

## Chapter 5: Couplings

### Preamble

The information on couplings given here has been reproduced from the latest Renold Shaft Coupling Catalogue number 0994 2E available at the time of this publication. This catalogue gives data on eleven different coupling types as illustrated on pages 96 and 97. Some of these types are essentially the same, the main variation being in cost. For example: spider and spiderflex couplings and pinflex and crown pin flexible couplings.

Of the eleven types six types have been selected for inclusion in this data manual. They are:

- Spiderflex
- Pinflex
- Tyreflex
- Discflex
- Chainflex
- Rigid.

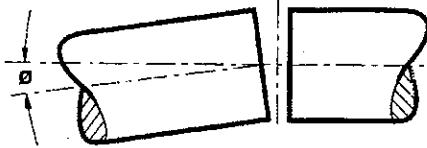
Renold make thirteen additional types of coupling for specialised application including couplings such as : high-misalignment gear types, brake drum gear types, disc brake gear types, shear pin gear types, buffer shear pin types, telescopic types as well as hydraulic couplings.

*Note :* The power rating of all Reynold flexible couplings is based on a speed of 100 rev/min.

When selecting a coupling it is necessary to multiply the actual power at the actual operating speed by the factor  $100/N$ , where  $N$  is the operating speed in rpm. This is part of the selection method for Renold flexible couplings outlined on page 92.

### Misalignment

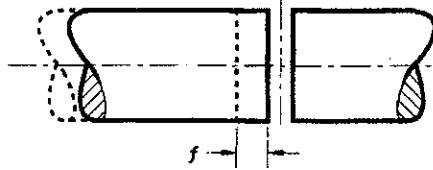
Rigid couplings are not designed to accept misalignment or movement between the shafts and should therefore are not suitable for applications where such misalignment or movement can occur. On the other hand, flexible couplings are designed to meet the four misalignment conditions described below and should always be used wherever a prime mover is directly coupled to a gearbox or machine shaft. They will absorb initial assembly inaccuracies and possible foundation settlement, as well as movement due to shaft or machinery movement under load and movement due to temperature changes. However flexible couplings are not designed to absorb excessive misalignment caused by careless assembly procedures and the shafts should still be aligned as accurately as possible in accordance with good engineering practice .

**1. Angular misalignment**

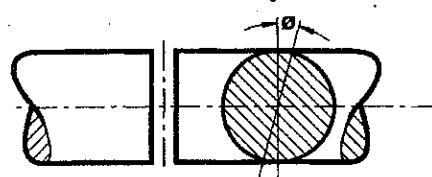
Angular misalignment is present when the shaft axes are inclined one to the other. Its magnitude can be measured at the coupling faces.

**2. Axial (or parallel) misalignment**

Axial misalignment is present when the axes of the driving and driven shafts are parallel but laterally displaced.

**3. End float**

End float is the ability to accommodate a relative axial displacement of the connected shafts; achieved by sliding members or flexure of resilient components.

**4. Torsional flexibility**

Torsional flexibility is a design feature necessary to permit shock and impulsive loadings to be suitably absorbed.

**Selection Method Rigid Couplings**

The selection method for rigid couplings is simple. They are rated to transmit the same torque and power as a mild steel shaft of the same diameter. As they will not absorb misalignment, misalignment is not a consideration in their selection.

Hence selection of rigid couplings with or without taper lock bushes is only a matter of matching the coupling to the shaft size involved and making sure that the speed is within the maximum speed listed.

**Example**

Select the smallest rigid coupling with taper lock bush suitable for coupling two shafts of 30 mm diameter rotating at a speed of 1450 rev/min.

**Solution**

From the rigid coupling table on page 99 choose the RRT12 with a TB1215 taper bush. The maximum allowable speed = 3980 rev/min and actual speed = 1450 rev/min - OK.

From the taper-lock bush table on page 106, 30 mm is a standard size for the TB1215. Hence specify RRT12 coupling with TB1215/30 taper-lock bush.

## Selection Method Flexible Couplings

1. Set out all relevant data, including:
  - maximum power to be transmitted (design power) and the operating speed
  - maximum speed (if different to the operating speed)
  - nature of the prime mover and load
  - average operating hours per day and number of starts per day
  - maximum misalignment expected (design misalignment)
  - shaft sizes.
2. From Table 1 on page 98, classify the load as: Steady (S), Medium impulsive (M), or Highly impulsive (H).
3. From Table 2 on page 99, obtain the service factor  $f_D$
4. From Table 3 on page 99, obtain the start factor  $f_S$
5. Calculate the selection power:  $P_s = P \times f_D \times f_S$   
Where  $P$  = design power in kW
6. Calculate the equivalent selection power  $P_e = \frac{P_s \times 100}{N}$   
Where  $N$  = operating speed in rev/min.
7. Go to the coupling tables for the type of coupling to be used and select the smallest suitable coupling for the equivalent selection power calculated in step 6.  
If the type of coupling has not been specified, list the various types that appear suitable.
8. Check that the design misalignment is less than the allowable misalignment for the coupling. If not, another type of coupling should be selected.
9. Check that the maximum coupling (or taper bush) bore is greater than the actual shaft size. If not, a larger coupling should be selected.
10. Check that the maximum coupling speed is greater than the maximum operating speed. If not, a different coupling should be selected.
11. Detail the coupling selection with Catalogue numbers for both the coupling and the taper bush (if used). If taper bushes are to be used, check the standard bore size from the table page 107.

**Example**

A coupling is required to transmit 7.5 kW @ 1440 rev/min from an electric motor to a gearbox driving a chain conveyor (non-uniformly fed), running an average of 18 hours per day with 15 starts per hour. Both motor and gearbox shafts are 38 mm diameter. The coupling is to absorb a maximum angular misalignment of 2° and axial misalignment of 0.2 mm. Select a suitable Renold coupling and taper bush. The taper bushes are to be installed from the coupling faces.

**Solution**

Because misalignment is to be absorbed, a flexible coupling must be used.

