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Torsionally Stiff All Metallic Membrane Couplings

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SERIES HSP

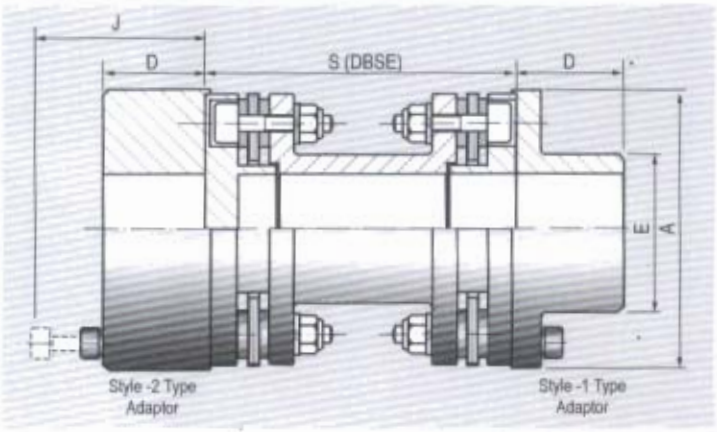
Torsionally Stiff All Metallic Membrane Couplings

Fleximax Series HSP all metallic steel couplings are torsionally stiff, backlash free couplings, designed to meet the requirements of virtually any drive system.. As distinct from other disc couplings, the **Fleximax HSP** coupling is far superior in quality and design. The stainless steel membrane pack is designed using our computer, to ensure that the line of action of the force corresponds with the centre line of the disc. The optimal membrane design allows highest degree of flexibility with buckling resistance and accomodates shaft misalignments. **Fleximax** couplings have no relatively moving parts, and as such require no lubrication and are virtually maintenance free. **Series HSP** couplings comply with the API 671 specifications.

The transmission assembly is simple to install and can be removed without disturbance to the coupled machinery.

Features:

- No lubrication and maintenance
- High torque capacity with low weight
- Compatible for high temperatures and hostile environments
- High flexibility due to optimised disc profile
- Low end thrust and bending moment
- High torsional rigidity.
- Available according to API 610 as well as API 671 standards.
- Available in several design configurations and non standard spacer lengths.
- Safety against the spacer member flying off in the unlikely event of failure of the membrane pack.
- Serviceable temperature range : - 40° C to +280°C.



Size	Max. Speed	Bore ϕ			Dimensions (mm)									Misalignments			Weight		Moment of Inertia	
		Min.	Max. Style 1	Max. Style 2	A	E	D	Min. S	S (DBSE) S (DBSE) of any length available as non-standard				J	Radial at Min. DBSE (mm)	Angular (deg) #	Axial (mm)	kg	per extra DBSE	kgm^2	per extra DBSE kgm^2
HSP-86	7000	10	38	50	86	54	40	66	100	140	180	250	100	0.28	0.50	1.00	4.8	2.3	0.0035	0.00055
HSP-105	6000	15	42	70	105	69	45	79	100	140	180	250	110	0.34	0.50	1.25	8.8	4.3	0.0101	0.0014
HSP-130	5200	25	65	90	130	90	55	99	x	140	180	250	135	0.43	0.50	1.50	17.2	5.2	0.0336	0.0048
HSP-152	4800	30	80	100	152	112	62	121	x	140	180	250	150	0.53	0.50	2.00	28.3	8.9	0.08	0.012
HSP-179	4400	40	90	120	179	130	70	130	x	140	180	250	167	0.57	0.50	2.50	42.8	10.5	0.1684	0.024
HSP-197	4200	50	115	130	197	163	90	130	x	140	180	250	210	0.57	0.50	2.75	65.5	9.5	0.324	0.03
HSP-222	4000	50	127	x	222	181	95	133	x	140	180	250	x	0.58	0.50	3.25	84.2	12.3	0.52	0.049
HSP-247	3800	60	140	x	247	206	107	138	x	140	180	250	x	0.60	0.50	3.75	114.4	15.9	0.888	0.084
HSP-272	3700	60	155	x	272	223	115	148	x	x	180	250	x	0.65	0.50	4.25	144.6	19.1	1.33	0.119
HSP-297	3600	70	172	x	297	248	130	171	x	x	180	250	x	0.75	0.50	5.00	198.5	26.8	2.192	0.192

For Speeds greater than 3600 rpm, the recommended angular misalignment is 0.33 deg.

