UK Flowtechnik

Taper Grid Couplings

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Taper Grid Couplings

Horizontal Split Cover Type

- Best Choice for limited spaces
- Allows easy access to the grid spring
- Suitable for reversing applications
- Light weight, Die-cast aluminium cover

Vertical Split Cover Type

- Best choice for high operating speeds
- Allows easy access to the grid spring
- Steel cover for strength

UK Flowtechnik Tapered Grid Couplings are shaft-to-shaft couplings that are compact in size, yet can handle large torque capacity due to their high strength hardened steel construction. The tapered grids are designed with a trapezoidal cross section and are tempered for spring hardness. Through a high precision operation called shot peening, the surface molecules are compressed by high velocity steel micro beads. The compression of the molecules results in dramatic increase in strength rating which provides a longer life time of the parts.

The tapered grids are accessible through the unit's removable cover. Due to their compact size, the tapered grids can simply be placed directly in the slots of the hub, making it a simple and easy process during the installation. There is no need for the equipment to be moved reducing the coupling installation downtime for the user. Finally, the practical split cover can be placed using standard tools.

Protection Against Shaft Misalignment

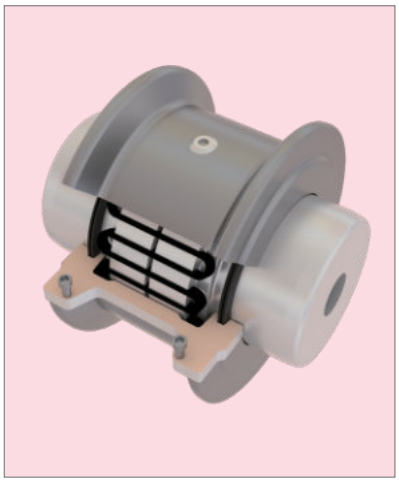
The tapered grids are free to rock, pivot and float within the hub teeth. This provides generous capacity for misalignment without producing the detrimental side loads on the bearings that are often created when the couplings are misaligned.

Protection Against Shock & Vibratory loads

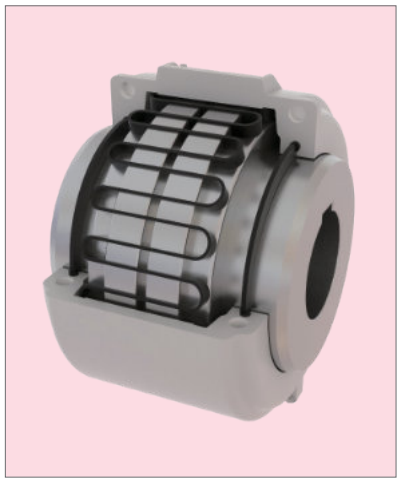
UK Flowtechnik Tapered Grid Couplings are able to deflect torsionally when subjected to normal shock or vibratory loads, so they are able to handle changing load conditions. The couplings are designed to be shock absorber for rotary motion, relying on the predictable resilience of the grid for torsional flexibility. The tapered grids "tune" the drive system. Due to their spring hardness, the grids absorb the impact by spreading the jolt energy over time. The grids can also dampen vibration and reduce the peak or shock loads experienced by the rest of the system.

Taper Grid Couplings are interchangeable with many of the industry standard products.

Taper Grid Coupling Types



T10 Type



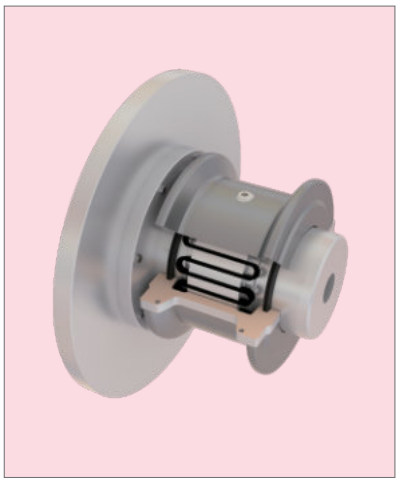
T10 Type (Large)

T20 Type

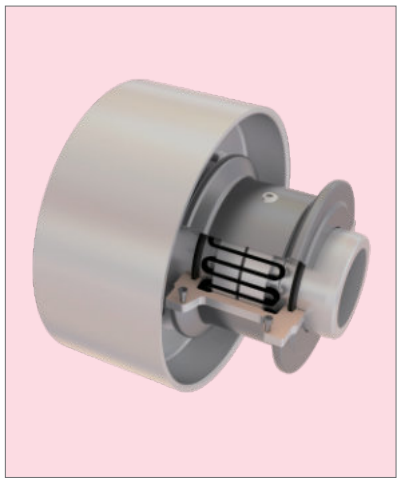
T31 Type (Full Spacer)

T35 Type (Half Spacer)

T50 Type (Floating Shaft)



