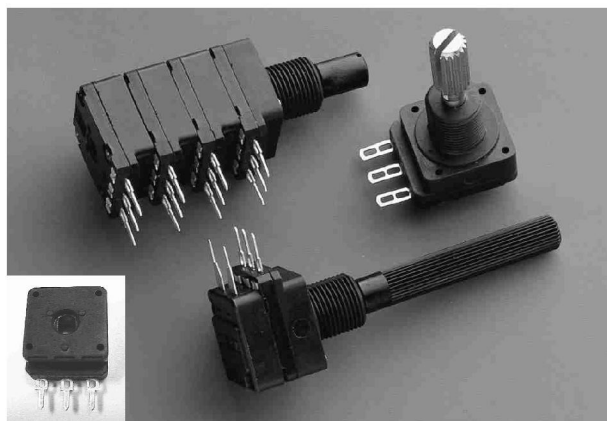




Bushless version

FEATURES

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

MECHANICAL SPECIFICATIONS

- Mechanical rotation angle: $300^\circ \pm 5^\circ$
- Electrical rotation angle: $280^\circ \pm 20^\circ$
- 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

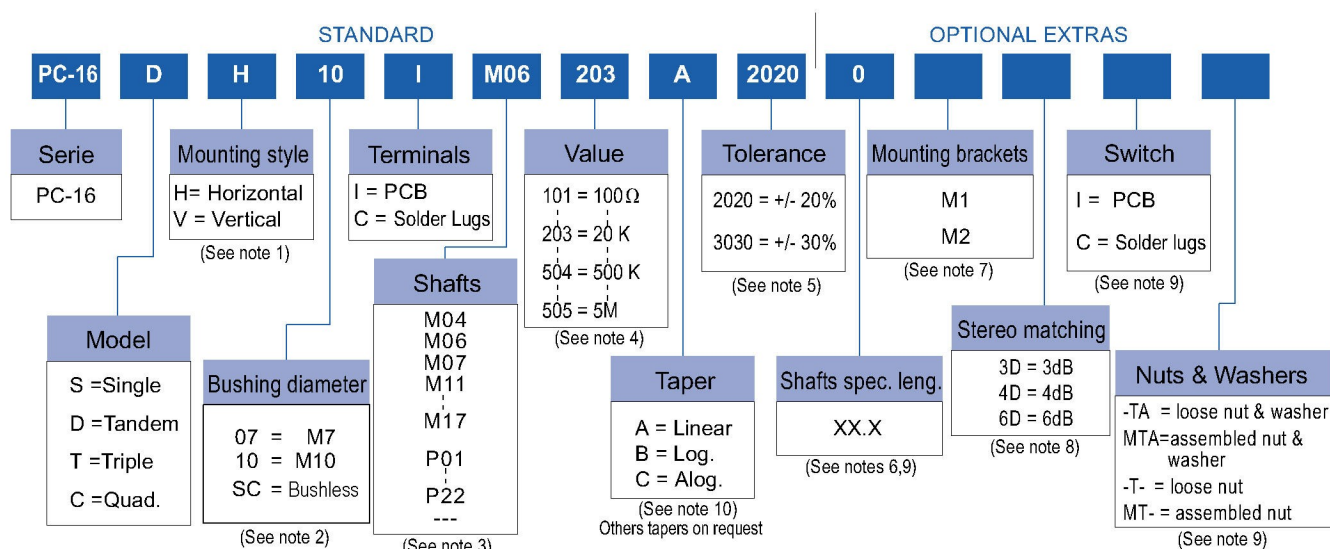
ELECTRICAL SPECIFICATIONS

- Range of values (*)
 $100\Omega \leq R_n \leq 5\text{ M}$ (Decad. $1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0$)
- Tolerance (*): $100\Omega \leq R_n \leq 1\text{M}\Omega$ $\pm 20\%$
 $1\text{M}\Omega < R_n \leq 5\text{M}\Omega$ $\pm 30\%$
- 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 $R_n > 1\text{K}$) Lin ; Log; Alog.
- Residual resistance: $\leq 0.1\%$ R_n (2Ω min.)
- Equivalent Noise Resistance: $\leq 3\%$ R_n (3Ω min.)
- Operating temperature**: $-25^\circ\text{C} + 70^\circ\text{C}$ ($-13^\circ\text{F} + 158^\circ\text{F}$)