Size	Torque (Nm) (At Service Factor 1)	kW Capacity at Different Speeds (RPM)						
		100	720	960	1440	2880	3000	3600
HSP-86	105	1.1	7.9	10.6	15.8	31.7	33.0	39.6
HSP-105	258	2.7	19.5	25.9	38.9	77.8	81.1	97.3
HSP-130	573	6.0	43.2	57.6	86.4	172.8	180.0	216.0
HSP-152	1051	11.0	79.2	105.7	158.5	317.0	330.2	396.2
HSP-179	1719	18.0	129.6	172.8	259.2	518.5	540.1	648.1
HSP-197	2483	26.0	187.2	249.6	374.4	748.9	780.1	936.1
HSP-222	3820	40.0	288.0	384.0	576.1	1152.1	1200.1	1440.2
HSP-247	5348	56.0	403.2	537.7	806.5	1613.0	1680.2	2016.2
HSP-272	7162	75.0	540.0	720.0	1080.0	2160.1	2250.1	2700.1
HSP-297	10695	112.0	806.4	1075.2	1612.8	3225.6	3360.0	4032.0

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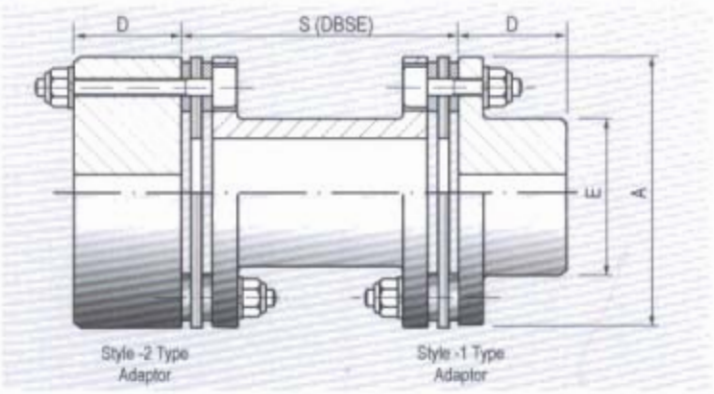
SERIES HSH

Torsionally Stiff All Metallic Membrane Couplings



Fleximax Series HSH are ideally suitable for general industrial applications. The standard spacers or DBSE (Distance Between Shaft Ends) are 100, 140, 180 and 250mm. Non-standard spacer lengths of any size are available on request.

The **Fleximax** coupling's precision components and piloting contribute to a low level of inherent potential unbalance. The all steel construction of the coupling can accept hostile environments and extreme temperatures from - 40°C to 280°C. This coupling is one of the most cost effective type as it does not require any maintenance. As there is no need for lubrication, there are no restrictions which prevail with other couplings that use grease or oil.

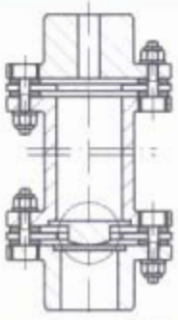
For couplings with larger torque ratings & shaft diameters, consult **NENCO**.