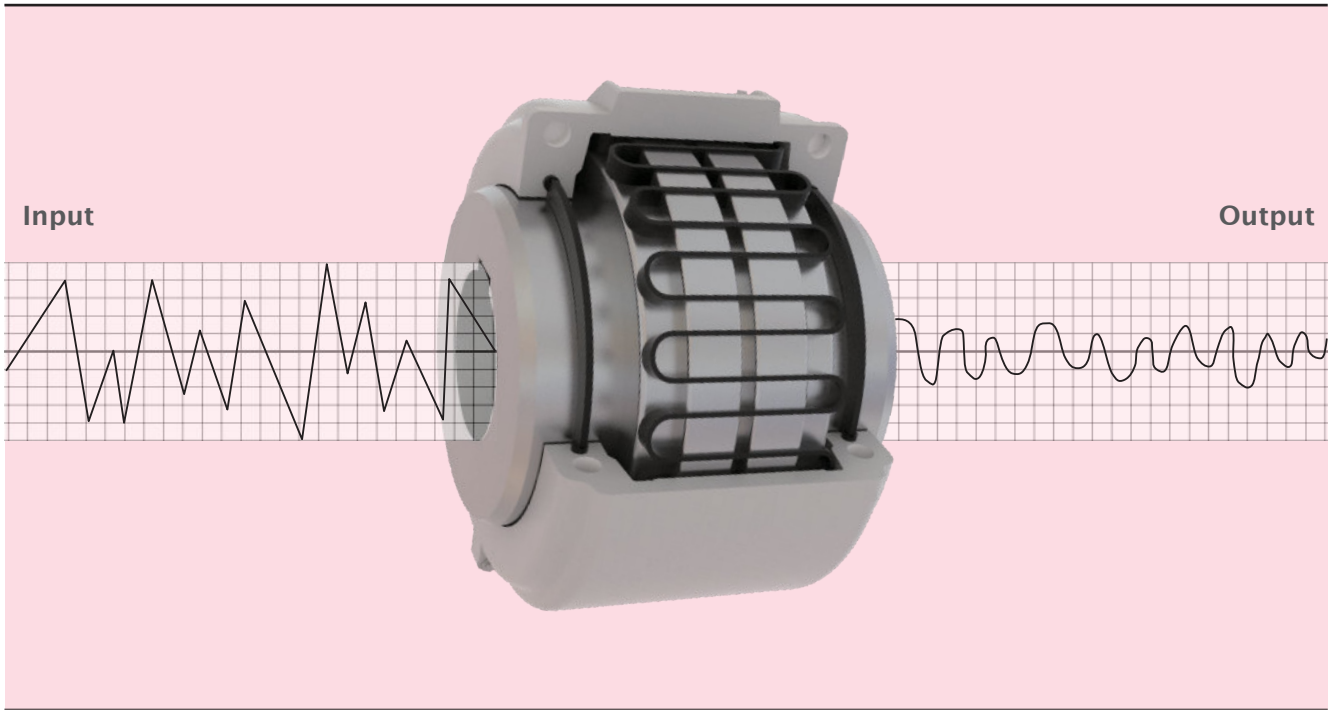
T63 Type

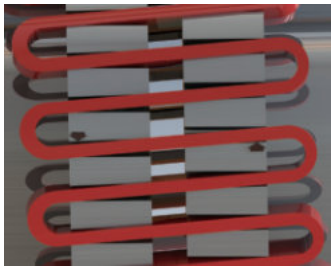


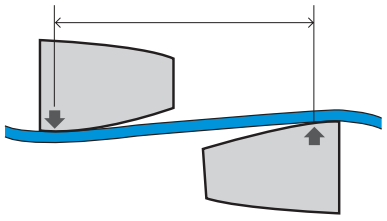
KBW Type

T10 & G82 Type (Floating Shaft)

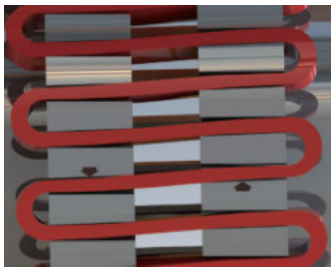
Vibration & Shock

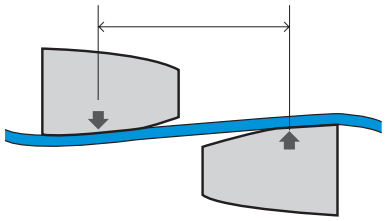




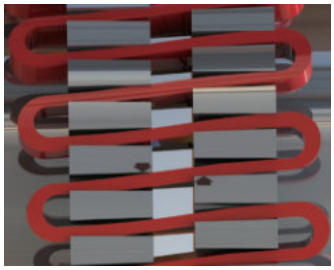


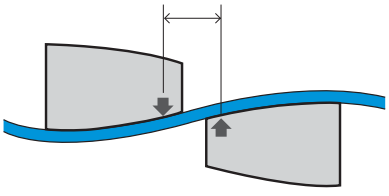
Light Load
The grid contacts near the outer edges of the hub teeth. A long span between the points of contact remains free to flex under load.





Normal Load
As the load increases, the distance between the contact points on the hub teeth is shortened, but a free span still remains to cushion the load.

