



# Drive Couplings

- Flexible Double Loop
- Flexible Jaw (Spider)
- Nylon Sleeve Gear Coupling

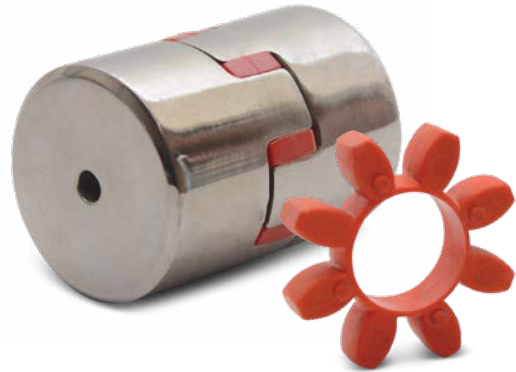
**General purpose couplings for light power drives.**



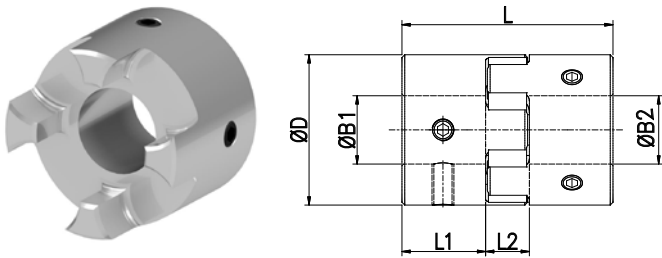
## Flexible Jaw Coupling

Huco Flexible Jaw Couplings utilise the flexibility and resilience of a polyurethane element between aluminium hubs. This combination allows high torque to be transmitted with little or no backlash, even where there is significant angular and/or parallel misalignment.

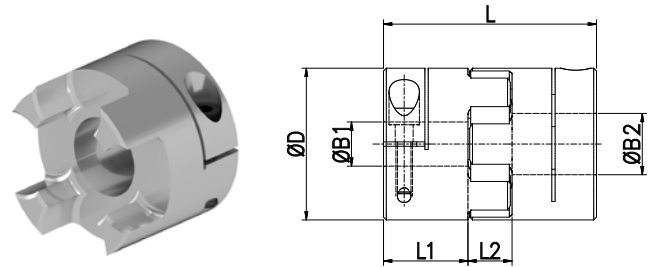
- Zero / Low backlash
- Rated up to 7200Nm Torque
- Choice of 4 polyurethane elements



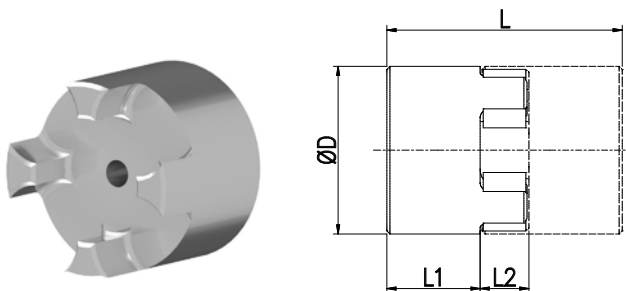
### Set Screw Hubs



### Thro' Clamp Hubs

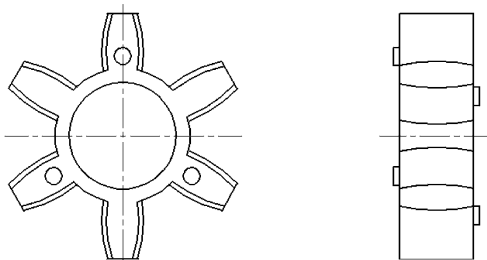


### Pilot Hubs



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.

### Elements



Polyurethane elements are available with three hardness levels; hard, standard and soft which exhibit different operating characteristics. Other features of polyurethane are:

- Resistance to oils, grease and many solvents
- Good atmospheric and chemical resistance
- Excellent shock and vibration damping

