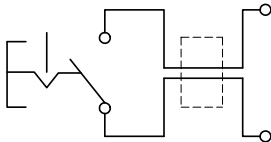
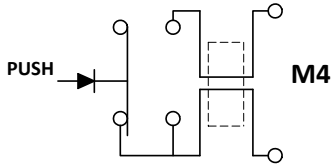
MICRO CAPACITY: DC 12V x 2A



M4: Spring back



M4: On / Off



MICRO CAPACITY: DC 12V x 2A

0 NO TOP BUTTON

1 M1

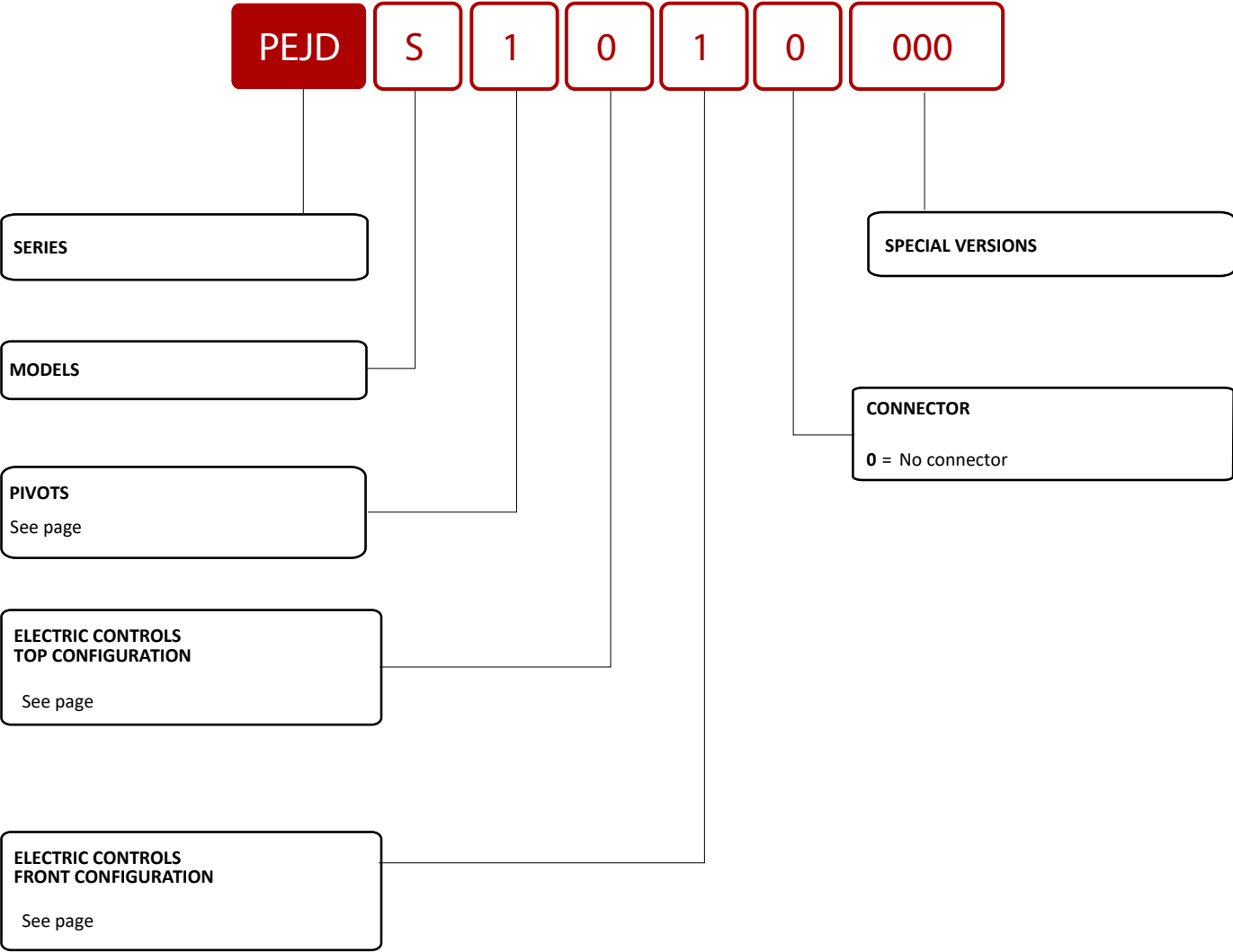
2 M2+M3

3 M1+M2+M3

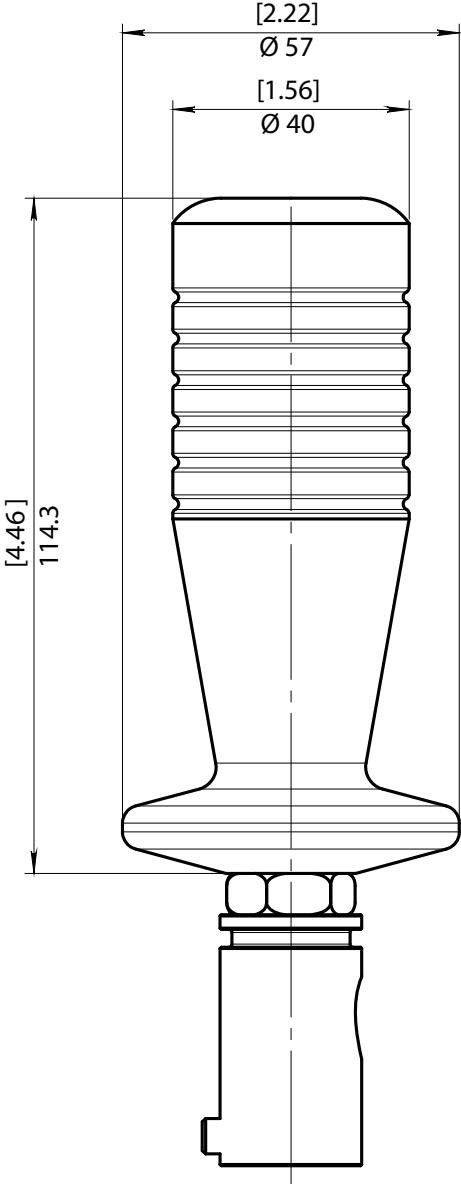
0 NO M4 BUTTON

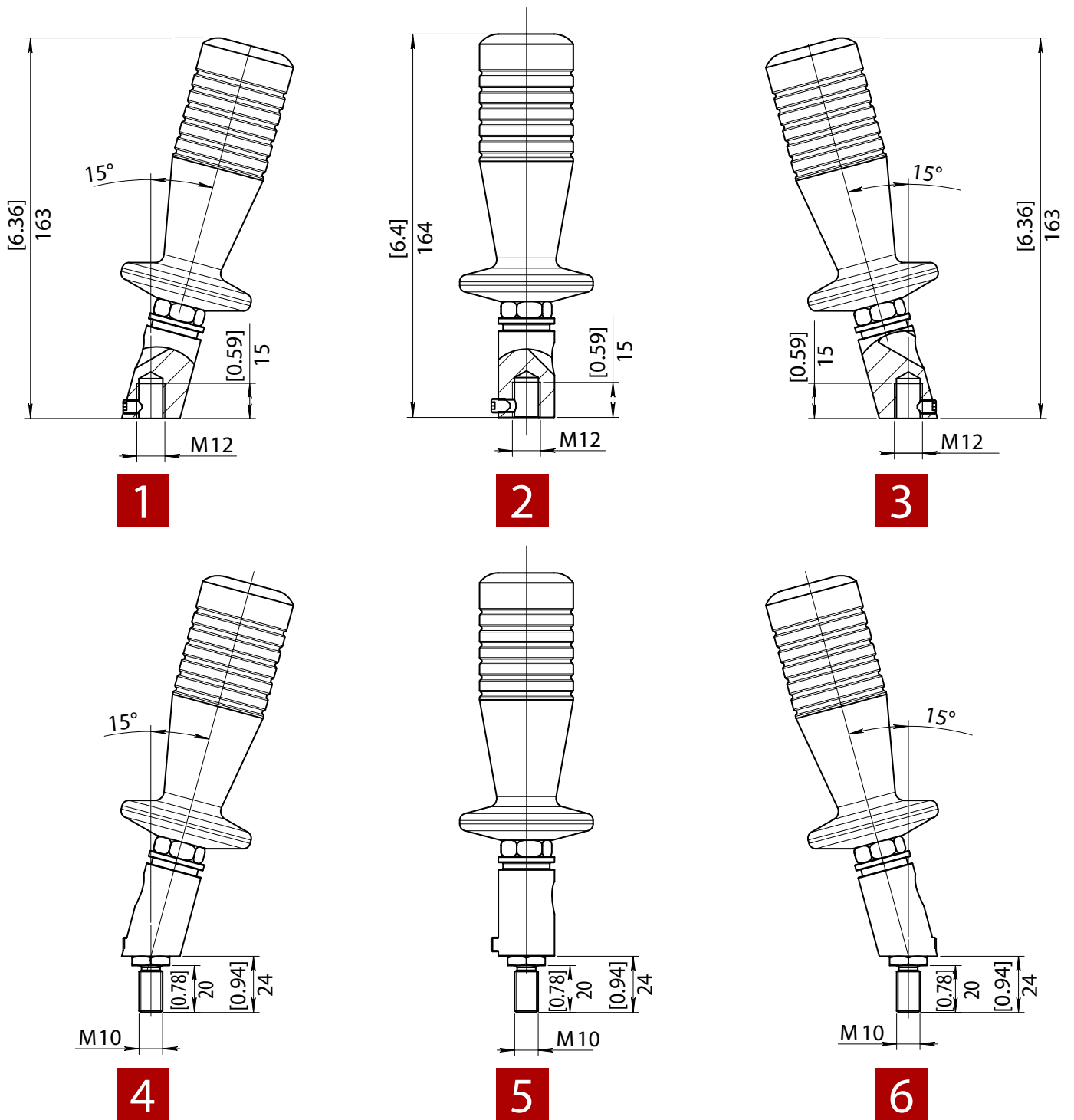
1 1 FRONT SWITCH M4 WITH ROCKING LEVER WITH SPRING RETURN-TO-CENTRE

2 M4 ON/OFF SWITCH



K





1 RIGHT TILTED 15° M12

4 RIGHT TILTED 15° M10

2 STRAIGHT M12

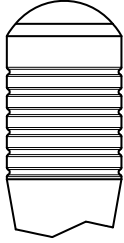
5 STRAIGHT M10

3 LEFT TILTED 15° M12

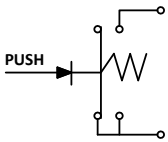
6 LEFT TILTED 15° M10

TOP CONFIGURATIONS

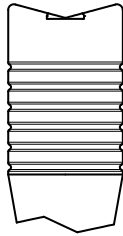
T1



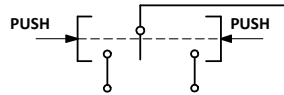
SINGLE BUTTON WITH
SPRING RETURN



T2

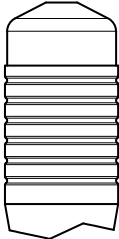


TOGGLE BUTTON

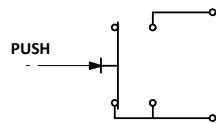


MICRO CAPACITY: DC 12V x 8A

T3

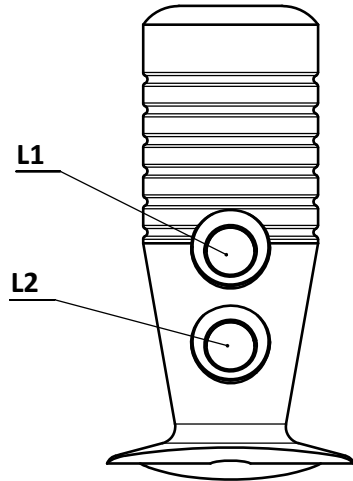


SINGLE PUSH-PUSH BUTTON

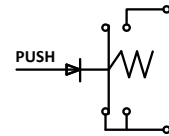


MICRO CAPACITY:
DC 28V x 10A RESISTIVE;
DC 28V x 5A INDUCTIVE

FRONT CONFIGURATIONS



SINGLE MOMENTARY BUTTON



MICRO CAPACITY: DC 28V x 5A RESISTIVE;
DC 28V x 3A INDUCTIVE

O NO TOP BUTTON

B T1 SINGLE TOP BUTTON

C T2 TOGGLE TOP BUTTON

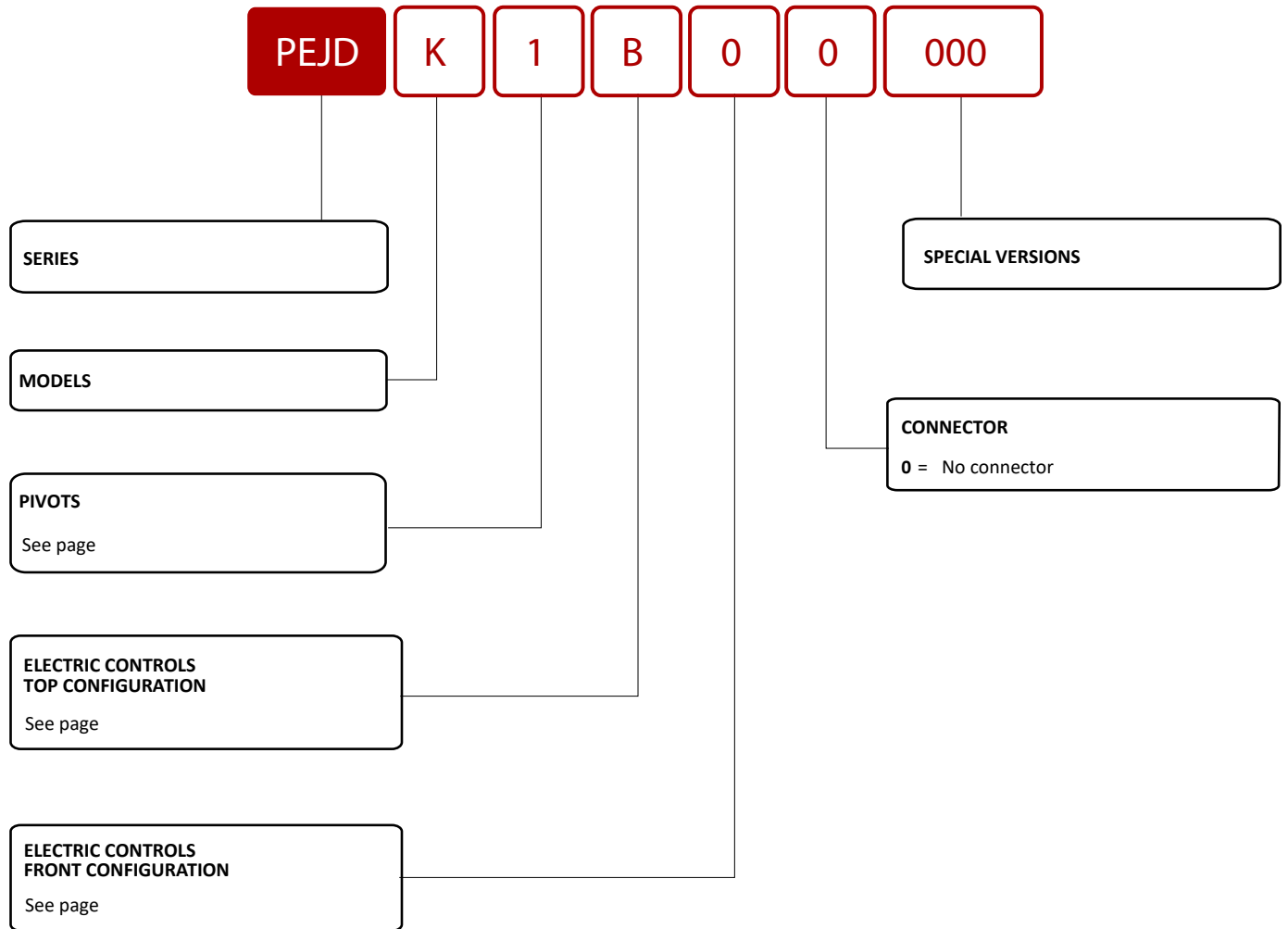
D T3 PUSH-PUSH TOP BUTTON

O NO SIDE BUTTON

F L1 MOMENTARY BUTTON

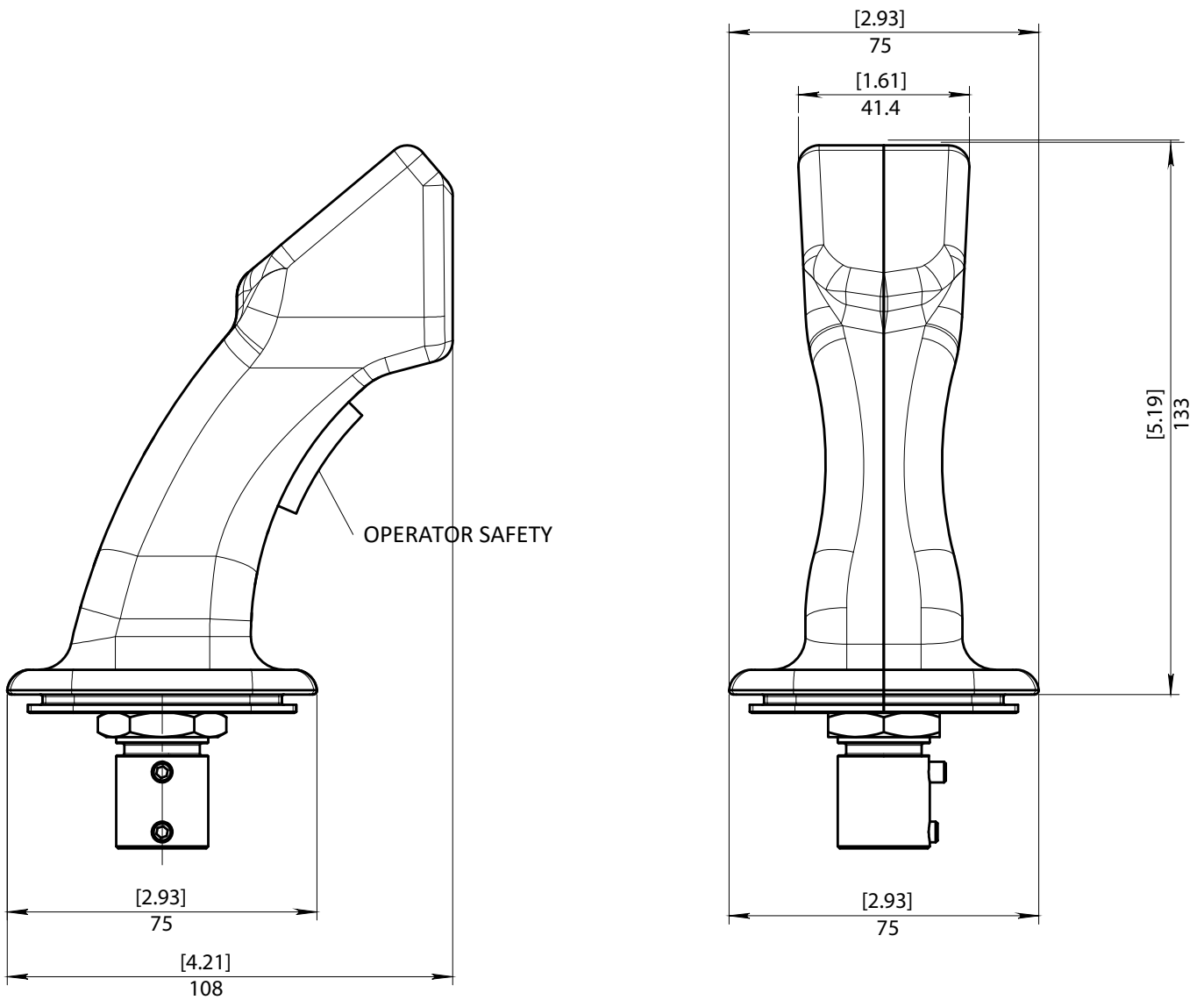
G L2 MOMENTARY BUTTON

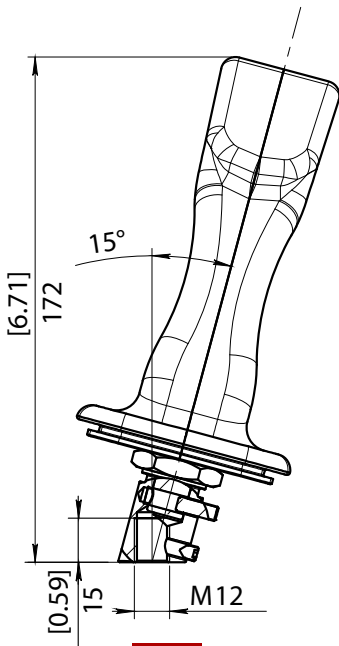
H L1 + L2



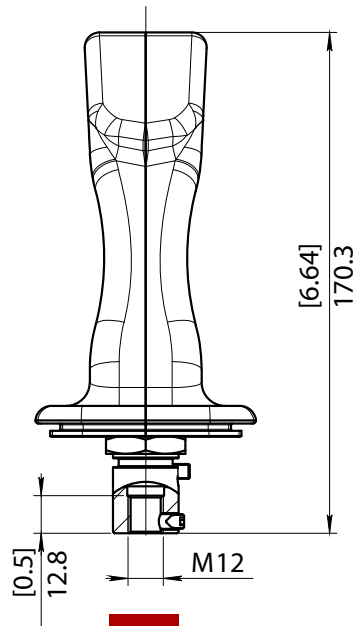
E ERGONOMIC HANDLE

F VERSION "E" + NO OPERATOR SAFETY

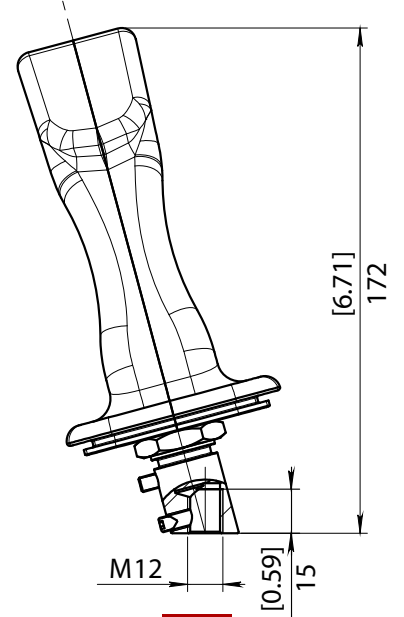




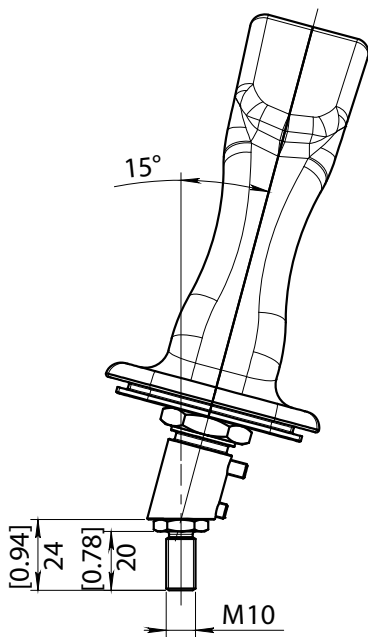
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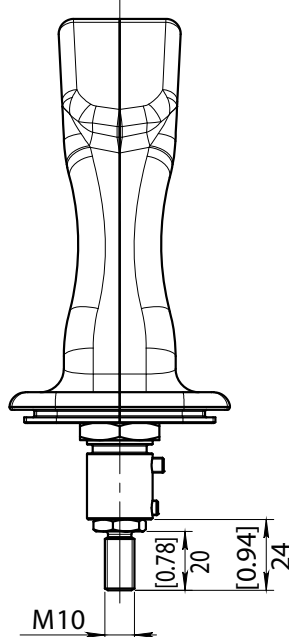
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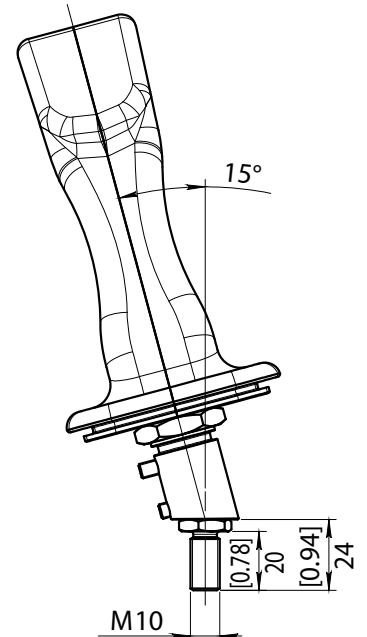
3



