



“永进”牌联轴节、减振器荣获“国家银质奖”

“Yongjin” Brand Coupling & Damper wins “National Silver Award”

齿齿相依 带动未来

SNUGGLE UP TOGETHER POWER THE FUTURE

“重齿”牌船用齿轮箱及“永进”牌联轴节、减振器
通过以下船级社认可：

中国CCS船级社、俄罗斯RS船级社、法国BV船级社、美国ABS船级社、英国LR船级社、德国GL船级社、挪威DNV船级社、意大利RINA船级社、日本NK海事协会、ZY渔检。

“Chongchi” Brand Marine Gearbox and Yongjin Coupling & Damper have been approved by following classification societies: CCS, RS, BV, ABS, LR, GL, DNV, RINA, NK and ZY.



CSSC

重庆齿轮箱有限责任公司
CHONGQING GEARBOX CO.,LTD



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重庆齿轮箱有限责任公司系中国船舶集团有限公司（CSSC）所属生产齿轮箱、联轴节、减振器的专业厂。船用齿轮箱是公司主导产品之一,主要包括GW系列、GC系列、GV系列、GA/GQ系列及其它非标工作船齿轮箱,公司还生产各种用于船舶、内燃机车、重型车辆等动力装置的弹性阻尼联轴节、弹性阻尼减振器、挠性杆联轴节。公司拥有先进的成套齿轮加工、热处理、检测和试验设备,使先进的设计思想得以实现,为用户提供最满意的产品。

Chongqing Gearbox Co., Ltd is a subsidiary of China State Shipbuilding Corporation Limited(CSSC), the company is the professional manufacturer for gearbox, coupling and damper. In shipping building industry, the main gearbox type including GW reversing clutch speed reduction gearbox, GC speed reducing gearbox, GVA two-in-one-out as well as elastic damping coupling, elastic damper and flexible shaft coupling. internal combustion engines, heavy-duty vehicles and generators is also covered. With complete modernized equipment for gear machining, heat-treatment, inspection and testing equipment, the factory is able to realize modern concepts of design and manufacture products that meet the needs of customers.

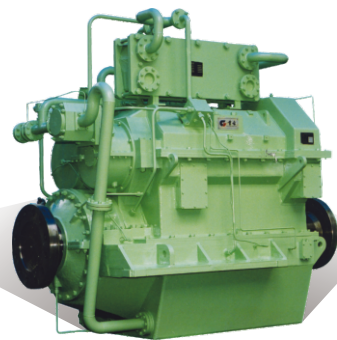
GW系列船用齿轮箱

GW-SERIES MARINE GEARBOX

概述

General information

重庆齿轮箱有限责任公司生产的GW系列船用齿轮箱具有体积小、重量轻、传扭能力大的特点。减速比从2到6,输入转速从360到1800转/分时,传扭能力可从0.38到46.2马力/转/分。其传扭能力的确切数值由中心距和减速比决定。GW系列齿轮箱不仅广泛应用于集装箱船、散货船、邮轮、LNG船、工作船、守护船、挖泥船和公务船等,而且可根据用户要求进行定制化设计。



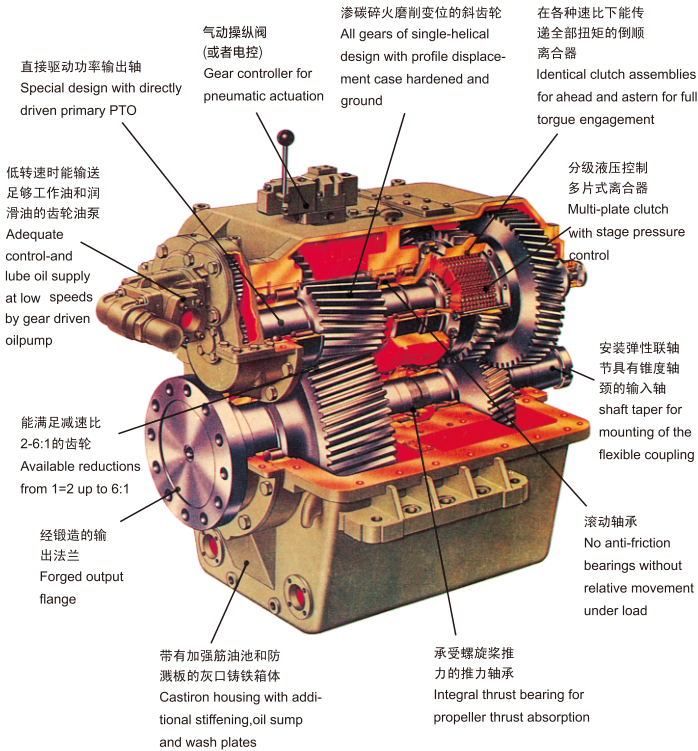
GW系列船用齿轮箱共有9种不同的结构形式,5种可逆转减速齿轮箱和4种离合减速齿轮箱,每种齿轮箱按其中心距的大小又可分为23个型号,根据输入输出轴的相对位置的不同,齿轮箱分为同心和偏心的形式。为了降低成本和减少备件,GW系列采用模块化设计,可组成不同结构形式的变型产品。

GW series have minimum space requirements. Their high torque transmission capacity covers a speed range from 360 to 1800 rpm depending on size and reduction and a torque power speed (N/n1) capacity from 0.38 up to 46.2 for reduction from 2 up to 6:1. The GW series gearboxes are not only widely used in container ships, bulk carriers, cruise ships, LNG carriers, workboats, standby vessels, dredgers and government vessels, etc., but also can be customized according to user requirements.

The family has 9 different models, 5 reversible speed reduction gears and 4 speed reduction gears without reversing function—each divided into 23 models depending on the size of their central distance. The relative configuration of input and output shaft is either coaxial or offset, the latter either vertically, horizontally or diagonally. The modular design affords a variety of advantages including low-cost-manufacture and less spare parts stocking.

齿轮箱结构介绍

Marine reverse reduction gearbox



命名规则

Naming rules

根据机舱布置型式及所需功能，确定齿轮箱型号。

选型 技术 参数	带离合器	正倒车功能	同心	单速比		GWC
			双速比		GWM	
			水平异心		GWH	
			垂直异心	常规		GWS
				轻型	一级减速	GQS/GAS
		两级减速	GAST			
		斜异心		GWD		
		单离合功能	同心	单速比		GWL
				双速比		GWT
	水平异心		GWU			
	垂直异心		常规		GWK	
		轻型	一级减速	GQK/GAK		
	两级减速		GAKT			
	不带离合器	同心	GWR			
		水平异心	GCH			
双机并车	垂直异心	GCS				
	带离合器	GVW				
	不带离合器	GVA				
带PTO/PTI	上表选型后加P					

选型图表

Selection diagram

GWC/GWL系列选型图表					
型 号 Gear Type	输入转速(rpm) Input Speed	减速比(i) Reduction ratio	传递能力(kw/rpm) transmission capacity	推力(kN) Propeller Thrust	净重(kg) Net Weight
GWC2830 GWL2830	400-900	2.0607	0.8597	80	1230 1070
	400-1150	2.5053	0.7071		
	400-1350	3.08	0.5752		
	400-1580	3.5351	0.5011		
	400-1800	4.0526	0.4372		
	400-1800	4.6456	0.3813		
	400-1800	5.0917	0.3479		
	400-1800	5.5861	0.3176		
	400-1800	6.1369	0.2886		
	400-1800	6.162	0.3698		
GWC3032 GWL3032	400-900	2.0316	1.1216	98	2200 1975
	400-1150	2.5516	0.893		
	400-1350	3.0372	0.752		
	400-1580	3.52	0.6473		
	400-1800	4	0.5697		
	400-1800	4.5456	0.5013		
	400-1800	5.0476	0.4514		
	400-1800	5.6412	0.4039		
	400-1800	6.162	0.3698		
	400-1800	6.162	0.3698		
GWC3235 GWL3235	400-900	2.0583	1.3827	115	2400 2150
	400-1150	2.5414	1.1198		
	400-1350	3.0212	0.942		
	400-1580	3.576	0.7958		
	400-1800	4.0526	0.7023		
	400-1800	4.5928	0.6196		
	400-1800	5.0893	0.5592		
	400-1800	5.5723	0.5107		
	400-1800	6.0789	0.4681		
	400-1800	6.0789	0.4681		
GWC3639 GWL3639	400-900	1.9737	2.0372	140	3200 2700
	400-1150	2.4502	1.6410		
	400-1350	2.9971	1.3416		
	400-1580	3.4737	1.1575		
	400-1800	3.9474	1.0186		
	400-1800	4.3959	0.9147		
	400-1800	5.0064	0.8031		
	400-1800	5.4656	0.7357		
	400-1800	5.9744	0.6730		
	400-1800	5.9744	0.6730		

GWC/GWL系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	减速比(i) Reduction ratio	传递能力(kw/rpm) transmission capacity	推力(kN) Propeller Thrust	净重(kg) Net Weight
GWC3941 GWL3941	400-800	1.975	2.8466	175	3945 2820
	400-1000	2.5339	2.2187		
	400-1200	3.0632	1.8353		
	400-1400	3.5206	1.5969		
	400-1600	4.042	1.3909		
	400-1600	4.528	1.2416		
	400-1600	5.0935	1.1038		
	400-1600	5.596	1.0046		
GWC4245 GWL4245	400-800	2	3.6086	220	4500 4000
	400-1000	2.5456	2.8352		
	400-1200	3.0244	2.3863		
	400-1400	3.4736	2.0777		
	400-1600	4	1.8043		
	400-1600	4.5238	1.5954		
	400-1600	5	1.4434		
	400-1600	5.3663	1.3449		
GWC4549 GWL4549	400-700	1.9737	4.4530	270	5275 4600
	400-875	2.4671	3.5624		
	400-1050	2.8946	3.0363		
	400-1230	3.3833	2.5977		
	400-1400	3.9474	2.2265		
	400-1400	4.3741	2.0093		
	400-1400	4.8498	1.8122		
	400-1400	5.3827	1.6328		
	400-1400	5.9847	1.4686		
	400-1400	5.9847	1.4686		
GWC4954 GWL4954	400-600	1.9359	5.7641	290	7190 6000
	400-750	2.4592	4.5376		
	400-900	2.9173	3.8250		
	400-1050	3.4457	3.2385		
	400-1200	3.9524	2.8233		
	400-1200	4.5338	2.4612		
	400-1200	4.9105	2.2724		
	400-1200	5.4824	2.0354		
	400-1200	5.9966	1.8609		
	400-1200	5.9966	1.8609		