* Others upon request

** Up to 85°C depending on application

HOW TO ORDER



NOTES:

- (1) Mounting style: Type "V" is only available in model "S" potentiometer and with printed circuit terminals.
- (2) Bushings: Type "10" has two parallel 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: $\begin{matrix} 10 & 1 & 100\Omega \\ & \rightarrow & \text{Number of zeros} \\ & \rightarrow & 2 \text{ first digits of the value.} \end{matrix}$
• In models "D", "T", "C", with different values, they will be asked by drawings.
- (5) Tolerance (non standard), upon request. Example: $+7\%$ Code: 07 05
 -5% Code: 05 07
negative tolerance
positive tolerance
- (6) Shaft special length:
• Only for special length and plain shafts (not knurled). Example: Shaft $\varnothing 6.35$ L= 24.5 M07 24.5
• NOTE: Maximum length recommended: L = 45
special length
shafts
- (7) Mounting brackets: Only applicable for model "S", mounting "H" and without switch.
- (8) Stereo matching: not available for single models. Maximum 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

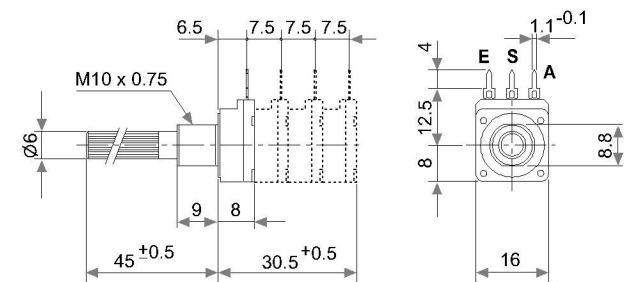
PC-16 S V + DRAWING NUMBER (Max. 16 digits)

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

STANDARD OPTIONS

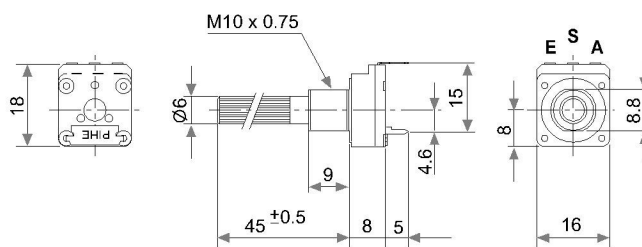
Shaft length 0 Standard Length
 Mounting brackets Without mounting brackets
 Stereo matching Only on request (see note 8)
 Switch No switch
 Nut & washer Without nut and washer

