

# FLEX-C COUPLINGS



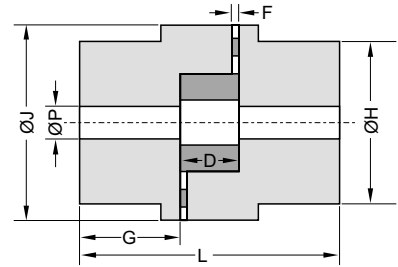
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## PRODUCT RANGE

### TYPE - 'S'

#### Standard star / spider couplings

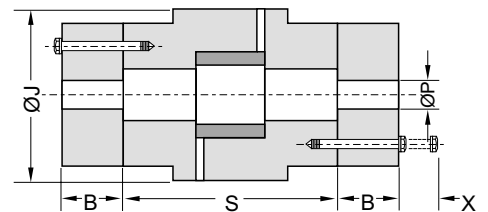
- ♦ Widely accepted star/spider design.
- ♦ Low weight to high torque ratio.
- ♦ Easy for alignment of equipments.
- ♦ Ranging up to torque of 24 kg-m capacity.
- ♦ Range of S-226 to 350 under development.



### TYPE - 'SR'

#### CI Spacer coupling

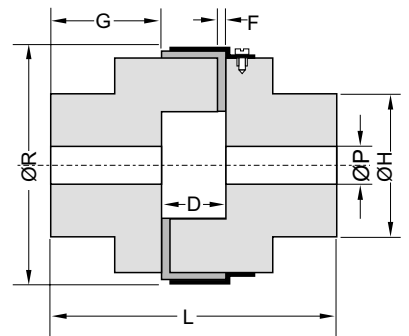
- ♦ Spacer coupling with star/spider design.
- ♦ Recommended specially for back pull out pumps & when the distance between shafts is more than the standard.
- ♦ Capacity up to 24kg-m of torque.
- ♦ Easy replacement of spider without removing equipment from base. Thus less down time.
- ♦ H.T. fastners used.
- ♦ Available in various spacer lengths of 75,90,100,135, 140, 180 mm.
- ♦ Also recommended where disconnection of driver & driven is required.



### TYPE - 'SE'

#### External spider coupling

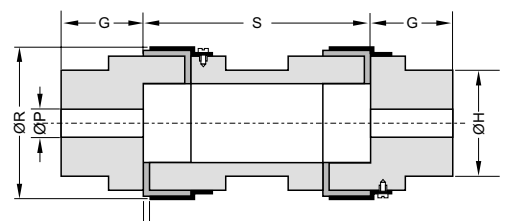
- ♦ Instead of a star, a strip/snap is provided which fits in the coupling from outside and can be replaced without disturbing the driver & driven unit.
- ♦ Practically no down time for replacement/inspection of the strip.
- ♦ A seamless retainer ring provided for proper location & stability of snap.



### TYPE - 'SRE'

#### Aluminum spacer coupling with external spiders

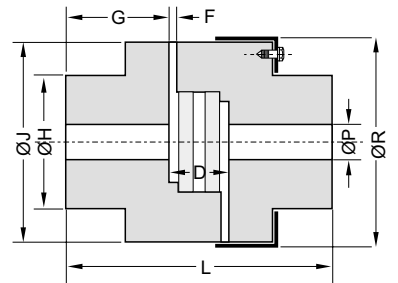
- ♦ Spacer coupling with easy to remove snap design.
- ♦ Suitable for back pull out design pumps.
- ♦ Spacer of Aluminum to reduce load on the extended shafts.
- ♦ Can take larger mis-alignments because of two flexible membranes.



## TYPE - 'K'

### Cushion pad coupling

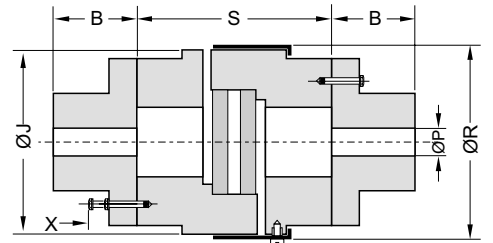
- ◆ Suitable for larger torques up to 435 kg-m.
- ◆ Available with cushion pads instead of star which facilitates easy removal of rubber elements without disturbing the equipments.
- ◆ Seamless retainer rings provided on inside & outside diameter of couplings to support the pads.
- ◆ Pads can be inspected easily from time to time.



