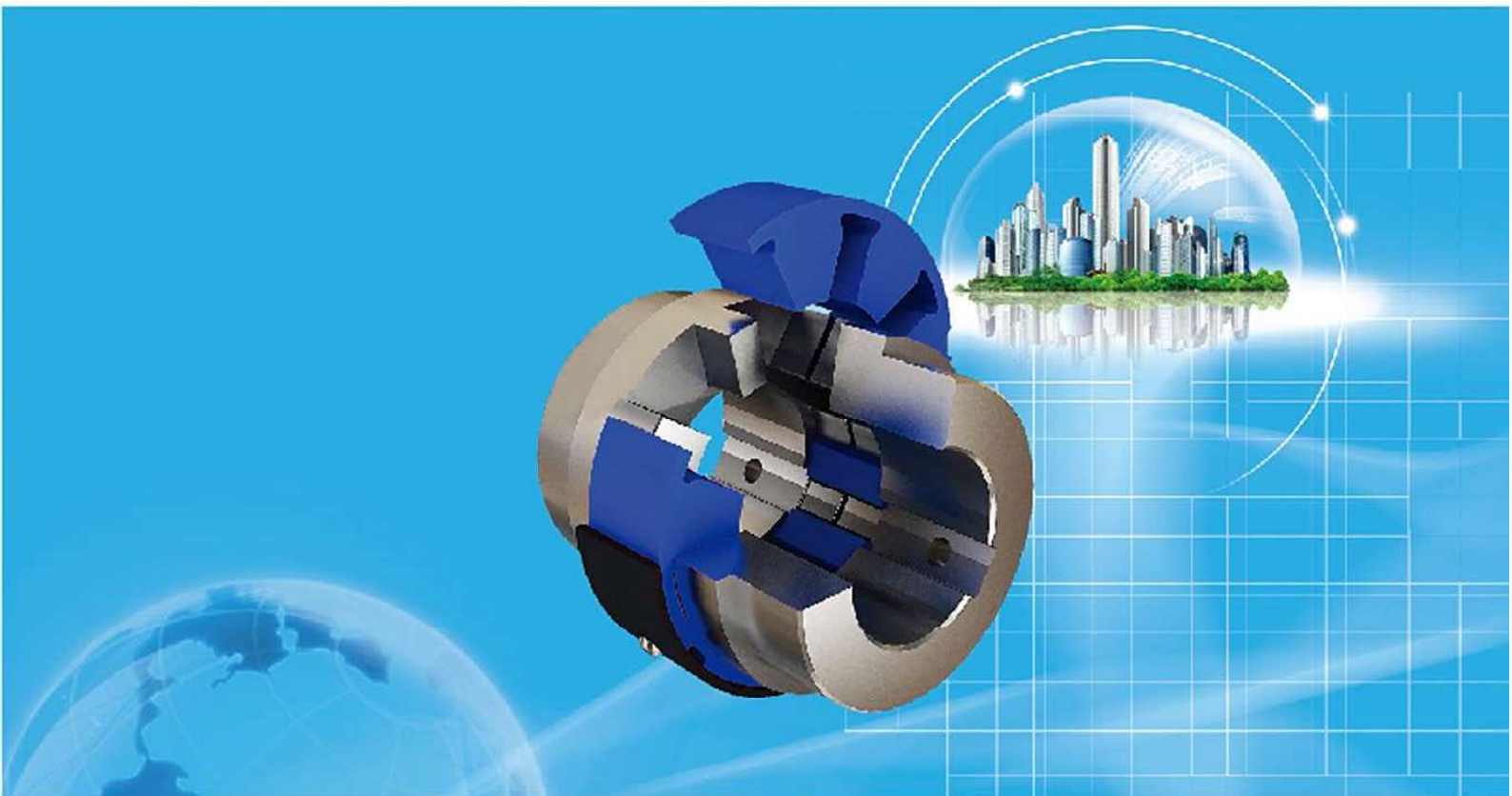


E SERIES COUPLINGS



Coupling Selection

How to Select

Standard Selection

The Standard Selection may be used for engine driven, motor, or turbine applications. The following information is required:

- Application or equipment type (motor to pump, reducer to conveyor, etc.)
- Shaft diameters (mm)
- Gaps between shafts (mm)
- Speed (RPM)
- Horsepower or torque (Nm)

