Calibration pot assembly.

Original Piher potentiometer: PC-16SHIP06104A202012.0

Piher recommended alternative: PC-16SH10IP06104A2020IMTA

Part description and source.

Description	Part number	Viamed stock reference	Source	Order code	Cost
Potentiometer	PC-16SH10IP06104A2020IMTA		Farnell	445-2884	1.86 (1 – 9)
Molex 3 way terminal housing with locking ramp	22-01-1033	0033250	Farnell	143-093	0.156 (10)
Molex crimp terminal	08-50-0032		Farnell	143-116	3.81 (100)
3.2mm heat shrinkable tubing		0032312	RS	666-874	15.35 (20m)
7/0.2mm equipment wire					
Black			RS	357-154	2.96 (100m)
Red		357-227	RS	357-227	2.96 (100m)
Yellow		357-255	RS	357-255	2.96 (100m)

Method.

There are two possible methods:

1 Simply replace the potentiometer on the original cable assembly and renew the heatshrink tubing. The cost of this approach is approximately £1.88 + VAT + labour. (Pot: £1.86, Heatshrink: £0.02).

2 Make up a complete new pot assembly. The approximate cost of this is:

Pot:	1.86
Heatshrink	0.02
Molex housing	0.16
Molex terminals	0.12
Wire x11cm x3	0.01
Total	2.17 + VAT + a lot more labour.

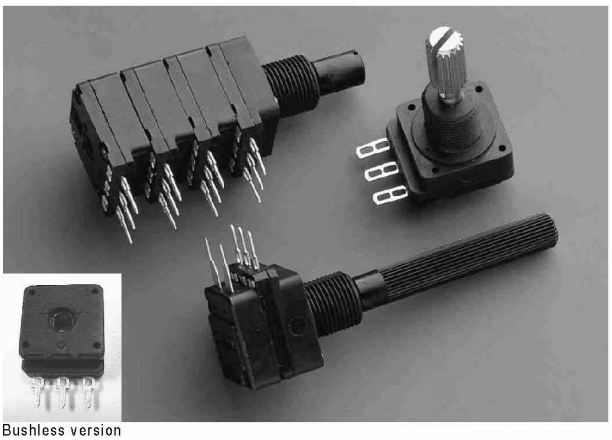
Peter Anderson
20th January 2004

Lockable knob.

Part description and source.

Description	Part number	Viamed stock reference	Source	Order code	Cost
Lockable knob		41-0000040	RS	584-930	13.69 (1 –11) + VAT

PC-16 16 mm Carbon Potentiometer



Bushless version

FEATURES

- Carbon resistive element
- Dust proof enclosure
- Polyester substrate
- Modular gang type (up to 4)
- Self extinguishable material UL 94-V0
- Upon request:
  - Metalic support
  - Stereo matching
  - Switch
  - Nut & washer
  - Bushless option available

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

ELECTRICAL SPECIFICATIONS

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

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

– Residual resistance: ≤ 0.1% Rn (2 Ω min.)

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

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

* Others upon request

** Up to 85°C depending on application

HOW TO ORDER

STANDARD | OPTIONAL EXTRAS

PC-16	D	H	10	I	M06	203	A	2020	0				
Serie	Model	Mounting style	Bushing diameter	Terminals	Shafts	Value	Taper	Tolerance	Shafts spec. leng.	Mounting brackets	Stereo matching	Switch	Nuts & Washers
PC-16	S =Single D =Tandem T =Triple C =Quad.	H= Horizontal V = Vertical (See note 1)	07 = M7 10 = M10 SC = Bushless (See note 2)	I = PCB C = Solder Lugs	M04 M06 M07 M11 M17 P01 P22 --- (See note 3)	101 = 100Ω 203 = 20 K 504 = 500 K 505 = 5M (See note 4)	A = Linear B = Log. C = Alog. (See note 10) Others tapers on request	2020 = +/- 20% 3030 = +/- 30% (See note 5)	XX.X (See notes 6,9)	M1 M2 (See note 7)	3D = 3dB 4D = 4dB 6D = 6dB (See note 8)	I = PCB C = Solder lugs (See note 9)	-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 → negative tolerance
05 → positive 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
24.5 → special length shafts
(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.