4



5



6

1 RIGHT TILTED 15° M12

4 RIGHT TILTED 15° M10

2 STRAIGHT M12

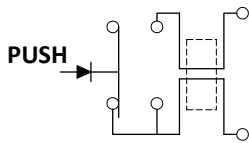
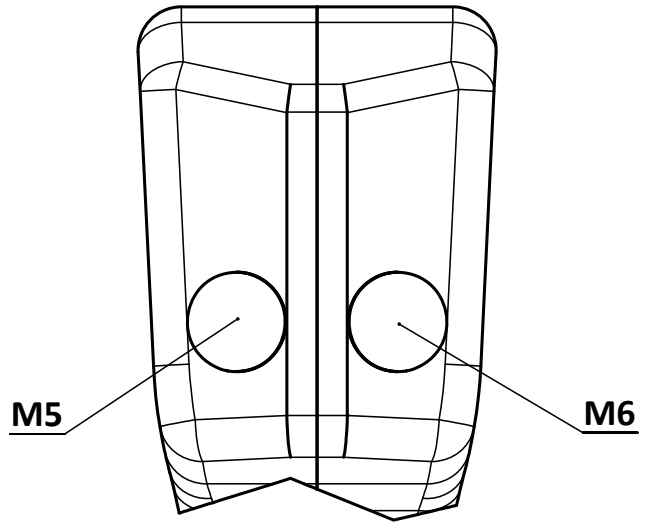
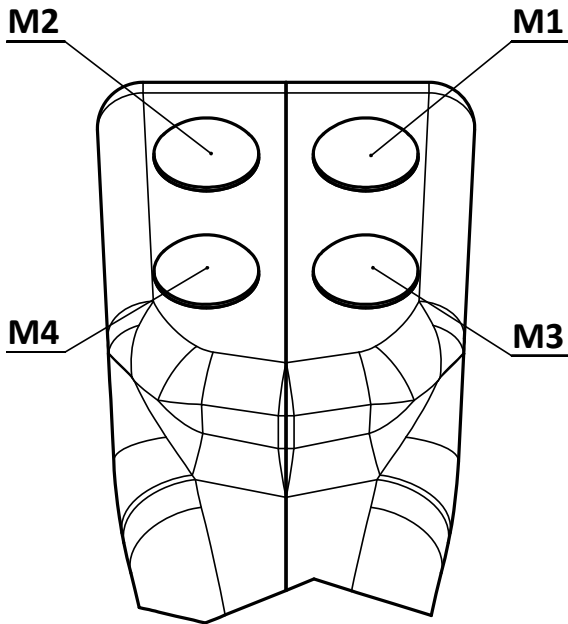
5 STRAIGHT M10

3 LEFT TILTED 15° M12

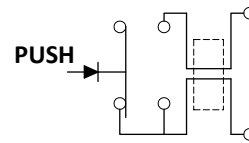
6 LEFT TILTED 15° M10

TOP CONFIGURATIONS

FRONT CONFIGURATIONS



MICRO CAPACITY: DC 12V x 2A



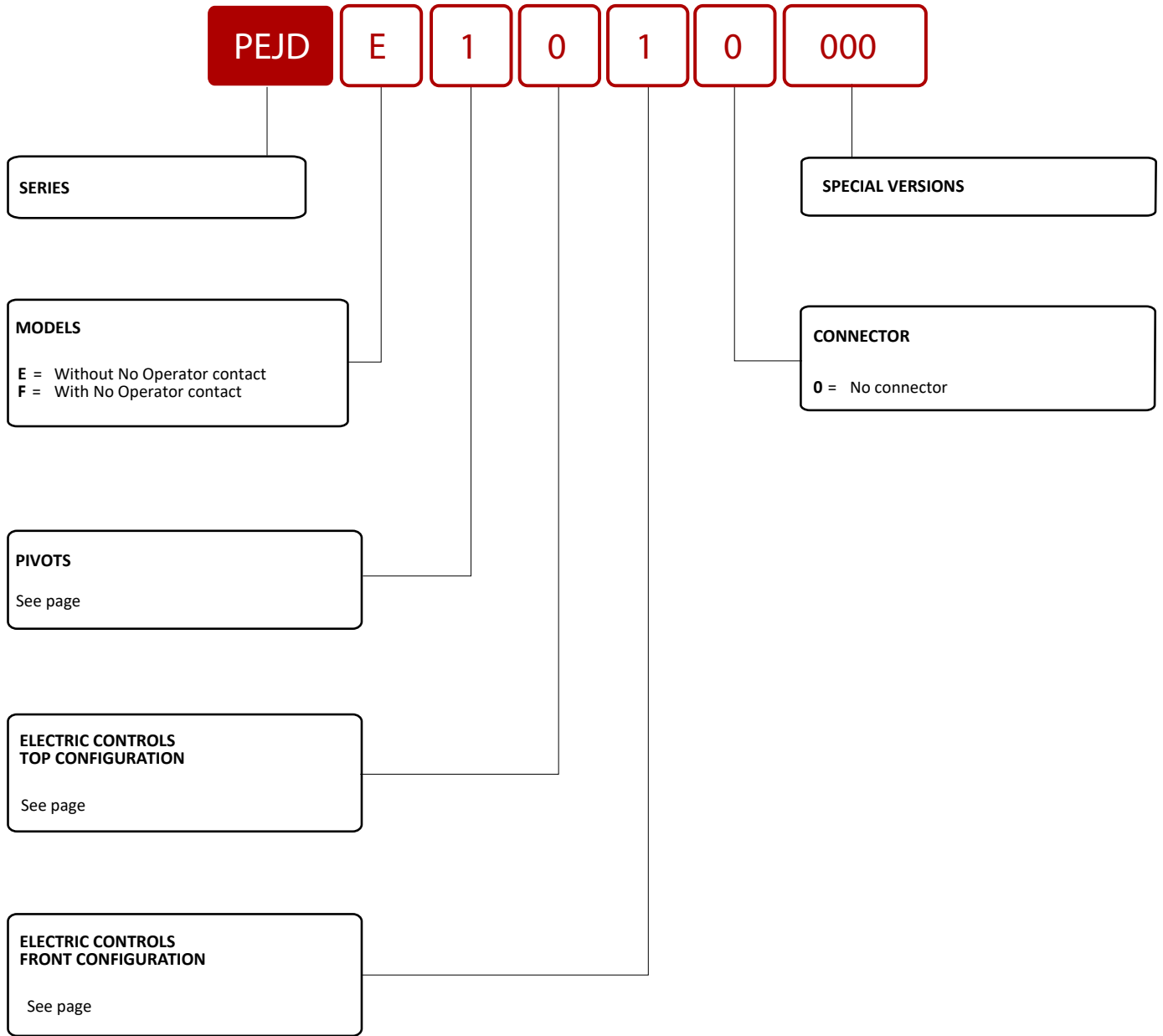
MICRO CAPACITY: DC 12V x 2A

BUTTONS ONLY AVAILABLE IN GREEN

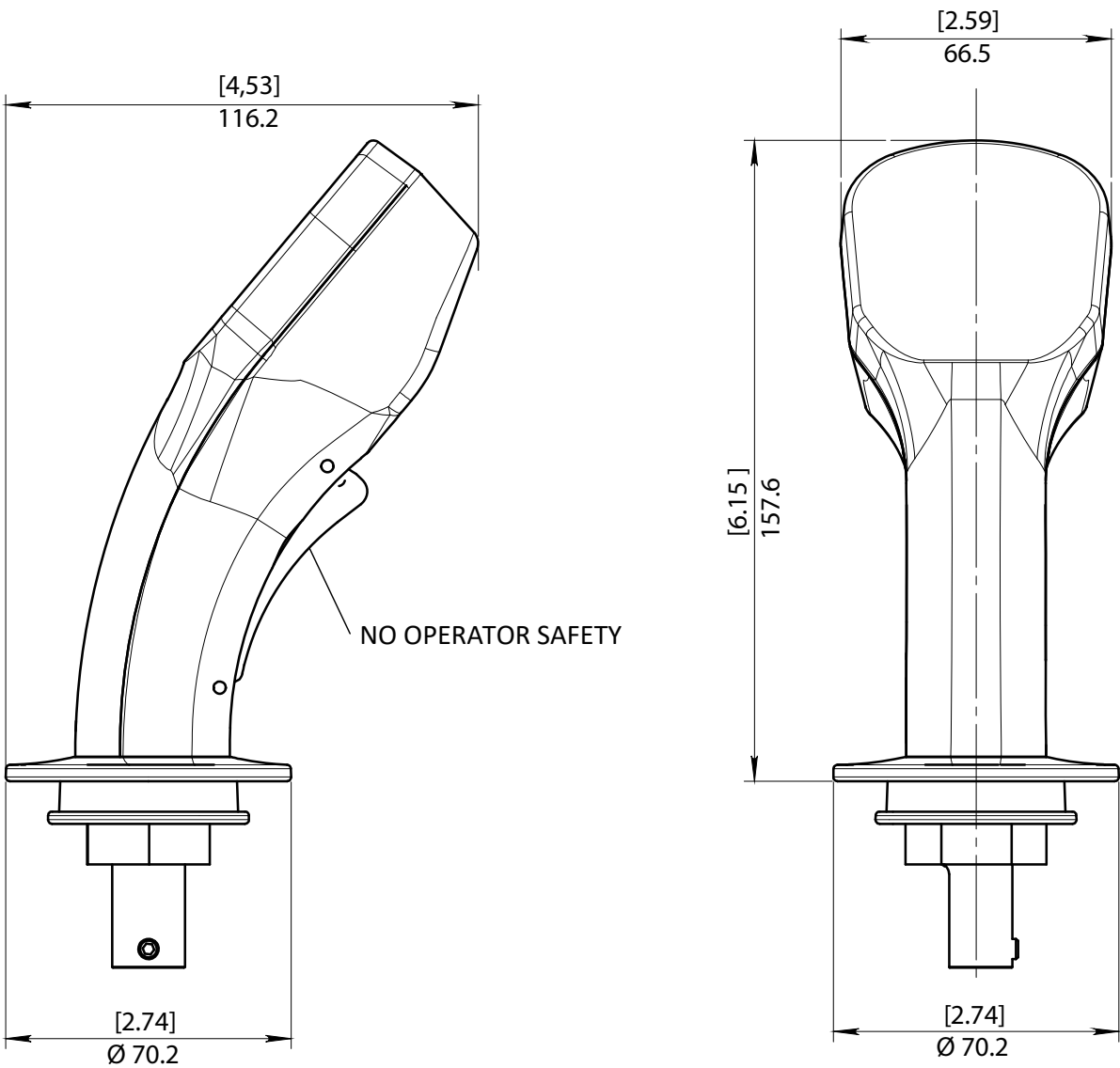
BUTTONS ONLY AVAILABLE IN GREEN

- 0** NO TOP BUTTON
- 1** M1
- 2** M1+M2
- 3** M1+M2+M3
- 4** M1+M2+M3+M4
- 5** M2

- 0** NO TOP BUTTON
- 1** M5
- 2** M5+M6
- 3** M6



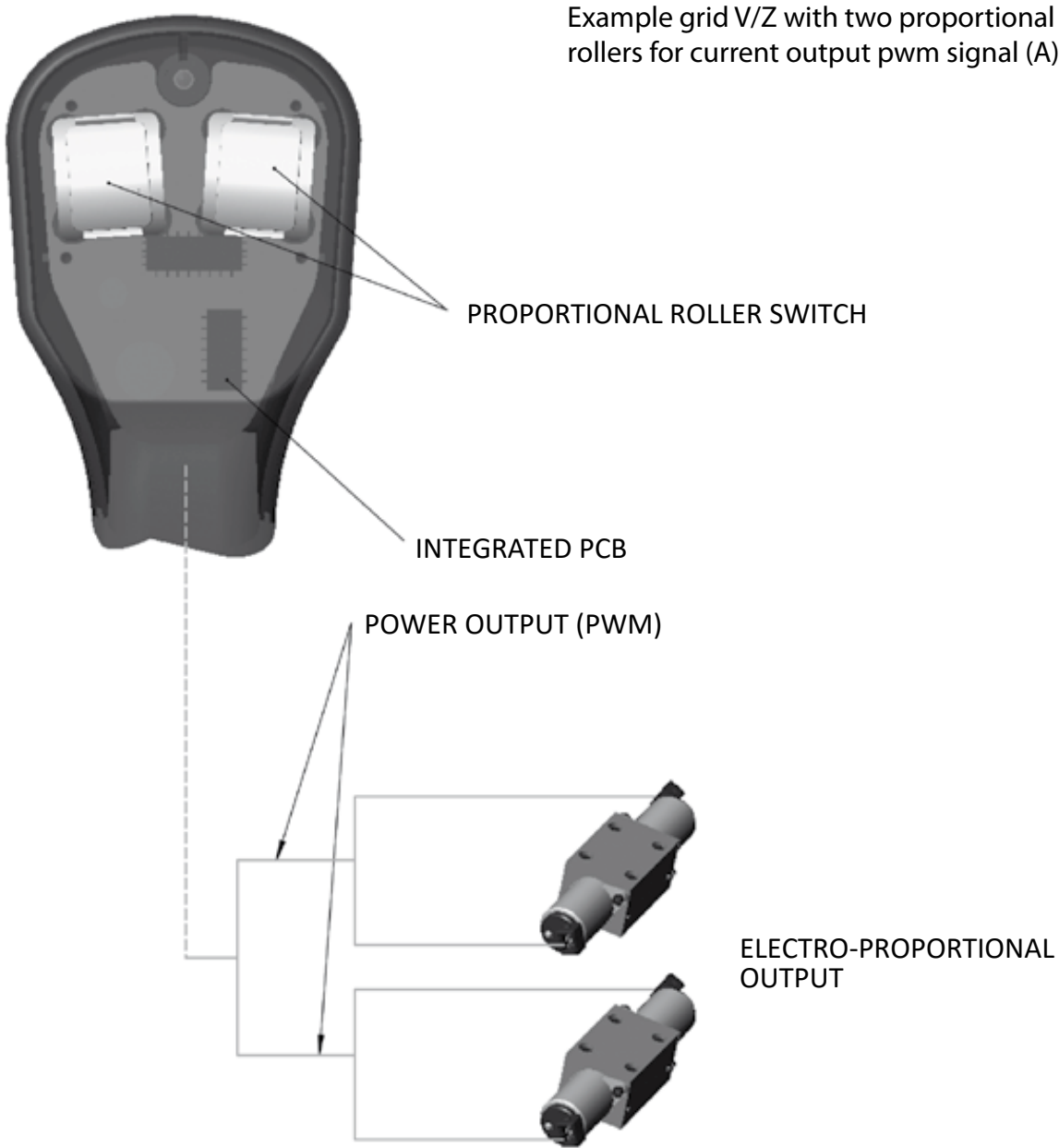
- T** MULTIFUNCTION HANDLE
- H** VERSION "T" WITH NO OPERATOR CONTACT
- V** MULTIFUNCTION GRIP WITH PROPORTIONAL PWM SIGNAL
- Z** VERSION "V" NO OPERATOR CONTACT

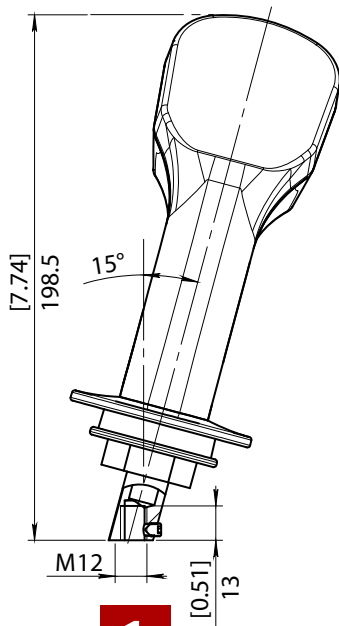


PEJD Proportional electronic joystic double Multifunction grip

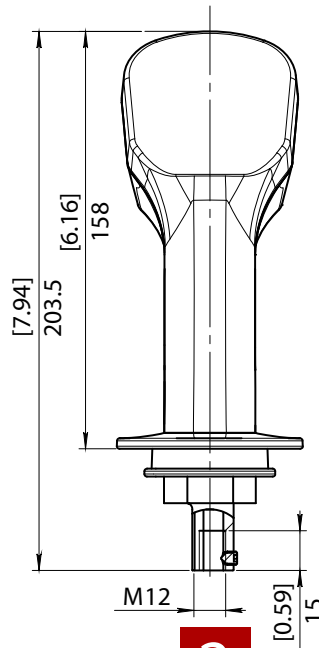
Handles are available with electric controls, with electronic proportional controls (two controls maximum), or with both. The power signal (PWM) is generated by a control unit integrated into the handle. Nonetheless if the system already features an external electronic unit, the roller switch will deliver exclusively the potential difference, which is then processed in power signal.

In case of a handle with two electro-proportional controls, fitted on a two-axle servocontrol, the control on 4-axle is achieved.

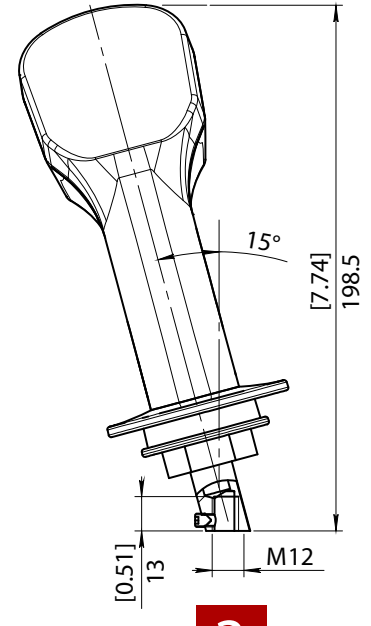




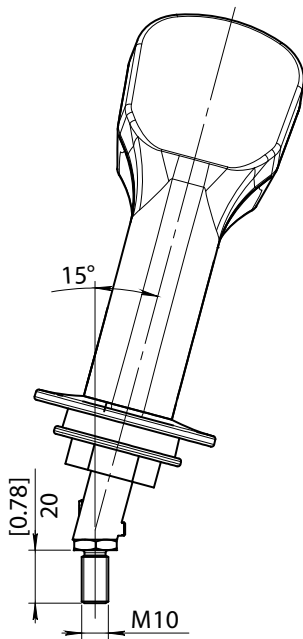
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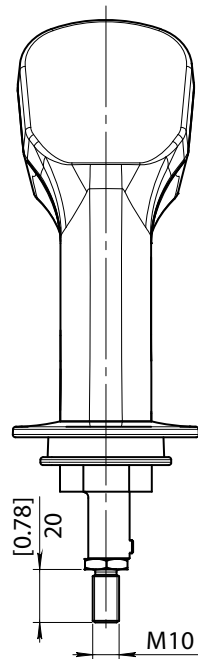
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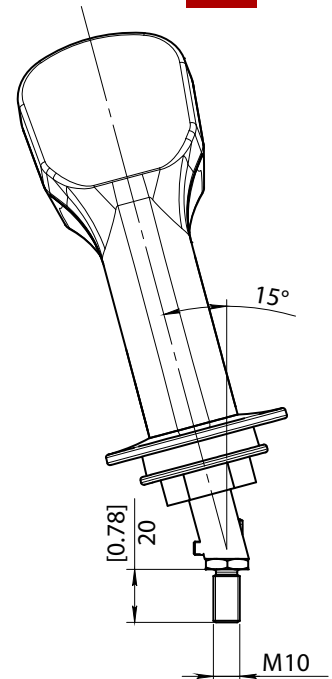
3



4



5



6

1 RIGHT TILTED 15° M12

2 STRAIGHT M12

3 LEFT TILTED 15° M12

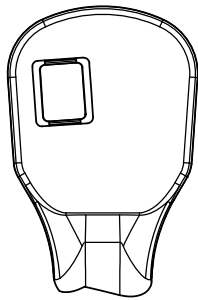
4 RIGHT TILTED 15° M10

5 STRAIGHT M10

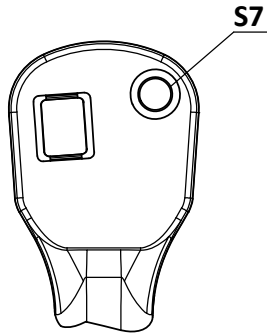
6 LEFT TILTED 15° M10

T
H
V
Z

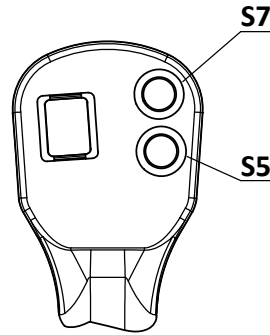
TOP CONFIGURATIONS



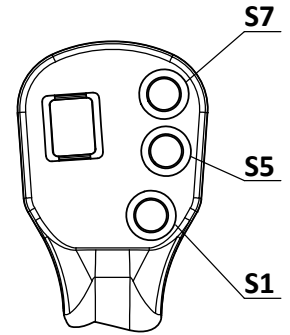
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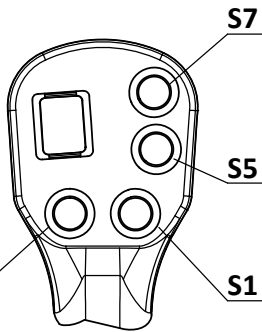
RB



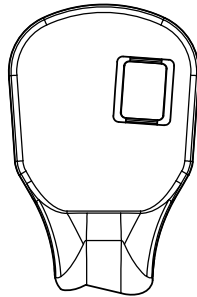
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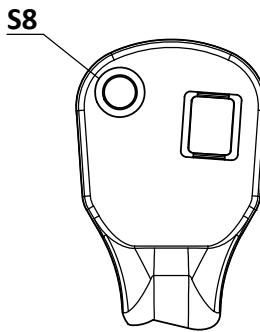
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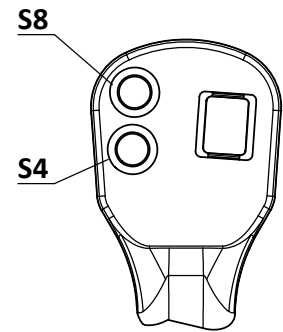
RE



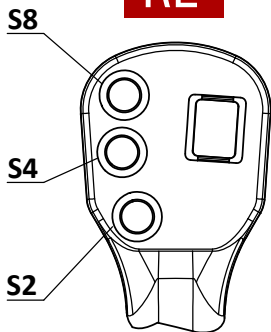
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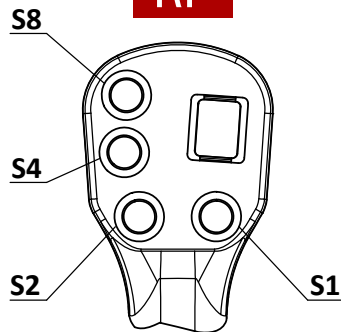
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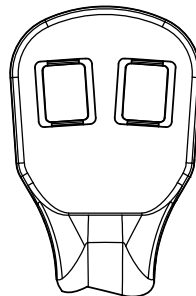
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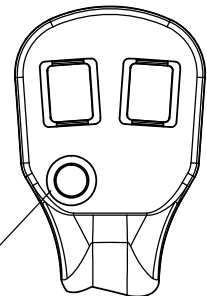
RJ



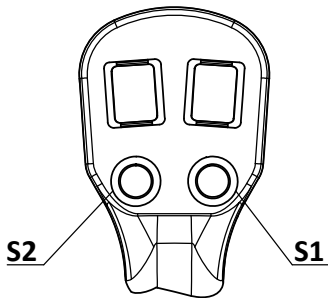
RK



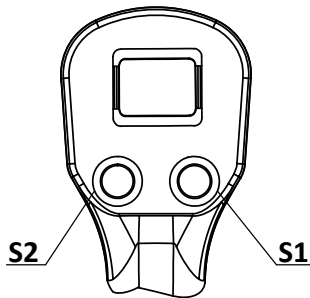
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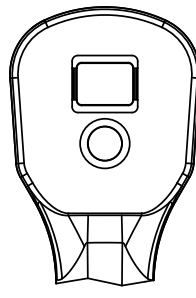
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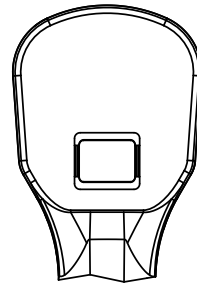
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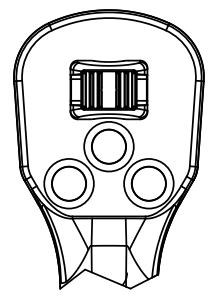
RO