1. Rating : Determine system torque. Torque is calculated as follows :

$$\text{I . Torque (Nm)} = \frac{\text{kW} \times 9,550}{\text{RPM}} \quad \text{II . Torque (Kg.m)} = \frac{\text{kW} \times 974}{\text{RPM}}$$

2. Service Factor : Determine appropriate service factor from page. 5-6

3. Minimum Coupling Rating : Determine the required minimum coupling rating as follows :
Minimum Coupling Rating = Service Factor x Torque (Nm)

4. Type : Select the appropriate coupling type

5. Size : Trace the Torque column to find the value that is equal or greater than value from Step 3.

6. Check : Check speed (RPM), bore, gap and dimensions.

Formula Selection

The Standard Selection should be used for most coupling selections. The

Formula Selection procedure below should be used for:

- High Peak Loads.
- Brake Applications (Brake disc or brake wheel is an integral part of coupling)

Using the Formula Selection and providing system peak torque and frequency, duty cycle, and brake torque rating will allow for a more refined selection.

1. High Peak Loads : Use formula A or B for applications which involve motors with higher than normal torque characteristics. Applications should also be those with intermittent operations, including shock loading, inertia effects due to starting and stopping, system-induced repetitive high peak torques. System Peak Torque is the maximum torque that can exist in the system. Select a coupling with a Torque Rating equal or greater than the Selection Torque calculated below:

A. Non-Reversing High Peak Torque : Selection torque (Nm) = System Peak Torque or

$$\text{System Torque (Nm)} = \frac{\text{System peak kW} \times 9549}{\text{RPM}}$$

B. Reversing High Peak Torque : Selection Torque (Nm) = 2 x System Peak Torque or

$$\text{System Torque (Nm)} = \frac{2 \times \text{Peak kW} \times 9549}{\text{RPM}}$$

2. Brake Applications : If the torque rating of the brake exceeds the motor torque, use brake rating as blow :

$$\text{Selection Torque (Nm)} = \text{Brake Torque Rating} \times \text{Service Factor}$$

Service Factors

Service Factors for Operation of Drive System

Application	Service Factor
AERATOR	2.0
AGITATORS	
Vertical and Horizontal Scerw, Propeller, Paddle	1.0
BARGE HAUL PULLER	1.5
BLOWERS	
Centrifugal	1.0
Lobe or Vane	1.25
CAR DUMPERS	2.5
CAR PULLERS	1.5
CLARIFIER or CLASSIFIER	1.0
COMPRESSORS	
Centrifugal	1.0
Rotary, Lobe or Vane	1.25
Rotary, Screw	1.0
With Flywheel and Gear between Compressor and Prime Mover	
1 Cylinder, single acting	3.0
1 Cylinder, double acting	3.0
2 Cylinders, single acting	3.0
2 Cylinders, double acting	3.0
3 Cylinders, single acting	3.0
3 Cylinders, double acting	2.0
4 or more cylinders, single acting	1.75
4 or more cylinders, double acting	1.75
CONVEYORS	
Apron, Assembly, Belt, Chain, Flight, Screw	1.0
Bucket	1.25
Live Roll, Shaker and Reciprocating	3.0
CRANES and HOIST	
Main Hoist	1.75
Skip Hoist	1.75
Slope	1.5
Bridge, Travel or Trolley	1.75
DYNAMOMETER	1.0
ELEVATORS	
Bucket, Centrifugal Discharge	1.25
Gravity Discharge	1.25
EXCITER, GENERATOR	1.0
EXTRUDER, PLASTIC	1.5
FANS	
Centrifugal	1.0
Cooling Tower	2.0
Forced Draft-Across the Line start	1.5
Forced Draft Motor driven thru fluid or electric slip clutch	1.0
Gas Recirculating	1.5
Induced Draft with damper control or blade cleaner	1.25
Induced Draft without controls	2.0
FEEDERS	
Apron, Belt, Disc, Screw	1.0
Reciprocating	2.5
GENERATORS	
Even Load	1.0
Hoist or Railway Service	1.5
Welder Load	2.0
GENERATORS	
Even Load	1.0