NOTE: The information contained here should be used for reference purposes only.

HOW TO ORDER CUSTOM DRAWING

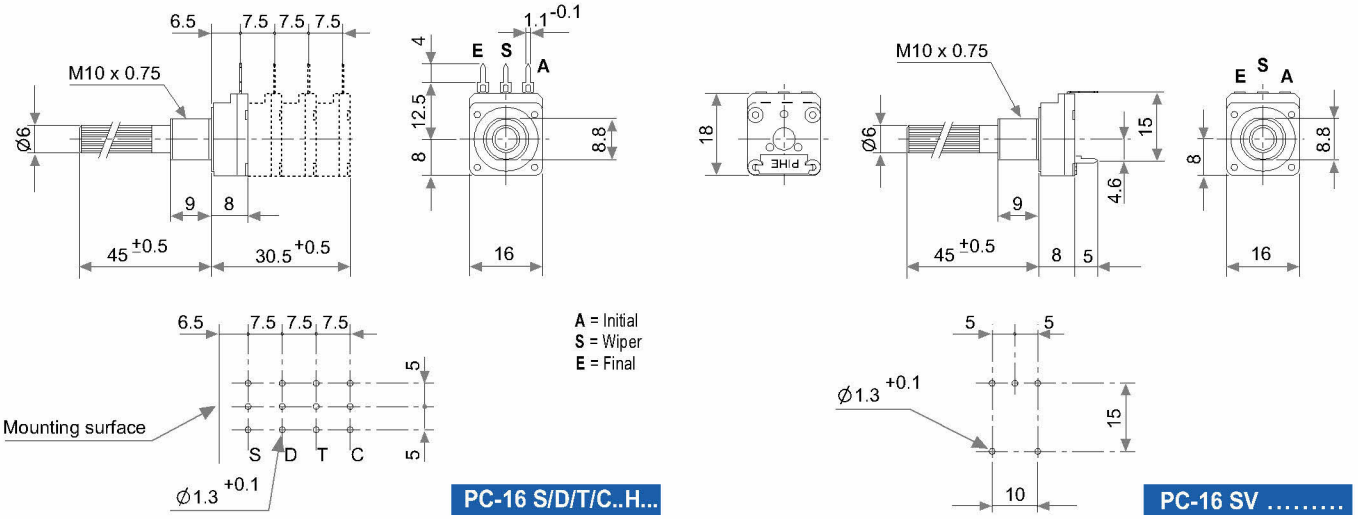
PC-16 S V + DRAWING NUMBER (Max. 16 digits)