RP



RQ

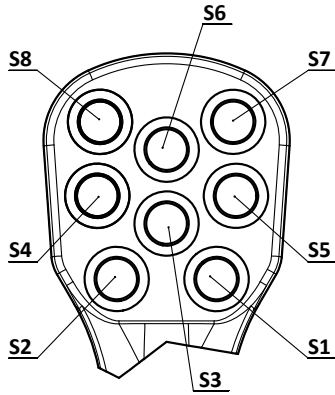
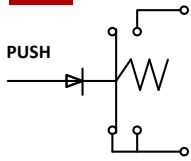


RR

TOP CONFIGURATIONS

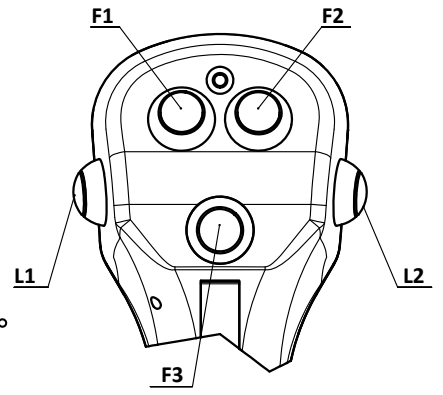
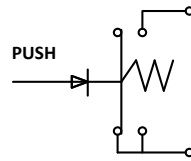
T
H

V
Z



FRONT CONFIGURATIONS

T
H



00 NO TOP BUTTON

- 01** S1
- 02** S3
- 03** S1+S2
- 04** S4+S5
- 05** S1+S2+S5
- 06** S1+S2+S4+S5
- 07** S1+S2+S3+S4+S5
- 08** S1+S2+S3+S4+S5+S6
- 09** S1+S2+S3+S4+S5+S7+S8
- 0A** S1+S2+S3+S4+S5+S6+S7+S8
- 0B** S3+S7+S8
- 0C** S1+S2+S4+S5+S7+S8
- 0D** S4+S8
- 0E** S5
- 0F** S4
- 0G** S5+S7
- 0H** S3+S4+S5+S6
- 0I** S4+S5+S6
- 0J** S1+S2+S3

- OK** S4+S5+S7+S8
- OL** S6
- OM** S1+S2+S4+S5+S6
- ON** S3+S7
- OP** S1+S5+S7
- OQ** S1+S2+S7+S8
- OR** S2+S4
- OS** S3+S4+S5+S7+S8
- OT** S1+S7
- OU** S3+S6
- OV** S8
- OW** S2+S8
- OZ** S1+S2+S6

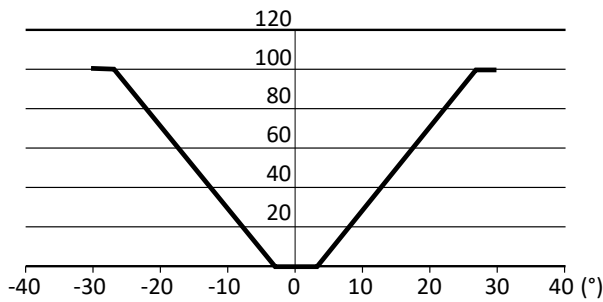
MICRO CAPACITY : DC 28V x 5A RESISTIVE
DC 28V x 3A INDUCTIVE

The versions "V" and "Z" are not prepared for front switches.

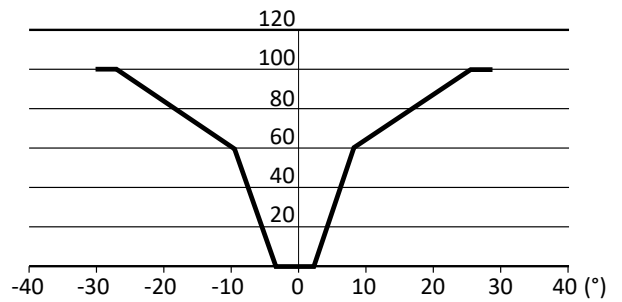
- 0** NO TOP BUTTON
- 1** L1
- 2** L2
- 3** L1+L2
- 4** F1
- 5** F2
- 6** F3
- 7** F1+F2
- 8** F1+F2+F3
- 9** F1+F2+F3+L1+L2
- A** F1+F2+L1+L2
- B** F3+L1+L2
- C** F1+L1
- D** F1+F3
- E** F1+F3+L1+L2

The integrated PCB in the H/T hand grip is programmed specifically for each application as the ramp is designed to respond optimally to each operating condition.
 You will therefore have to ask OMFB Hydraulic Components S.p.A. to assign you a 3-figure code once the application and correct ramp have been agreed (current delivered, % Imax, depending on the position of the roller switch, degree).
 Below are some examples of ramps available in standard configurations for the voltage, current and PWM frequency of the PCB.

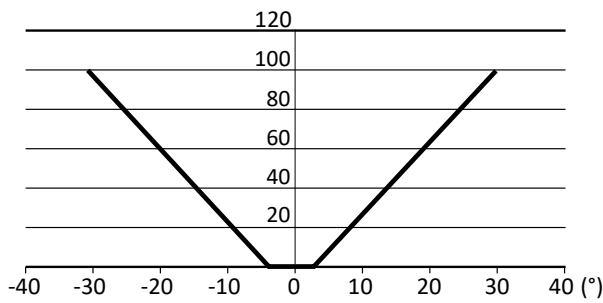
V
Z



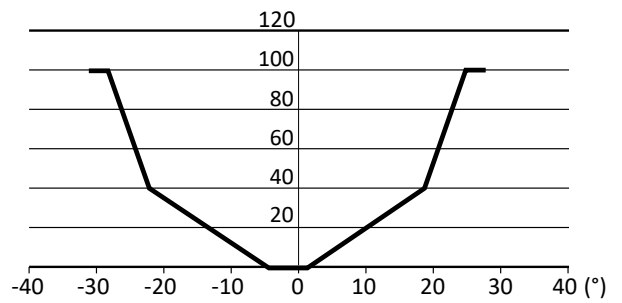
5 | 0 | 0



5 | 0 | 1



5 | 0 | 2



5 | 0 | 3

0 | 0 | 0

NO PWM SIGNAL

x = Angle of rotation of the roller switch (degrees) - y = current delivered, percentage of max (%imax)

V**Z****INPUT VOLTAGE****POWER OUTPUT (PWM)****STANDARD
CONFIGURATIONS****POWER SUPPLY VOLTAGE**

Nominal 12 Vdc battery:
9-16 Vdc effective
Nominal 24 Vdc battery:
18-30 Vdc effective

Maximum current - 1 channel
3 A (@ 12 Vdc)
2 A (@ 24 Vdc)
Maximum current - total
6.5 A (@ 12 Vdc)
4.5 A (@ 24 Vdc)
PWM frequency
100 - 400 Hz

Standard programming configurations share the following parameters:

Supply voltage: 12V DC

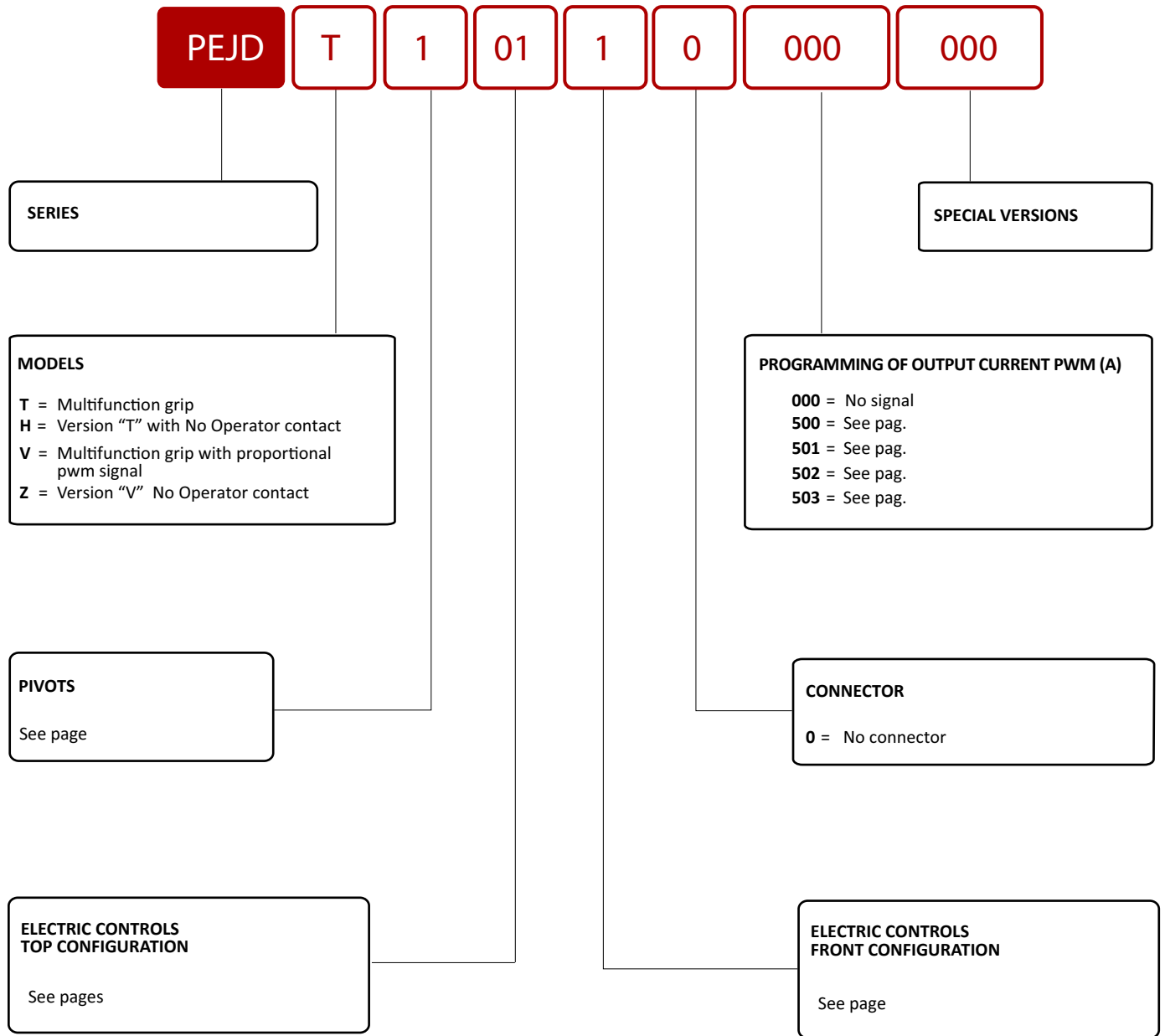
Maximum current (per single channel) I_{max} 1.5A

PWM frequency: 200Hz

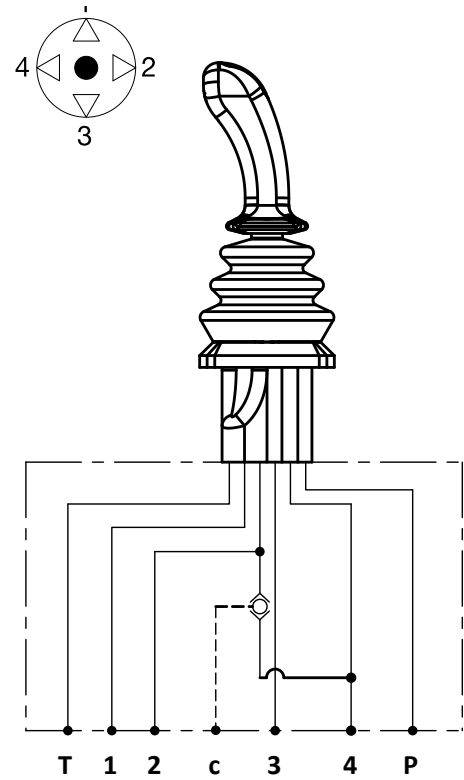
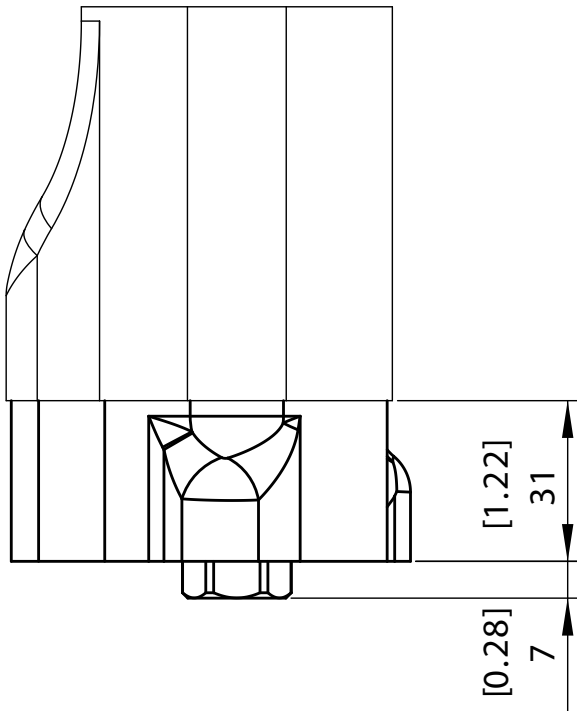
Soft current ramps both when increasing and decreasing, and different output curves (current supplied in accordance with the position of the roller switch).

PROTECTION RATING

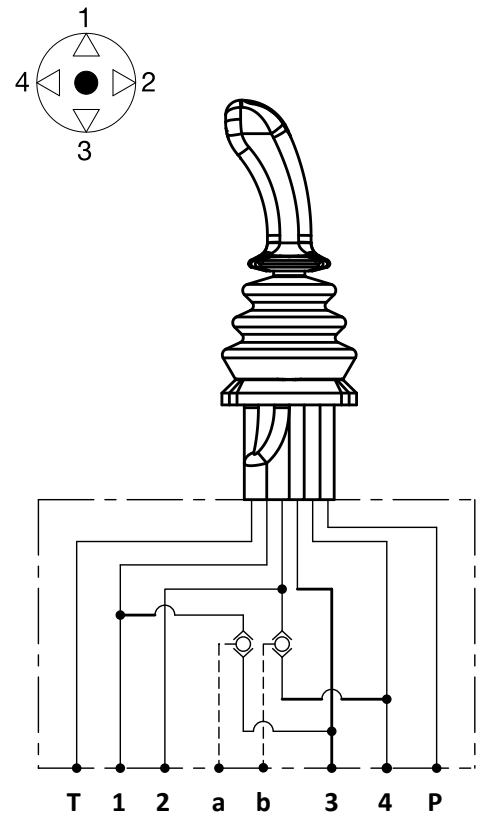
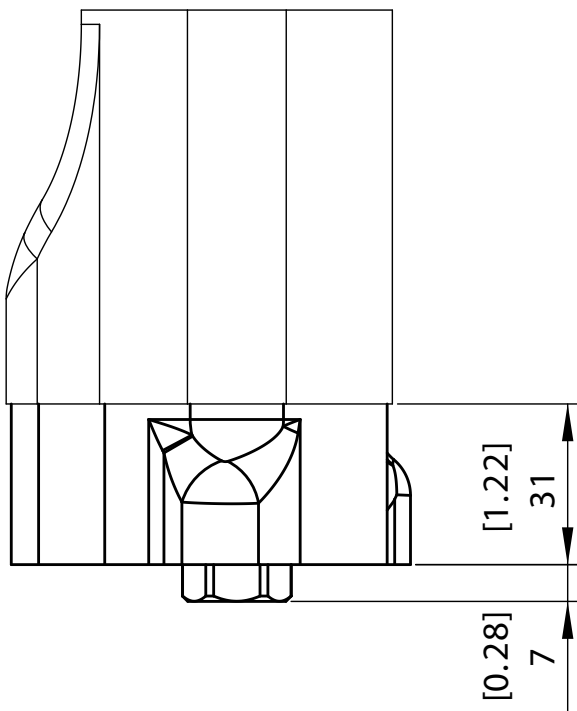
In configurations with buttons and roller switches, the hand grip is IP67 protected.



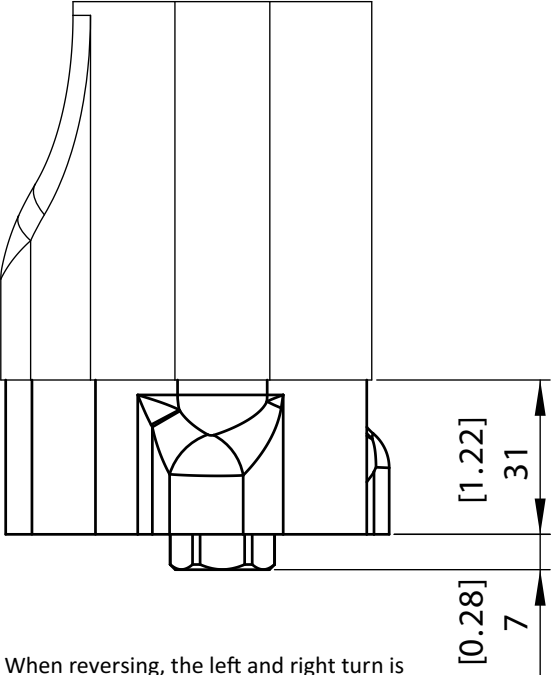
1 A pressure signal from axis 2-4



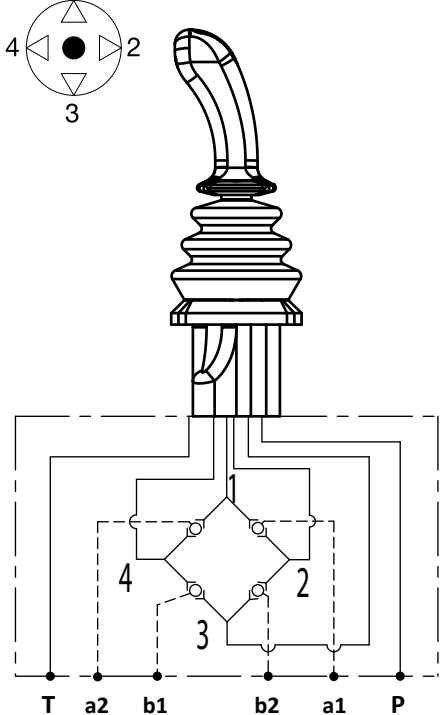
2 Two pressure signals from axis 1-3 and 2-4



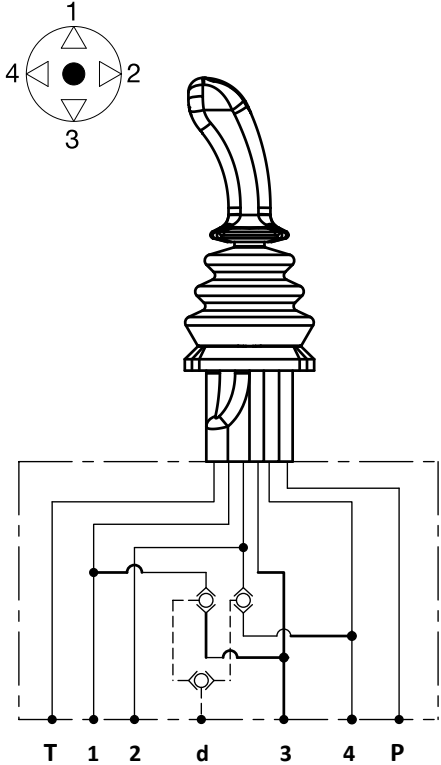
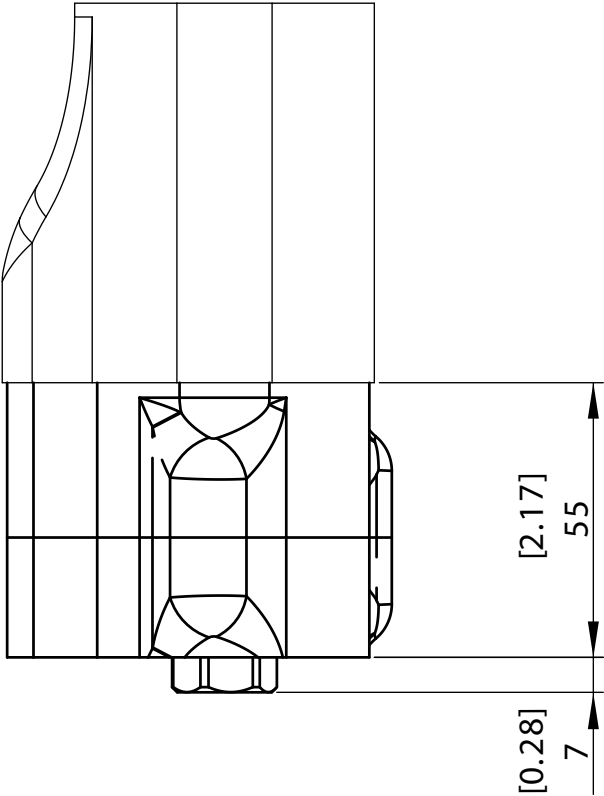
3 Opposite counter rotation



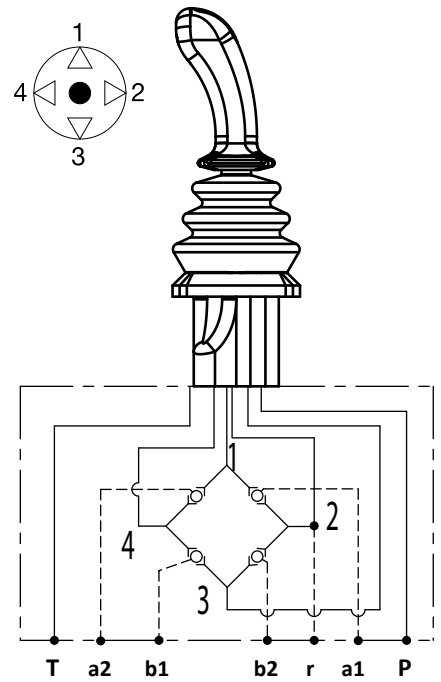
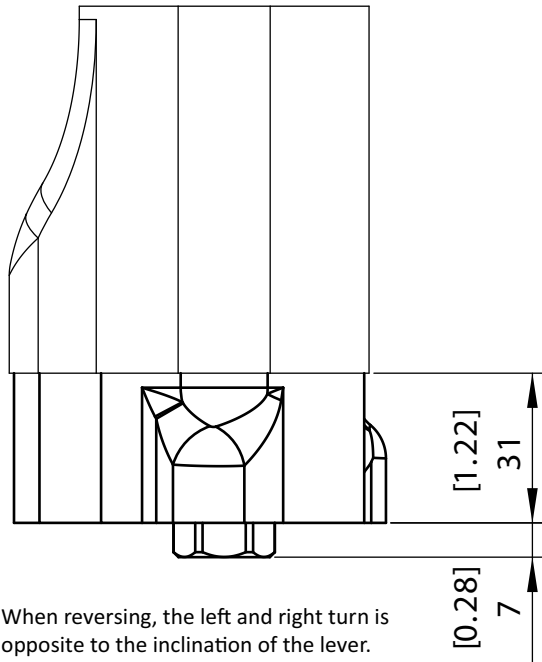
When reversing, the left and right turn is opposite to the inclination of the lever.



