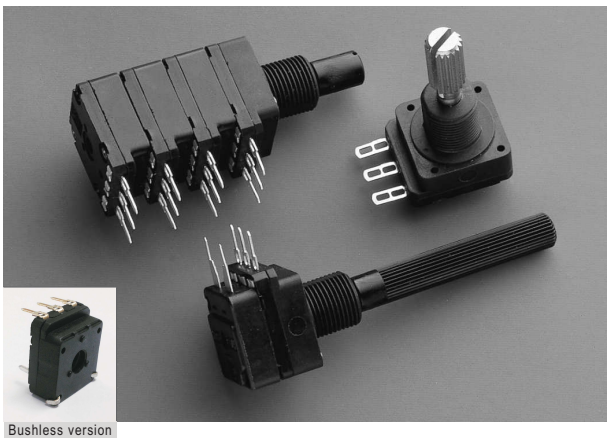
PIHER

PC-16 16 mm Carbon Potentiometer


Bushless version

FEATURES

- Carbon resistive element.
- IP54 protection according to IEC 60529.
- Polyester substrate.
- Modular gang type (up to 4).
- Self extinguishable material UL 94-V0.
- Upon request:
  - Metalic support.
  - Stereo matching.
  - Switch.
  - Nut & washer.
  - Bushless & shaftless models.
  - Assemblies with wires and connectors.

MECHANICAL SPECIFICATIONS

– Mechanical rotation angle:	300° ± 5°
– Electrical rotation angle:	280° ± 20°
– Torque:	0.5 to 1.5 Ncm. (0.7 to 2.1 in-oz)
– Stop torque:	> 40 Ncm. (>56 in-oz)
– Max. torque nut (binding out):	< 80 Ncm. (112 in-oz)
– Thrust and pull in the shaft:	> 25 N

* Others check availability.
** Up to 85°C depending on application.

ELECTRICAL SPECIFICATIONS

– Range of values*
100Ω ≤ Rn ≤ 5 M (Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)

– Standard tolerance*: 100Ω ≤ Rn ≤ 1M Ω ------ ± 20%
1MΩ < Rn ≤ 5M Ω ------ ± 30%

– Max. Voltage: 250 VDC (lin) 125 VDC (no lin)

– Nominal Power 50°C (122°F) (see power rating curve)
0.2 W (lin) 0.1 W (no lin)

– Taper* Lin ; Log; Alog (Log. & Alog. only Rn ≥ 1K).

– Residual resistance*: ≤ 0.5% Rn (5 Ω min.)

– Equivalent Noise Resistance: ≤ 3% Rn (3 Ω min.)

– Operating temperature**: –25°C + 70°C (–13°F + 158°F)

HOW TO ORDER

PC-16	D	H	10	I	M06	203	A	2020	0				

OPTIONAL EXTRAS

Serie
PC-16

Model
S =Single
D =Tandem
T =Triple
C =Quad.

Mounting style
H= Horizontal
V = Vertical
(See note 1)

Bushing diameter
07 = M7
10 = M10
SC = Bushless
(See note 2)

Terminals
I = PCB
C = Solder Lugs

Shafts
M04
M06
M07
M11
M17
P01
P22

(See note 3)

Value
101 = 100Ω
203 = 20 K
504 = 500 K
505 = 5M
(See note 4)

Taper
A = Linear
B = Log.
C = Alog.
(See note 10)
Others tapers on request

Tolerance
0505 = ± 5%
1010 = ± 10%
2020 = ± 20%
3030 = ± 30%
(See note 5)

Shafts spec. leng.
XX.X
(See notes 6,9)

Mounting brackets
M1
M2
(See note 7)

Stereo matching
3D = 3dB
4D = 4dB
6D = 6dB
(See note 8)

Switch
I = PCB
C = Solder lugs
(See note 9)

Nuts & Washers
-TA = loose nut & washer
MTA=assembled nut & washer
-T- = loose nut
MT- = assembled nut
(See note 9)

NOTES:

