



齿齿相依·带动未来  
GEARING INTERDEPENDENCE MOVING FUTURE

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JTM系列塔磨机减速机  
JTM SERIES TOWER MILL REDUCER



**CSSC**  
重庆齿轮箱有限责任公司  
CHONGQING GEARBOX CO.,LTD

# A Brief Introductions

## ▶ 公司简介



重庆齿轮箱有限责任公司隶属于中国船舶集团有限公司(简称“重齿”),位于重庆市江津区,员工总数2300余人。公司原名为国营永进机械厂,始建于1966年,1982年更名为四川齿轮箱厂,1997年改制为重庆齿轮箱有限责任公司。

重齿公司以硬齿面齿轮传动装置及其机、电、液传动系统研制为核心业务,产品广泛应用于船舶、海工、水泥建材、金属冶炼、传统能源、分布式清洁能源、轨道交通、工程机械、油气开采、固体废物处理等行业,是船舶系统内唯一生产舰船齿轮箱、联轴节、减振器的重点军工企业,是我国海军舰船后传动装置的研制基地、国内最大的硬齿面齿轮研发制造基地之一。

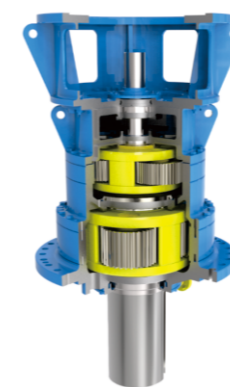
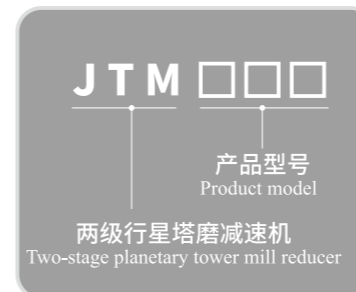
Chongqing Gearbox Co., Ltd. ("Chongchi"), located in Jiangjin District of Chongqing, China, is owned by China State Shipbuilding Corporation Limited (CSSC) and has more than 2300 employees. It was founded in 1966 and changed its name from Yongjin Machinery Plant to Sichuan Gearbox Plant in 1982, and then to its current name in 1997.

The company is specialized in the R&D and production of case-hardened gears and gearboxes, driving trains combining mechanical, electrical and hydraulic components. With products widely applied to various industries such as shipbuilding, offshore engineering, cement building material, metallurgy, traditional energy, distributed clean energy, railway transportation, engineering machinery, gas mining, solid waste treatment etc., the company is the only supplier in CSSC for production of gearboxes, couplings and dampers for naval ship purpose. The company is not only one of the largest R&D bases domestically for case-hardened gears, but also the research and production base for rear transmission equipments in the naval propulsion system.

# Overview

## 概述

# B



塔磨机减速机应用于金属矿石的二次粉磨、非金属矿石的细磨或超细磨、化工原料细磨等设备。

重齿公司塔磨机减速机自2012年开始研制,现已由LDF系列减速机升级优化到JTM系列减速机。JTM系列减速机可实现功率覆盖200kW ~4500kW,速比覆盖20~100,最大输出扭矩7500kN·m。

塔磨机减速机配有独立的润滑油站进行润滑和冷却,也可以采用集成风冷式油站进行润滑和冷却。

The tower mill reducer is used in equipment for secondary grinding of metal ores, fine grinding or ultra-fine grinding of non-metallic ores, and fine grinding of chemical raw materials.

The tower mill reducer of Chongqing Gearbox Co., Ltd. has been developed since 2012, and has been upgraded and optimized from LDF series reducer to JTM series reducer. The JTM series reducer can achieve power coverage of 200kW ~4,500kW, speed ratio of 20~100, and maximum output torque of 7,500 kN m.

The tower mill reducer is provided with an independent lubricating oil station for lubrication and cooling, or an integrated air-cooled oil station can be used for lubrication and cooling.

传动型式为两级行星结构。也可根据传动功率需求,设计为一级行星或两级平行+一级行星结构。

The reducer has a two-stage planetary structure. It can also has a first-stage planetary or two-stage parallel + first-stage planetary structure.



# Selection guide

## 选型指南

### 选型说明

Instructions for selection

#### ★ 样本符号说明 Description of sample symbol

符号 Symbol	说明 Description
P	齿轮箱额定输入功率 (kW) Rated input power of gearbox (kW)
P'	齿轮箱修正输入功率 (kW) Corrected input power of gearbox (kW)
n1	输入转速 (rpm) Input speed (rpm)
n2	输出转速 (rpm) Output speed (rpm)
i	额定传动速比 Rated transmission speed ratio
c	功率修正系数 Power correction factor

★ 塔磨机减速机系列产品为立式塔磨专用齿轮箱，根据额定输入功率P，按AGMA服务系数2.5进行设计校核，以保证齿轮箱具有足够的强度和安全可靠性。如果需要达到其他服务系数，可按示例进行修正计算或向重庆齿轮箱有限责任公司咨询。

The tower mill reducer series products are special gearboxes for vertical tower mills, for which design check is performed based on an AGMA service coefficient of 2.5 according to the rated input power P, to ensure that the gear boxes have sufficient strength, safety and reliability. If it is required to achieve other service coefficients, correction computation can be performed by following the example or consult Chongqing Gearbox Co., Ltd.