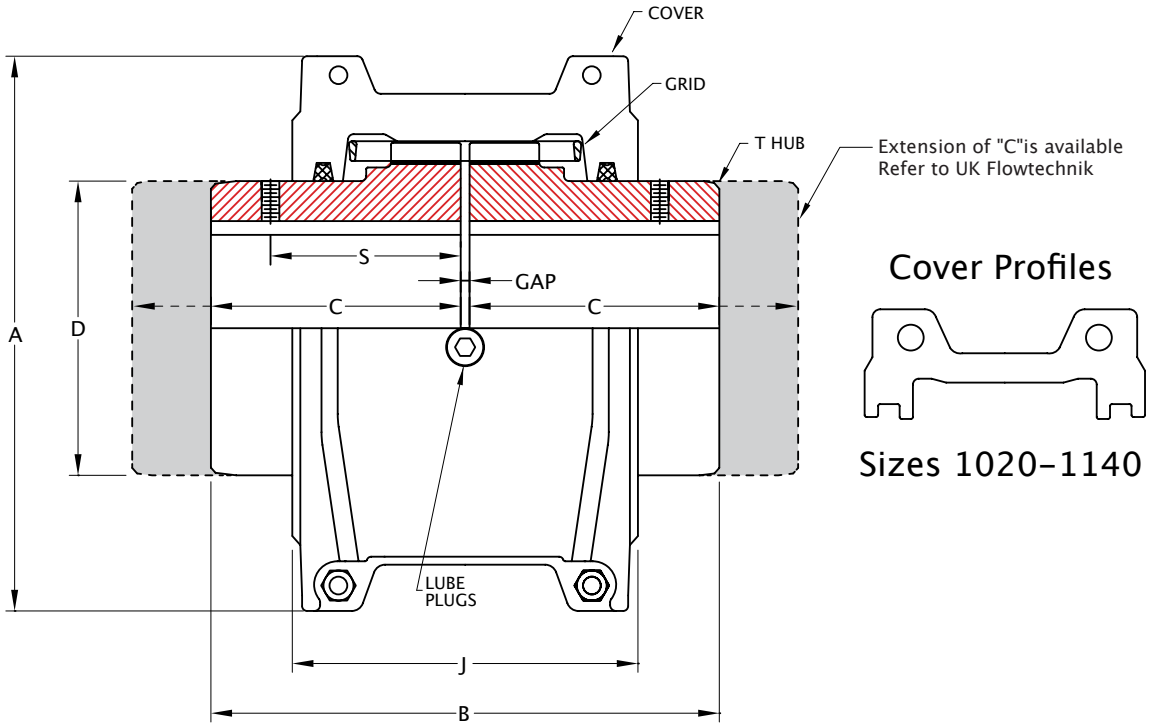




Shock Load
The coupling is flexible within its rated capacity. Under extreme overloads, the grid bears fully on the hub teeth and transmits full load directly.

T10 Type

Close Coupled
Horizontal Split Aluminium Cover

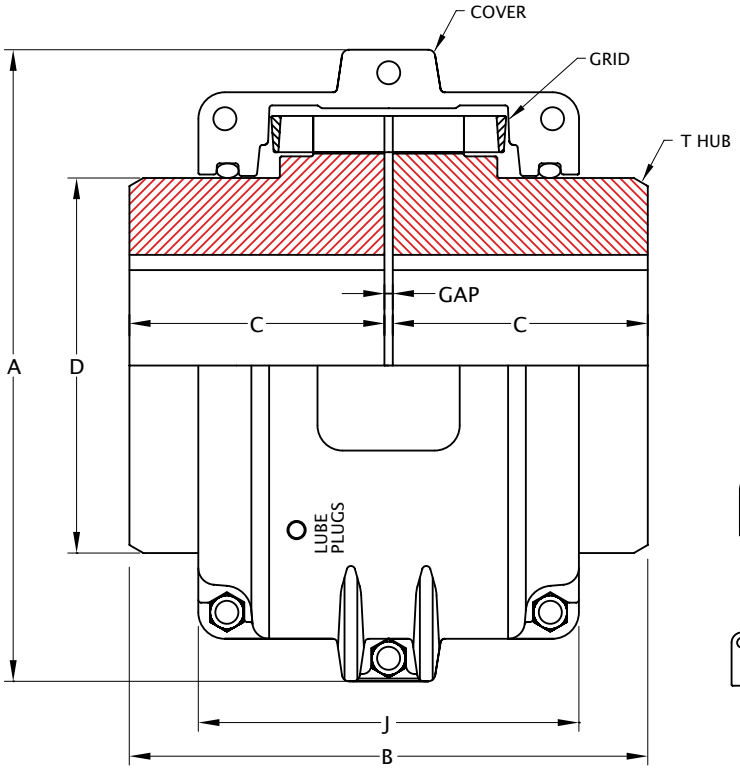


Size	Torque Rating (Nm)	Allow Speed RPM	Max Bore (mm)	Min Bore (mm)	Cplg Weight (Kg)	Lube Weight (Kg)	Dimensions (Millimeters)						
							A	B	C	D	J	S	GAP
1020	52	4,500	28	13	1.92	0.0272	101.0	98.2	47.6	39.7	67.8	39.1	3
1030	149	4,500	35	13	2.58	0.0408	109.0	98.2	47.6	49.2	71.9	39.1	3
1040	249	4,500	43	13	3.34	0.0544	116.0	104.6	50.8	57.2	72.0	40.1	3
1050	435	4,500	50	13	5.44	0.0680	137.8	123.6	60.3	66.7	81.6	44.7	3
1060	684	4,350	56	20	7.44	0.0862	147.0	130.0	63.5	76.2	97.9	52.3	3
1070	994	4,125	67	20	10.40	0.113	162.2	155.4	76.2	87.3	99.2	53.8	3
1080	2,050	3,600	80	27	17.90	0.172	193.0	180.8	88.9	104.8	118.4	64.5	3
1090	3,730	3,600	95	27	25.60	0.254	212.0	199.8	98.4	123.8	127.4	71.6	3
1100	6,280	2,440	110	42	42.00	0.426	250.7	246.2	120.6	142.1	156.6	-	5
1110	9,320	2,250	120	42	54.30	0.508	270.0	259.0	127.0	160.3	162.6	-	5
1120	13,700	2,025	140	61	81.20	0.735	306.4	304.4	149.2	179.4	191.7	-	6
1130	19,900	1,800	170	67	121.00	0.907	343.8	329.8	161.9	217.5	195.5	-	6
1140	28,600	1,650	200	67	178.00	1.130	383.8	374.4	184.2	254.0	201.7	-	6