(1) Mounting style: Type "V" is only available in model "S" potentiometer and with printed circuit terminals.
(2) Bushings: Type "10" has two paralell flat surfaces for avoiding rotation. Bushless option only available for single model.
(3) M07 shaft is only available with M10 bushing. --- = no shaft
(4) Value: • Code: 10 1 100 Ω
10 → 2 first digits of the value.
1 → Number of zeros
• In models "D", "T", "C", with different values, they will be asked by drawings.
(5) Tolerance (non standard), upon request. Example: +7% -5% Code: 07 05
07 → positive tolerance
05 → negative tolerance
(6) Shaft special length:
• Only for special length and plain shafts (not knurled). Example: Shaft Ø6.35 L= 24.5 M07 ..... 24.5
• NOTE: Maximun length recommended: L = 45
M07 → shafts
24.5 → special length
(7) Mounting brackets: Only applicable for model "S", mounting "H" and without switch.
(8) Stereo matching: not available for single models. Maximun will be: •3dB for model "D" •4dB for model "T" •6dB for model "C"
(9) Not available for Bushless version.
(10) Switch option not available with antilog taper.

HOW TO ORDER CUSTOM DRAWING

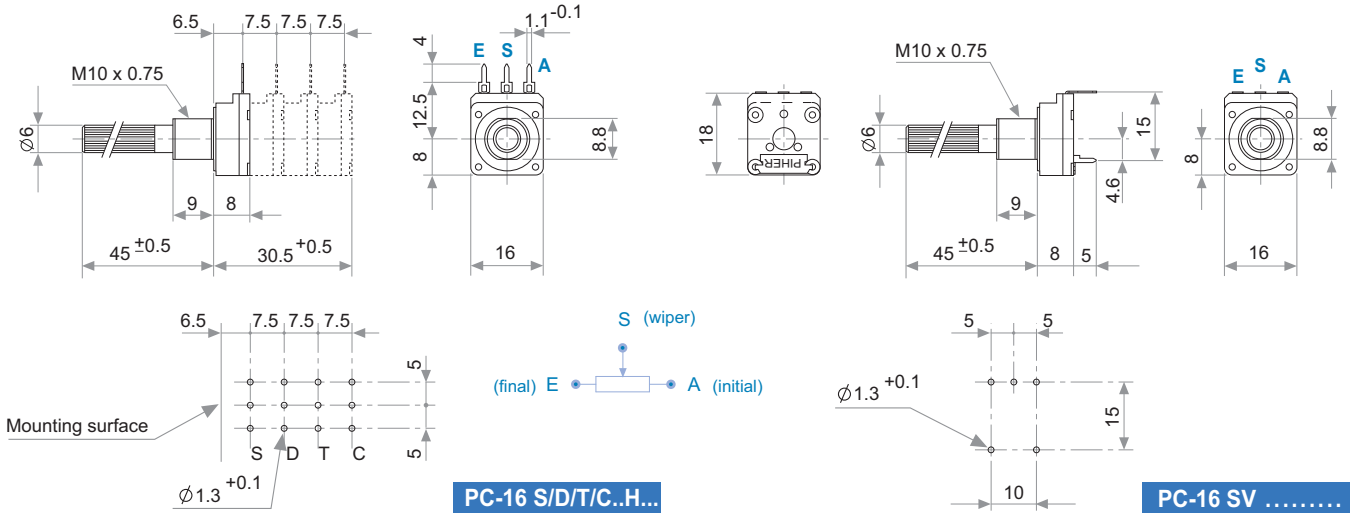
PC-16 S V + DRAWING NUMBER (Max. 16 digits)

This way of ordering should be used for options which are not included in the "How to order" standard and optional extras.