Application	Service Factor
Hoist or Railway Service	1.5
Welder Load	2.0
HAMMERMILL	1.75
LAUNDRY WASHER or TUMBLER	2.0
LINE SHAFTS	
Any Processing Machinery	1.5
MACHINE TOOLS	
Auxiliary and Traverse Drive	1.0
Bending Roll, Notching Press, Punch Press, Planer, Plate Reversing	1.75
Main Drive	1.5
METAL FORMING MACHINES	
Continous Caster	1.75
Draw Bench Carriage and Main Drive	2.0
Extruder	2.0
Farming Machine and Forming Mills	2.0
Slitters	1.0
Wire Drawing or Flattening	1.75
Wire Winder	1.5
Coilers and Uncoilers	1.5
MIXERS	
Concrete	1.75
Muller	1.5
PRESS, PRINTING	1.5
PUG MILL	1.75
PULVERIZERS	
Hammermil and Hog	1.75
Roller	1.5
PUMPS	
Boiler Feed	1.5
Centrifugal-Constant Speed	1.0
Frequent Speed Changes under Load	1.25
Descaling with accumulators	1.25
Gear, Rotary, or Vane	1.25
Reciprocating, Plunger Piston	
1 Cylinder, single or double acting	3.0
2 Cylinders, single acting	2.0
2 Cylinders, double acting	1.75
3 or more cylinders	1.5
Screw Pump, Progressing Cavity	1.25
Vacuum Pump	1.25
SCREENS	
Air Washing	1.0
Grizzly	2.0
Rotary Coal or Sand	1.5
Vibrating	2.5
Water	1.0
STEERING GEAR	1.0
STOKER	1.0
TIRE SHREDDER	1.5
TUMBLING BARREL	1.75
WINCH, MANEUVERING	
Dredge, Marine	1.5
WINDLASS	1.5
WOODWORKING MACHINERY	1.0

Service Factors and Reference

Service Factors for Operation of Drive System

Industry	Service Factor
AGGREGATE PROCESSING, CEMENT, MINING KILNS; TUBE, ROD and MILLS	
Direc or on L.S. shaft of Reducer, with final drive Machined Spur Gears	2.0
Single Helical or Herringbone Gears	1.75
Crushers, Ore or Stone	2.5
Dryer, Rotary	1.75
Grizzly	2.0
Hammermill or Hog	1.75
Tumbling Mill or Barrel	1.75
BREWING and DISTILLING	
Bottle and Can Filling Machines	1.0
Brew Kettle	1.0
Cookers, Continuous Duty	1.25
Lauter Tub	1.5
Mash Tub	1.25
Scale Hopper, Frequent Peaks	1.75
CLAY WORKING INDUSTRY	
Brick Press, Briquette Machine, Clay Working Machine, Pug Mill	1.75
DREDGES	
Cable Reel	1.75
Conveyors	1.25
Cutter head, Jig Drive	2.0
Maneuvering Winch	1.5
Pumps (Uniform load)	1.5
Screen Drive, Stacker	1.75
Utility Winch	1.5
FOOD INDUSTRY	
Beet Slicer	1.75
Botting, Can Filling Machine	1.0
Cereal Cooker	1.25
Dough Mixer, Meat Grinder	1.75
LUMBER	
Band Resaw	1.5
Circular Resaw, Cut-off	1.75
Edger, Head Rig, Hog	2.0
Log Haul	2.0
Planer	1.75
Rolls, Non-Reversing	1.25
Rolls, Reversing	2.0
Sawdust Conveyor	1.25
Slab Conveyour	1.75
Sorting Table	1.5
Trimmer	1.75
METAL ROLLING MILLS	
Coilers (Up or Down) Cold Mills only	1.5
Coilers (Up or Down) Hot Mills only	2.0
Coke Plants	
Pusher Ram Drive	2.5
Door Opener	2.0
Pusher or Larry Car Traction Drive	3.0
Continuous Caster	1.75
Colling Beds	1.5
Drawbench	2.0
Feed Rolls-Blooming Mills	3.0
Furnace Pushers	2.0
Hot and Cold Saws	2.0
Ingot Cars	2.0
Manipulators	3.0
Mill Tables	
Roughing Breakdown Mills	3.0
Hot Bed or Transfer, non-reversing	1.5
Runout, reversing	3.0
Runout, non-reversing, non-plugging	2.0
Reel Drives	1.75
Screwdown	2.0
Seamless Tube Mills	
Piercer	3.0
Thrust Block	2.0
Tube Conveyor Rolls	2.0
Reeler	2.0
Kick Out	2.0
Sideguards	3.0