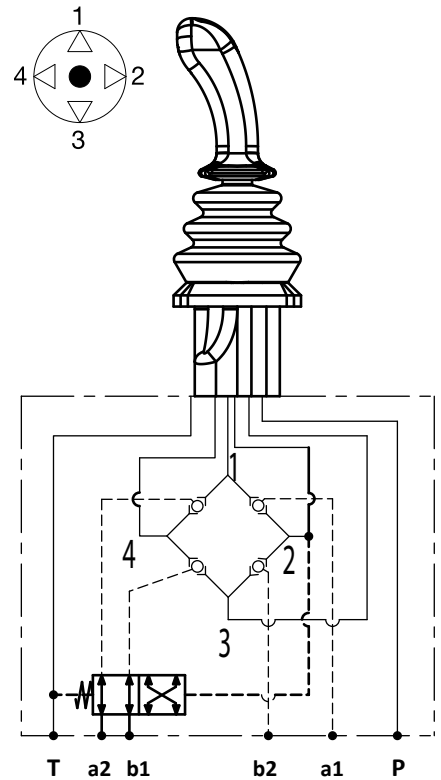
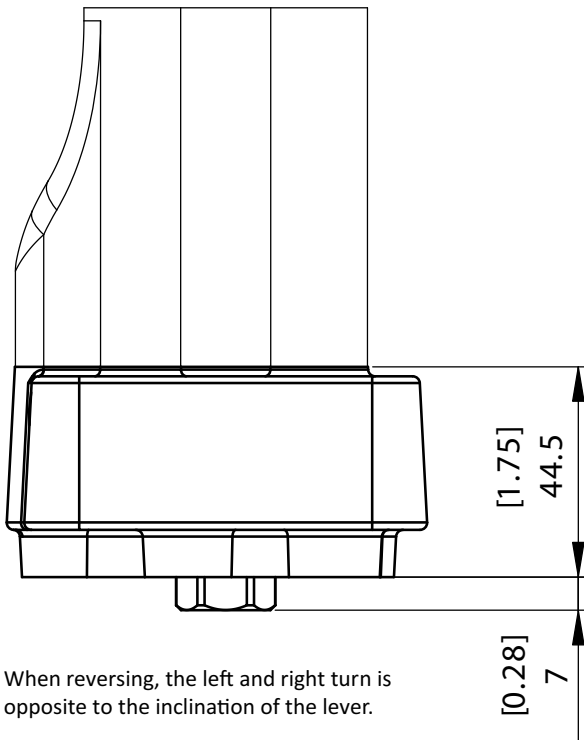
4 One pressure signal from each position



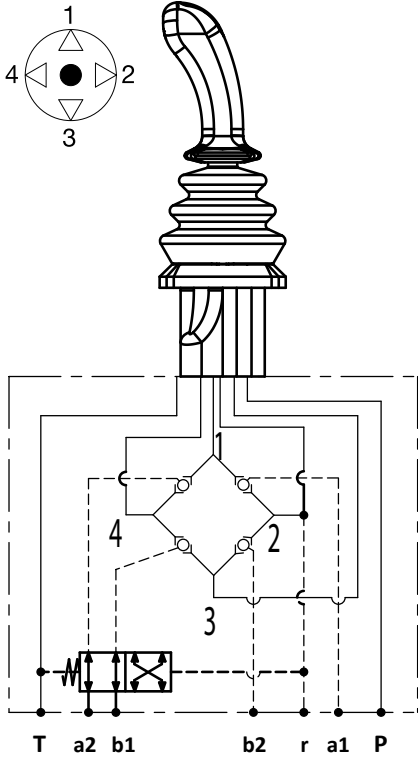
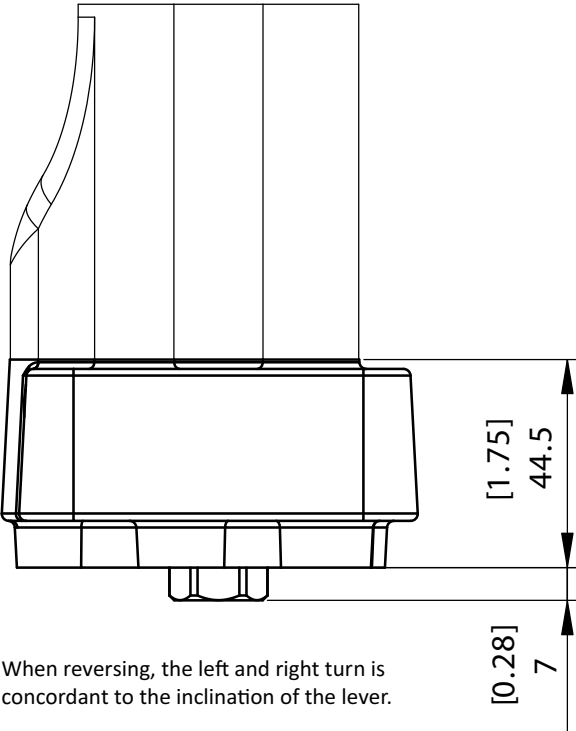
5 Opposite counter rotation with reverse signal

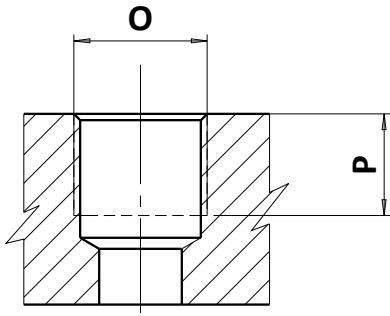


6 Concordant counter rotation



7 Concordant counter rotation and reverse signal

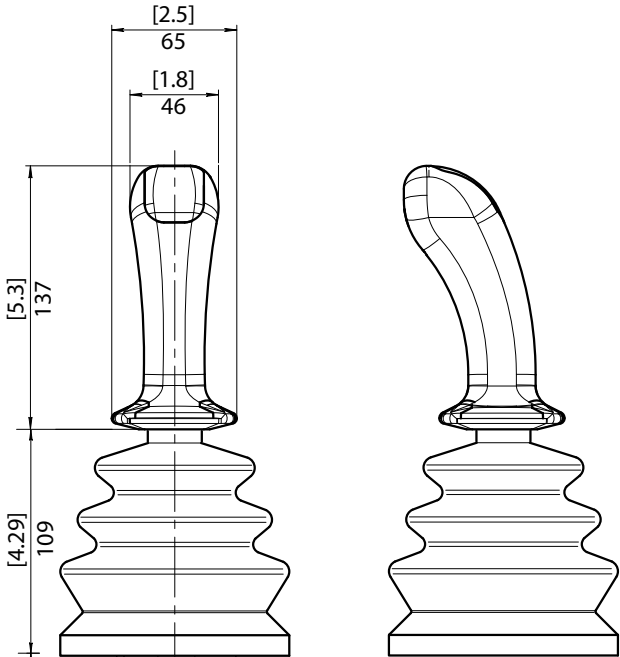




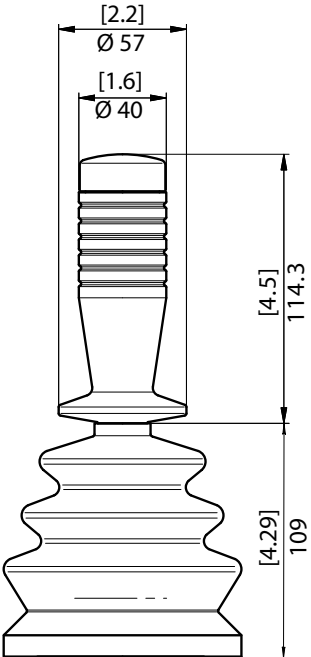
Type G2- U3

Type	O		P	
		Nm	mm	in
G2	1/4"	17	12	0.47
U3	9/16-18 UNF	25	13	0.47

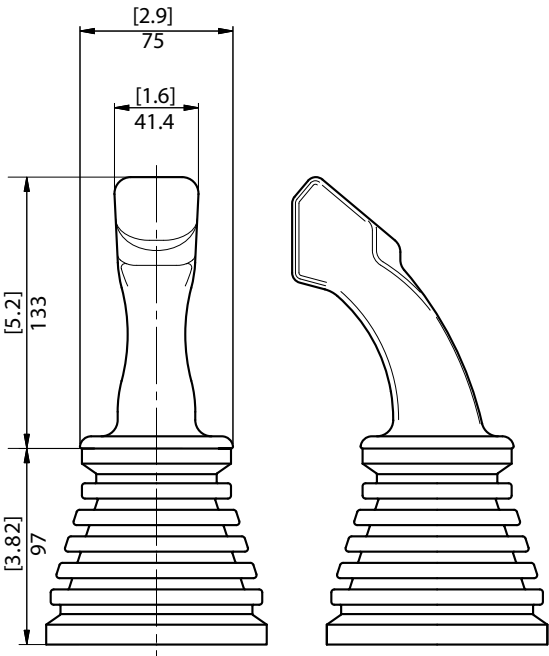
S Anatomical



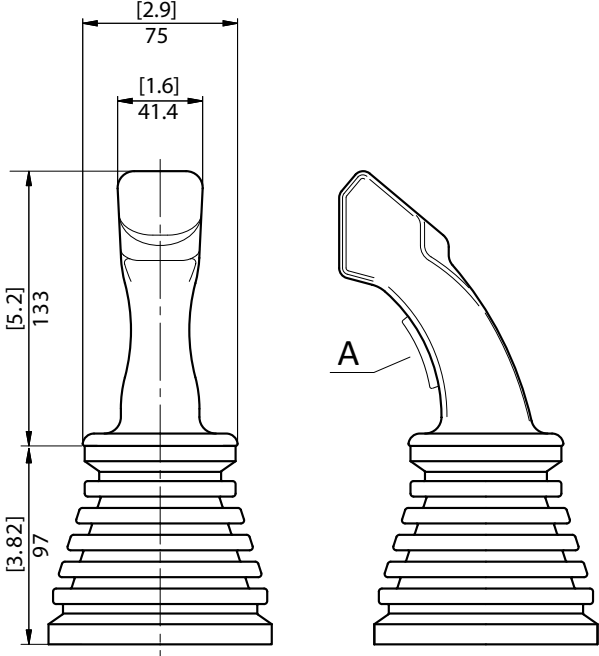
K Cylindrical



E Ergonomic

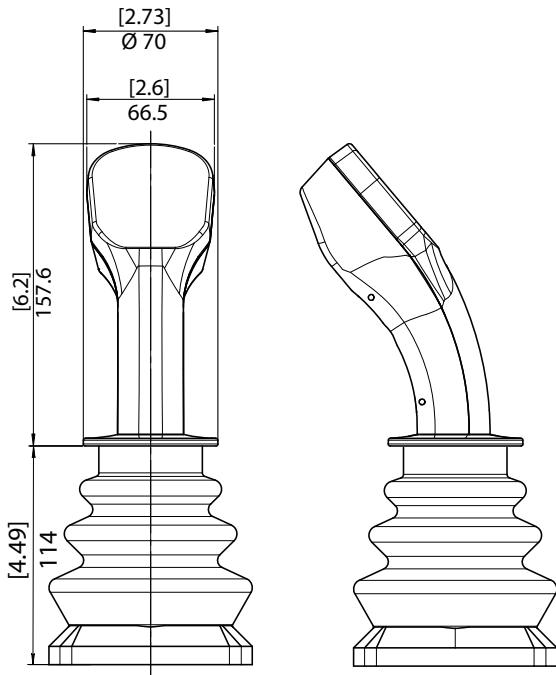


F Ergonomic present person

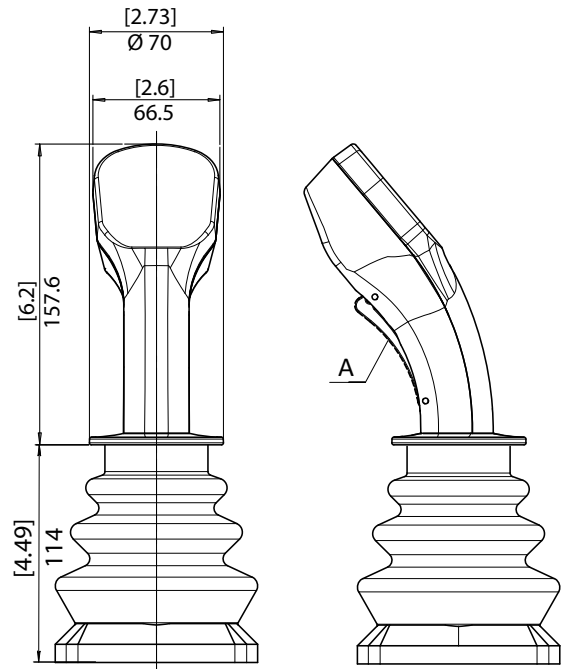


A Present person button

T Multifunctional

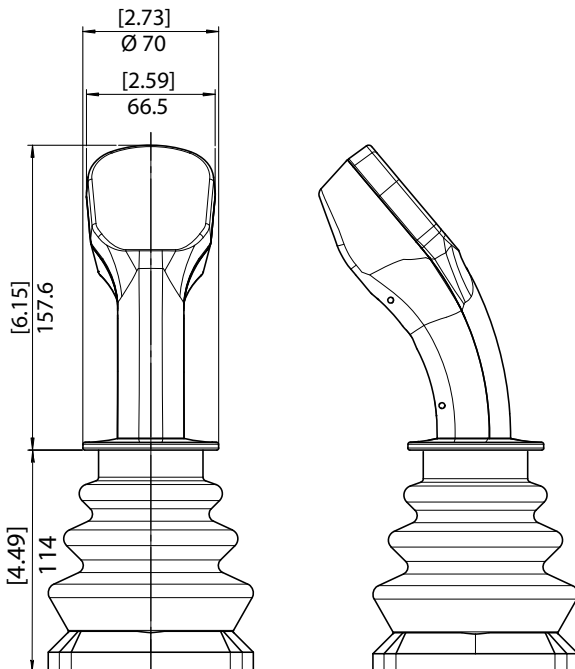


H Multifunctional present person



A Present person button

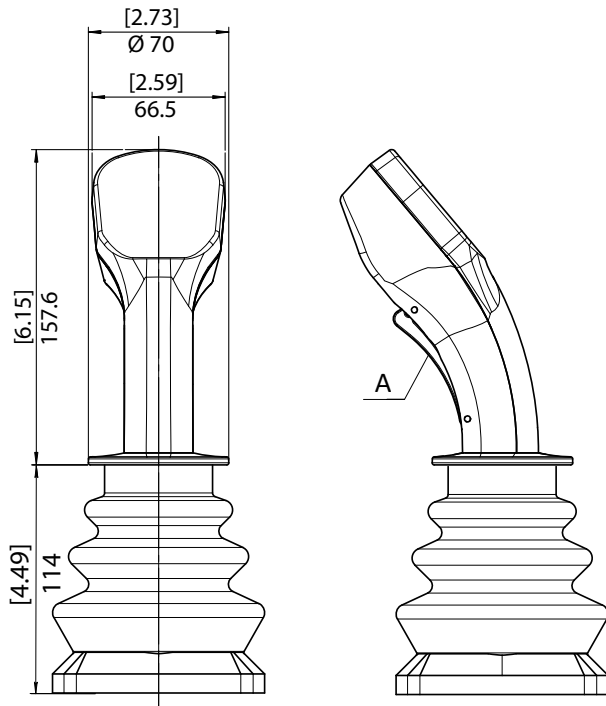
V Multifunctional PWM



Power supply voltage 12 V	9-16 Vdc effective
Power supply voltage 24 V	18-30 Vdc effective
Maximum output current 1 channel	3 A (@ 12 Vdc) 2 A (@ 24 Vdc)
Maximum output current Total	6.5 A (@ 12 Vdc) 4.5 A (@ 24 Vdc)
PWM frequency	100 - 400 Hz
Standard configuration	12 Vdc I max=1.5 A PWM = 200 Hz
Handle protection level	IP67

* Soft current ramps, both increasing and decreasing and different output curves (current supplied according to the roller position)

Z Multifunctional PWM Present person

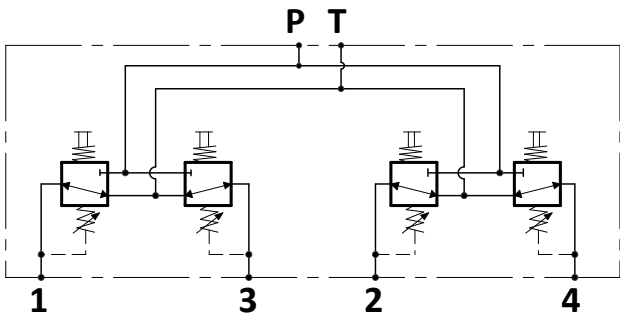


A - Present person button

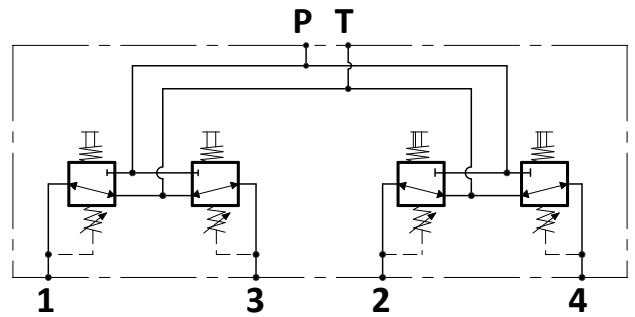
Power supply voltage 12 V	9-16 Vdc effective
Power supply voltage 24 V	18-30 Vdc effective
Maximum output current 1 channel	3 A (@ 12 Vdc) 2 A (@ 24 Vdc)
Maximum output current Total	6.5 A (@ 12 Vdc) 4.5 A (@ 24 Vdc)
PWM frequency	100 - 400 Hz
Standard configuration	12 Vdc I max=1.5 A PWM = 200 Hz
Handle protection level	IP67

* Soft current ramps, both increasing and decreasing and different output curves (current supplied according to the roller position)

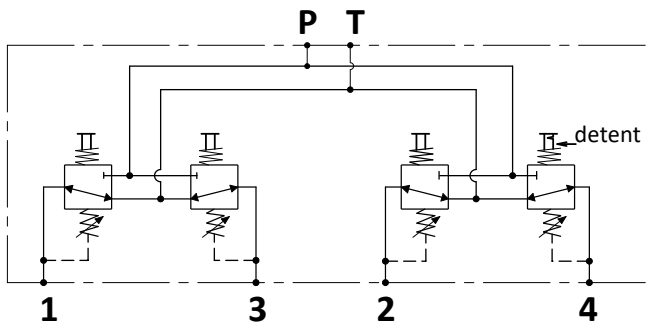
S With spring return to centre



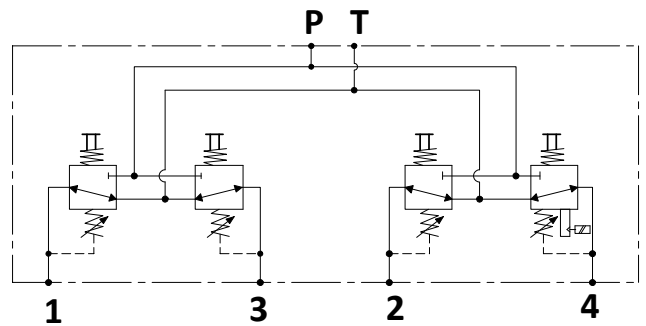
A Clutch controller forward/back 2-4



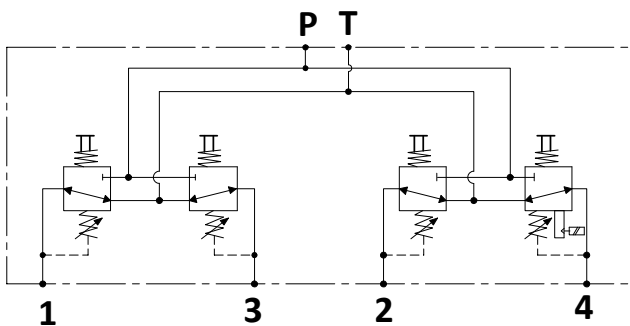
M Mechanical position 4



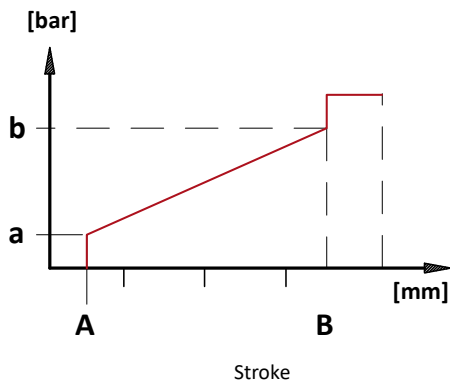
E Electromagnetic position 4 12 V



F Electromagnetic position 4 24 V

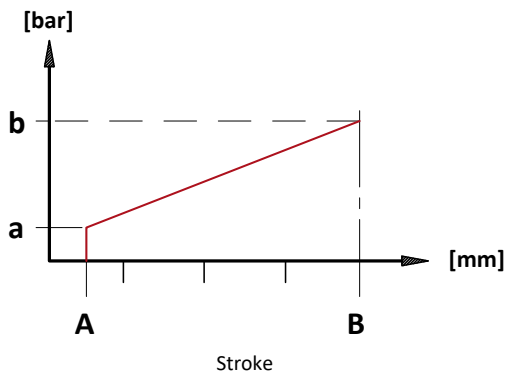


S.. Single ramp with step



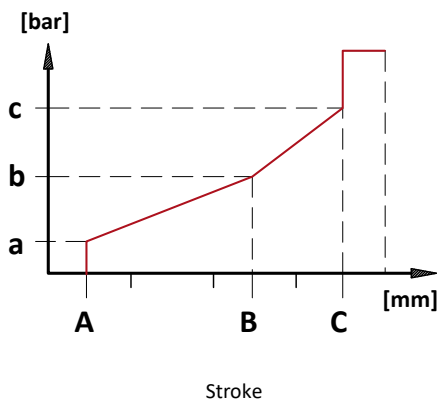
Type	Pressure a		Pressure b	
	bar	psi	bar	psi
S00	2	29	16	232
S01	5	73	20	290
S02	6.5	94	24.5	355
S04	3	46	17	249
S08	5	73	16	232
S11	4	58	15	218
S12	1.5	22	7	102
S13	5	73	28	406

L.. Single ramp without step



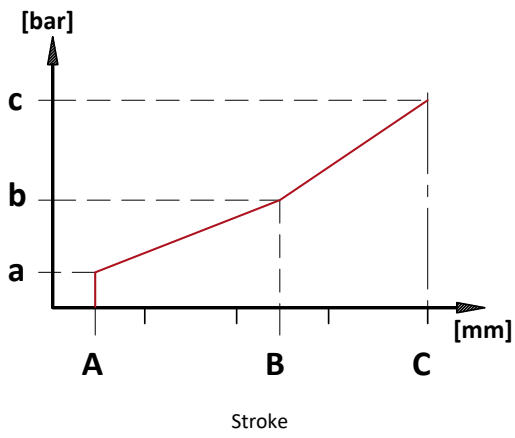
Type	Pressure a		Pressure b	
	bar	psi	bar	psi
L00	2	29	18	261
L01	5	73	22	319
L02	6.5	94	26.5	384
L04	3	46	19	276
L08	5	73	18	261
L11	4	58	16	218
L12	1.5	22	9	131
L13	5	73	30	435

M60 Double ramp with step



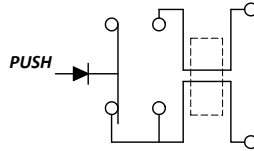
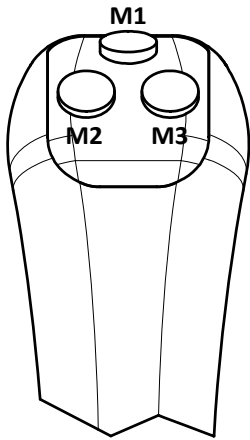
Type	Pressure a		Pressure b		Pressure c		Stroke		
	bar	psi	bar	psi	bar	psi	A mm	B mm	C mm
M60	5	73	12	174	21	306	1.2	5.4	7.8

G60 Double ramp without step



Type	Pressure a		Pressure b		Pressure c		Stroke		
	bar	psi	bar	psi	bar	psi	A mm	B mm	C mm
G60	5	73	12	174	23	334	1.2	5.4	8.3

Upper electric controls

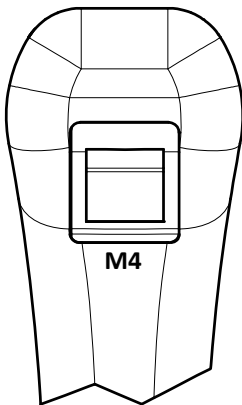


DC 12V x 2A

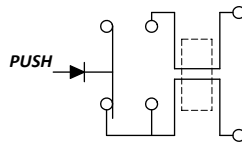
Configurations

Code	Description
00	No button
01	M1
02	M2+M3
03	M1+M2+M3

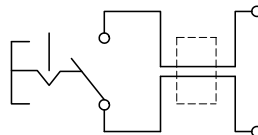
Front electric controls



Rocker switch



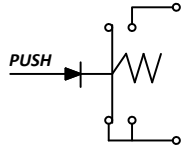
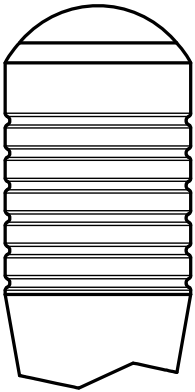
ON/OFF switch