GWC/GWL系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	减速比(i) Reduction ratio	传递能力(kw/rpm) Transmission capacity	推力(kN) Propeller Thrust	净重(kg) Net Weight
GWC4957 GWL4957	400-600	2	6.5102	320	8500 7000
	400-750	2.5	5.2082		
	400-900	2.9333	4.4388		
	400-1050	3.4286	3.7976		
	400-1200	4	3.2551		
	400-1200	4.4324	2.9376		
	400-1200	4.9143	2.6495		
	400-1200	5.4545	2.3870		
	400-1200	6.0645	2.1469		
	400-1200	6.4905	2.0061		
GWC5259 GWL5259	400-600	1.9343	7.7783	360	10000 8760
	400-750	2.4817	6.0626		
	400-900	2.9643	5.0755		
	400-1050	3.5251	4.2681		
	400-1200	3.9524	3.8067		
	400-1200	4.4314	3.3952		
	400-1200	4.9725	3.0257		
	400-1200	5.4017	2.7853		
GWC5262 GWL5262	400-600	1.9948	7.7689	400	10800 9700
	400-750	2.5217	6.1455		
	400-900	3.014	5.1418		
	400-1050	3.5438	4.3731		
	400-1200	4.05	3.8265		
	400-1200	4.5	3.4438		
	400-1200	5.0029	3.0976		
	400-1200	5.4964	2.8195		
	400-1200	6.0171	2.5755		
	400-1200	6.3333	2.5755		
	400-1200	6.5013	2.5091		
	400-1200	7.0037	2.3291		
GWC6066 GWL6066	400-600	2.0476	9.9382	540	13100 10550
	400-750	2.6062	7.8081		
	400-900	3.0714	6.6255		
	400-1050	3.5833	5.6790		
	400-1200	4.0952	4.9691		
	400-1200	4.6804	4.3478		
	400-1200	5.119	3.9753		
	400-1200	5.6039	3.6313		
	400-1200	6.1428	3.3127		
	400-1200	6.47	3.1428		

GWC/GWL系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	减速比(i) Reduction ratio	传递能力(kw/rpm) Transmission capacity	推力(kN) Propeller Thrust	净重(kg) Net Weight
GWC6071 GWL6071	400-1200	6.9619	2.9000	540	16000 13100
	400-1200	7.5083	2.4285		
	400-1200	6.5	3.09		
	400-1200	6.9	2.91		
GWC6074 GWL6074	400-600	2.0097	11.5000	650	16500 15000
	400-750	2.4993	9.2000		
	400-900	2.9984	7.6667		
	400-1050	3.5132	6.5714		
	400-1200	3.9524	5.8333		
	400-1200	4.5452	5.0833		
	400-1200	5.0064	4.6083		
	400-1200	5.5333	4.1667		
	400-1200	6.0326	3.8126		
	400-1200	6.4800	3.8356		
	400-1200	7.0192	3.8356		
GWC6371 GWL6371	300-500	2.0166	13.1133	710	17500 16000
	300-625	2.5316	10.4457		
	300-750	3.0056	8.7983		
	300-875	3.5526	7.4436		
	300-1000	4.1053	6.4415		
	300-1000	4.5515	5.8100		
	300-1000	5.0383	5.2487		
	300-1000	5.4737	4.8312		
	300-1000	5.9526	4.4425		
	300-1000	6.4335	3.8434		
	300-1000	6.963	3.3428		
GWC6675 GWL6675	300-475	2.042	13.9427	790	19500 17000
	300-595	2.509	11.3475		
	300-715	3	9.4903		
	300-830	3.52	8.0884		
	300-950	3.952	7.2042		
	300-950	4.446	6.4037		
	300-950	4.983	5.7136		
	300-950	5.514	5.1634		
	300-950	5.976	4.7642		
	300-950	6.6706	4.2681		
	300-950	7	4.0799		
GWC6680 GWL6680	300-950	6.48	5.05	790	21000 18500
	300-950	6.88	4.76		
	300-425	1.975	18.2470		
	300-530	2.5017	14.4053		

GWC/GWL系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	减速比(i) Reduction ratio	传递能力(kw/rpm) transmission capacity	推力(kN) Propeller Thrust	净重(kg) Net Weight
GWC7082 GWL7082	300-640	2.9625	12.1647	850	22500 20500
	300-745	3.4942	10.3136		
	300-850	3.95	9.1235		
	300-850	4.4652	8.0708		
	300-850	4.9375	7.2988		
	300-850	5.4915	6.5625		
	300-850	5.9756	6.0308		
	300-850	6.5354	6.0308		
	300-850	6.9709	5.6540		
	300-850	7.463	5.1644		
	300-850	7.955	4.6738		
GWC7085 GWL7085	300-425	1.9792	21.039	970	25000 23000
	300-530	2.4504	16.9908		
	300-640	3.0029	13.8647		
	300-745	3.5185	11.8329		
	300-850	3.9583	10.5182		
	300-850	4.4531	9.3495		
	300-850	5.0139	8.3038		
	300-850	5.5233	7.5379		
	300-850	5.9858	6.9555		
	300-850	6.4957	6.4095		
	300-850	7.069	6.4095		
GWC7590 GWL7590	200-415	1.9773	22.2624	1120	27000 24500
	200-515	2.48	17.7498		
	200-620	3.0198	14.5770		
	200-720	3.4893	12.6156		
	200-825	3.9545	11.1315		
	200-825	4.4818	9.8218		
	200-825	4.9662	8.8638		
	200-825	5.5364	7.9509		
GWC7895 GWL7895	200-825	6.0359	7.2929	1130	34000 31000
	200-375	2.012	26.52		
	200-475	2.496	21.37		
	200-570	2.983	17.89		
	200-665	3.503	15.23		
	200-750	3.9524	13.5		
	200-850	4.504	11.85		
	200-850	5.039	10.59		
	200-850	5.513	9.68		
	200-850	6.038	8.84		
	200-850	6.48	8.23		
	200-850	7	7.62		
	200-850	7.955	7.069		

GWC/GWL系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	减速比(i) Reduction ratio	传递能力(kw/rpm) transmission capacity	推力(kN) Propeller Thrust	净重(kg) Net Weight
GWC8095 GWL8095	200-375	2.012	27.50	1280	34000 31000
	200-475	2.496	22.17		
	200-570	2.983	18.55		
	200-665	3.503	15.80		
	200-750	3.9524	14		
	200-850	4.504	12.29		
	200-850	5.039	10.98		
	200-850	5.513	10.04		
	200-850	6.038	9.16		
	200-850	6.49	8.53		
	200-850	7	7.90		
GWC85100 GWL85100	200-350	1.9773	34	1440	38000 35000
	200-440	2.4899	27		
	200-525	3.005	22.4		
	200-615	3.4497	19.5		
	200-700	3.9545	17		
	200-700	4.5333	14.8		
	200-700	4.9685	13.5		
	200-700	5.4509	12.3		
	200-700	5.9883	11.2		
	200-700	6.48	10.59		

选型说明

Explains the method of selection of the gearbox type

GWC系列:

2级减速, 输入和输出为同心, 方向相同或相反, 具有倒顺离合减速功能;

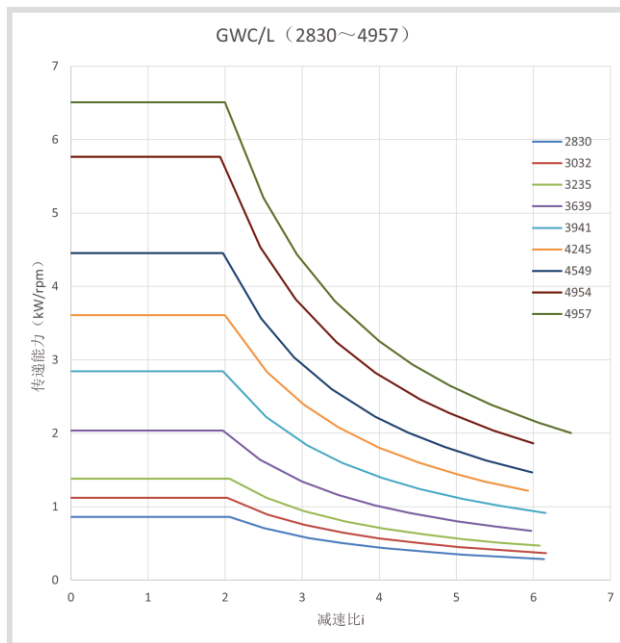
GWC design: GWC series marine gearbox has a primary stage, a reduction stage and a reverse stage. Input and output are coaxial and have same direction of rotation.

GWL 系列:

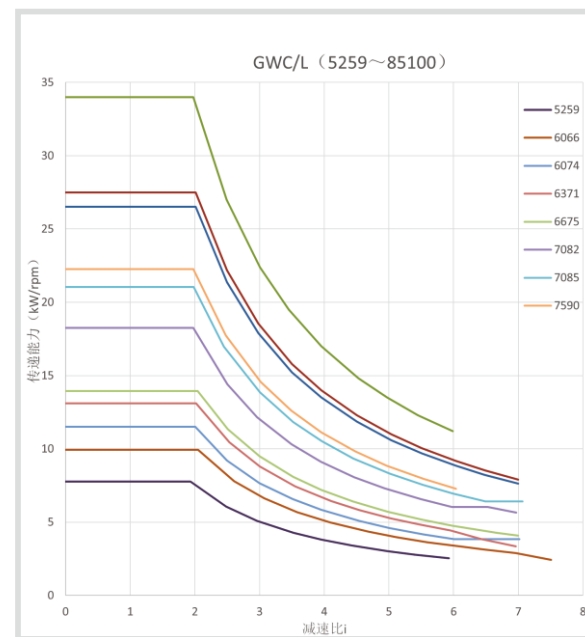
2级减速, 输入和输出为同心, 运转方向相同, 仅有离合减速功能;

GWL design: GWL series marine gearbox without reverse stage function corresponds to the GWC model has a primary stage and a reduction stage. Input and output are coaxial and have the same direction of rotation.