## Aluminium Flexible Jaw Coupling

### DIMENSIONS & ORDER CODES

Coupling Size	Set Screw Hubs	Clamping Style	Pilot Hub	ØD mm	L mm	L1 mm	L2 mm	ØB1 min mm	ØB1 max mm	Fasteners			Industry Reference Size	Moment of inertia kgm <sup>2</sup> x 10 <sup>-8</sup>	Mass kg x 10 <sup>-3</sup>	Soft (Blue)	Med (White)	Hard (Red)	Hi Temp (Green)
										Screw	Torque Nm	Wrench mm							
COUPLING REF										ELEMENT REF									
14	802.14	803.14	800.14	14.0	22.0	7.0	8.0	3.0	6.35	M3	0.9	1.5	7	18.4	7	804.14	805.14	806.14	-
	M2.5									1.3	2.5								
20	802.20	803.20	800.20	20.0	30.0	10.0	10.0	4.0	9.0	M3	0.9	1.5	9	106	17	804.20	805.20	806.20	-
	M3									2.4	2.5								
30	802.30	803.30	800.30	30.0	35.0	11.0	13.0	6.0	14.0	M4	2.2	2.0	14	606	51	804.30	805.30	806.30	-
	M3									2.4	2.5								
40	802.40	803.40	800.40	40.0	66.0	25.0	16.0	8.0	16.0	M5	4.6	2.5	19/24	4230	108	804.40	805.40	806.40	810.40
	M4									5.6	3.0								
55	802.55	803.55	800.55	55.0	75.4	29.5	16.4	10.0	30.0	M8	18.0	4.0	24/32	19000	311	804.55	805.55	806.55	810.55
	M6									46.0	6.0								
65	802.65	803.65	800.65	64.8	89.7	35.6	18.5	12.0	32.0	M8	18.0	4.0	28/38	59000	543	804.65	805.65	806.65	810.65
	M8									46.0	6.0								
80	802.80	803.80	800.80	80.0	114.3	45.1	24.1	16.0	45.0	M8	18.0	4.0	38/45	80000	892	804.80	805.80	806.80	810.80
	M8									46.0	6.0								
95	-	-	800.95	95.0	127.0	50.8	25.9	16.0	55.0	-	-	-	42/55	433800	2130	804.95	805.95	806.95	810.95
105	-	-	800.105	105.0	140.0	57.7	27.9	16.0	59.0	-	-	-	48/60	742600	2918	-	805.105	806.105	810.105

### PERFORMANCE (AT 20°C)

Coupling Size	Spider Rigidity Duo ⑦	Misalignment		Speed R.P.M Nm	Torsional ⑤		Backlash Free Torque Nm	Torque Nominal Nm ④	Torque Max Nm	KW @ 1800 RPM
		Angular deg	Radial mm		Rate deg/Nm	Stiffness Nm/rad				
14	80 Blue	2	0.10	40000	6.7	8.5	0.22	0.67	1.34	0.1
	92 White				3.9	14.7		1.12	2.24	0.2
	98 Red				2.29	25		1.90	3.80	0.4
20	80 Blue	2	0.15	28000	3.37	17	0.45	1.80	3.60	0.4
	92 White				2.05	28		2.93	6.00	0.6
	98 Red				1.22	47		4.85	9.70	1.0
30	80 Blue	2	0.20	19000	1.24	71	1.00	3.95	7.90	0.7
	92 White				0.40	143		7.33	14.60	1.4
	98 Red				0.25	228		12.40	24.80	2.4
40	80 Blue	2	0.38	14000	0.34	170	2.40	4.85	9.70	0.9
	92 White				0.17	344		9.80	19.60	1.9
	98 Red				0.10	573		16.70	33.40	3.3
55	64 Green	0.9	0.22	10600	0.08	716	4.25	20.90	41.80	4.0
	80 Blue				0.063	904		17.6	34.0	3.2
	92 White				0.027	2147		33.8	68.9	6.4
65	98 Red	0.9	0.25	8500	0.015	3729	11.5	55.8	119.0	11.2
	64 Green				0.012	4661		74.6	149.1	14.2
	80 Blue				0.025	2260		45.9	91.9	9.0
80	98 Red	1.0	0.28	7100	0.011	5198	23	94.9	189.0	18.0
	64 Green				0.006	9492		159.0	319.0	30.0
	80 Blue				0.005	11865		200.0	400.0	38.0
95	98 Red	1.0	0.30	6000	0.014	4068	32.5	92.9	184	17.9
	64 Green				0.006	9944		189	379	35.8
	80 Blue				0.002	29041		324	649	61.2
105	98 Red	1.1	0.40	5600	0.0016	36300	38	405	810	76.1
	64 Green				0.0098	5825		130	260	24.6
	80 Blue				0.0040	14250		264	530	50.0
	98 Red				0.0013	44500		450	899	85.0
	64 Green				0.0010	55625		560	1120	105.9
	92 White				0.0035	16500		310	616	58.2
	98 Red				0.0010	57500		524	1050	99.2
	64 Green				0.0008	71875		655	1309	123.8

