



圆柱齿轮减速器



中国驰名商标
CHINA WELL-KNOWN
TRADEMARK

TAILONG

地址(ADD): 江苏省泰州市大庆东路88号

NO.88, Daqing Rd.(E) TaiXing City Jiangsu Province, China

电话(TEL): 0086-523-87635698 87668018 87668028

传真(FAX): 0086-523-87662169 87665426 87665000

邮编(P.C): 225400

网址: <http://www.tailong.com> E-mail: tloffice@tailong.com

TAILONG MACHINERY

江苏泰隆机械集团公司

JIANGSU TAILONG MACHINERY GROUP COMPANY

江苏泰隆减速机股份有限公司

JIANGSU TAILONG DECELERATOR MACHINERY CO.,LTD.



Company Brief

Tailong Group, located in Taixing city along riverside of the Yangtze River, is a national giant enterprise which Taixing people are proud of. Tailong Group is east to Highway of Shanghai-Nanjing, west to Nanjing Lukou airport and south to the Jiangyin Bridge. Convenient transportation and smooth physical distribution build the unparalleled location advantages for Tailong Group.

With effortful operation for over 20 years, Tailong Group, under leadership of national outstanding entrepreneur, chairman Mr. Yin Jiansheng, a model worker of Jiangsu Province, has developed in one of top 500 machinery industrial enterprises in China, playing a leading role in domestic reducer/transmission industry.

At present, the group has total assets of RMB120billion, and fixed assets of RMB 692 million, and it covers an area of 800,000 square meters and more than 3000 employees, where professional technicians account for 991. 44% of our equipments are sophisticated and advanced manufacturing equipments and testing equipments such as large CNS gear grinding machine, large CNC boring and milling machine, worm grinder, machining centre, and carbonitriding furnace that are imported from USA, Germany, Japan, Russia, Australia and so on. Diameter of machining work piece reaches 5m to the maximum. Single reducer we produced reaches 120 tons to the maximum. We have established a 2000kW testing center with most complete testing function and most advanced instruments of the industry national wide, and established a provincial engineering technical center, mechanical transmission and control Engineering Research Center of Jiangsu Province, Tailong Group-Harbin Technology Engineering Research Center and a post-doctoral research station. The dominant product, the reducer is available in decades of series and several hundred thousand specifications. Equipped with advanced modular and dot line engagement technology, we have additionally developed series of high tech products such as TL modular gear retarded machine, TXP modular planar reducer, heavy load modular gear retarded machine, dot line engaged reducer, vertical grinder and edge drive grinder gearbox, joint, open-book, take-up gearbox used for aluminum metallurgy industry, three ring gear reducer, planetary wheel speed reducer, wind driven gearbox, transmission for hydro-power generation, nuclear circulating pump driven gearbox, and various special non-standard gearboxes. Tailong Industrial Park has become the largest steel coil production base of national wide. Our two-vane and three-vane Roots blowers and high temperature blower are exported to South East Asia, Europe and America in batches.

Our products are successfully used in the China Millennium Monument, the Three Gorges Dam, the Chang's lurch, Hangzhou Bay Bridge, Beijing Olympic Gymnasium, the Shanghai World Expo and other national key projects. Key customers include Baosteel Group, Shougang Group, Shanghai Zhenhua Port Machinery, Yanshan Petrochemical, Gezhouba Group, Beijing hydraulic, China aluminium, trap pump station, Guilin Rubber, Leshan Chengfa, Sany Heavy Industry and so on.

The company is now a secretariat unit for national technical committee for standardization of reducer. We are ever granted as "national first contract respecting and credit-keeping enterprise", "national key high-tech enterprise", "national high quality and efficiency unit in machinery industry", "quality management award of national machinery industry", "national custom satisfied service", "excellent enterprise of quality management team activity of national machinery industry" and so on. We are certified as the good enterprise with better standardization with national AAAA certification and the first grade safety quality standardized machinery manufacturing enterprise and have passed such certifications as GB/T 19022-2003 perfect measurement test system, ISO 9001-2008 quality system, ISO 14001-2004 environment system, and OHSAS 18001-1999 occupational health and safety. Our products are certified with safety marks for mining products and recognized pass-fitting industry type test. Tailong brand is recognized as the Chinese famous brand by national industrial and commercial bureau and Tailong reducer is awarded as the Chinese famous brand product.

Tailong people will keep to its persistent quality guarantee, service guarantee and credit, satisfying customer as our topmost pursuit.

公司简介

泰隆集团地处扬子江畔的泰兴市区，是泰兴人引以为豪的国家大型企业。泰隆集团东临沪宁高速，西靠南京禄口机场，南有江阳大桥，交通便捷，物流畅通，具有得天独厚的区位优势。

集团在全国优秀企业家、江苏省劳动模范董事长殷健豪的带领下，经过20多年的悉心经营，昂首迈进了中国机械工业500强，成为全国减速机行业排头兵企业。集团现拥有总资产12.06亿元，固定资产6.92亿元，占地面积80万平方米，员工3162人，专业工程技术人员991人，拥有美国、德国、日本、俄罗斯、奥地利等国家引进的大型数控磨齿机、大型数控铣床、蜗杆磨床、加工中心、碳氮共渗炉等一批高精尖的生产设备和检测设备达48%。建立了全国同行业中检测功能最全、仪器最先进的2000kW测试中心，创建了江苏省技术中心、江苏省传动机械与控制工程技术研究中心、泰隆集团-哈工大工程技术研究中心、博士后科研工作站。公司的主产品减速机在原有十几个系列，几十种规格的基础上，采用先进的模块化、点线啮合等技术开发出了TL模块化齿轮减速机、TXP行星模块化减速机、重载模块化齿轮减速机、点线啮合减速机、立式摆线及边缘传动磨齿机齿轮箱、铝冶行业的联合开卷卷取齿轮箱、一环减速机、星轮减速机、风电齿轮箱、水力发电变速装置、核电循环水泵驱动变速装置等高新技术产品，以及各类特殊非标齿轮箱。泰隆工业园区已经成为国内最大的钢市线设备生产基地，双叶、三叶罗茨风机及高温风机批量出口东南亚及欧美。

我们的产品成功应用于中华世纪坛、三峡大坝、嫦娥一号发射、杭州湾跨海大桥、北京奥运会、上海世博会等国家重点工程。重点客户有宝钢集团、首钢集团、上海振华港机、燕山石化、葛洲坝集团、北京水务、中博铝业、伊拉克基路、桂林橡胶、乐山成发、三一重工等。

公司现为全国减速机标准化技术委员会秘书处单位，荣获“全国首批守合同重信用企业”、“国家重点高新技术企业”、“全国机械工业质量效益型先进企业”、“全国机械工业质量管理奖”、“全国用户满意服务”、“全国机械工业质量管理小组活动优秀企业”等殊荣。在同行业中率先通过了国家AAAA标准化良好行为企业认证，一级安全质量标准化机械制造企业认证，GB/T19022-2003完善计量检测体系认证，ISO9001-2008质量体系认证，ISO14001-2004环境体系认证，OHSAS18001-1999职业健康安全认证。产品通过矿用产品安全标志认证，起重行业型式试验认可认证，泰隆牌商标被国家工商总局认定为中国驰名商标，泰隆牌减速机被评为中国名牌产品。

泰隆人将遵循自己一时的质量承诺，服务承诺和信誉承诺，把顾客满意当作我们的最高追求！

TAILONG MACHINERY

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起重机减速器 Crane Decelerators

一、概述 Brief

QJ系列减速器适用于起重机各运行机构，也广泛用于运输、冶金、矿山、化工、轻工等各种机械设备的传动机构中。

QJ series reducer is applicable for relative device of the crane, as well as for the driving gear of mechanical equipment used in transportation, metallurgy, chemical engineering, and light industry.



二、特点 Features

1. 减速比范围宽，公称速比10-200;
 2. 机械传动效率高，二级达96%，三级达94%;
 3. 运转平稳，噪音低;
 4. 由于采用42CrMo、35CrMo经锻造调质处理，分别制作齿轮轴和齿轮，所以使用寿命长，承载能力高;
 5. 易于拆检，易于安装。
1. Wide range of reduction ratio, nominal speed ratio 10-200%
 2. High efficiency of mechanical drive with Class II up to 96% and class III up to 94%;
 3. Running smoothly, low noise;
 4. Gear wheel and gear shaft are made of 42CrMo, 35CrMo and treated with forging, hardening and tempering for long service life and high carrying capacity.
 5. Easy for dismounting and inspection, easy for installation.

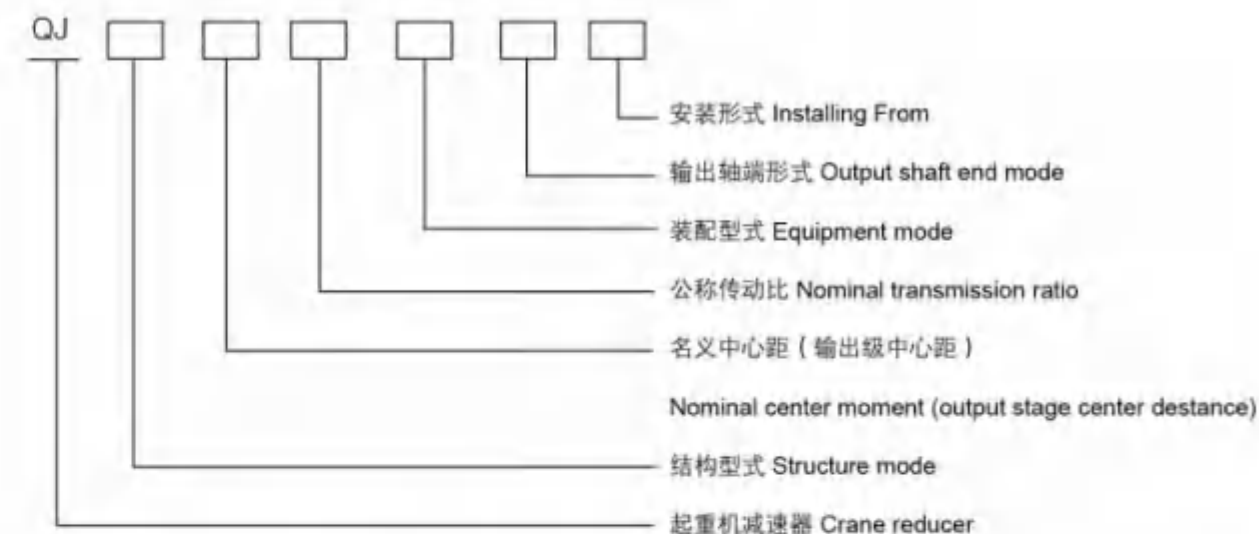
三、适用条件 Applicable conditions

1. 齿轮圆周速度不大于16m/s Circumferential speed of gear wheel $\leq 16\text{m/s}$
2. 高速轴转速不大于1000r/min; Rotation speed of high-speed shaft $\leq 1000\text{r/min}$;
3. 工作环境温度为-40-45℃ Operating ambient temperature: -40-45℃
4. 可正反两方向运转。 Operable both forward and backwards.

四、型号及速比 Types and Speed Ratio

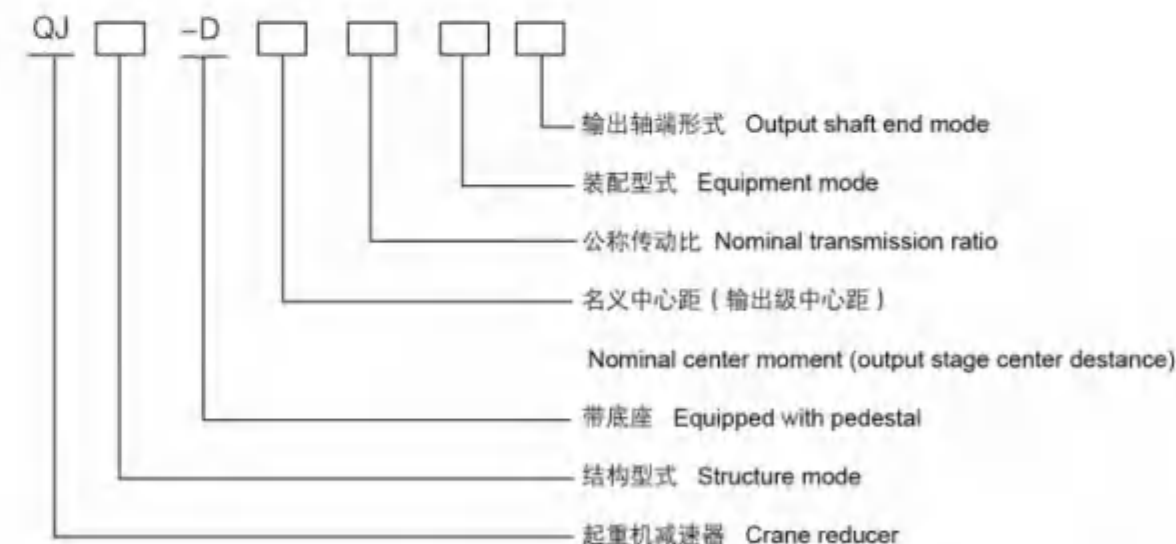
型号 Type	速比 Speed Ratio							
QJR QJR-D	10	12.5	16	20	25	31.5		
QJS, QJRS QJS-D, QJRS-D	40	50	63	80	100	125	160	200

五、标记 Earmark



标记示例：起重机减速器三级传动，名义中心距 $a_1=560\text{mm}$ ，公称传动比50，装配型式第Ⅱ种，输出轴为齿轮轴端，卧式安装则标记为：减速器QJS560-50-Ⅱ-cw

Type sample: 3 stage transmission of crane decelerator, nominal center moment $a_1=560\text{mm}$, nominal transmission ratio is 50, installing is No. II, output shaft locatss at the edge of gear shaft, the horizontal installation is: decelerator QJS560-50-Ⅱ-cw.



标记示例：起重机减速器二级传动，名义中心距 $a_1=560\text{mm}$ ，公称传动比20，装配型式第VI种，轴端形式为p型，则标记为：减速器QJR-D560-20-VIP

Type sample: if 2 stage transmission of crane decelerator, the nominal center moment $a_1=560\text{mm}$, nominal transmission ratio is 20, the installing form is VI, p type shaft edge, the type should be: decelerator QJR-D560-20-VIP.

六、减速器外形及尺寸表

(一) QJR-D(QJB-D)

减速器外形及尺寸表

Outlook and size of
QJR-D(QJB-D)reducer



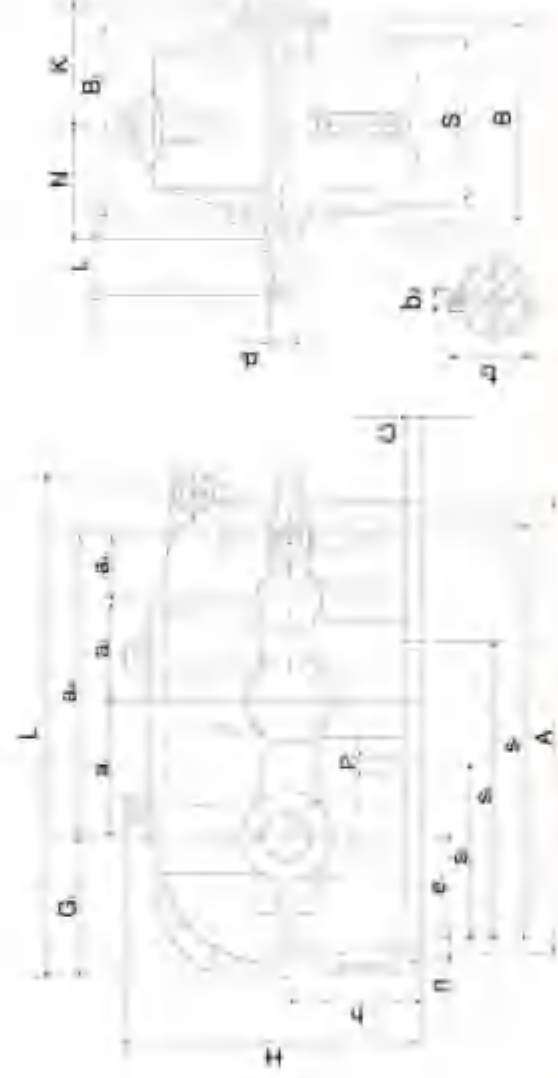
减速器外形及尺寸表 Outlook and size of reducer

减速器 型号 Reducer Model	外形尺寸 Outlook size			安装尺寸 Installation size			轴径 Shaft dia			重量 Weight (kg)			轴径 Shaft dia			重量 Weight (kg)								
	L	H	B	M	ΦK	L	b ₁	b ₂	L	S ₁	R ₁	S ₂	C	P	ΦK	A	Σ	Γ	B	A ₁	Σ ₁	Γ ₁	B ₁	
140	100	240	494	305	220	140	120	22	50	6	24.5	175	380	190	22	18	6	430	190	25	172	115	110	
170	118	288	577	365	250	170	135	28	60	8	31	205	460	230	25	18	6	513	215	27	197	138	170	
200	140	340	664	425	270	200	180	32	80	10	35	230	550	275	25	18	6	600	250	25	222	165	230	
236	170	406	796	497	330	236	210	38	80	10	41	280	660	330	28	23	6	716	300	30	265	195	310	
280	200	480	925	585	360	280	235	48	110	14	51.5	310	780	390	30	23	6	845	340	33	303	230	415	
335	236	571	1100	695	430	335	255	55	110	16	59	370	940	450	35	27	6	1006	400	35	362	280	840	
400	280	680	1289	860	510	400	285	65	140	18	69	450	1100	550	40	27	6	1195	490	50	422	325	1014	
450	315	765	1462	960	590	450	310	80	170	22	85	490	1240	1000	600	40	33	8	1350	550	55	481	370	1360
500	355	855	1622	1060	640	500	350	90	170	25	95	540	1390	1120	670	45	33	8	1510	620	60	531	415	2250
560	400	960	1822	1210	710	560	385	100	210	28	106	600	1550	1250	750	50	39	8	1690	690	70	596	460	3325
630	450	1080	2037	1335	770	630	425	110	210	28	116	650	1750	1410	850	55	39	8	1905	770	80	666	520	4370
710	500	1210	2278	1510	860	710	450	120	210	32	127	740	1960	1580	950	60	45	8	2130	868	85	744	585	6140
800	560	1360	2538	1730	980	800	490	130	250	32	137	830	2195	1770	1060	65	45	8	2390	980	100	824	650	7840
900	630	1530	2860	1890	1100	900	540	150	250	36	158	950	2480	2000	1200	70	52	8	2700	1130	110	930	740	11280
1000	710	1710	3200	2090	1200	1000	610	170	300	40	179	1050	2750	2220	1320	75	52	8	3020	1220	135	1040	815	16380

(二) QJS-D(QJC-D)

减速器外形及尺寸表

Outlook and size of
QJS-D(QJS-D)reducer



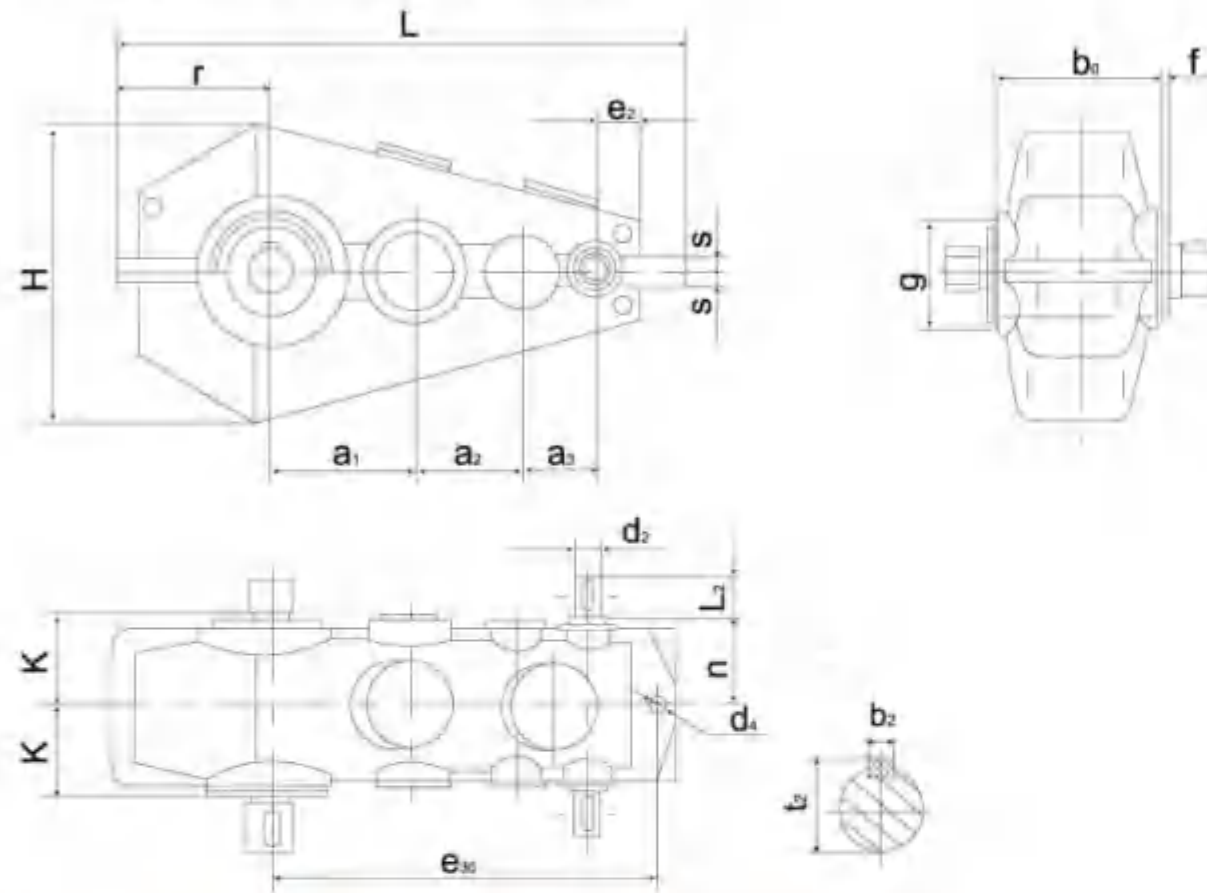
减速器 型号 Reducer Model		外形尺寸 Outlook size			安装尺寸 Installation size			轴径 Shaft dia			重量 Weight (kg)			轴径 Shaft dia			重量 Weight (kg)							
		L	H	B	M	ΦK	L	b ₁	b ₂	L	S ₁	R ₁	S ₂	C	P	ΦK	A	Σ	Γ	B	A ₁	Σ ₁	Γ ₁	B ₁
140	100 71	311	560	305	220	140	120	18	40	6	20.5	175	450	200	22	18	6	496	190	25	172	115	125	
170	118 85	373	652	365	250	170	135	22	50	6	24.5	205	535	235	25	18	6	588	215	27	197	138	180	
200	140 100	440	750	425	270	200	180	28	60	8	31	230	635	275	25	18	6	686	250	25	222	165	250	
236	170 118	524	896	497	330	236	210	32	80	10	35	280	750	330	28	23	6	816	300	30	265	195	370	
280	200 140	620	1045	585	360	280	235	38	80	10	41	310	900	390	30	23	6	965	340	33	303	230	650	
335	236 170	741	1245	695	430	335	255	45	110	14	48.5	370	1050	450	35	27	8	1151	400	35	362	280	965	
400	280 200	880	1461	860	510	400	285	50	110	14	53.5	450	1270	550	40	27	8	1367	490	50	422	325	1420	
450	315 224	989	1651	960	590	450	310	55	110	16	59	490	1425	600	40	33	8	1539	550	55	481	370	1520	
500	355 250	1105	1832	1060	640	500	350	60	140	18	64	540	1600	670	45	33	8	1720	620	60	531	415	2500	
560	400 280	1240	2062	1210	710	560	385	70	140	20	74.5	600	1780	750	50	39	8	1930	690	70	596	460	3300	
630	450 315	1395	2307	1335	770	630	425	80	170	22	85	650	2010	850	55	39	8	2175	770	80	666	520	4740	
710	500 355	1565	2583	1510	860	710	450	90	170	25	95	740	2265	950	60	45	8	2435	868	85	744	585	6240	
800	560 400	1760	2883	1730	980	800	490	100	210	28	106	830	2535	1060	65	45	8	2735	980	100	824	650	8730	
900	630 450	1980	3240	1890	1100	900	540	110	210	32	116	950	2860	1200	70	52	8	3080	1130	110	930	740	11970	
1000	710 500	2210	3620	2090	1200	1000	610	130	250	32	137	1050	3170	1320	75	52	8	3440	1220	135	1040	815	17000	