GWC/L选型图表曲线图



(仅适用于CCS船级社, 其他船级社请垂询重齿公司)



选型原则

根据输入传递能力及减速比选择合适的型号(中心距有要求的除外), 减速比一定时, 传递能力不得高于所选型号许用传递能力。

选型举例

主机额定功率(P): 2206 kW 主机额定转速(n): 600 r/min
减速比: 5.119 布置形式: GWC型 船级社: CCS

根据选型曲线, 速比5.119和 $P/n=3.6767$ 的点坐标位于5259以上, 6066以下, 故选用GWC6066。

GWD/GWK/GWS/GWH系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	减速比(i) Reduction ratio	传递能力(kw/rpm) Transmission capacity	推力(kN) Pusher Thrust	净重(kg) Net Weight
GWD2830 GWK2830 GWS2830 GWH2830	400-1800	2	0.4372	80	1130
		2.5556			1130
		3			1230
		3.5714			1130
		4.0526			1130
GWD3032 GWK3032 GWS3032 GWH3032	400-1800	1.9688	0.5697	98	1800
		2.5185			1300
		2.9583			1465
		3.5238			1465
		4			1465
		4.95	0.3404		
GWD3235 GWK3235 GWS3235 GWH3235	400-1800	2	0.7023	115	1870
		2.5556			1870
		3			2517
		3.5714			2080
		4.0526			2080
		4.441	0.4744		
GWD3639 GWK3639 GWS3639 GWH3639	400-1800	2.0323	1.0186	140	3000
		2.4815			2245
		2.9167			3000
		3.4762			3000
		3.9474			3000
		4.2778	0.6945		
GWD3941 GWK3941 GWS3941 GWH3941	400-1600	2	1.3909	175	3500
		2.5357			2960
		2.96			3500
		3.5			3900
		3.95			3900
GWD4245 GWK4245 GWS4245 GWH4245	400-1600	2	1.8043	220	3800
		2.5456			3600
		2.9286			3800
		3.619			3800
		4			3800
		4.1905	1.26096		
GWD4250 GWK4250 GWS4250 GWH4250	400-1600	4.5	1.59	270	5000
		5	1.375		4400
		5.318	1.25		5000
					5000
GWD4258 GWK4258 GWS4258 GWH4258	400-1400	4.5	1.8		6300
		5			5800
		5.7917	1.45		6300
		6.4545	1.3		6300
					6300
GWD4549		2.0323			5730

GWD/GWK/GWS/GWH系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	减速比(i) Reduction ratio	传递能力(kw/rpm) Transmission capacity	推力(kN) Pusher Thrust	净重(kg) Net Weight
GWD4549 GWS4549 GWH4549	400-1400	2.4815	2.2265	270	4835
		3.087			5730
		3.4762			5730
		3.9474			5730
GWD4558 GWK4558 GWS4558 GWH4558	400-1200	3.5	2.2265		6230
		4			5600
		4.5517			6230
		5.19	2		6230
GWD4954 GWK4954 GWS4954 GWH4954	400-1200	1.9714	3.2551	290	6900
		2.4667			6310
		3			6900
		3.5217			6800
		3.9524			6800
GWD5259 GWK5259 GWS5259 GWH5259	400-1200	4.5	2.17		
		1.9714			
		2.4667			
		3			
		3.5217			
GWD5282 GWK5282 GWS5282 GWH5282	400-1200	3.9524	3.8067	360	8920
		4.526			8120
		4.5			8920
		4.5849			8920
		5			8920
GWD6066 GWK6066 GWS6066 GWH6066	400-1200	4.1264	4.5849	540	13000
		5.48			11500
		6			13000
		3.4387			13000
					13000
GWD6071 GWK6071 GWS6071 GWH6071	400-1200	1.9722	4.969	540	12100
		2.4516			11100
		2.963			12100
		3.4583			12100
		4.0952			12100
GWD6090 GWK6090 GWS6090 GWH6090	400-1000	4.944	3.6		
		4			
		4.5			
		5			
		5.5			
GWD6371 GWK6371	400-1000	4.4783	4.87	730	16500
		5.0833			15500
		5.5263			16500
		5.9524			16500
		2.0312			
GWD6371 GWK6371	400-1000	2.4643	6.4415	710	17000
					16000

GWD/GWK/GWS/GWH系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	减速比(i) Reduction ratio	传递能力(kw/rpm) Transmission capacity	推力(kN) Propeller Thrust	净重(kg) Net Weight
GWS6371 GWH6371	400-1000	3.0417 3.5 4.1053	6.4415	710	17000 17000
GWD6675 GWK6675 GWS6675 GWH6675	300-950	1.971 2.5 3 3.522 3.952	7.2042	790	19000 17000 19000 19000
GWD7082 GWK7082 GWS7082 GWH7082	300-850	1.975 2.5017 2.9625 3.4942 3.95	9.1235	850	20000 18500 20000 20000
GWD7085 GWK7085 GWS7085 GWH7085	300-850	1.9792 2.4504 3.0029 3.5185 3.9583	10.5182	970	23000 21500 23000 23000
GWD7590 GWK7590 GWS7590 GWH7590	200-825	1.9773 2.48 3.0198 3.4893 3.9545	11.1315	1120	25500 23000 25500 25500
GWD8095 GWK8095 GWS8095 GWH8095	200-800	2.012 2.496 2.983 3.503 3.9524	11.19	1280	31500 28500 31500 31500
GWD80135 GWK80135 GWS80135 GWH80135	200-750	4 4.5 5 5.5 6.25	14.19	1280	40000 35500 40000 40000
GWD85100 GWK85100 GWS85100 GWH85100	200-700	1.9773 2.4899 3.005 3.4497 3.9545	17	1440	35000 32000 35000 35000
GWD85120 GWK85120 GWS85120 GWH85120	200-700	4.5 5.053 5.5 6	18.15 15.618 14.317	1200	41000 36000 41000 41000

GWM (双速比) 系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	减速比(i) Reduction ratio			传递能力(kw/rpm) Transmission capacity	推力(kN) Propeller Thrust	净重(kg) Net Weight
		正车1	正车2	倒车			
GWM3235	400-1800	2-4	2-4	2-4	0.71	115	3031
GWM3639	400-1800	2-4	2-4	2-4	0.94	140	4000
GWM3941	400-1600	2-4	2-4	2-4	1.24	175	5100
GWHM3960	650-2100	~6	~7	~7	1.067-1.24	300	7500
GWM4549	400-1600	2-4	2-4	2-4	2.1	270	8900
GWDM4952	400-1200	2-4	2-4.0421	2-4.0421	2.77	290	6500
GWM4954	400-1200	2-4	2-4	2-4	2.77	290	10500
GWDM5262	400-1200	2-4	2-4	2-4	3.876	360	6528

选型说明

Explains the method of selection of the gearbox type

GWK系列:

1级减速, 输入和输出为垂直异心。运转方向相反, 仅有离合减速功能。

GWK design: GWK series marine gearbox has no reverse function and is of single stage design, input and output are vertically off-set and have opposite sense direction of rotation.

GWS系列:

1级减速, 输入和输出为垂直异心, 运转方向相反, 具有倒顺离合减速功能。

GWS design: The GWS series has no primary stage but a reduction and reverse stage. Input and output are vertically off-set and have opposite sense direction of rotation.

GWD系列:

1级减速, 输入和输出为角向异心, 运转方向相反, 具有倒顺离合减速功能。

GWD design: GWD series marine gearbox has a reduction and a reverse stage but no primary stage. Input and output are diagonally off-set and have opposite direction of rotation.

GWH系列:

1级减速, 输入和输出为水平异心, 运转方向相反, 具有倒顺离合减速功能。

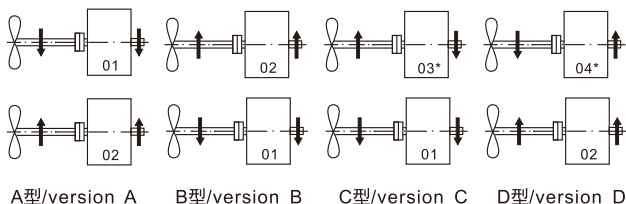
GWH design: GWH series marine gearbox has a reduction and a reverse stage but no primary stage. Input and output are horizontally off-set and have opposite sense direction of rotation.

双机配置方案

Configurations and Rotations

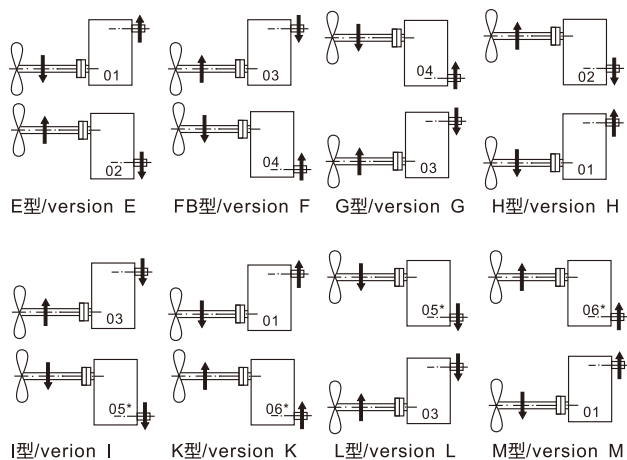
双机双桨排列型式

configurations and rotations GWC/GWL¹⁾



双机双桨排列型式

configurations and rotations GWD/GWH¹⁾

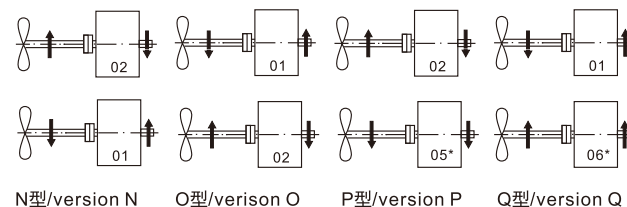


双机配置方案

Configurations and Rotations

双机双桨排列型式

configurations and rotations GWS/GWK¹⁾



1) 所示顺车旋转方向面对飞轮向前看

*) GWC、GWD、GWS和GWH仅供特殊订货。

1) stated rotations refer to ahead movement facing engine flywheel.

*) available as special design for models GWC/GWD/GWS and GWH only.

螺旋桨推力

Max. propeller thrusts

型号 Gear Type	最大螺旋桨推力 (Kgf) Max. propeller thrust (Kgf)		
28.30	8000		
30.32	9800		
32.35	11500		
36.39	14000		
39.41	17500		
42.45	22000		
45.49	27000		
49.54	29000		
	LROS	GL	双向旋转 reversible rotation
52.59	40000	36000	30000
60.66	60000	54000	45000
63.71	71000		
66.75	82000	73000	73000
70.82	108000		
70.85	104000	94000	78000
75.90	130000	117000	98000

1) 52.59以上为推力块

2) “双向旋转”即为同一推力轴承受螺旋桨既可左转，又可右转的最大推力。

1) From gear size 52.59, the propeller thrust taken by an axial-type segment thrust bearing.

2) The reversible rotation is the Max. thrust of propeller which is of reversible rotation the same bearing support.