## TYPE - 'KR'

### Spacer coupling with cushion pad

- ◆ Suitable for torques up to 435 kg-m.
- ◆ Convenient pad type design for easy removal/replacement of rubber elements.
- ◆ Spacer design advantageous for back pull out type pumps & where driver & driven needs to be disconnected.

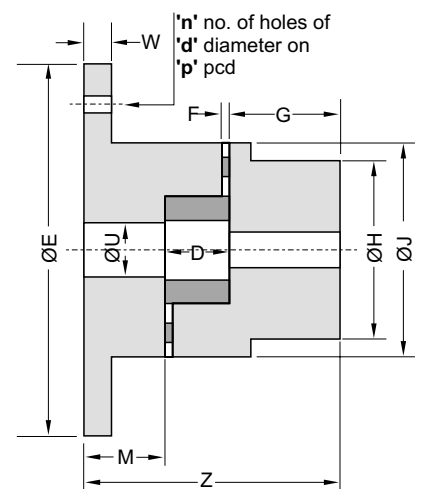


## TYPE - 'SN' / 'SEN' / 'KN'

### Flange type coupling

- ◆ Specially designed for engine-pump set/genset applications.
- ◆ Easy fitting & removal. The coupling flange fits directly on the engine fly wheel with SAE dimensions.
- ◆ All sizes from types S, SE & K are available
- ◆ Torques up to 435 kg-m.

**Note :** The flange details of couplings viz  $\varnothing E, W, M, Z, n-d-p$  to be specified by the customer



## **SALIENT FEATURES**

- 1 **'Flex-C' Couplings** are simple & economic in design. The couplings are easy and fast to install, easy to align, with no lubrication required.
- 2 The couplings are manufactured from the best quality **Graded Cast Iron** produced on Induction Furnace, to get best possible and consistent composition, properties and grain structure. Every batch undergoes all the tests in physical and chemical laboratories. Utmost care is taken to ensure that the casting are **free from any porosity**, blow holes or any other irregularity.
- 3 The couplings are **machined very accurately**, closest to the tolerances in a well equipped machine shop. Specially trained Engineers and Shop Supervisors assure the consistent quality and superb finish.
- 4 Both the diameters of couplings are machined at one time, so they are 100% **concentric**.
- 5 The critical dimensions are inspected in a **3 point inspection program** to deliver customer a 100% reliable product.
- 6 Couplings are **Phosphated** in-house to prevent them from rusting and giving them a highly elegant look. Painting is purposely avoided as it covers the blow holes / porosity in the castings.
- 7 The flexible rubber elements (Star / Spider / Strip Pad) are also manufactured in-house with best quality Synthetic Rubber - **Nitrile** on automated **hydraulic moulding** machines. These components thus possess highest compression / tensile strength, durability and mirror like finish.
- 8 Couplings and rubber elements are **tested** to two times the rated torque and no distortion of any kind is observed.
- 9 Couplings are manufactured in **various designs** STANDARD, SPACER, EXTERNAL SPIDER, PAD TYPE, FLANGE TYPE, etc., to suit most of the customer requirements.
- 10 The couplings design is **simple & economic** and facilitates quick installation and easier alignments. These couplings can take parallel misalignments upto 0.4 mm and angular misalignments upto 1.5 degree.
- 11 Couplings can be supplied with **Boring & Key-way** as per customers requirements, on request, at extra charges.
- 12 A **Dealer network** is available in major cities all over the country and abroad for effective sales and service and easy availability of spares.

