



Huco Dynatork Flexible Couplings

The Company & Its Products

Huco products are manufactured in Hertford, England, in a modern plant equipped with all necessary design, development, toolroom and production facilities. The plant operates a total quality assurance system assessed to ISO 9001-2000.













Huco products are available through distribution or Huco warehouses in most of the industrialised nations of the world. Recognised as one of the leading manufacturers of small flexible couplings, Huco has been responsible for several 'firsts' since its inception in 1965


















Huco was first to use thermoplastics as active transmission elements and was demonstrating plastic universal joints as far back as 1962. Other 'moving parts' couplings followed, notably the Uni-Lat and Oldham concepts. In the early 1990's Huco launched the Flex-M high integrity membrane coupling and this was followed by the Flex-B series of bellows couplings, another new and innovative design.

With the recent addition of the Multi-Beam and Single-Beam range of helical beam couplings, Huco can offer solutions that address specific issues in most coupling applications.

Whether the accent is on high torsional stiffness, generous misalignment capability, high speed operation recyclable hubs, or a capacity for operating in push/pull mode, Huco can help. If your needs should fall outside our standard range, we offer a customised service to meet your low-cost, high volume requirements.

Product Overview

Stainless Steel Bellows type	Nickel Bellows type	Membrane type	Multi-Beam type	Single-Beam type	Step-Beam type
Flex B, Flex K Short 3-convolution  Stretched 2-convolution  Long 9-convolution 	Flex Ni  	Flex M Single-stage  Short two-stage  Long two-stage 	Multi-Beam 6-Beam   Material Options: Aluminium Stainless Steel Acetal	Single-Beam  Material Options: Aluminium Stainless Steel	Step-Beam  Material Options: Nylon
General description					
Precision couplings with excellent kinematic properties. The 3 types offer differing combinations of stiffness, radial compensation and axial motion.	Precision couplings with excellent kinematic properties. The 3 types offer differing combinations of stiffness, radial compensation and axial motion.	Precision couplings with excellent kinematic properties. Dynamically balanced construction. Single-stage versions make up into 'whirl' free Cardans. The 2-stage versions offer short envelopes and low bearing loads respectively.	General purpose single piece couplings Single stage (3-beam) Two stage (6-beam) Material options for moisture and corrosion resistance.	More flexible than Multi-Beam but less torsional rigidity.	Unique coupling design gives excellent combination of radial flexibility with torsional stiffness.
Where to use					
High-end servo drives, pulse generators, scanners, positioning slides, metering valves, etc.	High-end servo drives, pulse generators, scanners, positioning slides, metering valves, etc.	High-end servo drives, pulse generators, scanners, positioning slides, high speed dynamometers, unsupported drive shafts, etc.	Stepper and servo drives, encoders, general purpose light duty power transmission applications.	Stepper drives, encoders, general purpose light duty power transmission applications.	Encoders, tachogenerators, small pumps, motors and drives
Speeds					
Up to 5000 rpm in standard form.	Up to 5000 rpm in standard form.	Up to 5000 rpm in standard form. Up to 30000 rpm in balanced form.	Up to 5000 rpm in standard form. Up to 30000 rpm in balanced form.	Up to 5000 rpm in standard form. Up to 30000 rpm in balanced form.	Up to 10000 rpm
Peak torque largest size					
500 Nm	12.5 Nm	100 Nm	140 Nm	30 Nm	25 Nm
Standard bores					
3 to 65	3 to 20	3 to 38	1 to 38	3 to 26	3 to 12.7
Temperature range					
-40° to +120°C	-40° to +120°C	-40° to +120°C	-40° to +140°C	-40° to +140°C	-20 to +150°C
Electrically isolating					
No, unless used with insulating bore adaptors	No, unless used with insulating bore adaptors	No, unless used with insulating bore adaptors	Aluminium } Stainless Steel } Acetal } No Yes	Aluminium } Stainless Steel } Acetal } No Yes	Yes
Connection					
Clamp, Set Screw or Spigot	Clamp or Set Screw	Clamp or Set Screw	Clamp or set screw	Clamp or Set Screw	Clamp or Set Screw
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Sliding Disc type	Universal/Lateral type	Double Loop type	Jaw Coupling	Universal Joints & Teleshfts	Friction Clutches	Bevel Gearboxes
Oldham Blind bored  Thru' bored  Thru' bored  Material Options: Aluminium Stainless Steel	Uni-Lat  	Flex-P   	Jaw coupling 	Huco-Pol Single joints  Double joints  Teleshfts 	Vari-Tork, Polyclutch Basic clutch  Basic clutch + Oldham coupling  Polyclutch 	L-Box  T-Box 
General description						
General purpose, robust, easy to use 3-part couplings with replaceable wear elements. Generous radial compensation and pull-apart / re-engage facility for blind assemblies.	Unique, general purpose light duty couplings with generous angular and radial misalignment compensation. Resist axial motion, can anchor unrestricted shafts and perform light push/pull duties.	Exceptional flexibility in all three directions, radial, angular and axial	High torque capacity and high speed are available from this naturally balanced coupling	Light duty plastic universal joints and extensible drive shafts (teleshfts). Low mass, corrosion resistant, ideal where conventional steel joints would be under-utilised.	Small, user-adjustable torque limiters for concentric or in-line mounting. Operate by friction using interleaved clutch plates.	Small 90° drives encased in molded housings providing electrical isolation between shafts and mounting surface. The L-Box is rated for intermittent use, the T box for continuous. 1:1 & 2:1 ratios are available with the T-Box.
Where to use						
Stepper drives for most applications including positioning slides, pumps, actuators, etc.	Encoder, resolver, tacho, potentiometer drives. Small positioning slides, dosing pumps, & light drives generally.	Light power drives, pumps and small generators	Light power drives where misalignment is small	Intermittent applications in business machines, instrumentation, lab equipment, analytical apparatus, etc., where steel joints would be under-utilised.	Friction clutches interrupt rotation when the load being transmitted reaches a pre-determined threshold. Used in all kinds of small drives to help protect personnel and equipment.	L-box offers a compact means to route drives thru' 90°. T-box offers 2 & 3 shaft configurations for multiple power offtake.
Speeds						
Up to 3000 rpm.	Up to 3000 rpm.	Up to 3000 rpm.	Up to 40,000 rpm.	Up to 1000 rpm	Up to 1000 rpm slipping speed	Up to 1500 rpm for T-box
Peak torque largest size						
44 Nm	12 Nm	18 Nm	133 Nm	10.7 Nm	60 Nm	0.68 Nm
Standard bores						
2 to 30	3 to 22	3 to 16	3 to 16	3 to 20	6 to 32	4 & 5 (shafts)
Temperature range						
-20 to +60°C	-20 to +60°C	-40 to +100°C	-40 to +80°C	-20 to +60°C	-10 to +80°C (when operating)	-20 to +60°C
Electrically isolating						
Yes	Yes	Yes	Yes	Yes	No	See General Description above
Connection						
Clamp or Set Screw	Clamp or Set Screw	Set Screw	Clamp or Set Screw	Set Screw, Bonding, or Cross-Pinning	Clamp or Set Screw	N/A
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Introduction to couplings