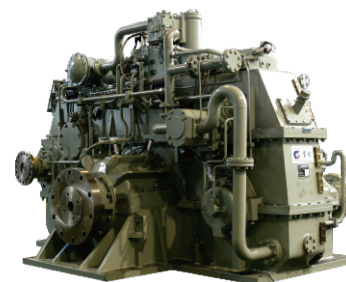
GV系列船用齿轮箱

GV-SERIES MARINE GEARBOX

概述

General information

GV系列双机并车齿轮箱是在长期生产中获得的设计经验基础上发展起来的：整体式的推力轴承具有相当大的刚性，齿轮箱体在承受全负荷时能保证齿轮的正常啮合，所有受力部件及操纵机构都是安全可靠的。主传动齿轮经渗碳淬火和磨齿。各种规格的双机并车齿轮箱均经各船级社根



据最新标准认可，被认为是很安全的，因而得到广泛的应用。

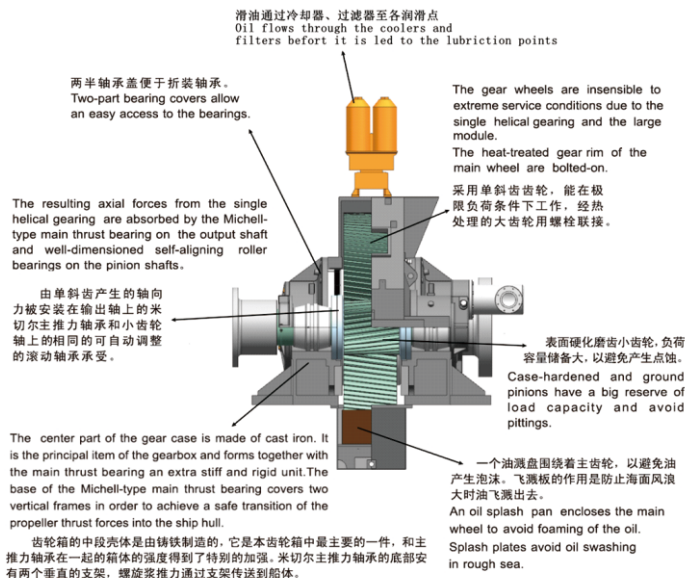
本产品样本包括了为某些船舶的需要而特别设计的齿轮箱，样本里所列举的双机并车齿轮箱均是经长期使用的、重量轻并安全可靠的产品。

Together with shipbuilders and engine makers on the basis of many years, experience, the developed product has some properties: heavy rigidity of the integrated thrust bearing, security of connecting tooth mesh in all-load service by a self-supporting gear housing, and safe connecting of all torque-transmitting parts and reliable control devices. The pinions are case-hardened and ground. Specifications of various types of these gearboxes are approved by the latest standard rules of classification societies. So they have a wide range of application.

The list comprises gears which are specially designed for special marine purpose and the twin input/single output gearbox is a light weight and reliable product, proved by many years, experience.

齿轮箱结构介绍

Marine reverse
reduction gear



GVA series
selection diagram

GVA系列选型图表

GVA(B)系列选型图表					
型号 Gear Type	输入转速(rpm) Input Speed	名义减速比(i) Nominal Ratio	传递能力(kw/rpm) transmission capacity	推力(kN) Propeller Thrust	中心距(mm) Center distance
GVA1000B	300-600	2	3.1	550	1000
	375-750	2.5	2.45		
	450-900	3	2.05		
	525-1050	3.5	1.76		
	600-1200	4	1.53		
	675-1350	4.5	1.34		
	750-1500	5	1.21		
	825-1650	5.5	1.07		
GVA1120B	900-1800	6	0.96	600	1120
	300-600	2	4.26		
	375-750	2.5	3.36		
	450-900	3	2.98		
	525-1050	3.5	2.54		
	600-1200	4	2.19		
	675-1350	4.5	1.91		
	750-1500	5	1.69		
GVA1250B	825-1650	5.5	1.51	750	1250
	900-1800	6	1.36		
	300-600	2	5.7		
	375-750	2.5	4.6		
	450-900	3	3.8		
	525-1050	3.5	3.3		
	600-1200	4	2.8		
	675-1350	4.5	2.45		
GVA1400B	750-1500	5	2.2	750	1400
	825-1650	5.5	1.95		
	900-1800	6	1.75		
	250-450	2	8.3		
	313-563	2.5	6.7		
	375-675	3	5.7		
	438-788	3.5	4.8		
	500-900	4	4.2		
GVA1400B	563-1013	4.5	3.6	750	1400
	625-1125	5	3.3		
	688-1238	5.5	2.9		
	750-1350	6	2.6		

GVA(B)系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	名义减速比(i) Nominal Ratio	传递能力(kw/rpm) transmission capacity	推力(kN) Propeller Thrust	中心距(mm) Center distance
GVA1500B	250-450	2	9.9	1000	1500
	313-563	2.5	8.1		
	375-675	3	6.8		
	438-788	3.5	5.7		
	500-900	4	4.9		
	563-1013	4.5	4.3		
	625-1125	5	3.8		
	688-1238	5.5	3.4		
	750-1350	6	3.2		
GVA1700B	250-450	2	14.3	1300	1700
	313-563	2.5	11.6		
	375-675	3	9.7		
	438-788	3.5	8.4		
	500-900	4	7.3		
	563-1013	4.5	6.3		
	625-1125	5	5.4		
	688-1238	5.5	4.9		
	750-1350	6	4.5		
GVA1875B	200-350	2	19.5	1300	1875
	250-438	2.5	15.9		
	300-525	3	13.3		
	350-613	3.5	11.3		
	400-700	4	9.7		
	450-788	4.5	8.5		
	500-875	5	6.7		
	550-963	5.5	5.9		
	600-1050	6	5.4		
GVA2050B	188-375	2.5	21	1600	2050
	225-450	3	17.3		
	263-525	3.5	14.7		
	300-600	4	12.7		
	338-675	4.5	11.2		
	375-750	5	9.9		
	413-825	5.5	8.8		
	450-900	6	8		

GVA(C)系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	名义减速比(i) Nominal Ratio	传递能力(kw/rpm) transmission capacity	推力(kN) Propeller Thrust	中心距(mm) Center distance
GVA1000C	300-600	2	4.1	550	1000
	375-750	2.5	3.3		
	450-900	3	2.78		
	525-1050	3.5	2.34		
	600-1200	4	2.03		
	675-1350	4.5	1.77		
	750-1500	5	1.58		
	825-1650	5.5	1.42		
	900-1800	6	1.29		
GVA1120C	300-600	2	5.7	750	1120
	375-750	2.5	4.7		
	450-900	3	3.8		
	525-1050	3.5	3.3		
	600-1200	4	2.85		
	675-1350	4.5	2.4		
	750-1500	5	2.1		
	825-1650	5.5	1.87		
	900-1800	6	1.67		
GVA1250C	300-600	2	7.6	750	1250
	375-750	2.5	6.3		
	450-900	3	5.3		
	525-1050	3.5	4.4		
	600-1200	4	3.8		
	675-1350	4.5	3.4		
	750-1500	5	3		
	825-1650	5.5	2.68		
	900-1800	6	2.42		
GVA1400C	250-450	2	11	1000	1400
	313-563	2.5	9		
	375-675	3	7.6		
	438-788	3.5	6.4		
	500-900	4	5.6		
	563-1013	4.5	4.9		
	625-1125	5	4.3		
	688-1238	5.5	3.4		
	750-1350	6	3.1		

GVA(B)系列选型图表

型号 Gear Type	输入转速(rpm) Input Speed	名义减速比(i) Nominal Ratio	传递能力(kw/rpm) transmission capacity	推力(kN) Propeller Thrust	中心距(mm) Center distance
GVA1500C	250-450	2	13.2	1300	1500
	313-563	2.5	10.9		
	375-675	3	9.2		
	438-788	3.5	7.8		
	500-900	4	6.7		
	563-1013	4.5	5.8		
	625-1125	5	5.3		
	688-1238	5.5	4.7		
GVA1700C	750-1350	6	4.2	1300	1700
	250-450	2	18.8		
	313-563	2.5	15.6		
	375-675	3	13.2		
	438-788	3.5	11.2		
	500-900	4	9.6		
	563-1013	4.5	8.4		
	625-1125	5	7.4		
GVA1875C	688-1238	5.5	6.6	1600	1875
	750-1350	6	5.9		
	200-350	2	26		
	250-438	2.5	22		
	300-525	3	17.8		
	350-613	3.5	15.2		
	400-700	4	13.2		
	450-788	4.5	11.5		
GVA2050C	500-875	5	10.2	2000	2050
	550-963	5.5	9.1		
	600-1050	6	8.2		
	188-375	2.5	27		
	225-450	3	23		
	263-525	3.5	20		
	300-600	4	17.2		
	338-675	4.5	14.9		
GVA2050C	375-750	5	13.5	2000	2050
	413-825	5.5	11.9		
	450-900	6	10.7		

该选型适用于CCS船级社，其它船级社需咨询重齿公司

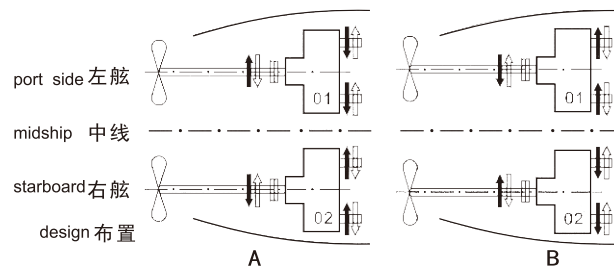
This selection applies to CCS, for other classification society, please consult
CN GPOWER GEARBOX CO.,LTD.

