



B-FLEX COUPLING PRODUCT MANUAL

OCT-2005 EDITION

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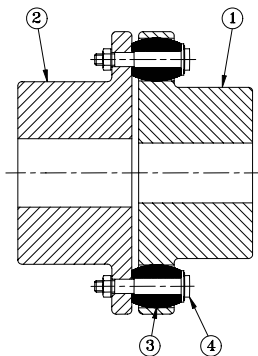
FEATURES OF B-FLEX COUPLING

- Simplicity of construction
- Varying stiffness characteristics
- No lubrication
- Simple or easy maintenance
- Low operational cost
- Smooth & quiet operation
- All metal parts are coated with Anti corrosive agent.

AT A GLANCE

- SIZES: 22 sizes (RB-105-3 to RB-900-16)
- POWER RATING: 1 kW to 1623 kW @ 100 RPM
(1.33 HP to 2176 HP @ 100 RPM)
- MAX. BORE RANGE: 32 mm. to 305 mm.
- MISALIGNMENTS :
 - a) Axial ± 1.5 mm. to ± 4 mm.
 - b) Parallel - ± 0.2 mm. to ± 1.8 mm.
 - c) Angular - $\pm 0.3^\circ$ to $\pm 1^\circ$

COMPONENTS OF B-FLEX COUPLING



B-FLEX coupling consists of following main parts.

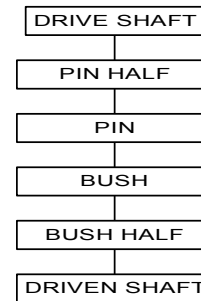
1. Bush half
2. Pin half
3. Bush
4. Pin

The above construction is used for sizes from RB-105-3 to RB-360-11.

For sizes from RB-400-10 to RB-900-16 the bushes are used on either of the hubs for alternative pin bushes.

HOW B-FLEX COUPLING WORKS

B-FLEX coupling consists of four components viz. bush half, pin half, pin & bush. Torque is transmitted from driver shaft to driven shaft as per above order.



STANDARD MATERIAL OF CONSTRUCTION

| COMPONENT | MATERIAL |
|-----------|-------------------------|
| Bush Half | C.I. IBS 1452-61 Gr. 12 |
| Pin Half | C.I. IBS 1452-61 Gr. 12 |
| Pin | Carbon Steel BS-970 |
| Bush | Natural Rubber |
| Hex Nut | BS-1083, 1768 |

VARYING TORSIONAL STIFFNESS

An exclusive feature of B-FLEX coupling

B-FLEX coupling consists of a set of resilient BARREL shaped bushes. These bushes provide varying torsional stiffness characteristics.

Torsional stiffness is the property of flexible coupling which enables the coupling to absorb shocks & vibrations.

If torsional stiffness of a coupling varies according to loading level, coupling can give better performance in shock & vibration absorption.

Due to its peculiar barrel shape bushes, at light loads, torque is transmitted through line of contact of mating parts giving less torsional stiffness.

As load goes on increasing area of contact also increases, hence coupling gives more torsional stiffness.

Thus varying torsional stiffness is achieved in B-FLEX coupling.

APPLICATIONS OF B-FLEX COUPLING

B-FLEX coupling is suitable for general engineering application requiring reliable power transmission, even under conditions of shaft misalignments, which are often unavoidable.

Applications of B-FLEX coupling can be classified according to intensity of load i.e. light, medium & heavy.

- LIGHT
 - Agitators, Centrifugal Blowers, Centrifugal Fans & Pumps, Generators
- MEDIUM
 - Crane Hoists, Machine Tools, Rotary Mills, Centrifugal Compressors, Oil Industry
 - Gear Pumps
- HEAVY
 - Reciprocating Conveyors, Crushers, Metal Mills, Reciprocating Compressors, Cooling Tower Fans, Reciprocating Pumps

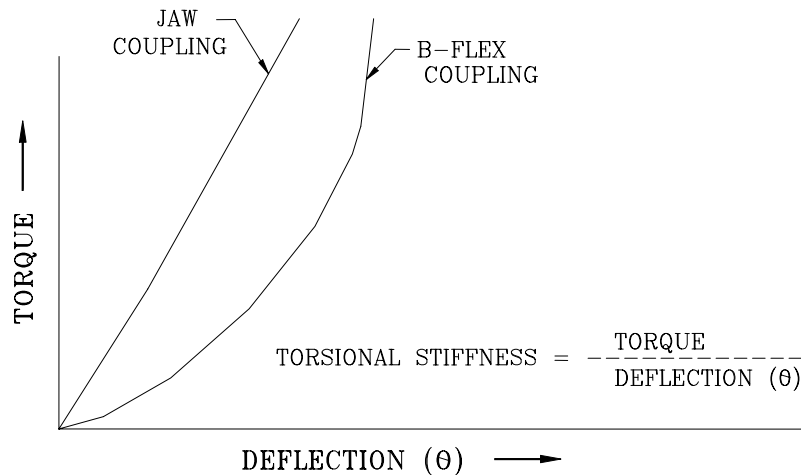
TORSIONAL STIFFNESS FOR STANDARD B-FLEX COUPLING

| COUPLING SIZE | # TORSIONAL STIFFNESS (Nm/degree) |
|---------------|-----------------------------------|
| RB-105 – 3 | 25.9 |
| RB-116 – 4 | 56.3 |
| RB-125 – 4 | 79 |
| RB-144 – 6 | 146 |
| RB-178 – 6 | 266 |
| RB-198 – 10 | 443 |
| RB-228 – 11 | 637 |
| RB-252 – 12 | 1077 |
| RB-285 – 11 | 1112 |
| RB-320 – 12 | 1664 |
| RB-360 – 11 | 2416 |
| RB-400 – 10 | 3010 |
| RB-450 – 12 | 5238 |
| RB-500 – 14 | 8084 |
| RB-560 – 10 | 9918 |
| RB-630 – 12 | 15056 |
| RB-710 – 12 | 25616 |
| RB-800 – 14 | 38019 |
| RB-900 – 16 | 65984 |

At Rated Torque.