In the simplest of terms a coupling's purpose is to transfer rotational movement from one shaft to another. Reality is somewhat more complicated, though, as flexible shaft couplings have also to compensate for misalignment between two shafts. This ability must be balanced with the need to be pliable in the planes of misalignment while still having the torsional strength to carry out the coupling's main function. This is known as the Compliance mechanism where compliance is the capacity for allowing relative displacement.

Several factors should always be taken into consideration when looking to specify flexible shaft couplings. These are torsional stiffness, backlash, torque, life and attachment system. All of these have bearing on coupling selection.

Selecting the ideal coupling

The choice of couplings available to today's engineers can be daunting, but follow our guidelines and you will arrive at the optimum coupling for your particular application.

- ❶ *Does the coupling provide adequate misalignment protection?*
- ❷ *Can it transmit the required torque?*
- ❸ *Do I need axial motion or axial stiffness?*
- ❹ *Can it sustain the required speed of rotation?*
- ❺ *Will it fit within the available space envelope?*
- ❻ *Can it operate at the designated ambient temperature?*
- ❼ *Does it provide torsional stiffness required for positional accuracy?*
- ❽ *Does it provide electrical isolation between the shafts?*
- ❾ *Will it have the required life expectancy?*



Service Factors

- ❶ Peak torque values quoted in the coupling performance tables apply to uniform load conditions at constant speed where there is no misalignment or axial displacement.
- ❷ The torque capacity of flexible couplings will reduce when acceleration is present, for example, in stop/start or reversing conditions.
- ❸ The more severe the acceleration, the greater reduction in torque capacity.
- ❹ Sliding couplings (Oldham and UniLat) are subject to a wear rate dependent on the number of cycles completed.

Peak torque must be greater than application torque x service factor

	Load					Duty (Hours/Day)				
	Steady State	Stop/Start	Reversing	Shock	Shock & Reversing	<1	1 - 2	3 - 5	6 - 12	>12
Huco Flex B	1.5	2.0	2.0	3.0	4.0	-	-	-	-	-
Huco Flex K	1.5	2.0	2.0	3.0	4.0	-	-	-	-	-
Huco Flex M	1.5	2.0	2.0	3.0	4.0	-	-	-	-	-
Huco Flex Ni	1.0	2.0	2.0	3.0	4.0	-	-	-	-	-
Huco Flex P	1.0	1.5	1.5	3.0	4.0	-	-	-	-	-
Huco Flex G	1.0	2.0	4.0	4.0	4.0	-	-	-	-	-
Huco MultiBeam	1.0	1.5	2.0	(Note 1)	(Note 1)	-	-	-	-	-
Huco S-Beam	1.0	1.5	2.0	(Note 1)	(Note 1)	-	-	-	-	-
Huco TorqLink	1.0	1.5	2.0	(Note 1)	(Note 1)	-	-	-	-	-
Huco Oldham	-	-	-	-	-	1.0	2.0	4.0	6.0	8.0
Huco Flex - B	-	-	-	-	-	1.0	1.5	2.0	3.0	4.0
Uni-Lat	-	-	-	-	-	1.0	1.5	2.0	3.0	4.0