Personal Details			Physical Attributes			Biometric Data					Genetic Markers					Health & Vitality								
Personal ID	Name	Age	Gender	Height (cm)	Weight (kg)	BMI	Heart Rate (bpm)	Blood Pressure (mmHg)	Cholesterol (mg/dL)	Glucose (mg/dL)	DNA Profile			Mitochondrial DNA		Y-Chromosome		Genetic Score	Health Index	Vitality Index				
											SNP1	SNP2	SNP3	mtDNA1	mtDNA2	Y1	Y2							
140	100	71	494	305	220	140	120	18	40	6	20.5	175	380	190	22	18	6	430	190	25	172	115	125	
170	118	85	577	365	250	170	135	22	50	6	24.5	205	460	230	25	18	6	513	215	27	197	138	180	
200	140	100	664	425	270	200	180	28	60	8	31	230	550		275	25	18	6	600	250	25	222	165	250
236	170	118	796	497	330	236	210	32	80	10	35	280	660		330	28	23	6	716	300	30	265	195	340
280	200	140	925	585	360	280	235	38	80	10	41	310	780		390	30	23	6	845	340	33	303	230	600
335	236	170	1100	695	430	335	255	45	110	14	48.5	370	940		450	35	27	6	1006	400	35	362	280	870
400	280	200	1289	860	510	400	285	50	110	14	53.5	450	1100		550	40	27	6	1195	490	50	422	325	1085
450	315	224	1462	960	590	450	310	55	110	16	59	490	1240	1000	600	40	33	8	1350	550	55	481	370	1420
500	355	250	1622	1060	640	500	350	60	140	18	64	540	1390	1120	670	45	33	8	1510	620	60	531	415	2380
560	400	280	1822	1210	710	560	385	70	140	20	74.5	600	1550	1250	750	50	39	8	1690	690	70	596	460	3511
630	450	315	2037	1335	770	630	425	80	170	22	85	650	1750	1410	850	55	39	8	1905	770	80	666	520	4740
710	500	355	2278	1510	860	710	450	90	170	25	95	740	1960	1580	950	60	45	8	2130	868	85	744	585	6240
800	560	400	2538	1730	980	800	490	100	210	28	106	830	2195	1770	1060	65	45	8	2390	980	100	824	650	8490
900	630	450	2860	1890	1100	900	540	110	210	28	116	950	2480	2000	1200	70	52	8	2700	1130	110	930	740	11700
1000	710	500	3200	2090	1200	1000	610	130	250	32	137	1050	2750	2220	1320	75	52	8	3020	1220	135	1040	815	16700

D 1000 2000 3000	D ₁	D ₂				L	H	R	K	W 0 -0.5	-0.1 0	S 1	D ₁	D ₂	B	I	T	year
		D _{1.5}	L	H	R													
140	100	22	50	6	24.5	505	320	120	130	190	16	130	12	320	12	170	50	59
170	118	28	60	8	31	600	386	135	140	215	18	150	15	380	14	202	60	85
200	140	32	80	10	35	707	455	180	195	250	20	170	18	450	17	232	70	133
236	170	38	80	10	41	828	518	210	225	300	20	200	18	530	17	272	85	240
280	200	48	110	14	51.5	974	584	235	250	335	25	240	22	630	22	314	100	330
335	236	55	110	16	59	1156	735	255	280	400	25	270	26	750	27	375	120	590
400	280	65	140	18	69	1387	867	285	340	475	30	320	33	900	27	447	140	850
450	315	80	170	22	85	1547	990	310	365	530	30	360	33	1000	32	506	160	1300
500	355	90	170	25	95	1720	1130	350	410	600	40	400	39	1120	32	554	180	1760
560	400	100	210	28	106	1922	1270	385	445	670	40	430	39	1250	37	626	200	2600
630	450	110	210	28	116	2156	1380	425	495	750	40	480	45	1400	37	704	225	3550
710	500	120	210	32	127	2433	1540	450	565	850	50	530	45	1600	42	781	250	4900
800	560	130	250	32	137	2739	1712	490	615	950	50	580	52	1800	42	880	280	6600
900	630	150	250	36	158	3043	1910	540	670	1060	50	650	62	2000	47	978	320	9200
1000	710	170	300	40	179	3384	2150	610	740	1180	60	720	70	2240	55	1074	360	12000

(五) QJS(QJC)减速器外形及尺寸表

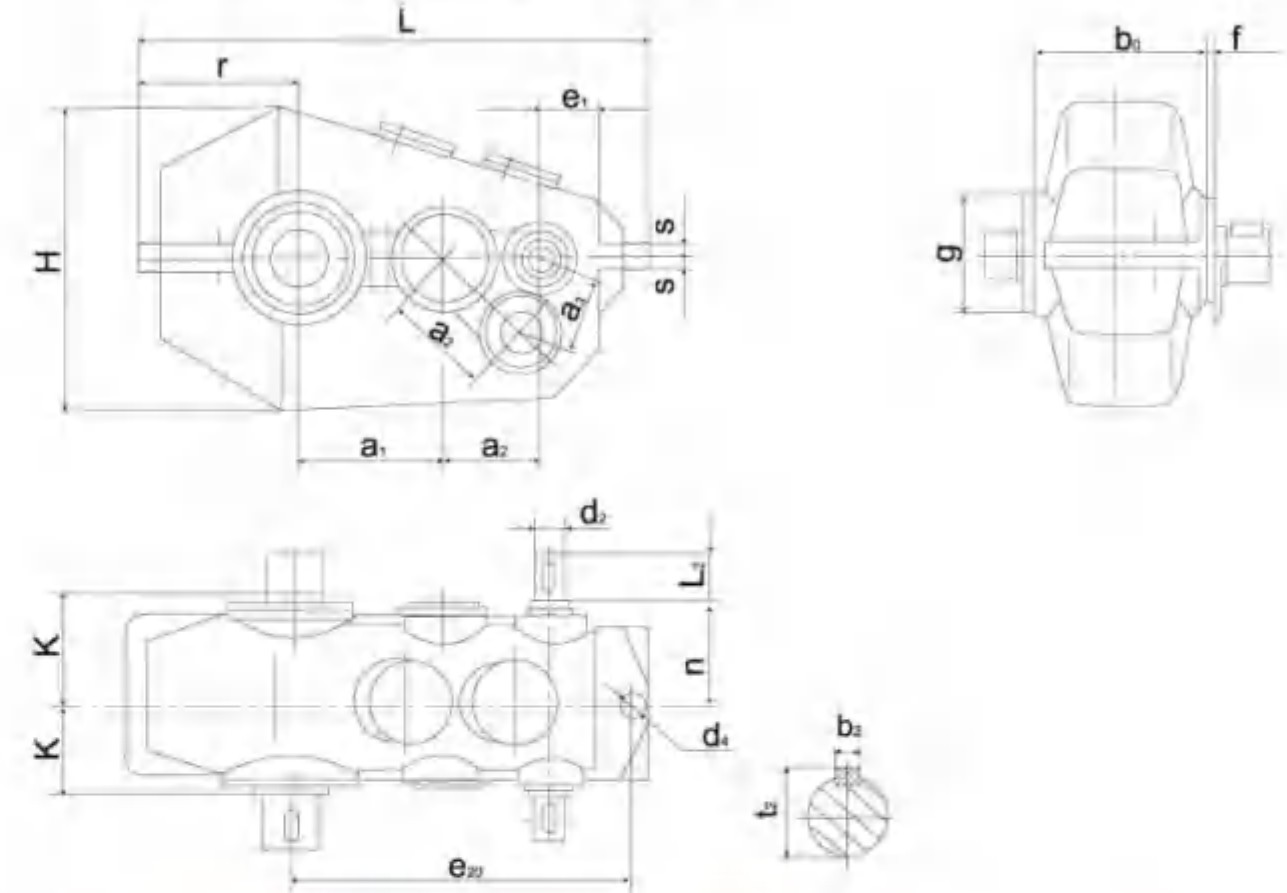
Outlook and size of QJS(QJC)reducer



QJS(QJC) nominal center space	a_2	a_3	input shaft nominal size			L	H	r	e_2	s	a_1	a_2	a_3	b_1	f	g	d_2	L_1	n	d_4	e_{30}	b_2	t_2	重量 weight
	a_2	a_3	d_2	L_1	b_1	L	H	r	e_2	s	a_1	a_2	a_3	b_1	f	g	d_2	L_1	n	d_4	e_{30}	b_2	t_2	重量 weight
140	100	71	18	40	6	20.5	567	320	120	130	190	16	130	12	380	12	170	40	64					64
170	118	85	22	50	8	24.5	673	386	135	140	215	18	150	15	450	14	202	48	95					95
200	140	100	28	60	8	31	793	455	180	195	250	20	170	18	530	17	232	56	170					170
236	170	118	32	80	10	35	928	518	210	225	300	20	200	18	630	17	272	67	256					256
280	200	140	38	80	10	41	1094	584	235	250	335	25	240	22	750	22	314	80	350					350
335	236	170	45	110	14	48.5	1301	735	255	280	400	25	270	26	900	27	375	95	654					654
400	280	200	50	110	14	53.5	1559	867	285	340	475	30	320	33	1060	27	447	112	940					940
450	315	224	55	110	16	59	1736	990	310	365	530	30	360	33	1180	32	506	125	1400					1400
500	355	250	60	140	18	64	1930	1130	350	410	600	40	400	39	1320	32	554	140	1850					1850
560	400	280	70	140	20	74.5	2162	1270	385	445	670	40	430	39	1500	37	626	160	2800					2800
630	450	315	80	170	22	85	2468	1380	425	495	750	40	480	45	1700	37	704	180	3500					3500
710	500	355	90	170	25	95	2738	1540	450	565	850	50	530	45	1900	42	781	200	4700					4700
800	560	400	100	210	28	106	3084	1712	490	615	950	50	580	52	2120	42	880	225	6400					6400
900	630	450	110	210	28	116	3423	1910	540	670	1060	50	650	62	2360	47	987	250	9000					9000
1000	710	500	130	250	32	137	3804	2150	610	740	1180	60	720	70	2650	55	1074	280	11700					11700

(六) QJRS(QJD)减速器外形及尺寸表

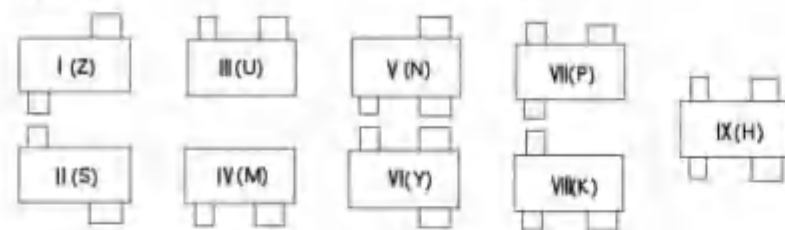
Outlook and size of QJRS(QJD)reducer



QJRS(QJD) nominal center space	a_2	a_3	input shaft nominal size			L	H	r	K	d_2	s	a_1	a_2	a_3	b_1	f	g	d_2	L_1	n	d_4	e_{30}	b_2	t_2	重量 weight
	a_2	a_3	d_2	L_1	b_1	L	H	r	K	d_2	s	a_1	a_2	a_3	b_1	f	g	d_2	L_1	n	d_4	e_{30}	b_2	t_2	重量 weight
140	100	71	18	40	6	20.5	505	298	120	130	190	16	130	12	320	12	170	50	64						64
170	118	85	22	50	8	24.5	600	375	135	140	215	18	150	15	380	14	202	60	94						94
200	140	100	28	60	8	31	707	440	180	195	250	20	170	18	450	17	232	70	185						185
236	170	118	32	80	10	35	828	500	210	225	300	20	200	18	530	17	272	85	284						284
280	200	140	38	80	10	41	974	582	235	250	335	25	240	22	630	22	314	100	380						380
335	236	170	45	110	14	48.5	1156	710	255	280	400	25	270	26	750	27	375	120	650						650
400	280	200	50	110	14	53.5	1387	836	285	340	475	30	320	33	900	27	447	140	930						930
450	315	224	55	110	16	59	1547	980	310	365	530	30	360	33	1000	32	506	160	1410						1410
500	355	250	60	140	18	64	1720	1060	350	410	600	40	400	39	1120	32	554	180	1820						1820
560	400	280	70	140	20	74.5	1922	1240	385	445	670	40	430	39	1250	37	626	200	2890						2890
630	450	315	80	170	22	85	2156	1370	425	495	750	40	480	45	1400	37	704	225	3550						3550
710	500	355	90	170	25	95	2433	1530	450	565	850	50	530	45	1600	42	781	250	4900						4900
800	560	400	100	210	28	106	2739	1691	490	615	950	50	580	52	1800	42	880	280	6600						6600
900	630	450	110	210	28	116	3043	1900	540	670	1060	50	650	62	2000	47	978	320	9200						9200
1000	710	500	130	250	32	137	3384	2070	610	740	1180	60	720	70	2240	55	1074	360	12000						12000

七、装配型式及安装型式

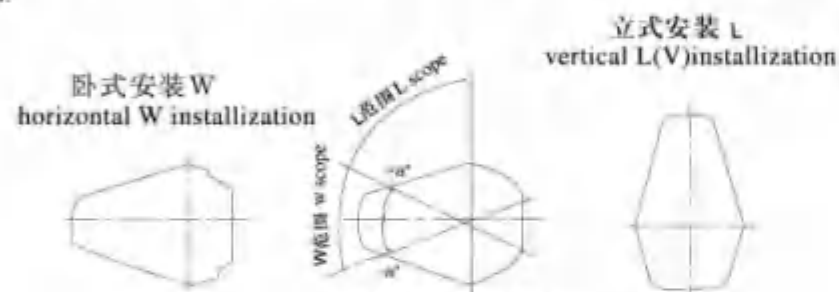
Installing and assembling form



减速器装配型式
installing form of reducers

QJR、QJS、QJRS型安装形式：卧式W或立式L(V)在偏转角 $\pm a^\circ$ 范围内，为立式安装。

Installing forms of QJR, QJS, QJRS reducers are horizontal or vertical L(V) when deflection angle ranging from $\pm a^\circ$, vertical installation is applied.

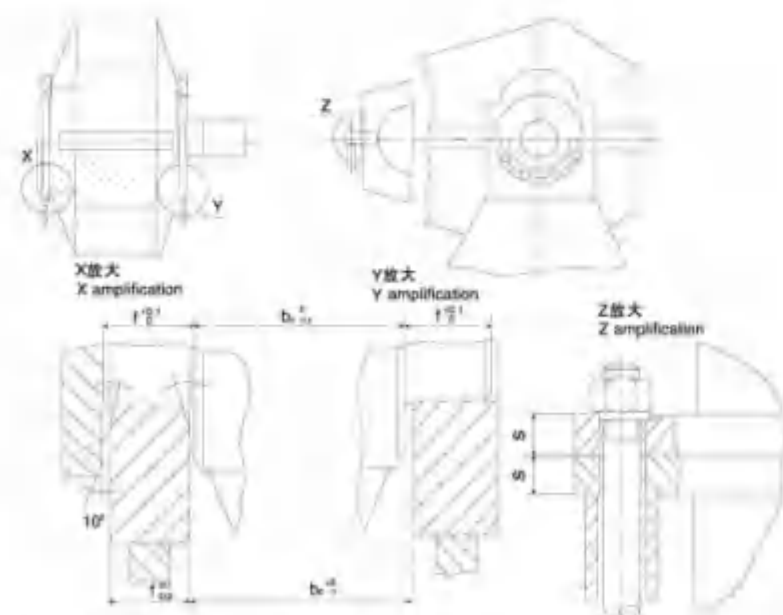


减速器安装型式
assembling form of reducers

注：a角的度数与传动比有关，当减速器倾a度时，应保证使中间级大齿轮沾油1-2个齿高深度。

QJR、QJS、QJRS型为三支点支承型式。

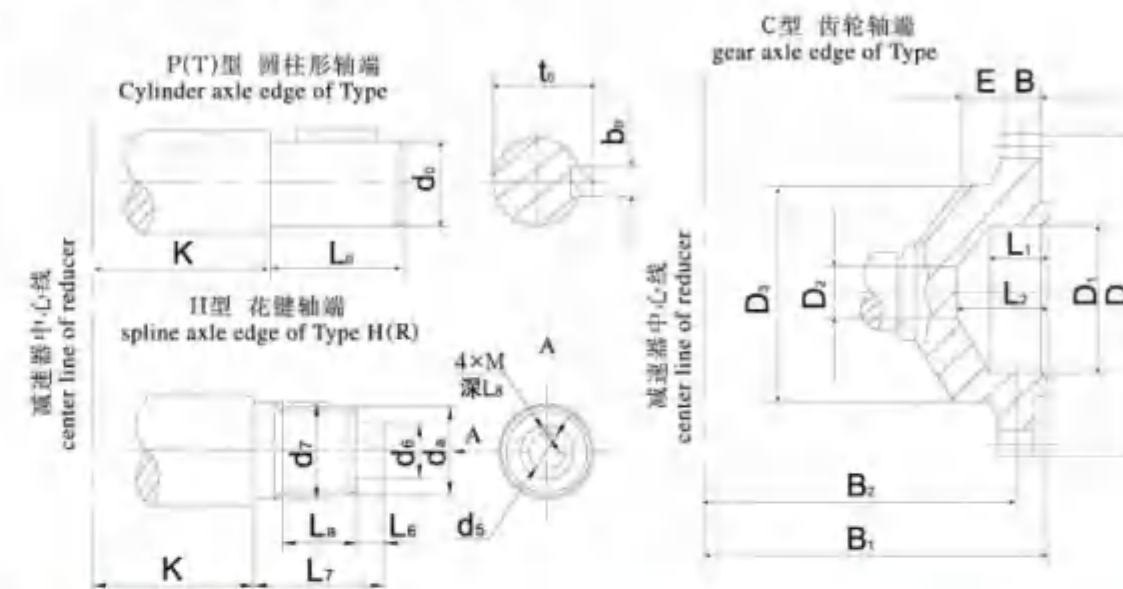
Annotation: the value of angle is relevant to the transmission ratio. It's necessary to guarantee one or two gear height into the oil of middle big gear when reducer has an angle of indication. The QJR, QJS, QJRS reducers are three-flucrum sustaining type.



减速器三支点支承型式 Three-flucrum sustaining type reducer

八、输出轴端型式及尺寸表

Type and size of input axle edge



注：选用括号内尺寸要特别注明。

中心距 center pitch space	P型 Type D					C型 Type C											H型 Type H										
	a ₂	d ₁ /f ₆	L ₀	b ₀	t ₀	MXZ	D	D ₁ (F8)	D ₂	D ₃	B ₁	B ₂	B	E	L ₁	L ₂	MXZ (h6)	d _a (h11)	L _a	d ₅ (k ₇)	L ₆	d ₇ (k ₇)	L ₇	d ₈	M	L ₈	
140	48	82	14	51.5													3X15	48	35	40	23	50	78	25	6	1	
170	55	82	16	59													3X18	57	35	50	27	60	82	30	6	1	
200	65	105	18	69													3X22	69	40	60	30	70	90	40	8	1	
236	80	130	22	85	3X56	174	90	40	135	279.5	253	25	25	45	60	3X27	84	45	70	30	85	95	50	8	1		
280	90	130	25	95	4X56	232	120	40	170	302.5	271	35	25	50	75	5X18	95	55	80	35	100	125	60	8	1		
335	110	165	28	116	4X56	232	120	40	170	339.5	308	35	25	50	75	5X22	115	60	100	40	120	135	70	10	2		
400	130 (140)	200 (36)	32 (137)	137 (148)	6X56	348	170	45	260	402	370	40	32	76	100	5X26	135	75	120	45	140	155	90	10	2		
450	150	200	36	158	6X56	348	170	45	260	429	397	40	32	76	100	5X30	155	80	140	50	160	165	100	12	2		
500	170 (180)	240 (45)	40 (179)	179 (190)	8X54	448	200	105	260	482	442	50	32	78	100	5X34	175	90	160	55	180	180	120	12	2		
560	190 (200)	280	45	200 (210)	10X48	500	200	105	280	570	505	60	35	78	110	5X38	195	100	180	55	200	190	140	12	2		
630	220	280	50	231	10X54	560	250	140	380	620	550	65	40	80	120	8X26	216	110	190	60	222	205	160	12	2		
710	250 (260)	330	56	262 (272)	12X48	600	270	150	420	700	620	75	45	95	130	8X30	248	125	220	60	254	220	180	16	3		
800	280	380	63	292	12X54	672	290	170	480	776	696	75	45	95	130	8X34	280	140	250	60	286	235	200	16	3		
900	320	380	70	334	12X58	720	310	180	560	850	770	85	60	105	140	8X38	312	155	280	70	318	260	220	20	4		
1000	360	450	80	375	12X64	792	380	230	620	970	895	100	80	140	180	8X44	360	175	320	75	366	285	250	20	4		

QJR、QJS、QJRS与QJR-D、QJS-D、QJRS-D型K值对比表

Contrasting graph of valve K betwain QJR, QJS, QJRS and QJR-D, QJS-D and QJRS-D reducers

型 Type	140	170	200	236	280	335	400	450	500	560	630	710	800	900	1000
R.R.S.S	130	140	195	225	250	280	340	365	410	445	495	565	615	670	740
R-D.RS-D.S-D	130	150	175	200	220	260	310	335	370	410	450	510	570	640	700

九、减速器输出轴端允许的最大径向载荷（当n=950r/min）见表

Allowed maximum radial load for reducer output shaft end is shown in the table.