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

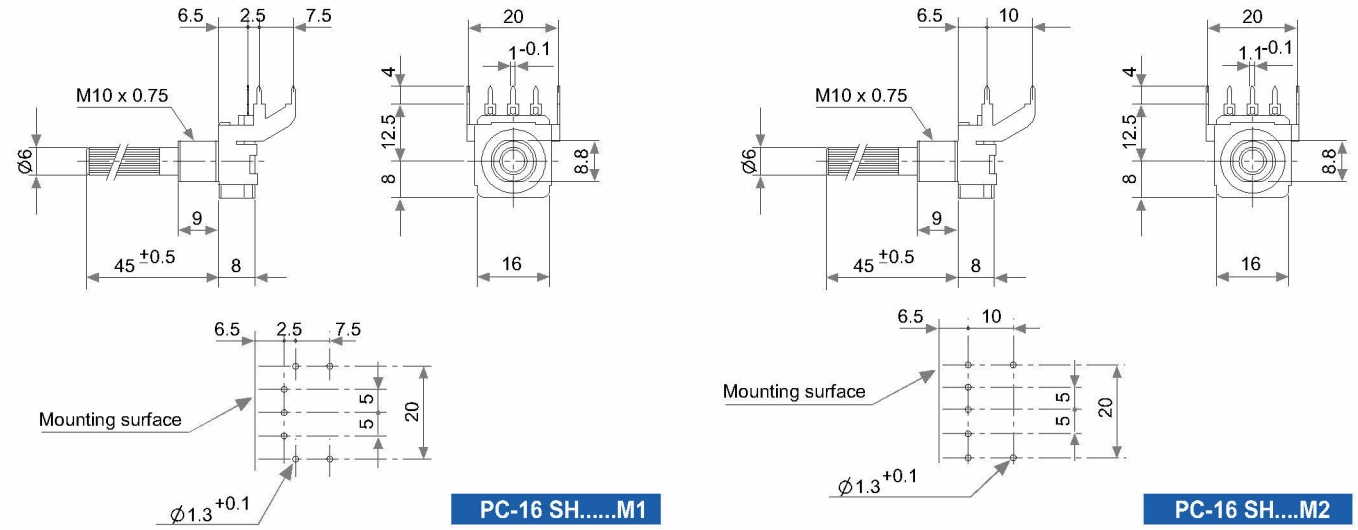
MODELS



PC-16 S/D/T/C..H...

PC-16 SV .....