Following the steps in the flexible coupling selection method:

1. Data as given.
2. From Table 1 on page 98, load is medium impulsive (M).
3. From Table 2 on page 99, the service factor  $f_D = 1.5$  (over 10 h/day)
4. From Table 3 on page 99, the start factor  $f_S = 1.2$  (1-30 starts/h)

5. Calculating the selection power:

$$P_s = P \times f_D \times f_S = 7.5 \times 1.5 \times 1.2 = 13.5 \text{ kW}$$

6. Calculating the equivalent selection power:

$$P_e = \frac{P_s \times 100}{N} = \frac{13.5 \times 100}{1440} = 0.9375 \text{ kW}$$

7. Going to the coupling tables, the following types can be examined:

Spiderflex : RSCT110

Pinflex : PFT1/3

Tyreflex : TY60

Discflex : DT52N

Chainflex : C33M

8. Checking the allowable misalignment the following table can be drawn up:

<i>Coupling</i>	<i>Allowable angular misalignment (deg)</i>	<i>Allowable radial misalignment (mm)</i>
Spiderflex : RSCT 110	1	0.3
Pinflex : PFT1/3	0.25	0.13
Tyreflex : TY60	4	1.6
Discflex : DT52N	1	0.5
Chainflex : C33M	1	0.25

Comparing to the design misalignment of  $2^\circ$  angular and 0.2 mm radial, it is seen that the only suitable coupling is the Tyreflex type.

9. Checking the maximum taper bush bore:

For the Tyreflex TY60 : maximum bore is 42 mm OK (we have 38 mm)

10. Checking the maximum coupling speed :

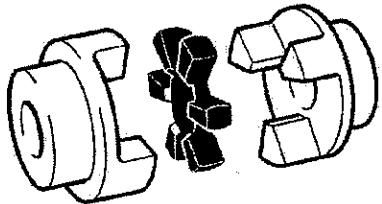
For the Tyreflex TY60 : 4000 rev/min OK (we have 1450 rev/min)

11. The coupling selected is the Tyreflex TY60/77 (F type) with taper bush TB1610.

From the taper bush table page 107, 38 mm is a standard shaft size.

Therefore the taper bush selected is TB1610/38.

## Coupling types

**SPIDER COUPLING**

CATALOGUE N° EXAMPLE:

PRODUCT N° EXAMPLE:

MAX KW @ 100RPM:

MAX SPEED:

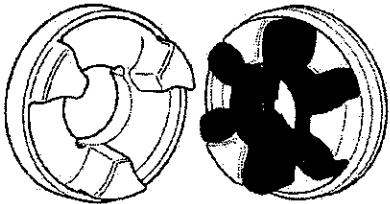
PAGE NUMBER 9

S11C

644801

1.12

11,000 RPM

**SPIDERFLEX COUPLING**

CATALOGUE N° EXAMPLE:

PRODUCT N° EXAMPLE:

MAX KW @ 100RPM:

MAX SPEED:

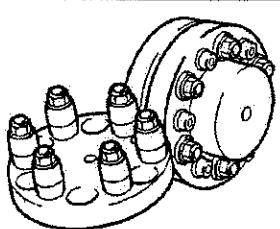
RSC70

644907

35

7,700 RPM

PAGE NUMBER 10

**PINFLEX COUPLING**

CATALOGUE N° EXAMPLE:

PRODUCT N° EXAMPLE:

MAX KW @ 100RPM:

MAX SPEED:

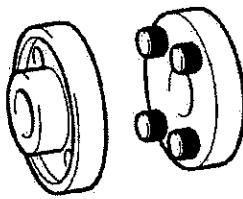
PAGE NUMBER 12

PF1/3

8001042/3

258

6,800 RPM

**CROWNPIN FLEXIBLE COUPLING**

CATALOGUE N° EXAMPLE:

PRODUCT N° EXAMPLE:

MAX KW @ 100RPM:

MAX SPEED:

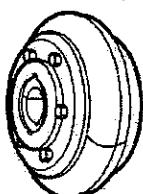
P36C/3P

7032303

2611

6,210 RPM

PAGE NUMBER 16

**TYREFLEX COUPLING**

CATALOGUE N° EXAMPLE:

PRODUCT N° EXAMPLE:

MAX KW @ 100RPM:

MAX SPEED:

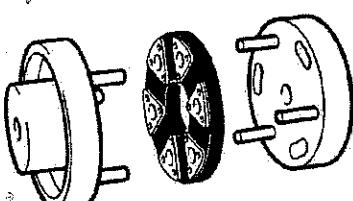
PAGE NUMBER 18

TY40

7131104

65.8

4,500 RPM

**DISCFLEX COUPLING**

CATALOGUE N° EXAMPLE:

PRODUCT N° EXAMPLE:

MAX KW @ 100RPM:

MAX SPEED:

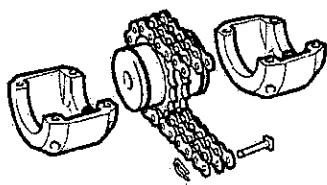
D41N

644263

45

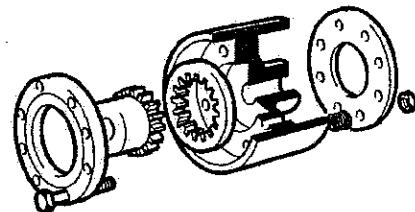
2,900 RPM

PAGE NUMBER 20



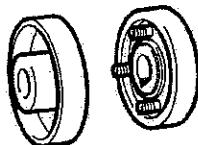
**CHAINFLEX COUPLING**

CATALOGUE N° EXAMPLE: C28M  
PRODUCT N° EXAMPLE: 642602  
MAX KW @ 100RPM: 90  
MAX SPEED: 3,500 RPM  
PAGE NUMBER 21



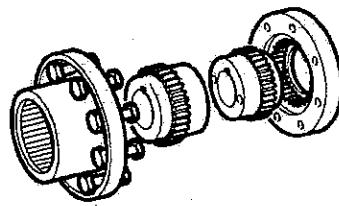
**TORQUE LIMITER COUPLING**

CATALOGUE N° EXAMPLE: T4BD  
PRODUCT N° EXAMPLE: 7101104  
MAX KW @ 100RPM: 78  
MAX SPEED: 5,750 RPM  
PAGE NUMBER 22



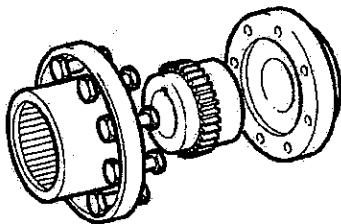
**RIGID COUPLING**

CATALOGUE N° EXAMPLE: RR35  
PRODUCT N° EXAMPLE: 7042105  
MAX KW @ 100RPM: 98  
MAX SPEED: 4,760 RPM  
PAGE NUMBER 24



**GEARFLEX COUPLING - DOUBLE ENGAGEMENT**

CATALOGUE N° EXAMPLE: GF1DA  
PRODUCT N° EXAMPLE: 6901108  
MAX KW @ 100RPM: 50485  
MAX SPEED: 7,100 RPM  
PAGE NUMBER 26, 29, 31, 33 AND 36