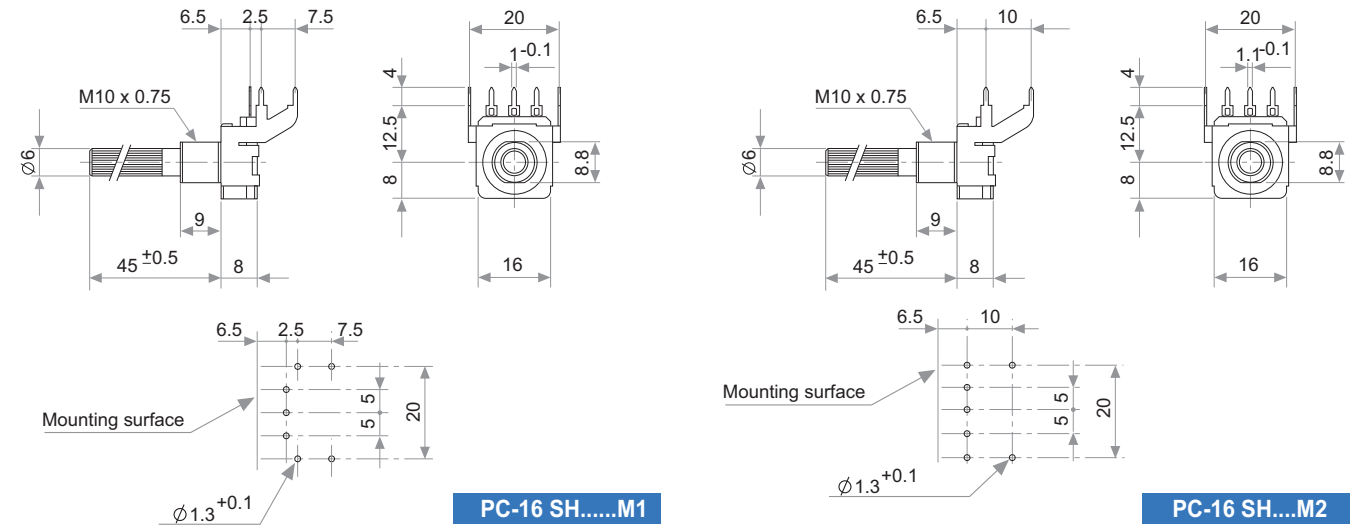
STANDARD OPTIONS

Shaft length ..... 0 Standard Length
Mounting brackets ..... Without mounting brackets
Stereo matching ..... Only on request (see note 8)
Switch ..... No switch
Nut & washer ..... Without nut and washer