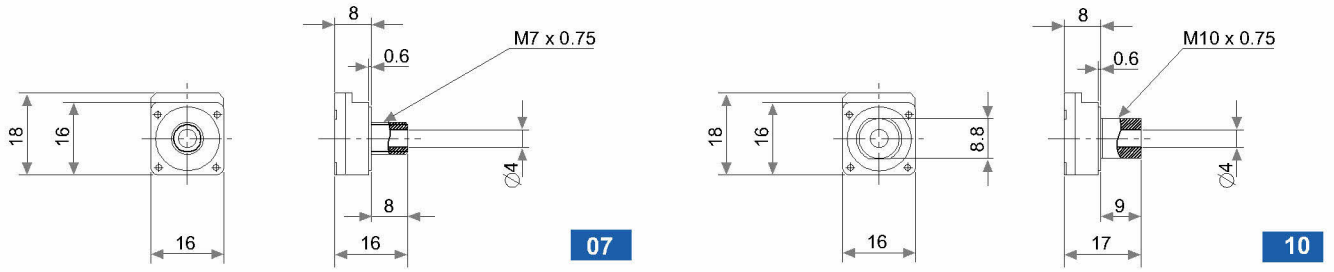
METALLIC SUPPORT



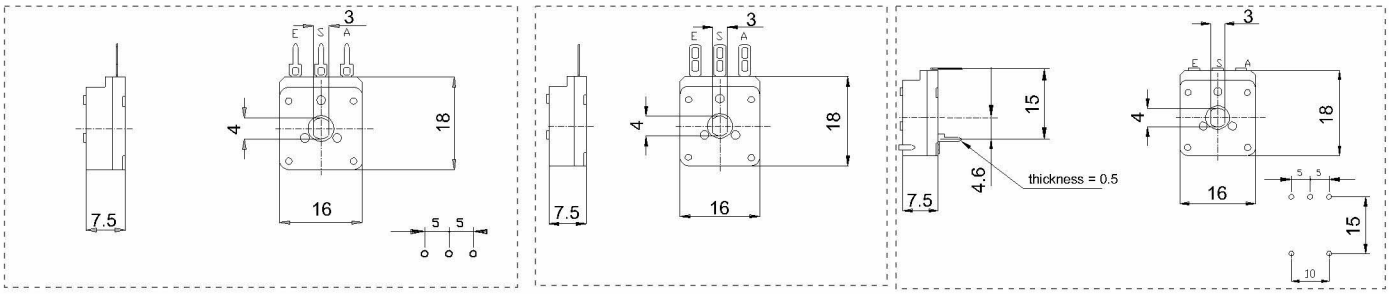
PC-16 SH.....M1

PC-16 SH....M2

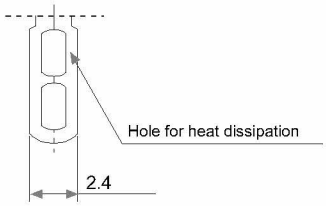
BUSHINGS

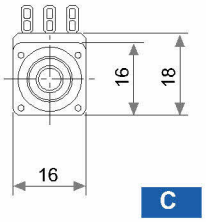


EXAMPLES OF BUSHLESS VERSION

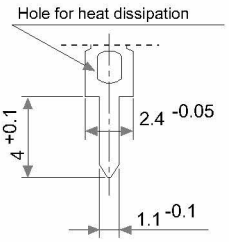


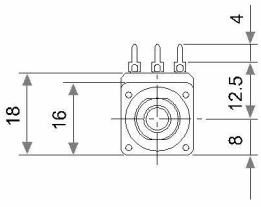
TERMINALS





C



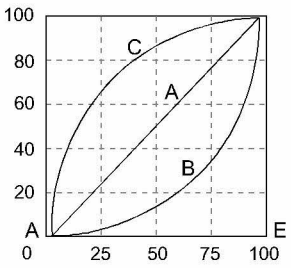


I

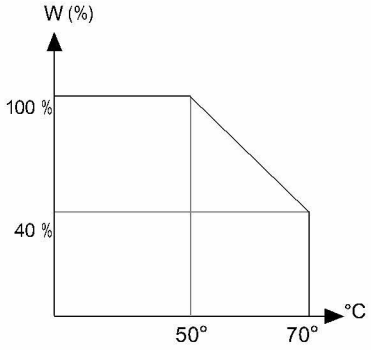
TAPERS

Standard

A = Linear
B = Log.
C = Alog.

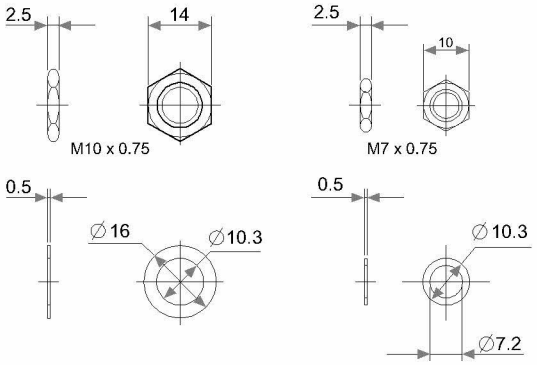


POWER RATING CURVE



NUTS & WASHERS

Bushing 10 | Bushing 07

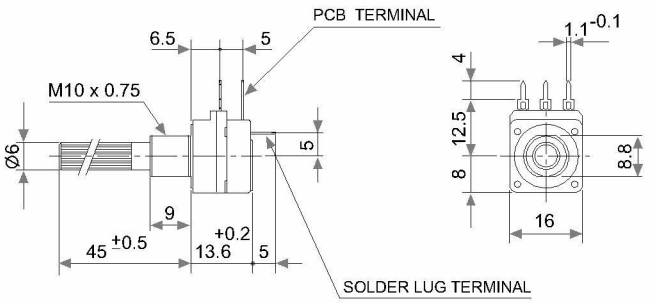


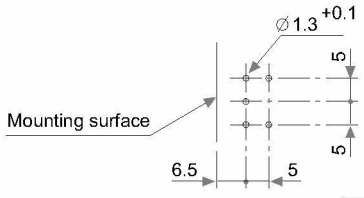
NOTE = Please note relative terminal positions when ordering non linear tapers.

TESTS

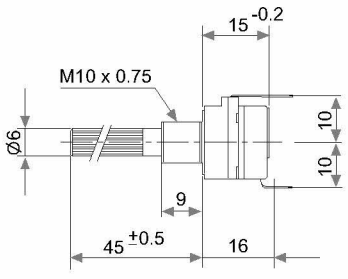
		TYPICAL VARIATIONS
ELECTRICAL LIFE	1.000 h. @ 50°C; 0.2 W	±5 %
MECHANICAL LIFE : POT. SWITCH	25.000 (10-15 CPM) 10.000 (1 A, 50 VAC)	±3 % (Rn < 1 MΩ)
TEMPERATURE COEFFICIENT	–25°C; +70°C	±300 ppm/°C (Rn <100 KΩ)
THERMAL CYCLING	16 h. @ 85°C; 2h. @ –25°C	±2.5 %
DAMP HEAT	500 h. @ 40°C @ 95% HR	±5 %
VIBRATION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

