Huco Coupling Comparison

Product Type	Radial Misalignment	Angular Misalignment	Axial Misalignment	Electrical Insulating	Should be Used When:	Top 3 Important Facts	Features/Benefits	Top 3-5 Applications	Materials/Type	Shaft Sizes	Peak Torque Nm (in.lb)	Torsional Stiffness Nm/rad (lb.inch/rad)	Shaft Clamp Styles
Oldham (Sliding/ Pivoting) 	**H**	**M**	**0**	**Yes**	*Cost is a paramount consideration *coupling is expected to transmit increment or periodic rotation *light Duty applications, Duty=50% or less *radial misalignment is severe - space limited *radial misalignment is difficult to predict or maintain *electrical isolation of shafts is required *slight torsional torsional damping is beneficial **three piece coupling is advantageous: with the oldham coupling, the drive can be disconnected with the hubs in place	-Best all-around coupling -Shafts need to be supported, limited axial play -Life time can be extended almost indefinitely by changing discs	Sliding tension/disc interface provide less wear on shaft bearings 3 part coupling with replaceable wear elements Torque disc acts as mechanical fuse to protect expensive equipment Electrically insulating to protect against static discharge Low weight/inertia keeps motor size small Blind or Through Bore Customizable bores (Keyway, Square, D type) Require shafts to be axially fixed Constant low bearing loads	**Microstepper and closed loop systems Incremental control on fluid valves positional systems** for machine tools, robots, and slide tables	Aluminum Brass, Stainless Steel	2mm to 30mm (1/8" – 1⅛")	44 (389)	2610 (23,100)	*Blind set screw&clamp *Through bore set screw &clamp)
Uni-Lat (Sliding/ Pivoting) 	**H**	**H**	**0**	**Yes**	*Cost is a paramount consideration *coupling is expected to transmit increment or periodic rotation *Light duty applications, Duty=50% or less *radial misalignment is severe - space limited *radial misalignment is difficult to predict or maintain *electrical isolation of shafts is required *coupling is required to transmit longitudinal motion (push/pull) *slight torsional torsional damping is beneficial * Need Greater angular misalignment than Oldham at low speeds	Light duty coupling resists actual motion Prevents axial shaft displacement Have more pronounced dampening characteristics, lower torque capacity, and run more quietly than Oldham couplings. * Highest Misalignment capacity	Sliding tension/disc interface Wear parts replaceable (Torque ring) Constant low bearing loads	**Push/Pull applications Light duty Stepper Small positioning slides, dosing pumps**	Brass, AL Alloy	3 mm to 22mm (1/8" – 3/4")	12 (106)	1,300 (11,506)	*set screw *clamp collar
Flex P Double Loop 	**H**	**H**	**H**	**Yes**	*Cost is a paramount consideration *Accurate rotational positioning is not required *Vibration damping is required *radial misalignment is severe - space limited *radial misalignment is difficult to predict or maintain *electrical isolation of shafts is required	*Ideal for transmitting rotation in small drives *This coupling works without any friction, wear, or noise *Low torsional stiffness makes it less suitable for high precision aps	Flexible mechanism to compensate for radial and angular misalignment.	**Light Power Drives, pumps, and small generators**	Hubs - Stell Flexing Element - Hytrel Fastener - Black oxide alloy steel	3 mm to 16mm (1/8" – 5/8")	18 (159)	23 (204)	*set screw
Single Beam 	**L**	**H**	**L**	**No**	*Torsional Stiffness is NOT critical	*Extremely customizable *Not recommended for closed loop servo systems because of risk of resonance	Flexible mechanism to compensate for radial and angular misalignment, more flexible than multi-beam but less torsionally rigid One piece construction, no service Can be tuned to alter torque and misalignment capability Customizable Low weight/inertia keeps motor size small Can be balanced for high speeds Lower torsional stiffness than multibeam		Aluminum	3mm to 26mm (1/8" – 3/4")	30 (266)		*set screw *clamp collar
Multi-Beam (Three-Six) 	**0**	**M**	**M**	**No**	*Backlash free life requirement is beyond capacity of Oldham/Unilat *Speeds higher than 3000 revolutions / minute *Continuous duty or duty cycle>50% *A coupling with axial compliance is required to protect bearings from thrust load *there is little risk of alignment errors exceeding limits during initial install	*Extremely versatile and customisable, can be made in almost any machineable material *Use with caution if low bearing loads are desired *Not recommended for closed-loop servo systems because of risk of resonance	Flexible mechanism to compensate for radial and angular misalignment One piece construction 3-Beam provide lower torsional stiffness, short length but accommodates lower degree of angular misalignment (3-5 deg) 6-Beam provide more torsional stiffness and longer length, but offers higher degree of parallel misalignment (3-7 deg)		Aluminum 3-Beam	1 mm to 14mm (1/16" – 1/2")	6 (53)	238 (2106)	set screw &clamp