Industry	Service Factor
Slitters, Steel Mill only	1.75
Lift	1.0
Travel	2.0
Straighteners	2.0
Unscramblers (Billet Bundle Busters)	2.0
Wire Drawing Machinery	1.75
OIL INDUSTRY	
Chiller	1.25
Oilwell Pumping (not over 150% peak torque)	2.0
Paraffin Filter Press	1.5
Rotary Kiln	2.0
PAPER MILLS	
Barker Auxiliary, Hydraulic	2.0
Barker, Mechanical	2.0
Barking Drum	
L.S. shaft of reducer with final drive-Helical or Herringbone Gear	2.0
Machined Spur Gear	2.5
Cast Tooth Spur Gear	3.0
Beater & Pulper	1.75
Bleachers, Coaters	1.0
Calender & Super Calender	1.75
Chipper	2.5
Converting Machine	1.25
Couch	1.75
Cutter, Felt Whipper	2.0
Dryer	1.75
Cylinder	1.75
Felt Stretcher	1.25
Fourdrinier	1.75
Jordan	2.0
Log Haul	2.0
Line Shaft	1.5
Press	1.75
Pulp Grinder	1.75
Reel, Rewinder, Winder	1.5
Stock Chest, Washer, Thickener	1.5
Stock Pumps, Centrifugal	
Constant Speed	1.0
Frequent Speed Changes Under load	1.25
Suction Roll	1.75
Vacuum Pumps	1.25
RUBBER INDUSTRY	
Calender	2.0
Cracker, Plasticator	2.5
Extruder	1.75
Intensive or Banbury Mixer	2.5
Mixing Mill, Refiner or Sheeter	
One or two in line	2.5
Three or four in line	2.0
Five or more in line	1.75
Tire Building Machine	2.5
Tire & Tube Press Opener (Peak Torque)	1.0
Tuber, Strainer, Pelletizer	1.75
Warming Mill	
One or two Mills in line	2.0
Three or more Mills in line	1.75
Washer	2.5
SEWAGE DISPOSAL EQUIPMENT	
Bar Screen, Chemical feeders, Collectors, De-watering Screen, Grit Collector	1.0
SUGAR INDUSTRY	
Cane Carrier & Leveler	1.75
Cane Knife & Crusher	2.0
Mill Stands, Turbine Driver with all Helical or Herringbone, or Spur Gears with any Prime Mover	1.75
TEXTILE INDUSTRY	
Batcher	1.25
Calender, Card Machine	1.5
Cloth Finishing Machine	1.5
Dry Can, Loom	1.5
Dyeing Machinery	1.25
Mangle, Napper, Soaper	1.25
Spinner, Tenter Frame, Winder	1.5

Service Factors

Standard Selection

Service Factors for engine drives are required for applications where good flywheel regulation prevents torque fluctuations greater than $\pm 20\%$. For drives where torque fluctuations are greater or where the operation is near a serious critical or torsional vibration, a mass elastic study is necessary.

Number of Cylinders	4 or 5					6 or more				
Service Factor	1.5	1.75	2	2.25	2.5	1.5	1.75	2	2.25	2.5
Engine Service Factor	2.5	2.75	3	3.25	3.5	2.5	2.75	3	3.25	3.5

To use Engine Drive Service Factors, first determine application Service Factor from page 5-6. When Service Factor is greater than 2.0, or where 1, 2 or 3 cylinder engines are involved, refer complete application details to Feinnord Coupling for engineering review.

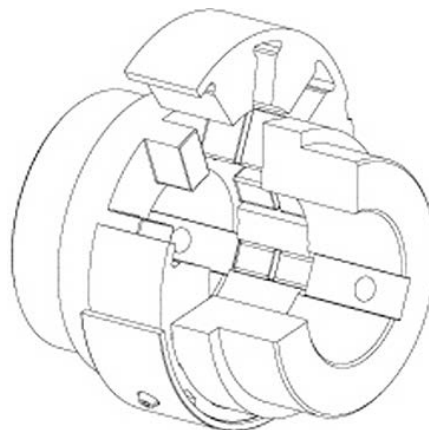
Service Factors are a guide, based on experience, of the ratio between coupling catalogue rating and system characteristics. The system characteristics are best measured with a torque meter.