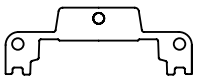
* Coupling Weight is without Bore Machining

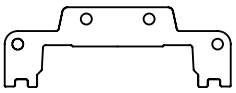
T10 Type (Large)

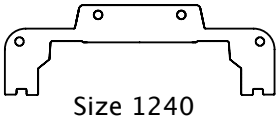
Close Coupled
Horizontal Split Aluminium Cover

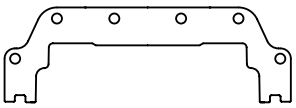


Cover Profiles


Size 1200


Sizes 1210-1230


Size 1240

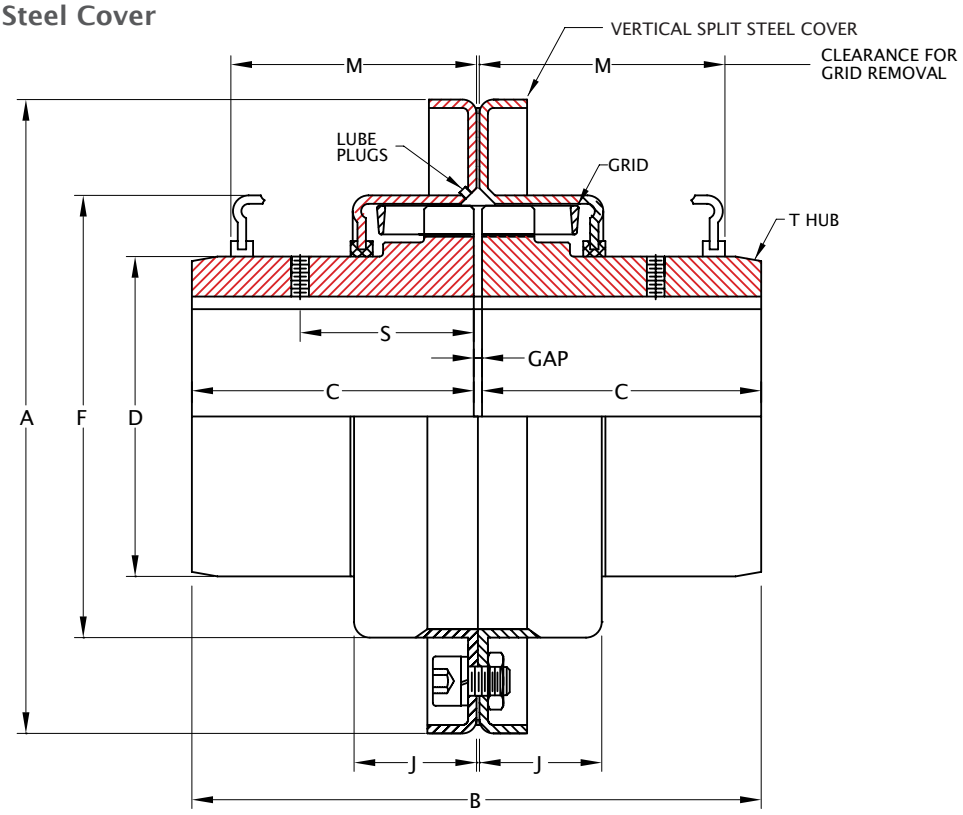

Sizes 1250-1260

Size	Torque Rating (Nm)	Allow Speed RPM	Max Bore (mm)	Min Bore (mm)	Cplg Weight (Kg)	Lube Weight (Kg)	Dimensions (Millimeters)					
							A	B	C	D	J	GAP
1150	39,800	1,500	215	108	234	1.95	453.1	371.8	182.9	269.2	271.5	6
1160	55,900	1,350	240	121	317	2.81	501.9	402.2	198.1	304.8	278.4	6
1170	74,600	1,225	280	134	448	3.49	566.9	437.8	215.9	355.6	307.3	6
1180	103,000	1,100	300	153	619	3.76	629.9	483.6	238.8	393.7	321.1	6
1190	137,000	1,050	335	153	776	4.40	675.6	524.2	259.1	436.9	325.1	6
1200	186,000	900	360	178	1058	5.62	756.9	564.8	279.4	497.8	355.6	6
1210	249,000	820	390	178	1424	10.50	844.6	622.6	304.8	533.4	431.8	13
1220	336,000	730	420	203	1785	16.10	920.8	663.2	325.1	571.5	490.2	13
1230	435,000	680	450	203	2267	24.00	1,003.3	703.8	345.4	609.6	546.1	13
1240	559,000	630	480	254	2950	33.80	1,087.1	749.6	368.3	647.7	647.7	13
1250	746,000	580	-	254	3833	50.10	1,181.1	815.6	401.3	711.2	698.5	13
1260	932,000	540	-	254	4682	67.20	1,260.9	876.6	431.8	762.0	762.0	13