**GEARFLEX COUPLING - SINGLE ENGAGEMENT**

CATALOGUE N° EXAMPLE: GF1SA  
PRODUCT N° EXAMPLE: 6908108  
MAX KW @ 100RPM: 50485  
MAX SPEED: 7,100 RPM  
PAGE NUMBER 27, 30 AND 32

<b>Agitators</b>		Induced draft	M	<b>Agitators (mixers)</b>	M
Pure liquids	S	Large, mine etc.	M	Barker-auxiliaries hydraulic	M
Liquids and solids	M	Large, industrial	M	Barking drum	H
Liquids-variable density	M	Light, small diameter	S	Beater and pulper	M
<b>Blowers</b>		<b>Feeders</b>		Bleacher	S
Centrifugal	S	Apron	M	Calenders	M
Lobe	M	Belts	M	Calenders-super	H
Vane	S	Disc	S	Converting machine except	
		Reciprocating	H	cutters, platters	M
		Screw	M	Conveyors	S
<b>Brewing and Distilling</b>		<b>Food Industry</b>		Couch	M
Bottling machinery	S	Beef slicer	M	Cutters, platters	M
Brew kettles-continuous duty	SS	Cereal cooker	S	Cylinders	M
Cookers-continuous duty	SS	Dough mixer	M	Dryers	M
Mash tubs-continuous duty	S	Meat grinder	M	Felt stretchar	M
Scale hopper-frequent starts	M			Fell whipper	H
<b>Can filling machines</b>	S	<b>Generators - not welding</b>	S	Jordans	M
Cane knives (1)	M	Hammer mills	H	Log haul	H
Car dumpers	H			Presses	M
Car pullers	M	<b>Hoists</b>		Pulp machine reel	M
Clarifiers	S	Heavy duty	H	Stock chest	M
Classifiers	M	Medium duty	M	Suction roll	M
		Skip hoist	M	Washers and thickeners	M
<b>Clay working machinery</b>		<b>Laundry</b>		Winders	M
Brick press	H	Washers - reversing	M		
Briquette machine	H	Tumblers	M		
Clay working machinery	M				
Pug mill	M				
<b>Compressors</b>		<b>Line shafts</b>			
Centrifugal	S	Driving processing equipment	M		
Lobe	M	Light	S	<b>Printers</b>	*
Reciprocating - multi-cylinder	M	Other line shafts	S	<b>Pullers</b>	
Reciprocating - single cylinder	H			Barge haul	H
<b>Conveyors - uniformly loaded or fed</b>		<b>Lumber industry</b>			
Apron	S	Barkers, hydraulic, mechanical	M		
Assembly	SS	Burner conveyor	M		
Belt	SS	Chain saw and drag saw	H		
Bucket	SS	Chain transfer	H		
Chain	SS	De-barking drum	H		
Flight	SS	Edger feed	M		
Oven	SS	Gang feed	M		
Screw	S	Green chain	M		
		Live rolls	H		
<b>Conveyors - heavy duty</b>		Log deck	H		
not uniformly fed		Log head-incline	H		
Apron	M	Log head-wall type	H		
Assembly	M	Log tail-tilting device	H		
Belt	M	Main long conveyor	H		
Bucket	M	Off bearing rolls	M		
Chain	M	Planer feed chains	M		
Flight	M	Planer floor chains	M		
Live roll	M	Planer lifting hoist	M		
Oven	M	Re-saw many-go-round conveyor	M		
Reciprocating	H	Roll cases	H		
Screw	M	Slab conveyor	H		
Shaker	H	Small waste conveyor-belt	S		
<b>Crane Drives - not dry dock</b>		Small waste conveyor-chain	M		
Main hoists	S	Sorting table	M		
Bridge travel		Tipple hoist conveyor	M		
Trolley travel	*	Tipple hoist drive	M		
<b>Crushers</b>		Transfer conveyors	M		
Ore	H	Transfer rolls	M		
Stone	H	Tray drive	M		
Sugar (1)	M	Trimmer feed	M		
<b>Dredges</b>		Waste conveyor	M		
Cable reels	M	<b>Machine tools</b>			
Conveyors	M	Bending roll	M		
Cutter head drives	H	Punch press-gear driven	H		
Jig drives	H	Notching press-belt drive	*		
Manoeuvring winches	M	Plate planers	H		
Pumps	M	Tapping machine	H		
Screen drive	H	Other machine tools	M		
Stackers	M	Main drives	M		
Utility winches	M	Auxiliary drives	S		
<b>Dry dock cranes</b>		<b>Metal mills</b>			
Main hoist	(2)	Drawn bench carriage	M		
Auxiliary hoist	(2)	and main drive			
Boom, lifting	(2)	Pinch, dryer and scrubber	*		
Rotating, swing or slew	(3)	rolls, reversing	*		
Tracking, drive wheels	(4)	Slitters	M		
<b>Elevators</b>		Table conveyors non-reversing group drives	M		
Bucket - uniform load	S	individual drives	H		
Bucket - heavy load	MS	Reversing	*		
Bucket - continuous	S	Wire drawing and flattening machine	M		
Centrifugal discharge	SS	Wire winding machine	M		
Escalators	SS	<b>Mills, rotary type</b>			
Freight	S	Ball (1)	M		
Gravity discharge	S	Cement kilns (1)	M		
Man lifts	S	Dryers and coolers (1)	M		
Passenger	*	Kilns other than cement	M		
<b>Extruders (plastic)</b>		Pebble (1)	M		
Film	S	Rod, plain & wedge bar (1)	M		
Sheet	SS	Tumbling barrels	H		
Coating	SS	<b>Mixers</b>			
Rods	S	Concrete mixers continuous	M		
Tubing	S	Concrete mixers intermittent	M		
Blow moulders	M	Constant density	S		
Pre-plasticisers	M	Variable density	M		
<b>Fans</b>		<b>Oil Industry</b>			
Centrifugal	S	Chillers	M		
Cooling towers		Oil well pumping	*		
Induced draft		Paraffin filter press	M		
Forced draft		Rotary kilns	M		
		Paper mills	M		

**S = Steady****M = Medium Impulsive****H = Highly Impulsive**

\* = Refer to Renold Gears

(1) = Select on 24 hours per day service factor only.

(2) = Use service factor of 1.00 for any duration of service.

(3) = Use service factor of 1.25 for a duration of service.

(4) = Use service factor of 1.50 for any duration of service.