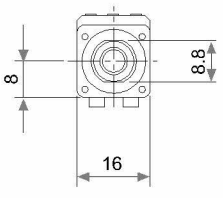
SWITCH

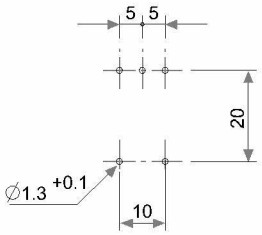




PC-16S . . . H . . . . . . I / C







PC-16SV . . . I

SWITCH SPECIFICATIONS

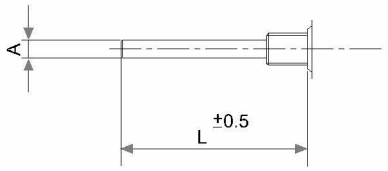
NOMINAL CURRENT	1A, 250 VAC
CONTACT RESISTANCE (initial)	10 m Ω
OPERATING TORQUE	1 to 3 Ncm (1.4 to 4.2 in oz)
OPERATING ANGLE	30° ± 5°
TEST VOLTAGE	500 V

PACKAGING

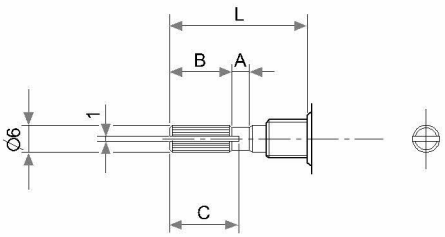
Boxes of 50 pieces (160 x 110 x 85 mm.)

METALIC SHAFTS

STANDARD

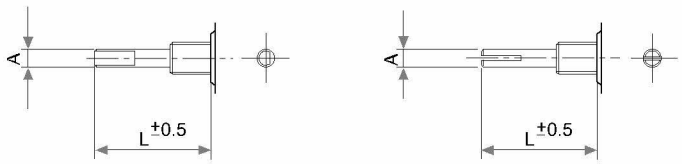


A	L	CODE
4	45	M04
6	45	M06
6.35	45	M07



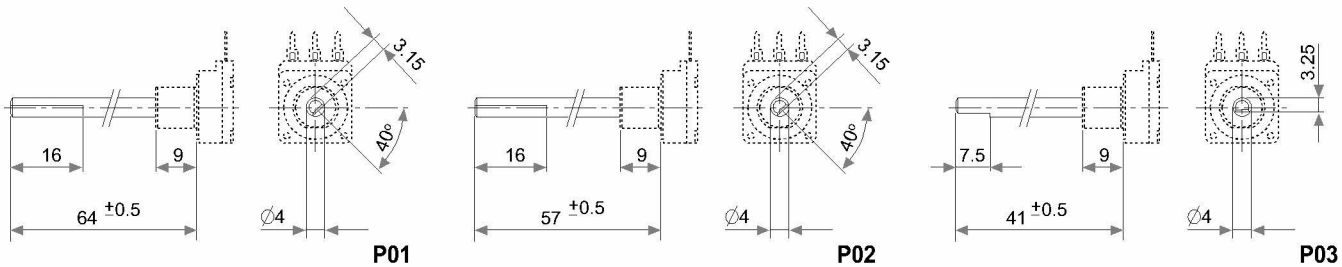
A	B	C	L	CODE
2	5	7	15	M11
2	10	11	20	M12
4	12	14	25	M13
4	12	14	30	M14
4	12	14	35	M15
4	12	14	40	M16
4	12	14	45	M17

SPECIAL

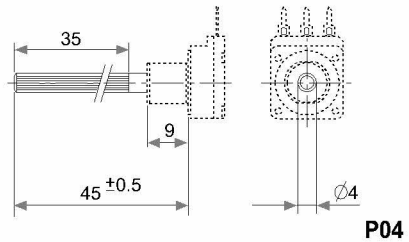


A
Ø 4
Ø 6
Ø 6.35

PLASTIC SHAFTS Ø4



PLASTIC SHAFTS Ø4



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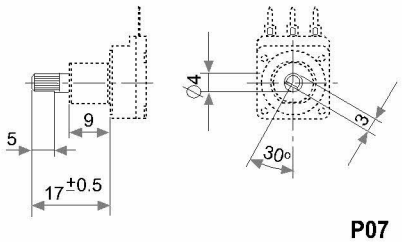

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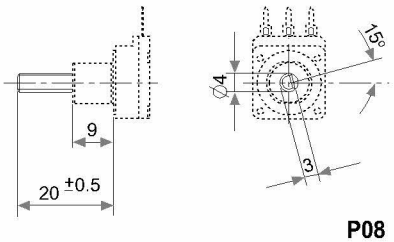