Comparison of Torsional Stiffness Characteristics for B-FLEX & JAW Coupling

As torsional stiffness of B-FLEX coupling is varying in nature at different torque transmission values it gives better performance for shock & vibration absorption. Hence results in smooth power transmission.



RATING FOR STANDARD B-FLEX COUPLINGS

| Sr. No. | Coupling Size | Rated Torque | | | Rated Power | | | |
|---------|---------------|--------------|-------|---------|-------------|------|-----------|-------|
| | | Nm | kgm | lbs-in. | @100 rpm | | @1500 rpm | |
| | | | | | kW | HP | kW | HP |
| 1 | RB-105 - 3 | 95.5 | 9.74 | 758 | 1 | 1.3 | 15 | 20 |
| 2 | RB-116 - 4 | 146 | 14.9 | 1293 | 1.5 | 2 | 23 | 31 |
| 3 | RB-125 - 4 | 165 | 16.8 | 1458 | 1.7 | 2.3 | 26 | 35 |
| 4 | RB-144 - 6 | 318 | 32.4 | 2812 | 3.3 | 4.5 | 50 | 67 |
| 5 | RB-162 - 6 | 525 | 53.5 | 4643 | 5.5 | 7.4 | 82.5 | 111 |
| 6 | RB-178 - 6 | 643 | 65.6 | 5694 | 6.7 | 9 | 101 | 135 |
| 7 | RB-198 - 10 | 1247 | 127 | 11023 | 13 | 17.5 | 196 | 263 |
| 8 | RB-228 - 11 | 2050 | 209 | 18143 | 21.4 | 28.8 | 322 | 432 |
| 9 | RB-252 - 12 | 3070 | 313 | 27170 | 32.1 | 43 | 482 | 646 |
| 10 | RB-285 - 11 | 4552 | 464 | 40285 | 47.6 | 64 | 715 | 960 |
| 11 | RB-320 - 12 | 6100 | 622 | 53985 | 63.8 | 86 | 958 | 1285 |
| 12 | RB-360 - 11 | 8900 | 907 | 78765 | 93.2 | 125 | 1398 | 1875 |
| 13 | RB-400 - 10 | 12051 | 1228 | 106651 | 126.2 | 169 | 1893 | 2538 |
| 14 | RB-450 - 12 | 18602 | 1896 | 164628 | 195 | 261 | 2922 | 3917 |
| 15 | RB-500 - 14 | 25802 | 2630 | 228348 | 270 | 362 | 4053 | 5433 |
| 16 | RB-560 - 10 | 31003 | 3160 | 274377 | 325 | 435 | 4870 | 6529 |
| 17 | RB-630 - 12 | 42000 | 4281 | 371700 | 440 | 590 | 6597 | 8844 |
| 18 | RB-710 - 12 | 75000 | 7645 | 663750 | 785 | 1052 | 11781 | 15793 |
| 19 | RB-800 - 14 | 100000 | 10194 | 885000 | 1047 | 1403 | 15708 | 21057 |
| 20 | RB-900 - 16 | 155000 | 15800 | 1371750 | 1623 | 2175 | 24347 | 32637 |

NOTE : Each coupling is capable of withstanding maximum torque of 3 times of nominal torque for short durations such as during start-up.

WEIGHT & MI FOR B-FLEX COUPLING

| COUPLING SIZE | Wt. kg | MI in kgm ² Approx. | |
|---------------|--------|--------------------------------|-----------------|
| | | WR ² | GD ² |
| RB-105 – 3 | 2 | 0.003 | 0.012 |
| RB-116 – 4 | 2.3 | 0.0048 | 0.0192 |
| RB-125 – 4 | 3.1 | 0.0069 | 0.0276 |
| RB-144 – 6 | 4.3 | 0.012 | 0.048 |
| RB-162 – 6 | 6.3 | 0.03 | 0.012 |
| RB-178 – 6 | 8.6 | 0.04 | 0.016 |
| RB-198 – 10 | 12 | 0.062 | 0.248 |
| RB-228 – 11 | 18 | 0.10 | 0.4 |
| RB-252 – 12 | 24 | 0.17 | 0.68 |
| RB-285 – 11 | 35 | 0.31 | 1.24 |
| RB-320 – 12 | 51 | 0.53 | 2.12 |
| RB-360 – 11 | 73 | 1.02 | 4.08 |
| RB-400 – 10 | 101 | 1.7 | 6.8 |
| RB-450 – 12 | 137 | 2.9 | 11.6 |
| RB-500 – 14 | 180 | 4.7 | 18.8 |
| RB-560 – 10 | 278 | 10.7 | 42.8 |
| RB-630 – 12 | 365 | 17.4 | 69.6 |
| RB-710 – 12 | 516 | 33.0 | 132 |
| RB-800 – 14 | 691 | 53.0 | 212 |
| RB-900 – 16 | 927 | 86.0 | 344 |

Note : Weight & MI are at maximum Bores.

| Basic Size (mm.) | | H7 | Js9 | For |
|------------------|------------------|----------------|------------------------|--------------------|
| Above | Upto & including | For Bore (mm.) | For Keyway Width (mm.) | Keyway Depth (mm.) |
| 3 | 6 | + 0.012/00 | ± 0.015 | + 0.1/0 |
| 6 | 10 | + 0.015/00 | ± 0.018 | |
| 10 | 18 | + 0.018/00 | ± 0.021 | |
| 18 | 30 | + 0.021/00 | ± 0.026 | 0.2/0 |
| 30 | 50 | + 0.025/00 | ± 0.031 | |
| 50 | 80 | + 0.030/00 | ± 0.037 | |
| 80 | 120 | + 0.035/00 | ± 0.043 | + 0.3/0 |
| 120 | 180 | + 0.040/00 | ± 0.050 | |
| 180 | 250 | + 0.046/00 | ± 0.057 | |
| 250 | 315 | + 0.052/00 | ± 0.065 | + 0.4/0 |
| 315 | 400 | + 0.057/00 | ± 0.070 | |
| 400 | 500 | + 0.063/00 | ± 0.077 | |

