Rubber Design
vibration and noise control

Rubber Design's VF-type Flexible Coupling

Low Stiffness Characteristics for High Vibration Isolation

Propulsion Equipment

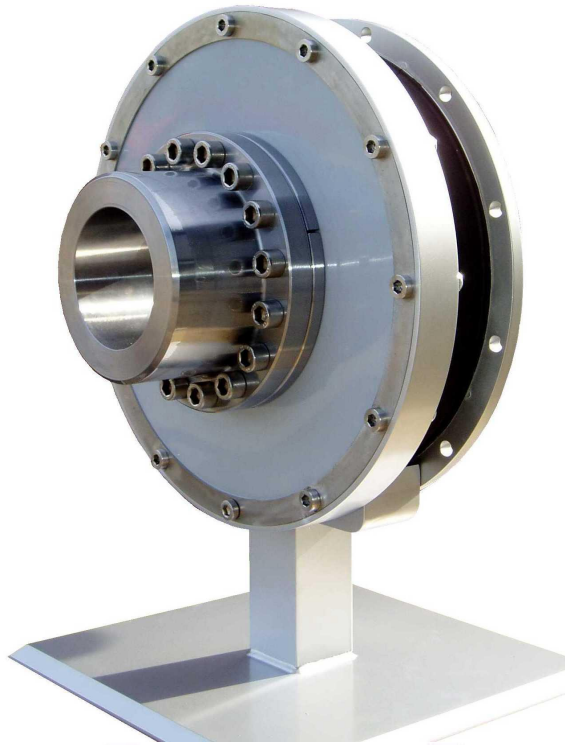
General / Applications

The VF couplings are designed to provide low radial and axial stiffness required for connecting resilient mounted diesel engines to gearboxes. The new product range has been designed for a torque range from 5.000 to 18.000 Nm.

Features

The VF couplings provide the low radial and axial stiffness necessary to guarantee optimum performance of the resilient mounted system. The flexible engine mountings reduce the structure borne noise and vibration levels of the engines, resulting in a lower noise and vibration level on board the ship.

Rubber Design has the in-house skills and expertise necessary to perform a complete dynamic analysis of a vessel's propulsion system in order to select the correct coupling and engine mountings for each application. This ensures that the flexible coupling and engine mountings are working together in harmony to provide a complete solution.



VF series flexible coupling

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Selection Chart

VF COUPLING		5000			10000			18000		
Rubber grade		F50	F60	F70	F50	F60	F70	F50	F60	F70
Nominal torque T_{kn}	kNm	4	5	5	8	10	10	14,4	18	18
Transient torque T_{Kmax1}	kNm	6	7,5	7,5	12	15	15	21,6	27	27
Maximum torque T_{Kmax2}	kNm	12	15	15	24	30	30	43,2	54	54
Vibratory torque T_{KW}	kNm	1,3	1,7	1,7	2,667	3,3	3,3	4,8	6	6
Dynamic torsional stiffness	kNm/rad	22	35	75	43	68	148	81	128	128
Allowable heat loading @ 30°	W	310	330	330	370	400	400	460	520	520
Dynamic magnifier	M	8	5,2	3,5	8	5,2	3,5	8	5,2	3,5
Maximum speed	RPM	2820			2300			1950		
Radial misalignment Δ Kr	mm	4	3	2	6	4,5	3	8	6	4
Radial stiffness	N/mm	440	690	1500	870	1400	2900	1600	2550	5500
Axial misalignment Δ Ka	mm	3,5			4,5			6		
Axial load @ 1mm	kN	0,2			0,15			0,42		

Dimensions

COUPLING SIZE		5000		10000		18000
NOMINAL TORQUE	kNm	4 to 5		8 to 10		14.4 to 18
		SAE14	SAE18	SAE18	SAE21	SAE21
DIMENSION (mm)	A	466.70	571.50	571.50	673.10	673.10
	B1	254	265	310	326	340
	B2	340	351	418	434	463
	B3	-	13	-	19	-
	D	150	150	175	175	185
	E	180	180	225	225	250
	F	438.15	542.92	542.92	641.35	641.35
	G	480	480	585	585	690
	G1	-	493	-	580	-
	J	15	15	17	20	20
	L1	122	133	156	172	185
	L2	208	219	264	280	308
	S	8	12	12	12	12
	U	13	17	17	17	17
	Max Y	120	120	150	150	170
WEIGHT (Kg)	W1	59.9	59.9	108.6	108.6	172.9
	W2	14.0	31.1	27.2	59.2	50.4
	W3	35.6	52.7	67.8	133.5	124.7
INERTIA (Kg m²)	J1	1.28	1.28	3.33	3.33	8.14
	J2	0.50	1.51	1.39	4.07	3.48
	J3	1.26	2.27	3.44	9.16	8.57