Configurations
and Rotations

配置方案及运转方向

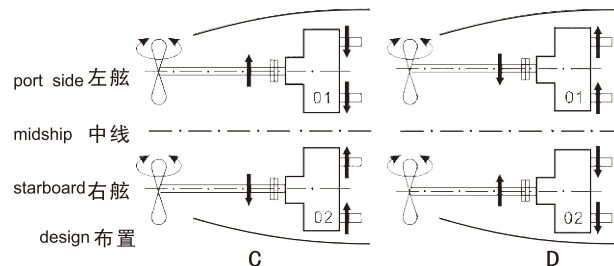
定距桨——可逆转发动机

Fixed propeller-reversible engines



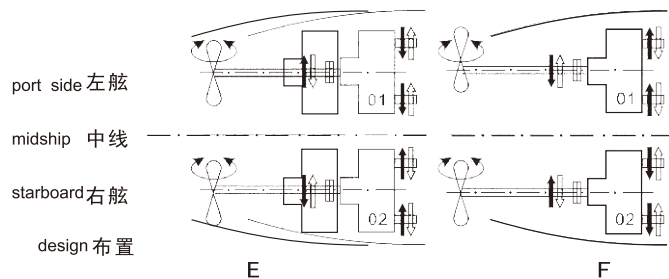
变距桨——不可逆转发动机

c.p. propeller-unidirectional engines



变距桨——可逆转发动机

c.p.propeller-reversible engines



说明 explanation

- ↑ rotation sense "ahead" 前进转向 (黑色箭头)
(black arrows)
- ↑ rotation sense "astern" (fixed propeller) 后退转向 (定距桨) (白色箭头)
(white arrows)

GVA series propeller
thrusts spare parts

GVA系列螺旋桨推力

螺旋桨推力/ Propeller Thrusts

型号 gear type	最大螺旋桨推力 normal 标准的 (Kgf)	/ max.propeller thrusts 对改变转向及推力方向 for changing sense of rotation and thrust direction* (Kgf)
GVA 1000B	55000	41250
GVA 1000C	55000	41250
GVA 1120B	60000	45000
GVA 1120C	75000	56250
GVA 1250B	75000	56250
GVA 1250C	75000	56250
GVA 1400B	75000	56250
GVA 1400C	100000	75000
GVA 1500B	100000	75000
GVA 1500C	130000	97500
GVA 1700B	130000	97500
GVA 1700C	130000	97500
GVA 1875B	130000	97500
GVA 1875C	160000	120000
GVA 2050B	160000	120000
GVA 2050C	200000	150000

对变距桨推进装置及可逆转发动机来说可承受螺旋桨推力相应减少。

*) For propulsion units with c.p.propeller and reversible engines are only these reduced propeller thrusts permitted.

GVW系列选型图表							
型 号 Gear Type	输入转速(rpm) Input Speed	名义减速比(i) Nominal Ratio	实际减速比(i) Actual Ratio	传递能力(kw/rpm) Transmission capacity	推力(kN) Propeller Thrust	中心距(mm) Center distance	重量(kg) Net Weight
GVWD900	650-1750	3	3.194	1.657	320	900	11700
GVW1050	400-800	2	2	1.61	550	1050	13000
	400-1000	2.5	2.4932				
	400-1200	3	2.9844				
	400-1400	3.5	3.4737				
	400-1600	4	4				
	400-1600	4.5	4.5435				
GVW1225P1	400-1600	5	5.0714	3.6	750	1225	20500
	400-600	2	2				
	400-750	2.5	2.4737				
	400-900	3	2.98				
	400-1050	3.5	3.5				
	400-1200	4	3.975				
	400-1200	4.5	4.5				
	400-1200	5	5				
GVW1250P1	400-1200	5.5	5.4194	3.6	750	1250	21500
	400-1200	6	6.0714				
	400-600	2	2.015				
	400-750	2.5	2.48				
	400-900	3	3.04				
	400-1050	3.5	3.489				
GVW1400P1 GVL1400P1	400-1200	4	4.05	4.87	850	1400	27000
	400-1200	4.5	4.46				
	400-1200	5	4.94				
	400-600	2	2				
	400-750	2.5	2.4923				
	400-900	3	2.9825				
GVW2000	400-1050	3.5	3.5098	21.6	800	2000	82000
	400-1200	4	4				
	400-1200	4.5	4.5122				
	400-1200	5	5				

GC系列船用齿轮箱

GC-SERIES MARINE GEARBOX

概述

General information

GC系列船用齿轮箱是采用表面硬化、磨齿的单斜齿齿轮的单级减速装置。包括GCS和GCH两种传动型式。GCS型是垂直偏置，GCH型是水平偏置。GC系列广泛用于电力推进船舶，以及豪华游轮、运输船、公务船、滚装船、散货船等，具有低噪声、低振动的特点。

GCS/GCH齿轮箱中心距从400到560时采用滚动轴承，中心距从600到1250时采用滑动轴承。

所有的型号都可以加装辅助功率输出轴(PTO)。

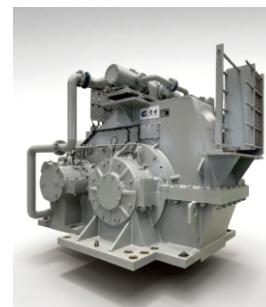
GC series marine gearbox are single stage reduction gears with case hardened and ground single helical spur wheels. It includes GCS and GCH two drive models. GCS gearbox are of vertical offset design. GCH gearbox have horizontal offset shafts. The GC series is widely used in electric propulsion ships, as well as luxury cruise ships, transport ships, government vessels, roll-on/roll-off ships, and bulk carriers, and is characterized by low noise and low vibration.

The sizes GCS/GCH400 to 560 are equipped with rolling (antifriction) bearings. The sizes GCS/GCH600 to 1250 are equipped with sliding bearings.

All gears can be equipped with a power take off(PTO) for which special superposition gears have been developed.



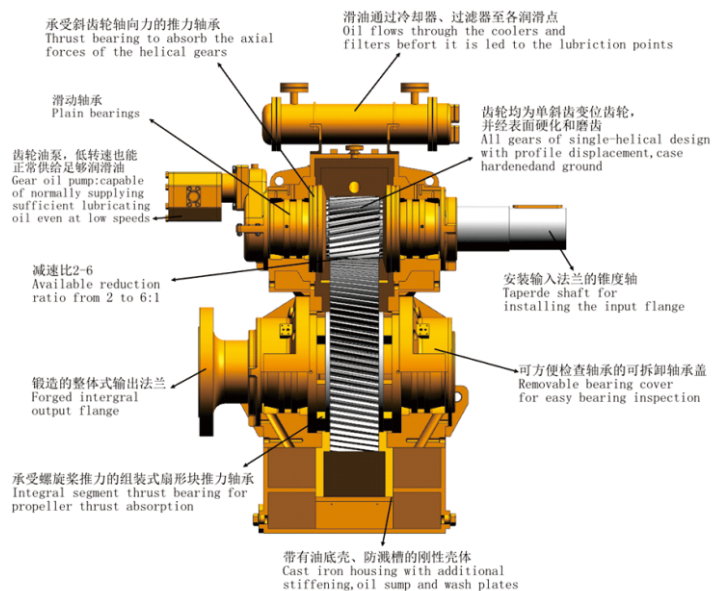
GCS500船用减速齿轮箱
Marine reduction gear



GCH1250船用减速齿轮箱
Marine reduction gear

齿轮箱结构介绍

Marine reverse
reduction gear



GCS减速齿轮箱
GCS Marine Reduction Gearbox

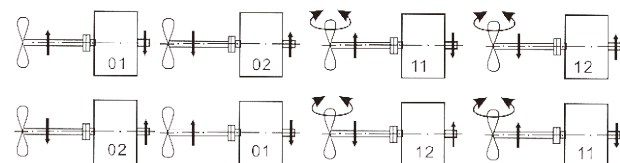
Configurations and
Rotations

配置方案及运转方向

布置图和旋向

configurations and rotations GCS¹

定螺距螺旋桨/for fixed propellers²⁾ 变螺距螺旋桨/for c.p. Propellers³⁾

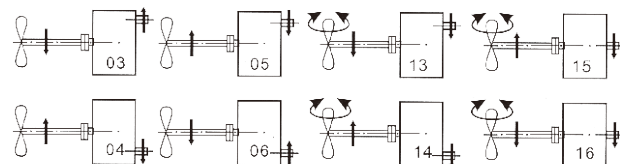


A型/ version A B型/ version B C型/ version C D型/ version D

布置图和旋向

configurations and rotations GCS¹

定螺距螺旋桨/for fixed propellers²⁾ 变螺距螺旋桨/for c.p. Propellers³⁾



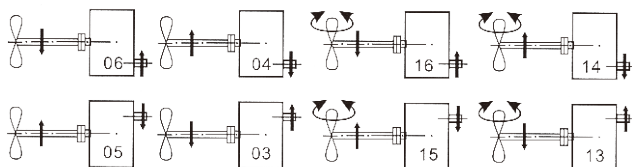
E型/ version E F型/ version F I型/ version I K型/ version K

布置图和旋向

configurations and rotations GCH¹

定螺距螺旋桨/for fixed propellers²⁾

变螺距螺旋桨/for c.p. Propellers³⁾



G型/ version G H型/ version H L型/ version L M型/ version M

1. 图示齿轮箱是从顶向下看，所示顺车旋转方向为面对飞轮向前看。
2. 与可逆转发动机匹配。
3. 与不可逆转发动机匹配。

- 1) The gears are shown in top view and the stated rotations refer to "ahead" movement facing engine flywheel.
- 2) With direct reversible engines
- 3) With irreversible engines

Selection diagram

选型图表

GCS/GCH系列选型图表					
型 号 Gear Type	输入转速(rpm) Input Speed	名义减速比(i) Nominal Ratio	传递能力(kw/rpm) transmission capacity	推力(kN) Propeller Thrust	中心距(mm) Center distance
GC400	440-1000	2	2.2	90	400
	440-1000	2.5	1.8		
	440-1000	3	1.5		
	440-1000	3.5	1		
GCS410	440-1000	2	3	180	410
	440-1000	2.5	2.3		
	440-1000	3.04	1.87		
	440-1000	3.5	1.5		
GC450	220-1000	2	2.63	220	450
	275-1000	2.5	2.05		
	330-1000	3	1.59		
	385-1000	3.5	1.25		
	440-1000	4	0.95		
GC500	220-1000	2	3.15	270	500
	275-1000	2.5	2.66		
	330-1000	3	2.17		
	385-1000	3.5	1.76		
	440-1000	4	1.45		
GC560	220-1000	2	1.7	290	560
	275-1000	2.5	3.82		
	330-1000	3	3.15		
	385-1000	3.5	2.56		
	440-1000	4	2.2		
GC600	220-800	2	6.4	360	600
	275-800	2.5	5.2		
	330-800	3	4.3		
	385-800	3.5	3.5		
	440-800	4	2.85		
GC630	220-800	2	7.3	400	630
	275-800	2.5	6.81		
	330-800	3	4.75		
	385-800	3.5	3.9		
	440-800	4	3.25		
GC665	220-800	2	8.25	500	665
	275-800	2.5	6.75		
	330-800	3	5.5		

GCS/GCH系列选型图表

型 号 Gear Type	输入转速(rpm) Input Speed	名义减速比(i) Nominal Ratio	传递能力(kw/rpm) Transmission capacity	推力(kN) Propeller Thrust	中心距(mm) Center distance
GC710	385-800	3.5	4.48	600	710
	440-800	4	3.63		
	220-800	2	10.7		
	275-800	2.5	8.5		
	330-800	3	6.8		
	385-800	3.5	5.46		
GC750	440-800	4	4.35	720	750
	220-800	2	12.4		
	275-800	2.5	10.2		
	330-800	3	8.2		
	385-800	3.5	6.75		
	440-800	4	5.45		
GC800	220-650	2	14.7	820	800
	275-650	2.5	11.9		
	330-650	3	9.5		
	385-650	3.5	7.6		
	440-650	4	6.1		
GC850	220-650	2	17.6	970	850
	275-650	2.5	14.3		
	330-650	3	11.7		
	385-650	3.5	9.4		
	440-650	4	7.6		
GC900	220-650	2	21.6	1120	900
	275-650	2.5	17.5		
	330-650	3	14.1		
	385-650	3.5	11.4		
	440-650	4	9.2		
GC950	220-650	2	26	1280	950
	275-650	2.5	20.8		
	330-650	3	16.4		
	385-650	3.5	13.2		
	440-650	4	10.5		
GC1000	220-650	2	30.8	1440	1000
	275-650	2.5	25.4		
	330-650	3	20.5		
	385-650	3.5	16.6		
	440-650	4	13.5		
GC1250	440-650	4.5	16.92	1500	1250

选型说明: (Selection notes)

GCS 系列:

1级减速,输入和输出为垂直异心,运转方向相反,无离合器,具有减速功能;输出垂直上方可以带辅助功率输出(PTO)。

GCS series gearbox:1 stage reduction, input and output vertically offset, having reverse operational direction, without clutch, PTO mounted on the right upper position of output end.

