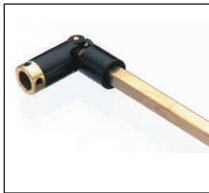


Couplings

Universal Joints, Brass Cross Pieces and Tubes



Materials & Finishes

Bodies: Acetal

Cross-pieces: Brass BS 2874 CZ121 CZ122, (HPC101, HPC103, HPC109, HPC111)

Bore Inserts: Brass BS 2874 CZ121 (HPC103, HPC111)
Al. Alloy 2014A T6 (HPC105)

Fasteners: Alloy steel, black oiled

General description

Light duty plastic universal joints.

Low mass, corrosion resistant, ideal where conventional steel joints would be under-utilised.

Where to use

Intermittent applications in business machines, instrumentation, lab equipment, analytical apparatus, etc., where steel joints would be under-utilised.

Speeds

Up to 1000 rpm

Electrically isolating

Yes

Peak torque largest size

10.7 Nm

Connection

Set Screw, Bonding or Cross-Pinning

Standard bores

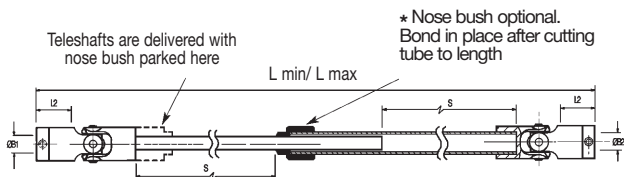
3 to 20 mm

Temperature range

-20 °C to +60 °C

Couplings

Universal Joints, Brass Cross Pieces and Tubes

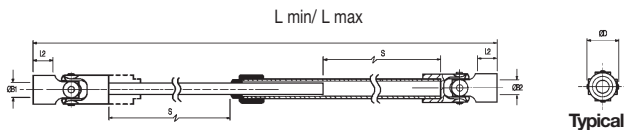


Refs. HPC128 & HPC495

Joints sleeved with headed brass inserts fitted 2 screws per end

**End A
(inner tube)**

**End B
(outer tube)**



Refs. HPC130 & HPC497

Joints sleeved with metal inserts. Attached to shafts by cross-pinning or bonding

Couplings

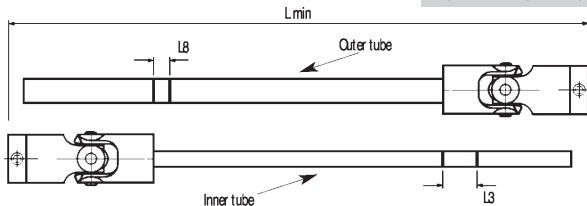
Universal Joints, Brass Cross Pieces and Tubes

Extensible drive shafts (teleshafts), are useful when the distance between actuator and load varies during operation, or needs to accommodate component variances, or when a quick disconnect facility is needed in the drive line.

HPC teleshafts are in keeping with the light duty capabilities of plastics universal joints and employ precision drawn square brass tubes as the telescoping medium. These can easily be cut by the user to provide an extensible drive shaft with customised dimensions.

There are 2 ways to arrive at a customised teleshaft: empirically (shown below), or with tables that provide all necessary data on stroke and tube lengths for teleshafts with and without nose bushes up to 520mm retracted length.

Size	L3	L8
09	8.6	3.2
13	10.4	4.3
16	15.2	6.1
20	17.0	8.2
25	20.0	10.3
32	21.0	18.0



Standard Bores

Bore Size	ØB1, ØB2 + 0.03 / - 0 mm						
	3.175	4	4.763	5	6	6.350	8
Coupling Size							
09	●	●	●	●			
13		●	●	●	●	●	
16					●	●	●
20							
25							
32							
Bore ref.	16	18	19	20	22	24	28
Corresponding bore adaptor				251		253	255

Diameters for which a bore adaptor is shown can be adapted to smaller shaft sizes. See page 3.84 for details.