**TABLE - 1**

TYPE	SIZE	RATED HP AT			RATED TORQUE kg-m	BORE SIZE ØP		WEIGHT** kg CI PILOT BORE COUP	JAW DIA ØJ	RING DIA ØR	TOTAL LENGTH L	HUB DIA ØH	LENGTH THROUGH BORE G	LENGTH OF BUSH B	SPACER LENGTH S	GAP BET. JAW & BODY F	BOLT EXTEN. X	DIST. BETWEEN SHAFTS D***
		1000 rpm	1500 rpm	3000 rpm		PILOT	MAX											
S	50	0.3	0.5	0.9	0.21	5	16	0.24	27	-	42	27	15	-	-	1	-	12
	70	0.5	0.8	1.5	0.35	9	20	0.28	36	-	51	36	19	-	-	2	-	13
	75	1.0	1.5	3.0	0.71	9	22	0.45	44.5	-	56	39	21	-	-	2	-	14
S SR SE SRE SN SEN	95	2.8	4.2	8.4	2.00	10	28	0.80	54	64	63	49	25	25	75/90/100/140	2	15	13
	99	4.0	6.0	12.0	2.86	10	30	1.10	65	77	72	51	27	-	-	2	-	18
	100	6.0	9.0	18.0	4.29	10	38	1.50	65	77	88	57	35	30	75/90/100/135/140	3	15	18
	110	11.0	16.5	33.0	7.87	15	*42	3.20	85	96	108	76	43	35		3	20	22
	150	17.0	25.5	51.0	12.17	15	*48	4.00	96	111	115	80	45	45	75/90/100/135/ 140/180	3	20	25
	190	22.0	33.0	66.0	15.75	20	+60/*55	7.50	115	129	133	102	54	51		3	24	25
	225	33.0	49.5	99.0	23.62	20	*65	10.00	127	142	153	108	64	57		3	24	25
	226	46.0	69.0	138.0	32.93	25	70	13.00	137	142	178	115	70	50		3	30	33
276	73.0	109.5	219.0	52.26	25	75	19.00	157	162	200	127	80	60	3		20	40	
280	110.0	165.0	330.0	78.76	30	80	44.00	192	197	200	140	80	60	3		-	40	
K KR	295	180.0	270.0	540.0	128.88	30	95	50.00	237	244	238	160	95	80	3	-	48	
KN	2955	300.0	450.0	900.0	214.80	30	100	55.00	237	244	264	180	108	80	3	-	48	
	300	434.0	651.0	-	310.74	30	100	UNDER										
	350	611.0	916.0	-	437.47	30	115	DEV.										

\* For triangular hubs max bore are 24,32,38,42 mm resp.

\*\* Approx. weights for S/SE/K models only

\*\*\* For non-spacer couplings only.

All dimensions are in mm.

+ For types S,SE,SRE - max bore 60 ,SR - 55

## SERVICE FACTOR GUIDE

TYPE OF LOAD	EXAMPLE OF LOAD	ELECTRIC MOTORS STEAM TURBINES	DIESEL ENGINES GASOLINE ENGINES	
			6 OR MORE CYL.	LESS THAN 6 CYL.
Light duty or Uniform load	Generators (uniform load), Centrifugal pumps, Agitators (light duty), Compressors (centrifugal), Belt Conveyors (Uniform load), Feeders (uniform load)	1.00	1.50	2.00
Medium duty or pulsating and varying loads without severe shocks	Generators (varying load), Reciprocating pumps, Mixers and pulverizers (light), Cranes & hoists (varying heavy loads) Conveyors (varying heavy loads)	1.50	2.00	2.50
Heavy duty or severe shock loads High vibrations	Compressors (reciprocating), Crushers & Pulverizers (heavy duty), Hammer mills (heavy duty) Vibrating Screens	2.00	2.50	3.00

### **SELECTION PROCEDURE**

#### **Data required :**

- A. Power in HP
  - B. Speed in rpm
  - C. Shaft size of driver & driven in mm
  - D. Service factor (per guide)
1. Determine the 'SERVICE FACTOR' from guide chart given.
  2. Multiply the service factor to the H.P. of the driver (eg. electric motor) to obtain the 'EFFECTIVE H.P.'
  3. Refer the 'HP rpm' chart in 'TABLE 1'. Taking the appropriate rpm column, scroll down the column until the HP equal to or greater than the effective HP is located.
  4. Ensure that the shaft sizes of your equipments are within pilot & max. bore sizes indicated in the same 'TABLE 1'.
  5. If the shaft size are larger than the max. bore indicated, select from the next higher sizes of couplings where the shaft size is accommodated.
  6. Thus the size of the coupling can be determined. The 'Type' of the coupling is at the discretion of the customer.
  7. For rpm other than indicated, the effective HP can be determined by simple linear equation.