HOW TO SELECT B-FLEX COUPLING

I. SELECTION PROCEDURE

- (a) **Service Factor**
Determine appropriate SERVICE FACTOR from table A. given on next page.
- (b) **Design Power**
Multiply running power of driven machinery by the service factor. This gives DESIGN POWER, which is used as a basis for coupling selection.
- (c) **Coupling Size**
Refer to respective table for your required coupling type and read from the appropriate speed column until a power equal to or greater than the DESIGN POWER is found.
- (d) **Bore size**
Refer respective coupling dimensional table to check that the reqd. bores can be accommodated. If bore size of selected coupling can't accommodate, the shaft size then go for next coupling size where shaft size can be accommodated.

II. SELECTION EXAMPLE

A coupling is required to transmit 75 kW from an electric motor, which runs at 1500 rev/min to a rotary mill. Shaft diameters for motor & rotary mill is 80 mm. & 85 mm. resp.

- (a) **Service Factor**
From Table 'A', service factor is 1.25.
- (b) **Design Power**
Design Power = 75 x 1.25 = 93.75 kW @ 1500 RPM
- (c) **Coupling Size**
First power rating for 1500 rev/min, which exceeds the design power of 93.75 kW, is 101 kW. Hence coupling size will be RB-178 - 6.
- (d) **Bore Size**
Max. bore sizes for RB-178 - 6 can not accommodate given shaft dias. Hence next coupling sizes are checked, and found RB-198-10 (Max. Bores 80 & 90 mm) can accommodate the required bores, hence selection of RB-198-10 is OK for this application.

SERVICE FACTOR TABLE 'A'

| DRIVEN MACHINE CLASS | TYPE OF DRIVING UNIT | | |
|---|----------------------------------|---|---|
| | Electric motor, steam turbine | Multi cylinder IC engine or steam engine or water turbine | Single cylinder IC engine or steam engine |
| <u>UNIFORM</u> Agitators, Brewing machinery, Centrifugal Blowers, Conveyors, Centrifugal fans and pumps, Generators, Sewage disposal equipments, Evaporators, Feeders, Textile machines, Wood working machines. | 1.00 | 1.25 | 1.50 |
| <u>MODERATE SHOCK</u> Clay working machinery, Crane Hoists, Laundry machinery, Machine Tools, Rotary mills, Paper mill machinery, Non- uniformly loaded centrifugal pumps, Rotary screens, Centrifugal compressors, Shredders, Printing presses, Oil industry, Mixers, Food industry, Beaters, Bucket elevators, Gear pumps, Wood working machinery, Textile machinery. | 1.25 | 1.50 | 1.75 |
| <u>HEAVY SHOCK</u> Reciprocating conveyors, Crushers, Shakers, Metal mills, Rubber machinery (Banbury mixers & mills), Reciprocating compressors, Welding sets, Freight & passenger elevators, Cooling tower fans, Hammer mills, Reciprocating pumps, Vibrating screens, Winches, Wire drawing machines. | 1.75 | 2.00 | 2.25 |

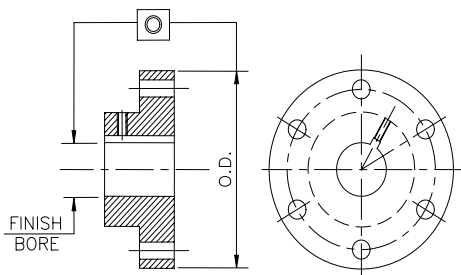
INSTALLATION INSTRUCTIONS

(A) BEFORE INSTALLATION

- After removing the coupling from packing, thoroughly inspect for sign of damage or loss.
- Remove protective coating/lubricant from bores & keyways dismantle the assembly.
- If the coupling is supplied in pilot bore, the finish bore must be done w.r.t. coupling OD. The keyway must be done in between two adjacent holes. (Ref. Fig. 'A' given below)

B) MOUNTING PROCEDURE

Fig. A



Mount the Pin & Bush halves on their respective shafts such that the shaft ends are flush with inner face. Tighten the setscrew over the keys.

Bring both the halves (along with equipments) closer to maintain the std. distance between two shaft ends. (Refer Table 1 & Fig.B for Gap 'S')

Deviation in std. gap 'S' is defined as axial misalignment (end float).

For normal applications the shaft ends should be flushed with inner face of halves. In some special cases, the shaft ends

may protrude beyond the inner face of halves or may remain inside if required, but the gap 'S' should be maintained as specified.

(C) ALIGNMENT PROCEDURE

Alignment procedure is given separately for each type of alignment, for simplicity. However all 3 type of misalignments may be present at the same time.

Refer table 1 & 2 for acceptable limits of misalignments.

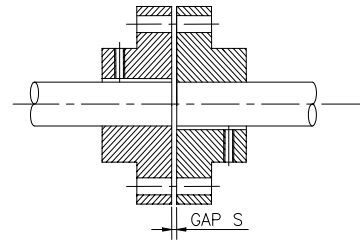
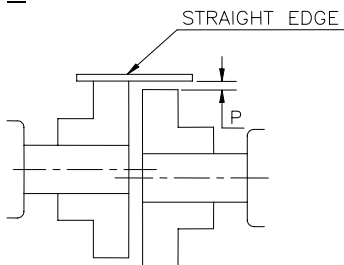


Fig B

(I) CHECKING PARALLEL / RADIAL ALIGNMENT

Fig. C



* Using Straight Edge (Fig. C)

Align straight edge on flange OD of one of the halves, measure the gap at 4 places 90° apart, gap 'P' will be the parallel / Radial misalignment. (Refer table 1 & 2 for allowable parallel misalignment values)

* Using Dial Gauge (Fig. D)

Fix the dial gauge on hub OD of one of the halves & set plunger on the flange OD of another half.