Torque Demands Driven Machine	Typical applications for Driven Equipment	Typical Service Factor
	Constant torque such as Centrifugal Pumps, Blowers and Compressors.	1.0
	Continuous duty with some torque variations including Plastic Extruders, Forced Draft Fans.	1.5
	Light shock loads from Metal Extruders, Cooling Towers, Cane Knife, Log Haul.	2.0
	Moderate shock loading as expected from a Car Dumper, Stone Crusher, Vibrating Screen.	2.5
	Heavy shock load with some negative torques from Roughing Mills, Reciprocating Pumps, Compressors, Reversing Runout Talbes.	3.0
	Applications like Reciprocating Compressors with frequent torque reversals, which do not necessarily cause reverse rotations.	Refer to KCP



- 9 sizes
- Torque Range: Max. 15 028 Nm
- Bore Capacity: 190 mm
- "Replace in Place"
- Non-Lubricated/Low Maintenance

Ever think that keeping your production lines running more profitably could be as simple as replacing a light bulb or opening a can with a pop-top?



Low Initial Cost

- Advanced manufacturing methods and innovative material allow us to offer you higher capacity ratings at a more competitive price than ever before possible.
- Initial investment protected by the industry's first, standard

Easy to Install

- The compound root radius in the element teeth (patent applied for) increases flexibility for easier and quicker assembly.
- Can be blind assembled from either direction.

Quick, easy installation and replacement set new standards for reduced downtime. Because motors or drives don't need to be moved, our "replace in place" elements even eliminate the need for time-consuming realignment, further reducing downtime.

Available in close-coupled and spacer designs, E series flexible couplings accommodate up to 190 mm shafts and torque loads up to 15,000Nm



Tough, Long-Lasting

- Polyurethane element has excellent wear and chemical resistance, and a operating temperature of -40° C (-40° F) to 95° C (200° F).
- Hubs made from carbon steel for maximum strength. Optional stainless steel hubs also available.
- Weather-resistant, high-grade nylon cover is standard.
- Optional carbon steel covers with black epoxy coating for highly corrosive, severe-duty applications. (Standard for sizes 60-80.)
- Optional Stainless steel hubs are available for Type E10 when required in food or corrosive environments.

Safety First

- Two stainless steel button-head cap screws, positioned 180° apart, prevent relative motion between cover and element and provide a positive means of retaining the cover to the element.
- Flexible element is retained after failure, helping minimize the potential for damage or personal injury.

Replace in Place

- Design allows quick and easy element replacement.
- There's no need to remove hubs or realign motors or drives, reducing downtime.

No Maintenance Needed

- Non-lubricated design of the tough, flexible polyurethane element reduces periodic, maintenance costs.

Protects Equipment

- Applied for design of the flexible element minimizes effects of misalignment for improved performance and life.

Quick and Easy Retrofits

- Compact design eliminates the need for coupling guard redesign on existing applications.
- Stock finished bores in popular sizes and taper bores, which accept Q.D. and Taper Lock bushings, are available from our worldwide distribution network for off-the-shelf availability.

E Series flexible coupling



E10 Type



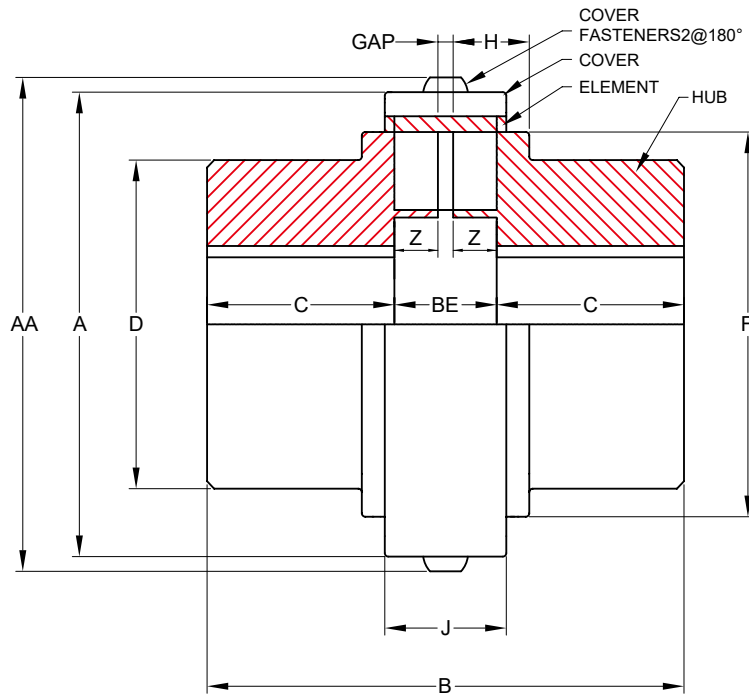
E20 Type (Full Spacer)



