

# Coupling Selection Process

1) Select correct Service Factor (S.F.) from the chart below.

2) Calculate HP/100 RPM or Design Torque (lb-in).

$$\text{HP/100 RPM} = \frac{\text{HP} \times \text{S.F.} \times 100}{\text{coupling RPM}}$$

OR

$$\text{Design Torque (lb-in)} = \frac{63025 \times \text{HP} \times \text{S.F.}}{\text{coupling RPM}}$$

OR

$$\text{Design Torque} = \text{Torque (lb-in)} \times \text{S.F.}$$

Calculate kW/100 RPM or Design Torque (Nm)

$$\text{kW/100RPM} = \frac{\text{kW} \times \text{S.F.} \times 100}{\text{coupling RPM}}$$

$$\text{Design Torque (Nm)} = \frac{9550 \times \text{kW} \times \text{S.F.}}{\text{coupling RPM}}$$

$$\text{Design Torque} = \text{Torque (Nm)} \times \text{S.F.}$$

3) Compare this to the HP/100 RPM (kW/100 RPM) column or the Rated Torque column.

4) Check other limiting factors such as max bores, minimum DBSE, max speed and overall dimensions.

Unit Conversions: HP x .746 = kW or kW x 1.34 = HP  
Nm x 8.851 = lb-in or lb-in x .113 = Nm

## SERVICE FACTOR TABLE

These service factors assume a smooth motor or turbine type driver. The adders listed for other driver types must be added to the service factor shown for the driven equipment.

Adders For Driver Type		Driven Equipment	S.F.	Driven Equipment	S.F.	Driven Equipment	S.F.
DRIVER	ADD	CONVEYORS-Uniform load (Cont.)		FANS		PAPER MILLS-(Cont.)	
TURBINE	0	Flight	1.25	Centrifugal	1.00	Couch	1.75
AC MOTORS		Oven	1.50	Cooling Tower	2.00	Cutters, Platers	2.00
With Soft Start	0	Screw	1.25	FEEDERS		Cylinders	1.75
NEMA A or B, IEC N	0	CONVEYORS-Non-Uniform Load		Apron	1.25	Dryers	1.75
NEMA C or D, IEC H	1	Apron	1.50	Belt	1.25	Felt Stretchers	1.25
DC MOTORS		Assembly	1.25	Disc	1.25	Felt Whipper	2.00
Shunt Type	0	Belt	1.25	Reciprocating	2.50	Presses	2.00
Series or Compound	1	Bucket	1.50	Screw	1.25	Reel	1.50
I/C ENGINES		Chain	1.50	FOOD INDUSTRY		Stock Chests	1.50
8 or More Cylinders	1	Flight	1.50	Cereal Cookers	1.25	Suction Roll	1.75
4-6 Cylinders	1.5	Oven	1.50	Dough Mixers	1.75	Washers and Thickeners	1.50
1-3 Cylinders	2	Reciprocating	2.50	Meat Grinders	1.75	Winders	1.50
<b>Driven Equipment</b>	<b>S.F.</b>	Screw	1.50	Slicers	1.75	PRINTING PRESSES	1.50
AGITATORS		Shaker	2.50	LUMBER INDUSTRY		PUMPS	
Pure Liquids	1.00	CRANES AND HOISTS		Barkers-Drum Type	2.00	Centrifugal	1.00
Liquids and Solids	1.25	Main Cranes	2.00	Edger Feeders	2.00	Reciprocating	
Liquids-Variable Density	1.25	Reversing	2.00	Live Rolls	2.00	Double Acting	2.00
BLOWERS		Skip Hoists	1.75	Log Haul	2.00	Single Acting 1-2 Cylinders	2.25
Centrifugal	1.00	Trolley Drive	1.75	Off Bearing Rolls	2.00	Single Acting 3+ Cylinders	1.75
Lobe	1.50	Bridge Drive	1.75	Planers	1.75	Rotary-Gear, Lobe, Vane	1.50
Vane	1.25	Slope	1.50	Slab Conveyors	1.50	TEXTILE INDUSTRY	
BRIQUETTER MACHINE	1.00	DREDGES		Sorting Table	1.50	Batchers	1.25
CAN FILLING MACHINE	1.00	Cable Reels	1.75	Trimmer Feed	1.75	Calenders	1.75
COMPRESSORS		Conveyors	1.50	MACHINE TOOLS		Card Machines	1.50
Centrifugal	1.25	Maneuvering Winches	1.75	Bending Roll	2.00	Cloth Finishing Machines	1.50
Lobe	1.50	Pumps	1.75	Plate Planer	1.50	Dry Cans	1.75
Reciprocating	C/F	Screen Drives	1.75	Spindle Drives	1.50	Dryers	1.50
CONVEYORS-Uniform Load		Stracers	1.75	Table/Axis Drives	1.25	Dyeing Machinery	1.25
Apron	1.25	Utility Winches	1.50	Tapping Machines	2.50	Looms	1.50
Assembly	1.00	ELEVATORS		PAPER MILLS		Mangles	1.25
Belt	1.00	Bucket	1.75	Beater & Pulper	1.75	Nappers	1.25
Bucket	1.25	Centrifugal Discharge	1.50	Bleacher	1.00	Soapers	1.25
Chain	1.25	Freight	2.00	Calendars	2.00	Spinners	1.50
		Gravity Discharge	1.50	Converting Machines	1.50	Tinter Frames	1.50