★ 塔磨机减速机规格参数图表中的速比范围和规格尺寸可根据用户需要定制，具体可向重庆齿轮箱有限责任公司咨询。

The speed ratio range and size in the specification chart of the tower mill reducer can be customized as required by the user. Please consult Chongqing Gear Box Co., Ltd. for details.

## 选型示例

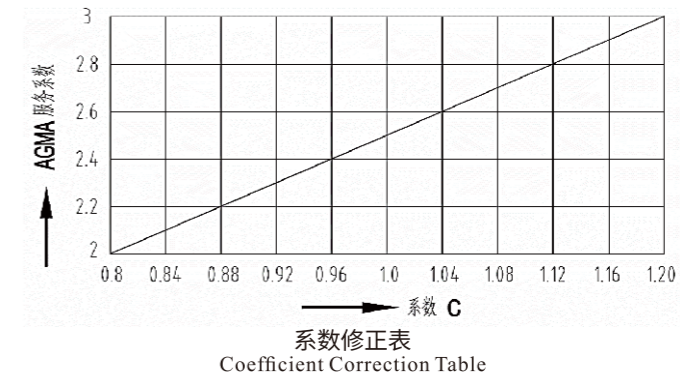
Example of selection

选用JTM系列塔磨机减速机，根据磨机转速及所需功率按【图表1】进行选型。所选具体型号所允许的最大速比及轴向静载荷见规格参数表。如用户所需AGMA服务系数大于或等于2.5时按【系数修正表】选取修正系数，按式(1)进行校核。

The JTM series tower mill reducer is selected based on the mill speed and required power stated in [Table 1]. The maximum allowable speed ratio and axial static load of the specific model selected are shown in the specification chart. If the AGMA service coefficient required by the user is greater than or equal to 2.5, select the correction coefficient according to the [Coefficient Correction Table], and check it according to Formula (1).

$$P' = C \times P \text{ 磨机额定功率} \dots\dots\dots (1)$$

Rated power of mill



### 例 1 (Sample 1)

一矿山用塔磨机需用减速器，要求传递功率1000kW，电动机驱动，电动机转速n1 =990r/min，n2=30r/min，AGMA服务系数为2.5。计算P/n2=33.3，根据各系列规格参数表，可选JTM355，最终可根据结构，外形及价格综合选取合适型号。

A tower mill in a miner requires a reducer, which requires a transmission power of 1,000kW and is driven by a motor. The motor speed n1 =990 r/min, n2=30 r/min, and the AGMA service coefficient is 2.5. It is known by calculation that P/n2=33.3. JTM355 can be selected according to the specification chart of all series, and finally, an appropriate model can be selected after taking the structure, shape and price into overall consideration.

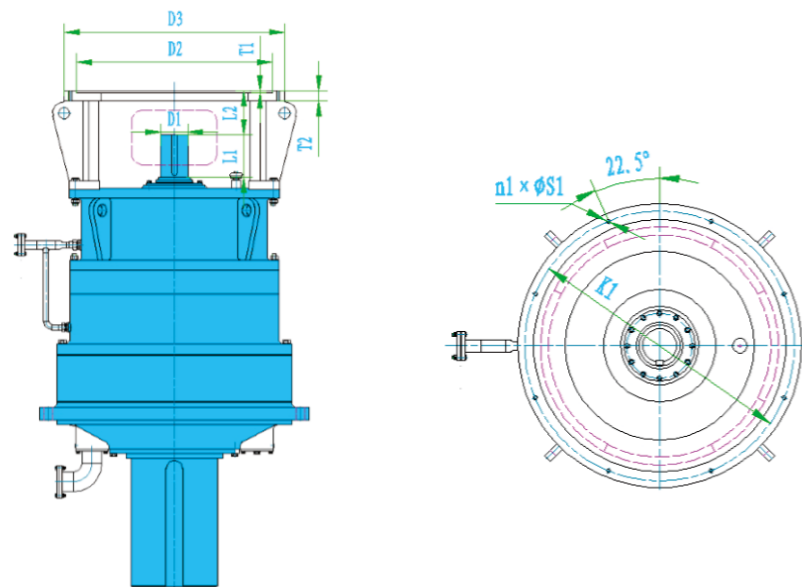
### 例 2 (Sample 2)

一矿山用塔磨机需用减速器，要求传递扭矩860kN·m，电动机驱动，电动机转速n1 =990r/min，n2=28r/min，AGMA服务系数为2.8。工作功率P=9.55×T×n2=2521kW，修正功率P'=C×P=2824kW，计算P/n2=101，根据各系列规格参数表，可选JTM1000，最终可根据结构，外形及价格综合选取合适型号。

A tower mill in a mine requires a reducer, which requires a transmitted torque of 860kN·m and is driven by a motor. The motor speed n1 =990 r/min, n2=28 r/min, and the AGMA service coefficient is 2.8. It is known by calculation that the operating power P=9.55×T×n2=2,521kW, corrected power P'=C×P=2,824kW, and P/n2=101. JTM1000 can be selected according to the specification chart of all series, and finally, an appropriate model can be selected after taking the structure, shape and price into overall consideration.