									Stainless Steel 3-Beam	1 mm to 14mm (1/16" – 1/2")	10 (88)	378 (3346)	set screw &clamp
									Aluminum 6-Beam	2 mm to 38mm (3/32" – 1 3/8")	75(663)	1125 (9957)	clamp, clamp collar
									Stainless Steel 6-Beam	2 mm to 38mm (3/32" – 1 3/8")	140 (1239)	2340 (20711)	clamp, clamp collar
Step Beam 		**M**	**M**	**Yes (plastic versions)**	Provides higher torsional stiffness and operating torque capability than multibeam or single beam	- Plastic, Aluminum or Stainless Steel	Flexible mechanism to compensate for radial and angular misalignment.		Couplings -Nylon type engineering polymer Fasteners - SS	3mm to 12.7mm (1/8" – 1/2")	25 (221)	18 (159)	*set screw&clamp
Flex M Disc 	**S=0 2=M**	**H**	**L**	**No**	*Torsional Stiffness and positioning accuracy is critical *Backlash free life requirement is beyond capacity of Oldham/Unilat *Speeds higher than 3000 revolutions / minute *Continuous duty or duty cycle>50% *A coupling with axial compliance is required to protect bearings from thrust load	The ideal choice for applications where high rotational speed and a high level of motion integrity are required such as high precision open/closed loop servo applications *Highest Speed Capacity (30,000 RPM) *Virtually infinite life with no wear or maintenance	High Torsional stiffness for precise positioning accuracy Low Applied bearing loads Low weight / inertia Single stage versions for angular misalignment only Two stage or extended versions for parallel misalignment.	**Closed Loop Servo Applications** Machine Tool Robots Centrifuges Turbines Scanners Dynamometers	Aluminium **Single Stage**	3mm to 38mm (1/8" – 1 1/8")	100 (909)	19,000 (168,163)	*set screw *clamp collar
									Aluminium **Two Stage**	3mm to 26mm (1/8" – 1 1/8")	60 (530)	19,000 (168,163)	*set screw *clamp collar
									Aluminum Spacer	3mm to 38mm (1/8" – 1 1/8")	100 (909)	19,000 (168,163)	*set screw *clamp collar
Flex B Bellows 	**S=0 2=M**	**H**	**S=L 2=H**	**No**	*Torsional Stiffness positioning accuracy is critical *Backlash free life requirement is beyond capacity of Oldham/Unilat *Speeds higher than 3000 revolutions / minute *Continuous duty or duty cycle>50% *A coupling with axial compliance is required to protect bearings from thrust load	High torsional stiffness enable it to be used in any drive system where high levels of motion integrity are essential *Bellows coupling gives best torsional stiffness available and lowest bearing loads *Virtually infinite life with no wear or maintenance	High Torsional stiffness for precise positioning accuracy Low weight / Inertia Single stage versions for angular misalignment only Two stage or extended versions for parallel misalignment.	**Closed Loop Servo Applications:** Encoders	Hub: AL Bellows: SS **SHORT**	3mm to 20mm (1/8" – 3/4")	10 (88)	2880 (25490)	*set screw *clamp collar
									Hub: AL Bellows: SS **LONG**	3mm to 20mm (1/8" – 3/4")	5 (44)	1310 (11594)	*set screw *clamp collar
									Hub: AL Bellows: SS **STRETCHED**	3mm to 20mm (1/8" – 3/4")	12.5 (110)	2245 (19870)	*set screw *clamp collar
Flex K Large Bellows 	**S=0 2=M**	**H**	**S=L 2=H**	**No**	*Torsional Stiffness is critical *Backlash free life requirement is beyond capacity of Oldham/Unilat *Speeds higher than 3000 revolutions / minute *continuous duty or duty cycle>50% *A coupling with axial compliance is required to protect bearings from thrust load	*Size for Size with Flex M Disc, it offers the highest torsional torsional stiffness *Provides a high level of translation accuracy * lowest bearing loads	Highest Torsional stiffness for precise positioning accuracy Two stage with two convolutions gives higher torsional stiffness	**Closed Loop Servo Applications:** Encoders **Two stage - High precision, high resolution applications such as main axis drives in closed loop and position control systems:** encoders tachogenerators resolvers	Hubs: AL and ALEco Bellows: SS Fasteners: Alloy steel, black oiled	16mm to 65mm (1/2" – 2.5")	500 (4,425)	320000	*Clamp

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