E30 (Half Spacer)

E10 Type

Close Coupled

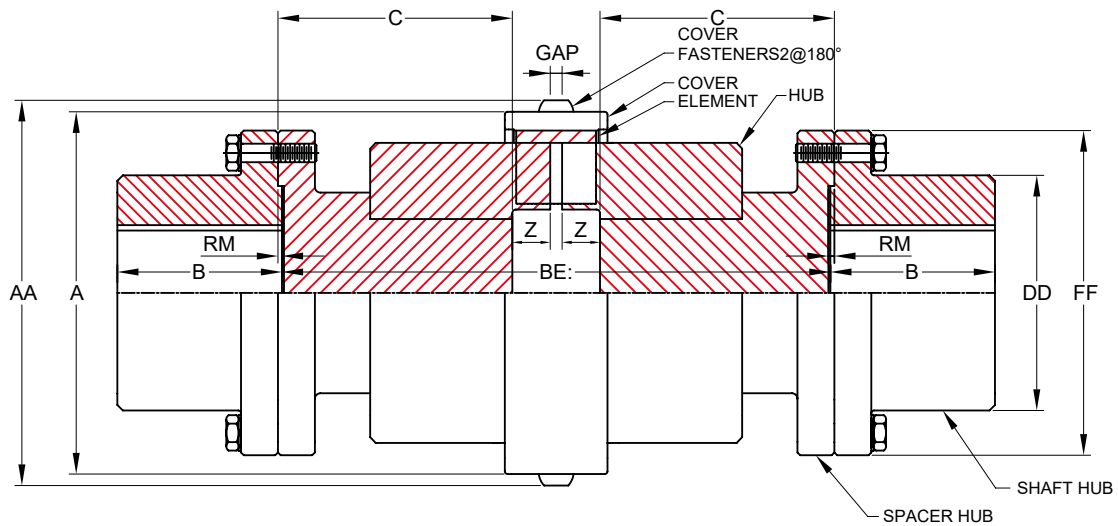


Size	Torque Rating (Nm)	Allow Speed RPM	Max Bore (mm)	Min Bore (mm)	Cplg Wt (Kg)		Dimensions (Millimeters)														Cover Fasteners	
							A		AA		B	BE	C	D	F	H	J	Z	GAP	Size	Allen Wrench	
					Nylon Cover	Steel Cover	Nylon	Steel	Nylon	Steel												
5	62	4,500	38	12.7	1.35	1.49	76.5	76.5	80.5	80.4	71.9	19.8	25.9	59.9	64	15.0	23.1	8.9	2	M4	M2.5	
10	130	4,500	48	15.88	2.49	2.72	90.4	90.4	94.5	94.4	91.9	23.9	34.0	72.1	75.9	19.1	27.9	10.9	2	M4	M2.5	
20	316	4,500	60	19.05	5.64	6.09	126.0	124.0	132.0	130.0	121.9	32.0	45.0	91.9	102.1	24.9	37.1	15.0	2	M6	M4	
30	520	4,500	65	25.40	9.41	10.00	146.6	143.0	153.0	149.0	151.9	36.1	57.9	104.9	118.1	29.0	41.9	17.0	2	M6	M4	
40	1,028	3,600	85	28.58	17.10	18.10	182.1	177.0	190.0	185.0	181.1	47.0	67.1	130.0	150.1	34.0	54.6	21.1	5	M8	M5	
50	2,508	3,000	105	31.75	35.80	37.70	230.9	224.0	239.0	232.0	214.9	60.7	77.0	178.1	190	46.0	69.6	27.9	5	M8	M5	
60	4,011	2,500	135	50.80	-	66.40	-	267.0	-	278.0	275.3	75.4	100.1	209.6	228.1	60.2	67.1	35.3	5	M10	M6	
70	8,011	2,100	160	69.85	-	111.00	-	310.0	-	321.0	324.1	84.1	119.9	251.0	270	69.6	74.9	39.6	5	M10	M6	
80	15,027	1,800	190	85.73	-	166.00	-	370.0	-	381.0	376.9	97.0	140.0	270.0	327.9	83.3	85.1	45.5	6	M10	M6	