名义中心距 Nominal center distance		140	170	200	236	280	335	400	450	500	560	630	710	800	900	1000
最大允许径向载荷 Allowable maximum radial load	R级	5000	7000	9000	15000	21000	28000	35000	55000	60000	75000	100000	107000	120000	150000	200000
	S级 RS级	5000	8000	10000	15000	30000	37000	55000	64000	93000	120000	150000	170000	200000	240000	270000

十、承载能力

Carrying capacity

（一）QJR、QJR-D减速器的承载能力表

Allowed power and output torque of QJR, QJR-D reducer

工作级别M₂
Operation level M₂

输入轴转速 rpm input shaft speed	名义中心距 a/mm Nominal center distance	输出扭矩 Nm Output torque moment	额定功率kW Nominal power kW					
			10	12.5	16	20	25	31.5
			高速轴许用功率kW Allowed power for high-speed shaft					
570	140	820	5.3	4.3	3.4	2.7	2.1	1.6
	170	1360	9.0	7.2	5.7	4.5	3.5	2.8
	200	2650	15.5	12.4	9.7	7.8	6.2	4.9
	236	4500	26.0	21.0	16.5	13.2	10.5	8.4
	280	7500	44.0	35.0	27.0	22.0	17.6	13.9
	335	12500	73.0	59.0	46.0	37.0	29.0	23.0
	400	21200	124.0	99.0	78.0	62.0	50.0	39.0
	450	30000	176.0	141.0	110.0	88.0	70.0	56.0
	500	42500	249.0	199.0	155.0	124.0	100.0	79.0
	560	60000	351.0	281.0	220.0	176.0	141.0	112.0
	630	85000	497.0	398.0	311.0	249.0	199.0	158.0
	710	118000	691.0	552.0	432.0	345.0	276.0	219.0
	800	170000	995.0	796.0	622.0	497.0	398.0	316.0
	900	236000	1381.0	1105.0	863.0	691.0	552.0	438.0
1000	335000	1961.0	1568.0	1225.0	980.0	784.0	622.0	
710	140	820	6.4	5.2	4.1	3.3	2.6	2.0
	170	1360	10.7	8.8	7.0	5.7	4.5	3.4
	200	2650	19.3	15.5	12.1	9.7	7.7	6.1
	236	4500	33.0	20.0	21.0	16.4	13.1	10.4
	280	7500	55.0	44.0	34.0	27.0	22.0	17.4
	335	12500	91.0	73.0	57.0	46.0	36.0	29.0
	400	21200	155.0	124.0	97.0	77.0	62.0	49.0
	450	30000	219.0	175.0	137.0	109.0	88.0	69.0
	500	42500	310.0	248.0	194.0	155.0	124.0	98.0
	560	60000	437.0	350.0	274.0	219.0	175.0	139.0
	630	85000	620.0	496.0	387.0	310.0	248.0	197.0
	710	118000	860.0	688.0	538.0	430.0	344.0	273.0
	800	170000	1239.0	991.0	775.0	620.0	496.0	393.0
	900	236000	1720.0	1376.0	1075.0	860.0	688.0	546.0
1000	335000	2442.0	1954.0	1526.0	1221.0	977.0	775.0	
950	140	820	7.9	6.5	5.2	4.2	3.3	2.6
	170	1360	13.2	10.9	8.7	7.1	5.7	4.4
	200	2650	26.0	21.0	16.2	12.9	10.3	8.2
	236	4500	44.0	35.0	27.0	22.0	17.6	13.9
	280	7500	73.0	59.0	46.0	37.0	29.0	23.0
	335	12500	122.0	98.0	76.0	61.0	49.0	39.0
	400	21200	207.0	165.0	129.0	103.0	83.0	66.0
	450	30000	293.0	234.0	183.0	146.0	117.0	93.0
	500	42500	415.0	332.0	259.0	207.0	166.0	132.0
	560	60000	585.0	468.0	366.0	293.0	234.0	186.0
	630	85000	829.0	663.0	518.0	415.0	332.0	263.0
	710	118000	1151.0	921.0	719.0	576.0	460.0	365.0
	800	170000	1658.0	1327.0	1036.0	829.0	663.0	526.0
	900	236000	2302.0	1842.0	1439.0	1151.0	921.0	731.0
	1000	335000	3268.0	2614.0	2012.2	1634.0	1307.0	1037.0

连续工作型
Continuous operation type

Input speed rpm	Input torque N·m	Output torque N·m	2.0	2.5	3.0	3.5	4.0	4.5
高速轴输入功率kW Allowed power for high-speed shaft								
570	140	410	2.7	2.2	1.7	1.4	1.1	0.8
	170	680	4.5	3.6	2.9	2.3	1.8	1.4
	200	1325	7.8	6.2	4.9	3.9	3.1	2.5
	236	225	13.0	10.5	8.3	6.6	5.3	4.1
	280	3750	22.0	17.5	13.5	11.0	8.8	7.0
	335	6250	36.5	29.5	23.0	18.5	14.5	11.5
	400	10600	62.0	49.5	39.0	31.0	25.0	19.5
	450	15000	88.0	70.5	55.0	44.0	35.0	28.0
	500	21250	124.5	99.5	77.5	62.0	50.0	39.5
	560	30000	175.5	140.5	110.0	88.0	70.5	56.0
	630	42500	248.5	199.0	155.5	124.5	99.5	79.5
	710	59000	345.5	276.0	216.0	172.5	138.0	109.0
710	800	85000	497.5	398.0	311.0	248.5	199.0	158.0
	900	118000	690.5	552.5	431.5	345.5	278.0	219.0
	1000	167500	980.5	784.0	612.5	490.0	392.0	311.0
	140	410	3.2	2.6	2.1	1.7	1.3	1.0
	170	680	5.4	4.4	3.5	2.9	2.3	1.7
	200	1235	9.7	7.8	6.1	4.9	3.9	3.1
	236	2250	16.5	13.0	10.5	8.2	6.6	5.2
	280	3750	27.5	22.0	17.0	13.5	11.0	8.7
	335	6250	45.5	36.5	28.5	23.0	18.0	14.5
	400	10600	77.5	62.0	48.5	38.5	31.0	24.5
	450	15000	109.5	87.5	68.5	54.5	44.0	34.5
	500	21250	155.0	124.0	97.0	77.5	62.0	49.0
950	560	30000	218.5	175.0	136.5	109.5	87.5	69.5
	630	42500	310.0	298.0	198.5	155.0	124.0	98.0
	710	59000	430.0	344.0	269.0	215.0	172.0	136.5
	800	85000	619.0	495.5	387.5	310.0	248.0	196.5
	900	118000	860.0	688.0	537.5	430.0	344.0	273.0
	1000	167500	1221.0	977.0	763.0	610.5	488.5	387.5
	140	410	3.9	3.2	2.6	2.1	1.6	1.3
	170	680	6.6	5.4	4.3	3.5	2.8	2.2
	200	1325	13.0	10.5	8.1	6.4	5.1	4.1
	236	2250	22.0	17.5	13.5	11.0	8.5	6.9
	280	3750	36.5	29.5	23.0	18.5	14.5	11.5
	335	6250	61.0	49.5	38.0	30.5	24.5	19.5
	400	10000	103.5	82.5	64.5	51.5	41.5	33.0
	450	15000	146.5	117.0	91.5	73.0	58.5	46.5
	500	21250	207.5	166.0	129.5	103.5	83.0	66.0
	560	30000	292.5	234.0	183.0	146.0	117.0	93.0
	630	42500	414.5	331.5	259.0	207.5	166.0	131.5
	710	59000	575.5	460.5	359.5	288.0	230.0	182.5
	800	85000	829.0	663.5	518.0	414.5	331.5	263.0
	900	118000	1151.0	921.0	719.5	575.5	460.5	365.5
	1000	167500	1634.0	1307.0	1021.0	817.0	653.5	518.5

(二) QJS、QJRS、QJS-D、QJRS-D承载能力表

Allowed power and output torque of QJS、QJRS、QJS-D、QJRS-D

工作级别M₀
Operation level M₀

Input speed rpm	Input torque N·m	Output torque N·m	2.0	2.5	3.0	3.5	4.0	4.5	5.0
高速轴输入功率kW Allowed power for high-speed shaft									
570	140	820	1.5	1.4	1.0	0.8	0.6	0.5	0.3
	170	1360	2.5	2.1	1.6	1.3	1.0	0.8	0.5
	200	2650	3.9	3.1	2.5	1.9	1.6	1.2	0.8
	236	4500	6.6	5.3	4.2	3.3	2.6	2.1	1.3
	280	7500	11.0	8.8	7.0	5.5	4.4	3.5	2.2
	335	12500	18.3	14.6	11.6	9.1	7.3	5.9	3.7
	400	21200	31.0	25.0	19.7	15.5	12.4	9.9	6.7
	450	30000	44.0	35.0	28.0	22.0	17.6	14.1	8.8
	500	42500	62.0	50.0	40.0	31.0	25.0	19.1	12.4
	560	60000	88.0	70.0	56.0	44.0	35.0	28.0	17.6
	630	85000	124.0	100.0	79.0	62.0	50.0	40.0	25.0
	710	118000	173.0	138.0	110.0	86.0	69.0	55.0	35.0
710	800	170000	249.0	199.0	158.0	124.0	100.0	80.0	50.0
	900	236000	345.0	276.0	219.0	173.0	138.0	110.0	69.0
	1000	335000	490.0	392.0	311.0	245.0	196.0	157.0	98.0
	140	820	1.8	1.5	1.2	1.0	0.8	0.6	0.4
	170	1330	3.1	2.6	2.0	1.6	1.3	1.0	0.6
	200	2650	4.8	3.9	3.1	2.4	1.9	1.6	1.0
	236	4500	8.2	6.6	5.2	4.1	3.3	2.6	1.6
	280	7500	13.7	10.9	8.7	6.8	5.5	4.4	2.7
	335	12500	23.0	18.2	14.5	11.4	9.1	7.3	4.6
	400	21200	39.0	31.0	25.0	19.3	15.5	12.4	7.7
	450	30000	55.0	44.0	35.0	27.0	22.0	17.5	10.9
	500	42500	78.0	62.0	49.0	39.0	31.0	25.0	15.5
950	560	60000	109.0	88.0	69.0	55.0	44.0	35.0	22.0
	630	85000	155.0	124.0	98.0	78.0	62.0	50.0	31.0
	710	118000	215.0	172.0	137.0	108.0	86.0	69.0	43.0
	800	170000	310.0	248.0	197.0	155.0	124.0	99.0	78.0
	900	236000	430.0	344.0	273.0	215.0	172.0	138.0	108.0
	1000	335000	611.0	488.0	388.0	305.0	244.0	195.0	153.0
	140	820	2.3	1.9	1.5	1.2	1.0	0.8	0.5
	170	1360	3.9	3.2	2.6	2.1	1.7	1.3	0.8
	200	2650	6.5	5.2	4.1	3.2	2.6	2.1	1.3
	236	4500	11.0	8.8	7.0	5.5	4.4	3.5	2.2
	280	7500	18.3	14.6	11.6	9.1	7.3	5.9	3.7
	335	12500	31.0	24.0	19.4	15.2	12.2	9.8	6.1
	400	21200	52.0	41.0	33.0	26.0	21.0	16.5	10.3
	450	30000	73.0	59.0	47.0	37.0	29.0	23.0	14.6
	500	42500	104.0	83.0	66.0	52.0	42.0	33.0	21.0
	560	60000	146.0	117.0	93.0	73.0	59.0	47.0	29.0
	630	85000	207.0	166.0	132.0	104.0	83.0	66.0	42.0
	710	118000	288.0	230.0	183.0	144.0	115.0	92.0	72.0
	800	170000	415.0	332.0	263.0	207.0	166.0	133.0	104.0
	900	236000	576.0	460.0	365.0	288.0	230.0	184.0	144.0
	1000	335000	817.0	654.0	519.0	408.0	327.0	261.0	204.0

连续工作型
Continuous operation type

减速器 Reducer	中心距 Center distance	输出轴 输出转矩 Output torque	额定功率KW Rated power KW							
			10	15	20	30	40	50	60	70
570	140	410	0.8	0.7	0.5	0.4	0.3	0.3	0.2	0.1
	170	680	1.3	1.1	0.8	0.7	0.5	0.4	0.3	0.2
	200	1325	2.0	1.6	1.3	1.0	0.8	0.6	0.5	0.4
	236	2250	3.3	2.7	2.1	1.7	1.3	1.1	0.9	0.7
	280	3750	5.5	4.4	3.5	2.8	2.2	1.8	1.4	1.1
	335	6250	9.2	7.3	5.8	4.6	3.7	3.0	2.3	1.9
	400	10600	15.5	12.5	9.9	7.8	6.2	5.0	3.9	3.4
	450	15000	22.0	17.5	14.0	11.0	8.8	7.1	5.5	4.4
	500	21250	31.0	25.0	20.0	15.5	12.5	10.0	7.8	6.2
	560	30000	44.0	35.0	28.0	22.0	17.5	14.0	11.0	8.8
	630	42500	62.0	50.0	39.5	31.0	25.0	20.0	15.5	12.5
	710	59000	86.5	69.0	55.0	43.0	34.5	27.5	21.5	17.5
710	800	85000	124.5	99.5	79.0	62.0	50.0	40.0	31.0	25.0
	900	118000	172.5	138.0	109.5	86.5	69.0	55.5	43.0	34.5
	1000	167500	245.0	196.0	155.5	122.5	98.0	78.0	61.5	49.0
	140	410	0.9	0.8	0.6	0.5	0.4	0.3	0.2	0.1
	170	680	1.6	1.3	1.0	0.8	0.7	0.5	0.4	0.3
	200	1325	2.4	2.0	1.6	1.2	1.0	0.8	0.6	0.5
	236	2250	4.1	3.3	2.6	2.1	1.7	1.3	1.1	0.8
	280	3750	6.9	5.5	4.4	3.4	2.8	2.2	1.7	1.3
	335	6250	11.5	9.1	7.3	5.7	4.6	3.7	2.9	2.3
	400	10600	19.5	15.5	12.5	9.7	7.8	6.2	4.9	3.9
	450	15000	27.5	22.0	17.5	13.5	11.0	8.8	6.9	5.5
	500	21250	39.0	31.0	24.5	19.5	15.5	12.5	9.7	7.8
950	560	30000	54.5	44.0	34.6	27.5	22.0	17.5	13.5	11.0
	630	42500	77.5	62.0	49.0	39.0	31.0	25.0	19.5	15.5
	710	59000	107.5	86.0	68.5	54.0	43.0	34.5	27.0	21.5
	800	85000	155.0	124.0	98.5	77.5	62.0	49.5	39.0	31.0
	900	118000	215.0	172.0	136.5	107.5	86.0	69.0	54.0	43.0
	1000	167500	305.5	244.0	194.0	152.5	122.0	97.5	76.5	61.0
	140	410	1.1	0.9	0.7	0.6	0.5	0.4	0.3	0.2
	170	680	1.9	1.6	1.3	1.0	0.8	0.6	0.5	0.4
	200	1325	3.2	2.6	2.0	1.6	1.3	1.0	0.8	0.6
	236	2250	5.5	4.4	3.5	2.7	2.2	1.7	1.3	1.1
	280	3750	9.1	7.3	5.8	4.5	3.6	2.9	2.3	1.8
	335	6250	15.5	12.0	9.7	7.6	6.1	4.9	3.8	3.0
950	400	10600	26.0	20.5	16.5	13.0	10.5	8.2	6.4	5.1
	450	15000	36.0	29.5	23.5	18.5	14.5	11.5	9.1	7.3
	500	21250	52.0	41.5	33.0	26.0	21.0	16.5	13.0	10.5
	560	30000	73.0	58.5	46.5	36.5	29.5	23.5	18.5	14.5
	630	42500	103.5	83.0	66.0	52.0	41.5	33.0	26.0	21.0
	710	59000	144.0	115.0	91.5	72.0	57.5	46.0	36.0	29.0
	800	85000	207.5	166.0	131.5	103.5	83.0	66.5	52.0	41.5
	900	118000	288.0	230.0	182.5	144.0	115.0	92.0	72.0	57.5
	1000	167500	408.5	327.0	259.5	204.0	163.5	130.5	102.0	81.5

十、减速器的选用及润滑 Selection and Lubrication of Reducer

1. 起重机各机构的工作级别分为八种，表列M5工作级别的功率值。若用在其它工作级别时，应按公式 $P_{mi}=P_{mi} \times 1.12^{(i-5)}$ 换算。

There are 8 types of operation level available for each device of the crane. Power value for operation level M5 is listed in the table, and if it is used for other operation level, the proper conversion should be made with formula $P_{mi}=P_{mi} \times 1.12^{(i-5)}$.

式中： P_{mi} —功率表中的数值；value in the power table, KW

i—工作级别1~8

P_{mi} —相对M工作级功率值；power value corresponding to operation level Mi, KW.

选用时，可根据起重机个机构疲劳计算基本载荷 $M_{max}=eMn$ ，再与转速换算出功率值

$$P_{mi} = \frac{M_{max} \cdot n}{9550}$$

For the selection, the basic load is calculated according to each crane device fatigue: $M_{max}=eMn$, which together with rotation speed may deduce power value: $P_{mi} = \frac{M_{max} \cdot n}{9550}$

2. 选用时，亦可根据计算载荷除以以下表系数K，再从相应表选用

For the selection, multiply calculated load by factor K, and then choose from the corresponding table:

起重状态	1	2	3	4	5	6	7	8
平均负荷 Average load	轻 light	中 middle	轻 light	中 middle	额定 rated	轻 light	中 middle	额定 rated
起重机状态载荷 Crane load status	Q_1		Q_2		Q_3		Q_4	
系数K Factor K	1.25		1		0.80		0.63	

3. 起重机载荷状态 Q ，见下表 Crane load status Q is shown in the table below:

起重状态 Load status	额定载荷 Nominal load factor	说明 Remarks
Q_1 —轻 light	0.125	很少起升额定负荷，一般起升微载荷 Seldom hoist rated load, usually hoist slight load
Q_2 —中 middle	0.25	有时起升额定负荷，一般起升1/3额定载荷 Sometimes hoist rated load, usually hoist 1/3 rated load
Q_3 —重 heavy	0.5	经常起升额定负荷，一般起升2/3额定载荷 Often hoist rated load, usually hoist 2/3 load
Q_4 —特重 serious	1.0	频繁起升额定负荷 Frequent hoist rated load

4. 减速器的润滑 Reducer lubrication

卧式减速器采用油池飞溅润滑，立式减速器应采用循环喷油润滑。润滑油选用GB/T5903中的L-CKC100、L-CKC150或L-CKC220。

当环境温度低于0℃时，用户应有润滑油加热装置；采用油池飞溅润滑时，油温高于0℃时启动；采用喷油润滑时，油温应高于5℃时才能启动。

Oil sump slashing is used to lubricate horizontal reducer. L-CKC100, L-CKC150 or L-CKC220 is selected from GB/T5903 for lubrication.

When ambient temperature is below 0℃, lubricant heating device should be available for user. If oil sump slashing is used for lubrication, reducer is started only when oil temperature above 0℃. If oil spray is used for lubrication, reducer is started only when oil temperature is above 5℃.

QJ-L QJ-T型起重机立式减速器 QJ-L QJ-T Crane Vertical Decelerators

一、概述 Brief

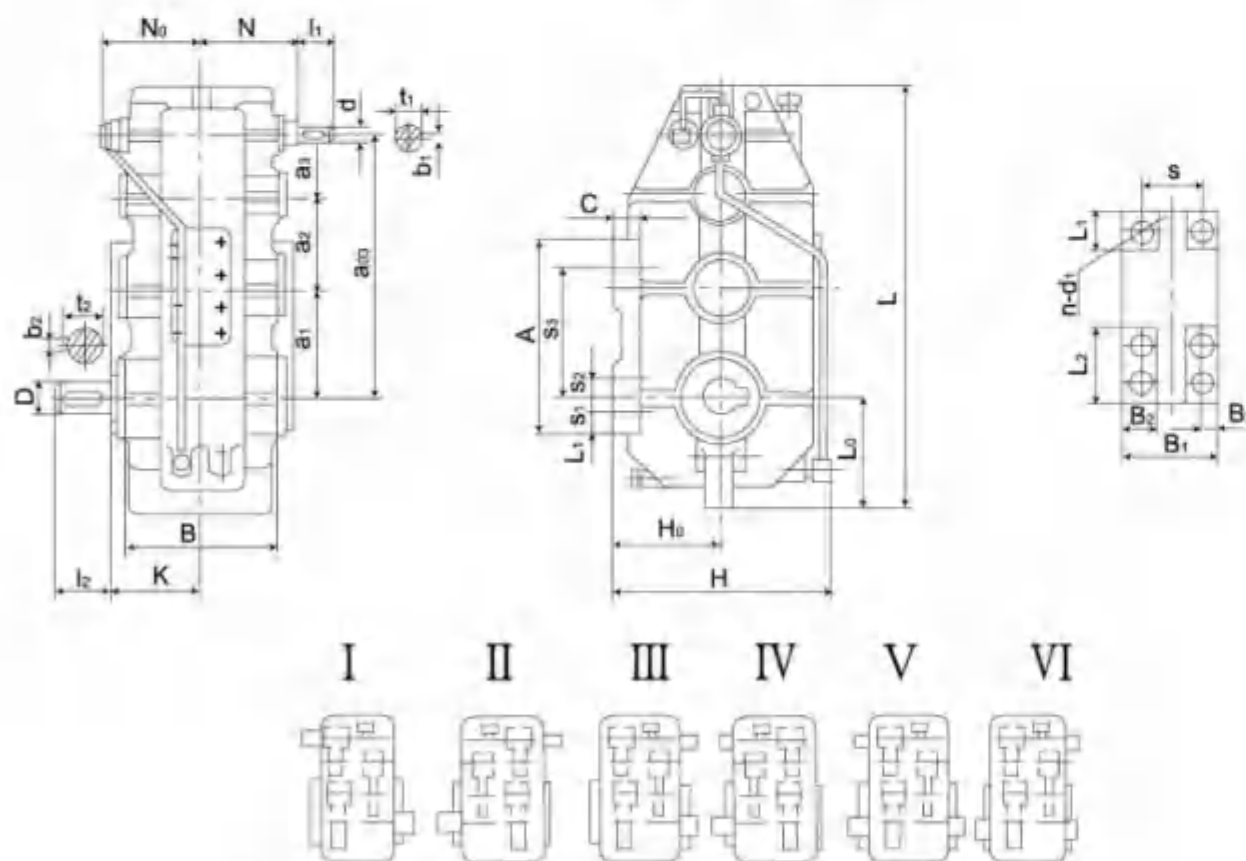
起重机立式减速器部分分为QJ-L、QJ-T两个系列，主要用于起重运行机构，也可用于运输、冶金、矿山、化工、轻工等各种机械设备的运行机构中。齿轮、齿轮轴采用中碳合金钢中硬齿面，具有结构紧凑、承载能力较高等优点，是我厂继ZSC型、ZSC(A)型减速器之后推出的又一代新产品。

The Crane vertical decelerators has two series, type QJ-L and type QJ-T. They are the operating mechanism of crane and other machinery in transportation, metallurgy, mining, chemical industry and light industry. The gear and axle are made of middle carbon alloy steel and middle carbide-faced, which are fastened structure with high carrying capacity. Such kind of reducers are our updated decelerators after ZSC and ZSC(A) reducers.