- ① Maximum permissible hub penetration
- ② Maximum recommended tightening torque
- ③ Values apply to complete couplings with max. bores
- ④ Nominal Torque. Select a size where Nominal Torque exceeds application torque x service factor (**see page 4**)
- ⑤ Values apply at 50% nominal torque, measured shaft to shaft with largest standard bores
- ⑥ Hubs can be provided with keyways or 'D' bores
- ⑦ Spider Durometer is shore 'A' hardness (810 Type is shore 'D' hardness)

### STANDARD BORES

ØB1, ØB2 +0.03mm/-0mm (+0.0012/ -0)																
Coupling Size	3	(1/8")	4	(3/16")	5	6	(1/4")	8	(3/8")	10	12	(1/2")	14	15	(5/8")	16
14	•	•	•	•	•	•	•	•								
20			•	•	•	•	•	•								
30					•	•	•	•	•	•	•	•	•			
40								•	•	•	•	•	•	•	•	•
55 - 80	-----MANUFACTURED TO ORDER ONLY. PLEASE ENQUIRE-----															
Bore ref.	14	16	18	19	20	22	24	28	31	32	35	36	38	40	41	42

### Materials & Finishes

**Hub sizes 14 - 30:** Al. Alloy 6026LF or L168  
**Hub sizes 40 - 105:** Al Alloy L168 or Cast Aluminium LM9  
**Elements:** Polyurethane  
**Fastener:** Alloy steel, black oiled

### Temperature Range

-40°C to +80°C (810 Type: -34°C to 110°C)  
 For short durations up to 100°C (810 Type: 130°C)

## Steel Flexible Jaw Coupling

### DIMENSIONS & ORDER CODES

Coupling Size	Pilot Hub	ØD	L	L1	L2	Pilot Bore Dia	ØB1 Min	ØB1 Max <sup>⑥</sup>	Moment of inertia kgm <sup>2</sup> x 10 <sup>-8</sup> <sup>③</sup>	Industry Reference Size	Mass kg x 10 <sup>-3</sup> <sup>③</sup>	Soft (Blue)	Med (White)	Hard (Red)	Hi Temp (Green)	ELEMENT REF	
																(Recommended)	
40	800.40.00ST	39.8	66.0	25.0	16.0	-	8.0	16.0	26800	19/24	0.49	804.40	805.40	806.40	810.40		
55	800.55.00ST	55.0	75.4	29.5	16.4	-	10.0	30.0	95300	24/32	1.12	804.55	805.55	806.55	810.55		
65	800.65.00ST	64.8	89.7	35.6	18.5	-	12.0	32.0	206600	28/38	1.74	804.65	805.65	806.65	810.65		
80	800.80.00ST	80.0	114.3	45.1	24.1	11.1	16.0	45.0	629200	38/45	3.77	804.80	805.80	806.80	810.80		
95	800.95.00ST	95.0	127.0	50.8	25.9	12.2	16.0	55.0	1254900	42/55	5.97	804.95	805.95	806.95	810.95		
105	800.105.00ST	105.0	140.0	57.7	27.9	12.2	16.0	59.0	2147200	48/60	8.25	-	805.105	806.105	810.105		
120	800.120.00ST	120.1	160.0	65.0	30.0	15.9	20.0	70.0	4100000	55/70	12.28	-	805.120	806.120	810.120		
135	800.135.00ST	135.1	184.9	74.9	35.1	24.9	30.0	74.0	7840000	65/75	17.77	-	805.135	806.135	-		
160	800.160.00ST	160.0	210.1	85.6	40.1	24.9	30.0	89.0	42945000	75/90	27.70	-	805.160	806.160	-		
200	800.200.00ST	200.1	245.1	100.1	45.0	37.6	40.0	100.0	160460000	100/110	51.36	-	805.200	806.200	-		