* Coupling Weight is without Bore Machining

T20 Type

Close Coupled
Vertical Split Steel Cover



Size	Torque Rating (Nm)	Allow Speed RPM	Max Bore (mm)	Min Bore (mm)	Cplg Weight (Kg)	Lube Weight (Kg)	Dimensions (Millimeters)							
							A	B	C	D	F	J	M	GAP
1020	52	6,000	28	13	1.94	0.0272	112.3	98.2	47.6	39.7	64.3	23.9	47.8	3
1030	149	6,000	35	13	2.58	0.0408	121.8	98.2	47.6	49.2	73.8	24.9	47.8	3
1040	249	6,000	43	13	3.35	0.0544	129.8	104.6	50.8	57.2	81.8	25.9	50.8	3
1050	435	6,000	50	13	5.32	0.0680	148.8	123.6	60.3	66.7	97.6	30.5	60.5	3
1060	684	6,000	56	20	7.01	0.0862	163.1	130.0	63.5	76.2	111.1	31.8	63.5	3
1070	994	5,500	67	20	10.20	0.1130	174.2	155.4	76.2	87.3	122.3	33.5	66.5	3
1080	2,050	4,750	80	27	17.60	0.1720	201.2	180.8	88.9	104.8	149.2	43.7	88.9	3
1090	3,730	4,000	95	27	25.40	0.2540	232.9	199.8	98.4	123.8	168.3	47.0	95.2	3
1100	6,280	3,600	110	42	42.00	0.4260	267.9	246.2	120.6	142.1	198.0	59.7	120.7	5
1110	9,320	3,000	120	42	54.40	0.5080	286.9	259.0	127.0	160.3	216.3	62.7	124.0	5
1120	13,700	2,700	140	61	81.80	0.7350	320.2	304.4	149.2	179.4	245.5	73.7	142.7	6
1130	19,900	2,400	170	67	122.00	0.9070	379.0	329.8	161.9	217.5	283.8	74.9	146.0	6
1140	28,600	2,200	200	67	180.00	1.1300	417.1	374.4	184.2	254.0	321.9	78.2	155.4	6
1150	39,800	2,000	215	108	230.00	1.9500	476.2	371.8	182.9	269.2	374.4	107.3	203.2	6
1160	55,900	1,750	240	121	321.00	2.8100	533.4	402.2	198.1	304.8	423.9	115.3	215.9	6
1170	74,600	1,600	280	134	448.00	3.4900	584.2	437.8	215.9	355.6	474.7	120.1	226.1	6
1180	103,000	1,400	300	153	591.00	3.7600	630.0	483.6	238.8	393.7	546.0	130.0	–	6
1190	137,000	1,300	335	153	761.00	4.4000	685.0	524.2	259.1	436.9	589.0	135.0	–	6
1200	186,000	1,100	360	178	1021.00	5.6200	737.0	564.8	279.4	497.8	652.0	145.0	–	6

* Coupling Weight is without Bore Machining

Lubrication

Grease Lubrication

Grease on the Grid & Hub teeth before assembling the cover.

Fill up the grease through the lubrication plug of the assembled coupling.

Selection

Select the grease according to the ambient temperature range.

Supplement

Every three months or 240~250 operating hours, the grease must be replenished.

Replacement

Every three years or 4,000 operating hours, the deteriorated grease must be completely removed and replaced.

Recommended Industrial Lubricants (NYGL Grade#2)

NO	Manufactruer	Ambient Temperature Range	
		-18˚c ~ 66˚c	-34˚c ~ 38˚c
		(0˚F ~ 150˚F)	(-30˚F ~ 100˚F)
1	Amoco Oil Co.	Amolth Grease #2	Amolith Grease #2
2	Atlantic Richfield Co.	Litholene HEP 2	Litholene HEP 2
3	Chevron U.S.A Inc.	Chevron Dura-Lith EP-2	Chevron Dura-Lith EP-2
4	Cities Service Co.	Citgo HEP-2	Citgo HEP-2
5	Conoco Inc.	EP Conolith #2	EP Conolith #2
6	Exxon Company, U.S.A	Ronex MP	Ronex MP
7	Gulf Oil Corp.	Gulfcrown Grease #2	Gulfcrown Grease #2
8	E. F. Houghton & Co.	Cosmolbe #2	Cosmolbe #2
9	Impenrial Oil Ltd.	Esso MP Grease H	Lotemp EP
10	Keystone Div.(Pennwalt)	#81 Light	#84 Light
11	Mobil Oil Corp.	Mobilux EP111	Mobilux #1
12	Phillips Petroleum Co.	IB & RB Grease	Philub IB & RB Grease
13	Shell Oil Co.	Alvania Grease #2	Alvania Grease #2
14	Standard Oil Co.	Factran #2	Factran #2
15	Sun Oil Company	Prestige 42	Prestige 42
16	Texaco Lubricants	Starplex HD2	Multifac EP2
17	Union Oil Co.	Union Undoba #2	Union Undoba #2
18	Valvoline Oil Co.	Val-Lith EP #2	Val-Lith EP #2

* In feed processing industry. check with lubrication manufacturer for approved lubricants.

Installation Instructions

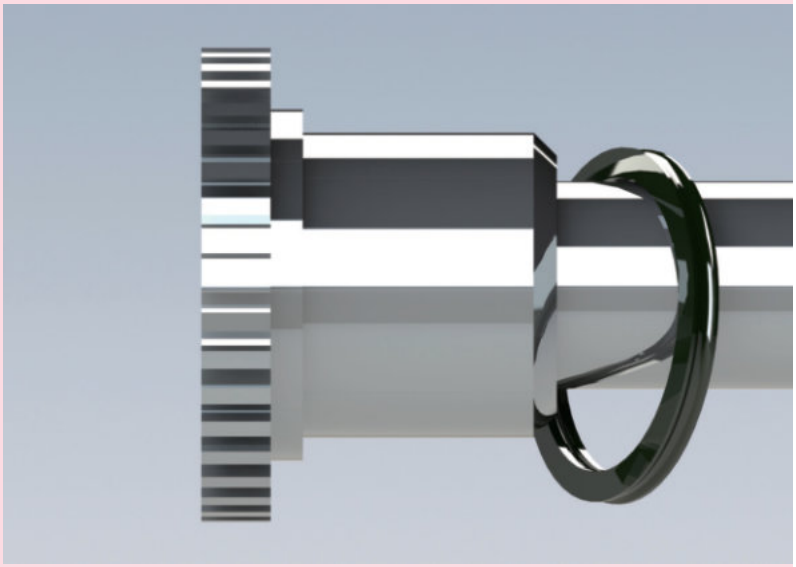
To enable you to install UK Flowtechnik Taper Grid Couplings, you require wrenches, a straight edge and feeler gauges. Taper Grid Coupling sizes from 1020 to 1090 are furnished for a clearance fit with a setscrew over the keyway. Larger sizes (from 1100 and up) are furnished for an interference fit without a setscrew

