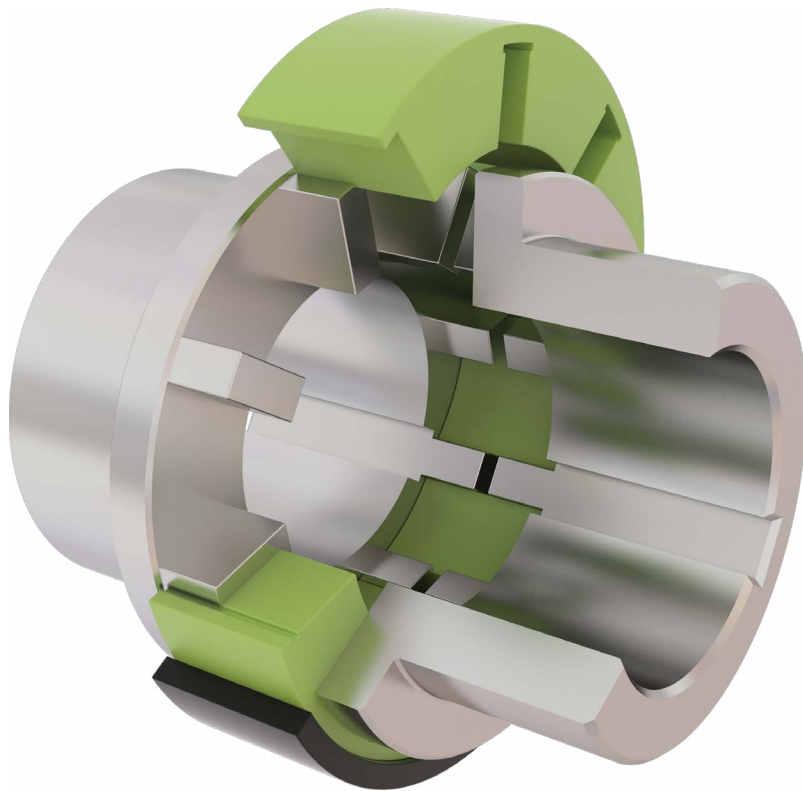


N-Wrap Couplings

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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 :

$$\text{Minimum Coupling Rating} = \text{Service Factor} \times \text{Torque (Nm)}$$

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

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

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

Operation of Drive System

Application	Service Factor
AERATOR	2.0
AGITATORS	
Vertical and Horizontal Screw, 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

Application	Service Factor
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	
Hammermill 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

Operation of Drive System

Industry	Service Factor
AGGREGATE PROCESSING, CEMENT, MINING KILNS; TUBE, ROD and MILLS	
Direct 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



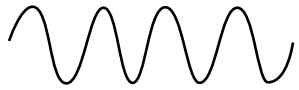



Standard Selection

Service Factors for engine drives are required for applications where good flywheel regulation prevents torque fluctuations greater 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.

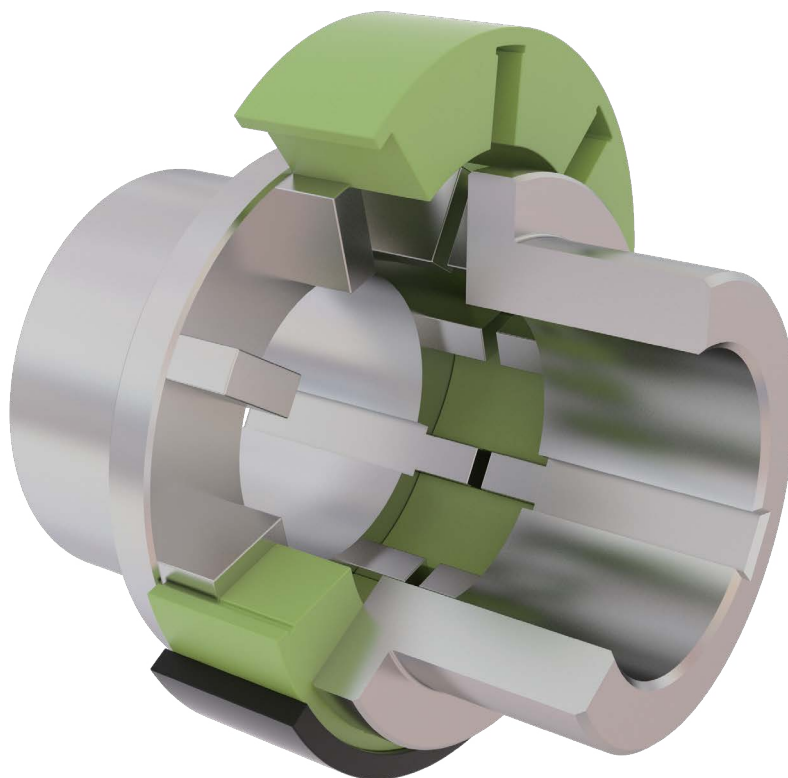
Number of Cylinders	4 or 5					6 or more				
Service Factor	1.5	1.75	2	2.25	2.5	1.5	1.75	2	2.25	2.5
Engine Service Factor	2.5	2.75	3	3.25	3.5	2.5	2.75	3	3.25	3.5