Configurations

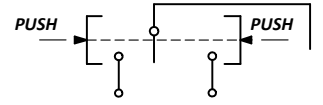
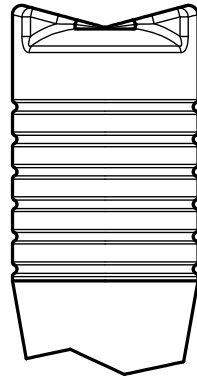
Code	Description
0	No switch
1	M4 rocker with spring-back
2	M4 ON/OFF switch

0B Single top button with return



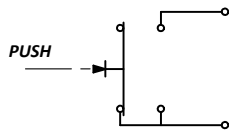
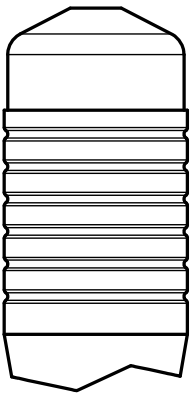
DC 12V x 8A

0C Rocker top button



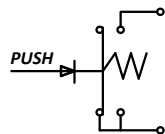
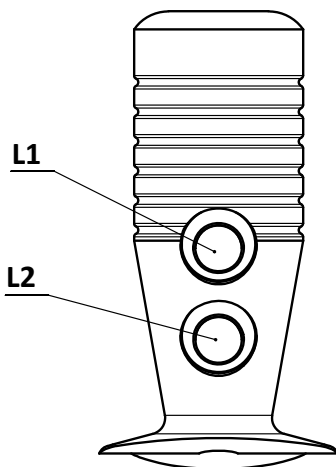
DC 12V x 8A

0D Stable top button



DC 28V x 10A resistive
DC 28V x 5A
Inductive

Front electric controls

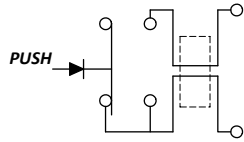
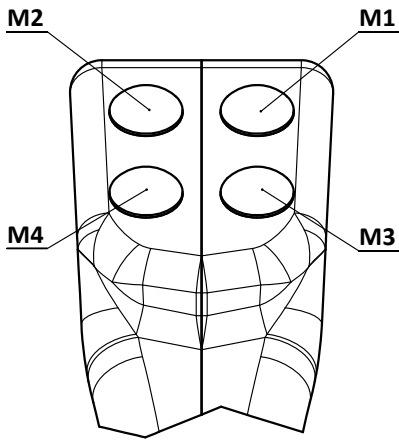


DC 28V x 5A resistive
DC 28V x 3A
Inductive

Configurations

Code	Description
0	No button
F	L1
G	L2
H	L1+L2

Upper electric controls

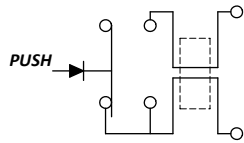
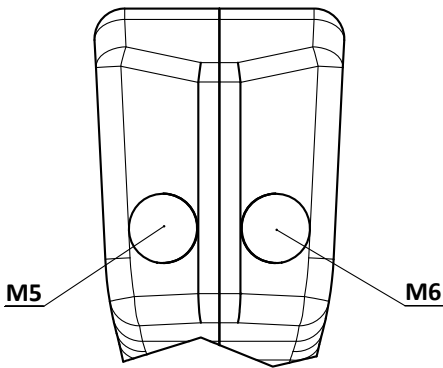


DC 12V x 4A resistive
DC 12V x 2A
Inductive

Configurations

Code	Description
00	No button
01	M1
02	M1+M2
03	M1+M2+M3
04	M1+M2+M3+M4
05	M2
06	M3+M4

Front electric controls

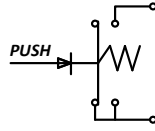
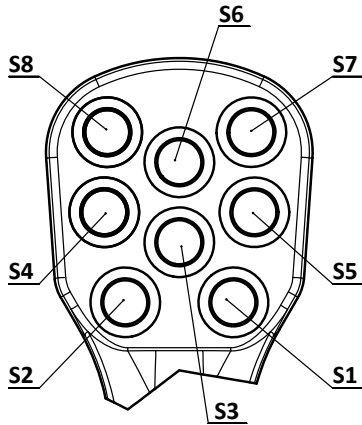


DC 12V x 4A resistive
DC 12V x 2A
Inductive

Configurations

Code	Description
0	No button
1	M5
2	M5+M6
3	M6

Upper electric controls

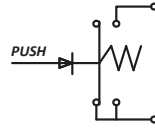
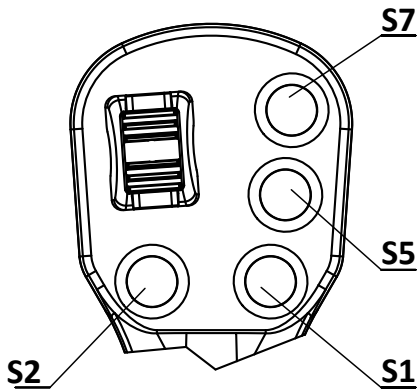


DC 28V x 5A resistive
DC 28V x 3A
Inductive

Configurations

Code	Description	Code	Description	Code	Description
00	No button	0C	S1+S2+S4+S5+S7+S8	0P	S1+S5+S7
01	S1	0D	S4+S8	0Q	S1+S2+S7+S8
02	S3	0E	S5	0R	S2+S4
03	S1+S2	0F	S4	0S	S3+S4+S5+S7+S8
04	S4+S5	0G	S5+S7	0T	S1+S7
05	S1+S2+S5	0H	S3+S4+S5+S6	0U	S3+S6
06	S1+S2+S4+S5	0I	S4+S5+S6	0V	S8
07	S1+S2+S3+S4+S5	0J	S1+S2+S3	0W	S2+S8
08	S1+S2+S3+S4+S5+S6	0K	S4+S5+S7+S8	0Y	S7+S8
09	S1+S2+S3+S4+S5+S7+S8	0L	S6	0Z	S1+S2+S6
0A	S1+S2+S3+S4+S5+S6+S7+S8	0M	S1+S2+S4+S5+S6	1A	S2+S4+S8
0B	S3+S7+S8	0N	S3+S7		

Upper electric controls and Left Roller

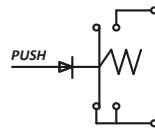
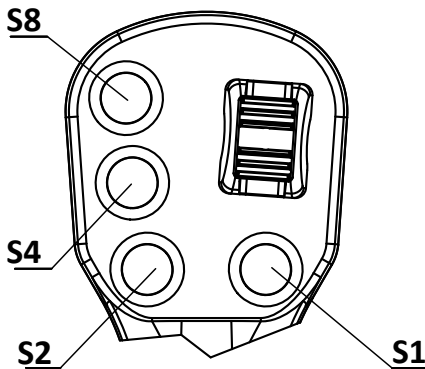


DC 28V x 5A resistive
DC 28V x 3A
Inductive

Configurations

Code	Description
RA	Left Roller
RB	Left Roller+S7
RC	Left Roller+S5+S7
RD	Left Roller+S1+S5+S7
RE	Left Roller+S1+S2+S5+S7

Upper electric controls and Right Roller

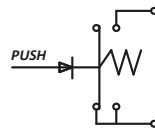
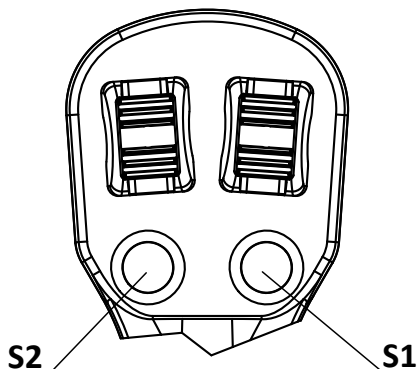


DC 28V x 5A resistive
DC 28V x 3A
Inductive

Configurations

Code	Description
RF	Right Roller
RG	Right Roller+S8
RH	Right Roller+S4+S8
RJ	Right Roller+S2+S4+S8
RK	Right Roller+S1+S2+S4+S8

Upper electric controls, Right Roller and Left Roller

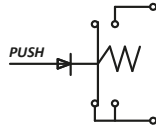
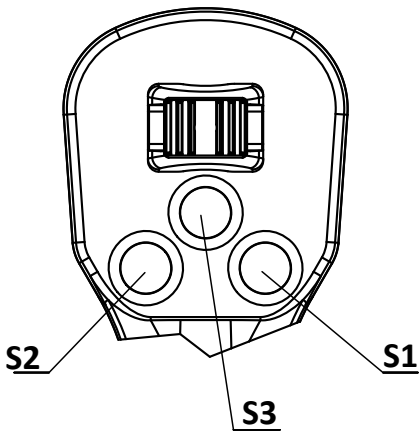


DC 28V x 5A resistive
DC 28V x 3A
Inductive

Configurations

Code	Description
RL	Right Roller+Left Roller
RM	Right Roller+Left Roller+S2
RN	Right Roller+Left Roller+S2+S1

Upper electric controls and Roller Up

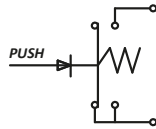
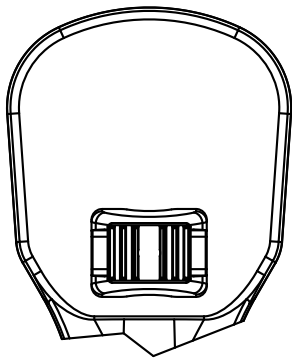


DC 28V x 5A resistive
DC 28V x 3A
Inductive

Configurations

Code	Description
RO	Roller Up+S1+S2
RP	Roller Up+S3
RR	Roller Up+S1+S2+S3

Roller Down

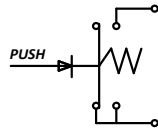
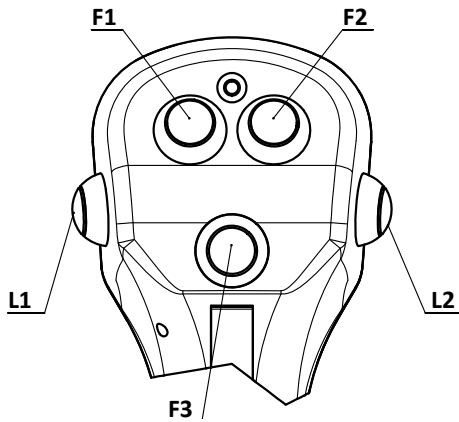


DC 28V x 5A resistive
DC 28V x 3A
Inductive

Configurations

Code	Description
RQ	Roller Down

Upper electric controls and Left Roller



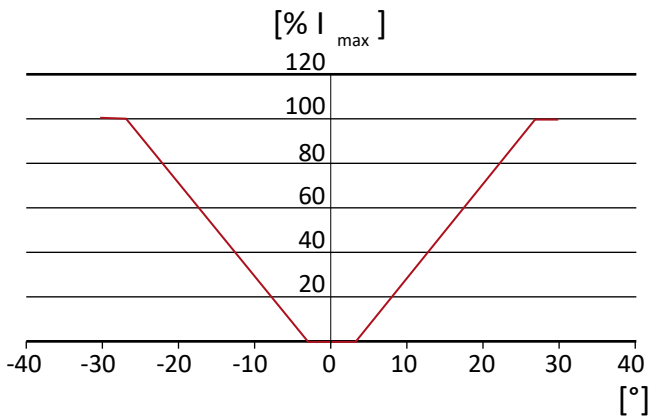
DC 28V x 5A resistive
DC 28V x 3A
Inductive

Configurations

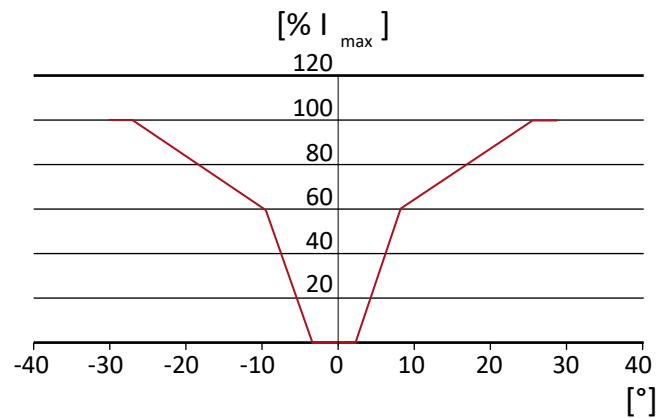
Code	Description	Code	Description	Code	Description
0	No button	5	F2	A	F1+F2+L1+L2
1	L1	6	F3	B	F3+L1+L2
2	L2	7	F1+F2	C	F1+L1
3	L1+L2	8	F1+F2+F3	D	F1+F3
4	F1	9	F1+F2+F3+L1+L2	E	F1+F3+L1+L2

Front buttons are not foreseen for versions "V" and "Z".

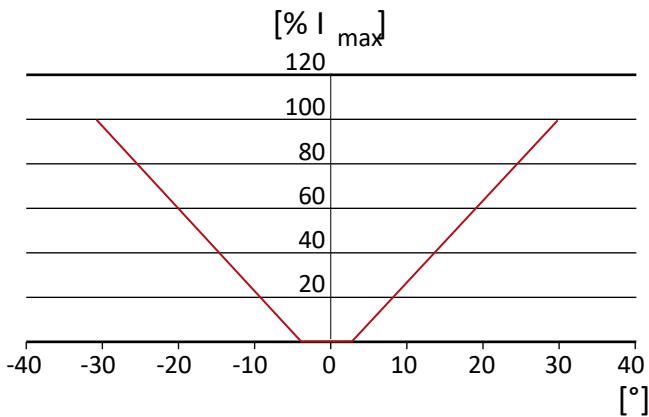
500 PWM output profile



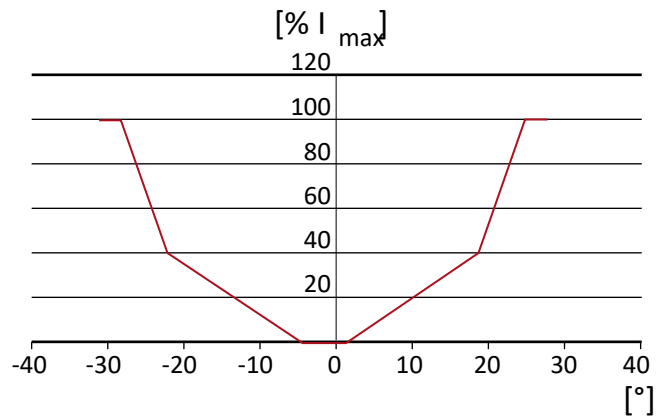
501 PWM output profile



502 PWM output profile



503 PWM output profile

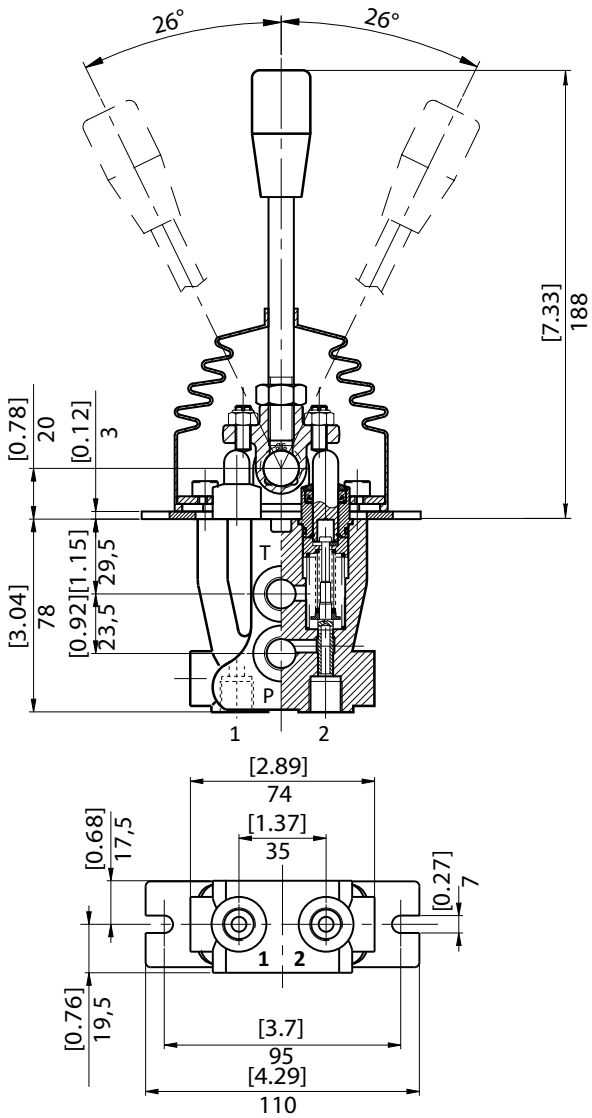


The programming of the electronic card, integrated in the H/T handle, is specific for each application as the ramp is designed to best meet the application working conditions. You will therefore have to ask HP Hydraulic to assign the 3-digit code once the application and the correct ramp has been agreed (current delivered, % I_{max}, depending on the roller position, degrees). Below are examples of ramps available to the standard configuration of the parameters of voltage, current and PWM frequency of the electronic board.

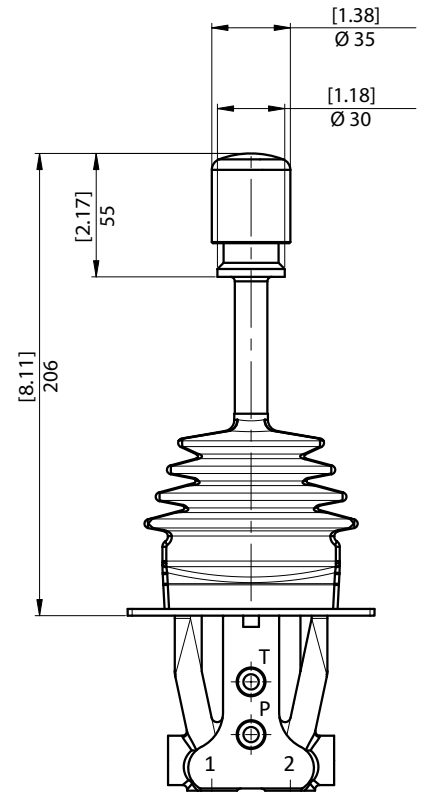
PHJD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	0	G	2	1	K	S	S	0	1	0	0	0	0	0	0	0	0	0

1	Models	1 1 pressure signal from axis 2-4	3 Opposite counter rotation	5 Opposite counter rotation with reverse signal	7 Concordant counter rotation with reverse signal
		2 2 pressure signals from axis 1-3 and 2-4	4 1 pressure signal from each position	6 Concordant counter rotation	
2 3	Ports	G2 1/4" gas-BSPP	U3 SAE 9/16"-18UNF		
4	Seals	1 NBR	2 Viton		
5	Grips	0 Without handle	E Ergonomic	H Multifunctional Deadman	
		S Anatomical	F Ergonomic deadman	V Multifunctional PWM output	
		K Cylindrical	T Multifunctional	Z Multifunctional PWM output Deadman	
6	Positioner	S With spring return to centre	M Mechanical position 4	F Electromagnetic position 4 24 V	
		A Clutch controlled forward/back 2-4	E Electromagnetic position 4 12 V		
7 8 9	Adjustment curve	S Single ramp with step	M Double ramp with step		
		L Single ramp without step	G Double ramp without step		
10 11	Upper electric controls	00 No button	... See upper electric controls		
12	Front electric controls	0 No switch	... See front electric controls		
13 14 15	Special versions	000 No special execution	001 Lever inclined right by 15°	002 Lever inclined left by 15°	
16 17 18	PWM output profile programming (A)	000 No PWM signal	501 PWM output profile	503 PWM output profile	
		500 PWM output profile	502 PWM output profile		

S A

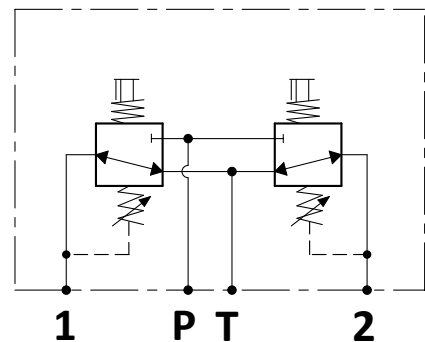
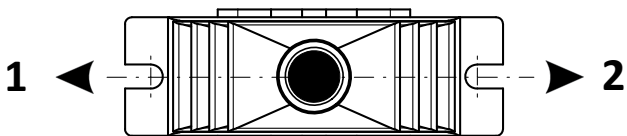


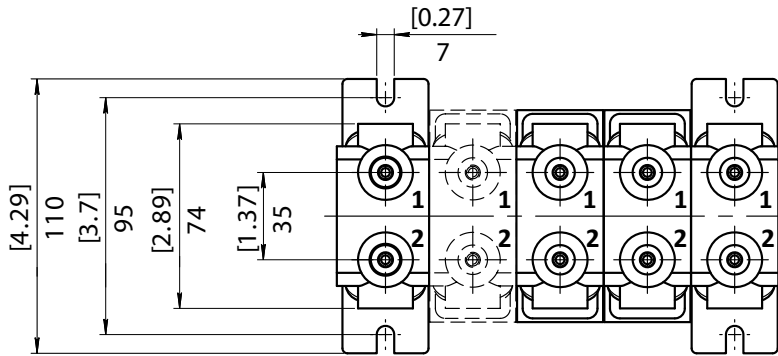
B C



1	PORTS
2	PORTS
T	TANK
P	INLET

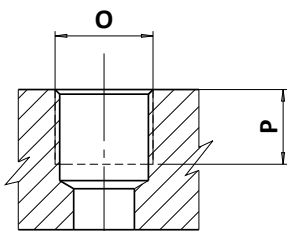
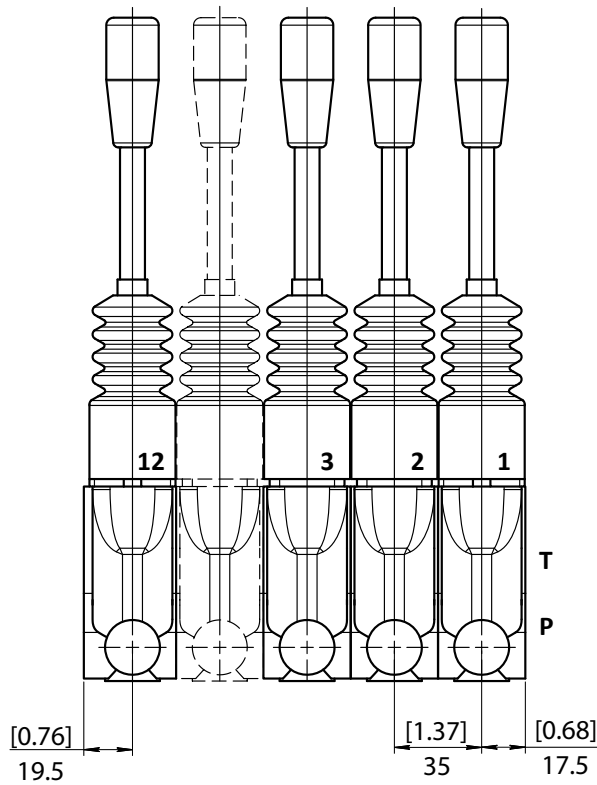
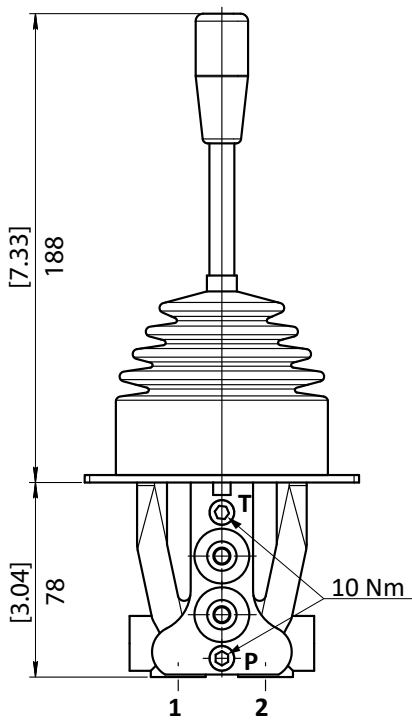
Direction of actuation