GCH系列:

1级减速,输入和输出为水平异心,运转方向相反,无离合器,具有减速功能; 输出水平异侧可以带辅助功率输出(PTO)。

GCH series gearbox:1 stage reduction, input and output horizontally offset, having reverse operational direction, without clutch, PTO mounted on the left or right side of output end in horizontal direction.

该选型适用于CCS船级社,其它船级社需咨询重齿公司.

This selection applies to CCS, for other classification society, please consult CN GPOWER GEARBOX CO.,LTD.

螺旋桨推力

Propeller Thrusts Spare Parts

最大螺旋桨推力 Max.propellers thrusts

型 号 Gear Type	最大螺旋桨推力 (Kgf) Max.propeller thrusts(Kgf)		
	*	GL	双向旋转** reversible rotation
600	36000	32000	26500
630	40000	36000	30000
665	50000	45000	38000
710	60000	54000	45000
750	72000	64000	55000
800	82000	74000	61000
850	97000	86000	73000
900	112000	101000	84000
950	128000	113000	96000
1000	144000	13000	108000

*符合各大船级社要求的推力块允许最大推力。

*The allowable Max. Thrusts conform to the classification LROS, DNV, BV,ABS.

**“双向旋转”即为同一推力轴承随螺旋桨既可左转，又可右转的最大推力。

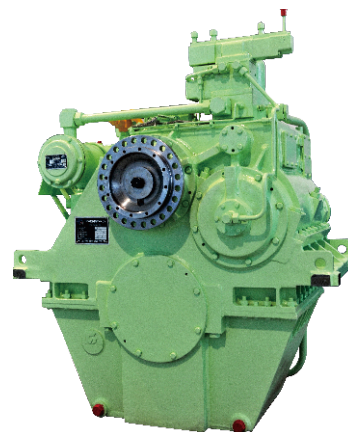
**The reversible rotation is the Max, thrust of propeller which is of reversible rotation the same bearing support.

GQ/GA系列船用齿轮箱

GQ/GA-SERIES MARINE GEARBOX

概述

General information



GQ/GA系列船用齿轮箱
GQ/GA-series Gearbox

GQ/GA系列齿轮箱是高性能轻量化船用齿轮箱，匹配功率200-1600KW，输入转速750-2300rpm，速比可为1.5~20.5，可匹配渔船、客船、液货船、集装箱船、货滚船、推（拖）船、休闲游艇、公物快艇、驳船等等，可适应单机、双机或者三机推进系统。

GQ/GA series are high performance lightweight marine gearboxes, GQ/GA series gearbox covers mating power 200-1600KW, input speed 750-2300rpm and reduction ratio 1.5-20.5, which is used for fishing vessel, passenger ship, liquid cargo carrier, container ship, LPGship, ro/ro ship, pusher, barge, etc and suitable for one-engine, two-engine and three-engine propulsion systems.

选型图表

Selection diagram

GA/GQ系列选型图表							
型号 gear type	输入转速 /min input speed	名义减速比(i) nominal ratio	传递能力 kW/r/min transmission capacity	额定推力 kN nominal thrust	中心距 mm center distance	长×宽×高mm l X w X h	净重kg weight
GAS1023	1000-2500	2—4.5	0.1	30	230	649×820×822	520
GAS1527	1000-2500	3.0—5.0	0.15	40	270	860×900×884	700
GQS2626	1000-2300	2—4	0.26	60	264	670×870×990	750
		4.50	0.22				
		5	0.2				
		5.5	0.15				
GQS2636	1000-2300	4—5	0.26	60	355	670×870×1130	750
		5.5	0.24				
GAST2636	1000-2300	4—7	0.26	70	355	755×940×1200	1120
		7.5—8	0.24				
		8.5	0.22				
		9—9.5	0.2				
GQS3426	1000-2100	2—3.8	0.34	82	264	816×1000×1070	820
GQS3436	1000-2100	4.0—5.0	0.34	82	355	685×950×1160	1100
		5.5—6.0	0.3				
GAST3438	1000-2100	6—8	0.34	82	375	759×990×1375	1400
		8.5—9	0.3				
		9.5	0.26				
GAST3447	1000-2100	8—9.5	0.34	120	465	1005×1100×1540	1500
		10—11	0.31				
		11.5—12	0.29				
GQS4832	1000-2100	2—3.9	0.48	90	320	801×1214×980	1300
GQS4842 (GQS2442)	1000-2100	4.2—5.7	0.48	90	415	831×1214×1145	1550
GAST4842	1000-2100	6—8	0.48	90	415	943×1110×1485	1650
		8.5—9.5	0.4				
GAST4850	1000-2100	7.5—9.5	0.48	140	500	982×1214×1570	1700
		10—12.5	0.42				
		13—16	0.36				
		2.3—5	0.63				
GQS6345	1000-1800	5.5	0.56	110	450	962×1280×1430	2200
		6	0.52				
GAST6345	1000-1800	5—7	0.63	140	450	962×1280×1560	2700
		7.5—8	0.56				
		8.5	0.52				

GA/GQ系列选型图表

型号 gear type	输入转速 /min input speed	名义减速比(i) nominal ratio	传递能力 kW/r/min transmission capacity	额定推力 kN nominal thrust	中心距 mm center distance	长×宽×高mm l X w X h	净重kg weight
GAST6358	1000-1800	6.8—9.7	0.63	220	582	1152×1360×1557	3200
		9.8—11	0.6				
		11.5—12.5	0.57				
		13—14	0.54				
		14.5—16	0.48				
		16.5—18	0.42				
GAST6367	1000-1800	13—14	0.63	220	666	1190×1490×2040	4000
		14.5—15.5	0.6				
		16—17	0.57				
		17.5—18.5	0.54				
		19—20.5	0.48				
GAST6374	1000-1800	21—22.5	0.44	240	736	1235×1570×1789	4200
		16—17.5	0.63				
		18—19	0.58				
		19.5—20.5	0.52				
GQS7434	600-1800	2—3.9	0.74	110	335	1040×1220×1200	1500
GQS7445	600-1800	4—5.6	0.74	140	450	1040×1220×1410	1800
GAST7450	600-1800	5.0—9.5	0.74	170	500	1080×1280×1660	2600
GAS8534	600-1800	1.5—3.5	0.85	170	340	1008×1200×1195	1480
GAST8455	600-1800	6—9.5	0.84	150	550	1080×1350×1660	2800
		9.5—14	0.505				
GQS9438	600-1800	2.0—3.5	0.94	130	380	1108×1180×1150	2000
		3.8	0.9				
		4	0.8				
		4.5	0.65				
GQS9445 (GQS2545)	600-1800	3.7—5	0.94	150	450	985×1260×1410	2400
		5	0.89				
		5.25	0.8				
		5.58	0.75				
GAST9455	600-1800	6—11	0.94	150	500	1153×1350×1625	3100
GAST10355	600-1800	6—10	1.03	220	550	1055×1370×1750	3300
GQS12539	600-1800	2—4	1.25	175	390	1289×1370×1300	2500
GAST12559	600-1800	5—9.5	1.25	250	585	1185×1480×1780	4200
GAST13763	600-1800	5—9	1.37	270	630	1139×1480×1915	4600
GAST16063	600-1800	5—8	1.6	270	630	1341×1560×1995	5600

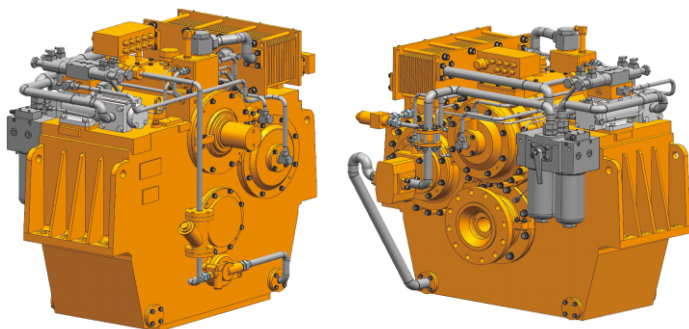
铝制特种船舶齿轮箱

ALUMINUM SPECIAL SHIP GEARBOX

铝制齿轮箱是轻型高速特种齿轮箱，箱体用铝合金整体铸造而成，具有高输入转速、带离合器、重量轻等特点，最高转速可达3500r/min。适用于对齿轮箱重量及外型尺寸等要求严格的船舶。

The aluminum gearbox is a light - duty high - speed special gearbox. The casing is integrally cast from aluminum alloy. It has the characteristics of high input speed, with a clutch, light weight, etc. The maximum speed can reach 3500r/min. It is suitable for ships with strict requirements on the weight and external dimensions of the gearbox.