### **NOTES**

- ◆ The angular shaft displacement should not exceed 1.5 deg. and parallel 0.38 mm for avoiding early failure of couplings.
- ◆ While fitting couplings care should be taken so that the gap between jaw and body is maintained.
- ◆ Couplings will be supplied with finish bore and keyway against specific requirements at extra cost.
- ◆ For further details please contact us.

◆ Due to constant research and development the specifications are subject to change without any prior notice.

### **EXAMPLE**

A) A coupling is to be selected to couple a centrifugal pump & an electric motor.

The Data is as below -

Power : 25 HP	Speed : 1500 rpm
Shaft sizes : Pump 28mm,	Motor 48mm

1. From the 'SERVICE FACTOR GUIDE', the S.F. is 1.00.  
Thus, the effective HP is  $25 \times 1.00 = 25\text{HP}$
  2. From the Table 1, scrolling down the column of 1500 rpm, 25.5HP is located which determines the smallest size of coupling which can transmit power of 25HP.
  3. This coupling can take max shaft size of 48mm as required.
  4. Thus, the size of coupling is '150'
- B) If the shaft size in above application was say 55mm, size 190 coupling shall be appropriate.

### **MATERIALS OF CONSTRUCTION**

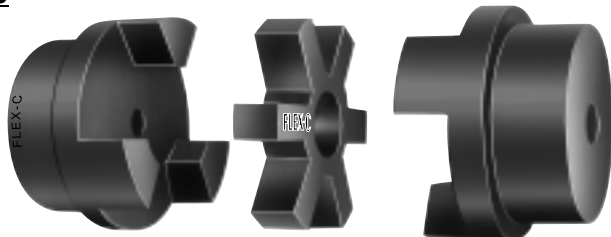
TYPES & SIZES	MATERIALS
◆ S-50,70	SI/AI
◆ S,SR,SE,SRE(hubs only),K,KR,SN,SEN,KN	CI
◆ S-50,70 & SRE(spacers only)	AI
◆ Retainer rings	MS
◆ Star/Spider/Strip/Snaps/Pads	Nitrite Rubber
◆ Screws/Bolts	MS/HT

### **FORMULAE**

- ◆ 1 H.P. = 0.75 kw.
- ◆ 1 inch = 25.4 mm.
- ◆ Torque =  $\frac{\text{HP} \times 716}{\text{rpm}}$   
(kg-m)

**EXPANDED VIEW OF COUPLINGS**

**Type - S**



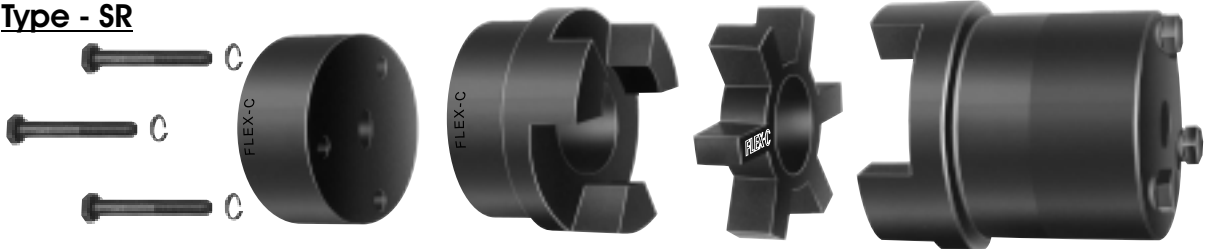
Hub Star/Spider

**Type - K**



Screw & Washers O.D. Ring Hub I.D. Ring Pads

**Type - SR**



Hexbolt & Washers Bush Spacer Star/Spider

**Type - SE**



Hub O.D. Ring Snap/Strip  
Screw & Washers