Rotate the coupling slowly to one complete revolution by taking dial gauge reading at 4 places 90° apart. The parallel misalignment is half the Total Indicated Reading (TIR) shown on dial gauge which is equal to values 'P' given in table 1 & 2. (Refer table 1 & 2 for allowable parallel misalignment values)

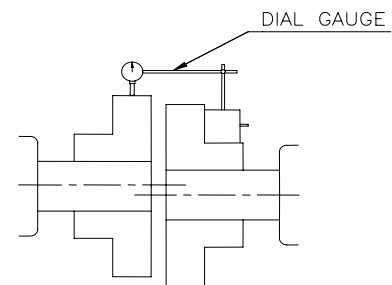
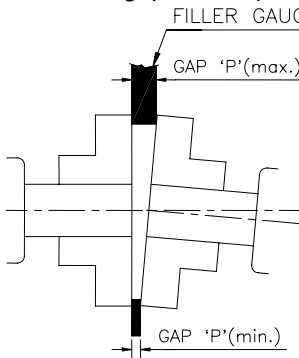


Fig. D

(II) CHECKING ANGULAR ALIGNMENT

*** Using Filler Gauge (Fig. E)**

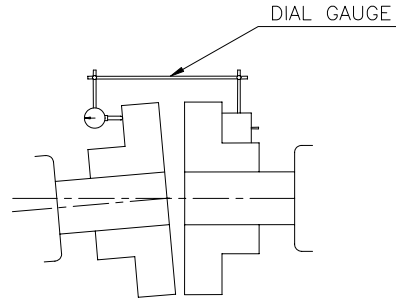
Measure gap 'P' at 4 places 90° apart. The difference in maximum & minimum gap will be the Total Indicated Reading (TIR), which will be the angular misalignment present. (Refer table 1 & 2 for allowable TIR values in mm.)



values in mm)

*** Using Dial Gauge (Fig.F)**

Fix the dial gauge on hub OD of the one of the halves & set plunger on the face of the flange of the another half as shown. Rotate coupling slowly to one complete revolution by taking dial readings at 4 intervals 90° apart. The Total Indicated Reading (TIR) will be the angular misalignment. (Refer table 1 & 2 for allowable TIR



After alignment, tighten all foundation & base frame bolts.

Fig: F

IMPORTANT: The misalignment capabilities shown in drawings or product literature are for dynamic conditions & variations.

For optimum service from the coupling, the installation (Initial) misalignment should not be more than 25% of the maximum allowable misalignments limits. Allowance should be made for any anticipated movements which will occurs during operation (e.g. Thermal movements).

IMPORTANT: The necessity for shields & guards varies with individuals installations. The owner or user must provide the required safety guards. Safety guards or shields are not furnished by us with this equipments.

TABLE 1

| SR NO | COUPLING SIZE | Permissible Initial Misalignment | | | | * GAP 'S' (Std) |
|-------|---------------|----------------------------------|----------------------------------|------------|--------------------------|-----------------|
| | | Angular | | Axial (mm) | Parallel / Radial 'P' mm | |
| | | Degree | Total Indicated Reading (TIR) mm | | | |
| 1 | RB-105 - 3 | 0.25° | 0.458 | 0.5 | 0.075 | 2-6 |
| 2 | RB-116 - 4 | 0.25° | 0.489 | 0.5 | 0.075 | 2-6 |
| 3 | RB-125 - 4 | 0.25° | 0.545 | 0.5 | 0.1 | 2-6 |
| 4 | RB-144 - 6 | 0.25° | 0.628 | 0.5 | 0.1 | 2-6 |
| 5 | RB-162 - 6 | 0.25° | 0.707 | 0.5 | 0.125 | 2-6 |
| 6 | RB-178 - 6 | 0.25° | 0.777 | 0.5 | 0.125 | 2-6 |
| 7 | RB-198 - 10 | 0.25° | 0.864 | 0.5 | 0.125 | 2-6 |
| 8 | RB-228 - 11 | 0.25° | 0.995 | 0.75 | 0.15 | 4-10 |
| 9 | RB-252 - 12 | 0.25° | 1.099 | 0.75 | 0.15 | 4-10 |
| 10 | RB-285 - 11 | 0.25° | 1.243 | 0.75 | 0.175 | 4-10 |
| 11 | RB-320 - 12 | 0.25° | 1.396 | 0.75 | 0.175 | 4-10 |
| 12 | RB-360 - 11 | 0.25° | 1.571 | 1.0 | 0.225 | 4-12 |
| 13 | RB-400 - 10 | 0.25° | 1.745 | 1.0 | 0.275 | 4-12 |
| 14 | RB-450 - 12 | 0.125° | 0.982 | 1.0 | 0.275 | 4-12 |
| 15 | RB-500 - 14 | 0.1° | 0.873 | 1.0 | 0.275 | 4-12 |
| 16 | RB-560 - 10 | 0.075° | 0.733 | 0.5 | 0.375 | 4-8 |
| 17 | RB-630 - 12 | 0.075° | 0.825 | 0.5 | 0.375 | 4-8 |
| 18 | RB-710 - 12 | 0.075° | 0.929 | 0.5 | 0.45 | 5-9 |
| 19 | RB-800 - 14 | 0.075° | 1.047 | 0.5 | 0.45 | 5-9 |
| 20 | RB-900 - 16 | 0.075° | 1.178 | 0.5 | 0.45 | 5-9 |

* Gap 'S' in the above table is given when angular & axial misalignments are zero.

Note: For permissible maximum misalignments, refer Table 2.