Note 1: Not recommended in these conditions

Round & Keywayed Bore Details & Codes

Metric mm	Inch fraction	Inch decimal	Round bore code	Metric keys		Inch keys		Keywayed bore code
				Key size w x h	K	Key size w x h	K	
1	—	0.0394	08	—	—	—	—	—
1.588	1/16	0.0625	10	—	—	—	—	—
2	—	0.0787	11	—	—	—	—	—
2.286	—	0.0900	12	—	—	—	—	—
3	—	0.1181	14	—	—	—	—	—
3.048	—	0.1200	15	—	—	—	—	—
3.175	1/8	0.1250	16	—	—	—	—	—
*3.969	5/32	0.1563	—	—	—	—	—	—
4	—	0.1575	18	—	—	—	—	—
4.763	3/16	0.1875	19	—	—	—	—	—
5	—	0.1969	20	—	—	—	—	—
6	—	0.2362	22	—	—	—	—	—
6.350	1/4	0.2500	24	—	—	—	—	—
7	—	0.2756	25	2 x 2	8.00	—	—	P25
7.938	5/16	0.3125	27	—	—	1/8 x 1/8	0.3755	R27
8	—	0.3150	28	2 x 2	9.00	—	—	P28
9	—	0.3543	30	3 x 3	10.40	—	—	P30
9.525	3/8	0.3750	31	—	—	1/8 x 1/8	0.4380	R31
10	—	0.3937	32	3 x 3	11.40	—	—	P32
11	—	0.4331	33	4 x 4	12.80	—	—	P33
12	—	0.4724	35	4 x 4	13.80	—	—	P35
12.700	1/2	0.5000	36	—	—	1/8 x 1/8	0.5630	R36
13	—	0.5118	37	5 x 5	15.30	—	—	P37
14	—	0.5512	38	5 x 5	16.30	—	—	P38
15	—	0.5906	40	5 x 5	17.30	—	—	P40
15.875	5/8	0.6250	41	—	—	3/16 x 3/16	0.7160	R41
16	—	0.6299	42	5 x 5	18.30	—	—	P42
17	—	0.6693	43	5 x 5	19.30	—	—	P43
18	—	0.7087	45	6 x 6	20.80	—	—	P45
19	—	0.7480	46	6 x 6	21.80	—	—	P46
19.050	3/4	0.7500	47	—	—	3/16 x 3/16	0.8410	R47
20	—	0.7874	48	6 x 6	22.80	—	—	P48
22	—	0.8661	49	6 x 6	24.80	—	—	P49
22.225	7/8	0.8750	50	—	—	1/4 x 1/4	0.9930	R50
24	—	0.9449	51	8 x 7	27.30	—	—	P51
25	—	0.9843	52	8 x 7	28.30	—	—	P52
25.400	1	1.0000	53	—	—	1/4 x 1/4	1.1180	R53
28	—	1.1024	54	8 x 7	31.30	—	—	P54
28.575	1-1/8	1.1250	55	—	—	5/16 x 1/4	1.2400	R55
30	—	1.1811	56	8 x 7	33.30	—	—	P56
31.750	1-1/4	1.2500	57	—	—	5/16 x 1/4	1.3580	R57
32	—	1.2598	58	10 x 8	35.30	—	—	P58
34.925	1-3/8	1.3750	59	—	—	3/8 x 1/4	1.4830	R59
35	—	1.3780	60	10 x 8	38.30	—	—	P60
38	—	1.4961	61	10 x 8	41.30	—	—	P61
40	—	1.575	63	12 x 8	43.30	—	—	P63
50	—	1.969	70	14 x 9	53.8	—	—	P70
50.800	—	2.000	71	—	—	1/2 x 1/2	2.224	R71
55	—	2.165	73	16 x 10	59.3	—	—	P73
60	—	2.362	75	18 x 11	64.4	—	—	P75
63.500	2-1/2	2.500	77	—	—	5/8 x 5/8	2.778	R77
65	—	2.559	78	18 x 11	69.4	—	—	P78

All shaft mounted products in this catalogue can be specified with inch and/or metric bore diameters. A standard range of sizes is listed for each product. Where physical dimensions permit, keyways may be specified at extra cost.

For the sake of uniformity and avoidance of errors when ordering, bore diameters are designated with a 2-digit number which forms part of the order code. *Please note that only the bore diameters listed for each product in the product pages are standard.*

To specify a **keywayed** bore, prefix the 2-digit number with a 'P' for metric keyways or an 'R' for an inch keyway.

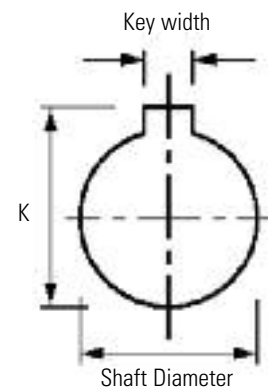
Standard keyways are machined to 2 specifications:

Bore codes prefixed 'P' denote a metric keyway conforming to ISO 773/774 (BS 4235 Pt. 1).

Bore codes prefixed 'R' denote an inch keyway conforming to BS 46 Pt. 1.

In most cases, keyways prefixed 'R' are compatible with AGMA 9002-A86 but can differ in the depth of the key seat.

All Huco couplings are RoHS compliant.



Note that our tooling produces a key seat classified as 'nominal' being a nominal clearance on standard keys

Order Codes

Combine the COUPLING REF in Main Product Tables with BORE REFS in Standard Bores Table. Please identify both bores e.g.

706.19.1924

Coupling ref.

Ø B1 ref.

Ø B2 ref.

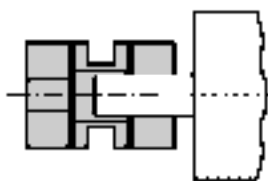
*Not manufactured. Nearest alternative 4mm. Intermediate size available on request

Flexible Coupling Types

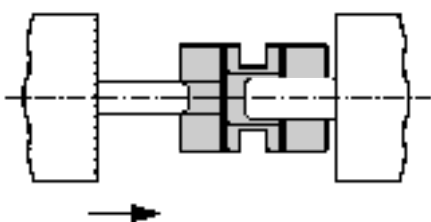
General instructions

1. Ensure that shafts are free of burrs, damage, or foreign matter, and can penetrate the bores.
2. Install the coupling by holding the shaft and the related hub, rotating it back and forth as you progress it along the shaft.
3. Do not apply any forces that cause extension, compression or lateral displacement of the coupling beyond its permissible offsets.

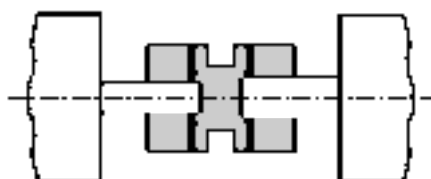
Normal installation



- a) Position and secure the larger of the 2 shafts (if different) and progress the coupling onto it.



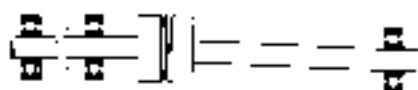
- b) Progress the second shaft into the bore, taking care not to lever either shaft against the inner wall of the spacer.