### PERFORMANCE (AT 20°C)

Coupling Size	Spider Rigidity Duo <sup>⑦</sup>	Misalignment		Speed R.P.M Nm	Torsional <sup>⑤</sup>		Backlash Free Torque Nm	Torque Nominal Nm <sup>④</sup>	Torque Max Nm	KW @ 1800 RPM
		Angular deg	Radial mm		Rate deg/Nm	Stiffness Nm/rad				
40	80 Blue	2	0.38	14000	0.34	170	2.40	4.85	9.70	0.9
	92 White				0.17	344		9.80	19.60	1.9
	98 Red				0.10	573		16.70	33.40	3.3
	64 Green				0.08	716		20.90	41.80	4.0
55	80 Blue	0.9	0.22	10600	0.063	904	4.25	17.6	34.0	3.2
	92 White				0.027	2147		33.8	68.9	6.4
	98 Red				0.015	3729		55.8	119.0	11.2
	64 Green				0.012	4661		74.6	149.1	14.2
65	80 Blue	0.9	0.25	8500	0.025	2260	11.5	45.9	91.9	9.0
	92 White				0.011	5198		94.9	189.0	18.0
	98 Red				0.006	9492		159.0	319.0	30.0
	64 Green				0.005	11865		200.0	400.0	38.0
80	80 Blue	1.0	0.28	7100	0.014	4068	23	93	184	17.9
	92 White				0.006	9944		189	379	35.8
	98 Red				0.002	29041		324	649	61.2
	64 Green				0.0016	36300		405	810	76.1
95	80 Blue	1.0	0.30	6000	0.0098	5825	32.5	130	260	24.6
	92 White				0.0040	14250		264	530	50.0
	98 Red				0.0013	44500		450	899	85.0
	64 Green				0.001	55625		560	1120	105.9
105	92 White	1.1	0.40	5600	0.0035	16500	38	310	616	58.2
	98 Red				0.0010	57500		524	1050	99.2
	64 Green				0.0008	71875		655	1309	123.8
	92 White				0.0028	20666		409	819	76.8
120	98 Red	1.1	0.4	4750	0.0007	77000	50	684	1369	129.1
	64 Green				0.0006	96250		824	1650	155.2
	92 White				0.0023	24830		625	1250	117.9
	98 Red				0.0006	96500		939	1879	176.8
135	92 White	1.2	0.4	4250	0.0018	31773	77	1279	2559	241.0
	98 Red				0.0004	129000		1920	3839	361.8
160	92 White	1.2	0.5	3550	0.0013	42882	157	2400	4800	452.8
	98 Red				0.0003	181000		3600	7199	678.9
200	92 White	1.2	0.5	3550	0.0013	42882	295	2400	4800	452.8
	98 Red				0.0003	181000		3600	7199	678.9

- ① Maximum permissible hub penetration
- ② Maximum recommended tightening torque
- ③ Values apply to complete couplings with max. bores
- ④ Nominal Torque. Select a size where Nominal Torque exceeds application torque x service factor (*see page 4*)
- ⑤ Values apply at 50% nominal torque, measured shaft to shaft with largest standard bores
- ⑥ Hubs can be provided with keyways or 'D' bores
- ⑦ Spider Durometer is shore 'A' hardness (810 Type is shore 'D' hardness)

### Materials & Finishes

**Hub sizes 40 - 65:** Sintered Steel  
**Hub size 80 - 200:** Steel 1045HR  
**Elements:** Polyurethane  
**Fastener:** Alloy steel, black oiled

### Temperature Range

-40°C to +80°C (810 Type: -34°C to 110°C)  
 For short durations up to 100°C (810 Type: 130°C)

## Flexible Jaw Coupling Selection Procedure

Drive shaft \_\_\_\_\_  
 Drive keyway \_\_\_\_\_  
 Driven shaft \_\_\_\_\_  
 Driven keyway \_\_\_\_\_

KW \_\_\_\_\_  
 RPM \_\_\_\_\_  
 Temperature \_\_\_\_\_  
 Starts/HR \_\_\_\_\_

**STEP 1:** Using the formula below calculate the nominal torque (Tn) of your application

$$T_n = (KW \times 9548) / RPM \text{ (Nm)}$$

**STEP 2:** Using the tables below select the service factors that best suit your application. After your selection calculate your service factor (S) by using the formula below.

$$S = S_1 \times S_2 \times S_3$$

**STEP 3:** Select a Guardian curved jaw coupling which has a nominal torque (Tkn) on page 2 equal to or greater than the nominal torque (Tn) value calculated in step 1 multiplied by the service factor (S) as shown below.