Table 1 Load classification



**SERVICE FACTORS****TABLE 2 (SERVICE FACTOR  $f_D$ )**

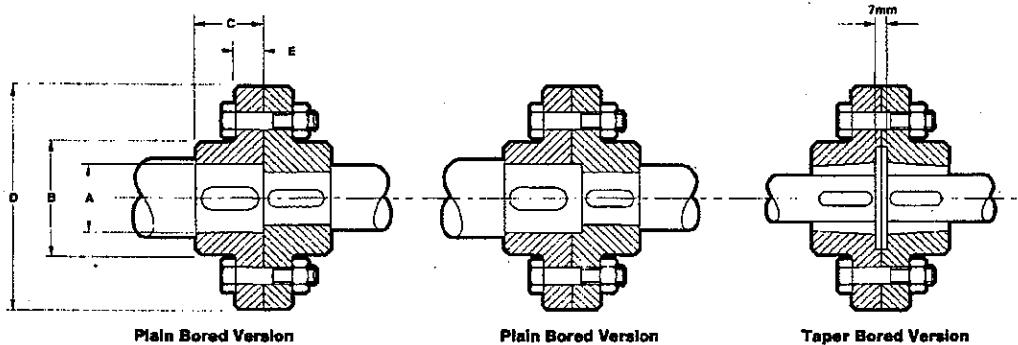
Prime mover (Drive Input)	Driven machinery characteristics			
	Duration Service	Steady load	Medium impulsive	Highly impulsive
hours/day				
Electric, Air & Hydraulic Motors or Steam Turbine (Steady input)	intermittent - 3hrs/day max	0.90	1.00	1.50
	3 - 10	1.00	1.25	1.75
	over 10	1.25	1.50	2.00
Multi-cylinder I.C. engine (Medium impulsive input)	intermittent - 3hrs/day max	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	over 10	1.50	1.75	2.25
Single-cylinder I.C. engine (Highly impulsive input)	intermittent - 3hrs/day max	1.25	1.50	2.00
	3 - 10	1.50	1.75	2.25
	over 10	1.75	2.00	2.50

**TABLE 3 FACTOR FOR STARTS/HOURS ( $f_S$ )**

No of Starts Per Hour	0-1	1-30	30-60	60+
Factor	1.0	1.2	1.3	1.5

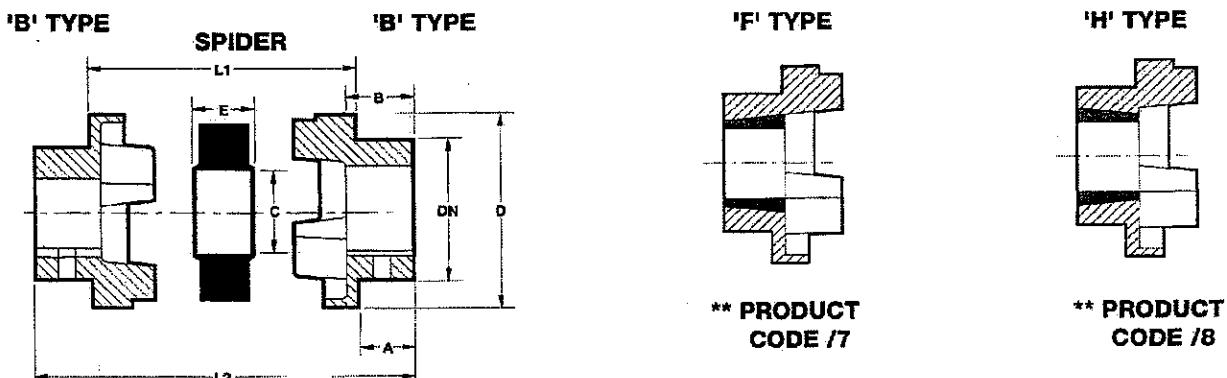
**NOTE**

For applications with excessive vibration, contact Renold Technical Department.

**RIGID COUPLINGS**

Couplings are rated to transmit the same power as a mild steel shaft of the same diameter

Catalogue No.	Product No.	Max Speed rpm	A Min	A Max	B	C	D	E	Taper Bush	WR <sup>1</sup> Kgm <sup>2</sup>	Weight Kg
RR35	7042105	4760	-	35	62	38	122	15	-	.003	3.6
RR45 RRT12	7042106 7042106/77	3980	-	45 32	73	45 42	146	19	TB1215	.007 .007	6.4 6
RR65 RRT20	7042208 7042208/77	2950	-	65 50	103	60 48	197	22	TB2012	.028 .025	14.9 11.5
RR75 RRT25	7042109 7042109/77	2510	38 19	75 60	120	70 67	232	29	TB2525	.066 .066	25 24
RR90 RRT30	7042110 7042110/77	2150	38 35	90 75	156	83 80	270	29	TB3030	.133 .131	40 39
RR115 RRT40	7042113 7042113/77	1690	50 40	115 100	203	108 105	343	33	TB4040	.426 .421	82 79