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 Novus Gear 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 Novus Gear

Novus Gear N-Wrap Couplings



Novus Gear N-Wrap Couplings are designed to allow for quick and easy element replacement. Removal of hubs or the realignment of motors or drives is not required, which in turn reduces overall downtime.

Advanced production methods and innovative material selection allows for a higher capacity at a more competitive price.

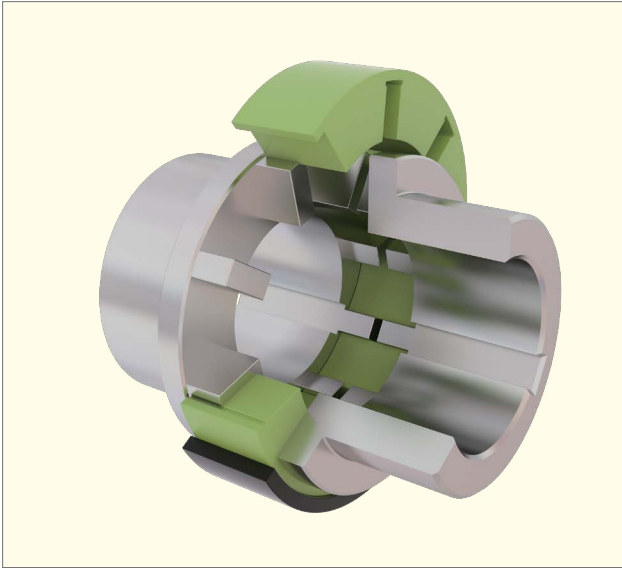
Novus Gear N-Wrap Couplings are non-lubricated and are designed from flexible urethane. The lack of need for lubrication decreases recurrent maintenance costs.

Available in both close-coupled and spacer designs, Urethane Flexible Couplings accommodate shaft diameters up to 186mm and torque loads up to 15,028 Nm

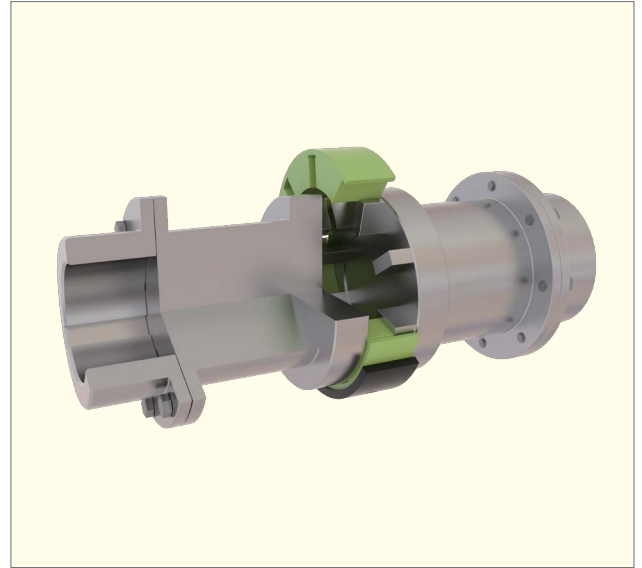
The urethane element has excellent resistance to wear and chemicals, and can be operated between temperatures of -40°C to 95°C.