$$T_{kn} > T_n \times S$$

**STEP 4:** Verify the maximum permissible torque (Tkmax) which should be greater than or equal to the system peak torque (Stmax) multiplied by the temperature service factor (S2) as shown below.

$$T_{kmax} > S_{tmax} \times S_2$$

**STEP 5:** Verify the system speed is less than the maximum speed rating listed on page 2.

**STEP 6:** Verify the system misalignment with the rated misalignment of the coupling on page 4.

**STEP 7:** Verify min/max bore sizes of the selected coupling to the shaft sizes in your system. Also verify that dimensionally the coupling will fit in the envelop of the system.

### APPLICATION SERVICE FACTORS (S1)

Application	Service Factor (S1)
<b>Uniform operation (small driven masses)</b> i.e. Hydraulic pumps/motors, centrifugal fans	1.00
<b>Uniform operation (medium driven masses)</b> i.e. Axial piston pumps, mixers, blowers, conveyors, screw compressors	1.20
<b>Non-uniform operation (medium driven masses)</b> i.e. Shredders, generators, paper mills, conveyors, spinning machines, winches	1.50
<b>Non-uniform operation (medium driven masses with light stock)</b> i.e. Centrifuges, compression pumps, chain conveyors, concrete mixers, cable cars	1.60
<b>Non-uniform operation (heavy driven masses with large stock)</b> i.e. piston pumps, extruders, presses, rotary boring machines, hammer mills	1.80
<b>Non-uniform operation (heavy driven masses with extreme shock)</b> i.e. Reciprocating Compressors, Stone Crushers, Chippers	2.50

### TEMPERATURE SERVICE FACTORS (S2)

Temperature (C°)	-28.9/26.7	37.8	60	79.4
<b>Service Factor S2</b>	1.00	1.20	1.40	1.80

### STARTS PER HOUR SERVICE FACTORS (S3)

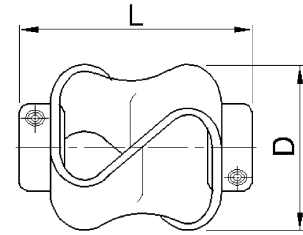
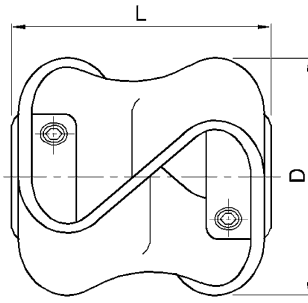
Starts/Hr	100	200	400	600
<b>Service Factor S3</b>	1.00	1.20	1.40	1.80

### DEFINITION OF TERMS

Term	Definition
<b>Tn</b>	Nominal torque of the system to be transmitted by the coupling
<b>HP</b>	Horsepower of the engine/motor
<b>RPM</b>	Driven speed of the application
<b>S</b>	Total service factor of the system
<b>S1</b>	Application service factor of the system
<b>S2</b>	Temperature service factor of the system
<b>S3</b>	Number of starts per hour service factor of the system
<b>Tkn</b>	Continuous nominal torque of the coupling
<b>Tkmax</b>	Maximum torque of the coupling
<b>Stmax</b>	Peak torque of the system to be transmitted by the coupling

These service factors are for general guidance only and are complimentary to customers knowledge of their own equipment. For further assistance in selecting a coupling please contact Huco.

## Double Loop Flexible Coupling



### DIMENSIONS & ORDER CODES

Size	Steel screws	Stainless steel screws	Dimensions					Fasteners		
	Order Code		Max Diameter mm	Length L +/- 1.0 mm	Bore length mm	Max Bores mm	Mass kg x 10-3	Size	Torque Nm	A/F mm
10	047.10	-	27	27	7.9	9.53	25	M3	0.9	1.5
	-	049.10							0.3	
20	047.20	-	48	48	12.7	12.7	92	M4	2.2	2.0
	-	049.20							2.0	
30	047.30	-	54	55	16.0	16.0	124	M5	4.6	2.5
	-	049.30							2.1	
40	047.40	-	56	56	16.0	16.0	136	M6	7.6	3.0
	-	049.40							3.7	