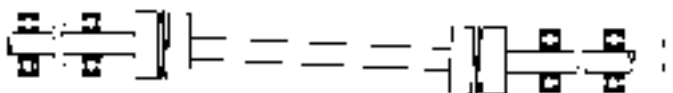
- c) Progress the coupling along the shafts to a position midway between the shaft terminations. Rotate the coupling to ensure it is not binding and is in its natural state, ie., neither extended nor compressed.
- d) Align the second shaft with the first using a straight edge and feeler gauges or a dial indicator.
- e) Secure the second shaft and re-check alignment. Final alignment must be within the permissible offsets.
- f) Secure one hub, tightening each screw alternately. Repeat for the second hub.

When to use single & two-stage couplings

Single-stage



Example 1. With partially supported (1 bearing) shafts.



Example 2. With unsupported intermediate shafts.

Single-stage couplings are radially supportive and function as supplementary bearings. They are used when the connected shaft lacks a full complement of bearings.

Two-stage



Two-stage couplings are radially compliant and are used when both shafts are fully supported by bearings.

CAUTION

These are precision high couplings that have a limited range of permissible flexure. They can be damaged through careless handling. Avoid gratuitous flexure in any direction.

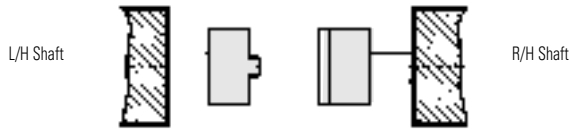
No axial forces are permitted across the membranes when fitting Huco-Flex M couplings. Keyways with interference fits are not recommended.

Bellows couplings are more tolerant of axial motion, but flexure beyond the permissible limits should be avoided.

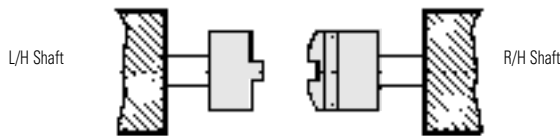
Note: Bellows couplings do not provide the same level of radial support as Flex M when used with partially or wholly unsupported shafts. When essential for reasons of greater axial motion, use the 3-convolution type for these purposes.

Sliding Disc type (Oldham)

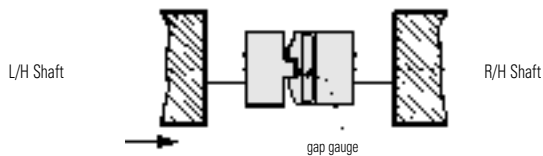
Blind hub



- Slide hubs on to both shafts until fully seated and tighten screws.
- Position and secure R/H shaft.



- Seat disc fully on R/H hub.



- Place a gap gauge flat against the bottom of the exposed slot in the disc and push the L/H hub into full engagement by manipulating the L/H shaft.
- Align shafts within the permissible offsets and secure L/H shaft.
- Check alignment and correct if necessary.
- Remove gap gauge.

To fit a new disc, withdraw L/H shaft complete with hub and remove old disc. Repeat steps c) to g).

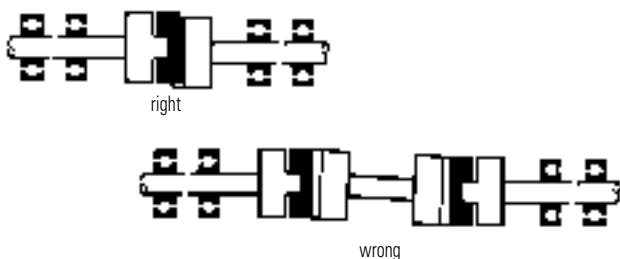
Gap gauges for all hub types

Coupling size	06, 09 & 13	19 & 25	33 & 41	50 & 57	Gap gauge
		0.05mm	0.10mm	0.15mm	0.20mm

Clearances are set to allow for thermal shaft growth and / or end-float. Gaps may be increased, but total shaft movement should not exceed the values shown under *Axial Compensation* in the Performance Table.

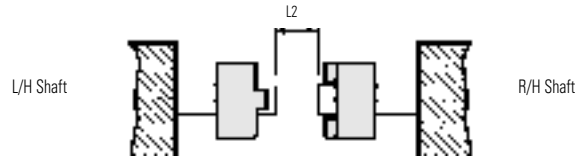
Radial support

Shafts must be fully supported by 2 bearings and have minimal overhang. Oldham couplings cannot be used in pairs.

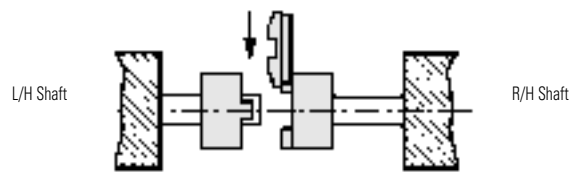


Note: It is important that installed couplings are not end-loaded. To help avoid this, thro' bored hubs are recommended for shafts which have fixed axial locations such as face-mounted motors.

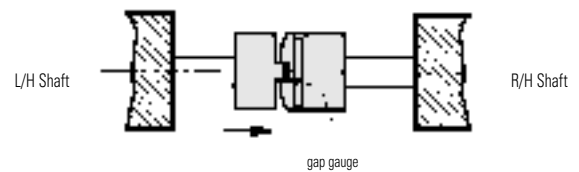
Thro' hub



- Slide hubs on to both shafts.
- Align shafts to within the permissible offsets and position to leave *minimum* gap 2 between terminations. Secure both shafts, check alignment and correct if necessary.



- Position R/H hub with inboard face flush with shaft termination and tighten screws.
- Slide disc radially on to the tenons of the R/H hub. Ensure the disc is fully seated.



- Place a gap gauge flat against the bottom of the exposed slot in the disc and push the L/H hub into full engagement.
- Tighten fastening screws and remove gap gauge.