**SPIDERFLEX PLAIN BORE - DIMENSIONS (mm)**

**\*\* PRODUCT CODE /78 COMBINES ONE OF EACH HALF BODY TYPE SHOWN**

**NOTE: COMPLETE COUPLING COMPRISSES TWO HALF BODIES (ANY TYPE) PLUS SPIDER.**

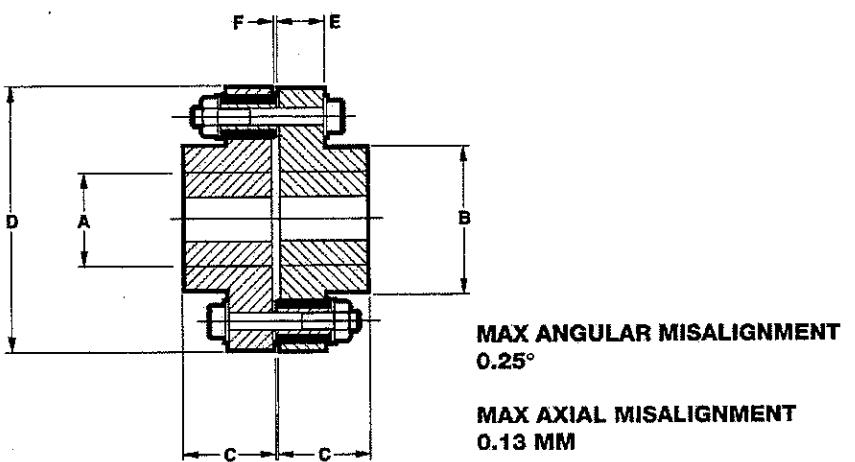
Half Body Catalogue No	Complete Coupling Product No	Taper Bush No	Power @100rpm kW	Torque Nm		Max Speed rpm	Min Bore	Max Bore	A	B	L2	D	DN	E	C	L <sub>1</sub>
				Nom	Max											
RSC70 B	644907	-	0.35	33	73	7700	-	32	20.6	23.5	65	69	60	18	31	25
RSCT70 F H	644907/**	TB1008					9	25	20.6	23.5	65					
RSC90 B	644909	-	0.88	84	185	6300	-	42	26	30	82.5	85	70	22	32	30.5
RSCT90 F H	644909/**	TB1108					9	28	19.5	23.5	70					
RSC110 B	644911	-	1.75	168	370	5000	-	55	37	45	119	112	100	29	45	45
RSCT110 F H	644911/**	TB1610					14	42	18.5	27	82					
RSC130 B	644913	-	3.44	331	728	4100	-	60	47	55.5	147	139	105	36	50	53
RSCT130 F H	644913/**	TB1610					14	42	18	27	89					
RSC150 B	644915	-	6.6	630	1490	3600	-	70	50	60	160	150	115	40	62	60
RSCT150 F H	644915/**	TB2012					14	50	24	34	107					
RSC180 B	644918	-	10.4	998	2300	3000	-	80	58	70	189	180	125	49	77	73
RSCT180 F H	644918/**	TB2517					16	65	35	47	142					
RSC230 B	644923	-	22	2100	4800	2600	48	100	77	90	240	225	155	59	99	85.5
RSCT230 F H	644923/**	TB3020					25	75	40	53	164					
RSC280 B	644928	-	34.7	3308	7000	2200	60	115	90	105	285	275	206	74	119	105
RSCT280 F H	644928/**	TB3525					35	90	51	67	207					

- At speeds exceeding allowable maximum speed, consult Renold.
- Both moment of inertia and coupling weight have been calculated assuming fitting of taper bush of medium bore size.
- For information on torsional stiffness, consult Renold.

**SPIDERFLEX**

Catalogue No	Product No	WR <sup>2</sup> Kgm <sup>2</sup>	Permissible Misalignment			Weight Kg
			End Float mm	Axial Radial mm	Angular Deg	
RSC 70	644907	0.00078	+0.2	0.3	0.5°	1.1
RSCT 70	644907/**	0.00085				1.0
RSC 90	644909	0.00108	+0.5	0.3	0.5°	1.7
RSCT 90	644909/**	0.00115				1.7
RSC 110	644911	0.00344	+0.6	0.3	1°	4.2
RSCT 110	644911/**	0.00400				5
RSC 130	644913	0.00850	+0.8	0.4	1°	6.3
RSCT 130	644913/**	0.00780				5.5
RSC 150	644915	0.02112	+0.9	0.4	1.5°	9.5
RSCT 150	644915/**	0.01810				7.1
RSC 180	644918	0.04820	+1.1	0.4	1.5°	15
RSCT 180	644918/**	0.04340				16.5
RSC 230	644923	0.14052	+1.3	0.5	2°	28
RSCT 230	644923/**	0.12068				26
RSC 280	644928	0.5479	+1.7	0.5	2.5°	63
RSCT 280	644928/**	0.44653				50

Flexible element: Characteristics				Shore Hardness
Type	Material	Temperature °C	Resistant to oil - Low absorption of liquids - Partially resistant to chemicals	
Type	Nitrile	-40 up to +100		A88

**PINFLEX PLAIN BORE - DIMENSIONS (mm)**

Catalogue No.	Product No.	No. of pins	Power at 100 RPM kW	Nominal Torque Nm	Normal maximum speed RPM	Bore		B	C	D	E	Setting width F	WR <sup>2</sup> kgm <sup>2</sup>	* Weight (mass) kg
						Min. A	Max. A							
PF 1/3	8001042/3	3	2.03	194										
PF 1/6	8001042/6	6	4.05	387										
PF 1/9	8001042/9	9	6.08	581										
PF 1/12	8001042/12	12	8.10	774	6800	**	50	70	44	125	20.0	4	0.00828	5.2
PF 2/3	8002050/3	3	3.59	343										
PF 2/6	8002050/6	6	7.18	685										
PF 2/9	8002050/9	9	10.76	1028										
PF 2/12	8002050/12	12	14.35	1370	5900	**	55	80	50	145	24.5	5	0.01843	8.3
PF 3/3	8003060/3	3	4.24	405										
PF 3/6	8003060/6	6	8.48	810										
PF 3/9	8003060/9	9	12.71	1214										
PF 3/12	8003060/12	12	16.96	1620	5200	**	72	100	59.5	165	24.5	5	0.03335	13.8
PF 4/3	8004075/3	3	8.32	795										
PF 4/6	8004075/6	6	16.65	1590										
PF 4/9	8004075/9	9	24.97	2384										
PF 4/12	8004075/12	12	33.29	3179	4400	**	80	113	75	195	34.5	6	0.08470	22.0
PF 5/4	8005090/4	4	13.94	1331										
PF 5/8	8005090/8	8	27.88	2662										
PF 5/12	8005090/12	12	41.82	3994										
PF 5/16	8005090/16	16	55.76	5325	3600	**	110	150	89	235	34.5	6	0.19972	37.8
PF 6/3	8006110/3	3	24.70	2359										
PF 6/6	8006110/6	6	49.40	4717										
PF 6/9	8006110/9	9	74.10	7076										
PF 6/12	8006110/12	12	98.80	9435	2900	55	130	180	110	290	49.5	7	0.61140	73.2
PF 7/4	8007130/4	4	37.18	3550										
PF 7/8	8007130/8	8	74.35	7100										
PF 7/12	8007130/12	12	111.53	10650										
PF 7/16	8007130/16	16	148.70	14200	2600	65	150	210	130	320	49.5	7	0.99756	103.0
PF 8/4	8008150/4	4	64.70	6179										
PF 8/8	8008150/8	8	129.40	12357										
PF 8/12	8008150/12	12	194.10	18536										
PF 8/16	8008150/16	16	258.80	24714	2200	75	175	245	150	380	60.0	7	2.33646	168.8

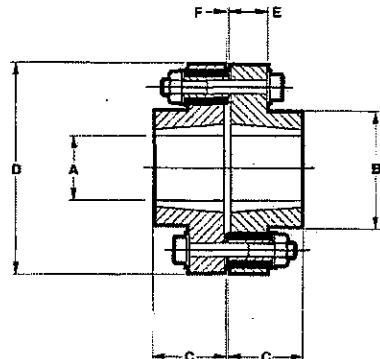
\* Values are for couplings with no bore and a full set of pin assemblies.

Standard Couplings have steel half-bodies.