Clearance Fit Hubs : Clean all parts using a non-flammable solvent. Check hubs, shafts and key ways for burrs, dirt and debris. Install the keys. Mount hubs with the flange face flush with shaft ends (or as otherwise specified). Tighten setscrews. Do not heat clearance fit hubs.

Interference Fit Hubs : Furnished without setscrews.

1) Mount Seals and Hubs

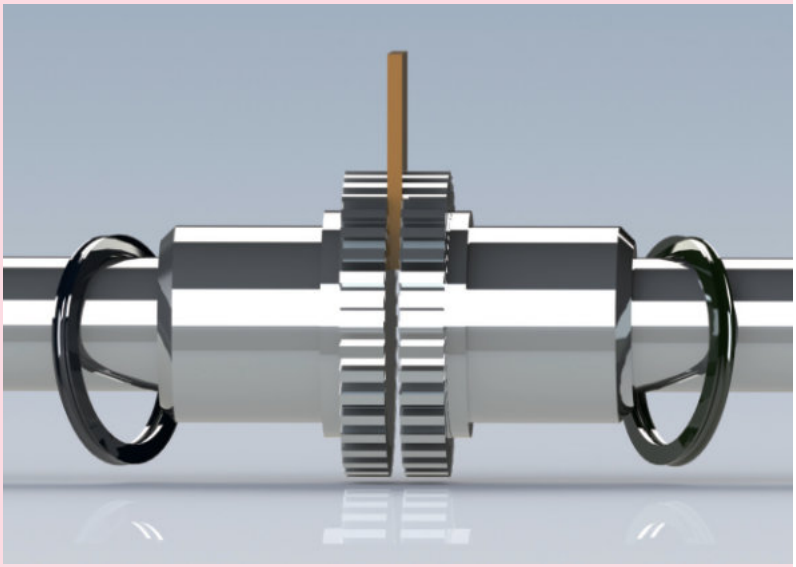
Turn off the starting switch of the prime mover(s). Clean the metal parts using a non-flammable solvent. Lightly coat seals with grease and place on to the shafts before mounting the hubs. Heat the interference fit hubs only. Seal the keyways to prevent leakage. Mount the hubs on their comparable shafts so that the hub face is flush with the end of the shaft (unless otherwise specified).



2) Gap and Alignment

Use a spacer bar equal in thickness to the gap between the shafts, for recommended dimensions see Page 12. Insert the bar and the same depth at 90° intervals and measure the clearance between the bar and hub face with feelers.

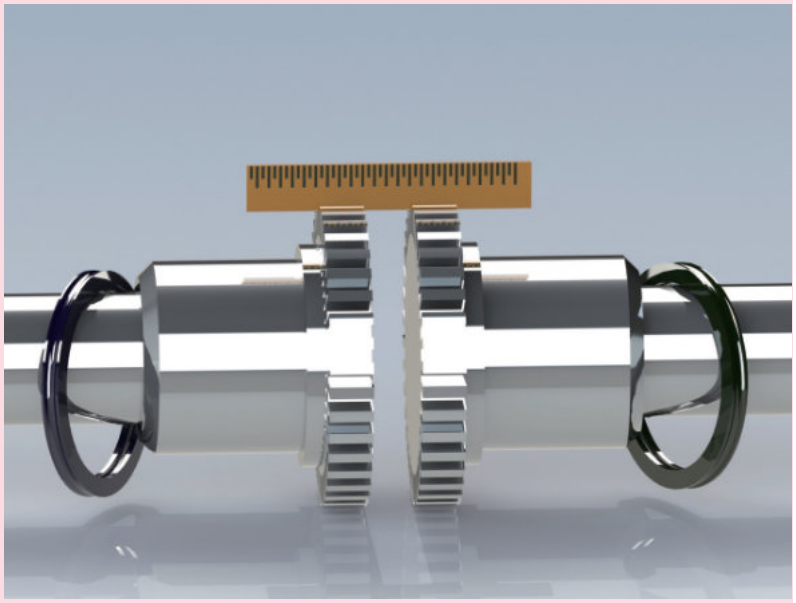
The difference in the minimum and maximum measurements must not exceed the angular installation limits (Page 12)