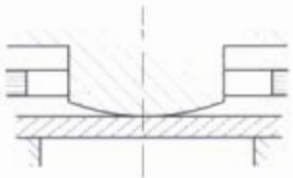
Size	Max. Speed	Bore ø			Dimensions (mm)								Misalignments			Weight * kg	Moment of Inertia* kgm^2
		Min.	Max. Style 1	Max. Style 2	A	E	D	Min. S	S (DBSE) *S (DBSE) of any length available as non-standard*				Radial at Min. 'S' DBSE (mm)	Angular (deg) #	Axial (mm)		
HSH-69	7000	10	28	32	69	39	30	50	100	140	180	250	0.20	0.50	0.7	1.1	0.0006
HSH-80	6000	10	32	38	80	47	35	60	100	140	180	250	0.24	0.50	1.0	1.8	0.0013
HSH-93	5000	15	42	50	93	60	40	70	100	140	180	250	0.28	0.50	1.1	2.6	0.0022
HSH-118	4500	20	48	55	118	70	50	86	100	140	180	250	0.34	0.50	1.4	5.3	0.0070
HSH-133	4000	25	60	70	133	85	60	106	x	140	180	250	0.42	0.50	1.6	7.6	0.0123
HSH-156	4000	25	75	90	156	105	70	126	x	140	180	250	0.50	0.50	1.9	11.8	0.0257
HSH-168	3600	30	80	95	168	112	75	130	x	140	180	250	0.52	0.50	2.0	15.5	0.0414
HSH-186	3600	30	85	100	186	120	80	140	x	140	180	250	0.56	0.50	2.2	20.0	0.0681
HSH-196	3000	40	90	110	196	130	90	160	x	x	180	250	0.64	0.50	2.3	24.0	0.0876

For Speeds greater than 3600 rpm, the recommended angular misalignment is 0.33 deg.

* At Minimum Bore with Minimum 'S' DBSE & Adaptor Style 1

Size	Torque (Nm) (At Service Factor 1)	kW Capacity at Different Speeds (RPM)						
		100	720	960	1440	2880	3000	3600
HSH-69	80	0.8	6.0	8.0	12.1	24.1	25.1	30.2
HSH-80	110	1.2	8.3	11.1	16.6	33.2	34.6	41.5
HSH-93	150	1.6	11.3	15.1	22.6	45.2	47.1	56.6
HSH-118	360	3.8	27.1	36.2	54.3	108.6	113.1	135.7
HSH-133	420	4.4	31.7	42.2	63.3	126.7	132.0	158.3
HSH-156	770	8.1	58.1	77.4	116.1	232.2	241.9	290.3
HSH-168	1200	12.6	90.5	120.6	181.0	361.9	377.0	452.4
HSH-186	2400	25.1	181.0	241.3	361.9	723.8	754.0	904.8
HSH-196	2600	27.2	196.0	261.4	392.1	784.2	816.8	980.2

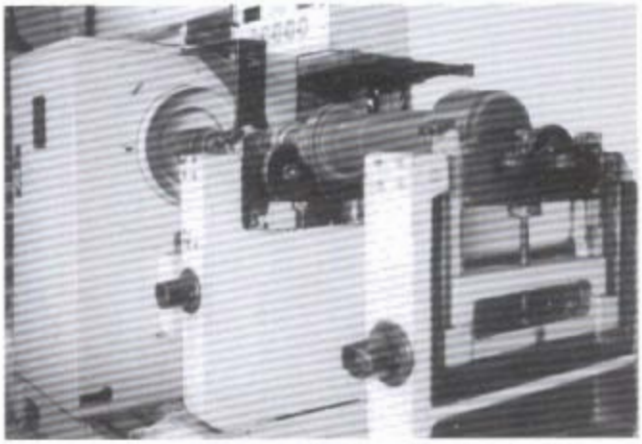




Vertical Installation with Pressure Plate
Fig. 1

Fleximax Series HSP as well as **HSH** are also suitable for vertical mounting. However, for vertical installations, involving long spacer members, a pressure plate as shown in fig. 1 is supplied to support the dead weight of the spacer member. To order couplings for vertical applications, please mention "V" after the size of the coupling

e.g. : HSP - 179V/180
HSH - 186V/140



Balancing of a high speed Fleximax floating shaft coupling in progress for a Nuclear Application