The compact design of this coupling eliminates that need for coupling guard redesign for specific applications.

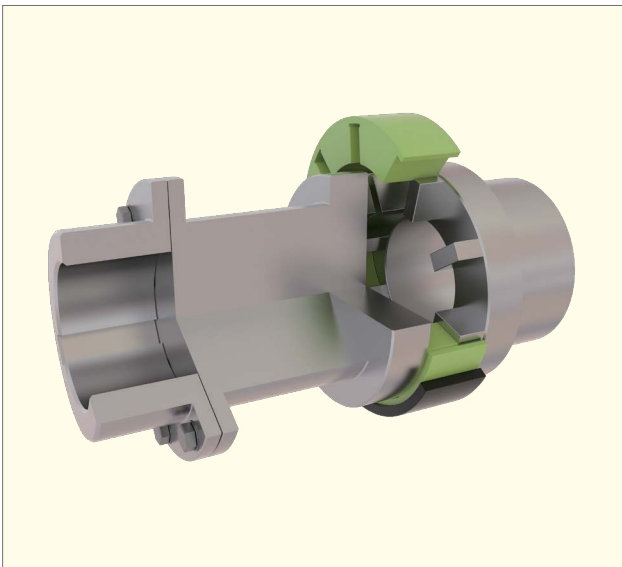
Novus Gear N-Wrap Coupling Types



NW10 Type



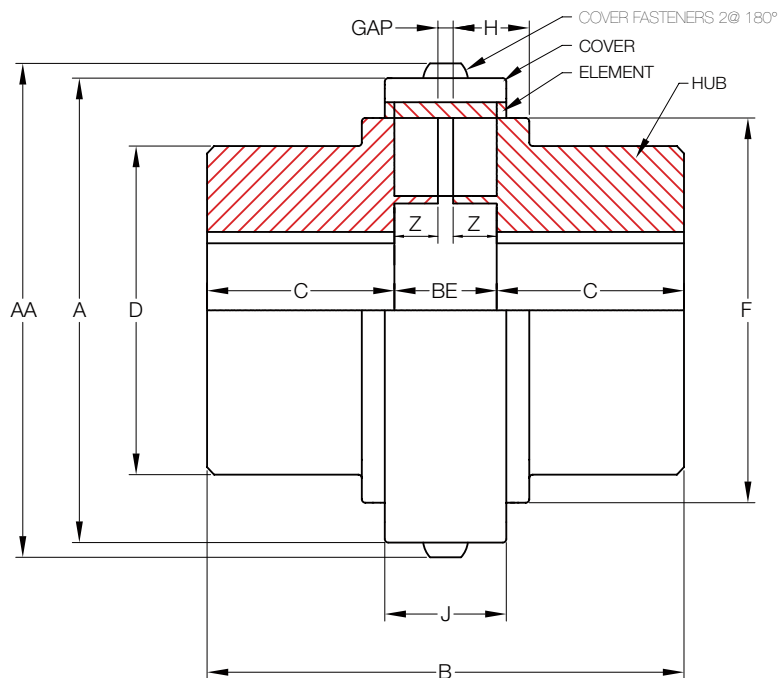
NW31 Type (Full Spacer)



NW35 Type (Half Spacer)