型号 Gear Type	转速(r/min) Input Speed	减速比(i) Reduction ratio	传递能力(kw/rpm) Transmission capacity	推力(kN) Propeller Thrust	重量(kg) Net Weight
MCS146	3500	1.25	0.1		80
MCS220	2100	2.52	0.3109	55	400
MCS390	1750	2.545	1.8685	181	1500
MCS450	1800	4.435	1.1288		1800



绿色混合动力船用齿轮箱

GREEN HYBRID MARINE GEARBOX

绿色混合动力船用齿轮箱选型图表

型号	输入转速 (rpm)	减速比(i)	传递能力 (kW/r/min)	推力 (kN)	PTO功率 (kW)	PTO转速 (rpm)	其它
GWC4549P1	750	5.9847	2.1	270	75	1500	
GWC4957P1	650	4.424	2.824	320	150	1888	
GWC4957P2	550	4	3.2	320	90	2213.8	
GWC5262P1	525	3.488	4.2172	360	250	1787.5	
GWC5262P2	525	3.488	4.2172	360	90	2205	
GWC6066P2	620	4.6084	4.1516	540	200	1757.7	
GWC6066P3	750	4.5	3.3333	540	200	2250	
GWC6066P4	550	3.5833	4.4127	540	250	1295.25	
GWC6371P	750	6.988	3.3333	710	250	1500	
GWC6371P2	600	4.55	4.8833	710	200	2005.8	
GWC6371P3	240	2.05	11.02	710	300	1310	
GWC6675P1	600	4.996	4.9917	730	200	1514.4	
GWC6675P3	600	5.5	4.8833	730	250	2400	
GWC7082P1	600	5.2	6.51	780	540	1176.5	
GWC7082P2	600	5.36	6.51	780	250	2244	
	750	6.77	5.333	780	250	1882.5	
GWC7082P3	650	6.17	5.5123	780	300	1560	
	620	6.3911	5.3387	780	310	1552	
GWC7085P1	600	4.95	7.355	780	300	1114.2	
GWC7085P2	600	5	7.3333	780	250	2178.4	
GWC7590P1	650	6.0528	7.3846	980	500	1611	
GWDK70100P1	750	5.421	8.16	900	2500	1520.8	
GWH5287P1	800	2.9744	3.4	310	500	1500	
GWH5287P2	800	2.94	3.4	400	500	1500	
GWH6098P1	800	3.075	4.10625	450	550	1800	

绿色混合动力船用齿轮箱选型图表

型 号	输入转速 (rpm)	减速比(i)	传递能力 (kW/r/min)	推 力 (kN)	PTO功率 (kW)	PTO转速 (rpm)	其 它
GWH6690P1	750	5.579	6	800	1730	1800	PTO/PTH
GWK4250P1	1000	5.5	1.2	270	550	1200	
GWK600P1	800	3.077	3.825	342	900	1809	
GWK6060P1	800	3.0385	3.825	360	600	1500	
GWK6069P1	525	2.7333	4.2019	730	1000	1500	
GWK6075P1	750	4.444	4.87	600	1500	1500	
GWK6080P2	750	4.458	3.636	540	850	1513.2	
GWKP6080	525	3.4091	4.202	540	650	1500	
GWS6090P1	750	5.9524	4.2	540	900	1300	
GWKP6675	600	3.5217	4.883	610	1272	1500	
GWK6685P1	750	4.368	6	980	1700	1500	
GWK6685P3	750	3.882	6	980	1700	1500	
GWK80112P1	750	5.391	10.67	1280	4126	1200	带制动器、带PTH
GWK80135P1	750	6.25	12.3733	1280	3800	1500	
GWK85120P1	600	5.053	15	1200	2500	1500	
GWS6395P2	750	6.0417	4.8	750	450	1804.5	
GWWH1600P1	514	3.8276	18.121	1200	2500	1500.8	
GCS850P1	650	4.087	8.3077	900	1160	1493	

上述表格中型号为我司已成功应用于绿色混合动力船舶的主推进齿轮箱。

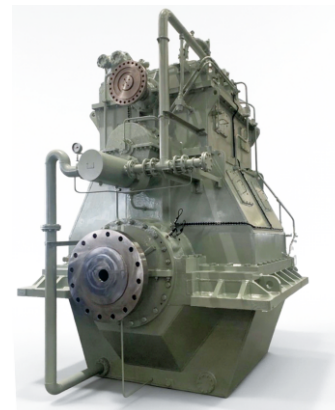
上述齿轮箱均可实现主机带动螺旋桨的同时将部分功率用于发电，其中部分齿轮箱还带有消防泵、水泵或制动器等功能；

亦有部分齿轮箱可在主机故障或船舶靠港情况下，由电机驱动螺旋桨工作，且有部分齿轮箱在PTI模式下有两个速比用于驱动螺旋桨。

上表部分型号电机集成在齿轮箱上，或PTO输出轴带有湿式多片离合器，未列入此表参数的齿轮箱请发我公司进行选型或定制产品。

The models in the above table are the main propulsion gearboxes that our company has successfully applied to green hybrid - powered ships. All the above - mentioned gearboxes can realize that while the main engine drives the propeller, part of the power is used for power generation. Some of the gearboxes also have

functions such as fire pumps, water pumps or brakes. Some gearboxes can also have the propeller driven by an electric motor when the main engine fails or the ship is in port. And some gearboxes have two speed ratios for driving the propeller in the PTI mode. For some models in the above table, the motor is integrated into the gearbox, or the PTO output shaft is equipped with a wet multi - disc clutch. For gearboxes not listed in the parameters of this table, please contact our company for model selection or customized products.



YJED重齿永进弹性阻尼联轴节

YJED ELASTIC DAMPING COUPLING

简要说明

General description

应用

随着发动机设计的不断发展，发动机动力装置的扭转振动问题也越来越引人重视。很多情况下，抑制扭转振动，或将危险共振转移到发动机工作转速范围之外，是很有必要的。这些任务可由重齿永进弹性阻尼联轴节（YJED）来解决。重齿永进弹性阻尼联轴节簧片的高弹性与通过油流动的理想粘性阻尼的组合，确保联轴节能把主临界转速被转移到发动机工作转速范围之外，使得整个轴系能在发动机工作转速范围之内安全运行。采用该联轴节通常还能降低发动机曲轴、输出轴以及齿轮上的应力；若用一般无阻尼的简单的弹性联轴节，不可能获得这样良好的效果。

重齿永进弹性阻尼联轴（YJED）不仅能满足各种型号和大小内燃机的要求，而且还能满足各种型号的水泵、压缩机和汽轮机其它机械。

多次的具体台架实验和运行装置试验测试得出了精确的阻尼和刚度数据，这些数据表明：准确的计算不但将危险的共振转移到发动机工作转速范围之外，而且还能将危险共振的振幅和应力转移到发动机工作转速范围之外。阻尼和弹性可根据具体的轴系要求在很大的范围内来进行调整。

由于重齿永进弹性阻尼联轴节（YJED）没有轴向刚度，轴向振动不会从驱动装置传递到被驱动装置上。该联轴节除了能吸收驱动轴与被驱动轴的热膨胀外，还允许驱动轴与被驱动轴之间有较大的平行误差和角度误差。

Application

Due to continuing progress in engine design more attention must be paid to the problems of torsional vibrations. In many cases it proves necessary to damp torsional vibrations and to move dangerous vibration resonances out of the engine speed range. These tasks are to be solved by the Chongchi Yongjin elastic coupling (YJED). The combination of the high elasticity of its leaf springs plus a hydrodynamic damping by oil displacement ensures the removal of the major critical speeds outside the engine speed range and an effective damping of minor torsional vibrations so that a continuous operation within the speed range is obtained. Employment of these couplings generally results in lower stresses for all engine driven shafts and gears as well as in the crankshafts. The same advantages cannot be achieved by using a simple flexible coupling with less damping.

Chongchi Yongjin elastic damping couplings (YJED) meet the demands not only of internal combustion engines of any type and size, but also of all sorts of other machinery such as pumps, compressors and turbines.

Many trials on special research test beds and on running installations are carried out so that precise data of the damping and elasticity requirements are established. The data show that correct calculation can move not only dangerous vibration resonances but also the amplitudes and loads of such resonances out of the engine speed range. Damping and elasticity can be adapted within large limits to meet the needs of every installation.

Selection Guidelines

选用指南

额定扭矩 T_{KN}

名义扭矩T按发动机的功率P和转速n来计算

$$T=9.55 \frac{P}{n}$$

T 名义扭矩 kNm

P 发动机功率 kW

n 发动机转速 min⁻¹

在选择联轴节的尺寸的时候，必须满足联轴节的额定扭矩 T_{KN} 大于或等于所需传递的名义扭矩T。

$$T_{KN}=1.3T$$

没有要求也没有必要将联轴节的尺寸选得过大，即使要求在冰区航行。

刚度系列

对于通常的应用，有三种系列刚度可供选择，若扭转振动计算表明有必要的话，还可以很容易地选择其他刚度。传递相同的扭矩，用较软的联轴节（如140系列）的外形尺寸，比较硬的联轴节如（55系列）的尺寸外形大。

Nominal torque T_{KN}

The mean torque T is calculated from the engine power data P and speed n.

T mean torque kNm

P engine power kW

n engine speed min⁻¹

The coupling size should be selected so that the coupling's nominal torque T_{KN} is greater or equal to the mean torque T which is to be transmitted.

$$T_{KN}=1.3T$$

It is neither recommended nor necessary to choose a coupling which is oversized, even if Ice-Class is required.

Stiffness series

For normal applications there are 3 different stiffness series available. The choice of other stiffness series is possible and can be made without problems if the torsional vibration calculation proves it to be necessary. To transmit the same mean torque a larger overall size is required for a soft coupling (series 140) than for a stiff coupling (series 55).

注：55系列联轴节，55U、85U、140U系列联轴节详细选型参数请与我司联系。

Note: For 55-series couplings, type selection of 55U,85U,140U-series may contact us.