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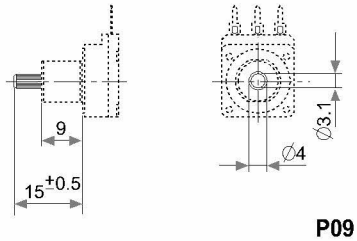

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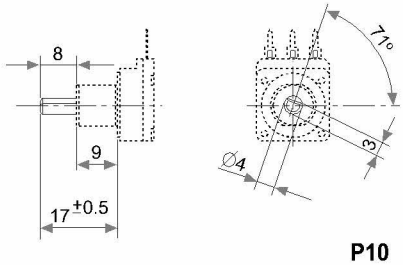

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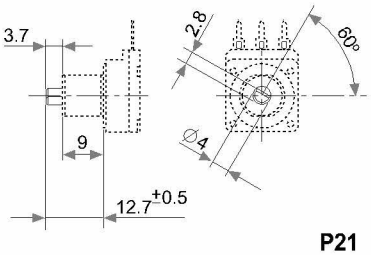
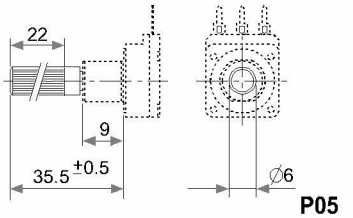


P21

PLASTIC SHAFTS Ø6



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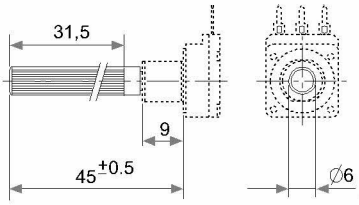

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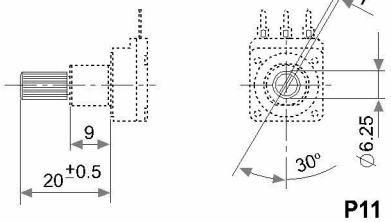

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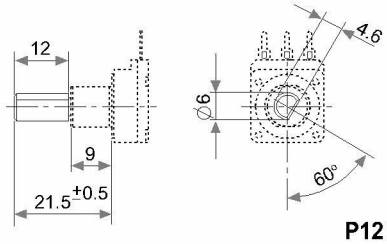

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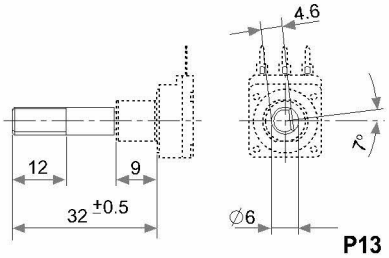

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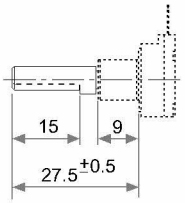

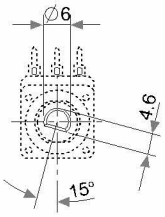

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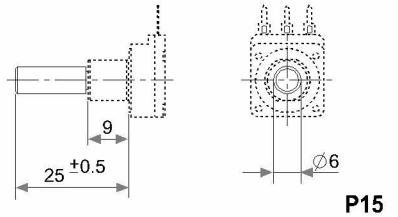

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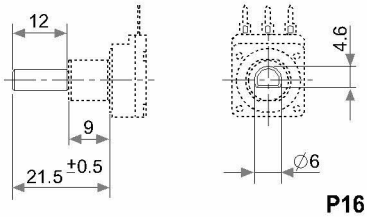

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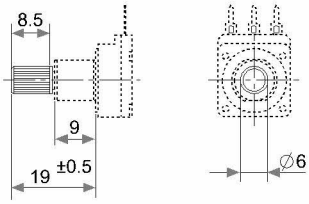

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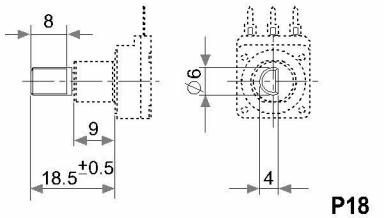