二、QJ-L型减速器外形、尺寸及装配型式

Outlook, assembling size and installing form of QJ-L reducer

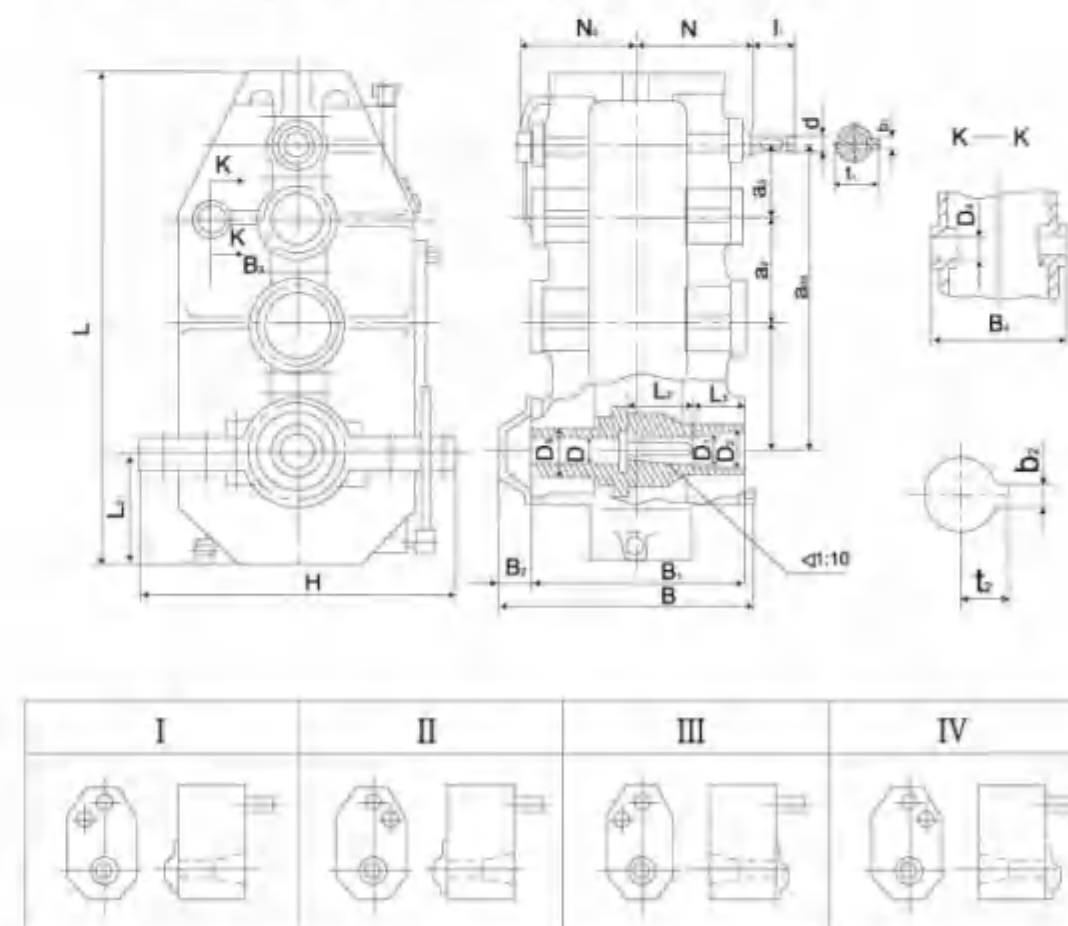


型号 type	中心距 border distance				基圆距 driving shaft				轴间距 passive shaft				外形尺寸 Outer size						
	a ₁	a ₂	a ₃	a ₄	d	l ₁	N	b ₁	l ₂	D	l ₃	K	b ₂	l ₄	H	B	L	L ₀	N ₀
QJ-L140	140	100	71	311	20	52	115	6	22.5	48	112	92	14	51.5	296	180	560	167	143
QJ-L170	170	118	85	373	20	50	125	6	22.5	55	110	135	16	59	330	190	638	180	153
QJ-L200	200	140	100	440	25	60	140	8	28	65	140	150	18	69	370	215	735	205	165
QJ-L236	236	170	118	524	30	80	160	8	33	80	170	170	22	85	430	250	871	242	183
QJ-L280	280	200	140	620	35	80	175	10	38	90	170	185	25	95	505	275	1015	280	200
QJ-L335	335	236	170	741	45	110	200	14	48.5	110	210	215	28	116	605	325	1211	335	225
QJ-L400	400	280	200	880	50	110	240	14	53.5	130	250	250	32	137	710	395	1430	395	260

型号 type	安装尺寸 installing size														重量 weight
	H ₀	A	S	S ₁	S ₂	S ₃	B ₁	B ₂	B ₃	L ₁	L ₂	L ₃	C	d ₁	
QJ-L140	135	260	180	0	0	180	245	40	32.5	40	80	80	20	21	87
QJ-L170	160	290	195	35	0	205	255	60	30	25	110	110	25	21	117
QJ-L200	185	340	220	40	0	240	280	60	30	30	120	120	25	21	163
QJ-L236	215	405	235	55	55	290	305	70	35	30	185	110	30	21	231
QJ-L280	255	480	265	60	60	340	335	70	35	40	195	120	30	21	351
QJ-L335	315	550	365	60	60	410	445	80	40	40	200	120	35	25	592
QJ-L400	360	680	365	70	70	510	455	90	45	50	240	140	40	31	895

三、QJ-T型减速器外形、安装尺寸及装配型式

Outlook, assembling size and installing form QJ-T reducer



型号 type	中心距 center distance				输入轴 input shaft					输出轴 output shaft							
	a ₁	a ₂	a ₃	a ₄	d	L ₁	N	b ₁	L ₂	D	D ₁	D ₂	D ₃	L ₃	L ₄	b ₂	L ₅
QJ-T140	140	100	71	311	20	52	115	6	22.5	35	39.5	47	60	82	50	10	21.25
QJ-T170	170	118	85	373	20	50	125	6	22.5	40	44.5	55	65	82	60	12	23.75
QJ-T200	200	140	100	440	25	60	140	8	28	55	64.5	75	90	105	65	16	34.18
QJ-T236	236	170	118	524	30	80	160	8	33	70	79.5	90	110	130	70	20	41.65
QJ-T280	280	200	140	620	35	80	175	10	38	80	89.5	100	120	130	75	22	47.15
QJ-T335	335	236	170	741	45	110	200	14	48.5	85	99.5	110	140	165	85	25	51.28
QJ-T400	400	280	200	880	50	110	240	14	53.5	105	119.5	135	160	165	100	28	62.28

型号 type	外形尺寸 dimension						重量 weight			
	H	B	B ₁	L	L ₂	N ₀	B ₂	B ₃	B ₄	D ₁ H ₀
QJ-T140	310	252	194	513	127	143	50	85	120	25
QJ-T170	360	272	214	606	148	153	50	100	140	25
QJ-T200	410	303	243	703	173	165	50	125	170	25
QJ-T236	500	372	286	831	205	183	75	140	200	28
QJ-T280	560	397	311	975	240	200	75	180	225	28
QJ-T335	670	447	361	1164	288	225	75	220	265	32
QJ-T400	790	524	435	1374	339	265	75	275	315	40

四、QJ-L, QJ-T型减速器承载能力表

Allowed power and output torque of QJ-L, QJ-T reducer

输入轴 转速 rpm	额定 扭矩 Nm	输出 扭矩 Nm	高速轴许用功率kW															
			18	12	20	22.4	25	35	35.5	40	45	50	60	63	71	80	90	100
600	140	308	1.3	1.1	1.0	0.9	0.8	0.75	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.34	0.30	0.25
	170	510	2.2	1.9	1.7	1.5	1.4	1.2	1.1	1.0	0.9	0.8	0.75	0.65	0.6	0.55	0.5	0.4
	200	993	3.6	3.2	2.9	2.6	2.3	2.0	1.8	1.6	1.4	1.3	1.1	1.0	0.9	0.8	0.7	0.65
	236	1686	6.1	5.4	4.8	4.3	3.8	3.4	3.1	2.7	2.4	2.1	1.9	1.7	1.5	1.3	1.2	1.0
	280	2813	10.1	9.0	8.0	7.2	6.4	5.7	5.1	4.5	4.1	3.6	3.3	2.9	2.6	2.3	2.0	1.8
	335	4688	16.9	15.1	13.5	12.0	10.7	9.6	8.6	7.6	6.8	6.1	5.4	4.8	4.3	3.8	3.4	3.0
	400	7950	28.7	25.6	22.9	20.4	18.2	16.3	14.5	13.0	11.6	10.3	9.3	8.3	7.3	6.5	5.8	5.1
750	140	308	1.6	1.4	1.3	1.1	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.35	0.3
	170	510	2.8	2.5	2.2	2.0	1.8	1.6	1.4	1.3	1.2	1.0	0.9	0.85	0.75	0.65	0.6	0.55
	200	993	4.5	4.0	3.5	3.2	2.9	2.6	2.3	2.0	1.8	1.8	1.5	1.3	1.2	1.0	0.9	0.8
	236	1686	7.6	6.8	6.0	5.4	4.8	4.3	3.9	3.4	3.1	2.7	2.5	2.2	1.9	1.8	1.5	1.3
	280	2813	12.6	11.2	10.1	9.0	8.0	7.2	6.4	5.7	5.1	4.6	4.1	3.6	3.3	2.9	2.6	2.3
	335	4688	21.3	19.0	17.0	15.2	13.6	12.1	10.8	9.7	8.6	7.7	6.8	6.1	5.4	4.8	4.3	3.8
	400	7950	36.1	32.3	28.8	25.8	23.0	20.5	18.3	16.4	14.6	13	11.6	10.3	9.4	8.3	7.2	6.4
1000	140	308	2.1	1.9	1.7	1.5	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.55	0.5	0.45	0.4
	170	510	3.6	3.2	2.9	2.6	2.3	2.0	1.8	1.6	1.5	1.3	1.2	1.1	1.0	0.9	0.8	0.65
	200	993	5.9	5.3	4.8	4.3	3.8	3.4	3.0	2.7	2.4	2.1	1.9	1.7	1.5	1.3	1.2	1.1
	236	1686	10.1	9.1	8.1	7.2	6.5	5.8	5.2	4.6	4.1	3.8	3.3	2.9	2.6	2.3	2.1	1.8
	280	2813	17.0	15.2	13.6	12.1	10.8	9.7	8.6	7.7	6.9	6.1	5.5	4.9	4.3	3.9	3.4	3.1
	335	4688	28.7	25.7	22.9	20.5	18.3	16.3	14.6	13.0	11.6	10.3	9.0	8.0	7.3	6.5	5.7	5.1
	400	7950	48.3	43.1	38.5	34.4	30.7	27.4	24.5	21.8	19.5	17.4	15.4	13.7	12.4	10.9	9.8	8.7
1500	140	308	3.2	2.8	2.5	2.2	1.9	1.7	1.6	1.4	1.3	1.1	1.0	0.9	0.8	0.75	0.65	0.6
	170	510	5.3	4.8	4.3	3.8	3.4	3.0	2.7	2.4	2.1	1.9	1.8	1.6	1.4	1.3	1.1	0.95
	200	993	8.9	7.9	7.1	6.4	5.7	5.0	4.5	4.0	3.6	3.2	2.9	2.6	2.3	1.9	1.8	1.6
	236	1686	15.2	13.5	12.1	10.8	9.7	8.6	7.7	6.9	6.1	5.5	4.9	4.4	3.9	3.5	3.0	2.7
	280	2813	25.4	22.7	20.3	18.0	16.2	14.5	12.9	11.5	10.3	9.2	8.2	7.3	6.5	5.8	5.1	4.5
	335	4688	43.1	38.5	34.4	30.6	27.4	24.5	21.8	19.5	17.4	15.5	13.5	12.0	10.9	9.7	8.6	7.5
	400	7950	72.5	64.7	57.8	51.5	46.1	41.1	36.6	32.7	29.3	26.0	23.0	20.5	18.5	16.4	14.6	12.5

QJG-L型起重机立式减速器

QJG-L type reducers

根据国家标准JB/T8905.3-1999生产QJG-L型减速器主要用于起重机的小车运行机构和部位门式起重机、装卸桥等大桥运行机构中，也可用于其它需要立式安装的设备传动。

Which are produced on basis of JB/T8905.3-1999, are mainly applied in craning, parts craning and Loading-unloading bridge. Also they can be applied in other vertical installing machines.

特点 Property

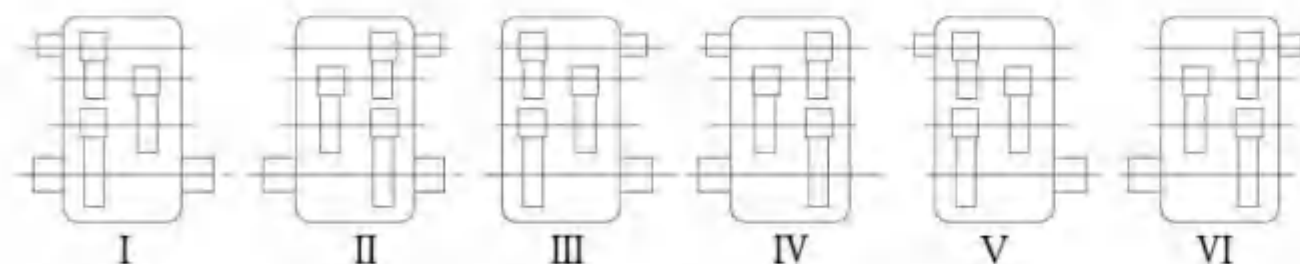
1. QJG-L型减速器采用铸铁箱体，底座式侧面安装立式减速器；
 2. 三级传动，速比为16-100；
 3. 该系列有7种规格，名义中心距为140-400mm；
 4. 小规格减速器为油浴式润滑，280以上的减速器采用集中喷油润滑。
- 其它特点同QJ型减速器。

1. Casting iron box is applied in QJG-L type decelerator and at side of pedestal the vertical decelerator is installed;
2. Three stage transmission with speed ratio of 16-100;
3. Seven kinds of specs for QJG-L series and nominal center space of 140-400mm;
4. Oil bathing lubrication for small size machines and central oil spuring lubrication for machines over 280.

型式 Type

1. 结构型式：QJG-L型减速器为三级立式带底座减速器。
2. 装配型式：QJG-L型减速器共有六种装配形式，见图

1. Structure type three stage vertical reducers with pedestal.
2. Installing type: There are six installing types for QJG-L type reducers which are showed below.



标记示例 Symbol example



起重机立式减速器，名义中心距为200mm，公称传动比为40，装配型式为第Ⅱ种，标记为：减速器QJG-L200-40-Ⅱ

Vertical crane decelerator with nominal center space of 200mm, nominal transmission ratio of 40 and installing type of Ⅱ, the symbol should be QJG-L200-40-Ⅱ.

Main tech Data

主要技术参数 Main tech data

1. 中心距 Center space QJG-L型减速器的中心距表 Chart of center space of QJG-L type decelerator

减速机型号 Type	QJG-L140	QJG-L170	QJG-L200	QJG-L236	QJG-L280	QJG-L335	QJG-L400
低速级 a_1 low speed	140	170	200	236	280	335	400
中速级 a_2 Middle speed	100	118	140	170	200	236	280
高速级 a_3 High speed	71	85	100	118	140	170	200
总中心距 a_{Σ} Total center space	311	373	440	524	620	740	880

2. 传动比 QJG-L型减速器的传动比见表。其公称传动比与实际传动比的极限偏差为±5%

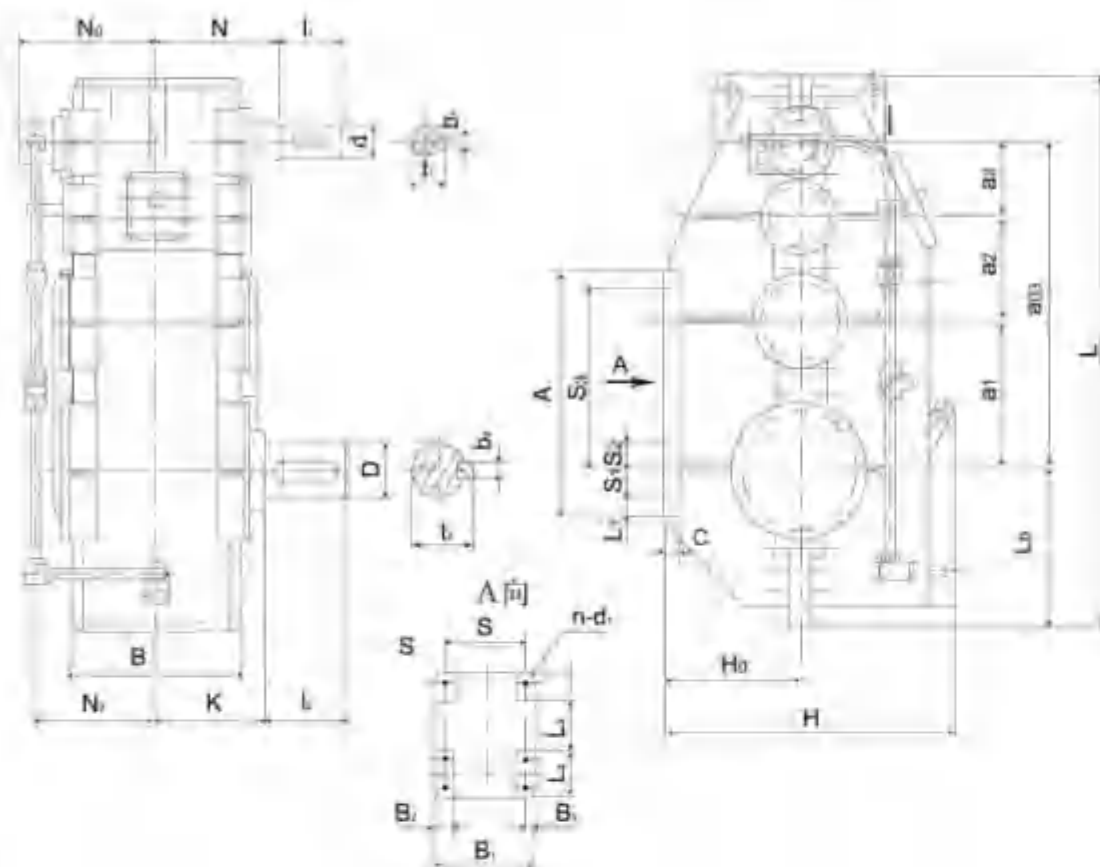
Transmission ratio; The transmission ratio of QJG-L type decelerator please see table below. Variation between nominal and actual transmission ratio is ±5%.

公称传动比 Nominal Transmission Ratio	实际传动比 Actual Transmission Ratio															
	10	16	20	22.4	25	28	31.5	35.5	40	45	50	56	63	71	80	90
140	15.57	17.92	19.96	23.13	24.46	28.59	32.15	35.83	40.30	45.72	49.26	55.20	63.09	68.25	78.00	90.88
170	15.82	17.86	19.95	22.64	25.44	27.78	31.45	35.22	39.87	43.34	49.21	56.39	64.04	72.06	81.82	89.29
200	15.78	18.10	20.22	22.23	24.98	27.57	31.21	35.99	40.75	44.03	49.95	55.73	63.22	68.12	77.28	86.10
236	15.68	18.07	20.21	22.28	25.09	27.77	31.53	34.37	41.13	43.95	50.21	53.36	64.92	71.00	81.11	85.83
280	16.51	18.19	20.26	22.39	23.69	27.72	31.18	34.83	39.15	44.41	50.76	53.69	61.36	71.84	82.11	90.04
335	15.70	17.98	20.20	22.18	25.11	27.64	31.58	35.76	40.00	45.70	48.76	58.43	62.35	72.82	83.19	93.75
400	15.78	18.10	20.22	22.23	24.98	27.57	31.21	36.00	40.75	44.03	49.95	55.73	63.22	68.12	77.28	86.10

外形及安装尺寸 Outlook and installing size

QJG-L型减速器的外形及安装尺寸见图和表

The outlook and installing size of QJG-L type decelerator are shown in graph and chart below.



QJG-L型减速器的外形及安装尺寸

Outlook and installing size of QJG-L type decelerator

减速器 Type	J	N ₁	N	S	g	L	N ₂	B ₁	L ₁	D	L ₂	K	B ₂	L ₃	H	B	L ₄	L ₅	N ₃	N ₄
QJG-L140	140	100	71	311	20	50	120	6	22.5	48	82	130	14	51.5	300	190	558	167	103	107
QJG-L170	170	118	85	373	25	50	135	8	28	55	82	150	16	59	355	215	650	192	115	120
QJG-L200	200	140	100	440	28	60	180	8	31	65	105	175	18	69	405	250	747	217	133	137
QJG-L236	236	170	118	524	35	80	210	10	38	80	130	200	22	85	475	300	894	260	158	164
QJG-L280	280	200	140	620	40	110	235	12	43	90	130	220	25	95	557	340	1035	295	277	211
QJG-L335	335	236	170	741	45	110	255	14	48.5	110	165	260	28	116	654	400	1243	357	307	241
QJG-L400	400	280	200	880	55	110	285	16	59	130	200	310	32	137	776	490	1443	412	352	286

减速器 Type	F ₁	λ	S	S ₁	B ₁	B ₂	B ₃	B ₄	B ₅	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	L ₈	L ₉	L ₁₀	L ₁₁
QJG-L140	138	260	185	30	0	170	245	60	30	30	80	80	20	21	4	77				
QJG-L170	168	290	205	35	0	205	265	60	30	25	110	110	25	21	4	112				
QJG-L200	193	340	235	40	0	240	295	60	30	30	120	120	25	21	4	165				
QJG-L236	230	405	270	55	55	290	330	60	30	30	180	120	30	21	6	249				
QJG-L280	265	480	320	60	60	340	400	80	40	40	195	120	30	25	6	364				
QJG-L335	315	550	365	60	60	410	445	80	40	40	200	120	35	25	6	647				
QJG-L400	380	680	430	70	70	510	520	90	45	50	240	140	40	31	6	1048				

承载能力 Carrying Capacity

QJG-L型减速器当工作级别为M5时的输出转矩和高速轴的许用功率见表2-18

The output torque and high-speed shaft allowed power for QJG-L type decelerator under working stage of M5 please check table below.

QJG-L型减速器的输出转矩和高速轴许用功率 (工作级别为M5)

Output torque and high-speed shaft allowed power of QJG-L type decelerator(working stage of M5)

减速器 Type	额定功率 Rated Power kW	额定转矩 Rated Torque N·m	100%	75%	50%	25%	10%	5%	2.5%	1.5%	1.2%	1.1%	0.98%	0.87%	0.78%	0.69%	0.61%	0.54%	0.52%
600	140	820	3.1	2.7	2.5	2.2	2.0	1.8	1.6	1.4	1.2	1.1	0.98	0.87	0.78	0.69	0.61	0.54	0.52
	170	1360	5.1	4.5	4.1	3.6	3.3	2.9	2.6	2.3	2.0	1.8	1.6	1.5	1.3	1.1	1.1	0.90	0.81
	200	2650	9.9	8.8	7.9	7.1	6.3	5.7	5.0	4.5	4.0	3.5	3.2	2.8	2.5	2.2	2.0	1.8	1.6
	236	4500	16.7	14.9	13.4	11.9	10.7	9.5	8.5	7.5	6.7	5.9	5.3	4.8	4.2	3.7	3.3	2.9	2.6
	280	7500	27.9	24.8	22.3	19.9	17.9	15.9	14.2	12.6	11.1	9.9	8.9	7.9	7.1	6.3	5.6	4.9	4.4
	335	12500	46.6	41.4	37.3	33.3	29.8	26.6	23.6	21.0	18.6	16.5	14.9	13.3	11.8	10.5	9.3	8.8	7.4
750	400	21200	79.0	70.3	63.2	56.4	50.6	45.2	40.1	35.6	31.6	28.1	25.3	22.6	20.0	17.8	15.8	14.0	12.6
	140	820	3.8	3.4	3.1	2.7	2.4	2.2	1.9	1.7	1.5	1.4	1.2	1.1	0.97	0.86	0.76	0.68	0.61
	170	1360	6.3	5.6	5.1	4.5	4.0	3.6	3.2	2.9	2.5	2.3	2.0	1.8	1.6	1.4	1.3	1.1	1.0
	200	2650	12.3	11.0	9.9	8.8	7.9	7.0	6.3	5.6	4.9	4.4	3.9	3.5	3.1	2.8	2.5	2.2	2.0
	236	4500	20.9	18.5	16.7	14.9	13.3	11.9	10.6	9.4	8.3	7.4	6.6	5.9	5.3	4.7	4.1	3.7	3.3
	280	7500	34.8	30.9	27.8	24.9	22.3	19.9	17.7	15.7	13.9	12.3	11.1	9.9	8.8	7.8	6.9	6.5	5.5
1000	335	12500	58.0	51.6	46.4	41.4	37.1	31.1	29.5	26.1	23.2	20.6	18.5	16.6	14.7	13.0	11.6	10.3	9.2
	400	21200	98.5	87.5	78.8	70.3	63.0	56.3	50.0	44.4	39.4	35.0	31.5	28.1	25.0	22.2	19.7	17.5	15.7
	140	820	5.1	4.5	4.1	3.6	3.3	2.9	2.6	2.3	2.0	1.8	1.6	1.5	1.3	1.2	1.0	0.91	0.82
	170	1360	8.5	7.5	6.8	6.0	5.4	4.8	4.3	3.8	3.4	3.0	2.7	2.4	2.2	1.9	1.7	1.5	1.4
	200	2650	16.5	14.7	13.2	11.8	10.6	9.4	8.4	7.4	6.6	5.9	5.3	4.7	4.2	3.7	3.3	2.9	2.6
	236	4500	28.0	24.8	22.3	19.9	17.9	15.9	14.2	12.6	11.1	9.9	8.9	7.9	7.1	6.3	5.6	4.9	4.4
1500	280	7500	46.6	41.4	37.3	33.3	29.8	26.6	23.6	21.0	18.6	16.5	14.9	13.3	11.8	10.5	9.3	8.2	7.4
	335	12500	77.7	69.5	62.1	55.5	49.7	44.4	39.4	35.0	31.0	27.6	24.8	22.2	19.7	17.5	15.5	13.8	12.4
	400	21200	131.8	117.1	105.4	94.1	84.3	75.3	66.9	59.4	52.7	46.8	42.1	37.6	33.4	29.7	26.3	23.4	21.0
	140	820	7.5	6.7	6.0	5.4	4.8	4.3	3.8	3.4	3.0	2.7	2.7	2.4	2.3	2.1	1.8	1.6	1.4
	170	1360	12.5	11.1	10.0	8.9	8.0	7.1	6.3	5.6	5.0	4.4	4.0	3.8	3.4	3.0	2.6	2.4	2.1
	200	2650	24.3	21.6	19.4	17.3	15.5	13.9	12.3	10.9	9.7	8.6	7.8	7.0	6.6	5.8	5.2	4.6	4.2
1500	236	4500	41.2	36.6	32.9	29.4	26.3	23.5	20.9	18.6	16.4	14.6	13.2	11.7	10.4	9.2	8.2	7.3	6.6
	280	7500	68.7	61.0	54.9	49.0	43.9	39.2	34.9	30.9	27.4	24.4	21.9	19.6	17.4	15.4	13.7	12.2	11.0
	335	12500	114.5	101.8	91.6	81.8	73.3	65.4	58.1	51.6	45.8	40.7	36.6	32.7	29.0	25.8	22.9	20.3	18.3
	400	21200	194.2	172.6	155.4	138.7	124.3	111.0	98.6	87.5	77.7	69.0	62.1	55.5	49.3	43.7	38.6	34.5	31.0

QJG-L型减速器为连续工作时的输出转矩和高速轴的许用功率 (见下页)

Output torque and high-speed shaft allowed power for continuous QJG-L type decelerator

减速器输出轴端的瞬时允许转矩为额定转矩的2.7倍。

The temporary allowed torque of output shaft edge is 2.7 times of rated torque.