From 1 to sections

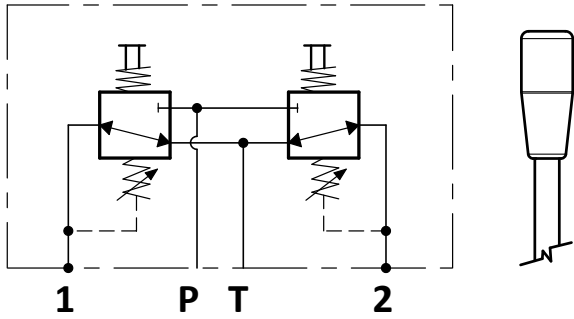
- 1** N° 1 Section
- 2** N° 2 Section
- 3** N° 3 Section
- 4** N° 4 Section
- 5** N° 5 Section
- 6** N° 6 Section
- 7** N° 7 Section
- 8** N° 8 Section
- 9** N° 9 Section
- A** N° 10 Section
- B** N° 11 Section
- C** N° 12 Section



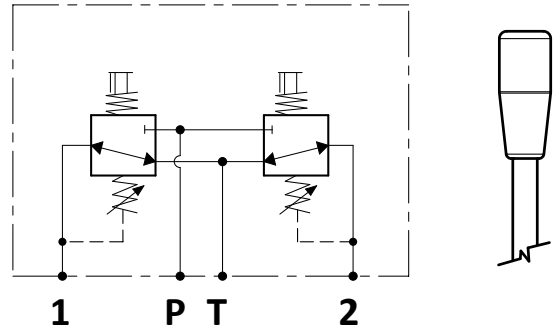
PORTS

TYPE	O		P	
	Nm	mm	mm	in
G2	17	12		0,47
U3	25	13		0,47

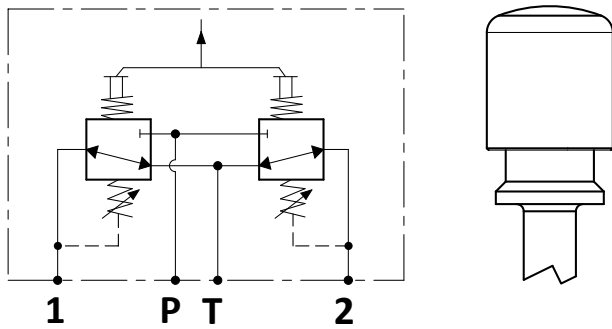
S Standard with spring back



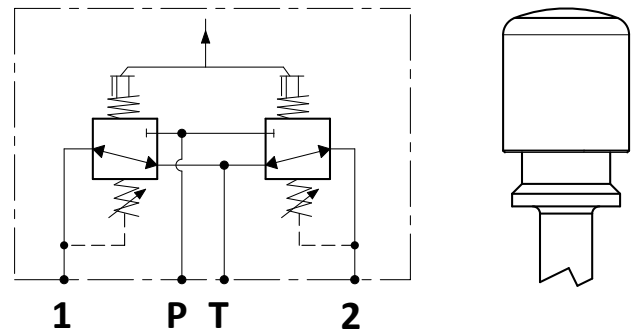
A Clutch controlled



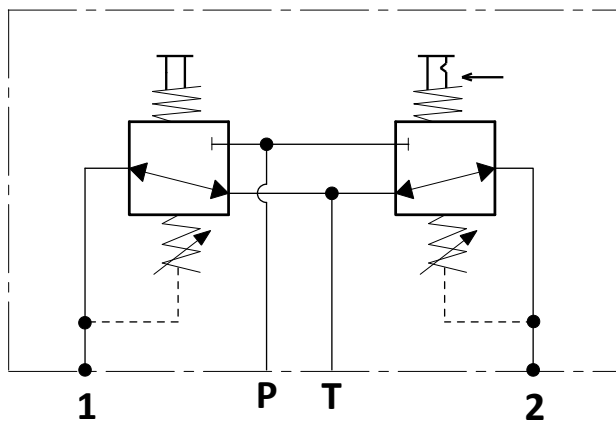
L Central with spring back



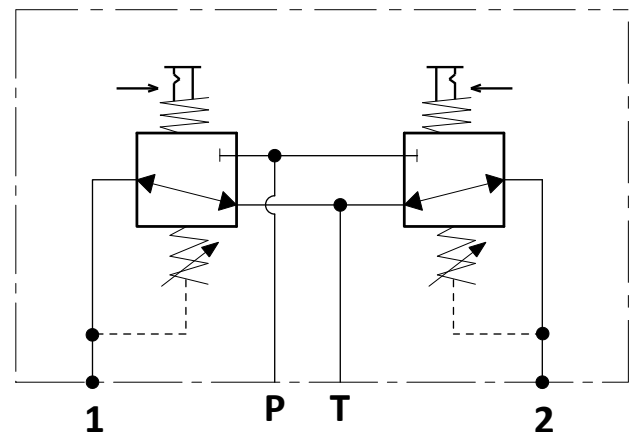
F Central clutch controlled



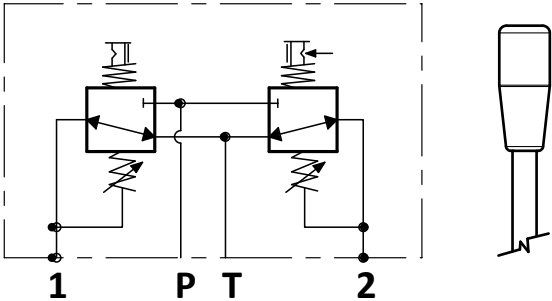
Q Mechanical detent pos. 2



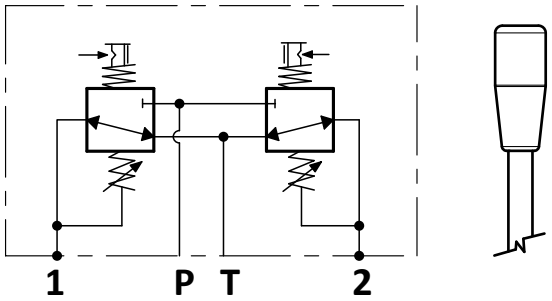
D Mechanical detent pos. 1-2



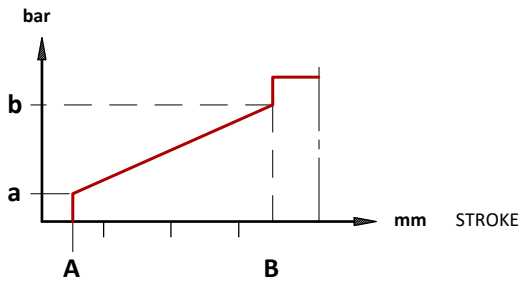
U Mechanical detent pos. 2
clutch controlled



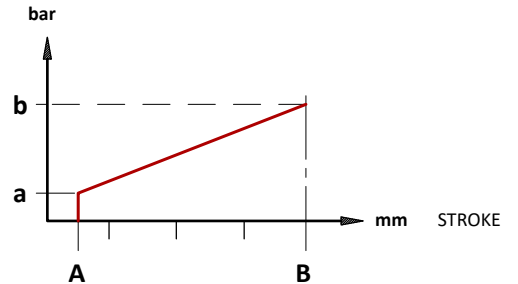
Y Mechanical detent pos. 1-2
clutch controlled



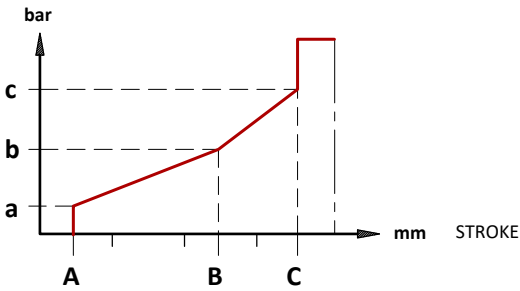
S.. With step



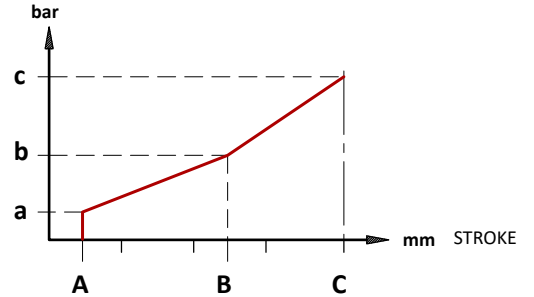
L.. Without step



M.. With step



G.. Without step



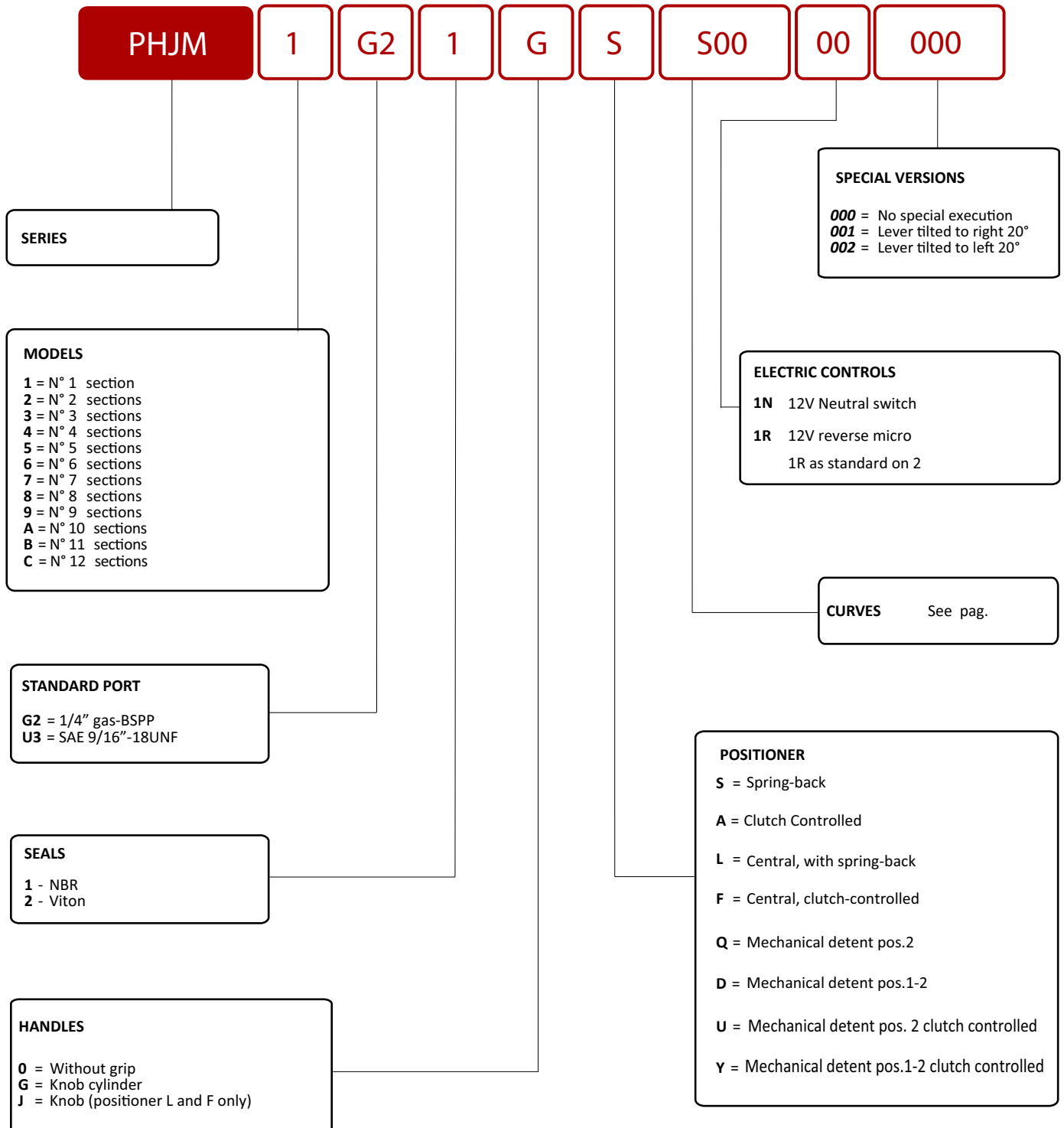
Adjustment curves

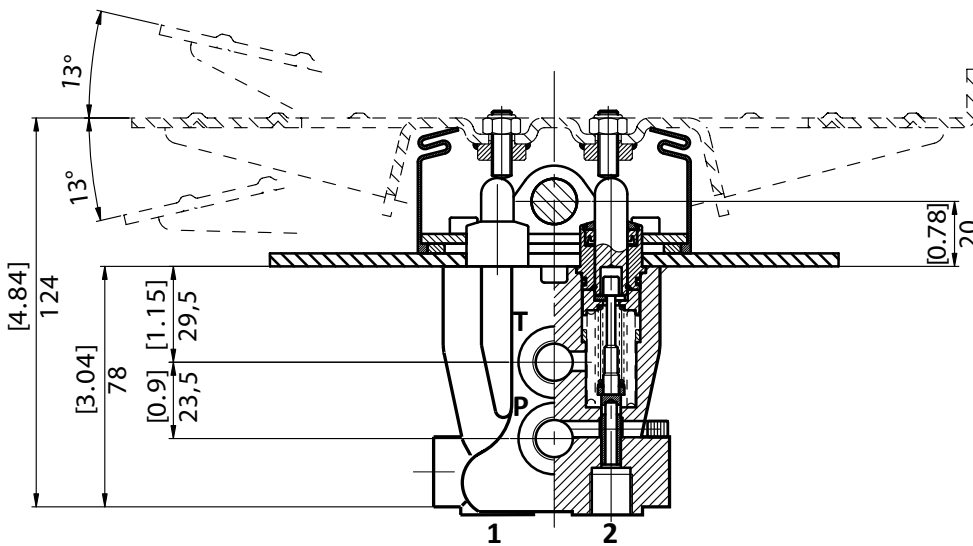
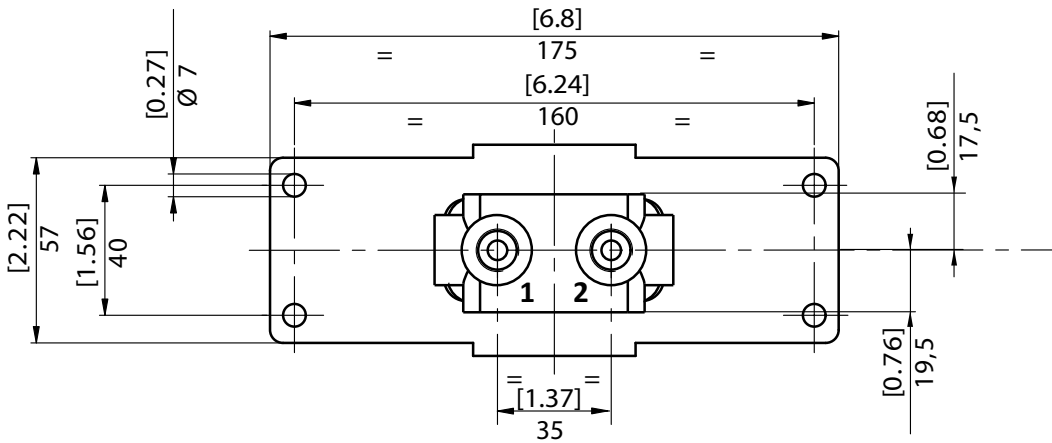
TYPE	PRESSURE			
	a		b	
S	bar	psi	bar	psi
S00	2	29	16	232
S01	5	73	20	290
S02	6,5	94	24,5	355
S04	3	46	17	249
S08	5	73	16	232
S11	4	58	15	218
S12	1,5	22	7	102
S13	5	73	28	406

TYPE	PRESSURE						STROKE		
	a		b		c		A	B	C
M	bar	psi	bar	psi	bar	psi	mm	mm	mm
M60	5	73	12	174	21	306	1,2	5,4	7,8

TYPE	PRESSURE						STROKE		
	a		b		c		A	B	C
G	bar	psi	bar	psi	bar	psi	mm	mm	mm
G60	5	73	12	174	23	334	1,2	5,4	8,3

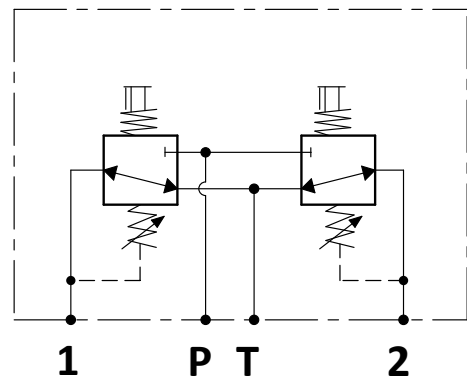
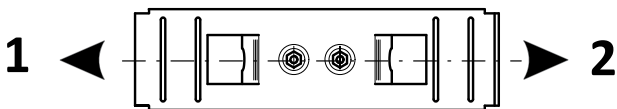
TYPE	PRESSURE			
	a		b	
L	bar	psi	bar	psi
L00	2	29	18	261
L01	5	73	22	319
L02	6,5	94	26,5	384
L04	3	46	19	276
L08	5	73	18	261
L11	4	58	15	218
L12	1,5	22	9	131
L13	5	73	30	435



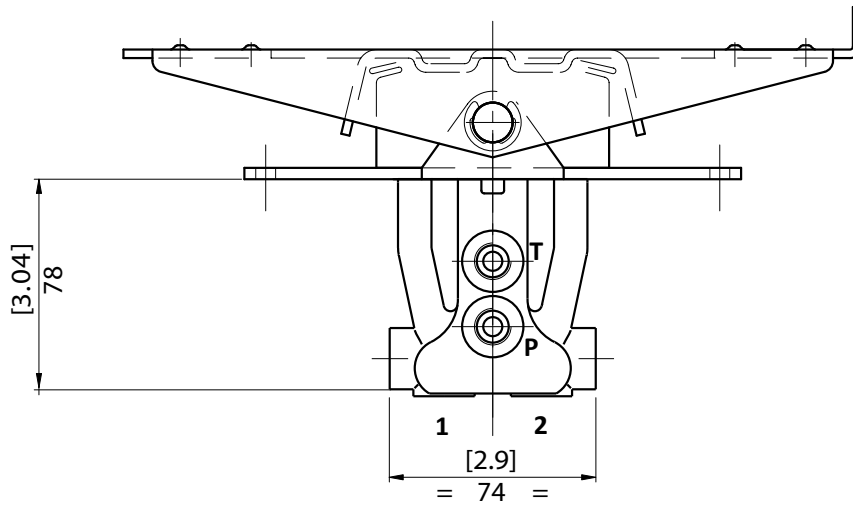


1	PORTS
2	PORTS
T	TANK
P	INLET

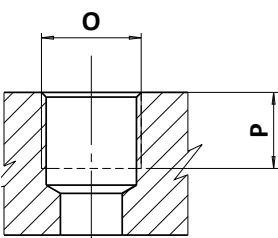
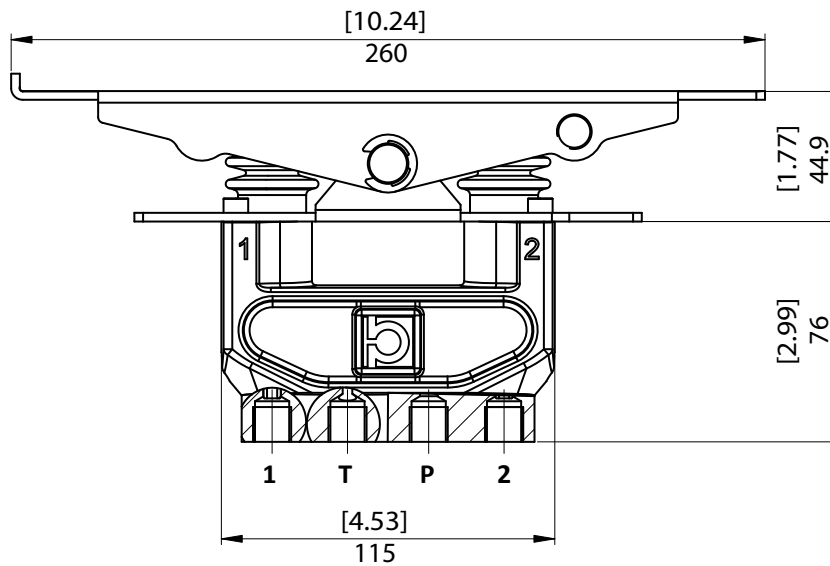
Direction of actuation



0 Standard



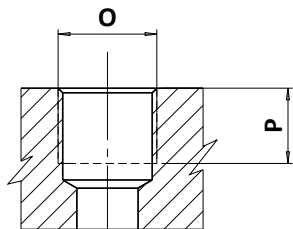
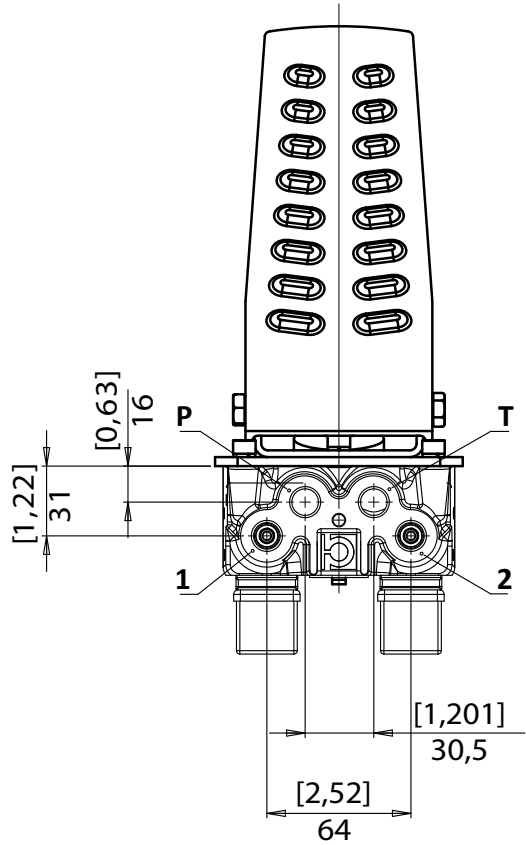
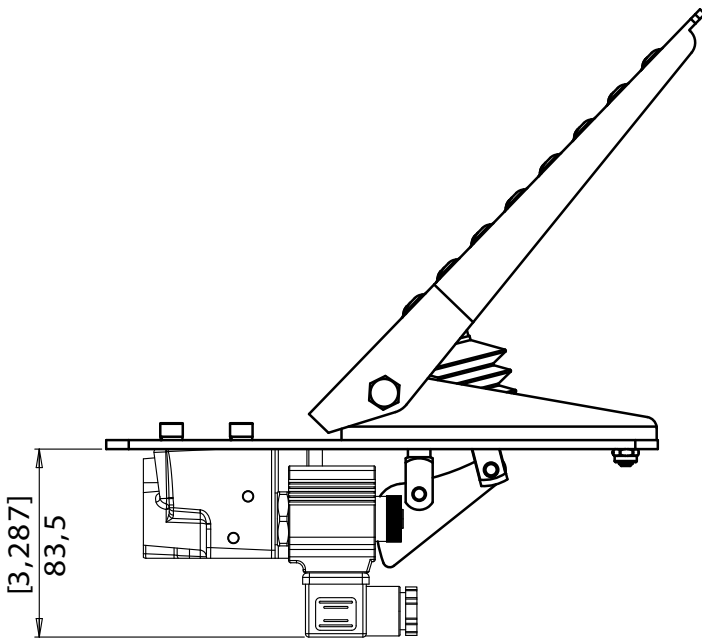
2 Long step (pedals 1 - 4 only)