NW10 Type

Close Coupled

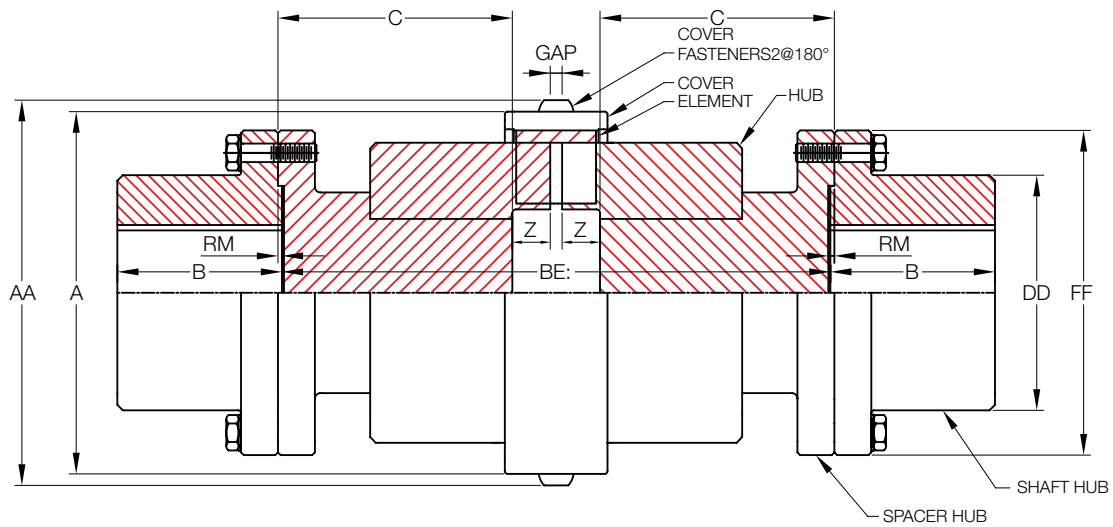


Size	Torque Rating (Nm)	Allow Speed RPM	Max Bore (mm)	Min Bore (mm)	Cplg Weight (Kg)		Dimensions (Millimeters)														Cover Fasteners	
					Nylon Cover	Steel Cover	A		AA		B	BE	C	D	F	H	J	Z	GAP	Size	Allen Wrench	
							Nylon	Steel	Nylon	Steel												
5	62	4,500	38	12.7	1.35	1.49	76.5	76.5	80.5	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

NW31 Type

Full Spacer

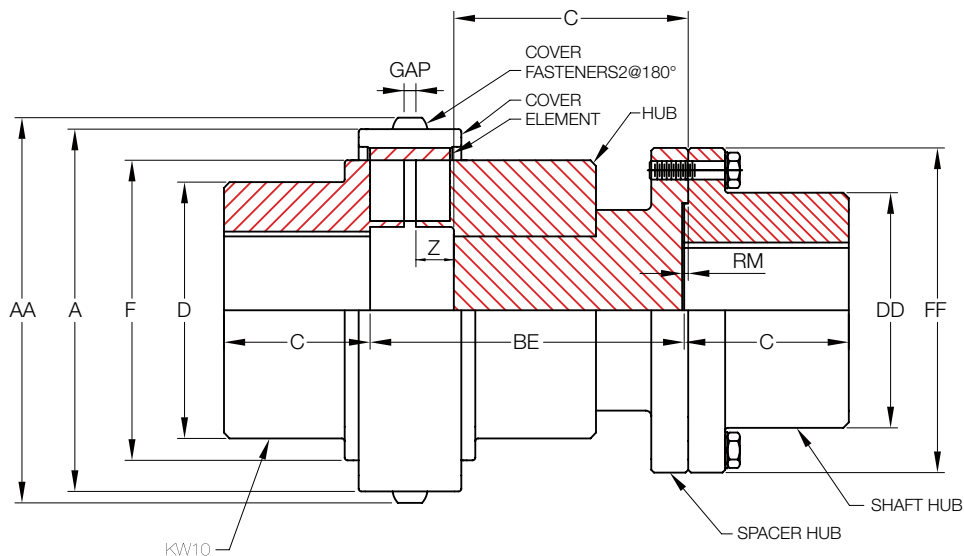


Size	Torque Rating (Nm)	Allow Speed RPM	Max Bore (mm)	Cplg Weight (Kg)		Dimensions (Millimeters)														Cover Fasteners		Flange Fasteners		T-Shaft Hub
						Distance Between Shaft Ends (BE) = 2(C) + 2(Z) + GAP - 2(RM)														Size	Allen Wrench	Size	Per Flange	
						BE		A		AA		B	BDD	FF	RM	S	Z	GAP						
Max	Min	Nylon	Steel	Nylon	Steel	Min BE (Kg)	Add BE (Kg)																	
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	1020	
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	1030	
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	1040	
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	1050	
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	1070	
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	1080	
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	1090	
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	1100	
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	1110	
80	15,027	1,800	170	188.00	0.144	424	250.0	-	370.0	-	381.0	119.4	25.4	320	2.39	-	45.5	6	M10	M6	-	12	1120	
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	1130	