QJG-T型起重机套装式减速器

QJG-T craning decelerator

QJG-T型减速器是QJG-L型减速器的基础上派生的,主要用于起重机的运行机构,也可用于其它机械需要立式套装的传动中,用以代替ZSC(A)型减速器。

QJG-T craning decelerator, derived from QJG-L type decelerator, is mainly used in Craning and other machines with vertical set-installing operation to replace ZSC(A) type reducer.

特点 Property

QJG-T型减速器的输出端为圆锥套,减速器就套在主机器的被动轴上,将其紧固固定,减速器的重量也支承在该轴上。在箱体上部设有安装孔,通过销轴固定在支架上。

With cypinder output edge, the QJG-L reducer is installed on passive shaft. The weight is there after sustained. the upper of case locates some holes to fastened onto shelf with screw shaft.

QJG-L型减速器的输出转矩和高速轴许用功率（连续型）

Output torque and high-speed shaft allowed power of QJG-L reducer (continuous type)

减速器 型号 Reducer Model	中心距 Center distance mm	额定功率 Rated power kW	高速轴许用功率 High-speed shaft allowed power kW																
			15.0	18.0	22.0	28.0	35.0	45.0	55.0	70.0	90.0	110.0	140.0	180.0	220.0	280.0	350.0		
600	140	410	1.5	1.3	1.2	1.0	0.98	0.87	0.78	0.69	0.61	0.54	0.49	0.44	0.39	0.34	0.31	0.27	0.24
	170	680	2.5	2.2	2.0	1.8	1.6	1.4	1.2	1.1	1.0	0.90	0.81	0.72	0.64	0.57	0.51	0.45	0.41
	200	1325	4.9	4.3	3.9	3.5	3.1	2.8	2.5	2.2	1.9	1.7	1.5	1.4	1.2	1.1	0.99	0.88	0.79
	236	2250	8.3	7.4	6.7	6.0	5.3	4.8	4.2	3.7	3.3	2.9	2.6	2.4	2.1	1.8	1.6	1.4	1.3
	280	3750	13.9	12.4	11.1	9.9	8.9	7.9	7.1	6.3	5.6	4.9	4.4	4.0	3.5	3.1	2.8	2.4	2.2
	335	6250	23.3	20.7	18.6	16.6	14.9	13.3	11.8	10.5	9.3	8.2	7.4	6.6	5.9	5.2	4.6	4.1	3.7
400	10600	39.5	35.1	31.6	28.2	25.3	22.6	20.0	17.8	15.8	14.0	12.6	11.3	10.0	8.9	7.9	7.0	6.3	
750	140	410	1.9	1.6	1.5	1.3	1.2	1.0	0.97	0.86	0.76	0.68	0.61	0.54	0.48	0.43	0.38	0.34	0.30
	170	680	3.1	2.8	2.5	2.2	2.0	1.8	1.6	1.4	1.2	1.1	1.0	0.90	0.80	0.71	0.63	0.56	0.51
	200	1325	6.1	5.4	4.9	4.4	3.9	3.5	3.1	2.7	2.4	2.1	1.9	1.7	1.5	1.3	1.2	1.0	0.99
	236	2250	10.4	9.2	8.3	7.4	6.6	5.9	5.3	4.7	4.1	3.7	3.3	2.9	2.6	2.3	2.0	1.8	1.6
	280	3750	17.4	15.4	13.9	12.4	11.1	9.9	8.8	7.8	6.9	6.2	5.5	4.9	4.4	3.9	3.4	3.1	2.7
	335	6250	20.0	25.8	23.2	20.7	18.5	16.6	14.7	13.0	11.6	10.3	9.2	8.3	7.3	6.5	5.8	5.1	4.6
400	10600	49.2	43.7	39.4	35.1	31.5	28.1	25.0	22.2	19.7	17.5	15.7	14.0	12.5	11.1	9.8	8.7	7.8	
1000	140	410	2.5	2.2	2.0	1.8	1.6	1.4	1.2	1.1	1.0	0.91	0.82	0.73	0.65	0.57	0.51	0.45	0.41
	170	680	4.2	3.7	3.3	3.0	2.7	2.4	2.1	1.9	1.6	1.5	1.3	1.2	1.0	0.95	0.85	0.75	0.68
	200	1325	8.2	7.3	6.5	5.8	5.2	4.7	4.1	3.7	3.3	2.9	2.6	2.3	2.2	1.8	1.6	1.4	1.3
	236	2250	13.9	12.4	11.1	9.9	8.9	7.9	7.1	6.3	5.6	4.9	4.4	4.0	3.5	3.1	2.8	2.4	2.2
	280	3750	23.3	20.7	18.6	16.6	14.9	13.3	11.8	10.5	9.3	8.2	7.4	6.6	5.9	5.2	4.6	4.1	3.7
	335	6250	38.8	34.5	31.0	27.7	24.8	22.2	19.7	17.5	15.5	13.8	12.4	11.1	9.8	8.7	7.7	6.9	6.2
400	10600	65.9	58.9	52.7	47.0	42.1	37.6	33.4	29.7	26.3	23.4	21.0	18.8	16.7	14.8	13.1	11.7	10.5	
1500	140	410	3.7	3.3	3.0	2.6	2.4	2.1	1.9	1.6	1.5	1.3	1.2	1.0	0.95	0.85	0.75	0.67	0.60
	170	680	6.2	5.5	4.9	4.4	3.9	3.5	3.1	2.8	2.4	2.2	1.9	1.7	1.5	1.4	1.2	1.1	1.0
	200	1325	12.1	10.7	9.7	8.6	7.7	6.9	6.1	5.4	4.8	4.3	3.8	3.4	3.0	2.7	2.4	2.1	1.9
	236	2250	20.6	18.3	16.4	14.7	13.2	11.7	10.4	9.2	8.2	7.3	6.6	5.8	5.2	4.6	4.1	3.6	3.3
	280	3750	34.3	30.5	27.4	24.5	21.9	19.6	17.4	15.4	13.7	12.2	11.0	9.8	8.7	7.7	6.8	6.1	5.5
	335	6250	57.2	50.9	45.8	40.9	36.6	32.7	29.0	25.8	22.9	20.3	18.3	16.3	14.5	12.9	11.4	10.1	9.1
400	10600	97.1	86.3	77.7	69.3	62.1	55.5	49.3	43.7	38.8	34.5	31.0	27.7	24.6	21.8	19.4	17.2	15.5	

箱体分三部分，成“上”形，作立式减速器使用，下箱体油不易渗漏，输出轴中心线到下端极限位置尺寸比较小，其它特点同QJG-L型减速器。

The case is made up by three parts and some are shaed as vertical decelerator. The size between center line of output shaft and end position is rather small other properties are the same as that of QJG-L reducers.

型式 Type

1. 装配型式 QJG-T型减速器的装配型式有四种，见图
2. 轴端型式 高速轴采用圆柱形轴伸，平键联接，低速轴采用空心轴套，锥形轴孔，平键联接。
1. Installing type: There are four types for QJG-L type decelerator showed below.
2. Shaft edge type: Cylinder extension for high-speed shaft and shaft connection.

型号标记示例 Symbol example

起重机套架式减速器，名义中心距 $a_1=200$ ，公称传动比 $i=40$ ，装配型式第Ⅲ种，标记为：减速QJG-T200-40-Ⅲ
Craning reducer, nominal center space $a_1=200$, nominal transmission ratio $i=40$, installing form is Ⅲ, the symbol is :reducer QJG-T200-40-Ⅲ

主要技术参数 Main tech data

QJG-T型减速器的中心距和传动比与QJG-L型减速器相同。
Center space and transmission ratio of QJG-T reducer are the same as those of QJG-L reducers.

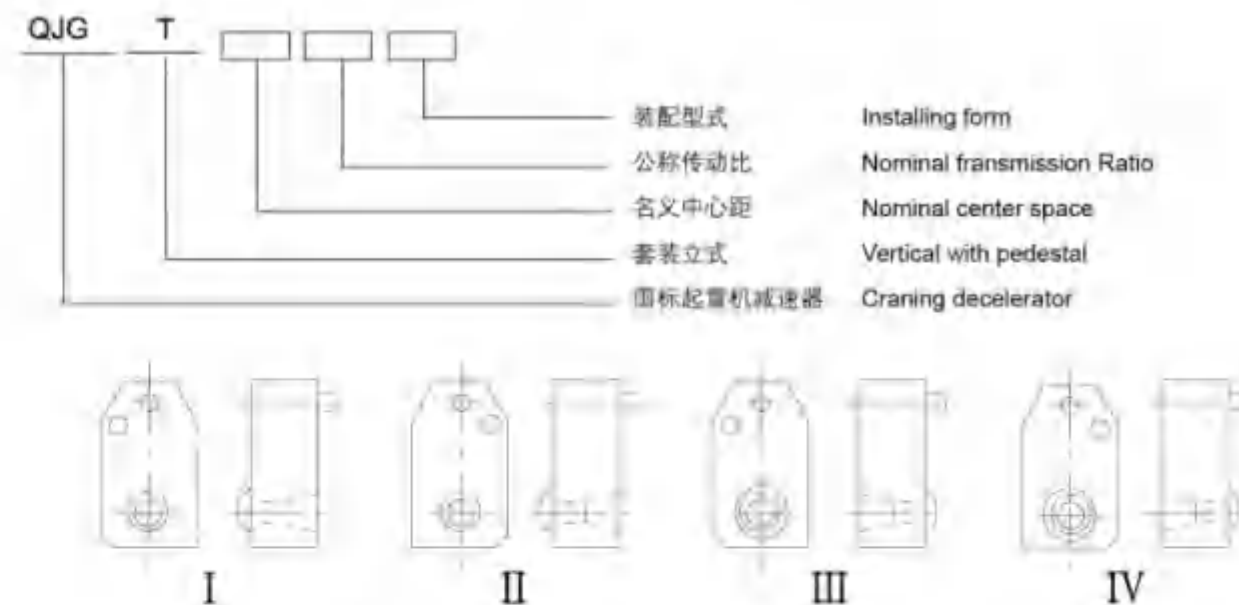


图2-14 QJG-T型减速器装配型式
Graph2-14 Installing form of QJG-T type decelerator

外形及安装尺寸 Contour and installing size

QJG-T型减速器的外形及安装尺寸见表2-15和表2-20。

The contour and installing size of QJG-T type decelerator are shown in table 2-15 and 2-20.

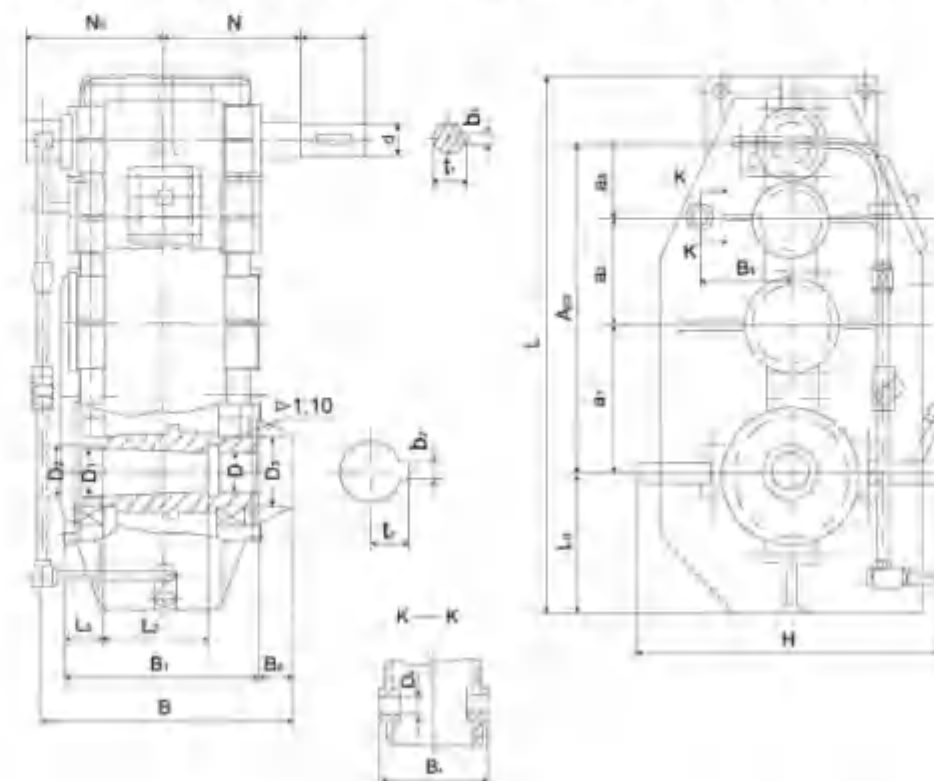


图2-15 QJG-T型减速器外形及安装尺寸
Graph 2-15 Outlook and installing size of QJG-T type decelerator

型号 Type	a ₁	a ₂	a ₃	a ₄	d	L	N	b	i ₁	D	D ₁	D ₂	D ₃	L ₁	L ₂	b ₂	L ₃
QJG-T140	140	100	71	311	20	50	120	6	22.5	40	50	55	70	105	50	14	26.2
QJG-T170	170	118	85	373	25	50	135	8	28	50	60	65	80	105	55	16	31.7
QJG-T200	200	140	100	440	28	60	180	8	31	55	65	70	90	105	60	18	34.3
QJG-T236	236	170	118	524	35	80	210	10	38	70	85	90	120	155	70	22	44
QJG-T280	280	200	140	620	40	110	235	12	43	75	95	100	130	205	75	22	47.8
QJG-T335	335	236	170	741	45	110	255	14	48.5	90	110	120	160	205	85	28	56.3
QJG-T400	400	280	200	880	55	110	285	16	59	100	120	130	180	255	105	28	60.03

型号 Type	n	B	B ₁	L	L ₁	N ₁	β ₁	B ₂	B ₃	D ₁ HB	重量 (kg)
QJG-T140	324	256	214	526	135	103	35	85	150	25	76
QJG-T170	376	281	239	618	160	115	35	105	170	25	108
QJG-T200	426	333	274	715	185	133	50	135	200	25	153
QJG-T236	510	387	328	854	220	158	50	155	245	28	247
QJG-T280	580	460	368	995	255	277	65	190	270	28	364
QJG-T335	689	524	436	1196	310	307	65	225	330	32	593
QJG-T400	807	624	526	1396	365	352	75	280	390	40	938

承载能力 Loading capacity

QJG-T型减速器的输出转矩和高速轴的许用功率与QJG-L型减速器相同,见表2-18 QJG-L表

The output torque and high-speed shaft allowed power of QJG-T decelerator and QJG-L decelerator the related values art listed in table 2-18 QJG-L.

选择方法 Selection method

选择原则 Selection principle

- 1) 在选择减速器时,首先要满足工作条件,即高转速,最大齿轮圆周速度,环境温度,转向等。
 - 2) 满足机械强度的要求,如输入轴的功率(或输出轴的转矩),轴伸的最大径向力和瞬时最大转矩等。对于连续使用的减速器还要满足热功率。
 - 3) 满足转速要求,根据原动机的转速和工作机械的要求转速选择最接近的传动比(最好是减速器的实际传动比,如果未给实际传动比用公称传动比代替);一般两者极限偏差2级为±4%,3级为±5%。如果特殊要求,我公司联系特殊配制。
 - 4) 根据主机要求减速器的安装位置,界限尺寸,联接部位,传动性能的要求,确定减速器的结构形式,安装型式和装配形式。
 - 5) 根据输入和输出的联接方式,选择轴端型式。
 - 6) 考虑使用维修方便,选择注油口,排油口的位置,润滑方式,散热等。
- f) the operating condition must be qualified when select decelerator,for example,the high speed rotation,max gear circle velocity,ambient temperature and rotation.
- 2) To meet mechanical intensity ,for example,the input shaft power (or output shaft torque),max radial force of shaft extension and intermittent max torque Aslo the heat power of continuous decelerator.

3) To meet rotating speed ,the most favorable transmission ratio should be selected according to the given rotating speed and required rotating speed (the actual transmission ratio,if not that,nominal transmission ration is favorable).Usually the defference between them is 4%for 2 stage,5%for 3 stage.If there's any special requirement,please contact us.

4) To determine structure mode, installing form and assembling type according to in stalling position,margin size,connecting place and driving property of decelerator.

5) To select connecting mode of input and output,to select shaft edge type.

6) To select oil inlet and outlet position ,lubricating mode and radiating.

选择计算 Selecting calculation

1) QJ型(包括QJ-D/QJG-T,QJ-L)以及ZQA型减速器,用于起重机各机构时,根据GB3811《起重机设计规范》(以下简称《规范》)的规定,起重机机构的工作级别分为M1-M8八种,本手册所列的承载能力为M5工作级别,要用在其它工作级别时应按公式进行折算

$$P_{M5}=P_{M1} \times 1.12^{(i-5)} \text{ KW}$$

式中 P_{M5} — 减速器承载能力表中的高速轴许用功率值(KW);

P_{M1} — 相对M1工作级别的功率值(KW)

i — 工作级别数1-8

2) 起重机各机构疲劳计算的基本载荷 M_{max}

a) 起升和非平衡变幅机构

1) when QJ decelerator (including QJ-D/QJG-T,QJ-L type)and ZQA decelerator are applied in craning equipments,according to GB3811<design stipulation of craning >,there are eight working series M1-M8, the enclised loading capacity is M5. if other series is applied ,the followed formula is applied.

Where, P_{M5} —the hugg-speed sgaft akkiwed powed power in loading capacity table (Kw)

P_{M1} —the powe of M1 series (KW)

i —the working series 1-8

2) the basic leak load of craning M_{max}

3) lofting and unbalanced structure

$$M_{max}=\varphi_1 M_N \quad N_{M1} \quad \varphi_1=1/2(1+\varphi_2)$$

φ_1 —动载系数; φ_2 —load factor

M_N —电动机额定转矩 (Nm); M_N =motor rated torque (Nm)

φ_2 —起升载荷系数, $\varphi_2=1-2$ 当起升速度高,系统刚度大,操作猛时,取值较大值。见《规范》附录B。

φ_2 —lifting load factor, $\varphi_2=1-2$, If lifting speed is high, large ragidity and heavy strike, the larger value is preferable in 《stipulation》 appedix B.

b) 运行和回转机构 operation and back-turning mechanism

$$M_{max}=\varphi_3 \times \varphi_4 M_N$$

式中 where φ_3 —弹性振动增大系数 $\varphi_3=1.5-1.7$ —Stretching vibrant arising factor

φ_4 —刚性动载系数 $\varphi_4=1.2-2.0$ —Rigid loading factor

φ_4 与电动机的驱动特性和计算零件两侧的转动量的比值有关。见《规范》附录B。

The value of B is rekated ti ratio between driving vharacter and moment of inertia,please see appendix P。

平衡变幅机构 Balance changing structure

疲劳计算基本载荷取为该零件承受的等改幅静阻力矩，其它零件取为电动机额定力矩传到该计算零件力矩的1.3~1.4倍。当瞬时最大转矩低于2.7倍的额定转矩时，可以进行静强度校核，当超过此值时，应验算零件强度，或者选大机座号的减速器。

In leak calculation the basic load is determined by loaded resistance torque of the parts, for other parts, the basic load is 1.3-1.4 times of torque from motor rated torque to this related parts. You can check under silent intensity should be checked and larger type of decelerator should be selected.

3. 根据疲劳计算基本载荷和转速可算出该工作级别的功率值 P_M 。

3. The related power of this series can be calculated according to basic leak load and torque.

$$P_M = M_{max} \times n / 9550 (\text{kW})$$

式中 Where n - 减速器输入轴转速 (r/min) n -input shaft rotating speed (r/min)

如果工作级别不是M5，可按式(2-1)换算至M5工作级别的功率 P_{M5} ，然后再根据 P_{M5} 输入转速 n 和公称传动比 i 选择减速器。

If the series is not M5, the series power P_M can be calculated according to formula 2-1, and the decelerator can be selected on P_M , input rotating speed n and nominal transmission ratio i .

选用实例 Selecting example:

1) 一台起重量为32t，跨度为25.5m的桥式起重机，其起升机构功率为60Kw，转速为750r/min，起升速度为8m/min，机构的工作级别为M6，选择减速器（减速器的传动比为40，要求第III种装配型式，齿轮轴端）。

1) bridge crane with weight of 32ton and span of 25.5m, the lifting structure power is 60Kw, the rotating speed is 750r/min, the lifting speed is 8m/min, the working series is M6. the related decelerator should be selected (transmission ratio is 40, the third installing form, gear shaft edge).