TABLE 2

| SR NO | COUPLING SIZE | Permissible Maximum Misalignment | | | * GAP 'S' (Std) | |
|-------|---------------|----------------------------------|----------------------------------|------------|--------------------|--------------------------|
| | | Angular | | Axial (mm) | | Parallel / Radial 'P' mm |
| | | Degree | Total Indicated Reading (TIR) mm | | | |
| 1 | RB-105 - 3 | 1° | 1.833 | 2 | 0.3 | 2-6 |
| 2 | RB-116 - 4 | 1° | 1.955 | 2 | 0.3 | 2-6 |
| 3 | RB-125 - 4 | 1° | 2.182 | 2 | 0.4 | 2-6 |
| 4 | RB-144 - 6 | 1° | 2.513 | 2 | 0.4 | 2-6 |
| 5 | RB-162 - 6 | 1° | 2.827 | 2 | 0.4 | 2-6 |
| 6 | RB-178 - 6 | 1° | 3.107 | 2 | 0.5 | 2-6 |
| 7 | RB-198 - 10 | 1° | 3.456 | 2 | 0.5 | 2-6 |
| 8 | RB-228 - 11 | 1° | 3.979 | 3 | 0.6 | 4-10 |
| 9 | RB-252 - 12 | 1° | 4.398 | 3 | 0.6 | 4-10 |
| 10 | RB-285 - 11 | 1° | 4.973 | 3 | 0.7 | 4-10 |
| 11 | RB-320 - 12 | 1° | 5.584 | 3 | 0.7 | 4-10 |
| 12 | RB-360 - 11 | 1° | 6.282 | 4 | 0.9 | 4-12 |
| 13 | RB-400 - 10 | 1° | 6.980 | 4 | 1.1 | 4-12 |
| 14 | RB-450 - 12 | 0.5° | 3.926 | 4 | 1.1 | 4-12 |
| 15 | RB-500 - 14 | 0.4° | 3.490 | 4 | 1.1 | 4-12 |
| 16 | RB-560 - 10 | 0.3° | 2.932 | 2 | 1.5 | 4-8 |
| 17 | RB-630 - 12 | 0.3° | 3.298 | 2 | 1.5 | 4-8 |
| 18 | RB-710 - 12 | 0.3° | 3.717 | 2 | 1.8 | 5-9 |
| 19 | RB-800 - 14 | 0.3° | 4.188 | 2 | 1.8 | 5-9 |
| 20 | RB-900 - 16 | 0.3° | 4.71 | 2 | 1.8 | 5-9 |

* Gap 'S' in the above table is given when angular & axial misalignments are zero.

Important: At the time of installation, INITIAL misalignments should not exceed 25% of permissible maximum misalignments.

Note : For permissible initial misalignments, refer Table 1.

(D) ASSEMBLY PROCEDURE

Insert all the pins with bushes at bush half & tighten the nuts evenly with tightening torques as mentioned in table 3.

Use Loctite to prevent the loosening of threads, if required.

TABLE 3:**RECOMMENDED TIGHTENING TORQUES**

| SR. NO. | COUPLING SIZE | BOLT SIZE | TIGHTENING TORQUE (Nm) |
|----------------|----------------------|------------------|-------------------------------|
| 1 | RB-105 - 3 | M8 | 22 |
| 2 | RB-116 - 4 | | |
| 3 | RB-125 - 4 | | |
| 4 | RB-144 - 6 | | |
| 5 | RB-162 - 6 | M10 | 45 |
| 6 | RB-178 - 6 | | |
| 7 | RB-198 - 10 | | |
| 8 | RB-228 - 11 | M14 | 125 |
| 9 | RB-252 - 12 | M16 | 190 |
| 10 | RB-285 - 11 | | |
| 11 | RB-320 - 12 | | |
| 12 | RB-360 - 11 | M20 | 385 |
| 13 | RB-400 - 10 | | |
| 14 | RB-450 - 12 | | |
| 15 | RB-500 - 14 | | |
| 16 | RB-560 - 10 | M36 | 2325 |
| 17 | RB-630 - 12 | | |
| 18 | RB-710 - 12 | M42 | 3720 |
| 19 | RB-800 - 14 | | |
| 20 | RB-900 - 16 | | |

Note:

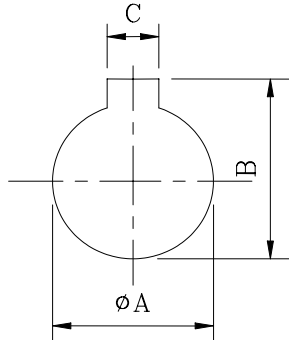
All the above values are for Hexagon headed High Tensile Gr. 10.9 bolts as per IS 1364.