Universal Joints, Brass Cross Pieces and Tubes

Empirical method (based on the retracted length)

- Disengage the teleshaft, remove the nose bush parked on the inner tube and keep it in case you need to use it later. Then lay the 2 halves of the teleshaft side by side.
- Slide one half alongside the other so that overall length L min matches the intended length of the teleshaft when fully retracted. With a felt tip pen, draw a line across the outer tube at the point where this is level with the inboard end of the universal joint.
- If you are sure that the teleshaft will satisfactorily extend the required amount, cut the tube at the line.
- Mark the inner tube in the same way, then add an amount equivalent to dimension L3 for your teleshaft size and draw a second line. Cut the tube at this second line.
- Now re-engage the tubes, taking care to orientate them correctly so that the inboard forks of the joints are in the same plane, and retract the teleshaft. The overall length should be as intended, and both tubes should bottom out simultaneously.
- If required, the nose bush can now be fitted by bonding it to the outer tube with an instant adhesive, (factory fitted bushes are retained by a barbing technique). The bush will add an amount equivalent to dimension L8 to the retracted length. Cutting this amount from the outer tube will reinstate the intended retracted length.
- The purpose of the nose bush is to eliminate any torsional free play that may be apparent in the tubes due to working clearances.

Coupling Size	Bore Size							
	ØB1, ØB2 + 0.03 / - 0 mm							
	9.525	10	12	12.7	15.875	16	19.05	20
09								
13								
16	●	●						
20	●	●						
25			●	●				
32					●	●	●	●
<i>Bore ref.</i>	31	32	35	36	41	42	47	48
<i>Corresponding bore adaptor</i>		257		259		260		261

Couplings

Universal Joints, Brass Cross Pieces and Tubes

Dimensions and Order Codes

PART NUMBER		Teleshaft Size	ØD	L ±1.0 min	L max	Stroke S	L2
① Standard tubes self-colour brass	Wear-resistant tubes Niflor coated						
HPC128.09.240.-----	HPC495.09.240.-----	09	11.1	240	389	149	13.1
HPC128.13.300.-----	HPC495.13.300.-----	13	14.3	300	484	184	15.7
HPC128.16.450.-----	HPC495.16.450.-----	16	17.5	450	730	280	22.3
HPC130.20.464.-----	HPC497.20.464.-----	20	23.0	464	745	281	17.0
HPC130.25.500.-----	HPC497.25.500.-----	25	28.5	500	784	284	20.0
HPC130.32.564.-----	HPC497.32.564.-----	32	36.5	564	868	304	21.0

① Niflor is a proprietary PTFE impregnated electroless nickel plating process.

② Max shaft penetration.

③ Values apply with max bores.

• A range of standard telescopes is available which can be shortened to achieve an infinite number of length/stroke requirements. The lengths L min shown in the table above are the longest of the standard range in each size. Specific lengths are produced by cutting an equal amount from both ends of the nearest standard size. See next page for recommended procedure.

• Custom Teleshaft assemblies can be factory made subject to minimum order quantities.

• *The nose bush eliminates any torsional free play that may be apparent in the tubes due to working clearances.

• Full details of the standard range and product order codes are available on request. Please ask for a HPC Teleshaft data sheet.

Order codes: Please combine the universal joint part number in the above table with the bore reference in the standard bores table (see pages 3.102 & 3.103).

Please identify both bores to complete the part number eg. HPC128.09.240. 18 20

Part Number ØB1 ØB2

Teleshaft Size	ØB1,	Mass kg x 10 ⁻³ ③	PART NUMBER	PRICE EACH 1-5	PART NUMBER	PRICE EACH 1-5
	ØB2 max		① Standard tubes self-colour brass		Wear-resistant tubes Niflor coated	
09	240	149	HPC128.09.240.----	£36.51	HPC495.09.240.----	£40.20
13	300	184	HPC128.13.300.----	£41.94	HPC495.13.300.----	£52.57
16	450	280	HPC128.16.450.----	£45.86	HPC495.16.450.----	£62.75
20	464	281	HPC130.20.464.----	£52.36	HPC497.20.464.----	£75.95
25	500	284	HPC130.25.500.----	£72.89	HPC497.25.500.----	£109.13
32	564	304	HPC130.32.564.----	£80.29	HPC497.32.564.----	£140.08

How to order customised teleshafts

Please specify your teleshaft by completing the questionnaire.

Teleshaft size

Teleshaft ref.

Bore diameter End A

Bore diameter End B

Fitted nose bush (end B only)

Speed of rotation rpm

Please specify:

L min and/or

L max and/or

Stroke S

If more than one parameter is specified, which one is critical?

Please quote pcs

Projected annual qtys pcs