To fit a new disc, slacken the fastening screws on one hub and retract it along the shaft. Slide the old disc out radially and replace with the new. Repeat steps d) to f).

To retain shaft phasing, withdraw L/H shaft and repeat steps c) to g) as for Blind hub couplings.

Over-penetration of shafts can impair function of coupling with solid disc. Min shaft gap L2 must be observed. Specify thro' bored disc for near-butted shafts.

Coupling size	19	25	33	41	50	57
L2 min	7.2	9.2	12.0*	15.3	18.4	21.2

*types 243, 245, 454 and 456 = 18.0

Clamp hubs

To improve clamp action, apply a little grease under the head of the clamp screw.

Beam Type

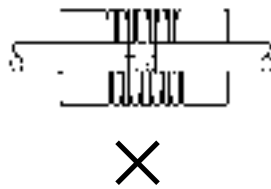
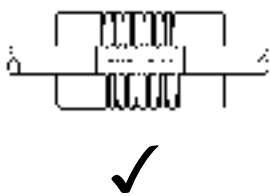
Relief Under The Beams

Most Multi-Beam couplings can be supplied with or without relief under the beams as shown in the diagrams below. When the drive or driven shafts extend under the beams relief is essential to ensure that the coupling remains flexible. Where non-relieved versions are used, shafts must not be allowed to penetrate under the beamed section of the coupling. Unless otherwise specified, relieved versions will be supplied.

Pilot Bores

Couplings can be supplied 'pilot bored' for opening out by the customer. Pilot bores are plain drilled holes, which are not produced with the same accuracy as finished machined bores. The largest bore provided in a pilot bored product is that needed to make the coupling flexible and this will always be larger than the minimum possible bore size 'B1' shown in the bore tables. For sizes 13 to 25, the pilot bore is also larger than the 'B2' minimum shown in the bore tables. Further details are available on request.

Non-Relieved



Relieved



general purpose motion control couplings

- Universal Lateral (Uni-Lat)
- Sliding Disc (Oldham)

- **Backlash-free up to 10° turns**
- **Can tolerate large misalignments**
- **Slight damping characteristics**
- **Flex-free mechanical action - non-progressive bearing loads**
- **Non-magnetic (with special screws)**
- **Electrically isolating**
- **Low inertia**

Uni-Lats are widely used for pulse generator drives while Oldhams are very popular for stepper driven positioning stages.

A unique property of Uni-Lats is resistance to axial motion. This makes them suitable for light push/pull duties and for anchoring axially unrestricted shafts.

Oldhams are 3-part couplings consisting of 2 hubs + 1 torque disc. The hubs determine the method of installation and shaft attachment, the discs determine the quality of motion.

The 4 hub styles and 2 disc materials that comprise the range are fully interchangeable within each of the 9 sizes available. To take advantage of this flexibility, hubs and discs are specified and supplied separately.

The discs are the sacrificial elements and are replaceable at low cost in the event of wear or breakage.





Materials & Finishes

Hub sizes 18 & 27: Brass BS 2874 CZ121

Hub sizes 34, 41 & 70: Al. Alloy 2014 T6
Irridite NCP

Fasteners: Alloy steel, black oiled

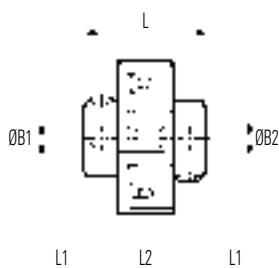
Clamp rings (sizes 18 & 27): Al. Alloy 2014 T6
Irridite NCP

Torque rings, all sizes: Acetal (black)

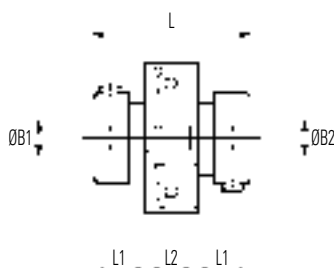
Temperature Range

-20°C to +60°C

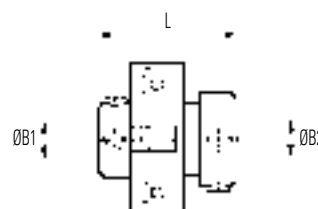
Set screw hubs



Ref. 201
Small bores



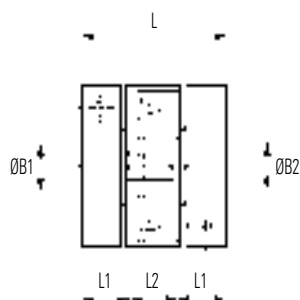
Ref. 203
Large bores



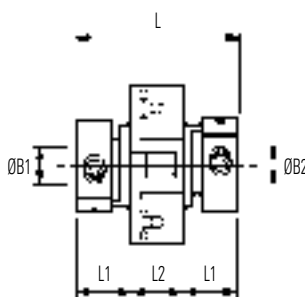
Ref. 221 (not listed in main table).
Combines large & small bores.
See explanatory note on facing page

Coupling ref. 221	
Size	L
18	16.7
27	22.3
34	28.0
41	33.3

Clamp hubs



Ref. 207
Collet hub & ring clamp

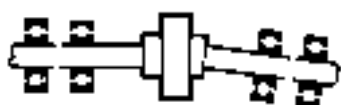


Ref. 205, 206
Integral leaf clamp



Typical

Installation



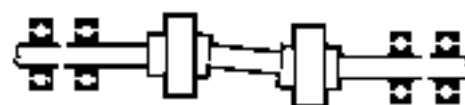
right

Up to 10° angular offset,
depending on type



right

Up to 1mm radial offset for
extreme misalignments



wrong

Standard Uni-Lats cannot be used in pairs.
Special versions are available for use in this mode.
Please enquire.