MODELS



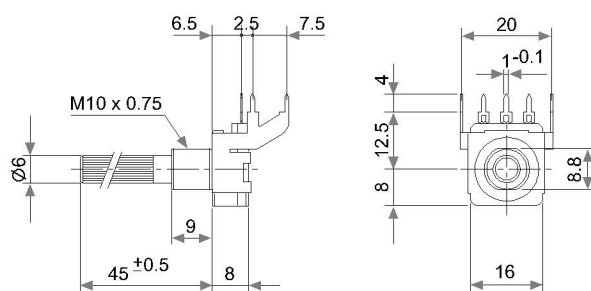
A = Initial
 S = Wiper
 E = Final

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

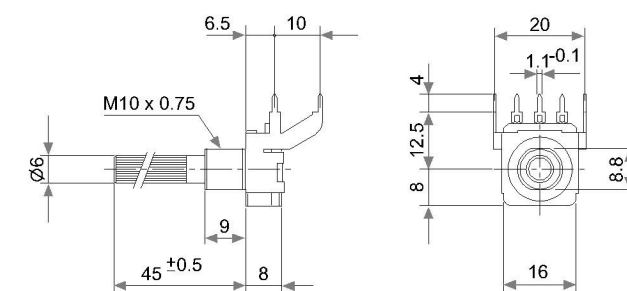


PC-16 SV

METALLIC SUPPORT

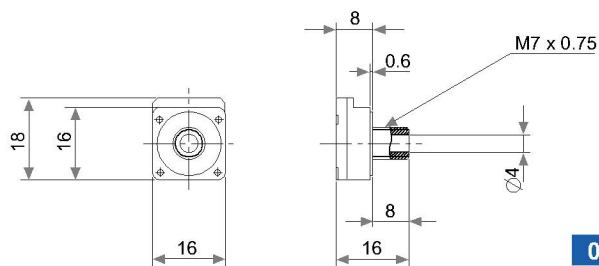


PC-16 SH.....M1

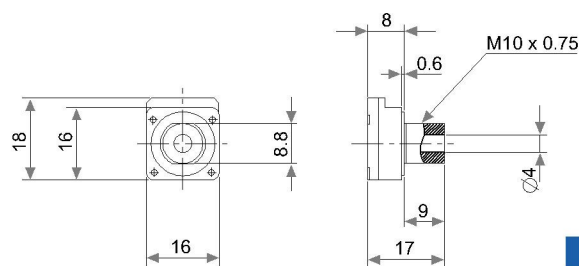


PC-16 SH....M2

BUSHINGS

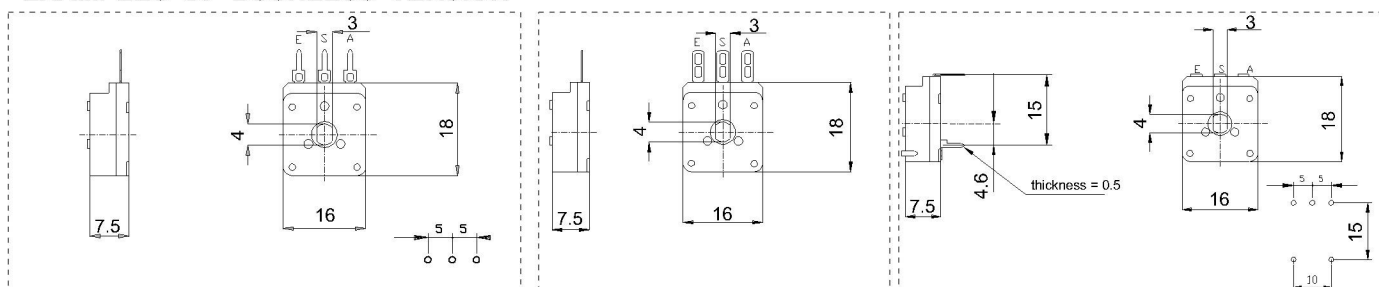


07

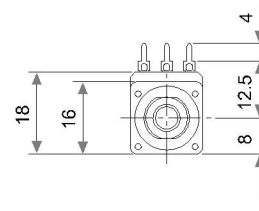
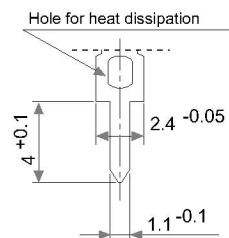
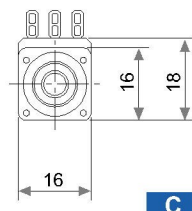
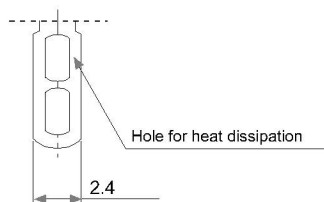


10

EXAMPLES OF BUSHLESS VERSION



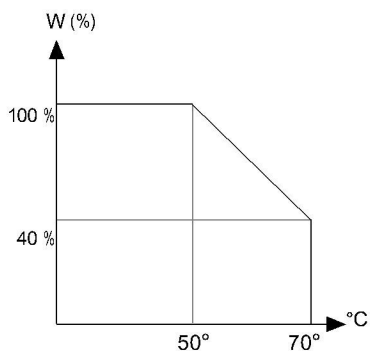
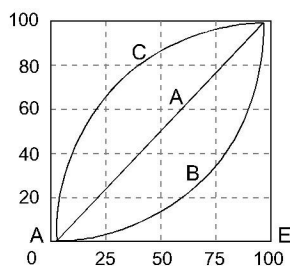
TERMINALS



TAPERS

Standard

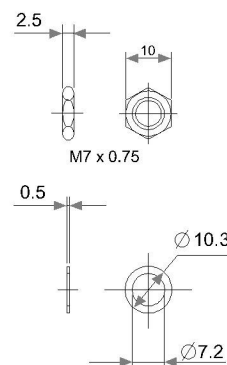
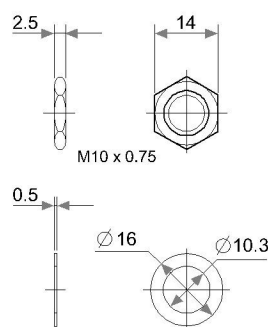
A = Linear
B = Log.
C = Alog.