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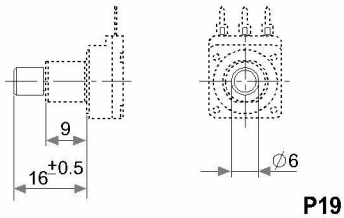
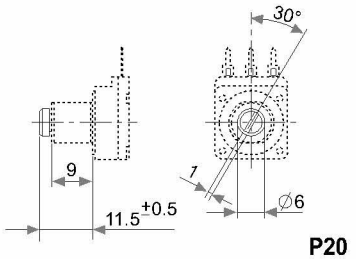
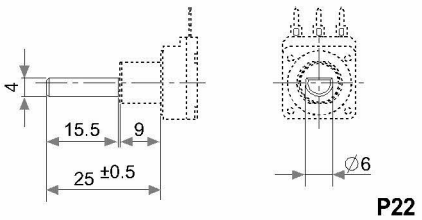


P19



P20

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



P22

Lockable Knobs

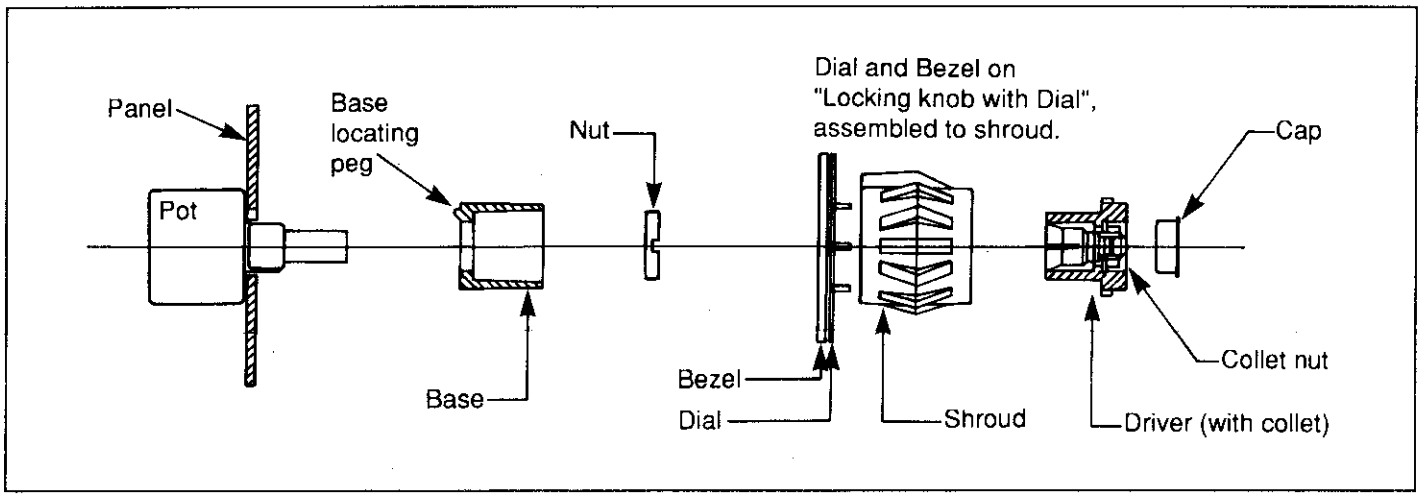
Stock Nos.

41-0000040

Parts List

Base
Nut (3/8" UNEF slotted)
Shroud **or**
Shroud with dial and bezel
Driver (1/4" collet)
Cap

Locking Knob Assembly



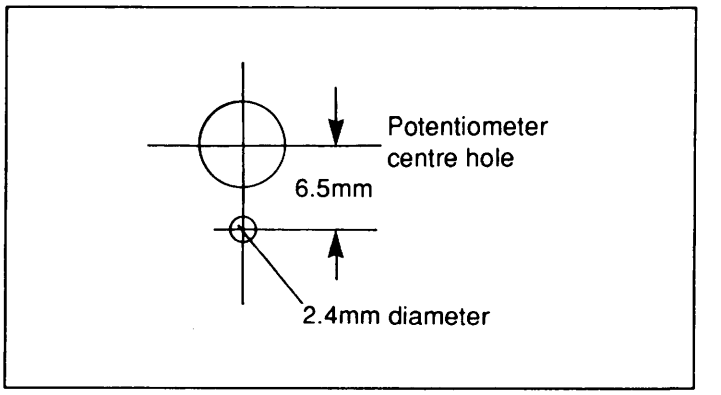
1. Turn the (potentiometer/switch) shaft fully anti-clockwise.
2. Push the base over the (potentiometer/switch) shaft, locating the "peg" on the rear of the base into the 2.4mm hole in the case front.
3. Place the 3/8" nut over the (potentiometer /switch) shaft with the slots facing outwards and tighten with a screwdriver or snipe-nosed pliers. Do not overtighten.
4. Place the shroud over the base, aligning the pointer with the zero (or fully anti-clockwise) marker.
5. Slacken off the 1/4" collet nut on the driver by about one turn. This is best done with a 5mm nut spinner
   Push into the shroud and tighten the collet nut.
6. Push the cap into the driver.