DIMENSIONS & ORDER CODES

Coupling Size	Set Screw Hubs	Clamp Hubs	ØD	L	① L1	② L2	ØB1, ØB2 max	Fasteners			④ Moment of inertia kgm ² x 10 ⁻³	④ Mass kg x 10 ⁻³
								Screw	③ Torque Nm	Wrench mm		
18	201.18	–	18.0	14.2	4.6	5.1	5	M3	0.94	1.5	20	7
	203.18	–		19.1	7.0		6.35					
	–	207.18 ‡ 219	19.1	–	–	4-40	2.33	2.0	55	11		
27	201.27	–	28.0	19.1	6.1	6.9	8	M3	0.94	1.5	91	16
	203.27	–		25.4	9.3		10					
	–	207.27 ‡ 218	–	–	–	M3	2.43	2.5	220	26		
34	201.34	–	33.7	25.2	8.1	8.9	10	M4	2.27	2.0	165	17
	203.34	–		30.7	10.9		12.7					
	–	206.34	–	–	–	10	4-40	2.33	–	183	20	
41	201.41	–	41.4	28.4	8.6	11.2	12.7	M4	2.27	2.0	476	30
	203.41	–		38.1	13.5		16					
	–	205.41	–	–	–	12.7	M4	5.66	3.0	550	40	
70	203.70	–	69.0	74.0	28.5	17.0	22	M6	7.60	3.0	7315	189
	–	205.70					–					

- ① Length of supported thro' bore. Shafts must not penetrate beyond L1 when in operation.
 - ② Nominal distance between shafts inserted to L1.
 - ③ Maximum recommended tightening torque.
 - ④ Values apply with max bores.
 - ⑤ *Peak torque.* Select a size where Peak Torque exceeds the application torque x service factor. (**see page 6**)
 - ⑥ Couplings can provide up to 1mm radial and 10° angular compensation (5° for ref. 207) when required. Observe given values for maximum backlash-free life. Electrical isolation between shafts > 3kV for all models when offset ≤5°.
 - ⑦ Values apply at 50% peak torque with no misalignment, measured shaft-to-shaft with largest standard bores.
 - ⑧ Momentary values.
- ‡ Ref. 207 only. Insert both bore codes in place of ‡.

PERFORMANCE AT 20°C

Coupling Size	⑤ Peak torque Nm	⑥ Max compensation @ 3000 r.p.m.	⑦ Torsional			Axial		Static break torque Nm	
			Angular deg	Radial mm	Rate deg / Nm	Stiffness Nm / rad	Max loading ±N		Stiffness N / mm
18	0.3	2	2	0.2	2.3	25	19	155	0.9
27	1.7			0.2	0.6	92	31	350	5.0
34	2.5			0.25	0.4	146	34	300	7.5
41	3.5			0.25	0.19	299	39	250	10.5
70	12.0			0.25	0.19	1300	75	540	68

Coupling ref. 221

By specifying ref. 221 (not listed in tables, see diagram facing page) you can combine the bores coded for ref. 201 with those coded for ref. 203, eg., 221.27.2432 specifies Size 27 with Ø6.35 x 10 bores.

IMPORTANT

Load capacity depends on application conditions: **see page 6** for details

STANDARD BORES

Coupling size	ref.	ØB1, ØB2 +0.03/-0mm																				
		3	3.175	4	4.763	5	6	6.350	7.938	8	9.525	10	12	12.700	14	15.875	16	18	19	19.05	20	
18	201.18	●	●	●	●	●																
	203.18						●	●														
	207.18	●	●	●	●	●	●	●														
27	201.27	●	●	●	●	●	●	●	●	*	●											
	203.27										●	●										
	207.27					●	●	●		●	●	●										
34	201.34						●	●		●	●	●										
	203.34												●	●								
	206.34						●	●	●	●	●	●										
41	201.41						●	●		●	●	●	●									
	203.41														●	●	●					
	205.41						●	●		●	●	●	●		●	●	●					
70	203.70											●	●	●	●	●	●	●	●	●	●	●
	205.70											●	●	●	●	●	●	●	●	●	●	●
Bore ref.		14	16	18	19	20	22	24	27	28	31	32	35	36	38	41	42	45	46	47	48	
Corresponding bore adaptor						251		253		254* 255		257		259			260				261	

Diameters for which a bore adaptor is shown can be adapted to smaller shaft sizes. See page 60 for details.

*Note that adaptor 254 is dedicated to coupling ref. 201.27. Use adaptor 255 for all other 8mm diameters.



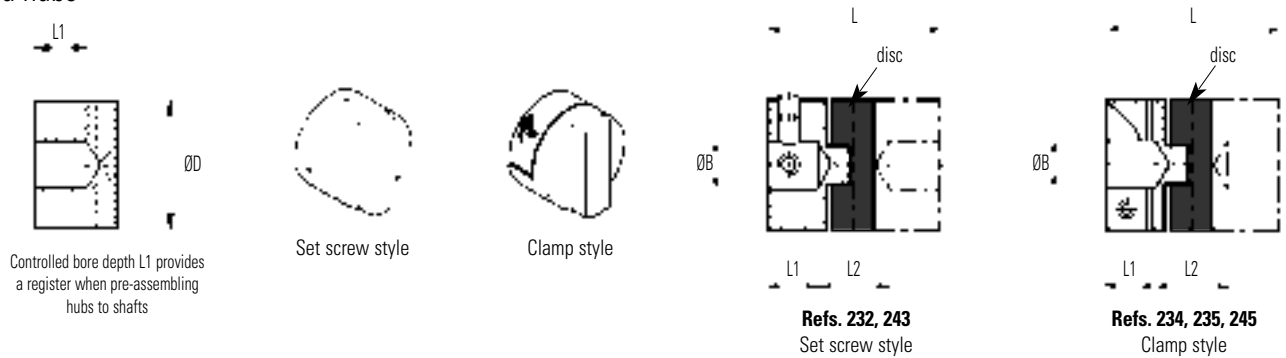
Materials & Finishes

- Hub sizes 06 to 13:** Brass BS 2874 CZ121
- Hub sizes 19 to 57:** Al. Alloy 2014A T6
- Fasteners:** Alloy steel, black oiled
- Blind & blank hubs:** Irridite NCP finish
- Thro' hubs:** Clear anodised finish
- Torque discs:** Types 236 - Acetal (black)
Types 238 - Nylon 11 (natural)