SPARE DETAILS FOR B-FLEX COUPLING

| COUPLING SIZE | PIN HALF PART NO. | BUSH HALF PART NO. | PIN + WASHER PART NO. | BUSH PART NO. | NO. OF PIN-BUSH ASSY/ COUPLIN G | NUT SIZE |
|------------------|-------------------------|--------------------------|-----------------------------|---------------------|---|-------------|
| RB-105 - 3 | RB-105-3/1 | RB-105-3/2 | RB/P-2 | RB/B-2 | 3 | M8 |
| RB-116 - 4 | RB-116-4/1 | RB-112-4/2 | RB/P-2 | RB/B-2 | 4 | M8 |
| RB-125 - 4 | RB-125-4/1 | RB-125-4/2 | RB/P-2 | RB/B-2 | 4 | M8 |
| RB-144 - 6 | RB-144-6/1 | RB-144-6/2 | RB/P-2 | RB/B-2 | 6 | M8 |
| RB-162 - 6 | RB-162-6/1 | RB-162-6/2 | RB/P-3 | RB/B-3 | 6 | M10 |
| RB-178 - 6 | RB-178-6/1 | RB-178-6/2 | RB/P-3 | RB/B-3 | 6 | M10 |
| RB-198 - 10 | RB-198-10/1 | RB-198-10/2 | RB/P-3 | RB/B-3 | 10 | M10 |
| RB-228 - 11 | RB-228-11/1 | RB-228-11/2 | RB/P-4 | RB/B-4 | 11 | M14 |
| RB-252 - 12 | RB-252-12/1 | RB-252-12/2 | RB/P-4 | RB/B-4 | 12 | M14 |
| RB-285 - 11 | RB-285-11/1 | RB-285-11/2 | RB/P-5 | RB/B-5 | 11 | M16 |
| RB-320 - 12 | RB-320-12/1 | RB-320-12/2 | RB/P-5 | RB/B-5 | 12 | M16 |
| RB-360 - 11 | RB-360-11/1 | RB-360-11/2 | RB/P-6 | RB/B-6 | 11 | M20 |
| RB-400 - 10 | RB-400-10 | | RB/P-7 | RB/B-7 | 10 | M20 |
| RB-450 - 12 | RB-450-12 | | RB/P-7 | RB/B-7 | 12 | M20 |
| RB-500 - 14 | RB-500-14 | | RB/P-7 | RB/B-7 | 14 | M20 |
| RB-560 - 10 | RB-560-10 | | RB/P-8 | RB/B-8 | 10 | M36 |
| RB-630 - 12 | RB-630-12 | | RB/P-8 | RB/B-8 | 12 | M36 |
| RB-710 - 12 | RB-710-12 | | RB/P-9 | RB/B-9 | 12 | M42 |
| RB-800 - 14 | RB-800-14 | | RB/P-9 | RB/B-9 | 14 | M42 |
| RB-900 - 16 | RB-900-16 | | RB/P-9 | RB/B-9 | 16 | M42 |

STANDARD TOLERANCES FOR FINISH BORE & KEYWAY

Unless otherwise specified, couplings with finish bore & keyway are supplied as per IS 2048 :1962 and tolerances in H7 & Js9 (as per IS-919 (Part 2) : 1993 standard).



ØA - Bore
 B - Keyway Depth
 C - Keyway Width

| Basic Size (mm.) | | H7 | JS9 | For |
|------------------|------------------|-----------------|------------------------|--------------------|
| Above | Upto & including | For Bores (mm.) | For Keyway Width (mm.) | Keyway Depth (mm.) |
| 3 | 6 | + 0.012 | ± 0.015 | + 0.1 |
| 6 | 10 | + 0.015 | ± 0.018 | |
| 10 | 18 | + 0.018 | ± 0.021 | |
| 18 | 30 | + 0.021 | ± 0.026 | + 0.2 |
| 30 | 50 | + 0.025 | ± 0.031 | |
| 50 | 80 | + 0.030 | ± 0.037 | |
| 80 | 120 | + 0.035 | ± 0.043 | + 0.3 |
| 120 | 180 | + 0.040 | ± 0.050 | |
| 180 | 250 | + 0.046 | ± 0.057 | |
| 250 | 315 | + 0.052 | ± 0.065 | + 0.4 |
| 315 | 400 | + 0.057 | ± 0.070 | + 0.5 |
| 400 | 500 | + 0.063 | ± 0.077 | |

COMPARISON OF B-FLEX (RB) & CONE-FLEX (RC) COUPLINGS

There is a substantial difference in prices of RB & RC couplings. RB is relatively cheaper than RC coupling.

The causes of price difference are as follows.

| CONE-FLEX (RC) | B-FLEX (RB) |
|--|--|
| Multiple cone rings are used for single pin. | One bush is used for one pin. |
| Holes on bush half are reamed. | Holes on bush half are drilled. |
| Holes are machined with close tol. on PCD & Pitch. | Holes are machined with comparatively loose tol. on PCD & Pitch. |
| Nylock nuts are used on pins. | Std. nuts are used on pins. |
| Cone rings are made from nitrile rubber. | Bushes are made from natural rubber. |

**EQUIVALENT RATHI B-FLEX RB COUPLING
FOR RATHI RC COUPLING**

| RATHI RC | | | | RATHI B-FLEX RB | | | |
|------------------|-------------------|-----------------|-----|------------------|-------------------|-----------------|-----|
| COUPLING SIZE | kW AT 1500 rpm | MAX. BORE (mm.) | | COUPLING SIZE | kW AT 1500 rpm | MAX. BORE (mm.) | |
| | | BH | PH | | | BH | PH |
| 020 | 8.4 | 20 | 28 | 105-3 | 15 | 30 | 32 |
| 030 | 18 | 30 | 38 | 116-4 | 23 | 39 | 42 |
| 038 | 30 | 38 | 42 | 144-6 | 50 | 50 | 60 |
| 042 | 45 | 42 | 48 | 144-6 | 50 | 50 | 60 |
| 048 | 75 | 48 | 55 | 162-6 | 82.5 | 60 | 65 |
| 058 | 120 | 58 | 65 | 198-10 | 196 | 80 | 90 |
| 070 | 165 | 70 | 75 | 198-10 | 196 | 80 | 90 |
| 075 | 405 | 75 | 80 | 252-12 | 482 | 105 | 115 |
| 085 | 555 | 85 | 90 | 285-11 | 715 | 115 | 125 |
| 105 | 840 | 105 | 120 | 320-12 | 958 | 125 | 135 |
| 120 | 1410 | 120 | 130 | 360 -11* | 1395 | 135 | 150 |
| 135 | 1920 | 135 | 150 | 400 -10* | 1893 | 160 | 160 |
| 150 | 2505 | 150 | 170 | 450-12 | 2922 | 180 | 180 |
| 170 | 3870 | 170 | 190 | 500-14 | 4053 | 200 | 200 |
| 190 | 5400 | 190 | 215 | 630-12 | 6597 | 250 | 250 |
| 215 | 7005 | 215 | 240 | 710-12 | 11781 | 260 | 260 |

NOTE: Above comparison is done on the basis of both, kW rating & maximum bore sizes.