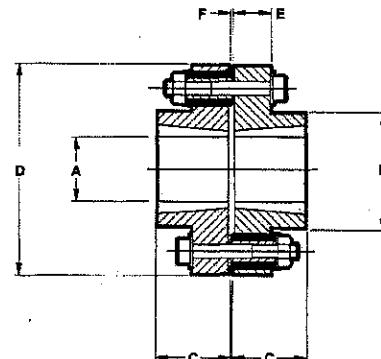
\*\* Unbored

**PINFLEX TAPER BORE - DIMENSIONS (mm)**

**PRODUCT CODE /78 COMBINES  
ONE OF EACH HALF BODY TYPE  
SHOWN.**



**\*\* PRODUCT  
CODE /77**



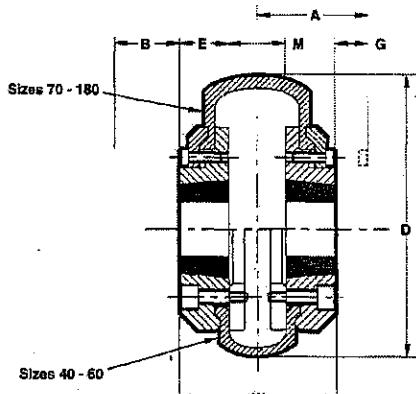
**\*\* PRODUCT  
CODE /88**

Catalogue No.	Product No.	No. of pins	Power at 100 RPM kW	Nominal Torque Nm	Normal maximum speed RPM	Taper bush No.	Bore		B	C	D	E	Setting width F	WR <sup>a</sup> kgm <sup>2</sup>	Weight (mass) kg
							Max. *A mm	Max. *A inch							
PFT 1/3	8001042/3/**	3	2.03	194					70	40	125	20.0	4	0.00813	5.0
PFT 1/6	8001042/6/**	6	4.05	387											
PFT 1/9	8001042/9/**	9	6.08	581	6800	TB1215	32	1.125"							
PFT 2/3	8002050/3/**	3	3.59	343					80	40	145	24.5	5	0.01780	7.6
PFT 2/6	8002050/6/**	6	7.18	685											
PFT 2/9	8002050/9/**	9	10.76	1028	5900	TB1615	42	1.625"							
PFT 3/3	8003060/3/**	3	4.24	405					100	47	165	24.5	5	0.03143	12.1
PFT 3/6	8003060/6/**	6	8.48	810											
PFT 3/9	8003060/9/**	9	12.71	1214	5200	TB2017	50	2.000"							
PFT 4/3	8004075/3/**	3	8.32	795					113	65	195	34.5	6	0.08195	20.3
PFT 4/6	8004075/6/**	6	16.65	1590											
PFT 4/9	8004075/9/**	9	24.97	2384	4400	TB2525	60	2.500"							
PFT 5/4	8005090/4/**	4	13.94	1331											
PFT 5/8	8005090/8/**	8	27.88	2662											
PFT 5/12	8005090/12/**	12	41.82	3994	3600	TB3030	75	3.000"	150	80	235	34.5	6	0.19274	35.3
PFT 6/3	8006110/3/**	3	24.70	2359											
PFT 6/6	8006110/6/**	6	49.40	4717											
PFT 6/9	8006110/9/**	9	74.10	7076	2900	TB3535	95	3.500"	180	91	290	49.5	7	0.58086	65.2
PFT 7/4	8007130/4/**	4	37.18	3550											
PFT 7/8	8007130/8/**	8	74.35	7100											
PFT 7/12	8007130/12/**	12	111.53	10650	2600	TB4040	100	4.000"	210	105	320	49.5	7	0.92310	88.5
PFT 8/4	8008150/4/**	4	64.70	6179											
PFT 8/8	8008150/8/**	8	129.40	12357											
PFT 8/12	8008150/12/**	12	194.10	18536	2200	TB5050	125	5.000"	245	130	380	60.0	7	2.22610	154.1

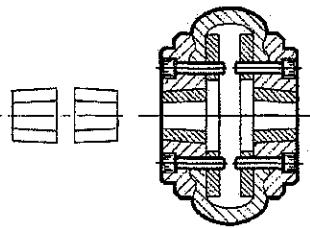
\* Taper Bushes at maximum bore may have keyways which are shallower than standard.

## TYREFLEX COUPLINGS - DIMENSIONS

Tyreflex catalogue No. example:- TY40 or  
product No. 7131104/1.