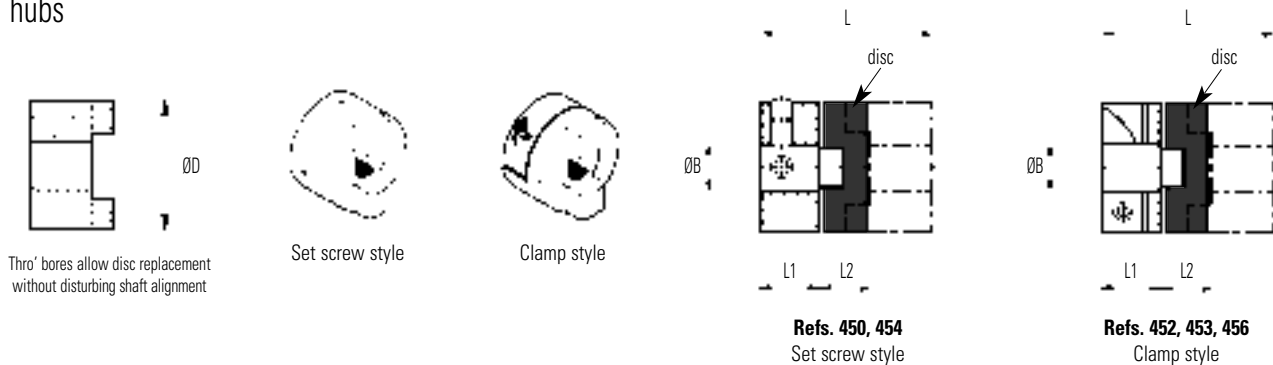
Temperature Range

-20°C to +60°C

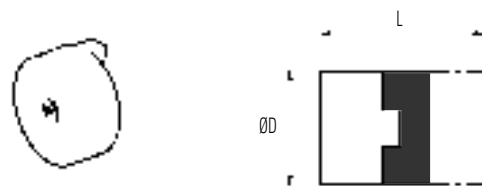
Blind hubs



Thro' hubs



Blank hubs



User-adaptable for special needs, e.g. fitting within tubes. Blank hubs are supplied centred with no provision for fastening. External dimensions identical with blind hubs.

Coupling size	Complete hub ref.	ØB	L
06	231.06.00	6.4	12.7
09	231.09.00	9.5	12.7
13	231.13.00	12.7	15.9
19	231.19.00	19.1	22.0
25	231.25.00	25.4	28.4
33	230.33.00	33.3	48.0
33	231.33.00	33.3	42.0
41	231.41.00	41.3	50.8

Standard discs (larger sizes are webbed)



- Acetal – High torsional stiffness, good bearing properties, long backlash-free life.
- Nylon 11 – Resilient, isolates noise & vibration. Performance approximately 25% that of acetal disc.

Thro' bored discs



Thro' bored discs allow shafts to near-butt, standard thro' hole diameter = ØD x 0.5. To order, add suffix 'T' to order code, eg., **236.25T**

Other thro' hole diameters are manufactured to order. Specify the disc ref. and thro' hole diameter. This should equal the larger shaft diameter + 2 x max radial error.

Note that thro' bored discs reduce torsional stiffness.

DIMENSIONS & ORDER CODES

Coupling Type and Size	Hub Ref		Dimensions							Fasteners			Disc Ref			
	Set Screw Style	Clamp Style	ØD	L	① L1	② L2	ØB1 Max	④ Moment of Inertia kgm ² x10 ⁻⁸	④ Mass kg x10 ⁻³	Size	③ Torque (Nm)	Wrench (mm)	Acetal (black) Std.	Nylon 11 (Natural)		
Blind Hubs	06	232.06	-	6.4	12.7	3.8	5.1	3.18	6	2.5	M3	0.94	1.5	236.06	238.06	
	09	232.09	-	9.5	12.7	3.8	5.1	5	18	4	M3	0.94	1.5	236.09	238.09	
	13	232.13	-	12.7	15.9	4.3	7.3	6.35	26	11	M3	0.94	1.5	236.13	238.13	
	19	232.19	-	19.1	22.0	6.3	9.4	8	8	67	12	M3	0.94	1.5	236.19	238.19
		-	235.19									4-40	2.33	2.0		
	25	232.25	-	25.4	28.4	8.6	11.2	12	12	252	31	M4	2.27	2.0	236.25	238.25
		-	234.25									M3	2.43	2.5		
	33	232.33	-	33.3	42.0	13.0	16.0	16	16	1074	72	M5	4.62	1.5	836.33	838.33
		-	234.33									M4	2.33	2.0		
		243.33	-									M4	2.27	3.0		
-		245.33	M4									5.66	2.5			
41	232.41	-	41.3	50.8	16.7	17.4	20	20	3327	148	M5	4.62	2.5	236.41	238.41	
	-	234.41									M4	5.66	3.0			
Thro' Hubs	19	450H19	-	19.1	26.0	9.4	7.2	8	59	13	M5	4.62	2.5	236.19	238.19	
		-	453H19								4-40	2.33	2.0			
	25	450H25	-	25.4	32.4	11.6	9.2	12	12	252	31	M5	4.62	2.5	236.25	238.25
		-	452H25									M3	2.43	2.5		
	33	450H33	-	33.3	42.0	15.0	12.0	16	16	1080	67	M6	7.61	3.0	836.33	838.33
		-	452H33									M4	5.66	3.0		
		454H33	-									M6	7.61	3.0		
		-	456H33									M4	5.66	3.0		
	41	450H41	-	41.3	50.8	17.8	15.3	20	20	3177	142	M6	7.61	3.0	236.41	238.41
		-	452H41									M4	5.66	3.0		
50	450H50	-	50.0	59.6	20.6	18.4	25.4	25.4	7550	208	M8	18.36	4.0	236.50	-	
	-	452H50									M5	11.40	4.0			
57	450H57	-	57.1	78.0	28.4	21.2	30	30	12410	361	M8	18.36	4.0	236.57	-	
	-	452H57									M6	19.34	5.0			