# D Specifications

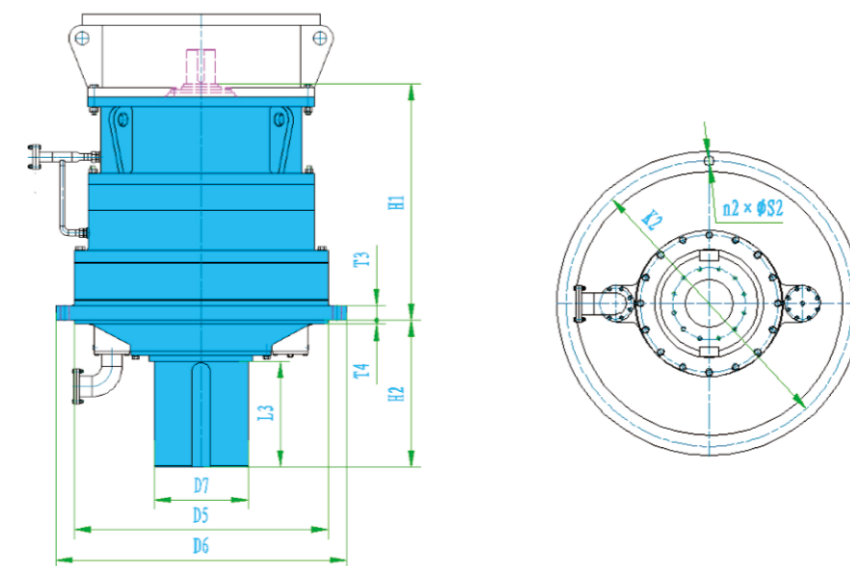
## 系列规格



JTM系列减速机输入端安装尺寸表

Mounting dimensions of JTM series reducer input end

电机基座号	安装尺寸							法兰螺栓		
	D1 mm	D2 mm	D3 mm	L1 mm	L2 mm	T1 mm	T2 mm	K1 mm	S1 mm	数量 n1
400	110	1000	1130	215	220	11	40	1080	28	8
450	125	1120	1230	215	220	12	50	1180	28	8
500	140	1250	1370	255	260	15	57	1320	28	8
560	160	1400	1600	305	310	15	75	1500	28	8
560	180	1400	1600	305	310	15	75	1500	28	8
630	180	1600	1800	305	310	15	75	1700	28	8
630	200	1600	1800	355	360	15	75	1700	28	8



JTM系列减速机输出外形安装尺寸表

Overall dimensions and mounting dimensions of JTM series reducer output end

型号	额定传 输扭矩 T2 kNm	输出轴			输出安装法兰				输出法兰螺栓			高度 H1 mm	油站流量 L/min
		D7 mm	L3 mm	H2 mm	T3 mm	T4 mm	D5 mm	D6 mm	K2 mm	S2 mm	数量 n2		
JTM140	140	300	500	650	55	12	860	1000	930	33	36	1030	63
JTM160	160	310	500	660	60	12	935	1115	1025	39	32	1040	63
JTM200	200	350	550	720	65	25	1025	1210	1120	39	36	1050	80
JTM250	250	380	590	770	70	25	1115	1320	1220	45	36	1150	80
JTM315	315	400	650	830	70	25	1115	1320	1220	45	36	1240	100
JTM355	355	430	690	880	80	30	1215	1460	1345	53	32	1320	100
JTM400	400	460	750	960	80	30	1215	1460	1345	52	32	1380	100
JTM500	500	500	790	1020	90	30	1340	1605	1485	62	32	1520	125
JTM560	560	510	850	1080	90	30	1340	1620	1500	62	32	1610	125
JTM630	630	530	900	1150	90	30	1400	1665	1545	62	32	1650	160
JTM710	710	570	950	1200	90	30	1495	1755	1635	62	36	1680	200
JTM800	800	600	1000	1270	95	30	1610	1870	1750	62	36	1760	200
JTM900	900	620	1000	1270	95	30	1610	1870	1750	62	36	1840	200
JTM1000	1000	640	1000	1270	100	30	1700	1960	1840	62	40	1900	250
JTM1250	1250	660	1040	1320	110	30	1835	2090	1970	62	40	1980	250
JTM1400	1400	700	1100	1380	110	30	1920	2180	2060	70	40	2030	250
JTM1600	1600	740	1150	1440	115	30	2005	2290	2160	70	40	2120	250
JTM2000	2000	820	1270	1550	120	30	2170	2460	2330	70	40	2220	300
JTM2240	2240	840	1320	1600	130	30	2320	2635	2500	78	40	2310	300