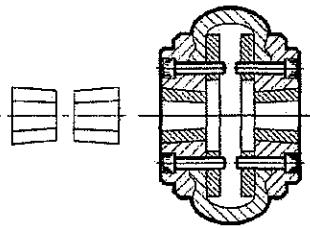


'F' TYPE HALF BODIES



Taper bored type half bodies  
product code /77  
eg: 7131104/77

'H' TYPE HALF BODIES



Taper bored type half bodies  
product code /88  
eg: 7131104/88

**NOTE: COMPLETE COUPLING COMPRIMES TWO HALF BODIES (ANY TYPE) PLUS ONE TYRE.**

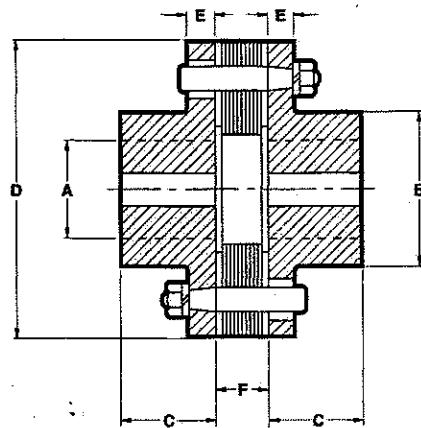
Half Body Catalogue No.	Half Body Product No.	A	B	D	G	Taper Bush		Min. Bore	Max. Bore	M Setting	E Flange	W Width	Clamping Tyre Gap	Approx. Screw Torque Nm.	Mass kg
						/88	/77								
TY40	7131104	-	-	-	-	-	-	12	30	22	22.4	67	2	15	2.1
TY40/77	7131104/77	-	29	104	-	-	-	9	25	22	22.4	67	2	15	2.1
TY40/88	7131104/88	-	29	104	-	-	-	9	25	22	22.4	67	2	15	2.1
TY50	7131105	-	-	-	-	-	-	15	36	25	32.4	90	2	15	3.0
TY50/77	7131105/77	-	38	133	-	-	-	11	32	25	35.4	76	2	15	3.0
TY50/88	7131105/88	-	38	133	-	-	-	11	32	25	35.4	76	2	15	3.0
TY60	7131106	-	-	-	-	-	-	18	45	33	38.6	110	2	15	4.7
TY60/77	7131106/77	-	38	185	-	-	-	14	42	33	35.4	84	2	15	4.7
TY60/88	7131106/88	-	38	185	-	-	-	14	42	33	35.4	84	2	15	4.7
TY70	7132107	60.0	-	187	13	-	-	22	60	23	35.5	94	2	27	6.9
TY70/77	7132107/77	58.9	42	187	13	-	-	14	50	23	32.4	88	3	27	6.9
TY70/88	7132107/88	54.8	38	187	13	-	-	14	42	23	30.3	84	3	27	6.9
TY80	7132108	70.9	-	211	18	-	-	25	60	25	42.4	110	3	27	10.0
TY80/77	7132108/77	74.0	48	211	18	-	-	16	60	25	45.5	116	3	27	10.0
TY80/88	7132108/88	60.9	42	211	18	-	-	14	50	25	32.4	90	3	27	10.0
TY90	7132109	79.1	-	235	16	-	-	28	70	27	49.6	126	3	48	14.5
TY90/77	7132109/77	75.0	48	235	16	-	-	16	60	27	45.5	118	3	48	14.5
TY90/88	7132109/88	75.0	48	235	16	-	-	16	60	27	45.5	118	3	48	14.5
TY100	7132110	81.2	-	254	16	-	-	32	80	27	56.0	140	3	48	20.0
TY100/77	7132110/77	86.0	55	254	16	-	-	25	75	27	51.0	130	3	48	20.0
TY100/88	7132110/88	75.0	48	254	16	-	-	16	60	27	45.5	118	3	48	20.0
TY110	7132111	92.8	-	279	16	-	-	30	95	25	64.3	152	3	40	25.0
TY110/77	7132111/77	80.5	55	279	16	-	-	25	75	25	51.0	127	3	40	23.4
TY110/88	7132111/88	80.5	55	279	16	-	-	25	75	25	51.0	127	3	40	23.4
TY120	7132112	101.8	-	314	18	-	-	38	110	29	71.3	169	3	50	33.8
TY120/77	7132112/77	95.4	67	314	18	-	-	35	100	29	64.9	157	3	50	33.0
TY120/88	7132112/88	85.4	67	314	18	-	-	25	75	29	51.0	131	3	50	31.8
TY140	7132114	128.1	-	369	17	-	-	75	130	32	95.1	221	5	55	44.4
TY140/77	7132114/77	97.9	67	369	17	-	-	35	100	32	64.9	152	5	55	44.6
TY140/88	7132114/88	97.9	67	369	17	-	-	35	100	32	64.9	162	5	55	44.6
TY160	7132116	137.4	-	402	19	-	-	85	140	30	102	234	5	80	71.6
TY160/77	7132116/77	111.7	80	402	19	-	-	40	115	30	77.0	184	5	80	67.0
TY160/88	7132116/88	111.7	80	402	19	-	-	40	115	30	77.0	184	5	80	65.0
TY180	7132118	136.0	-	470	19	-	-	85	150	46.0	114	274	6	105	98.2
TY180/77	7132118/77	136.0	89	470	19	-	-	55	125	46.0	89.0	224	6	105	84.4
TY180/88	7132118/88	136.0	89	470	19	-	-	55	125	46.0	89.0	224	6	105	84.4

**NOTE:** G is dimm by which clamping screws need to be withdrawn to release tyres.  
B is wrench clearance for taper bush screws when large end is outboard/88.

### RATINGS TABLE

COUPLING SIZE	POWER AT 100 rev/min kW	MAX SPEED rev/min	NORMAL TORQUE Nm	MAXIMUM TORQUE Nm	TORSIONAL STIFFNESS Nm <sup>2</sup> at 20°C	Deg	MALALIGNMENT ANGULAR AXIAL mm	END FLOAT ± mm
TY40	0.26	4500	25	65	6.0	4	1.1	1.8
TY50	0.69	4500	65	165	12.5	4	1.3	1.7
TY60	1.33	4000	127	320	32.0	4	1.6	2.0
TY70	2.62	3600	250	625	60.0	4	1.9	2.3
TY80	3.83	3100	375	940	63.0	4	2.1	2.6
TY90	5.24	3000	500	1250	91.0	4	2.4	3.0
TY100	7.07	2600	675	1690	126.0	4	2.6	3.3
TY110	9.2	2300	875	2130	178	4	2.9	3.7
TY120	13.9	2050	1300	3540	296	4	3.2	4.0
TY140	24.3	1800	2320	5642	470	4	3.7	4.6
TY160	39.4	1600	3720	9340	776	4	4.2	5.3
TY180	65.8	1500	6270	16455	1370	4	4.8	6.0

## DISCFLEX COUPLINGS



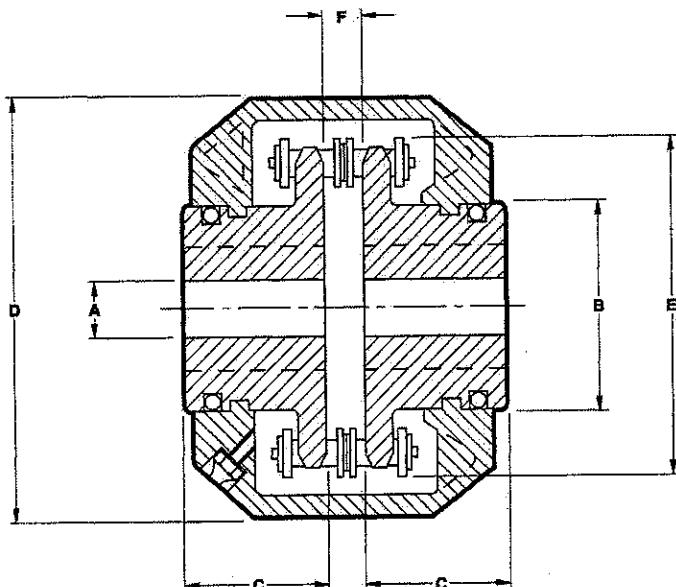
Taper bored type  
product code /77  
eg: 644266/77