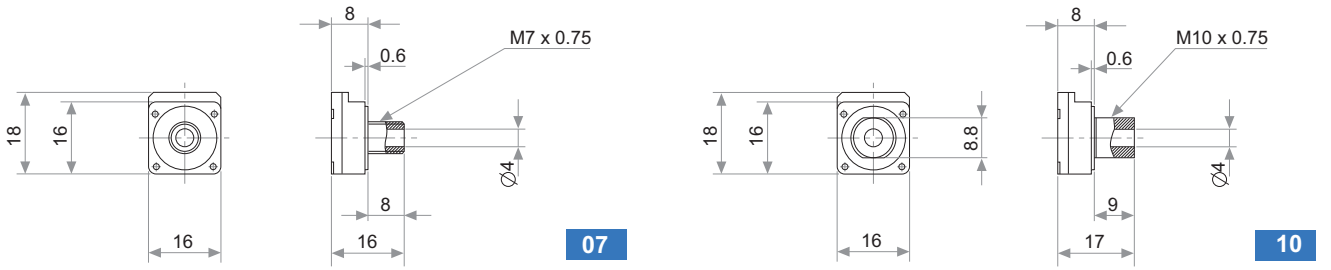
MODELS



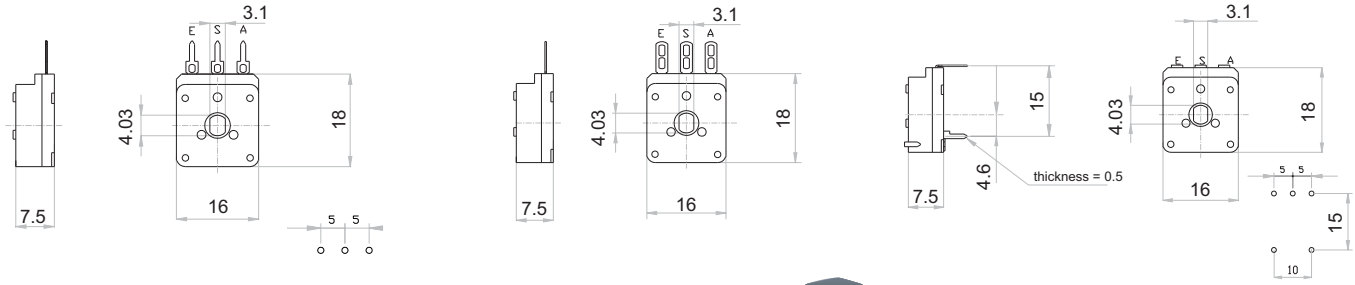
METALLIC SUPPORT



BUSHINGS

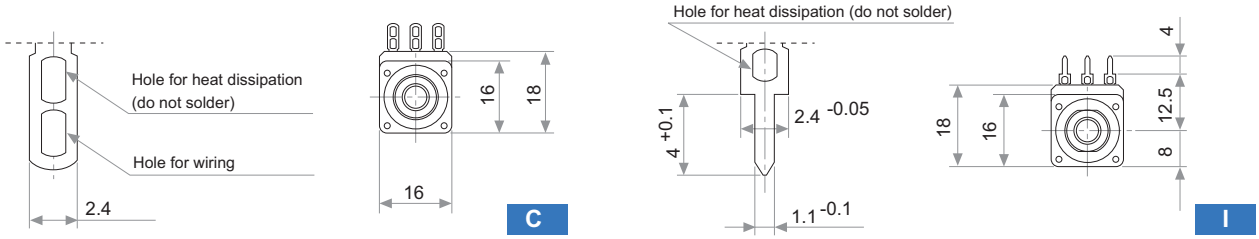


EXAMPLES OF BUSHLESS VERSION



Download STEP files here:
https://piher.net/piher/?p=938

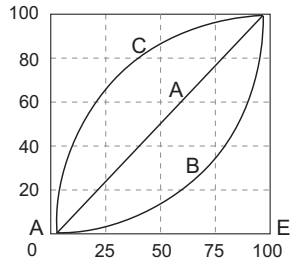
TERMINALS



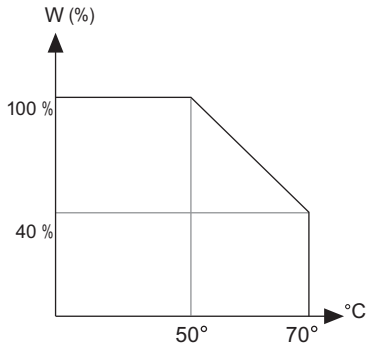
TAPERS

Standard

A = Linear
B = Log.
C = Alog.