电机的额定转矩 Rated torque: $M_n = 9550p/n = 9550 \times 60 / 750 = 764.8 \text{ N} \cdot \text{m}$

根据《规范》附录B，起升载荷分配系数 $\varphi_2 = 1 + 0.71v = 1 + 0.71 \times 8 / 60 = 1.1$ According to 《stipulation》B, lift load factor $\varphi_2 = 1 + 0.71v = 1 + 0.71 \times 8 / 60 = 1.1$

式中 where v - 起升速度(m/s) V -lifting speed (m/s)

动载系数: $\varphi_0 = 1/2(1 + \varphi_2) = (1 + 1.1)/2 = 1.05$ loading factor $\varphi_0 = 1/2(1 + \varphi_2) = (1 + 1.1)/2 = 1.05$

疲劳计算基本载荷 $M_{max} = \varphi_0 m_n = 1.05 \times 764.8 = 803 \text{ N} \cdot \text{m}$

相对M₅工作级别的功率 M_5 's power

$$P_{M5} = M_{max} \times n / 9550 = 803 \times 750 / 9550 = 63 \text{ kW}$$

折算成M₅时的功率 related M₅ power

$$P_{M5} = P_{M5} \times 1.12^{(6-5)} = 63 \times 1.12 = 70.65 \text{ kW}$$

查表2-8，当 $n=710 \text{ r/min}$, $i=40$ 时，高速轴许用功率为78kW，相对的减速器为：

Check table 2-8, if $n=710 \text{ r/min}$, $i=40$ the allowed high-speed shaft power is 78Kw, the related decelerator is :

QJS500-40III C 或 QJS-D500-40III C 型减速器。要求三支点用前者，要求带底座的用后者。

QJS500-40 III C or QJS-500-40 III C the former is for three-point sustaining and later is for machine with stand.

2) 一台双梁门式起重机，其大车运行机构为两套，一套电动机的额定为7.5Kw，转速 $n=1000 \text{ r/min}$ ，工作级别为M7，选择起重机的套式减速器，（传动比为 $i=35.5$ ，第II种装配型式）。

2) a double-door crane, the operating structure is two sets, of which the motor power is 7.5Kw, the rotating speed is $n=1000 \text{ r/min}$, working series is M7, to select a craning set decelerator (transmission ratio of 35.5 the second installing form)

电动机的额定转矩 Motor rated torque

$$M_n = 9550p/n = 9550 \times 7.5 / 1000 = 71.7 \text{ N} \cdot \text{m}$$

疲劳计算基本转矩 basic leale torque

$$M_{max} = \varphi_0 \cdot \varphi_2 \cdot M_n$$

取 $\varphi_0=1.5$, 取 $\varphi_2=1.4$

$$M_{max} = 1.5 \times 1.4 \times 71.7 = 150.57$$

相对M₇工作级别的计算功率 calculated power for M₇ series

$$P_{M7} = M_{max} \times n / 9550 = 150.57 \times 1000 / 9550 = 15.75 \text{ kW}$$

折算成M₅时的功率 related power for M₅

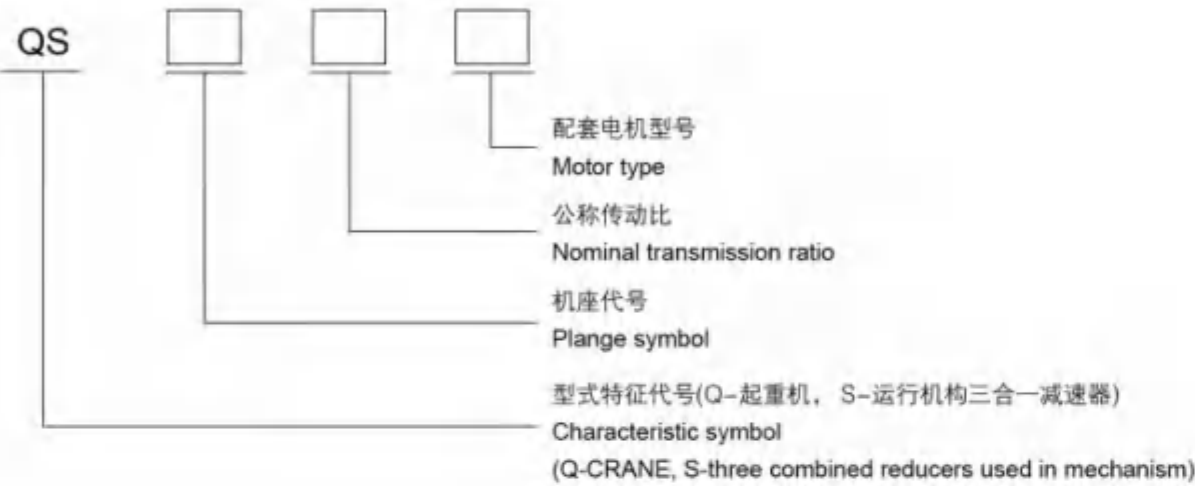
$$P_{M5} = P_{M7} \times 1.12^{(7-5)} = 15.75 \times 1.122 = 19.75 \text{ kW}$$

查表2-18，当 $n=1000 \text{ r/min}$, $i=35.5$ 时，高速轴的许用功率 $P_{M5}=21 \text{ Kw}$ ，相对应的减速器为QJG-T280-355II满足要求。

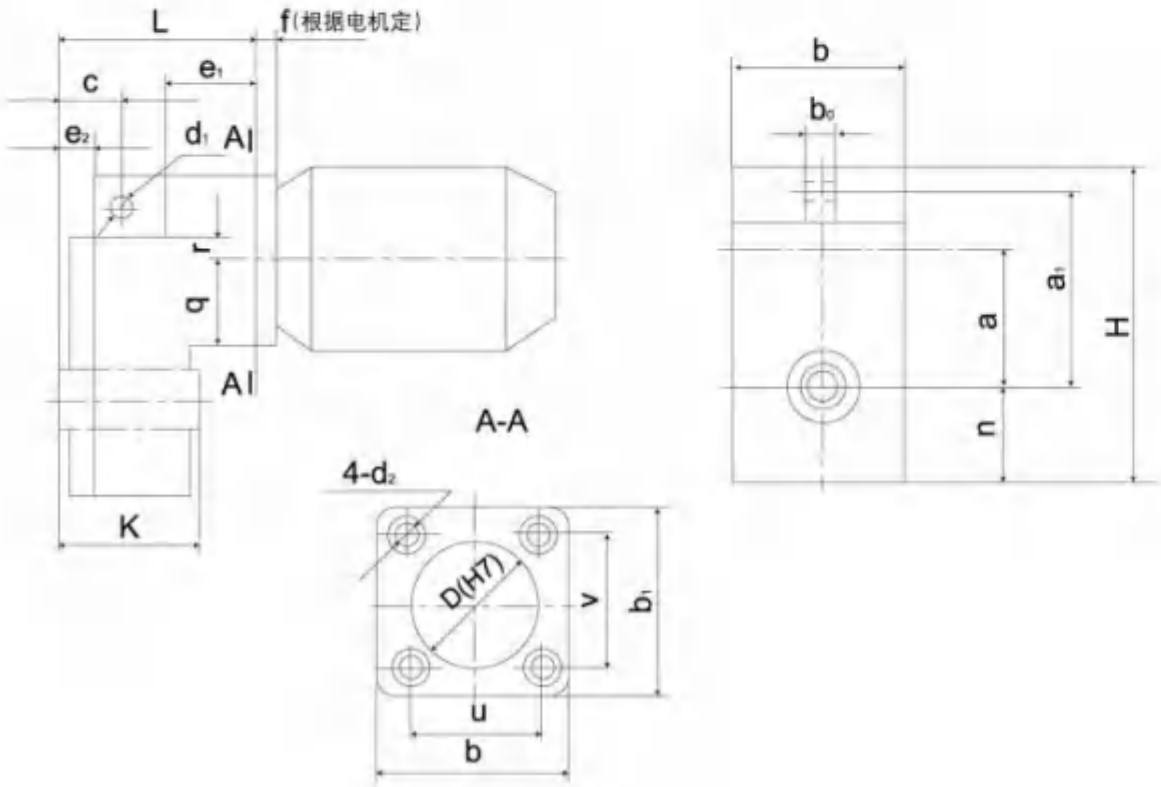
Check table 2-18, when $n=1000 \text{ r/min}$, $i=35.5$, the allowed power of high-speed shaft $P_{M5}=21 \text{ Kw}$, the related reducer QJG-T285-355 II can meets demands.

三合一减速器
THREE-IN-ONE Decelerators

一、标注示例 Symbol sample

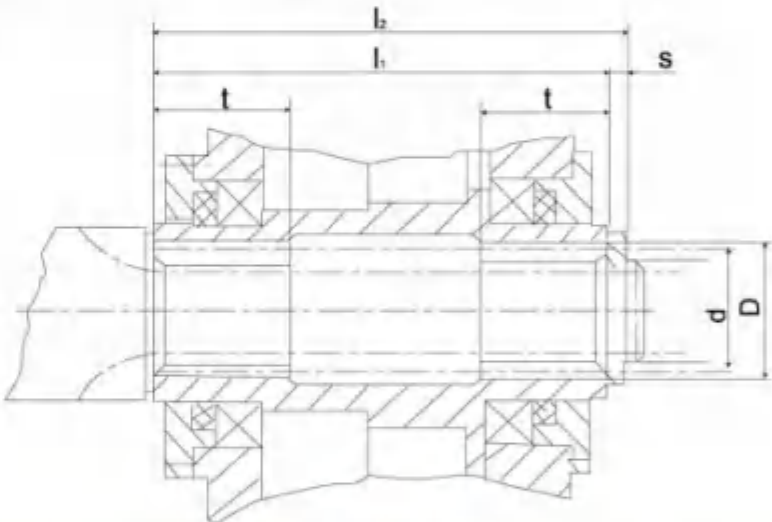


二、QS型外形及安装尺寸表
Outlook and installing size of reducer



机座代号 pedestal type	a	H	a ₁	b	b ₀	b ₁	c	D (H7)	d ₁	d ₂	L	K	e ₁	e ₂	n	q	r	u	v	重量(kg) weight
06	125	285	175	168	20	160	67	Ø148 Ø14	M10	215	161	80	42	80	70	29	128	120	30	
08	160	358	230	210	20	200	82.75	Ø170 Ø20	M10	235.75	188	73.5	47.75	96	100	40	154	154	45	
10	200	452	297	274	25	250	88	Ø226 Ø22	M12	261	208	84	53	127	125	51	210	186	75	
12	250	566	360	346	30	312	92.25	Ø286 Ø22	M16	307.75	255	88	61.25	160	156	55	274	240	145	
16	315	705	440	400	40	340	115.75	Ø280 Ø40	M16	331.25	264	100	65.75	220	170	75	320	260	210.0	
20	400	820	525	500	50	340	127.75	Ø280 Ø40	M16	385.25	318	104	67.75	250	170	80	320	260	320	
25	500	1050	667	620	70	560	137.75	Ø320 Ø40	M20	429.75	356.5	112	75.75	310	280	95	380	360	780	

三、内花键轴及联接尺寸表
inner spline axle and connection size



机座代号 pedestal type	花键副 spline size	内花键 大径D inner spline diameter	外花键 大径d outer spline diameter	l ₁	l ₂	s	t
06	INT/EXT21Z x 2m x 30Px6H/6h GB3478.1-83	45	44	161	162.5	1.5	50
08	INT/EXT24Z x 2m x 30Px6H/6h GB3478.1-83	51	50	188	189.5	1.5	55
10	INT/EXT31Z x 2m x 30Px6H/6h GB3478.1-83	65	64	208	210	2	60
12	INT/EXT27Z x 3m x 30Px6H/6h GB3478.1-83	85.5	84	255	257.5	2.5	65
16	INT/EXT35Z x 3m x 30Px6H/6h GB3478.1-83	109.5	108	264	266.5	2.5	75
20				318	320.5		
25				356.5	359		

四、减速器的许用功率及输出扭矩表 allowing power and output torque of reducer

输入轴转速为1400r/min, 工作级别M₀ Annotation: input velocity is 1400r/min, actuating type M₀

减速器 型式 Type	06	08	10	12	16	20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500
输入轴许用功率KW input axle allowing power	4.473	3.956	3.586	3.330	3.061	2.708	2.422	2.134	1.831	1.694	1.516	1.264	1.204	1.080	0.970	0.766	0.690	0.647		
输出扭矩N·M output turning moment	418	438	44	442	454	455	462	458	447	452	459	437	470	457	470	426	420	436		
输入轴许用功率KW input axle allowing power	6.220	5.793	5.575	5.132	4.908	4.448	4.215	3.981	3.744	3.211	3.046	2.588	2.274	2.017	1.897	1.551	1.450	1.248		
输出扭矩N·M output turning moment	609	655	699	708	753	756	801	844	892	850	918	879	887	891	899	848	908	842		
输入轴许用功率KW input axle allowing power	12.141	11.322	10.480	10.051	9.176	8.731	7.825	7.557	6.902	6.211	5.352	5.065	4.316	3.923	3.641	3.036	2.827	2.500		
输出扭矩N·M output turning moment	1145	1225	1307	1383	1391	1468	1461	1624	1687	1702	1650	1776	1695	1650	1722	1644	1749	1653		
输入轴许用功率KW input axle allowing power	31.937	29.857	28.313	25.387	22.821	21.582	19.250	17.905	15.292	13.477	12.050	10.847	9.435	8.421	7.948	6.721	5.621	5.19		
输出扭矩N·M output turning moment	2980	3295	3482	3514	3573	3602	3598	3803	3707	3775	3645	3703	3647	3667	3696	3548	3386	3507		
输入轴许用功率KW input axle allowing power	54.710	48.439	45.267	42.088	38.914	34.975	30.314	27.475	25.824	22.935	19.854	19.558	16.301	15.133	12.965	10.989	9.215	8.603		
输出扭矩N·M output turning moment	5288	5254	5503	5751	5973	6062	5955	6112	6165	6269	6117	6174	6275	6340	6168	5907	5742	5795		
输入轴许用功率KW input axle allowing power	101.5	100	96	91	81	71	67	59	51	41	37	35	27	25	22	17	16	13		
输出扭矩N·M output turning moment	9684	9164	11549	12378	12362	12386	12361	12235	12065	10888	11163	10498	10455	10622	9820	9797	8654			
输入轴许用功率KW input axle allowing power	154	143	132	121	113	90	87	82	73	69	61	57	46	41	41	37	32	29		
输出扭矩N·M output turning moment	14700	15319	15925	16513	7304	16831	17270	17257	17593	18733	19086	19097	18146	18241	19526	20643	20014	20478		

注: 配套电机功率: N_{in} (容许功率 ~ 2-2.5。 Notes: the mate motor power N_{in} (allowed power ~2-2.5)

输入轴转速为1400r/min, 连续工作型。 Annotation: input axle velocity is 1400r/min for cotinuous actuating type

减速器 型式 Type	06	08	10	12	16	20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500
输入轴许用功率KW input axle allowing power	3.17	2.78	2.49	2.29	2.08	1.82	1.62	1.41	1.19	1.10	0.97	0.83	0.80	0.67	0.60	0.47	0.42	0.39		
输出扭矩N·M output turning moment	296	307	308	305	309	306	309	302	291	294	293	277	296	283	289	260	259	262		
输入轴许用功率KW input axle allowing power	4.39	4.06	3.85	3.50	3.32	2.99	2.81	2.60	2.45	2.07	1.94	1.63	1.43	1.26	1.18	0.95	0.88	0.75		
输出扭矩N·M output turning moment	430	459	482	483	510	509	533	522	583	555	586	556	558	557	557	522	550	506		
输入轴许用功率KW input axle allowing power	8.63	7.91	7.29	6.96	6.28	5.89	5.26	5.19	4.55	4.04	3.44	3.21	2.71	2.43	2.24	1.85	1.70	1.49		
输出扭矩N·M output turning moment	814	856	910	967	951	991	982	1077	1112	1106	1059	1124	1064	1023	1059	1004	1053	985		
输入轴许用功率KW input axle allowing power	23.28	21.50	20.07	17.82	15.84	15.18	13.05	11.53	10.18	8.88	7.83	7.00	6.01	5.23	4.95	4.13	3.89	3.13		
输出扭矩N·M output turning moment	2172	2372	2469	2467	2480	2471	2439	2548	2469	2488	2369	2388	2323	2318	2303	2178	2056	2118		
输入轴许用功率KW input axle allowing power	33.90	34.05	31.46	28.91	23.68	23.57	20.13	18.16	16.99	15.10	12.91	12.06	10.43	9.56	8.06	6.85	5.74	5.24		
输出扭矩N·M output turning moment	3760	3694	3825	3951	4050	4086	3990	4040	4057	4125	3976	4013	4016	4007	3843	3717	3577	3529		
输入轴许用功率KW input axle allowing power	60.83	60	57.6	54.6	48.6	42.6	40.2	35.4	30.6	24.6	22.2	21	16.2	15	13.2	10.2	9.6	7.8		
输出扭矩N·M output turning moment	5810	5498	6929	7426	7440	7417	7431	7416	7341	7239	6532	6698	6298	6273	6397	5352	5878	5192		
输入轴许用功率KW input axle allowing power	92.4	85	79	72	67	57	52	49	43	41	36	34	27	24	24	22	19	17		
输出扭矩N·M output turning moment	8820	9191	9555	9907	10382	10098	10332	10354	10555	10239	11438	11458	10887	10944	11715	12385	12008	12288		

注: 配套电机功率: N_{in} (容许功率 ~ 2-2.5。 Notes: the mate motor power N_{in} (allowed power ~2-2.5)

QSC垂直式三合一减速器

QSC Series vertical "Three-in-one" Decelerators

QSC系列“三合一”减速机为垂直轴式减速机，主要用于门式起重机运行机构。两系列产品亦可用于运输、冶金、石油、化工、建筑、铁路、港口、国防工程、轻纺工业等各种机械设备中的传动机构。

The QSC series "THREE-IN-ONE" speed-damper machine is of the vertical-axis type in the operation unit of cranes. The products of QS and QSC can also be used as drive mechanism of machine in areas of transport, metallurgy, mining, petroleum, chemical industry, building, railing defence and textile industry.



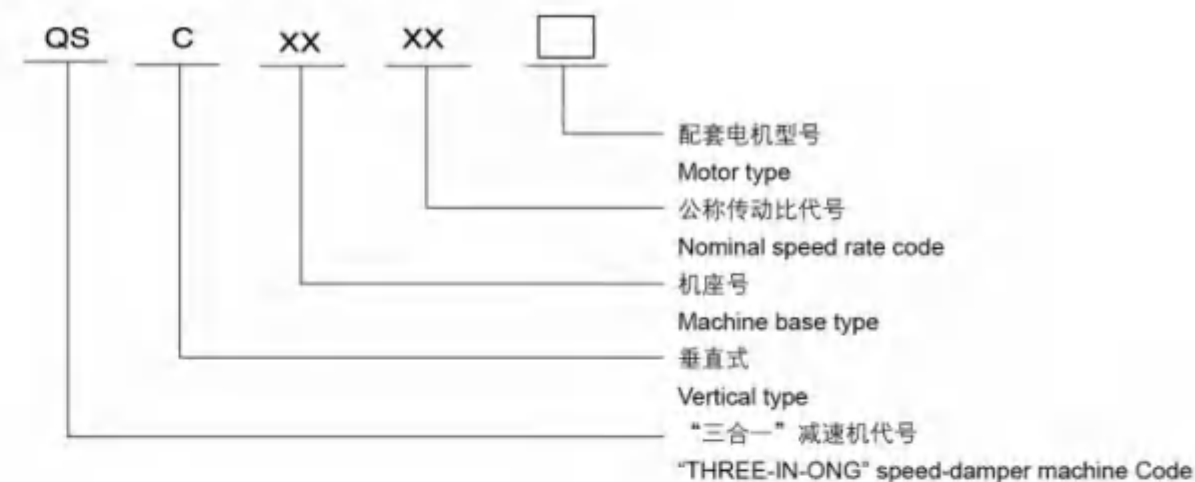
一、适用条件 Specifications

1. 齿轮圆周速度 $\leq 20\text{m/s}$
2. 高速轴转速 $\leq 1500\text{mr/min}$
3. 工作环境温度为 $-40^{\circ}\text{C} \sim +45^{\circ}\text{C}$
4. 可正/反两方向运转
1. Gear circle velocity $\leq 20\text{m/s}$
2. High speed shaft rotation velocity $\leq 1500\text{mr/min}$
3. Enviromental temperature $-40^{\circ}\text{C} \sim +45^{\circ}\text{C}$
4. Progressive and retrogressive rotation.