PERFORMANCE (AT 20°C WITH STANDARD ACETAL DISC)

Coupling Size	⑤ Peak torque Nm	⑥ Max compensation @ 3000 r.p.m.			⑦ Torsional		Static break torque Nm
		Angular deg	Radial mm	Axial ± mm	Rate deg / Nm	Stiffness Nm / rad	
06	0.06	0.5	0.1	0.05	5.7	10	0.7
09	0.21		0.1	0.05	1.9	30	2
13	0.5		0.1	0.05	0.88	65	4
19	1.7		0.2	0.1	0.50	115	8
25	4		0.2	0.1	0.28	205	13
33	9		0.2	0.15	0.093	615	53
41	17		0.25	0.15	0.048	1200	57
50	30		0.25	0.2	0.042	1375	95
57	44	0.25	0.2	0.022	2610	150	

NB. Size 33 available in both 'standard' and 'long' versions

IMPORTANT

Load capacity depends on application conditions:
see page 6 for details

For Standard Bores **see page 30**

- ① **Blind hubs:** Length of parallel bore ±0.2. Bores may terminate in 118° incl. angle.
Thro' hubs: Max permissible hub penetration.
- ② **Blind hubs:** Nominal distance between unchamfered shafts bottomed out to L1.
Thro' hubs: Nominal distance between shafts with standard (unbored) disc.
- ③ Maximum recommended tightening torque.
- ④ Values apply to complete couplings with max bores.
- ⑤ **Peak torque.** Select a size where Peak Torque exceeds the application torque x service factor.
- ⑥ Couplings can provide up to (ØD x 0.1) radial compensation in extreme cases. Observe given values for maximum backlash-free life. Axial compensation is set on installation. Electrical isolation between shafts > 3kV.
- ⑦ Values apply at 50% peak torque with no misalignment, measured shaft-to-shaft with largest standard bores.
- ⑧ Thro' hubs can be provided with keyways.

Thro' hubs



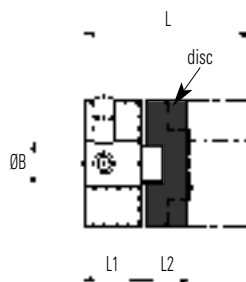
Thro' bores allow disc replacement without disturbing shaft alignment



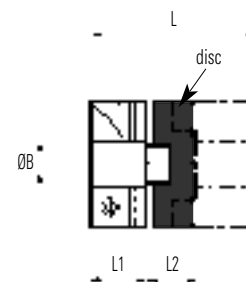
Set screw style



Clamp style



Ref. 850
Set screw style



Ref. 852
Clamp style

Materials Finishes

Hubs : Stainless Steel 303 S31 - Natural Finish

Fasteners: Stainless Steel

Discs: Torque disc details on page 28

Temperature Range

-20°C to +60°C

Maximum Rotational Speed

3000 rev/min

DIMENSIONS & ORDER CODES

Size	Hub Ref		Dimensions							Fasteners			Disc Ref	
	Set Screw Style	Clamp Style	ØD	L	L1	L2	ØB1 Max	Moment of Inertia kgm ² x10 ⁻⁸	Mass kg x10 ⁻³	Size	Torque (Nm)	A/F (mm)	Acetal (black) Std.	Nylon 11 (Nat)
25	850.25	-	25.4	32.4	11.6	9.2	12.0	587	76	M5	2.1	2.5	236.25	238.25
	-	852.25								M3	1.2	2.5		
33	850.33	-	33.3	42.0	15.0	12.0	16.0	2091	165	M6	3.8	3.0	836.33	838.33
	-	852.33								M4	2.9	3.0		
41	850.41	-	41.3	50.8	17.8	15.3	20.0	6822	305	M6	3.8	3.0	236.41	238.41
	-	852.41								M5	5.9	4.0		
50	850.50	-	50.0	59.6	20.6	20.6	25.4	17368	510	M8	9.0	4.0	236.50	N/A
	-	852.50								M6	9.8	5.0		

PERFORMANCE

Size	Peak Torque (Nm)	Max compensation @ 3000 rev/min			Torsional		Static break torque (Nm)
		Angular deg	Radial mm	Axial +/- mm	Rate deg/Nm	Stiff Nm/Rad	
25	4	0.5	0.2	0.1	0.28	205	13
33	9		0.2	0.15	0.093	615	53
41	17		0.25	0.15	0.048	1200	57
50	30		0.25	0.12	0.042	1375	95

STANDARD BORES® FOR ALL TYPES

Coupling Size	ØB +0.03/-0mm																							
	2	3	3.175	4	4.763	5	6	6.350	8	9.525	10	12	12.700	14	15	15.875	16	18	19	19.050	20	24	25	30
06	●	●	●																					
09		●	●	●	●	●																		
13		●	●	●	●	●	●	●																
19				●	●	●	●	●	●															
25						●	●	●	●	●	●													
33								●	●	●	●	●	●	●	●	●	●							
41									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
50										●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
57											●	●	●	●	●	●	●	●	●	●	●	●	●	●
Bore ref.	11	14	16	18	19	20	22	24	28	31	32	35	36	38	40	41	42	45	46	47	48	51	52	56