* Rating of RB coupling is marginally less than RC coupling.

*BH = Bush Half & PH = Pin Half

COMPETITORS FOR B-FLEX COUPLING

| SR | COMPETITOR | MAX. Kw @ 1500 rpm | MAX. BORE (MM.) |
|----|--|-----------------------|--------------------|
| 1 | Flender Rupex (RWN Series) (GERMANY) | 157500 | 600 |
| 2 | SNS Coupling (CL & HCL Series) (JAPAN) | 17259 @ 1500 rpm | 280 |
| 3 | Fenner [Type B] [INDIA] | 3735 @ 1500 rpm | 190 |
| 4 | Unique [PB Series] [INDIA] | 62751 @ 1500 rpm | 450 |

**EQUIVALENT RATHI B-FLEX RB COUPLING
FOR FLENDER RUPEX COUPLING**

| RUPEX RWN | | | | RATHI B-FLEX RB | | | |
|-----------|----------|-----------------|-----|------------------|----------|-----------------|-----|
| COUPLING | kW AT | MAX. BORE (mm.) | | COUPLING | KW AT | MAX. BORE (mm.) | |
| SIZE | 1500 rpm | BH | PH | SIZE | 1500 rpm | BH | PH |
| 105 | 23.4 | 32 | 38 | 125-4 | 26 | 45 | 50 |
| 125 | 40.8 | 40 | 48 | 144 -6 | 50 | 50 | 60 |
| 144 | 61.2 | 45 | 55 | 162-6 | 82.5 | 60 | 65 |
| 162 | 91.05 | 50 | 60 | 178-6 | 101 | 70 | 75 |
| 178 | 113.1 | 60 | 70 | 198-10 | 196 | 80 | 90 |
| 198 | 157.5 | 70 | 80 | 198-10 | 196 | 80 | 90 |
| 228 | 265.5 | 80 | 90 | 228-11 | 322 | 90 | 100 |
| 252 | 330 | 90 | 100 | 228 -11* | 322 | 90 | 100 |
| 285 | 519 | 100 | 110 | 285-11 | 715 | 115 | 125 |
| 320 | 660 | 110 | 120 | 285-11 | 715 | 115 | 125 |
| 360 | 942 | 120 | 130 | 320-12 | 960 | 125 | 135 |
| 400 | 1530 | 140 | 140 | 400-10 | 1893 | 160 | 160 |
| 450 | 2280 | 160 | 160 | 450-12 | 2922 | 180 | 180 |
| 500 | 2985 | 180 | 180 | 450 -12* | 2922 | 180 | 180 |
| 560 | 4710 | 180 | 200 | 560-10 | 4870 | 225 | 225 |
| 630 | 6285 | 180 | 220 | 630-12 | 6597 | 250 | 250 |
| 710 | 10200 | 200 | 240 | 710-12 | 11781 | 260 | 260 |
| 800 | 13500 | 220 | 260 | 800-14 | 15708 | 280 | 280 |
| 900 | 18750 | 260 | 290 | 900-16 | 24347 | 305 | 305 |
| 1000 | 24000 | 280 | 320 | NOT AVAILABLE | | | |
| 1120 | 33000 | 300 | 350 | | | | |
| 1250 | 42000 | 330 | 380 | | | | |
| 1400 | 64500 | 380 | 440 | | | | |
| 1600 | 91500 | 440 | 480 | | | | |
| 1800 | 118500 | 500 | 540 | | | | |
| 2000 | 157500 | 560 | 600 | | | | |

* Rating of RB is marginally less than Flender.

NOTE: Above comparison is done on the basis of both, kW rating & maximum bore sizes.

*BH = Bush Half & PH = Pin Half

EQUIVALENT RATHI B-FLEX RB COUPLING
FOR SNS CL & HCL COUPLING

| SNS COUPLING | | | RATHI B-FLEX COUPLING | | | |
|------------------|-------------------|----------------------|-----------------------|-------------------|-----------------|-----|
| COUPLING SIZE | kW AT 1500 rpm | MAX. BORE (mm) | COUPLING SIZE | kW AT 1500 rpm | MAX. BORE (mm.) | |
| | | | | | BH | PH |
| CL-140 | 7.7 | 35 | RB-105-3* | 15 | 30 | 32 |
| CL-160 | 17.3 | 45 | RB-125-4 | 26 | 45 | 50 |
| CL-180 | 24.6 | 50 | RB-125-4* | 26 | 45 | 50 |
| CL-200 | 39 | 56 | RB-144-6* | 50 | 50 | 60 |
| CL-224 | 62 | 63 | RB-178-6 | 101 | 70 | 75 |
| CL-250 | 97 | 71 | RB-178-6 | 101 | 70 | 75 |
| CL-280 | 154 | 80 | RB-198-10 | 196 | 80 | 90 |
| CL-315 | 247 | 90 | RB-228-11 | 322 | 90 | 100 |
| CL-355 | 385 | 100 | RB-252-12 | 482 | 105 | 115 |
| CL-400 | 616 | 110 | RB-285-11 | 715 | 115 | 125 |
| CL-450 | 971 | 125 | RB-320-12** | 958 | 125 | 135 |
| CL-560 | 1541 | 140 | RB-400-10 | 1893 | 160 | 160 |
| CL-630 | 2466 | 160 | RB-450-12 | 2922 | 180 | 180 |
| HCL-710B | 3852 | 180 | RB-500-14 | 4053 | 200 | 200 |
| HCL-711B | 5239 | 200 | RB-630-12 | 6597 | 250 | 250 |
| HCL-800B | 6934 | 210 | RB-710-12 | 11781 | 260 | 260 |
| HCL-900B | 8629 | 225 | RB-710-12 | 11781 | 260 | 260 |
| HCL-901B | 10941 | 250 | RB-710-12 | 11781 | 260 | 260 |
| HCL-1000B | 13869 | 265 | RB-800-14 | 15708 | 280 | 280 |
| HCL-1120B | 17259 | 280 | RB-900-16 | 24347 | 305 | 305 |

NOTE: Above comparison is done on the basis of both, kW rating & maximum bore sizes.