* Coupling Weight is without Bore Machining

NW35 Type

Half Spacer



Size	Torque Rating (Nm)	Allow Speed RPM	Max Bore		Cplg Weight (Kg)		Dimensions (Millimeters)							
			T-Shaft Hub	NW10 Hub	Min BE (Kg)	Add BE (Kg)	Distance Between Shaft Ends (BE) = 2(C) + 2(Z) + GAP - 2(RM)							
							BE		A		AA		B	C NW10 Hub
5	62	4,500	35	38	2.54	0.014	127.0	50.5	76.5	76.5	80.5	80.4		
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 Fasteners		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					
5	159.9	52.4	64.0	86	1.27	Shaft Hub	NW10 Hub	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



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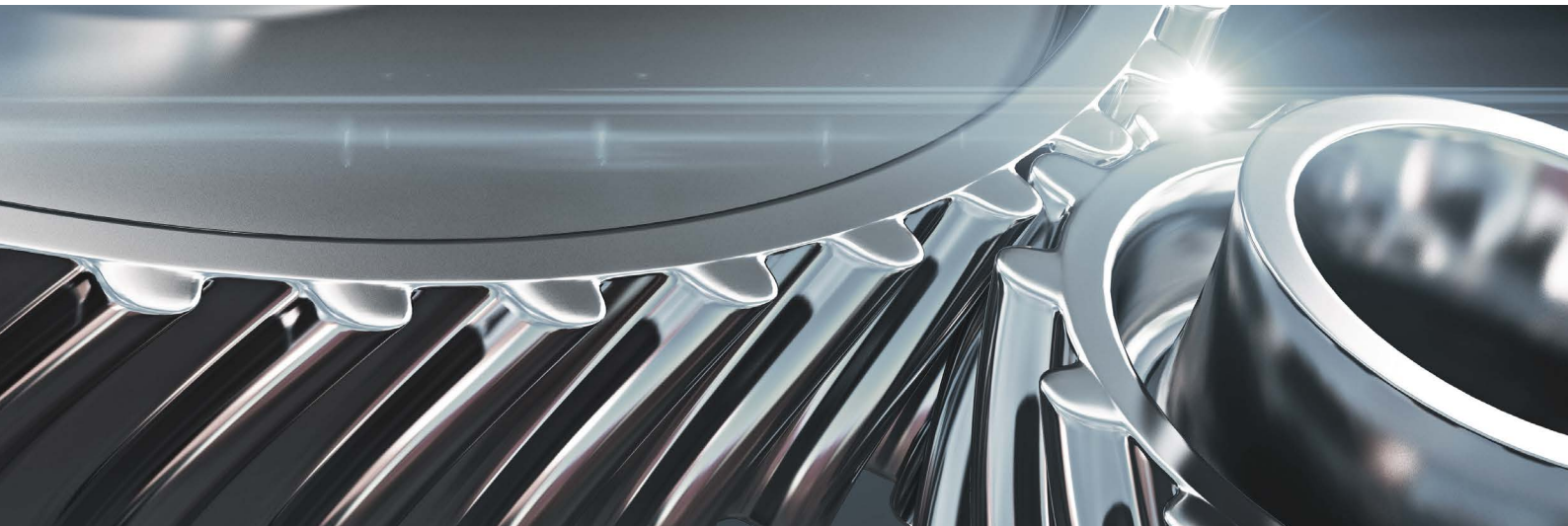
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“NOVUS GEAR and our partners embrace the challenges of day to day plant reliability and undertake to be available to all our customers on a 24/7 basis”