二、主要特点 main features

1. 配套功率范围大，减速范围广。
2. 装配及调整快速简单。
3. 输出轴可两面装配，用于单独驱动或集中驱动。
4. 结构紧凑、美观、体积小、重量轻。
5. 运转平稳、噪音低。
1. Big power and speed damping range.
2. Assemble and adjust easily.
3. The output shaft assimbles in two dircetions, and used to drive singles or units.
4. Compact structure and small volume with light weight.
5. Operate smoothly with low noise

型号说明 THREE-IN-ONE Decelerators



外型及联接尺寸 shape and size of connection

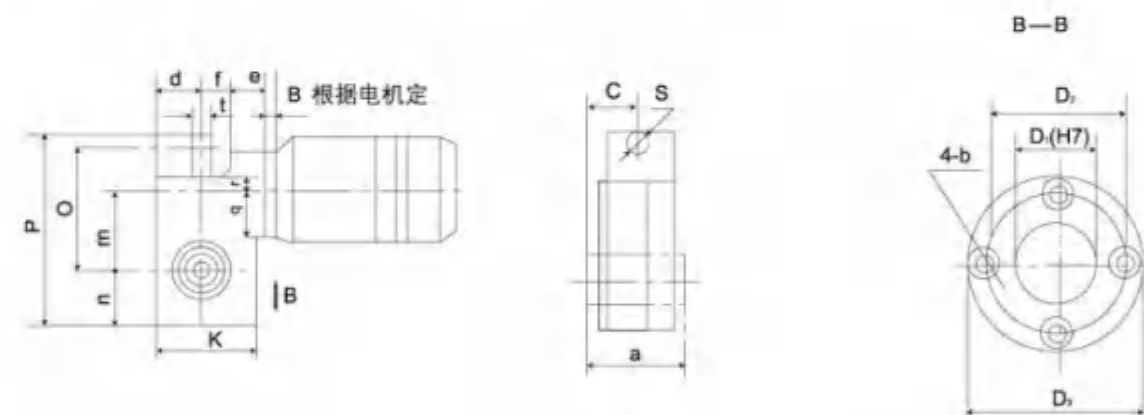


图6 figure 6

机座号 Machine base type	a	c	d	f	k	m	n	o	p	q	r	s	t	D1 (H7)	D2	D3	b	e	重量 Weight kg
QSC10	208	104	137	125	274	225	127	325	490	86	56	Ø22	26	Ø132	Ø152	Ø172	M12	40	75
QSC12	255	127.5	173	150	346	280	160	406	612	101.5	70	Ø26	36	Ø160	Ø180	Ø203	M16	45	140
QSC16	264	132	200	180	400	355	220	485	760	104	85	Ø34	46	Ø160	Ø180	Ø208	M16	55	210
QSC20	318	159	250	220	500	470	250	625	930	140	100	Ø40	50	Ø210	Ø240	Ø280	M16	55	350
QSC25	356.5	178.25	310	275	620	580	310	777	1160	180	125	Ø40	70	Ø240	Ø280	Ø320	M20	75	820

注：表中重量为不含电动机和制动器的减速器的重量。

四、输入轴容许功率及输出扭矩

Permissible Power of the input shaft and the output torque

输入轴转速1400r/min,工作级别为M₆

Rotation velocity of the input shaft is 1400r/min,working status is M₆

容许功率: kW(Allowed Power)

输出扭矩: N.mThe output torque

减速器型号 Reducer type		输入轴转速 Input shaft speed n (r/min)	22	30	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	
QSC10	225	容许功率 permissible power the output torque	9.176	8.371	7.825	7.825	6.902	6.211	5.353	5.065	4.316	3.923	3.641	3.036	2.827	2.500	2.28	1.89	1.76	1.50
		输出扭矩 The output torque	1391	1468	1461	1624	1687	1651	1776	1695	1650	1722	1644	1749	1653	1571	1685	1576	1587	1556
QSC12	280	容许功率 permissible power the output torque	22.821	21.58	19.25	17.90	15.29	13.47	12.05	10.84	9.43	8.42	7.04	6.72	5.62	5.19	4.96	4.20	3.51	3.24
		输出扭矩 The output torque	3573	3602	3595	3803	3703	3775	3645	3703	3647	3667	3697	3550	3387	3507	3666	3485	3277	3361
QSC16	355	容许功率 permissible power the output torque	38.91	34.97	30.31	27.41	25.82	22.95	19.85	19.55	16.30	15.13	12.96	10.98	9.21	8.60	8.10	6.86	5.76	5.38
		输出扭矩 The output torque	5793	6.62	5955	6111	6165	6269	6117	6179	6275	6340	6168	5967	5742	5795	2967	5693	5377	5931
QSC20	470	容许功率 permissible power the output torque	61	71	67	59	51	41	37	35	27	25	22	17	16	13	12	10.6	9.5	8.12
		输出扭矩 The output torque	12001	12362	12386	12361	12235	12065	10888	11763	10498	10455	10662	8920	9797	8654	8963	8689	8963	8512
QSC25	580	容许功率 permissible power the output torque	86	89	82	75	70	60	54	51	45	43	38	35	28	27	25	23	20	18
		输出扭矩 The output torque	14100	15319	15825	16513	17304	15390	17220	17257	17393	18733	19088	19037	19648	18741	19523	20643	20014	20478

注: 配套电机功率: $N_n < \text{容许功率} \div 2 \sim 2.5$ Notes: the mate motor power $N_n < \text{allowed power} \div 2 \sim 2.5$

输入轴转速1400r/min,连续工作型

Rotation velocity of input shaft is 1400r/min,Continuous working type

容许功率: kW(Allowed Power)

输出扭矩: N.mThe output torque

减速器型号 Reducer type	输入轴转速 Input shaft speed n (r/min)	容许功率 Permissible power the output torque	22	30	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	
QSC10	225	容许功率 permissible power the output torque	6.28	5.89	5.26	5.19	4.55	4.04	3.44	3.21	2.71	2.43	2.24	1.85	1.70	1.49	1.40	1.16	1.06	0.93
		输出扭矩 The output torque	951	991	982	1077	1112	1106	1059	1124	1064	1023	1059	1004	1053	985	1034	962	989	984
QSC12	280	容许功率 permissible power the output torque	15.84	15.18	13.05	11.53	10.18	8.88	7.83	7.00	6.01	5.32	4.95	4.13	3.89	3.13	3.09	2.58	2.43	1.96
		输出扭矩 The output torque	2480	2471	2439	3548	2469	2488	2369	2388	2323	2318	2303	2178	2065	2118	2283	2141	2268	2033
QSC16	355	容许功率 permissible power the output torque	23.68	23.57	20.31	18.16	16.99	15.10	12.91	12.06	10.43	9.56	8.08	6.85	5.74	5.24	5.05	4.28	3.59	3.28
		输出扭矩 The output torque	4050	4086	3990	4040	4057	4125	3976	4013	4016	4007	3843	3717	3577	3529	3732	3552	3351	3402
QSC20	470	容许功率 permissible power the output torque	48.6	42.6	40.2	35.4	30.6	24.6	22.2	21	16.2	15	13.2	10.2	9.6	7.8	7.2	6.36	5.7	4.87
		输出扭矩 The output torque	7440	7417	7431	7416	7341	7239	6532	6898	6298	6273	6397	5352	5878	5912	5373	5333	5377	5107
QSC25	580	容许功率 permissible power the output torque	57.6	53.4	49.1	45	42	36	32.4	30.6	27	25.3	21.8	21	16.3	15	15	13.6	12	10.8
		输出扭矩 The output torque	8820	9198	9555	9907	10882	10068	10332	10354	10345	11239	11238	11439	10887	10844	11715	12853	12008	12288

注: 配套电机功率: $N_n < \text{容许功率} \div 2 \sim 2.5$ Notes: the mate motor power $N_n < \text{allowed power} \div 2 \sim 2.5$

输出花键轴的联接

The output-spline connection

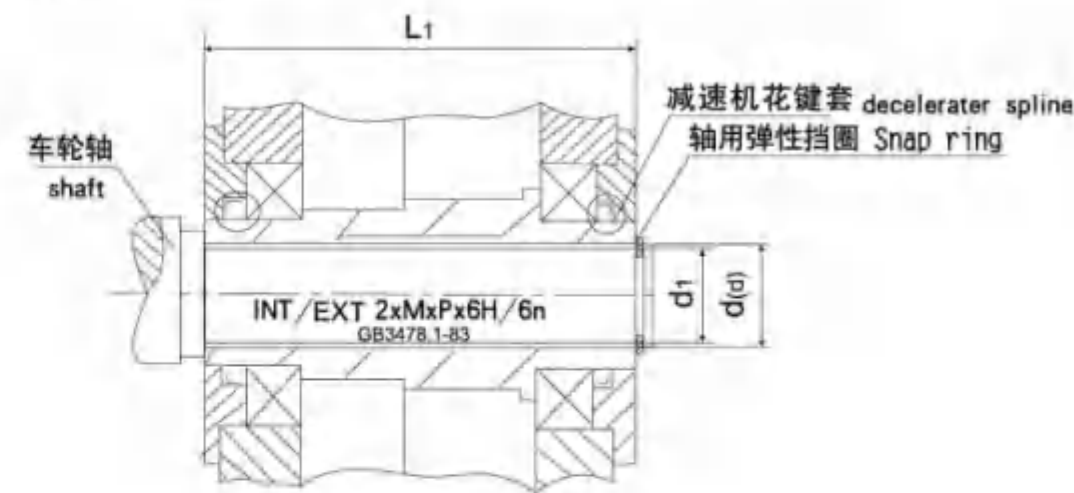


图7 figure 7

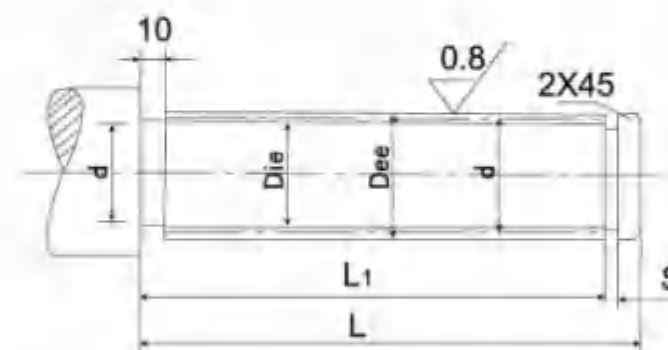


图8 调质处理HB245-280 材料40Cr

figure 8 Heat treatment HB245-280 Material 40Cr

减速器型号 Reducer type	花键轴 Spline size	中间花键轴 The big diameter on the spline	外花键轴 The small diameter on the spline	L	L1	d	S
QSC10	INT/EXT31Z x 2M x 30Px6H/6h GB3478.1-83	ø 64 -0.10 -0.20	ø 59 -0.10 -0.15	215	208	ø 62	2.2
QSC12	INT/EXT27Z x 3M x 30Px6H/6h GB3478.1-83	ø 84 -0.10 -0.25	ø 76.5 -0.10 -0.18	262	255	ø 81	2.7
QSC16	INT/EXT35Z x 3M x 30Px6H/6h GB3478.1-83			272	264		
QSC20	INT/EXT35Z x 3M x 30Px6H/6h GB3478.1-83	ø 108 -0.15 -0.30	ø 100.5 -0.10 -0.20	326	318	ø 105	3.2
QSC25	INT/EXT35Z x 3M x 30Px6H/6h GB3478.1-83			365	356.5		

QSC系列“三合一”减速机配套电机主要技术参数
Specifications for the motors of the QSC series
“THREE-IN-ONE” Speed-damper machine

型号 Model	功率 Power kW	额定转速 Rated speed r/min	额定转矩 Rated Torque Nm	额定电流 Rated Current A	效率 Efficiency %	功率因数 Power factor cosφ	防护等级 Protection grade	重量 Weight kg	外形尺寸 Dimensions mm	安装尺寸 Mounting dimensions mm	冷却方式 Cooling method	备注 Remarks
ZDR12 4	1.5	1350	4.5	3	0.7	0.75	B	10.8	131	9.5	25%	218 X 488
ZDR112 L ₁ 4	2.2	1350	5.6	3	0.79	0.8	F	15.7	131	12.0	40%	218 X 507.5
ZDR112 L ₂ 4	3.0	1350	7.5	3	0.8	0.8	F	19.6	131	16.0	40%	218 X 507.5
ZDR125 4	4.6	1380	13	2.5	0.73	0.64	F	35.2	175	18.0	40%	249 X 52.5
ZDR140 4	8.0	1380	25.5	2.5	0.77	0.63	F	62.0	168	31.0	40%	274 X 297
YZRE112 M ₁ 4	0.8	1400	2.4	2.5	0.65	0.78	F	27	100	8	40%	250 X 513
YZRE112 M ₂ 4	1.5	1410	4.5	2.5	0.68	0.79	F	30	100	12.5	40%	250 X 513
YZRE112 M ₃ 4	2.2	1410	6	2.5	0.72	0.76	F	30	132	12.6	40%	250 X 513
YZRE132 M ₁ 4	3.7	1410	9.2	2.7	0.77	0.77	F	50	187	14.5	40%	300 X 548
YZRE132 M ₂ 4	5.5	1410	15	2.7	0.77	0.78	F	50	139	25.7	40%	300 X 598
YZRE132 M ₃ 4	7.5	1420	17	3	0.80	0.82	F	50	185	26.5	40%	300 X 618
YZRE160 M ₁ 4	7.5	1420	17	3	0.80	0.82	F	80	185	26.5	40%	350 X 667
YZRE160 M ₂ 4	11	1420	24.5	3	0.82	0.825	F	80	252	27.6	40%	350 X 712
YZRE160 L 4	15	1420	33	3	0.85	0.825	F	80	218	46	40%	350 X 782
ZDY ₂₁ 4	0.8	1380	2.4	2.51	0.7	0.72	B	8.036				217 X 329
ZDY ₂₂ 4	1.5	1380	4.3	2.5	0.72	0.74	B	19.6				235 X 355
YEJ80 4	0.75	1500	2.0		0.75	0.78	F	10				200 X 385
YEJ90L 4	1.5	1500	3.6		0.78	0.82	F	20				200 X 425
YEJ100L ₂ 4	3	1500	6.65		0.825	0.83	F	38				250 X 465
YEJ112M 4	4	1500	8.6		0.84	0.84	F	50				250 X 495
YEJ123S 4	5.5	1500	11.5		0.845	0.87	F	95				250 X 575
YEJ132M 4	7.5	1500	15.5		0.865	0.86	F	95				300 X 620
YEJ160M 4	11	1500	22		0.875	0.86	F	190				350 X 710
YEJ160L 4	15	1500	30		0.88	0.86	F	190				350 X 755

注：1. 额定电压为380伏，频率50赫兹。 Note: 1. rated voltage is 380v and frequency 50HZ.

ZQ(H)系列圆柱齿轮减速器
ZQ(H)Cylindrical Gear Decelerators

ZQ(H)型减速器主要用于起重、矿山、通用化工、纺织、轻工等行业，其适用条件如下：

减速器齿轮传动圆周速度不大于4米/秒

减速器高速轴的转速不大于1500转/分

减速器用于正反双向运转。当带逆止器时，以正对输出轴端看的方向为准。

减速器工作环境温度为-40℃到+40℃

减速器有九种传动比，九种配置型式和三种低速轴轴端型式。



The ZQ(H) type reducers are mainly applied to craning, mining, general chemistry, Textiling and light industry. The applicable conditions are as follows.

The gear transmission circle velocity no more than 4m/s.

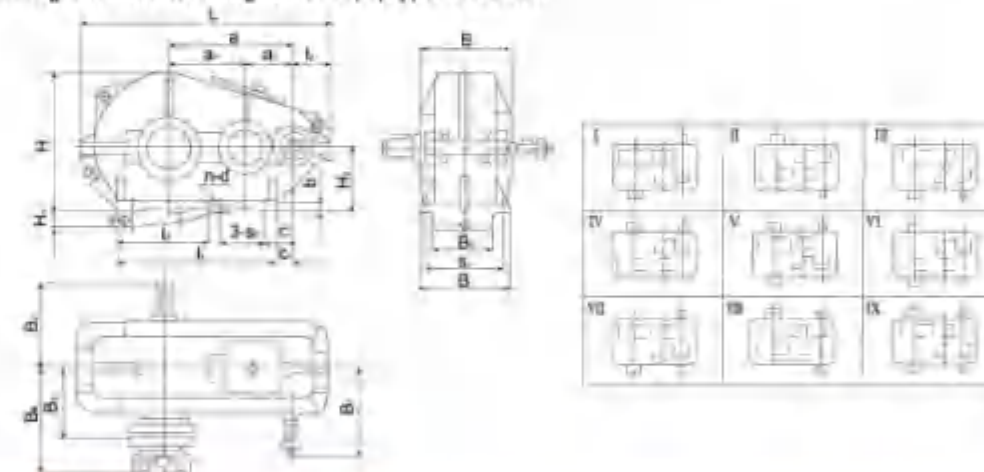
The wheeling speed of high-speed axle no more than 1500r.p.m.

The actuating temperature ranging from -40℃ to +40℃.

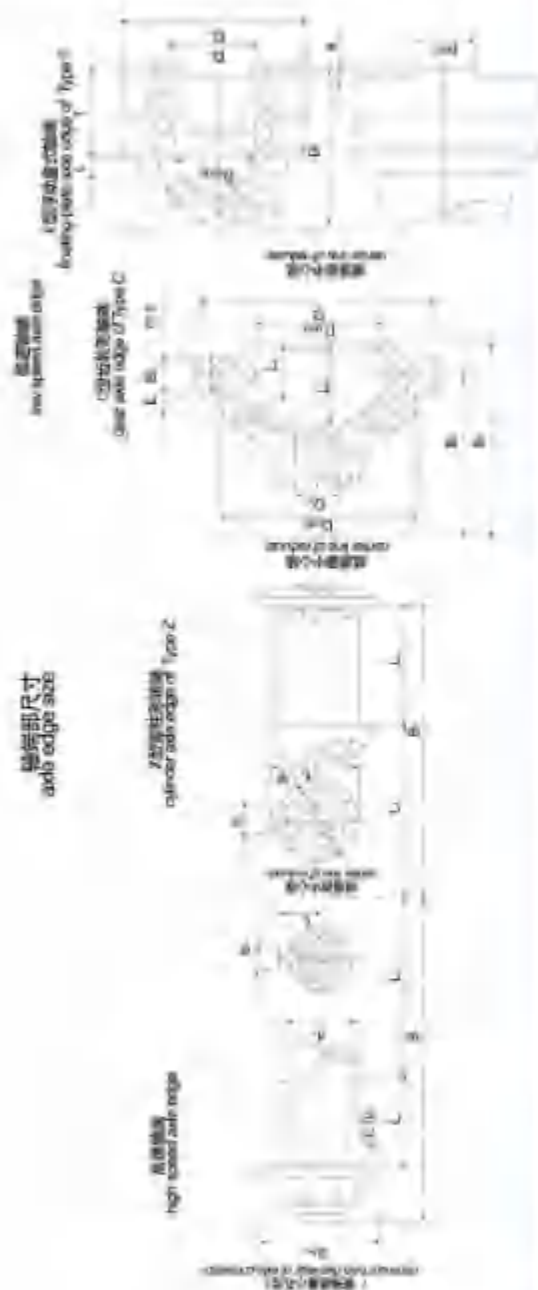
The reducer being applied to right and reverse direction 9transmission ratio, 9 installing modes and 3 low-speed axle edge types.

ZQ(H) 型减速器外形、尺寸及装配型式

Outlook assembling size and installing form ZQ(H) type reducers.



型号 Type	功率 Power			效率 Efficiency	额定转矩 Rated Torque			外形尺寸 Dimensions				重量 Weight				冷却方式 Cooling Method				备注 Remarks				
	P ₁	P ₂	P ₃		L	B	H	高 高 High dotted gate		低 低 Low solid gate		L ₁	L ₂	B ₁	B ₂	C ₁	C ₂	冷却 冷却 Cool Cooling			冷却 冷却 Cool Cooling	冷却 冷却 Cool Cooling		
								B ₁	B ₂	B ₁	B ₂							S ₁	S ₂					
ZQH25 ZQ25	250	100	150	0 160-1.4	540	230	325	200	220	170	164.5	345	101	-	-	-	20	80	28	235	190	17	4	100
ZQH35 ZQ35	350	150	200	0 200-1.4	730	290	405	260	250	222	214	470	132	-	-	-	25	100	40	310	250	17	4	200
ZQH40 ZQ40	400	150	250	0 250-1.4	826	310	490	270	305	250	234	490	133	-	-	-	25	110	80	370	270	17	4	259
ZQH50 ZQ50	500	200	300	0 300-1.5	986	350	590	330	325	290	270	620	148	-	-	-	25	130	80	240	310	17	6	390
ZQH65 ZQ65	650	250	400	0 320-1.5	1278	470	700	430	430	370	342	830	183	495	318	95	35	160	85	215	410	25	8	880
ZQH75 ZQ75	750	300	450	0 320-1.5	1448	510	745	450	450	410	362	1020	207	620	362	130	35	155	55	275	450	25	8	1100
ZQH85 ZQ85	850	350	500	0 400-1.6	1632	580	875	510	525	480	403	1100	236	610	418	105	40	155	75	300	520	32	8	1500
ZQH100 ZQ100	1000	400	600	0 400-1.6	1896	660	965	550	605	495	507	1350	257	870	478	200	40	200	100	350	590	32	8	2230



减速器型号	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1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ZQ、ZQH型减速器容许输入功率

Allowable Input Power for Type ZQ, ZQH Decelerator

		ZQ 100 120 160 200 250 315 400 500 630 800 1000 1250 1600 2000 2500 3150 4000 5000 6300 8000 10000										ZQH 100 120 160 200 250 315 400 500 630 800 1000 1250 1600 2000 2500 3150 4000 5000 6300 8000 10000									
		输入轴转速 (rpm) Input speed (rpm)																			
48.57	轻 Light	20.5	23.5	28.5	33	36.5	32	40	51	58	65	44	55	73	89	75	94	117	140		
	中 Middle	17.9	20.5	25	28.5	32	28	34.5	44	51	56	38.5	47.5	63	78	65	82	104	120		
	重 Heavy	15.8	17.4	21	24.5	27	23.5	29.5	37	43	48	32.5	40.5	54	66	56	69	88	102		
	超重 Overweight	6.7	7.7	10.1	12.7	15.2	9.5	11	14.5	18.1	21.5	13.1	16.2	21.3	24.6	22.5	26.1	34.5	43		
40.17	轻 Light	26	30	36	41	44.5	38.5	47.5	62	73	79	53	66	86	105	91	112	146	170		
	中 Middle	22.5	26	31.5	35.5	38.5	33.5	41	54	64	69	46	57	75	91	79	98	127	150		
	重 Heavy	19.2	22	26.5	30.5	33	28.35	35	46	54	59	39	48.5	64	77	67	83	108	127		
	超重 Overweight	7.7	9.2	12.3	15.5	18.4	11	13.1	17.5	22	26.5	14.7	17.9	24	30	26	31.5	41.5	52		
31.5	轻 Light	29.5	33	40.5	45.5	48.5	51	60	72	80	86	73	88	115	127	121	144	170	190		
	中 Middle	25.5	29	33.5	39.5	42	44	52	66	70	75	63	77	100	111	106	124	148	164		
	重 Heavy	21.5	24.5	30	33.5	36	37.5	44.5	53	59	63	54	65	85	95	89	105	126	139		
	超重 Overweight	10.3	12.8	17	21.5	25.5	14.5	18.2	23.8	30.5	36.5	20	25	33	41.5	35	43.5	58	72		
23.34	轻 Light	42	47.5	55	61.5	69	70	84	97	109	120	94	116	148	172	166	196	235	255		
	中 Middle	36.5	41	48	53.6	60	61	73	85	95	104	82	101	129	150	144	171	205	220		
	重 Heavy	31	35	40.5	46.5	51	52	62	72	80	89	69	86	110	128	122	145	173	189		
	超重 Overweight	13.8	17.4	23	29	34.5	19.5	24.5	35	41	49	27.5	33.5	45	56	47	58.5	78	98		
20.49	轻 Light	48.5	55	64	73	70.5	78	95	108	123	135	108	131	162	196	185	225	255			
	中 Middle	42	47.5	56	63.5	80	68	83	94	108	118	94	114	141	171	161	196	220			
	重 Heavy	35.5	40.5	47	54	60	58	70	80	92	100	80	97	120	145	137	166	188			
	超重 Overweight	15.8	18.5	26.5	33	39.5	22.5	28	37.5	46.5	56	31	38.5	51	64	53	66	89			
15.75	轻 Light	55	60	69	79	85	96	107	122	138	150	144	174	193		225	255	290			
	中 Middle	47.5	53	60	68.5	74	84	93	106	120	130	125	151	168		198	220	250			
	重 Heavy	40	44.5	51	58	53	71	79	90	102	111	106	128	143		168	188	215			
	超重 Overweight	22	27.5	37	46	50	31.5	35	52	65	71	43	54	72		74	92	113			
12.64	轻 Light	65	71	85	92		115	127	149	162		172	200	236		270	305				
	中 Middle	57	62	73	80		100	110	130	142		150	174	205		235	260				
	重 Heavy	48	52.5	62.5	68		85	94	110	120		127	148	174		200	220				
	超重 Overweight	27.5	35	46	50		39	48.5	59	74		53.5	67	82		92	105				
10.35	轻 Light	75	84	95	102		129	147	168			202	236			305	350				
	中 Middle	65	73	83	87.5		112	128	146			176	205			265	305				
	重 Heavy	55	62	70	74		95	109	124			149	174			225	260				
	超重 Overweight	33.5	42	50.5	53.5		47.5	60	72			66	75			113	129				
8.23	轻 Light	86	95	106			151	168				242	264			355					
	中 Middle	75	83	90			131	146				210	230			310					
	重 Heavy	63.5	70	76			111	124				178	195			260					
	超重 Overweight	42	43	64			60	68				83	94			129					

ZQ、ZQH型减速器轴端容许载荷

Allowed load for shaft end of type ZQ, ZQH decelerator

		ZQ 100 120 160 200 250 315 400 500 630 800 1000 1250 1600 2000 2500 3150 4000 5000 6300 8000 10000										ZQH 100 120 160 200 250 315 400 500 630 800 1000
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续表 Table continued