NUTS & WASHERS

Bushing 10

Bushing 07



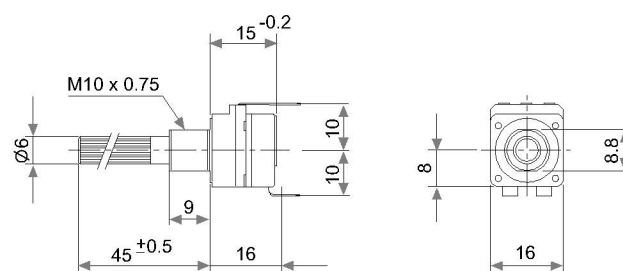
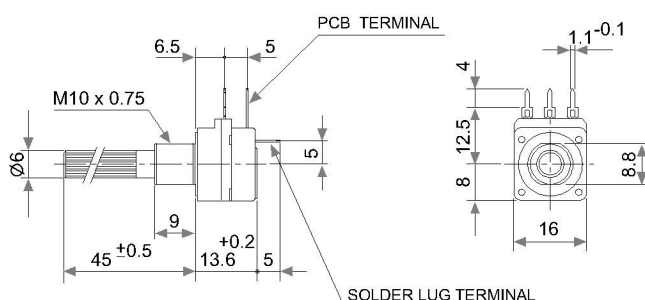
NOTE = Please note relative terminal positions when ordering non linear tapers.

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

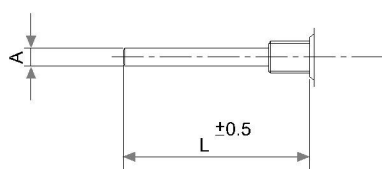
NOMINAL CURRENT	1A, 250 VAC
CONTACT RESISTANCE (initial)	10 m Ω
OPERATING TORQUE	1 to 3 Ncm (1.4 to 4.2 in oz)
OPERATING ANGLE	30° $\pm$ 5°
TEST VOLTAGE	500 V

PACKAGING

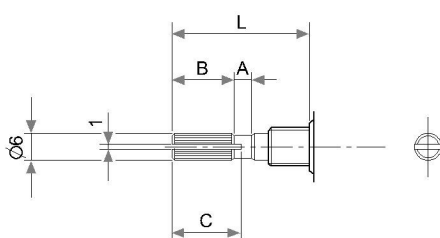
Boxes of 50 pieces (160 x 110 x 85 mm.)

METALIC SHAFTS

STANDARD

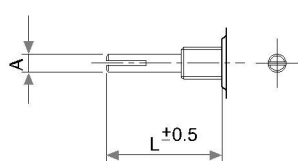
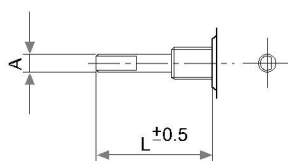