### PERFORMANCE

Size	Max Torque 1 Nm	Max Torque 2 Nm	max misalignment/displacement		
			Angular deg	Radial mm	Axial +/- mm
10	0.5	0.8	10	2.6	4.5
20	1.8	3	15	3.2	7.5
30	5	8	15	3.2	8.5
40	10	18	15	3.2	11

Torque 1 = torque at maximum displacement

Torque 2 = torque at 1 deg. angular, 2mm axial and 0.5mm radial displacement

### Materials & Finishes

**Hubs:** Stainless Steel 304 [1.4301] natural finish  
**Flexing Element:** Hytel  
**Fastener:** 047 Type: Alloy steel, black oiled  
 049 Type: Stainless steel

### Temperature Range

-40°C to +100°C

### Maximum Rotational Speed

3000 rev/min

### STANDARD BORES\*

Size	ØB1, ØB2 +0.05mm/-0mm (+0.002/-0)																
	3	(1/8")	4	(3/16")	5	6	(1/4")	(5/16")	8	(3/8")	10	12	(1/2")	14	15	(5/8")	16
10	●	●	●	●	●	●	●	●	●	●							
20						●	●	●	●	●	●	S	S				
30										●	●	●	●	S	S	S	S
40										●	●	●	●	S	S	S	S
<b>Bore Ref</b>	14	16	18	19	20	22	24	27	28	31	32	35	36	38	40	41	42

\* Couplings with dissimilar bores are non-standard

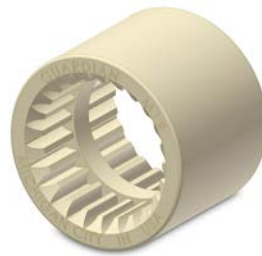
S = Plain bore only, keyway not permissible size 10

## Flexible Coupling

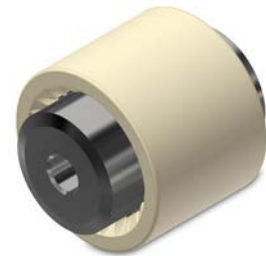
420 HUB



423 SLEEVE



425 TYPE



### COUPLING SELECTION

Size	Nominal Torque Nm	Max. Torque Nm	Kw H.P. @ 1750 RPM	Kw H.P. @ 1140 RPM	Max. RPM
14	9.7	30	1.86	1.11	14000
19	15.6	48	2.76	1.86	11800
24	19.5	60	3.35	2.38	10600
28	44	135	7.8	5.2	8500
32	58	180	10.8	7	7500
38	78	240	16.4	9.3	6700
42	98	300	17.8	11.9	6000
48	137	420	22	16.4	5600
65	372	1140	67	44	4000

1. Nominal torque ratings allow for 82°C ambient, full misalignment and/or maximum RPM.
2. Starting torque and braking loads should not exceed listed maximum torque.
3. Intermittent, transient peak loads should not exceed three times nominal torque.
4. Applications with uniform loading, well-aligned shafts, and low speeds will allow for operation at maximum torque levels.
5. Larger Sizes 80 and 100 available on request

### ORDER CODES

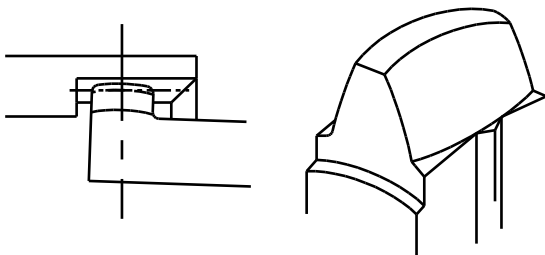
Pilot Hub Only	Sleeve Only	Complete Coupling Pilot Bores	Complete Coupling Finished Bores +0.03mm/-0mm
420.14040.00	423.14040	425.14040.0000	428.14040
420.19048.00	423.19048	425.19048.0000	428.19048
420.24052.00	423.24052	425.24052.0000	428.24052
420.28066.00	423.28066	425.28066.0000	428.28066
420.32076.00	423.32076	425.32076.0000	428.32076
420.38083.00	423.38083	425.38083.0000	428.38083
420.42092.00	423.42392	425.42092.0000	428.42092
420.48100.00	423.48100	425.48100.0000	428.48100
420.65140.00	423.65140	425.65140.0000	428.65140

\* See page 5 for bore codes

### Double Crowned Tooth Gear Coupling

Double crowned tooth design provides free axial movement, low friction and minimum stress during misalignment. Designs are available with up to 9.5mm axial travel.