Catalogue No.	Product No.	Taper Bush No.	Power @100rpm kw.	Nom Torque Nm	Max * Speed rpm	Min Bore A	Max Bore A	B	C	D	E	F	End Float MM	Weight KG
D41N DT41N	644263 644263/77	TB1008	0.75	71.6	2900	12 9	32 25	58	25	104	10.6	15.5	1.8	2.1
D52N DT52N	644266 644266/77	TB1215	1.5	143	2250	19 11	42 32	72	41	133	13.2	22.4	2.5	4.9
D52S DT52S	644267 644267/77	TB1215	2.25	215	2250	19 11	42 32	72	41	133	13.2	26.4	2.5	5.0
D52W DT52W	644268 644268/77	TB1215	3	287	2250	19 11	42 32	72	41	133	13.2	31.2	2.5	5.03
D71N DT71N	644269 644269/77	TB2017	3.75	358	1650	28 18	60 50	102	48	181	15.7	22.9	3.0	11
D71S DT71S	644270 644270/77	TB2017	5.25	501	1650	28 18	60 50	102	48	181	15.7	26.9	3.0	11.1
D71W DT71W	644271 644271/77	TB2017	7.5	716	1650	28 18	60 50	102	48	181	15.7	31.8	3.0	11.2
D89N DT89N	644272 644272/77	TB2525	9	860	1300	32 19	75 60	121	70	225	18.2	27.9	3.8	20.8
D89S DT89S	644273 644273/77	TB2525	12	1146	1300	32 19	75 60	121	70	225	18.2	39.9	3.8	21.0
D89W DT89W	644274 644274/77	TB2525	15	1433	1300	32 19	75 60	121	70	225	18.2	47.2	3.8	21.7
D108N DT108N	644275 644275/77	TB3030	18.7	1791	1050	38 35	95 75	155	83	274	22.1	47.0	4.6	40
D108S DT108S	644276 644276/77	TB3030	22.5	2149	1050	38 35	95 75	155	83	274	22.1	50.8	4.6	40
D108W DT108W	644277 644277/77	TB3030	26.3	2507	1050	38 35	95 75	155	83	274	22.1	63.2	4.6	41
D127N DT127N	644278 644278/77	TB3535	30	2865	900	55 35	110 90	185	95	324	25.4	53.3	5.3	65
D127S DT127S	644279 644279/77	TB3535	38	3581	900	55 35	110 90	185	95	324	25.4	60.5	5.3	66
D127W DT127W	644280 644280/77	TB3535	45	4298	900	55 35	110 90	185	95	324	25.4	73.2	5.3	67

\* Normal maximum speeds with 1° max. angular malalignment, above these speeds consult our Sales Technical Staff.

Max\* angular malalignment 1°  
Max\* axial malalignment 0.5mm

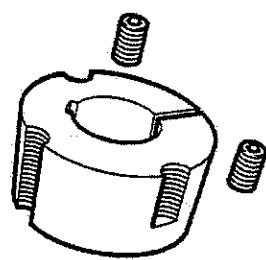
## CHAINFLEX COUPLINGS



Taper bored type  
product code /77  
eg: 642606/77

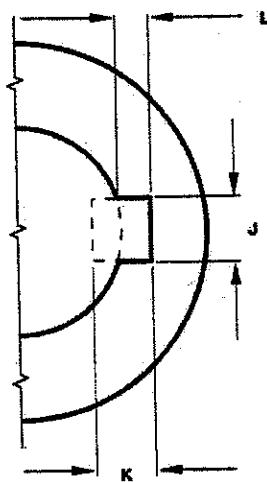
Catalogue No.	Product No.	Taper Bush No.	Power @100rpm kw	Nom Torque Nm	Max Speed rpm	Min Bore A	Max Bore A	B MM	C MM	D MM	E MM	F MM	Malalignment Angle Deg	Axial MM	End Float MM	Weight KG
C28M	642602	-	0.55	52.5	3500	12	25	42	21	72	62	3	1°	0.25	0.7	0.54
C33M	642603	-	1.0	95.5	3000	12	30	50	25	83	74	5.1	1°	0.25	1.0	1.0
C43M	642604	-	2.25	215	2250	14	40	59	32	108	99	6.9	1°	0.25	1.3	2.1
CT43M	642604/77	TB1008				9	25									
C63M	642606	-	7.5	716	1500	19	60	91	51	159	148	8.9	1°	0.3	2.0	7.1
CT63M	642606/77	TB1615				14	42									
C81M	642608	-	17.5	1671	1200	24	80	117	63	206	197	16.2	1°	0.38	2.5	16
CT81M	642608/77	TB2525				19	60									
C101A	642610	-	33.5	3200	960	32	100	144	76	258	245	18.8	1°	0.38	3.3	30
C122A	642612	-	60	5730	750	50	130	182	101	311	295	25.1	1°	0.5	3.8	61
C140A	642614	-	90	8595	700	55	140	195	114	357	343	31.2	1°	0.5	4.6	85

\* For ratings above these speeds, consult our Sales Technical Staff.

**SHAFT COUPLINGS****RANGE OF TAPER BUSHES****METRIC RANGE**

Bush No.	Range of Bores (mm)						
	9	10	12	14	16	18	19
TB 1008	9	10	11	12	14	15	16
TB 1108	9	10	11	12	14	15	16
TB 1210	11	12	14	16	18	19	20
TB 1215	11	12	14	16	18	19	20
TB 1610	14	16	18	19	20	22	24
TB 1615	14	16	18	19	20	22	24
TB 2012	14	16	18	19	20	22	24
TB 2017	18	19	20	22	24	25	28
TB 2517	16	18	19	20	22	24	25
TB 2525	19	20	22	24	25	28	30
TB 3020	25	28	30	32	35	38	40
TB 3030	35	38	40	42	45	48	50
TB 3525	35	38	40	42	45	48	50
TB 3535	35	38	40	42	45	48	50
TB 4030	40	42	45	48	50	55	60
TB 4040	40	42	45	48	50	55	60
TB 4535	55	60	65	70	75	80	85
TB 5050	70	75	80	85	90	95	100

\*Shallow key Depth  
N.B. When ordering specify both bush number and bore size required.



**Keyway dimensions**  
Parallel keyways are supplied unless customer states otherwise.

## KEY AND KEYWAY - DIMENSIONS

### Metric (mm)

Keyways comply with BS4235: Part 1:  
1972

Shaft dia. over	Incl	Key & Keyway		
		J	K	L
6	8	2	2	1.0
8	10	3	3	1.4
10	12	4	4	1.8
12	17	5	5	2.3
17	22	6	6	2.8
22	30	8	7	3.3
30	38	10	8	3.3
38	44	12	8	3.3
44	50	14	9	3.8
50	58	16	10	4.3
58	65	18	11	4.4
65	75	20	12	4.9
75	85	22	14	5.4
85	95	25	14	5.4
95	110	28	16	6.4
110	130	32	18	7.4
130	150	36	20	8.4
150	170	40	22	9.4
170	200	45	25	10.4
200	230	50	28	11.4

RENOULD