Installation Instructions

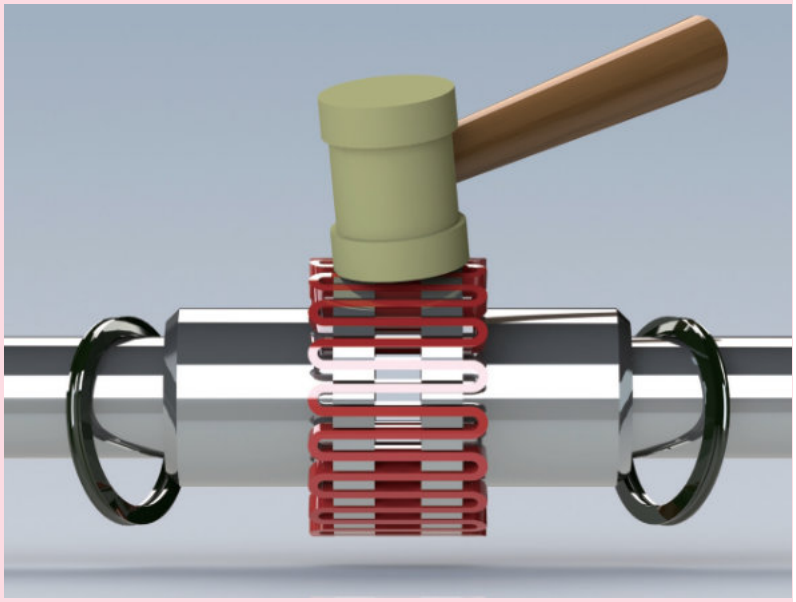
3) Offset Alignment

Align a straight edge so that it rests squarely on both hubs as shown in the diagram and check with the feelers. The clearance must not exceed the parallel offset installation limits (Page 12). Tighten all the foundation bolts and repeat Steps 2 and 3. If required realign the coupling.



4) Insert Grid

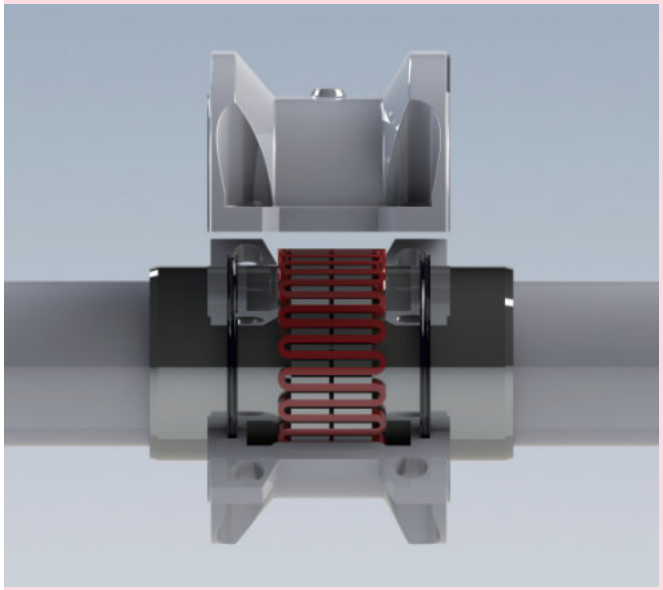
Pack the gap and grooves with the specified Lubricant (Page 8) before inserting grid. When the grids are furnished in two or more segments, install them, so that all cut ends extend in the same direction. This will assure the correct contact between the grid and any non-rotating pins in each half of the covers. Spread the grid just enough so that it passes over the coupling teeth. Insert with a soft mallet.

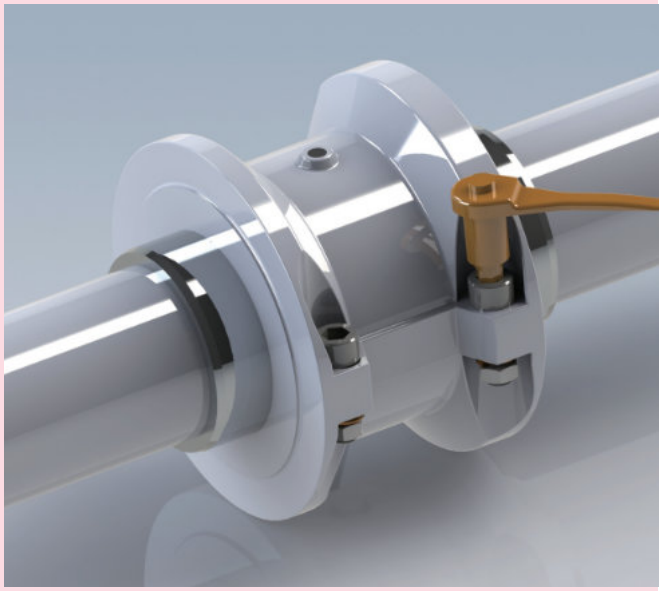


Installation Instructions

5) Pack

Pack any spaces between and around the grid with as much lubricant as possible. Wipe off any excess so that any remaining lubricant is flush with top of grid. Position the hub seals to line up with the grooves in the cover. Position gaskets on the lower cover half flange and assemble the two covers so that the match marks are on the same side. If shafts are not horizontally level, or if the coupling is to be used vertically, assemble cover halves with the lug so that the match marks are up or are on the high side. Push the gaskets in against the seals as far as possible. Secure cover halves with fasteners and tighten to the required torque setting (page 12), be sure the gaskets stay in position while the fasteners are tightened.