A	L	CODE
4	45	M04
6	45	M06
6.35	45	M07



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

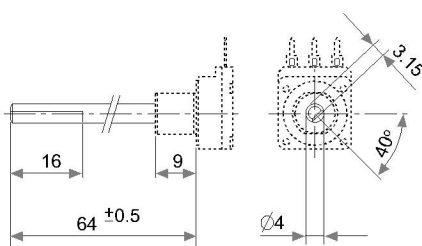
SPECIAL



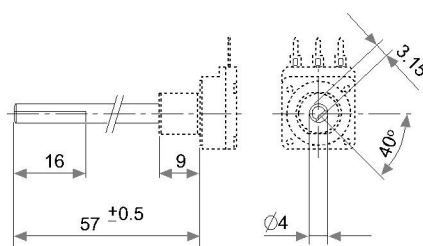
A

$\varnothing$ 4
 $\varnothing$ 6
 $\varnothing$ 6.35

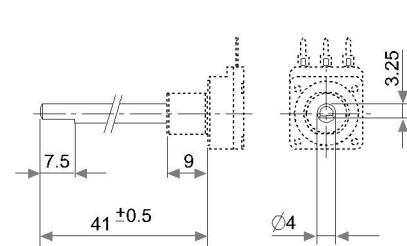
PLASTIC SHAFTS $\varnothing$ 4



P01

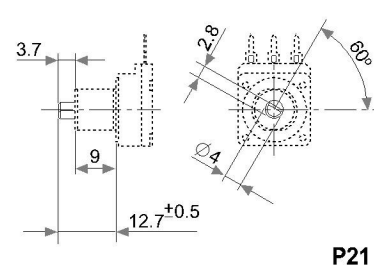
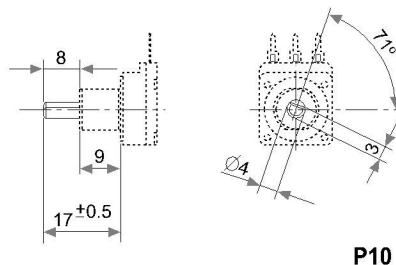
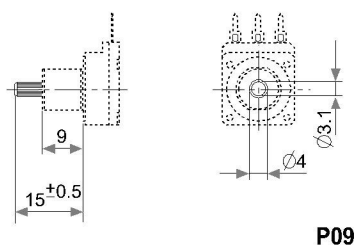
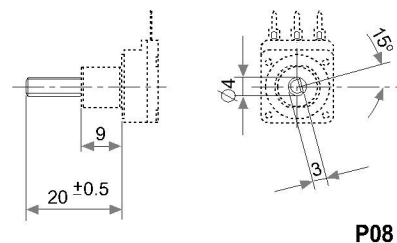
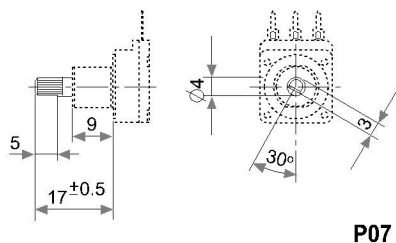
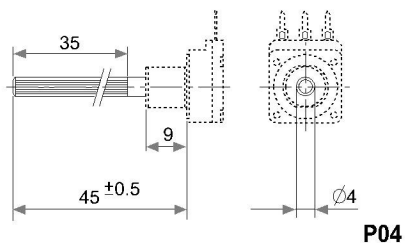