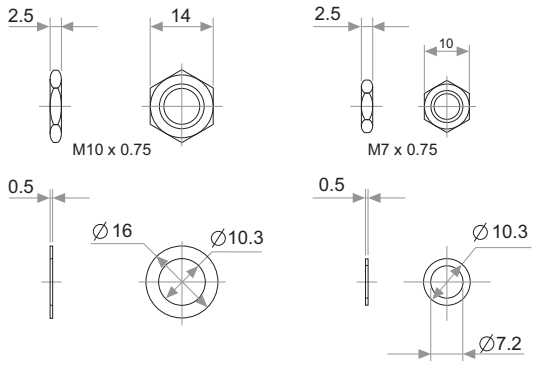


POWER RATING CURVE



NUTS & WASHERS

Bushing 10	Bushing 07

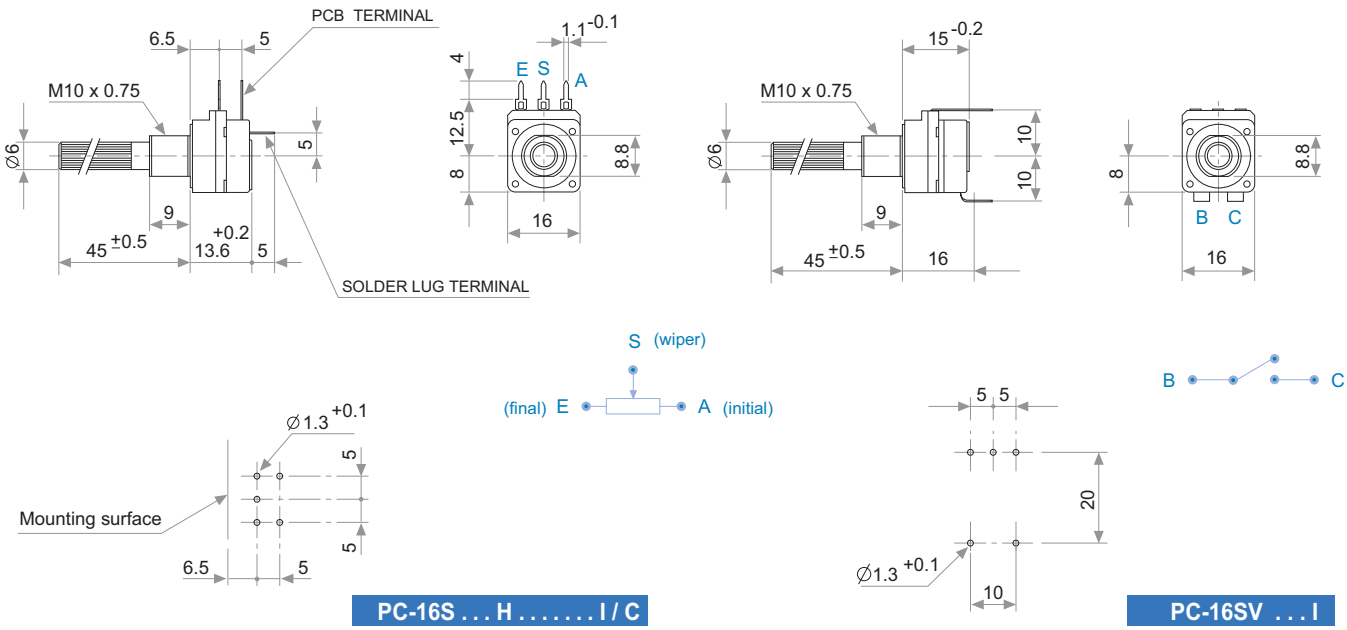


NOTE = Please note relative terminal positions when ordering non linear tapers.

TESTS		TYPICAL VARIATIONS
ELECTRICAL LIFE	1.000 h. @ 50°C; 0.2 W	±5 %
MECHANICAL LIFE : POT.* SWITCH	25.000 (10-15 CPM) 10.000 (1 A, 50 VAC)	±3 % (Rn < 1 MΩ)
TEMPERATURE COEFFICIENT	–25°C; +70°C	±300 ppm/°C (Rn < 100 KΩ)
THERMAL CYCLING	16 h. @ 85°C; 2h. @ –25°C	±2.5 %
DAMP HEAT	500 h. @ 40°C @ 95% HR	±5 %
VIBRATION (for each plane X,Y,Z)	2 h. @ 10 Hz. ... 55 Hz.	±2 %

(*) only applicable to values ≥1K. For lower values please consult.

SWITCH



PC-16S . . . H . . . . . I / C

PC-16SV . . . I

SWITCH SPECIFICATIONS

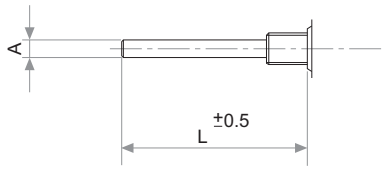
NOMINAL CURRENT	1A, 250 VAC
CONTACT RESISTANCE (initial)	10 m Ω
OPERATING TORQUE	1 to 3 Ncm (1.4 to 4.2 in oz)
OPERATING ANGLE	30° ± 5°
TEST VOLTAGE	500 V

PACKAGING

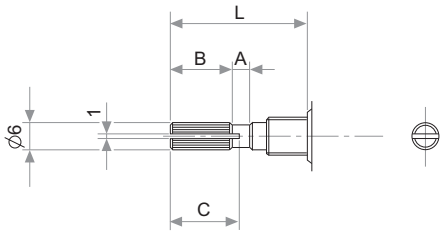
Boxes of 100 pieces (single body model): Inner dimensions 250 x 160 x 95 mm

METALIC SHAFTS

STANDARD

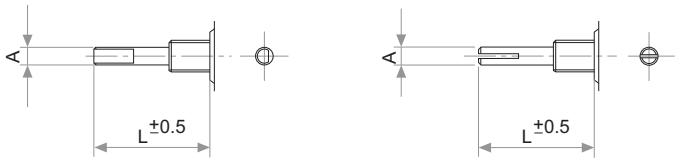


A	L	CODE
4	45	M04
6	45	M06
6.35	45	M07



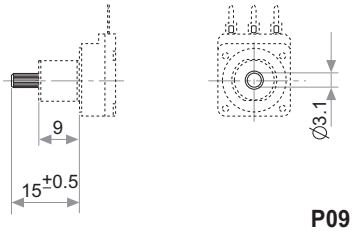
A	B	C	L	CODE
2	5	7	15	M11
2	10	11	20	M12
4	12	14	25	M13
4	12	14	30	M14
4	12	14	35	M15
4	12	14	40	M16
4	12	14	45	M17