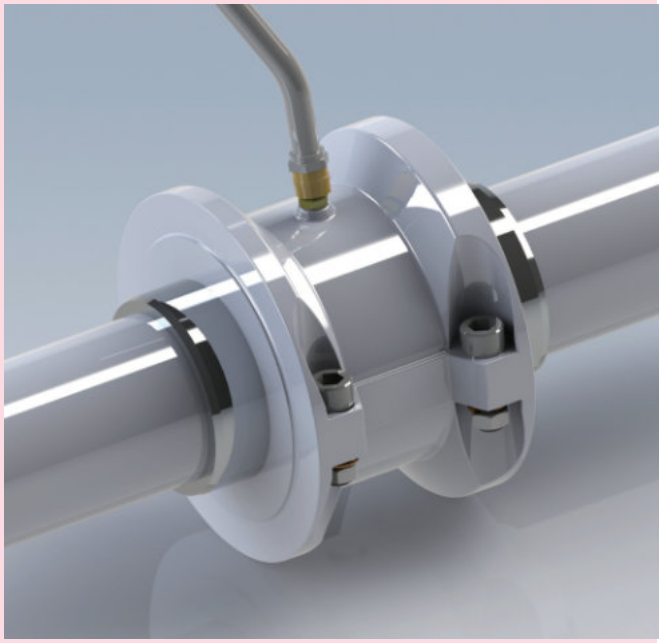




Annual Maintenance

Items to perform annually :

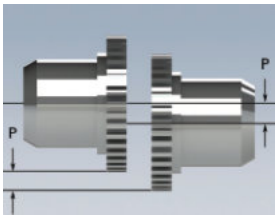
1. Check the alignment. If the maximum operating misalignment limits are exceeded. Realign the coupling to the recommended installation limits.
2. Check that all fasteners are tightened to the required torque setting.
3. Inspect the Oil Seal and Gasket to determine if replacements are required. Replace if the Seal and Gasket is leaking grease.
4. Disassemble the coupling and inspect for wear. Replace any worn parts. Clean the grease from coupling and repack with new grease. Install the coupling using a new gasket.



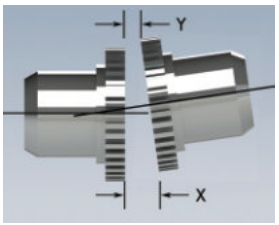
Alignment Data

Accurate alignment results in the maximum life and minimum maintenance for the coupling and the connected machinery. The amount of time for a coupling to reach its maximum operating limits is a function of load, operating speed and lubrication. Maximum operating values listed in the table below are based on the allowable RPM listed on this catalogue. Values listed are based on the use of the specified gaps, use of standard coupling components, standard assemblies and catalogue allowable speeds. Values may be combined for an installation or operating condition. Parallel misalignment is the distance between the centres of each shaft. Angular misalignment is dimension X minus dimension Y as shown in the drawing below. End float is the axial movement of the hubs within the covers as measured from "0" gap. This measure assumes zero angular and zero parallel misalignment.

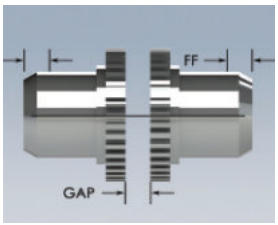
Parallel Misalignment



Angular Misalignment



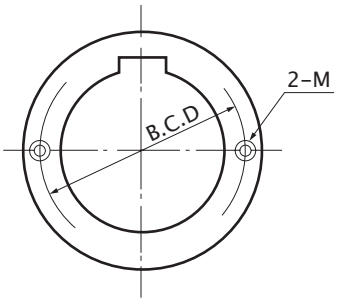
End Float



Misalignment Capacity

Size	Recommended Installation			Operating			Fastener Tightening Torque Rating (Nm)
	Parallel Offset-P Max (mm)	Angular (X-Y) Max (mm)	Hub Gap (10%) Max (mm)	Parallel Offset-P Max (mm)	Angular (X - Y) Max (mm)	End Float (2 x F) Max (mm)	
1020	0.15	0.08	3	0.30	0.25	5.33	11.30
1030	0.15	0.08	3	0.30	0.30	5.03	11.30
1040	0.15	0.08	3	0.30	0.33	5.36	11.30
1050	0.20	0.10	3	0.41	0.41	5.38	22.60
1060	0.20	0.13	3	0.41	0.46	6.55	22.60
1070	0.20	0.13	3	0.41	0.51	6.58	22.60
1080	0.20	0.15	3	0.41	0.61	7.32	22.60
1090	0.20	0.18	3	0.41	0.71	7.26	22.60
1100	0.25	0.20	3	0.51	0.84	10.90	35.00
1110	0.25	0.23	5	0.51	0.91	10.90	35.00
1120	0.28	0.25	5	0.56	1.02	14.12	73.00
1130	0.28	0.30	6	0.56	1.17	14.00	73.00
1140	0.28	0.33	6	0.56	1.35	14.50	73.00
1150	0.28	0.41	6	0.60	1.57	-	-
1160	0.30	0.46	6	0.60	1.78	-	-
1170	0.30	0.51	6	0.60	2.01	-	-
1180	0.38	0.56	6	0.76	2.26	-	-
1190	0.38	0.61	6	0.76	2.46	-	-
1200	0.38	0.69	6	0.76	2.72	-	-
1210	0.46	0.74	13	0.91	3.00	-	-
1220	0.46	0.81	13	0.91	3.28	-	-
1230	0.46	0.89	13	0.97	3.61	-	-
1240	0.48	0.97	13	0.97	3.91	-	-
1250	0.51	1.07	13	1.02	4.29	-	-
1260	0.51	1.17	13	1.02	4.65	-	-

Puller Holes



Size	B.C.D (mm)	Tap Size
1150	263	M16 x 2.0 x 24
1160	298	M22 x 2.5 x 27
1170	338	M30 x 3.5 x 32
1180	378	M30 x 3.5 x 38
1190	413	M36 x 4.0 x 45
1200	456	M36 x 4.0 x 45

Size	B.C.D (mm)	Tap Size
1210	497	M36 x 4.0 x 45
1220	541	M36 x 4.0 x 45
1230	586	M36 x 4.0 x 45
1240	633	M36 x 4.0 x 45
1250	690	M36 x 4.0 x 45
1260	749	M36 x 4.0 x 45