Lockable Knobs

Stock Nos. 584-930 and 584-946

Parts List

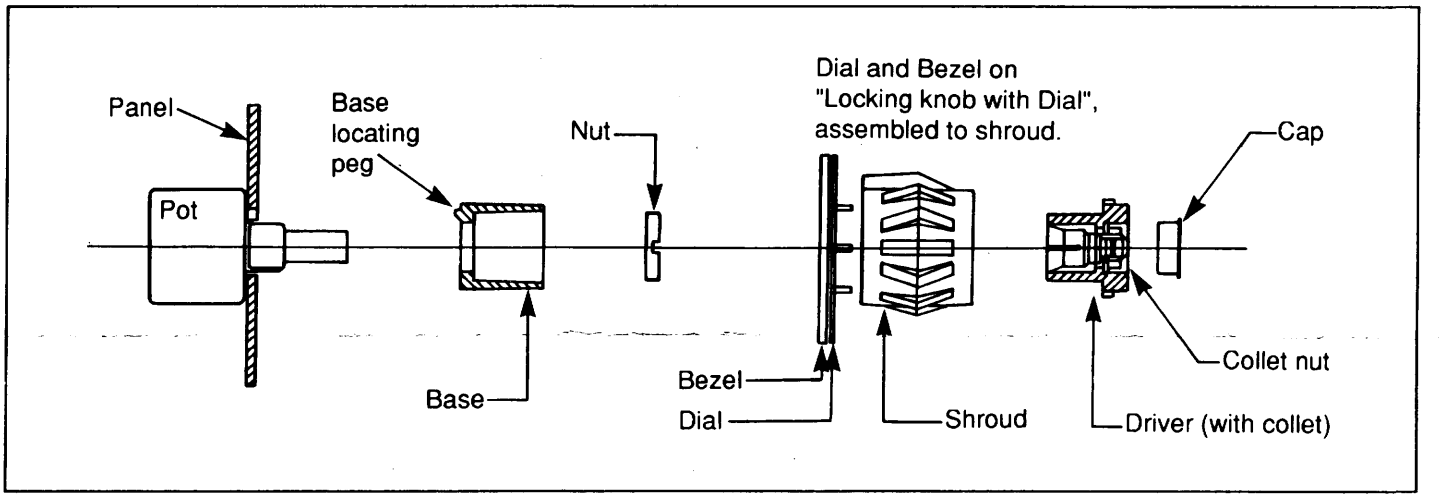
Base
Nut (3/8" UNEF slotted)
Shroud **or**
Shroud with dial and bezel (locking knob with dial **RS** Stock No. 584-946 only)
Driver (1/4" collet)
Cap



Hole Drilling

Drill holes required for potentiometer, or rotary switch, and drill an additional 2.4mm diameter hole with a 6.5mm offset for the locking knob base peg as shown alongside.

Locking Knob Assembly



1. Turn the (potentiometer/switch) shaft fully anti-clockwise.
2. Push the base over the (potentiometer/switch) shaft, locating the "peg" on the rear of the base into the 2.4mm hole in the case front.
3. Place the 3/8" nut over the (potentiometer /switch) shaft with the slots facing outwards and tighten with a screwdriver or snipe-nosed pliers. Do not overtighten.
4. Place the shroud over the base, aligning the pointer with the zero (or fully anti-clockwise) marker.
5. Slacken off the 1/4" collet nut on the driver by about one turn. This is best done with a 5mm nut spinner (**RS** Stock No. 544-730). Push into the shroud and tighten the collet nut.
6. Push the cap into the driver.