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KCP

Nylon Coupling

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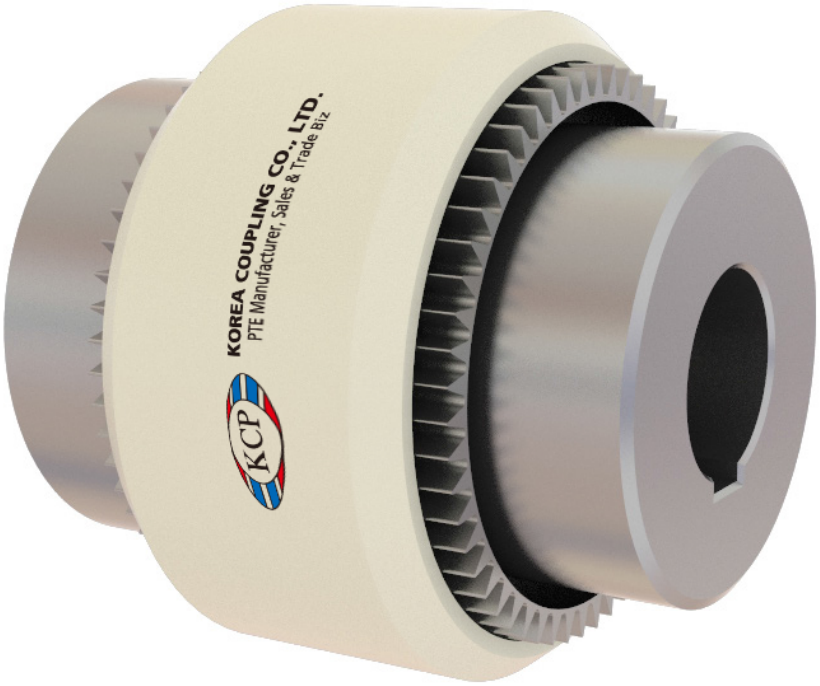

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KOREA COUPLING CO., LTD.
PTE Manufacturer, Sales & Trade Biz

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 :

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

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 Toque 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

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

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

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

2. Brake Applications : If the torque rating of the brake exceeds the motor torque, use brake rating as blow :
Selection Torque (Nm) = Brake Torque Rating x 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
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, Dewatering 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 thans ± 20%. For drives where torque fluctuations are greather 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 Korea Coupling for engineering review.

Service Factors are a guid, based on experience, of the ratio between coupling catalogue rating and sytem 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

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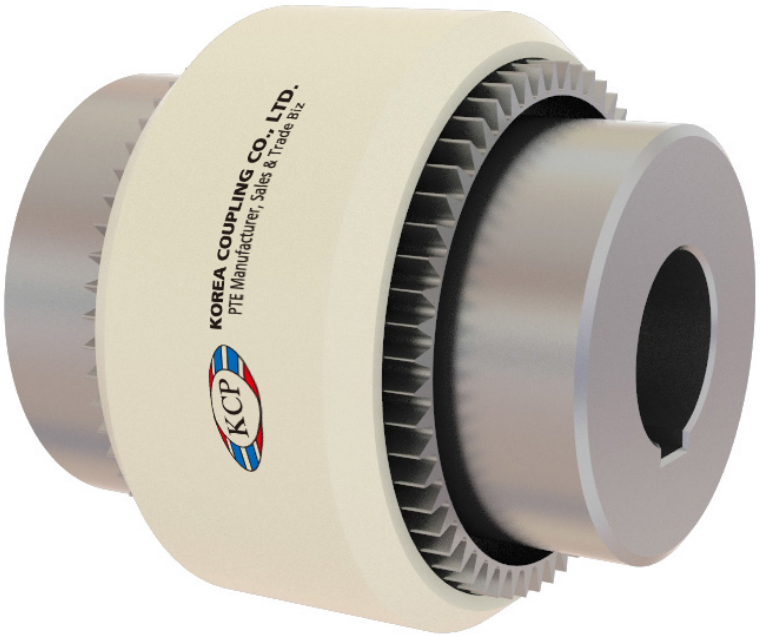


KCP Nylon Coupling is torsionally rigid power transmission couplings. Their flexible shaft connections transmit torque between two steel gear hubs and the internal teeth of a nylon drive sleeve. These couplings are specifically suitable to compensate for shaft misalignment, whether axial, radial, and/or angular.

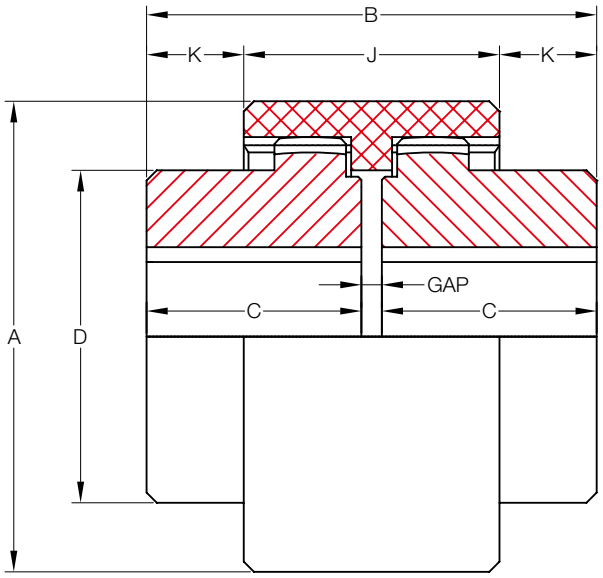
Single or doubts engagement options make the Nylon Couplings suitable for variety of applications. The spacer type connections can accommodate large shaft end gaps. Nylon couplings can be assembled both vertically and horizontally. There is no need for any special assembly tools. Nylon Couplings are non lubricated and low noise.

The steel hubs and nylon sleeves are a material combination that allows for maintenance free, continuous operation and very low friction onthe teeth. In the case of misalignment in couplings between hubs with spur teeth, high edge pressure can develop on the contact surfaces. This can lead to considerable wear.

The curved teeth of the Nylon Couplings avoid edge pressure on the coupling, even in the case of angular and radial misalignment.

KM Type

Close Coupled



Size	Torque Rating (Nm)	Allow Speed RPM	Max Bore (mm)	Min Bore (mm)	Dimensions (Millimeters)						
					A	B	C	D	J	K	GAP
14	17	14,000	14	6	40	50	23	25	37	6.5	4
19	30	11,800	19	8	48	54	25	32	37	8.5	4
24	37	10,600	24	10	52	56	26	36	41	7.5	4
28	69	8,500	28	10	66	84	40	45	46	19.0	4
32	90	7,500	32	12	76	84	40	50	48	18.0	4
38	127	6,700	38	14	83	84	40	58	48	18.0	4
42	164	6,000	42	20	92	88	42	65	50	19.0	4
48	202	5,600	48	20	100	104	50	68	50	27.0	4
65	436	4,000	65	25	140	144	70	96	72	36.0	4
80	692	3,150	80	30	175	186	90	124	93	46.5	6
100	1,246	3,000	100	40	210	228	110	152	102	63.0	8
125	2,749	2,120	125	50	270	290	140	192	134	78.0	10

* Coupling Weight is without Bore Machining

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