P02

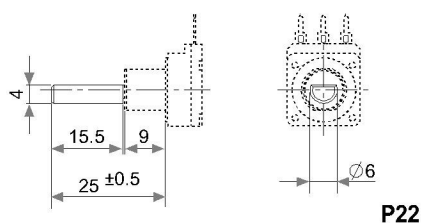
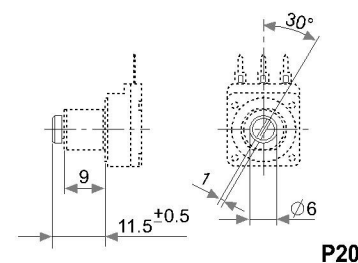
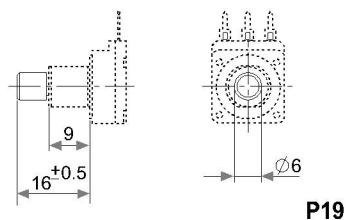
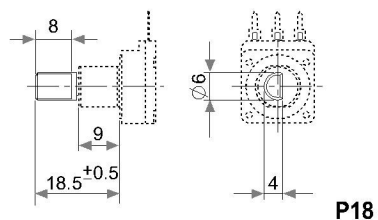
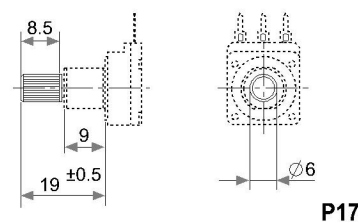
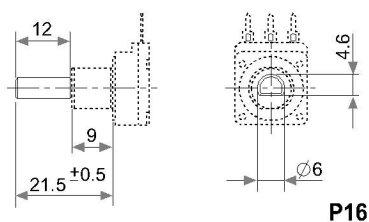
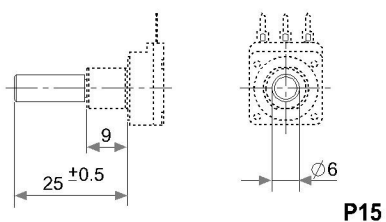
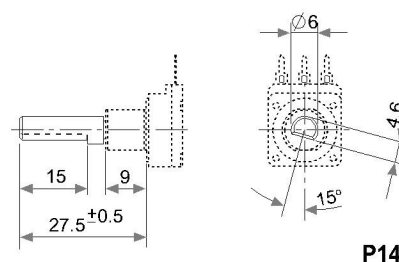
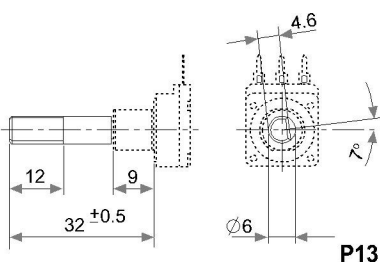
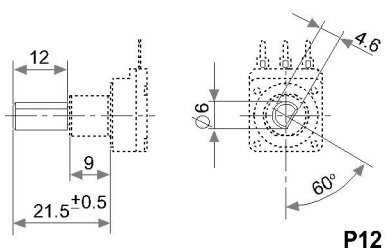
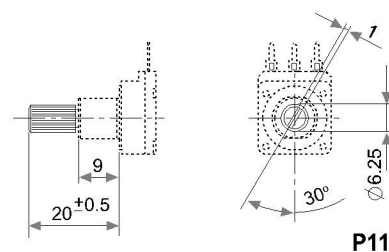
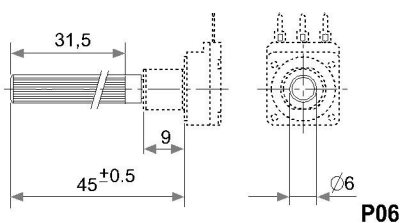
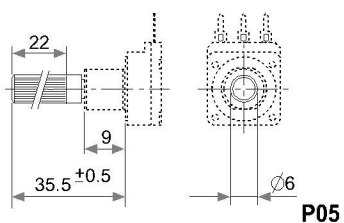