PORTS

TYPE	O	P	
		Nm	in
G2	1/4"	17	0,47
U3	9/16-18 UNF	25	0,47

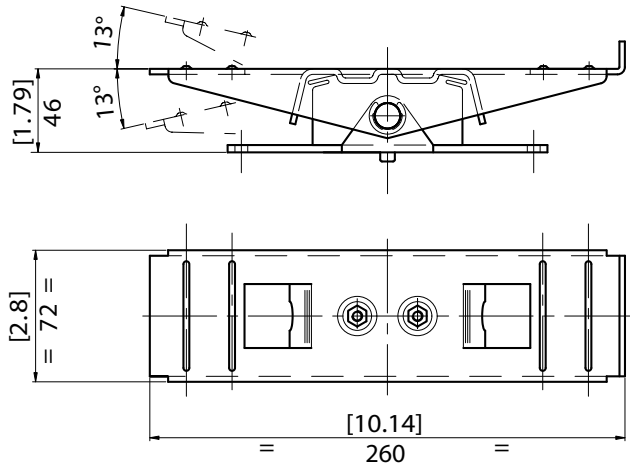
3 With directional electric valves (pedals D - W only)



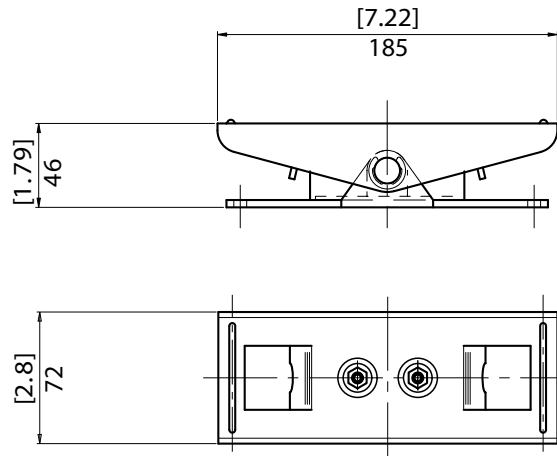
PORTS

TYPE	O	P	
		Nm	in
G2	1/4"	17	0,47
U3	9/16-18 UNF	25	0,47

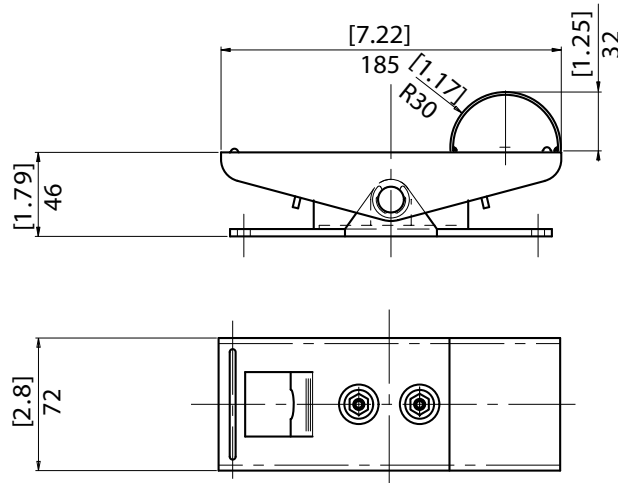
1 Standard toggle pedal



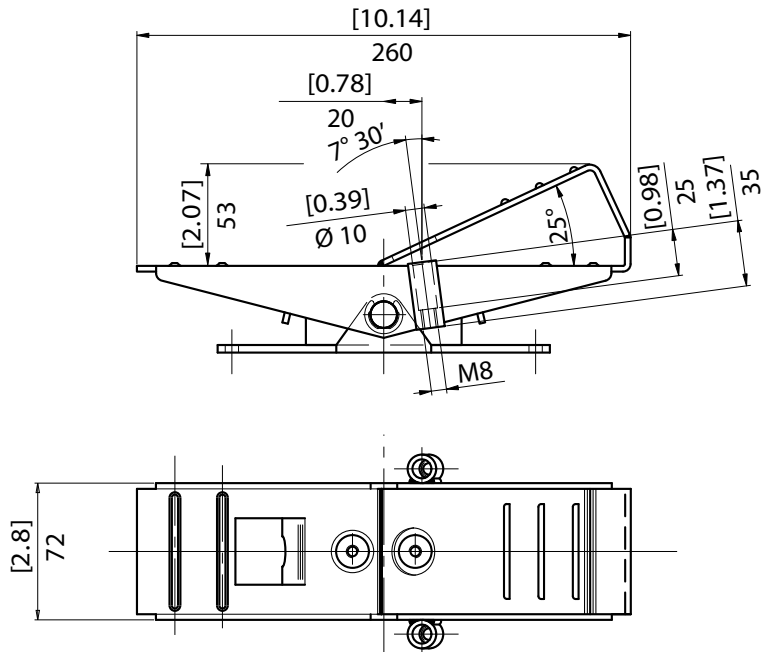
2 Standard short pedal



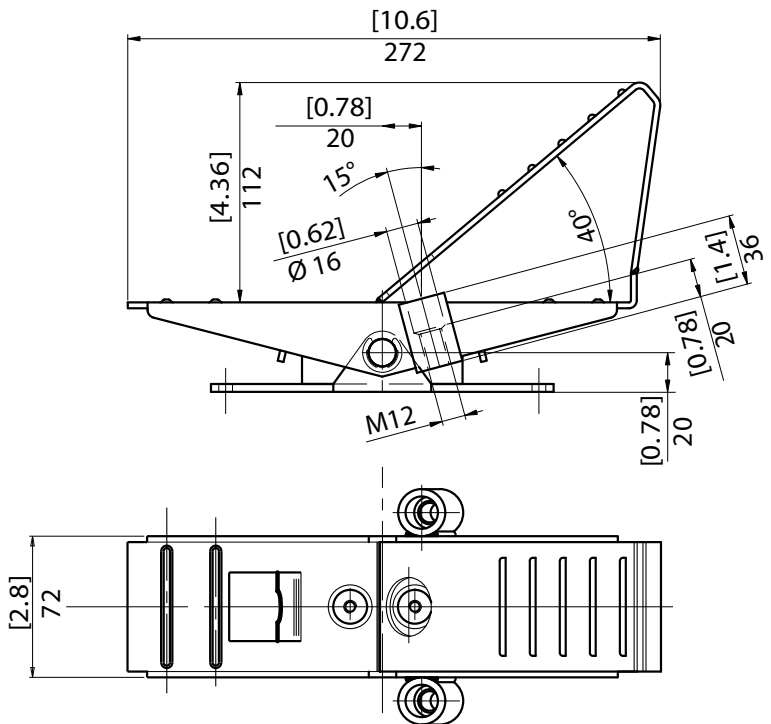
3 Convex short pedal



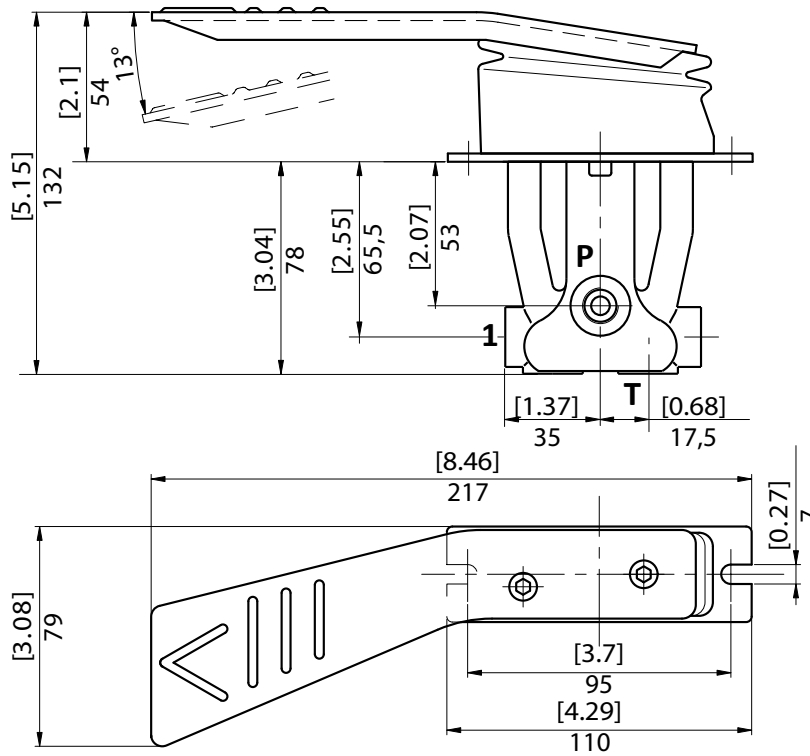
4 Pedal with shim



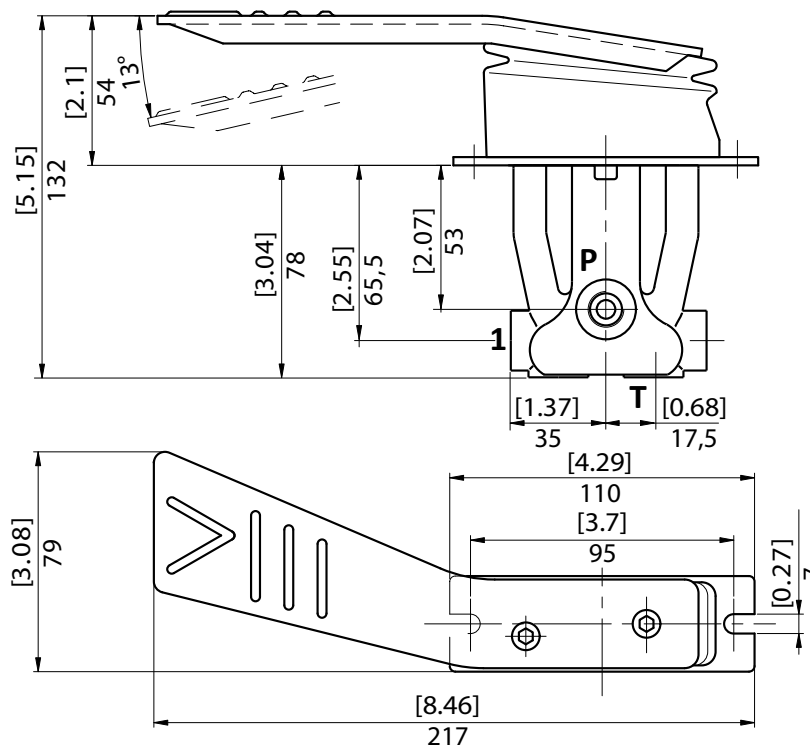
5 Pedal with high shim



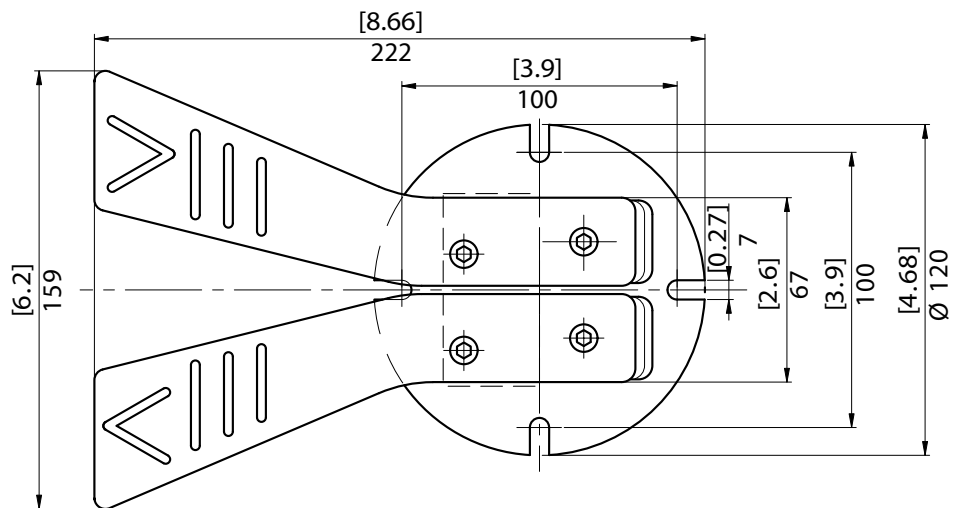
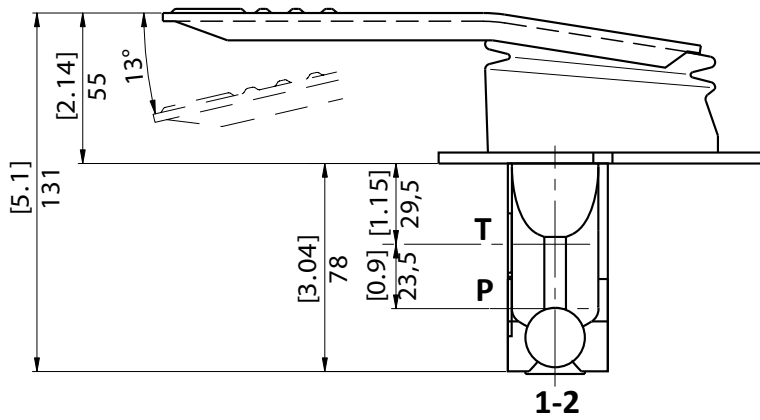
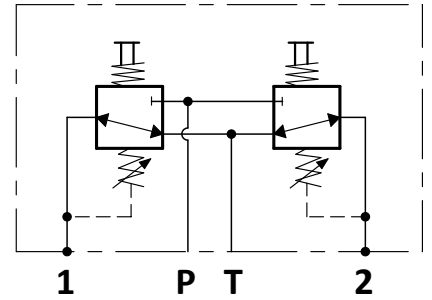
6 Single right pedal



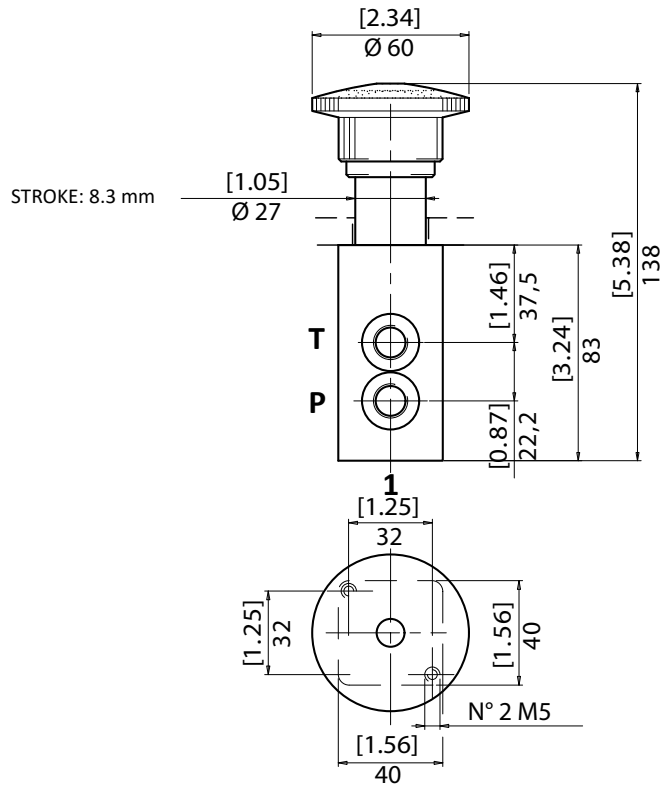
7 Single left pedal



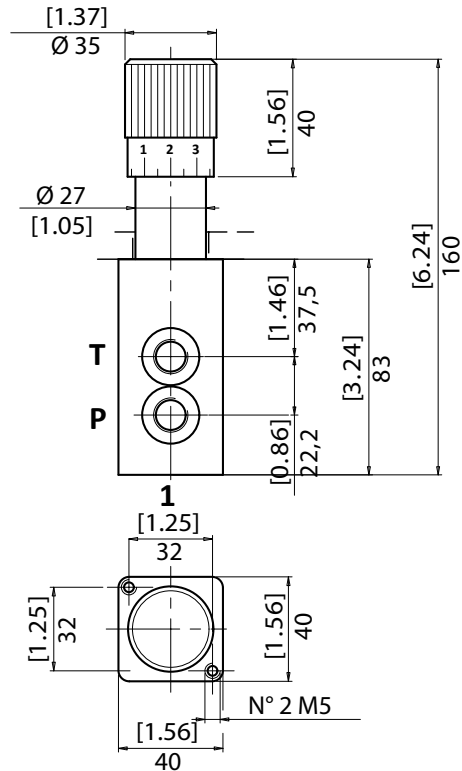
8 Double pedal



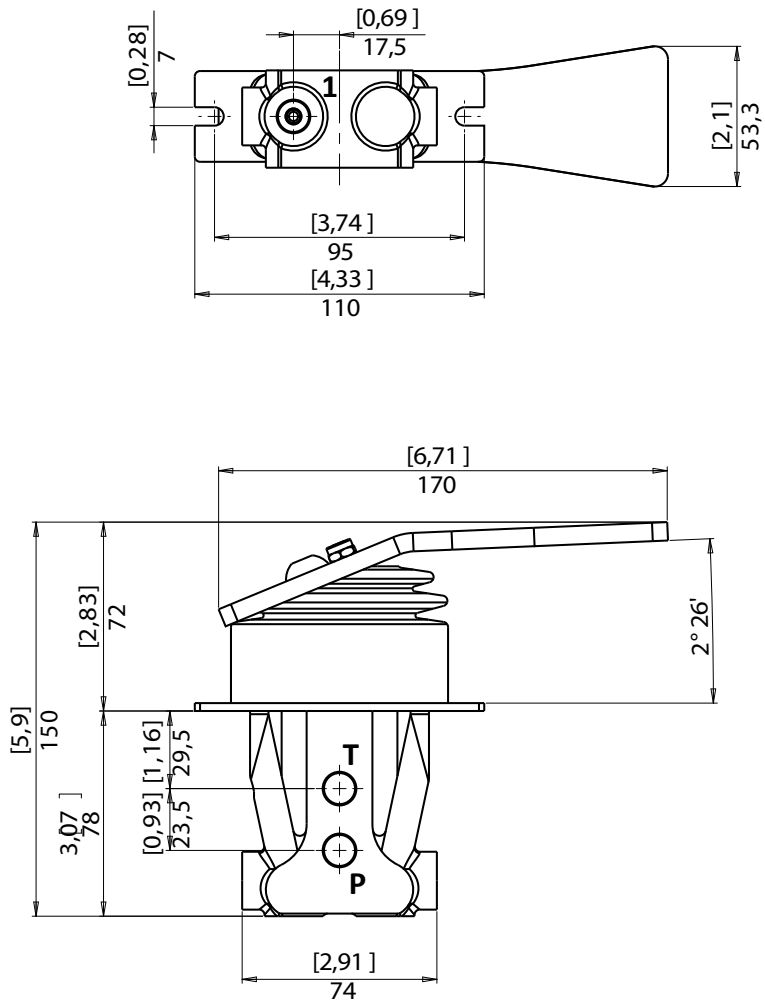
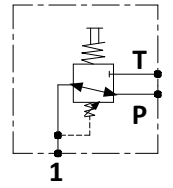
9 Button pedal



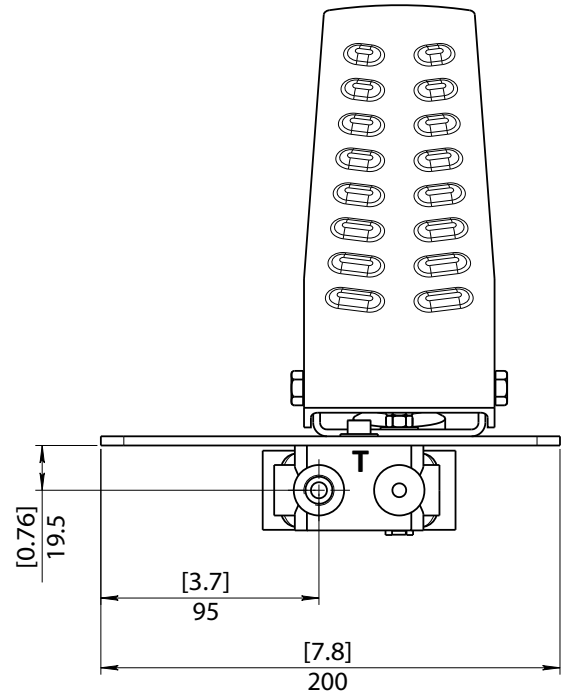
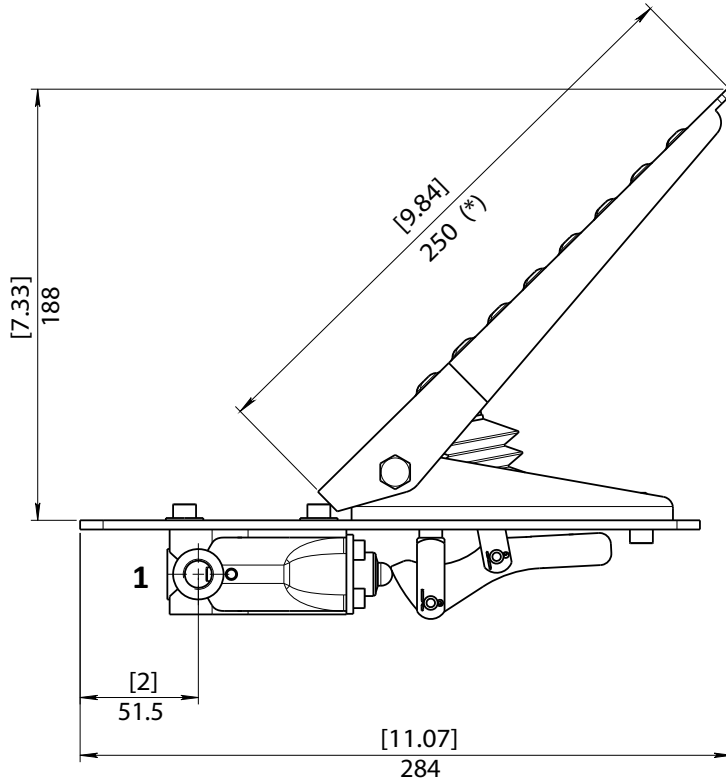
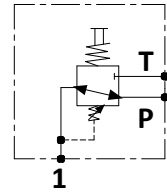
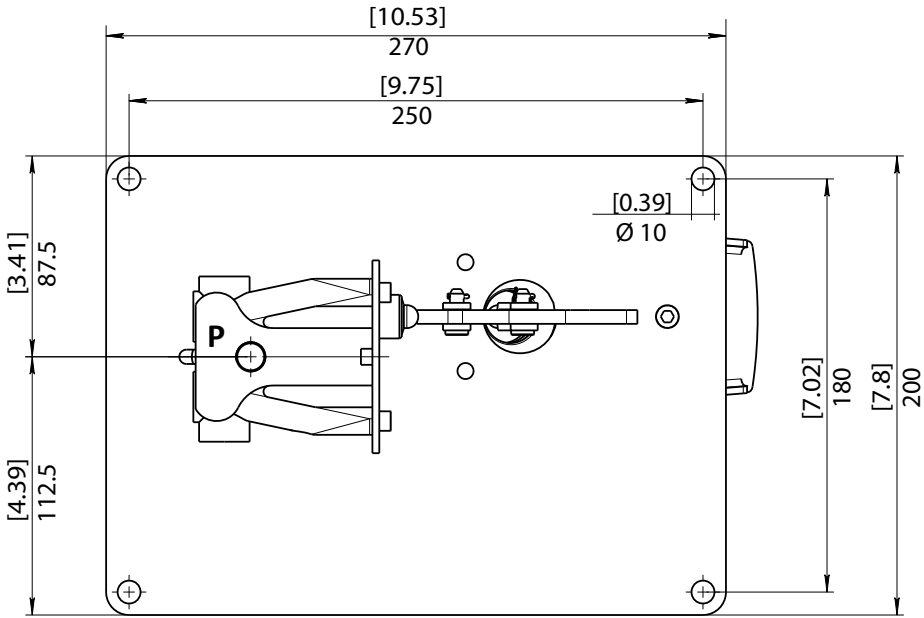
R Pression regulator