* Coupling Weight is without Bore Machining

E30 Type

Full Spacer

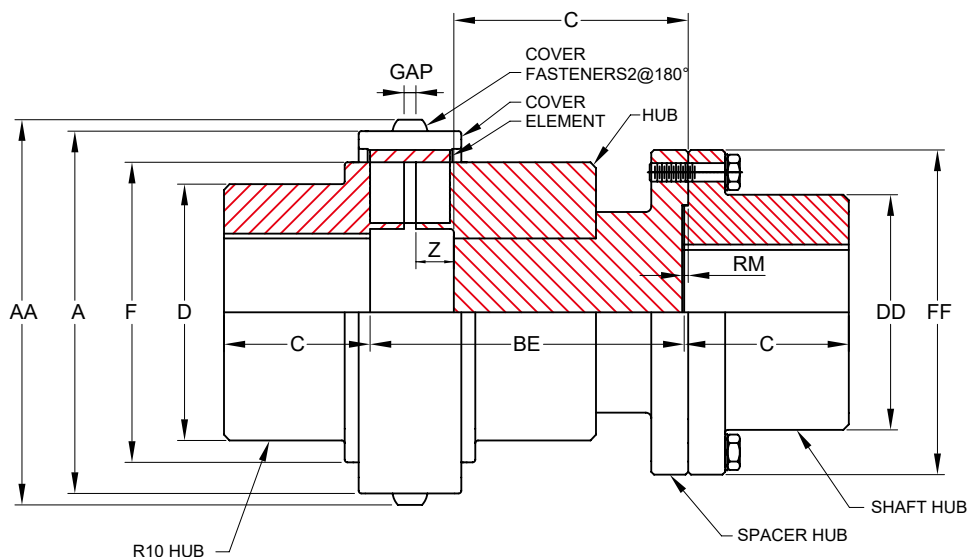


Size	Torque Rating (Nm)	Allow Speed RPM	Max Bore (mm)	Cplg Wt (Kg)		Dimensions (Millimeters)														Cover Fasteners		Flange Fastners		T- Shaft Hub
						Distance Between Shaft Ends (BE) = 2(C) + 2(Z) + GAP - 2(RM)																		
						Min BE (Kg)	Add BE (Kg)	BE		A		AA		B	BDD	FF	RM	S	Z	GAP	Size	Allen Wrench	Size	
						Max	Min	Nylon	Steel	Nylon	Steel													
5	62	4,500	35	3.63	0.014	235	80.9	76.5	76.5	80.5	80.4	34.9	52.4	86	1.27	27.4	8.9	2	M4	M2.5	M6	4	1020T	
10	130	4,500	43	4.99	0.015	254	88.9	90.4	90.4	94.5	94.4	41.3	59.5	94	1.27	31.5	10.9	2	M4	M2.5	M6	8	1030T	
20	316	4,500	56	9.53	0.027	254	88.9	126.0	124.0	132.0	130.0	54.0	78.6	113	1.27	27.4	15.0	2	M6	M4	M6	8	1040T	
30	520	4,500	67	14.10	0.034	254	111.0	146.6	143.0	153.0	149.0	60.3	87.3	126	1.27	40.6	17.0	2	M6	M4	M8	8	1050T	
40	1,028	3,600	85	25.90	0.040	311	127.0	182.1	177.0	190.0	185.0	79.4	109.5	153	1.27	46.7	21.1	5	M8	M5	M10	12	1070T	
50	2,508	3,000	95	45.40	0.059	311	165.0	230.9	224.0	239.0	232.0	88.9	122.2	178	1.27	49.8	27.9	5	M8	M5	M12	12	1080T	
60	4,011	2,500	110	72.60	0.082	311	200.0	-	267.0	-	278.0	101.6	142.9	210	1.27	-	35.3	5	M10	M6	M16	12	1090T	
70	8,011	2,100	130	102.00	0.117	373	224.0	-	310.0	-	321.0	90.4	171.4	251	1.52	-	39.6	5	M10	M6	M20	12	1100T	
70	8,011	2,100	150	120.00	0.117	373	224.0	-	310.0	-	321.0	104.1	196.8	276	1.52	-	39.6	5	M10	M6	M20	12	1110T	
80	15,027	1,800	190	230.00	0.240	424	256.0	-	370.0	-	381.0	134.6	238.1	347	2.39	-	45.5	6	M10	M6	M27	12	1130T	