P03

PLASTIC SHAFTS Ø4



PLASTIC SHAFTS Ø6



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

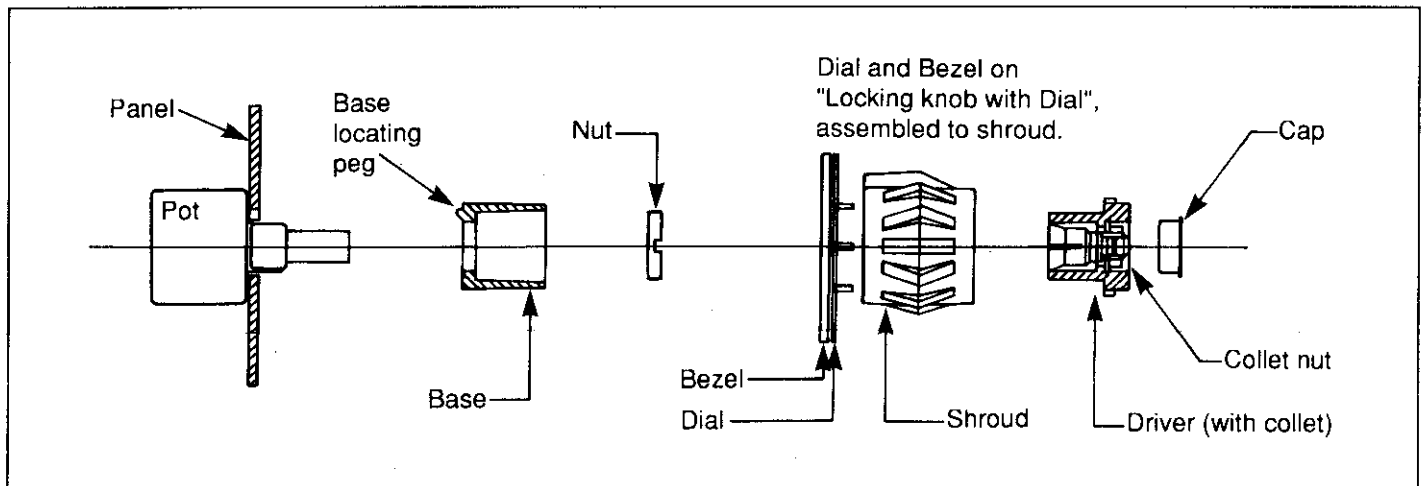
Lockable Knobs

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

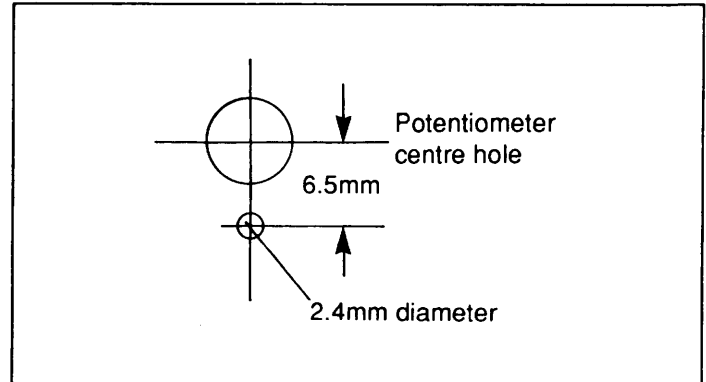
Shroud with dial and bezel (locking knob with dial RS Stock No. 584-946 only)

Driver (1/4" collet)

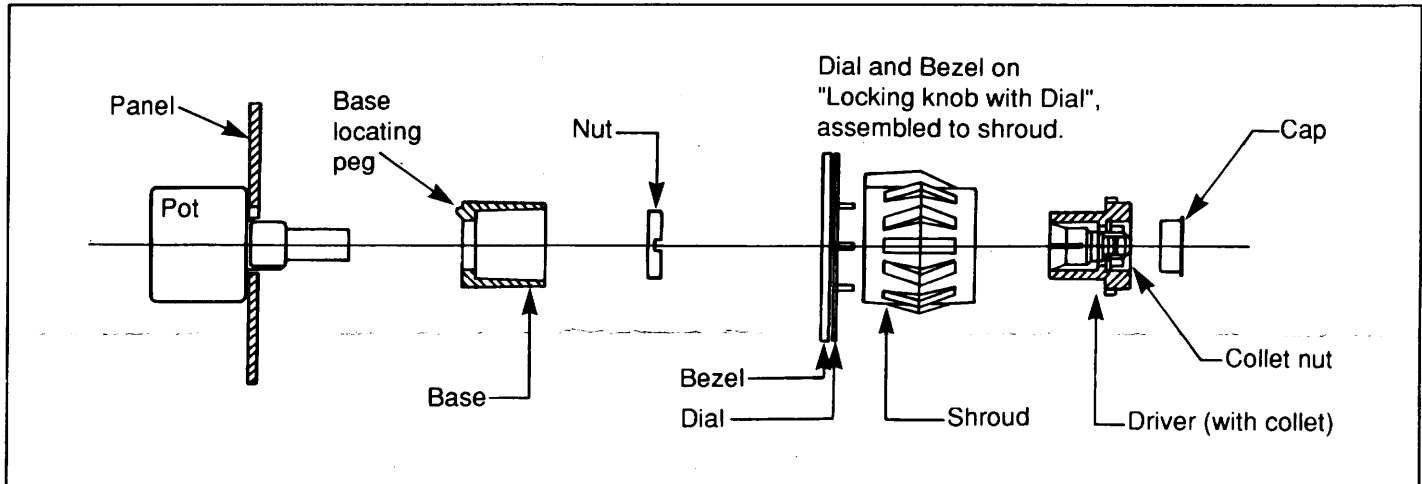
Cap

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.

Lockable knob.

Part description and source.

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

Calibration pot assembly.

Original Piher potentiometer: PC-16SHIP06104A202012.0

Piher recommended alternative: PC-16SH10IP06104A2020MTA

Part description and source.

<u>Description</u>	<u>Part number</u>		<u>Viamed stock reference</u>
<u>Source</u>	<u>Order code</u>	<u>Cost</u>	
Potentiometer	PC-16SH10IP06104A2020MTA		0100194
Farnell	445-2768	0.89 (1 – 9)	
Molex 3 way terminal	22-01-1033		0033250
Farnell	143-093	0.156 (10)	
housing with locking ramp			
Molex crimp terminal	08-50-0032		
Farnell	143-116	3.81 (100)	
3.2mm heat shrinkable			0032312
666-874	15.35 (20m)		RS
tubing			
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 £0.91 + VAT + labour. (Pot: £0.89, Heatshrink: £0.02).
- 2 Make up a complete new pot assembly. The approximate cost of this is:

Pot:	0.89
Heatshrink	0.02
Molex housing	0.16
Molex terminals	0.12
Wire x11cm x3	<u>0.01</u>
Total	1.20 + VAT + a lot more labour.

Peter Anderson
20th January 2004
27th April 2004