技术参数

Technical data

85 系列联轴节

型号 type	额定扭矩 nominal torque	扭转刚度 static torsional stiffness	特征频率 omega-zero	许用阻尼扭矩 perm.damping torque		许用功率损失 perm.power loss	径向位移 radial misalignment	径向刚度 radial stiffness	轴向位移 axial misalignment	轴向反作用力 axial reaction force	角刚度 angular stiffness
	T_{KN} kNm	C_S MNm/rad	ω_0 rad/S	$T_{d,p}$ kNm/bar		P_V kW	K_r mm	C_r kN/mm	K_a mm	F_a kN	C_w kNm/rad
41×2.5—85	4.02	0.049	74	0.128		1.1	0.24	4.7	1.5	0.8	0.2
41×5—85	8.04	0.098	150	0.257		1.2	0.30	9.4	1.5	1.7	2.0
41×7.5—85	12.10	0.147	210	0.385		1.3	0.34	14.0	1.5	2.5	6.6
48×7.5—85	17.20	0.206	220	0.511		1.7	0.39	15.0	2.0	3.0	6.9
48×10—85	22.90	0.275	290	0.681		1.9	0.43	20.0	2.0	4.1	16.0
56×10—85	28.70	0.345	210	0.904		2.5	0.46	18.0	2.5	4.3	15.0
56×12.5—85	35.90	0.431	260	1.130		2.6	0.49	22.0	2.5	5.4	29.0
63×12.5—85	44.60	0.536	230	1.430		3.2	0.53	21.0	2.5	5.9	28.0
63×15—85	53.60	0.643	290	1.720		3.4	0.57	26.0	2.5	7.1	48.0
72×15—85	72.60	0.875	280	2.210		4.2	0.63	27.0	3.0	8.5	51.0
72×17.5—85	84.70	1.020	320	2.580		4.4	0.66	32.0	3.0	9.9	81.0
80×15—85	83.40	0.998	200	2.760		5.1	0.66	25.0	3.0	8.8	47.0
80×17.5—85	97.30	1.160	230	3.220		5.3	0.69	29.0	3.0	10.0	74.0
80×20—85	111.00	1.330	260	3.680		5.5	0.72	33.0	3.0	12.0	110.0
90×20—85	147.00	1.760	260	4.670		6.8	0.79	35.0	3.5	14.0	120.0
90×22.5—85	165.00	1.980	290	5.250		7.0	0.82	40.0	3.5	15.0	170.0
100×20—85	184.00	2.230	240	5.780		8.1	0.85	35.0	3.5	15.0	120.0
100×22.5—85	207.00	2.510	280	6.500		8.4	0.89	40.0	3.5	17.0	170.0
110×20—85	221.00	2.640	220	7.020		9.5	0.91	35.0	4.0	17.0	120.0
110×25—85	276.00	3.300	270	8.770		10.0	0.98	44.0	4.0	21.0	230.0
125×20—85	292.00	3.540	210	9.020		12.0	1.00	36.0	4.0	20.0	120.0
125×25—85	365.00	4.420	280	11.300		13.0	1.10	45.0	4.0	25.0	240.0
125×30—85	438.00	5.310	280	13.500		13.0	1.10	54.0	4.0	29.0	410.0

140 系列联轴节

型号 type	额定扭矩 nominal torque	扭转刚度 static torsional stiffness	特征频率 omega-zero	许用阻尼扭矩 perm.damping torque		许用功率损失 perm.power loss	径向位移 radial misalignment	径向刚度 radial stiffness	轴向位移 axial misalignment	轴向反作用力 axial reaction force	角刚度 angular stiffness
	T_{KN} kNm	C_s MNm/rad	ω_0 rad/S	$T_{d,p}$ kNm/bar		P_V kW	K_r mm	C_r kN/mm	K_a mm	F_a kN	C_W kNm/rad
41×2.5—140	2.35	0.017	32	0.124		1.1	0.20	2.5	1.5	0.6	0.1
41×5—140	4.70	0.034	62	0.247		1.2	0.25	5.1	1.5	1.2	1.1
41×7.5—140	7.06	0.051	97	0.371		1.3	0.29	7.6	1.5	1.8	3.6
41×10—140	9.41	0.069	130	0.495		1.4	0.32	10.0	1.5	2.4	8.5
48×7.5—140	11.10	0.080	110	0.486		1.7	0.33	8.8	2.0	2.4	4.1
48×10—140	14.80	0.107	160	0.648		1.9	0.37	12.0	2.0	3.3	9.8
48×12.5—140	18.50	0.134	200	0.810		2.0	0.40	15.0	2.0	4.1	19.0
56×10—140	19.40	0.140	130	0.856		2.5	0.40	11.0	2.5	3.7	9.5
56×12.5—140	24.20	0.175	160	1.070		2.6	0.43	14.0	2.5	4.6	18.0
56×15—140	29.00	0.210	190	1.280		2.8	0.46	17.0	2.5	5.5	32.0
63×12.5—140	30.90	0.226	150	1.350		3.2	0.47	14.0	2.5	5.2	19.0
63×15—140	37.10	0.271	180	1.620		3.4	0.50	17.0	2.5	6.2	32.0
63×17.5—140	43.20	0.316	220	1.890		3.6	0.53	20.0	2.5	7.2	51.0
72×15—140	47.40	0.346	150	2.100		4.2	0.54	17.0	3.0	7.0	32.0
72×17.5—140	55.30	0.403	170	2.450		4.4	0.57	20.0	3.0	8.2	51.0
72×20—140	63.20	0.461	200	2.800		4.7	0.60	23.0	3.0	9.3	76.0
80×17.5—140	68.20	0.500	150	3.050		5.3	0.61	19.0	3.0	8.9	50.0
80×20—140	78.00	0.571	180	3.490		5.5	0.64	22.0	3.0	10.0	74.0
80×22.5/140	87.70	0.642	200	3.920		5.8	0.67	25.0	3.0	11.0	110.0
90×20—140	98.50	0.721	160	4.410		6.8	0.69	23.0	3.5	12.0	75.0
90×22.5—140	111.00	0.811	180	4.960		7.0	0.72	25.0	3.5	13.0	110.0
90×25—140	123.00	0.901	200	5.510		7.3	0.75	28.0	3.5	14.0	150.0
100×22.5—140	141.00	1.030	170	6.150		8.4	0.78	26.0	3.5	15.0	110.0
100×25—140	156.00	1.150	200	6.840		8.7	0.81	29.0	3.5	16.0	150.0
110×25—140	189.00	1.380	170	8.250		10.0	0.86	29.0	4.0	18.0	150.0
110×30—140	226.00	1.660	200	9.900		11.0	0.91	35.0	4.0	22.0	260.0
125×25—140	251.00	1.840	160	10.700		13.0	0.95	30.0	4.0	21.0	150.0
125×30—140	301.00	2.210	180	12.800		13.0	1.00	36.0	4.0	25.0	270.0
125×35—140	351.00	2.580	260	14.900		14.0	1.10	41.0	4.0	29.0	420.0

扭转振动问题

每个汽缸单独发火使低速二冲程柴油机输出扭矩极不均衡，扭矩的波动使柴油机相对螺旋桨发生振动，导致中间轴、螺旋桨轴产生扭振附加应力。如果扭矩波动频率接近系统的固有频率，则扭振应力将放大。而轴系的扭振应力又必须控制在船级社规定的许用线以下。有时，用一个大飞轮降低扭矩波动幅度和（或）通过增加轴的直径来降低扭振应力，但上述两种办法往往得不到预期的效果，比较切实可行而又经济的方法是在柴油机的自由端安装一个永进YJD2减振器，该减振器的第二质量弹性联结在柴油机曲轴上，且具有液体阻尼。通过选择适当的弹性和阻尼可实现最佳匹配，不仅降低了轴段上的扭振应力，而且还能使减振器的直径和重量比其它类似的减振器小。

The problems with torsional vibrations

The very rough torque output characteristic of slow-speed, two-cycle diesel engines is the result of individual cylinder firings. Torque fluctuation causes the engine to vibrate against the propeller, intermediate and propeller shafts, if the fluctuation frequency approaches the natural frequency of the system, the torsional stresses are amplified.

Stresses in the shafting must be kept below limits established by the classification societies. In some cases, using a very large flywheel will reduce the torque fluctuation and/or increasing shafting diameters will reduce the stresses. Both measures are expensive and do not always yield the desired effect.

A more practical and economical solution is to mount a Yongjin YJD2 damper to the front end of the engine. The damper's Secondary mass attaches elastically to the engine crankshaft and is hydraulically dampened. Optimum sizing through choice of suitable elasticity and damping not only reduces torsional shaft stresses but also results in smaller dimensions and weight than other approaches.



减振器型号	type		140	160	180	200	224	260	280	300	330
柴油机气缸直径	Engine bore from to	mm	380	480	560	580	600	620	680	700	760
		mm	560	600	620	680	700	760	800	840	840
大约重量	Approximate weight	kg	2030	2900	4000	6000	9000	12000	15300	22000	31500
外径	Outer diameter	mm	1400	1600	1800	2000	2240	2600	2800	3000	3300

说明:

减振器由内部构件（第一部份）和外部构件（第二部份）组成，内外构件之间排列有外端被夹紧的簧片组件，簧片组件与内外构件一起形成的空腔充满油。如果外部构件相对内部构件发生振动，则簧片组被弯曲，迫使油从一个空腔流到另一个空腔，因此，内外构件之间的相对运动被抑制，扭转振动被阻尼。减振器的弹性由簧片组确定，阻尼取决于内外构件之间的间隙。

应用:

YJD4减振器安装在柴油机曲轴自由端，以阻尼和转移柴油机激发的扭转振动。

一般数据:

$$\text{阻尼系数} = \frac{\text{阻尼扭矩}}{\text{弹性扭矩}} = 0.2 - 1.0$$

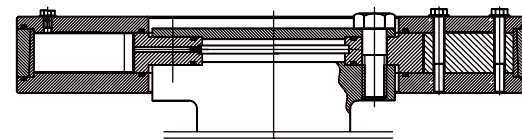
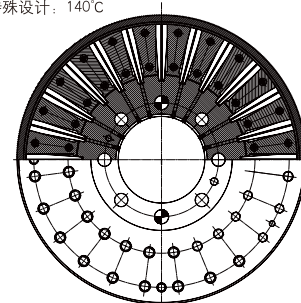
（需要的话，阻尼系数可以调节）

扭转振动减振器适用于单缸功率大于50kW的柴油机，它是具有弹性和液体阻尼的调谐减振器。

许用环境温度:

标准设计: 90°C

特殊设计: 140°C



减振器型号	type		41	48	56	63	72	80	90	93	100	110	125	140	160	180
柴油机气缸直径	Engine bore from to	mm	90	120	150	180	210	240	280	290	320	350	400	460	540	610
		mm	180	210	240	270	310	340	380	390	420	460	510	580	660	740
重量	Approximate weight	kg	33	80	155	198	271	340	435	544	822	1020	1552	2030	2695	4328
外径	Outer diameter	mm	410	480	560	630	720	800	900	930	1000	1100	1250	1400	1600	1800

Description

The damper consists of a primary and a secondary member. Between these, groups of leaf spring are arranged, which are damped at their outer ends. These spring groups and the primary and secondary members form chambers, which are filled with oil. If the exterior part vibrates in relation to the inner one, the leaf springs are bent and press oil from one chamber to another. By this action the relative movement of the two parts is retarded and the torsional vibrations are damped. The elasticity is given by the Springs, the damping is determined by the clearances between primary and secondary member.

Application

Mounting at the free end of Diesel engine crank shafts for damping and elimination of torsional vibrations excited by the engine.

General Features

$$\text{Damping Factor} = \frac{\text{damping torque}}{\text{elastic torque}} = 0.2 - 1.0$$

(adjustable if required)

Torsional vibration damper with tuned elasticity and hydrodynamic damping for engines of more than 50kW per cylinder. Allowable ambient temperature:

Standard design: 90°C

Special design: 140°C

齿齿相依·带动未来
GEARING INTERDEPENDENCE MOVING FUTURE

* 2025年07月版 *