* Coupling Weight is without Bore Machining

E20 Type

Half Spacer



Size	Torque Rating (Nm)	Allow Speed RPM	Max Bore		Cplg Wt (Kg)		Dimensions (Millimeters)							
			T-Shaft Hub	KW10 Hub	Min BE (Kg)	Add BE (Kg)	Distance Between Shaft Ends (BE) = 2(C) + 2(Z) + GAP - 2(RM)							
							BE		A		AA		B	C KW10 Hub
5	62	4,500	35	38	2.54	0.014	127.0	50.5	76.5	76.5	80.5	80.4	34.9	25.9
10	130	4,500	43	48	3.96	0.015	140.0	59.6	90.4	90.4	94.5	94.4	41.3	34.0
20	316	4,500	56	60	8.44	0.027	140.0	76.5	126.0	124.0	132.0	130.0	54.0	45.0
30	520	4,500	67	65	12.90	0.034	146.1	87.6	146.6	143.0	153.0	149.0	60.3	57.9
40	1,028	3,600	85	85	22.40	0.040	184.2	88.6	182.1	177.0	190.0	185.0	79.4	67.1
50	2,508	3,000	95	105	40.80	0.059	184.2	113.1	230.9	224.0	239.0	232.0	88.9	77.0
60	4,011	2,500	110	135	69.00	0.082	203.2	137.6	-	267.0	-	278.0	101.6	100.1
70	8,011	2,100	130	160	106.00	0.117	228.9	153.9	-	310.0	-	321.0	90.4	119.9
70	8,011	2,100	150	160	115.00	0.117	228.9	153.9	-	310.0	-	321.0	104.1	119.9
80	15,027	1,800	170	190	180.00	0.144	259.6	172.7	-	370.0	-	381.0	119.4	140.0
80	15,027	1,800	190	190	193.00	0.240	259.6	175.5	-	370.0	-	381.0	134.6	140.0

Size	Dimensions (Millimeters)									Cover Fasteners		Flange Fastners		T- Shaft Hub
	Distance Between Shaft Ends (BE) = 2(C) + 2(Z) + GAP - 2(RM)									Size	Allen Wrench	Size	Per Flange	
	D	DD	F	FF	RM	S		Z	GAP					
						Shaft Hub	KW10 Hub							
5	159.9	52.4	64.0	86	1.27	27.4	15.9	8.9	2	M4	M2.5	M6	4	1020T
10	72.1	59.5	75.9	94	1.27	31.5	22.2	10.9	2	M4	M2.5	M6	8	1030T
20	91.9	78.6	102.1	113	1.27	27.4	25.4	15.0	2	M6	M4	M6	8	1040T
30	104.9	87.3	118.1	126	1.27	40.6	31.8	17.0	2	M6	M4	M8	8	1050T
40	130.0	109.5	150.1	153	1.27	46.7	41.3	21.1	5	M8	M5	M10	12	1070T
50	178.1	122.2	190.0	178	1.27	49.8	44.5	27.9	5	M8	M5	M12	12	1080T
60	209.6	142.9	228.1	210	1.27	-	-	35.3	5	M10	M6	M16	12	1090T
70	251.0	171.4	270.0	251	1.52	-	-	39.6	5	M10	M6	M20	12	1100T
70	251.0	196.8	270.0	276	1.52	-	-	39.6	5	M10	M6	M20	12	1110T
80	270.0	225.4	327.9	320	2.39	-	-	45.5	6	M10	M6	M24	12	1120T
80	270.0	238.1	327.9	347	2.39	-	-	45.5	6	M10	M6	M27	12	1130T

* Coupling Weight is without Bore Machining

APPLICATION CONSIDERATIONS

The proper selection and application of power transmission products and components, including the related area of product safety, is the responsibility of the customer. Operating and performance requirements and potential associated issues will vary appreciably depending upon the use and application of such products and components. The scope of the technical and application information included in this publication is necessarily limited. Unusual operating environments and conditions, lubrication requirements, loading supports, and other factors can materially affect the application and operating results of the products and components and the customer should carefully review its requirements. Any technical advice or review furnished by Feinnord Maschinen GmbH and its affiliates with respect to the use of products and components is given in good faith and without charge, and Feinnord assumes no obligation or liability for the advice given, or results obtained, all such advice and review being given and accepted at customer's risk.



Feinnord Maschinen GmbH

Friedrich-Ebert-Anlage 36,
60325 Frankfurt am Main

Phone: +49 (0) 162 / 87 73 925
E-mail: info@feinnord.de

www.feinnord.de