- Large contact area to provide low contact pressure and to reduce stress of shaft misalignment.
- Load distributed near the center of the tooth for maximum strength.
- Low friction for a smooth flow of power without the need for lubrication — maintenance free.
- Free axial movement of the coupling parts to compensate for shaft thermal changes and future alignment problems.



### Nylon Sleeves, Steel Hubs

Molded nylon sleeve with high torsional stiffness, free from any internal frictional losses or heat build-up. A torsionally stiff coupling with minimum backlash.

Nylon and steel components allow high ambient temperature operation without lubrication or maintenance. Continuous operating ambients in the ranges between (-) 25°C and (+) 82°C. Heat stabilized polyamide available for temperatures up to (+) 121°C.

Nylon sleeves resistant to dirt, moisture, most chemicals and petroleum products. No lubrication, seals or retainers to maintain. Easy clean-up and visual inspection.

Compact and lightweight design with high torque and low inertia. Minimum shaft gap for close-coupled applications.

Precision molded concentric sleeve and hubs for high speed applications. No bolts, pins, flanges or protrusions to affect balance or safety. Smooth exterior surface.

### Blind Assembly

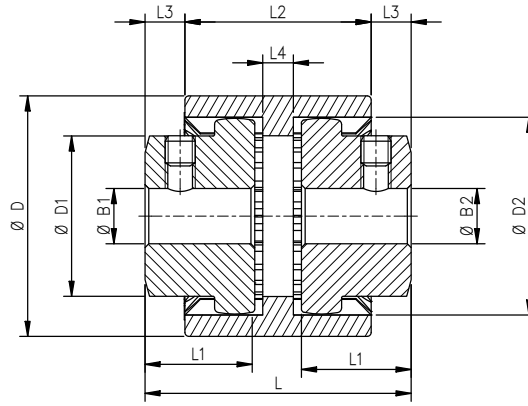
Suitable for assembly in both horizontal and vertical positions. Blind assembly with slip-together components for easy inspection and adjustment without disassembly.

**Directly interchangeable with a range of industry standard designs**

# Nylon Sleeve Gear

## Flexible Coupling

428 TYPE



## DIMENSIONS & PERFORMANCE

Size	D	L	D1	D2	L1	L2	L3	L4	Fastening			Pilot Bore Dia mm	Bores B1 & B2 mm			Mass kg x 10-3		No. of Teeth
									Fastener	Fastener Torque Nm	A/F		Min Bore	Max Plain Bore	Max Keyways Bore	Pilot Hub	Sleeve	
14	40.0	45.0	25.4	33.0	19.8	36.8	3.6	4.8	M5	4.6	2.5	4.6	5	16	16	74	22	20
19	48.3	49.8	51.8	28.9	21.8	36.8	6.4	7.1	M6	7.6	3.0	9.4	10	19	19	116	33	24
24	52.1	52.6	36.0	44.7	21.3	40.6	6.4	9.9	M6	7.6	3.0	9.4	10	24	22	156	33	28
28	65.5	80.5	50.0	53.8	35.6	45.7	17.5	9.4	M6	7.6	3.0	6.2	12	28	28	396	72	34
32	76.2	80.0	50.0	62.7	35.6	48.8	16.0	8.9	M8	18.0	4.0	11.6	12	30	30	519	95	40
38	82.6	80.0	58.4	68.6	35.6	48.3	16.5	8.9	M8	18.0	4.0	11.0	12	38	38	670	103	44
42	91.2	85.3	64.8	77.7	45.7	50.0	18.5	9.1	M8	18.0	4.0	11.0	12	40	40	900	124	50
48	98.6	99.3	67.8	77.7	70.1	49.0	30.5	7.9	M10	36.0	5.0	11.0	12	48	44	1391	177	50
65	142.0	140.0	96.5	110.0	90.0	92.9	35.1	12.2	M10	36.0	5.0	N/A	13	65	60	3996	462	42

**Assembly Notes:** 1. Dimension "L1" is fully compressed. For best misalignment characteristics, 1.6mm gap per hub is recommended.

## ALIGNMENT TOLERANCES

Axial Displacement	Angular Misalignment	Parallel Offset	Recommended Hub Spacer Gap
±1.0"	1°/hub	.4/hub	1.6/hub