* The max. bore BH of RB size is only marginally less than that of SNS CL size.

** The rating of RB size is only marginally less than that of SNS CL size.

***BH = Bush Half & PH = Pin Half

**EQUIVALENT RATHI B-FLEX RB COUPLING
FOR FENNER TYPE B COUPLING**

| FENNER TYPE 'B' COUPLING | | | RATHI B-FLEX COUPLING | | | |
|--------------------------|----------------|----------------|-----------------------|----------------|-----------------|-----|
| COUPLING SIZE | Kw AT 1500 rpm | MAX. BORE (mm) | COUPLING SIZE | kW AT 1500 rpm | MAX. BORE (mm.) | |
| | | | | | PH | BH |
| BC 1 | 12 | 28 | RB-105-3 | 15 | 32 | 30 |
| BC 2 | 49 | 30 | RB-144-6 | 84 | 60 | 50 |
| BC 2A | 81 | 42 | RB-144-6 | 84 | 60 | 50 |
| BC 3 | 98 | 48 | RB-178-6 | 101 | 75 | 70 |
| BC 4 | 131 | 65 | RB-198-10 | 196 | 90 | 80 |
| BC 4A | 195 | 65 | RB-198-10 | 196 | 90 | 80 |
| BC 5 | 261 | 75 | RB-228-11 | 322 | 100 | 90 |
| BC 6 | 371 | 95 | RB-252-12 | 482 | 115 | 105 |
| BC 6A | 461 | 95 | RB-252-12 | 482 | 115 | 105 |
| BC 6B | 355 | 95 | RB-285-11 | 715 | 125 | 115 |
| NBC 7 | 653 | 115 | RB-285-11 | 715 | 125 | 115 |
| NBC 7A | 818 | 120 | RB-320-12 | 958 | 135 | 125 |
| NBC 8 | 914 | 130 | RB-360-11 | 1398 | 150 | 135 |
| NBC 8A | 1142 | 135 | RB-360-11 | 1398 | 150 | 135 |
| NBC 8B | 1371 | 140 | RB-400-10 | 1893 | 160 | 160 |
| NBC 9 | 1560 | 150 | RB-400-10 | 1893 | 160 | 160 |
| NBC 9A | 2085 | 160 | RB-450-12 | 2922 | 180 | 180 |
| NBC 10 | 2265 | 170 | RB-450-12 | 2922 | 180 | 180 |
| NBC 10A | 2835 | 180 | RB-450-12 | 2922 | 180 | 180 |
| NBC 11 | 3735 | 190 | RB-500-14 | 4053 | 200 | 200 |

NOTE: Above comparison is done on the basis of both, kW rating & maximum bore sizes.
*BH = Bush Half & PH = Pin Half

**EQUIVALENT RATHI B-FLEX RB COUPLING
FOR UNIQUE PB SERIES COUPLING**

| UNIQUE PB SERIES | | | | RATHI B-FLEX RB | | | |
|------------------|-------------------|--------------------|-----|------------------|-------------------|-----------------|-----|
| COUPLING SIZE | kW AT 1500 rpm | MAX. BORE (mm.) | | COUPLING SIZE | kW AT 1500 rpm | MAX. BORE (mm.) | |
| | | PH | BH | | | PH | BH |
| 96 | 16 | 30 | 28 | RB-105-3* | 15 | 32 | 30 |
| 112 | 31 | 42 | 38 | RB-144-6 | 50 | 60 | 50 |
| 125 | 51 | 48 | 40 | RB-144-6* | 50 | 60 | 50 |
| 140 | 82 | 55 | 48 | RB-162-6 | 82.5 | 65 | 60 |
| 160 | 99 | 60 | 53 | RB-178-6 | 101 | 75 | 70 |
| 180 | 134 | 70 | 65 | RB-198-10 | 196 | 90 | 80 |
| 200 | 196 | 80 | 75 | RB-198-10 | 196 | 90 | 80 |
| 225 | 314 | 90 | 83 | RB-228-11 | 322 | 100 | 90 |
| 250 | 471 | 103 | 95 | RB-252-12 | 482 | 115 | 105 |
| 285 | 690 | 110 | 103 | RB-285-11 | 715 | 125 | 115 |
| 320 | 939 | 122 | 118 | RB-320-12 | 958 | 135 | 125 |
| 360 | 1376 | 130 | 130 | RB-360-11 | 1398 | 150 | 135 |
| 400 | 1847 | 145 | 135 | RB-400-10 | 1893 | 160 | 160 |
| 450 | 2831 | 160 | 150 | RB-450-12 | 2922 | 180 | 180 |
| 500 | 3914 | 180 | 170 | RB-500-14 | 4053 | 200 | 200 |
| 560 | 4698 | 200 | 185 | RB-560-10 | 4870 | 225 | 225 |
| 630 | 6264 | 220 | 210 | RB-630-12 | 6597 | 250 | 250 |
| 710 | 12528 | 240 | 240 | RB-800-14 | 15708 | 280 | 280 |
| 800 | 17226 | 290 | 290 | RB-900-16 | 24347 | 305 | 305 |
| 900 | 25839 | 340 | 340 | NOT AVAILABLE | | | |
| 1000 | 34508 | 380 | 380 | | | | |
| 1100 | 44742 | 400 | 400 | | | | |
| 1200 | 62751 | 450 | 450 | | | | |
| | | | | | | | |

* The rating of RB size is only marginally less than that of UNIQUE PB size.

NOTE: Above comparison is done on the basis of both, kW rating & maximum bore sizes.

*BH = Bush Half & PH = Pin Half