SPECIAL



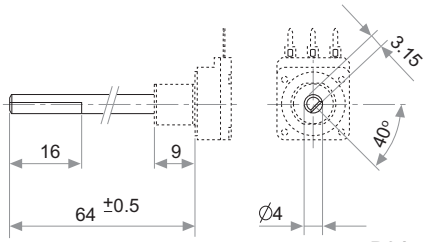
A
Ø 4
Ø 6
Ø 6.35

PLASTIC SHAFTS Ø 3.1



P09

PLASTIC SHAFTS Ø 4



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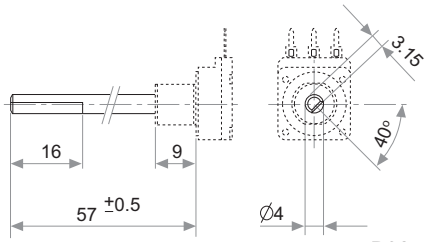
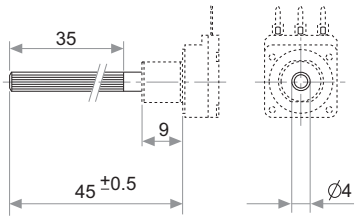


P02

PLASTIC SHAFTS Ø4



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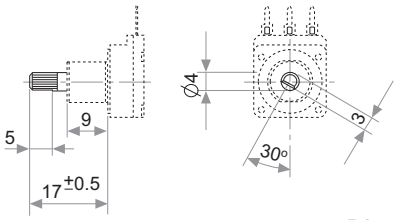

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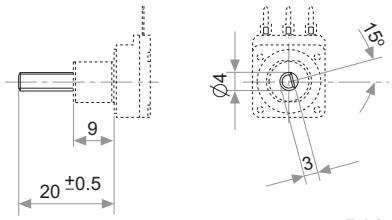

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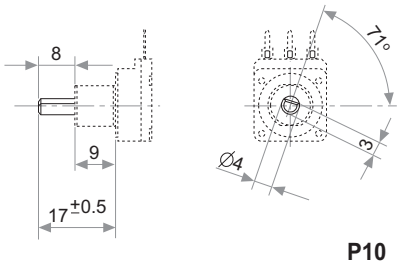

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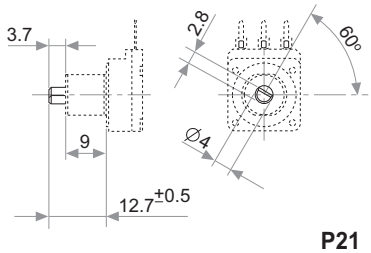
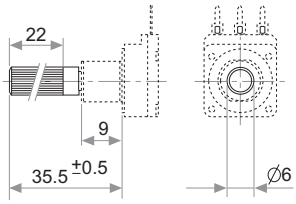


P21

PLASTIC SHAFTS Ø6

Shaft position shown full CCW. Any other position for plastic shafts has to be shiftted n times 24°. Other positions upon request.



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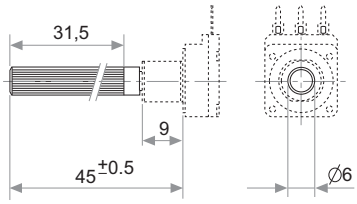

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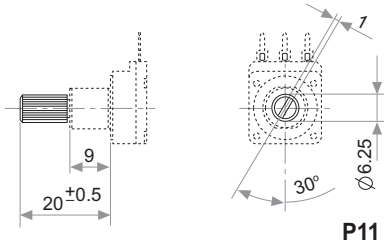

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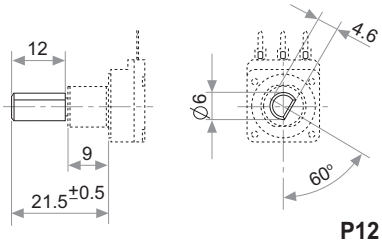