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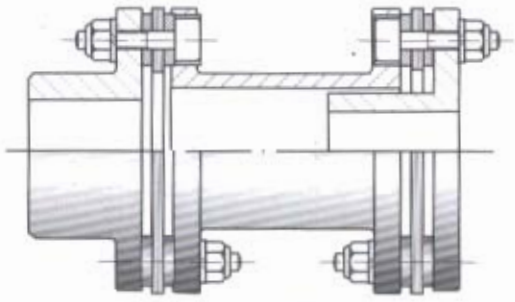
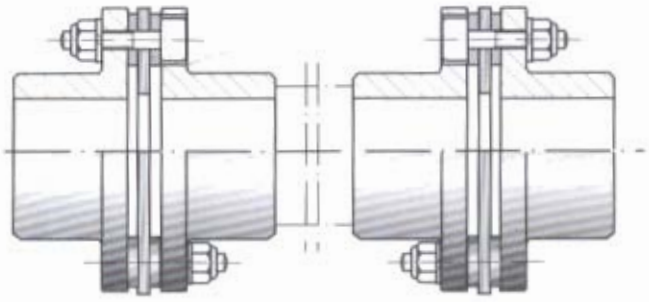
TORSIONALLY STIFF ALL METALLIC MEMBRANE COUPLINGS

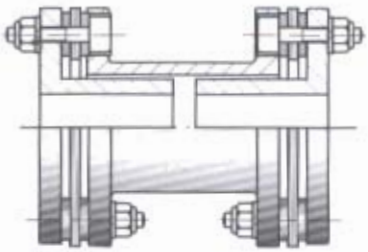
Other Design Configurations



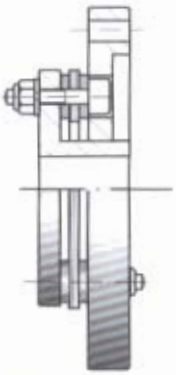
Series - HSR



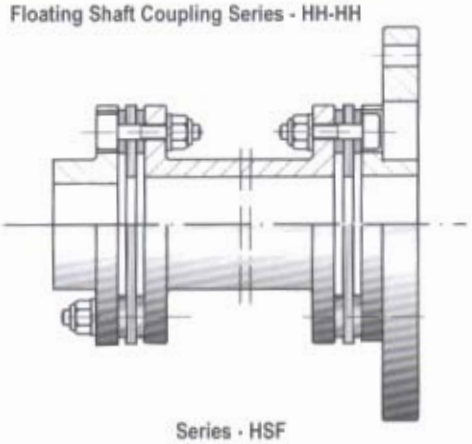
Floating Shaft Coupling Series - HH-HH



Series - RSR



Series - RF



Series - HSF

Selection :

1. Know Your Application Nominal Torque (N_T) :

Determine the Nominal Torque rating in Nm of the application from Power & Speed, by the following formulae :

$$N_T = \frac{kW \times 9549}{RPM} \text{ (Nm)} \quad \text{or} \quad N_T = \frac{HP \times 7024}{RPM} \text{ (Nm)}$$

2. Know Your Application Service Factor (S_F) :

Determine the appropriate Service Factor of your application by referring the adjacent table.

3. Calculate Coupling Selection Torque (C_T) :

The Coupling Selection Torque can be calculated by multiplying the Service Factor to the Nominal Torque.

$$C_T = N_T \times S_F$$

4. Select Coupling on the basis of Torque Rating :

Considering the calculated Coupling Selection Torque (C_T), select the coupling with a rated torque equal to or greater than your calculated torque.

5. Check for the Maximum Bore Capacity :

If the coupling size is inadequate for want of a larger bore capacity, check for the adaptor Style 2. Couplings with a combination of Style 1 and Style 2 are also available.

6. Check on other Parameters :

Check that the selected coupling is appropriate for maximum speed, misalignment and spacer lengths.

Service Factor (S_F) :

(For smooth uniform prime movers like motors, turbines etc.)

Constant Torque (Centrifugal Compressor, Feed Pumps, etc.)	1.5
API - 671	1.75
Moderate Torque Fluctuations (Fans, Screw Compressor, etc.)	2.0
Turbine / Generator Drives	Check Peak Torque Capacity

*For drives with significant torque fluctuations or oscillations consult **NENCO**.*

FEM Analysis of Membrane ensures minimum stress areas

We reserve the right to make alterations due to technical developments and change in designs

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