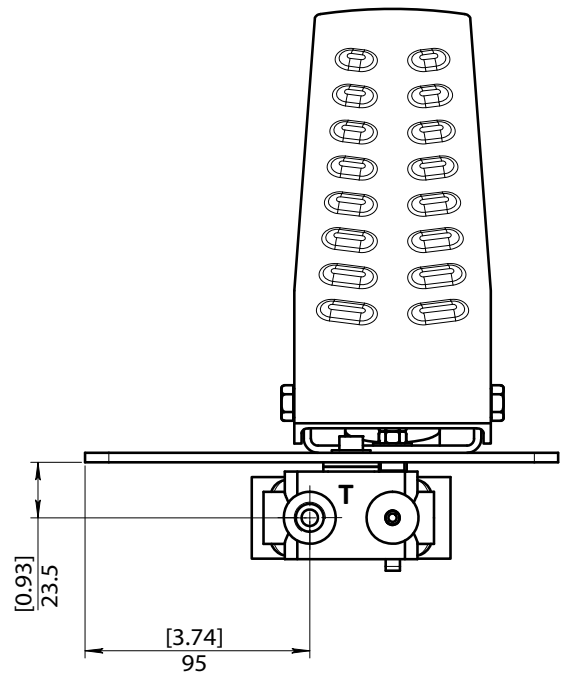
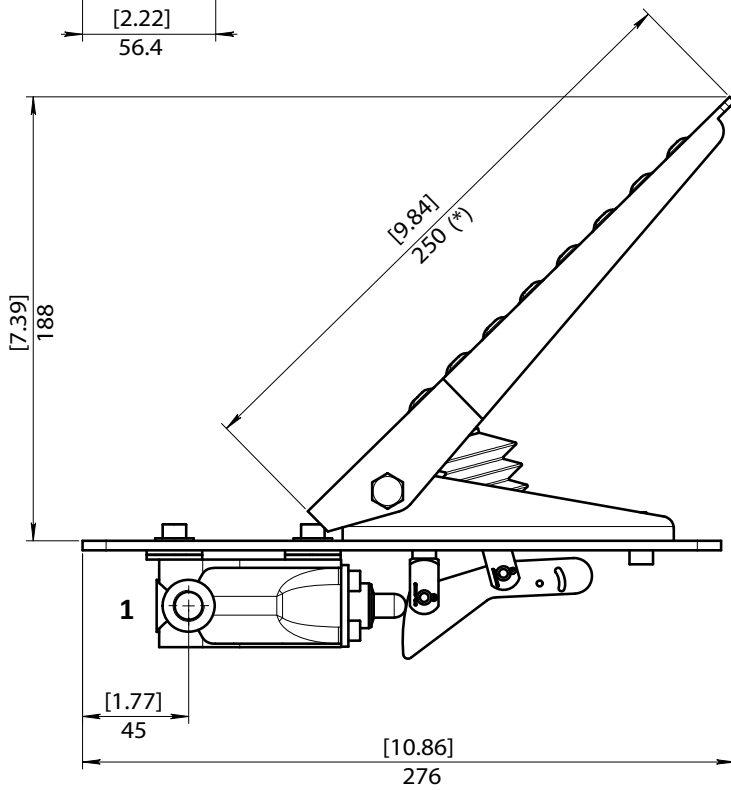
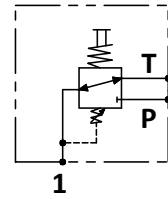
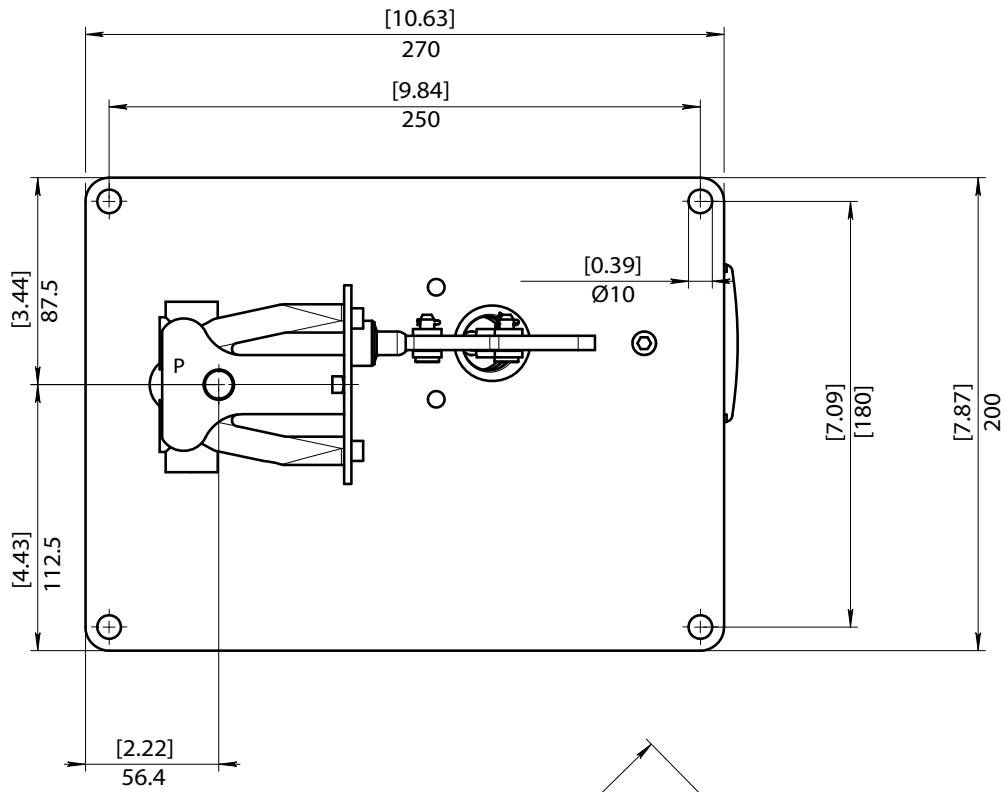
N Negative single pedal negative



V Negative toggle lever pedal



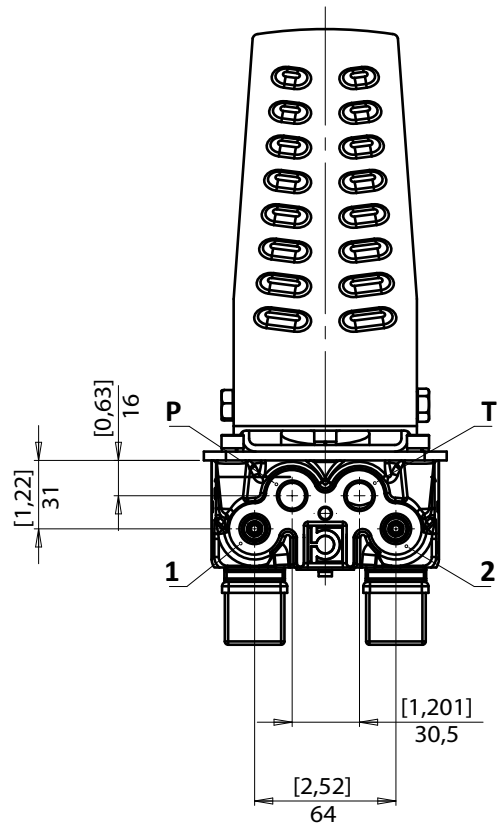
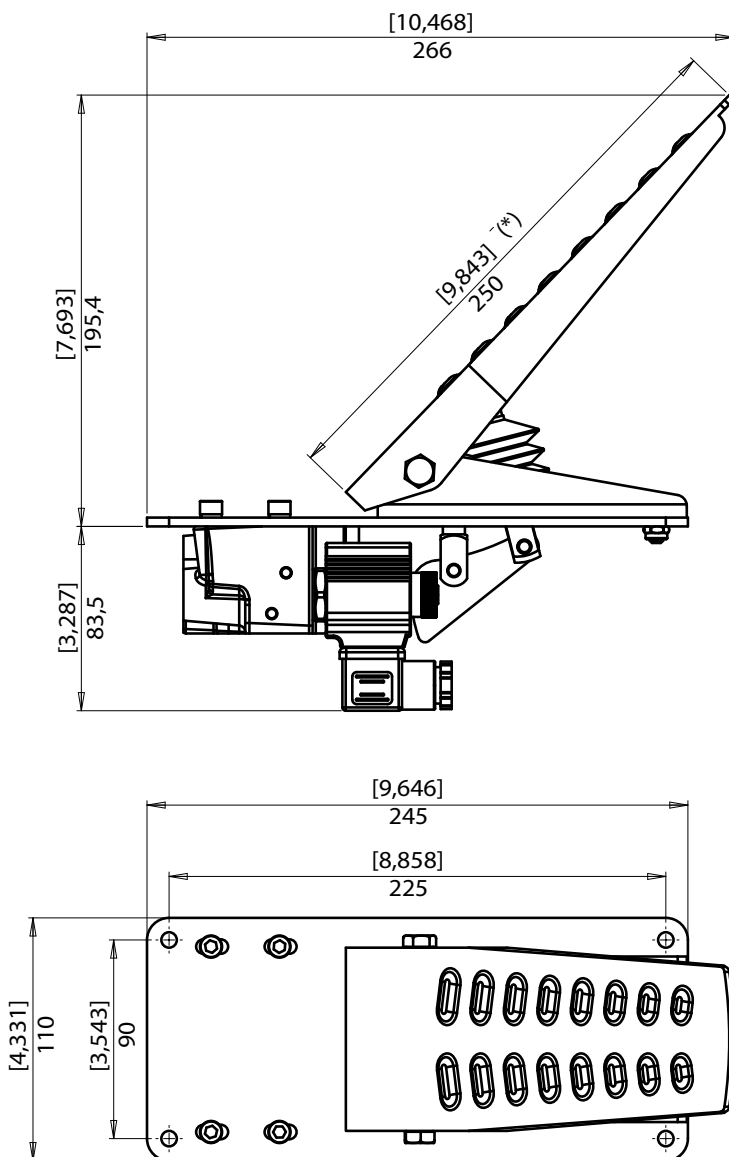
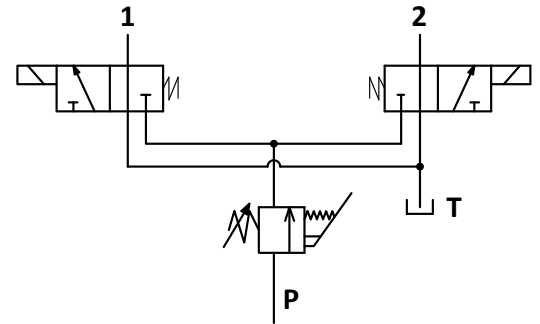
X Positive long toggle lever pedal



W Long toggle lever pedal with directional electrovalves

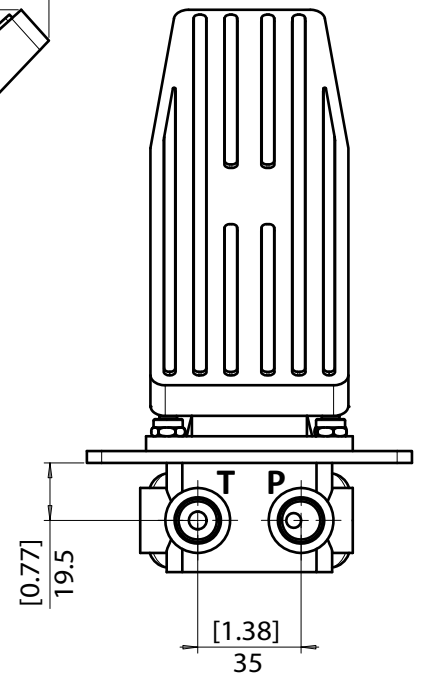
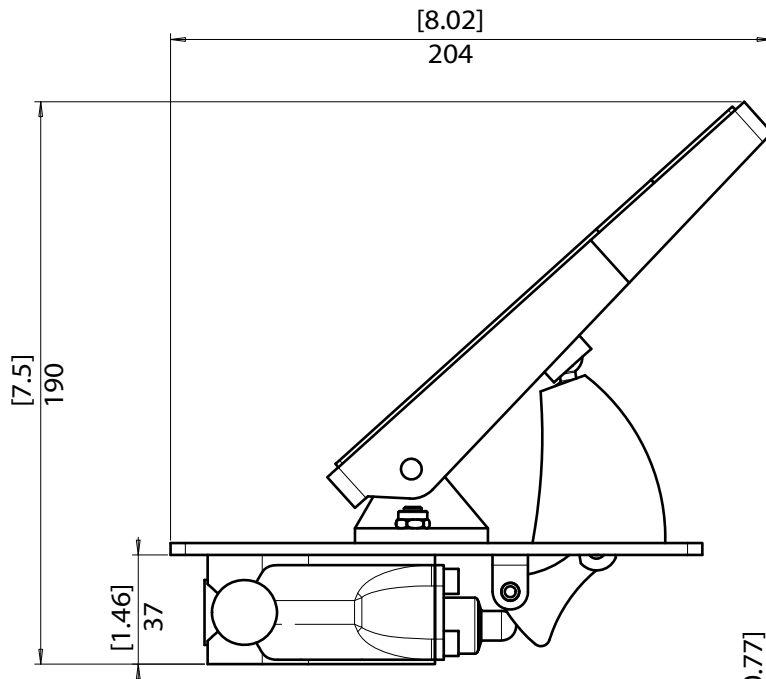
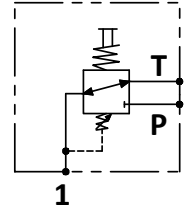
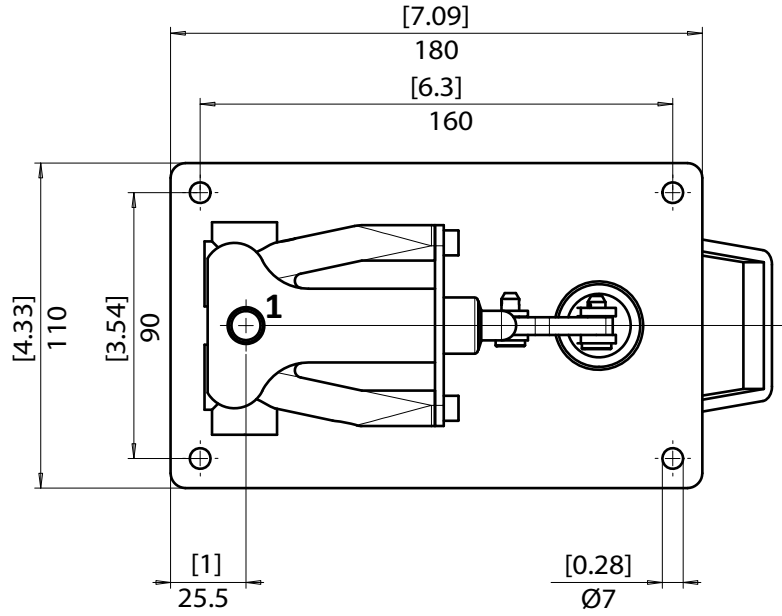
FEATURES COIL

Voltage (V)	Current draw (A)	Power (W)	Resistance (Ω)
12VDC +5/-10%	1.9	22.8	6.3(20°) -9.2+/-7% IP:65
24VDC +5/-10%	0.95	22.5	25.6(20°) -37+/-7% IP:65



(*Available in a version with pedal length 190 mm too

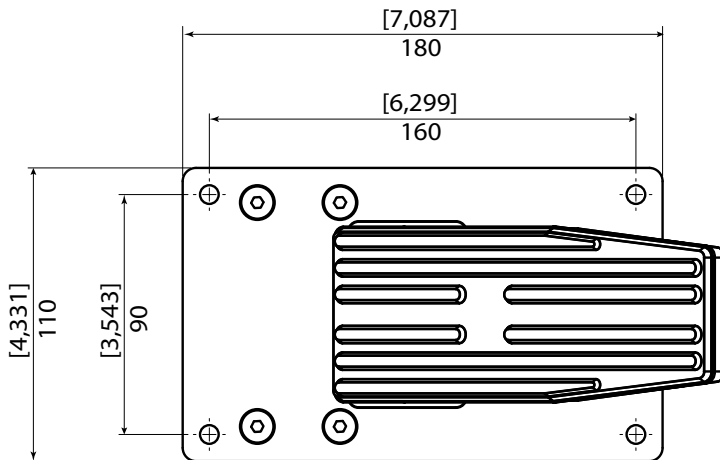
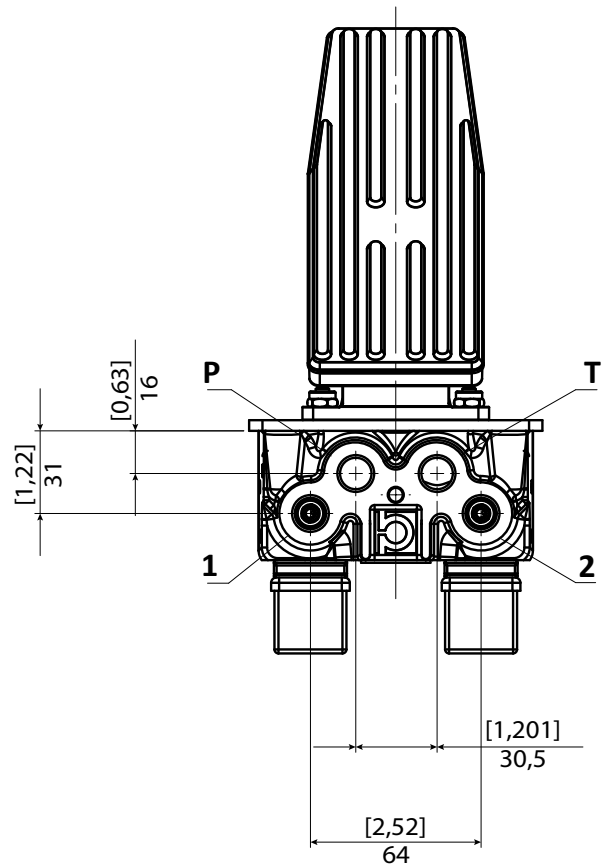
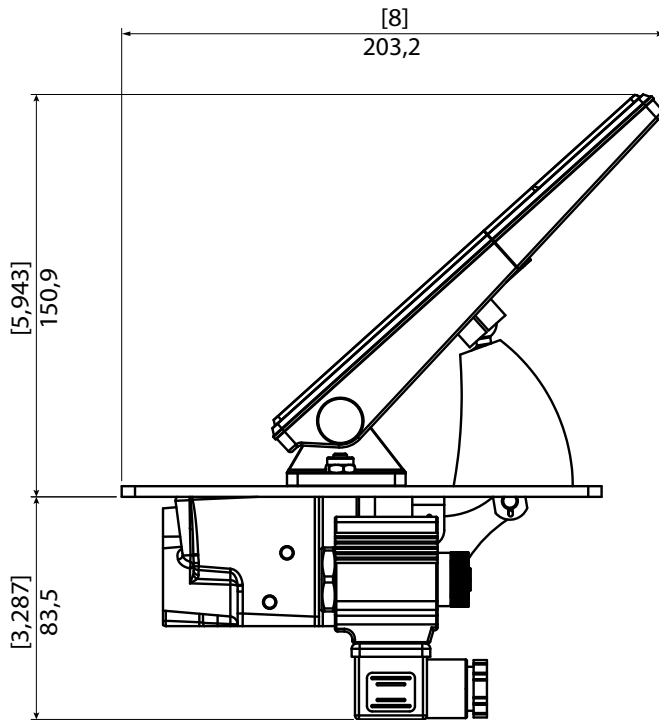
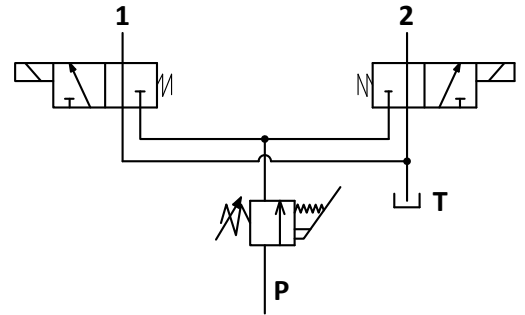
Z Resin toggle lever pedal



D Resin toggle lever pedal with directional electrovalves

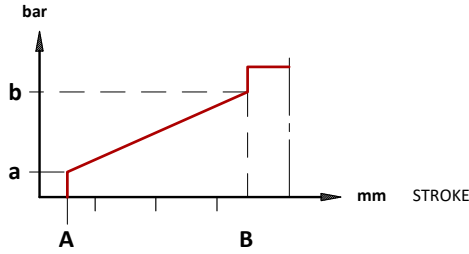
FEATURES COIL

Voltage (V)	Current draw (A)	Power (W)	Resistance (Ω)
12VDC +5/-10%	1.9	22.8	6.3(20°) -9.2+/-7% IP:65
24VDC +5/-10%	0.95	22.5	25.6(20°) -37+/-7% IP:65

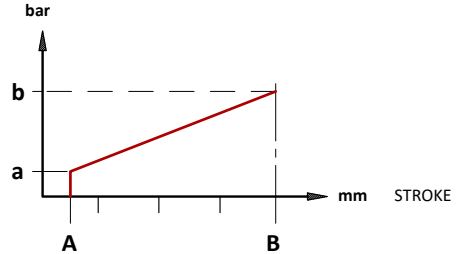


Single slope pressure curves

P.. With step



R.. Without step



Adjustment curves

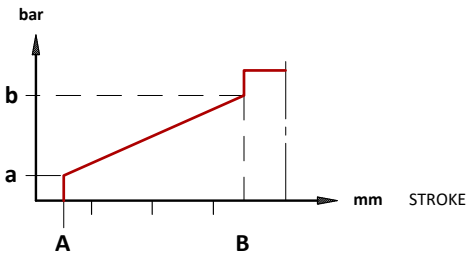
TYPE	PRESSURE			
	a		b	
P	bar	psi	bar	psi
P00	2	29	16	232
P01	3	43	18	261

TYPE	PRESSURE			
	a		b	
R	bar	psi	bar	psi
R00	2	29	18	261
R01	3	44	22	290

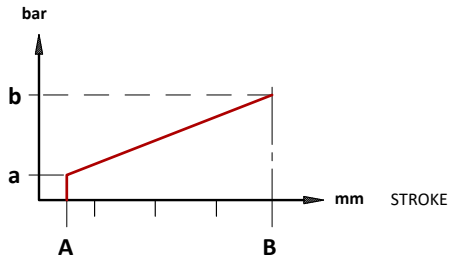
Pressure curves for 9, R, D, HPCF1

Single slope pressure curves

S.. With step



L.. Without step

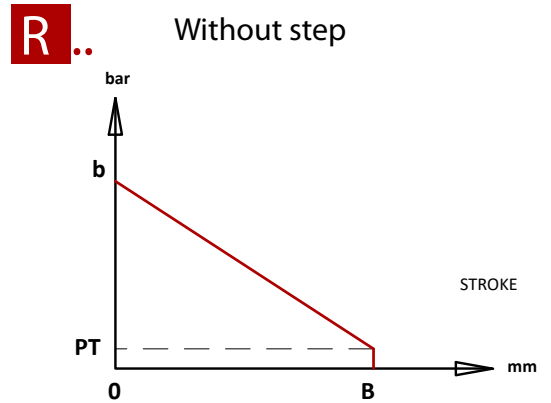
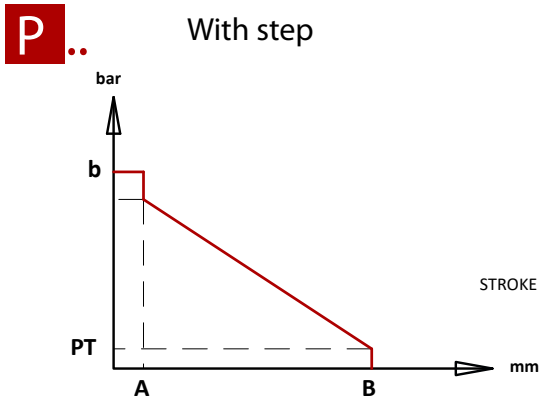


Adjustment curves

TYPE	PRESSURE			
	a		b	
S	bar	psi	bar	psi
S00	2	29	16	232
S01	5	73	20	290
S02	6,5	94	24,5	355
S04	3	46	17	249
S08	5	73	16	232
S11	4	58	15	218
S12	1,5	22	7	102
S13	5	73	28	406

TYPE	PRESSURE			
	a		b	
L	bar	psi	bar	psi
L00	2	29	18	261
L01	5	73	22	319
L02	6,5	94	26,5	384
L04	3	46	19	276
L08	5	73	18	261
L11	4	58	15	218
L12	1,5	22	9	131
L13	5	73	30	435

Single slope pressure curves



Adjustment curves

TYPE	PRESSURE			PT
	bar	b	psi	
P00	16		232	PT
P01	18		261	

TYPE	PRESSURE			PT
	bar	b	psi	
R00	16		261	PT
R01	22		290	