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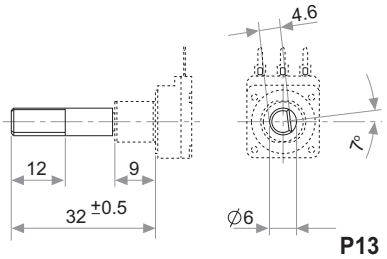

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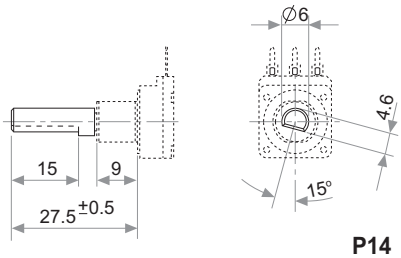

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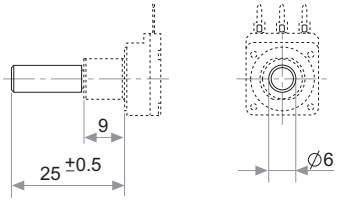

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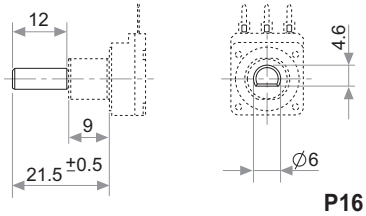

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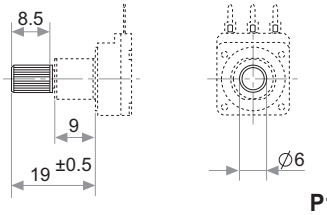

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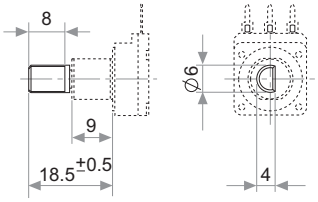

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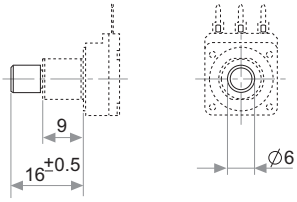

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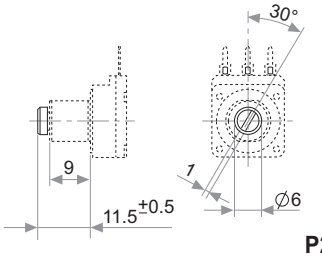

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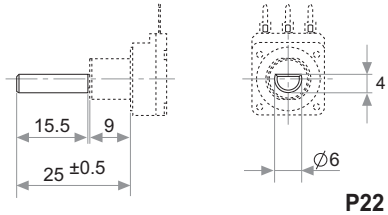
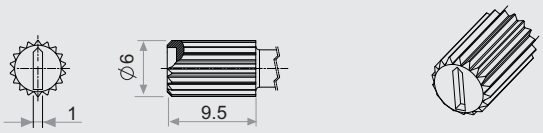
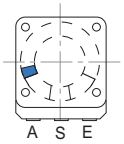


P22

Special shaft example (18 teeth knurl & arrow. Check availability.).

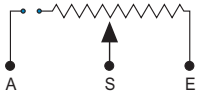


OPEN CIRCUIT FEATURE (CUT TRACK)

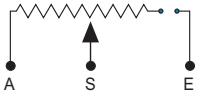


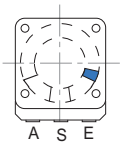
CCW on-off (A)

PCI
Cut track at the beginning of the travel.



PCF
Cut track at the end of the travel



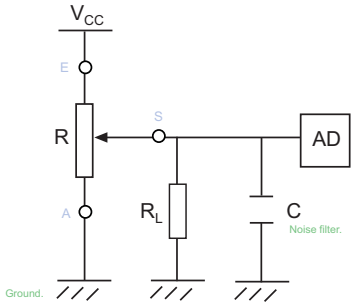


CW on-off (E)

A = Initial S = Wiper E = Final.
PCI, PCF and other configurations available upon request. Check the ordering code with Piher.

RECOMMENDED CONNECTIONS

Piher potentiometer's recommended connection circuit for a position sensor or control application.
(voltage divider circuit electronic design).



$R_L \approx 100 \times R$

Disclaimer

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