Service type		6350	6250	6200	6000	5900	9500	8900	8700	8500	8300	12280	12180	11840	11640	20900	20600	20000	19500
48.57																			
40.17																			
31.5																			
23.34	各种工作类型	5900	5550	5500	4650	4300	8300	8100	7900	7500	6900	11340	10940	10560	10100	19000	18200	17200	15500
20.49		5650	5250	4600	3750	4000	8200	8000	7500	7000	6350	11140	10800	10300	9820	18600	18100	15900	
15.75	Service type	4600	4300	3850	3500	3200	7550	7000	7000	5600		10480	10120	9560		15000	14700	12900	
12.64		4100	3800	3400	3050		6750	6200	5600			10160	8260	9000		14200	12500		
10.35		3700	3400	2900	3200		6000	5450				8900	8100			12000	11000		
8.23		3350	2900	2700			5200	4700				7680	6900			10700	9540		
Service type																			
48.57	轻-重 Light - Heavy	11400	11000	9600	9050	8650	10500	9750	8850	8150	7900	15000	13700	12400	11900	17600	16400	15000	13400
	超-重 Overweight	8900	8900	7600	7100	6700	8750	8150	7500	6900	6550	12150	11300	10300	9650	14500	13700	12400	11700
40.17	轻-重 Light - Heavy	10600	10000	8950	8650	8200	9900	9100	8250	7850	7400	14100	13100	11900	11500	16700	15100	14100	13000
	超-重 Overweight	8400	7950	7150	6800	6400	8250	7650	7000	6550	6150	11500	10800	9800	9200	13700	12700	11700	10800
31.5	轻-重 Light - Heavy	9700	9200	8500	7950	7500	9000	8300	7650	7400	6800	12500	11800	10800	10400	15100	14100	13100	12200
	超-重 Overweight	7700	7250	6350	6150	5800	7550	7050	6400	5900	5650	10500	9600	8900	8350	12600	11700	10500	10000
23.34	轻-重 Light - Heavy	8800	8400	7650	7200	6800	8100	7550	6950	6500	6250	11500	10800	9800	9350	13500	12700	11600	11200
	超-重 Overweight	7000	6550	6000	5600	5300	6850	6400	5850	5400	5100	9550	8950	8150	7600	11500	10700	9700	9000
20.49	轻-重 Light - Heavy	8600	8050	7350	6900	6550	7700	7200	6650	6200	5950	11000	10400	9400	9000	12800	12100	11100	
	超-重 Overweight	6850	6350	5700	6400	5000	6600	6150	5600	5200	4900	9150	8600	7800	7250	10800	9700	9250	
15.75	轻-重 Light - Heavy	7850	7600	6800	6400	6200	7100	6700	6200	5800		1000	9300	8800		11500	11300	10500	
	超-重 Overweight	6250	5700	5200	5150	4600	6000	5550	5050	4700		8350	7750	7100		10000	9150	8500	
12.64	轻-重 Light - Heavy	7300	6900	6350	5950		6600	6200	5750			9300	8700	8000		11200	10500		
	超-重 Overweight	5750	5250	5050	4500		5600	5200	4700			7800	7250	6800		9100	8950		
10.35	轻-重 Light - Heavy	6900	6500	6000	5300		6250	5850	5450			8700	8400			10500	9800		
	超-重 Overweight	5400	5200	4600	4250		5200	4850	4400			7300	6950			8700	8250		
8.23	轻-重 Light - Heavy	6450	6300	5800			5850	5500				8100	8000			10400			
	超-重 Overweight	5000	4850	4250			4850	4500				6800	6500			8100			

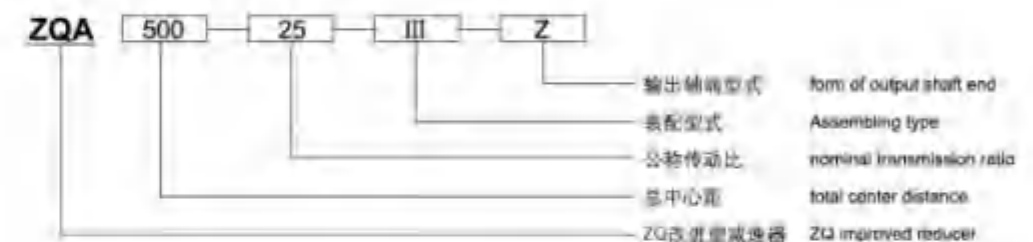
ZQA型减速器

ZQA type decelerator

ZQA型减速器是在ZQ型减速器的基础上改进设计的。为提高齿轮承载能力,又便于替代ZQ型减速器。在外形、轴端和安装尺寸不变的情况下,改变齿轮齿轴材质,齿轮轴为42CrMo,大齿轮为ZG35CrMo,调质硬度齿轮轴为291~323HB,大齿轮为255~291HB。

ZQA type decelerator has improved and designed at the basis of ZQ type in order to enhance the load capacity and replace the old ZQ type. There are no change at contour, shaft end and installing sizes, but change materials of gear and gear shaft as following. the material of gear shaft is 42CrMo, big gear is ZG35CrMo, and the hardness of gear shaft is 291~323HB, big gear is 255~291HB.

1 型号 Type



标记示例

ZQ改进型减速器总中心距500mm, 公称传动比25, 第Ⅲ种装配型式, 圆柱轴伸, 标记为: 减速器ZQA500-25 III z

2 传动比

ZQA型减速器的实际传动比 $i_s=23.34$ 不同之外其余相同。(因为ZQ型的实际传动比与公称传动比的偏差不大于4%) 见表。

3 外形、轴端和安装尺寸

ZQA型减速器的外形、轴端和安装尺寸与ZQ型减速器相同。

4 承载能力

ZQA型减速器的输入许用功率和输出转矩工作级别为M5见表, 连续型见表。

ZQA型减速器的最大允许径向载荷见表。

Eemark

ZQ improved decelerator total center distance 500mm, nominal transmission ratio is 25, the third assembling form, solid shaft extension, can marked: ZQA500-25 III z

2 Transmission ratio

Actual transmission ratios of ZQA type are same except $i_s=23.34$ (Because the deviation is less than 4% between ZQ type actual transmission ratio and nominal's), see table

3 Contour, shaft end and installing dimensions

The Contour, shaft end and installing dimensions of ZQA type are same to ZQ type

4 Load capacity

Get allowed input power and duty M5 of output torque of ZQA type decelerator in table, including continuous type.

Get max allowable radical load of ZQA type decelerator in table

表 ZQA型减速器传动比 Table: Transmission ratio of ZQA type decelerator

	1	2	3	4	5	6	7	8	9
公称传动比 Nominal transmission ratio	50	40	31.5	25.0	20	15	12.5	10	8
实际传动比 Actual transmission ratio	48.57	40.17	31.5	25.02	20.49	15.75	12.64	10.35	8.23

ZQA型减速器的承载能力 (工作级别M5) Allowed carrying capacity of ZQA reducer(Working status is M5)

减速器 型号 Reducer Type	额定 扭矩 Nm Rated torque	额定 功率 kW Rated power	高速轴转速 r/min High speed shaft speed								
			30	40	50	60	75	100	150	200	300
高速轴许用功率 kW Allowed power for high-speed shaft											
600	ZQA 250	564	5.3	4.5	3.8	3.0	2.2	1.7	1.0	.8	.6
	ZQA 350	2141	15.6	13.0	11.1	9.3	6.4	5.5	4.4	3.1	2.7
	ZQA 400	2623.9	23.1	19.3	16.6	13.7	9.5	7.3	4.7	3.9	2.9
	ZQA 500	6210.3	44.3	37.1	31.6	26.6	18.3	1.6	13.0	9.3	7.7
	ZQA 650	11381.9	118.4	98.5	82.7	58.1	46.7	31.4	20.7	17.0	12.7
	ZQA 750	21712	175.0	145.3	123.5	109.8	72.6	61.4	37.8	32.4	25.0
	ZQA 850	34344	246.7	205.0	174.4	145.4	102.6	87.0	66.5	49.9	41.2
	ZQA1000	59307	442.5	368.7	313.6	285.1	185.3	167.1	107.0	89.4	67.4
750	ZQA 250	564	6.6	5.6	4.8	3.7	2.7	2.1	1.3	1.0	.8
	ZQA 350	2141	19.4	16.2	13.9	11.6	8.0	6.6	5.5	3.8	3.4
	ZQA 400	2623.9	28.7	24.1	20.6	17.1	11.8	9.1	5.9	4.9	3.6
	ZQA 500	6210.3	55.1	46.2	39.4	33.1	22.8	19.4	16.2	11.6	9.6
	ZQA 650	11381.9	147.5	122.7	103.0	72.4	58.2	39.1	25.7	21.2	15.8
	ZQA 750	21712	218.0	180.9	153.8	136.7	90.5	76.5	47.1	40.4	31.2
	ZQA 850	34344	307.3	255.4	217.3	181.1	127.8	108.3	82.9	62.1	51.3
	ZQA1000	59307	551.2	459.3	390.6	355.2	230.9	208.1	133.3	111.4	83.9
1000	ZQA 250	564	8.9	7.5	6.4	4.9	3.6	2.8	1.7	1.4	1.0
	ZQA 350	2141	25.9	21.7	18.6	15.6	10.7	9.1	7.4	5.1	4.5
	ZQA 400	2623.9	38.5	32.2	27.6	22.9	15.8	12.1	7.9	6.5	4.9
	ZQA 500	6210.3	73.8	61.8	52.7	44.3	30.5	26.0	21.7	15.5	12.8
	ZQA 650	11381.9	197.4	164.2	137.8	96.9	77.9	52.3	34.4	28.3	21.2
	ZQA 750	21712	291.6	242.1	205.8	183.0	121.0	102.4	63.0	54.0	41.7
	ZQA 850	34344	411.1	341.7	290.7	242.3	171.0	144.9	110.9	83.1	68.7
	ZQA1000	59307	737.5	614.5	522.6	475.2	308.9	278.4	178.3	149.0	112.3
1500	ZQA 250	564	13.1	11.0	9.4	7.3	5.4	4.1	2.5	2.1	1.5
	ZQA 350	2141	38.2	32.0	27.4	23.0	15.7	13.4	10.8	7.5	6.6
	ZQA 400	2623.9	56.7	47.5	40.7	33.7	23.3	17.8	11.6	9.6	7.2
	ZQA 500	6210.3	108.7	91.1	77.6	65.2	44.9	38.3	31.9	22.9	18.8
	ZQA 650	11381.9	290.9	242.0	203.1	142.8	114.7	77.1	50.7	41.7	21.2
	ZQA 750	21712	429.8	356.8	303.2	269.6	178.4	150.9	92.8	79.6	61.5
	ZQA 850	34344	605.9	503.5	428.4	357.0	252.0	213.6	163.4	122.5	101.2
	ZQA1000	59307	1086.9	905.6	770.1	700.3	455.2	410.3	212.6	192.6	165.5

ZQA型减速器的承载能力 (连续工作类型) Allowed carrying capacity of ZQA reducer(Continuous working type)

减速器 型号 Reducer Type	额定 扭矩 Nm Rated torque	额定 功率 kW Rated power	高速轴转速 r/min High speed shaft speed								
			30	40	50	60	75	100	150	200	300
			高速轴许用功率 kW Allowed power for high-speed shaft								
600	ZQA 250	282.	2.7	2.2	1.9	1.5	1.1	.8	.5	.4	.3
	ZQA 350	1071.	7.8	6.5	5.6	4.7	3.2	2.7	2.2	1.5	1.3
	ZQA 400	1312.0	11.5	9.7	8.3	6.9	4.8	3.6	2.4	2.0	1.5
	ZQA 500	2105.2	22.1	18.5	15.8	13.3	9.1	7.8	6.5	4.7	3.8
	ZQA 650	5691.0	59.2	49.3	41.4	29.1	23.4	15.7	10.3	8.5	6.3
	ZQA 750	10856.	87.5	72.6	61.7	54.9	36.3	30.7	18.9	16.2	12.5
	ZQA 850	17172.	123.3	102.5	87.2	72.7	51.3	43.5	33.3	24.9	20.6
	ZQA1000	29654	221.3	184.4	156.8	142.6	92.7	83.5	53.5	44.7	33.7
750	ZQA 250	282.	3.3	2.8	2.4	1.8	1.4	1.1	.6	.5	.4
	ZQA 350	1071.	9.7	8.1	6.9	5.8	4.0	3.4	2.7	1.9	1.7
	ZQA 400	112.0	14.4	12.0	10.3	8.6	5.9	4.5	3.0	2.4	1.8
	ZQA 500	3105.2	27.6	23.1	19.7	16.5	11.4	9.7	8.1	5.8	4.8
	ZQA 650	5691.0	73.8	61.4	51.5	36.2	29.1	19.6	12.9	10.6	7.9
	ZQA 750	10856.	109.0	90.5	76.9	68.4	45.2	38.3	23.5	20.2	15.6
	ZQA 850	17172.	153.6	127.7	108.6	90.5	63.9	54.2	41.4	31.1	25.7
	ZQA1000	29654.	275.6	229.6	195.3	177.6	115.4	104.0	66.6	55.7	42.0
1000	ZQA 250	282.	4.4	3.7	3.2	2.5	1.8	1.4	.9	.7	.5
	ZQA 350	1071.	13.0	10.8	9.3	7.8	5.3	4.6	3.7	2.5	2.2
	ZQA 400	1312.0	19.2	16.1	13.8	11.4	7.9	6.1	4.0	3.3	2.4
	ZQA 500	3105.2	36.9	30.9	26.3	22.1	15.2	13.0	10.8	7.8	6.4
	ZQA 650	5691.0	98.7	82.1	68.9	48.4	38.9	26.2	17.2	14.2	10.6
	ZQA 750	10856.	145.8	121.1	102.9	91.5	60.5	51.2	31.5	27.0	20.9
	ZQA 850	17172.	205.8	170.8	145.4	121.1	85.5	72.5	55.4	41.6	34.3
	ZQA1000	29654.	368.8	307.3	261.3	237.6	154.5	139.2	89.2	74.5	56.1
1500	ZQA 250	282.	6.5	5.5	4.7	3.6	2.7	2.1	1.3	1.0	.8
	ZQA 350	1071.	19.1	16.0	13.7	11.5	6.7	6.7	5.4	3.8	3.3
	ZQA 400	1312.0	28.3	23.7	20.3	16.9	8.9	8.9	5.8	4.8	3.6
	ZQA 500	3105.2	54.4	45.5	38.8	32.6	19.2	19.2	16.0	11.5	9.4
	ZQA 650	5691.0	145.4	121.0	101.6	71.4	38.6	38.6	25.4	20.9	15.6
	ZQA 750	10856.	214.9	178.4	151.6	134.8	75.7	75.7	46.4	39.8	30.7
	ZQA 850	17172.	302.9	251.8	214.2	178.5	106.8	106.8	81.7	61.3	50.6
	ZQA1000	29654	543.4	452.8	385.1	350.2	205.2	205.2	131.4	101.8	82.7

ZQA型减速器最大允许径向载荷 (KN) Max allowable radical load of ZQA type decelerator

转速 R/min	轴类 Shaft	工作制度 Duty	ZQA 350 轴伸最大允许径向载荷 Max allowable radical load on shaft end of ZQA 350							
600	输入轴 Input shaft	≤M5 连续型 Continuous	3.10	3.10	2.90	2.80	2.80	2.60	2.30	2.70
		≤M5 连续型 Continuous	2.80	2.80	2.70	2.70	2.60	2.50	2.50	2.40
750	输入轴 Input shaft	≤M5 连续型 Continuous	19.10	18.00	16.20	14.80	14.10	13.10	11.90	11.40
		≤M5 连续型 Continuous	15.40	14.60	13.40	12.40	12.20	10.70	9.90	9.30
1000	输入轴 Input shaft	≤M5 连续型 Continuous	17.60	16.40	15.10	13.50	12.80	11.90	11.20	10.40
		≤M5 连续型 Continuous	14.40	13.60	12.50	11.32	10.80	10.00	9.30	8.10
1250	输入轴 Input shaft	≤M5 连续型 Continuous	16.00	14.80	13.50	12.5	11.90	11.00	10.30	9.80
		≤M5 连续型 Continuous	13.10	12.70	11.40	10.40	10.00	9.00	8.50	7.90
1500	输入轴 Input shaft	≤M5 连续型 Continuous	2.40	2.40	2.30	2.30	2.30	2.20	2.30	2.40
		≤M5 连续型 Continuous	2.30	2.20	2.0	2.10	2.10	2.00	1.90	1.80
600	输出轴 Output shaft	≤M5 连续型 Continuous	15.00	13.90	13.10	11.80	11.30	10.50	9.80	9.30
		≤M5 连续型 Continuous	12.30	11.80	10.80	9.60	9.90	8.40	7.80	7.30
750	输入轴 Input shaft	≤M5 连续型 Continuous	2.40	2.30	2.30	2.20	2.20	2.20	2.30	2.30
		≤M5 连续型 Continuous	2.10	2.10	2.00	2.00	2.00	1.80	1.80	1.70
1000	输入轴 Input shaft	≤M5 连续型 Continuous	14.20	13.40	12.50	11.10	10.70	10.00	9.40	8.90
		≤M5 连续型 Continuous	11.70	10.90	10.00	9.10	8.80	7.90	7.40	6.90
600	输出轴 Output shaft	≤M5 连续型 Continuous	3.80	3.80	3.50	3.40	3.20	3.10	3.10	3.00
		≤M5 连续型 Continuous	3.70	3.70	3.30	3.30	2.80	2.80	2.70	2.70
750	输入轴 Input shaft	≤M5 连续型 Continuous	18.40	16.90	14.73	13.10	12.60	11.00	10.30	9.60
		≤M5 连续型 Continuous	15.80	14.90	13.60	12.40	12.10	10.70	9.80	9.20
1000	输入轴 Input shaft	≤M5 连续型 Continuous	18.90	15.76	13.90	12.60	11.80	10.30	9.20	8.80
		≤M5 连续型 Continuous	14.80	13.90	12.80	11.50	11.10	9.90	9.20	8.10
1250	输入轴 Input shaft	≤M5 连续型 Continuous	3.10	3.10	2.90	2.80	2.80	2.60	2.60	2.50
		≤M5 连续型 Continuous	3.10	3.00	2.70	2.70	2.60	2.30	2.30	2.40
1500	输入轴 Input shaft	≤M5 连续型 Continuous	16.00	14.10	12.50	11.10	10.70	9.30	8.80	8.50
		≤M5 连续型 Continuous	13.40	12.70	11.60	10.50	10.10	8.90	8.20	7.70
600	输出轴 Output shaft	≤M5 连续型 Continuous	2.90	2.80	2.70	2.60	2.60	2.40	2.30	2.20
		≤M5 连续型 Continuous	2.60	2.60	2.20	2.30	2.40	2.00	2.00	2.10
750	输入轴 Input shaft	≤M5 连续型 Continuous	14.00	13.00	11.60	10.40	10.10	8.80	8.40	8.10
		≤M5 连续型 Continuous	12.50	11.70	10.80	9.70	9.30	8.50	7.60	7.10
1000	输入轴 Input shaft	≤M5 连续型 Continuous	2.90	2.80	2.50	2.40	2.40	2.20	2.20	2.10
		≤M5 连续型 Continuous	2.70	2.70	2.30	2.30	2.20	2.10	2.10	2.00
1250	输入轴 Input shaft	≤M5 连续型 Continuous	13.70	12.90	11.50	10.2	9.90	9.00	8.40	7.90
		≤M5 连续型 Continuous	11.70	11.00	10.00	9.20	8.70	7.70	7.10	6.80

续表 Continued

转速 R/min	轴类 Shaft	工作制度 Duty	ZQA 500 轴伸最大允许径向载荷 Max allowable radical load on shaft end of ZQA 500							
600	输入轴 Input shaft	≤M5 连续型 Continuous	3.30	3.20	2.90	2.80	2.80	2.30	2.20	2.10
		≤M5 连续型 Continuous	2.80	2.60	2.60	2.10	2.00	1.90	1.90	2.00
750	输入轴 Input shaft	≤M5 连续型 Continuous	24.30	23.10	21.65	18.85	17.65	16.75	15.60	14.75
		≤M5 连续型 Continuous	21.80	20.40	18.85	16.75	15.90	14.10	13.10	12.40
1000	输入轴 Input shaft	≤M5 连续型 Continuous	3.00	3.00	2.70	2.60	2.50	2.10	2.00	1.90
		≤M5 连续型 Continuous	2.60	2.40	2.30	2.10	2.00	1.90	1.90	1.70
1250	输入轴 Input shaft	≤M5 连续型 Continuous	23.60	21.60	20.10	17.90	16.99	15.55	14.45	14.00
		≤M5 连续型 Continuous	20.10	19.65	17.30	15.45	14.85	12.80	12.10	11.25
1500	输入轴 Input shaft	≤M5 连续型 Continuous	2.70	2.60	2.40	2.20	2.20	2.00	1.90	2.00
		≤M5 连续型 Continuous	2.40	2.30	2.10	2.10	2.00	1.70	1.60	1.50
600	输出轴 Output shaft	≤M5 连续型 Continuous	21.65	19.90	18.70	16.65	15.90	14.85	13.35	13.05
		≤M5 连续型 Continuous	18.50	17.35	16.75	13.95	13.30	11.75	10.90	10.10
750	输入轴 Input shaft	≤M5 连续型 Continuous	2.50	2.40	2.10	2.00	2.00	1.70	1.70	1.90
		≤M5 连续型 Continuous	2.10	2.00	2.00	1.80	1.80	1.50	1.40	1.30
1000	输入轴 Input shaft	≤M5 连续型 Continuous	20.25	18.80	17.75	15.8	15.00	14.00	13.10	12.40
		≤M5 连续型 Continuous	17.20	15.85	14.55	12.90	12.30	10.80	10.00	9.25
1250	输入轴 Input shaft	≤M5 连续型 Continuous	2.30	2.20	2.10	2.00	1.90	1.90	2.00	2.10
		≤M5 连续型 Continuous	2.20	2.20	2.00	1.89	1.80	1.30	1.20	1.10
1500	输入轴 Input shaft	≤M5 连续型 Continuous	20.10	17.90	16.95	15.00	14.40	13.40	12.60	12.05
		≤M5 连续型 Continuous	16.20	15.05	13.65	12.15	11.50	10.10	9.30	8.55
600	输出轴 Output shaft	≤M5 连续型 Continuous	4.30	4.30	3.80	3.80	3.80	3.20	3.10	3.00
		≤M5 连续型 Continuous	3.20	3.20	2.40	2.00	1.90	1.30	1.20	1.40
750	输入轴 Input shaft	≤M5 连续型 Continuous	21.30	19.80	17.85	15.90	15.10	13.10	12.05	11.35
		≤M5 连续型 Continuous	21.10	19.80	16.85	14.40	13.70	12.05	11.20	10.70
1000	输入轴 Input shaft	≤M5 连续型 Continuous	4.00	3.90	3.50	3.50	3.40	2.90	2.80	2.60
		≤M5 连续型 Continuous	2.80	2.00	2.10	1.70	1.80	1.50	1.60	1.50
1250	输入轴 Input shaft	≤M5 连续型 Continuous	19.50	17.95	16.30	14.55	13.90	12.05	11.00	10.20
		≤M5 连续型 Continuous	19.60	17.85	14.05	13.35	12.40	11.90	11.00	10.20
1500	输入轴 Input shaft	≤M5 连续型 Continuous	3.60	3.50	3.10	3.00	3.00	2.40	2.30	2.20
		≤M5 连续型 Continuous	2.40	2.30	2.00	1.80	1.80	1.70	1.60	1.70
600	输出轴 Output shaft	≤M5 连续型 Continuous	17.70	16.65	14.70	13.10	12.00	11.40	10.95	9.95
		≤M5 连续型 Continuous	16.65	15.80	14.70	12.63	12.00	10.70	9.80	9.00
750	输入轴 Input shaft	≤M5 连续型 Continuous	3.20	3.20	2.80	2.70	2.70	2.20	2.00	1.90
		≤M5 连续型 Continuous	2.10	1.80	1.80	1.60	1.70	1.40	1.40	1.70
1000	输入轴 Input shaft	≤M5 连续型 Continuous	17.40	15.35	14.20	12.20	11.50	10.85	10.35	9.85
		≤M5 连续型 Continuous	16.40	14.55	13.50	12.00	11.15	9.75	8.90	8.15
1250	输入轴 Input shaft	≤M5 连续型 Continuous	3.20	3.00	2.60	2.50	2.50	1.90	1.90	2.00
		≤M5 连续型 Continuous	3.10	2.10	2.00	1.80	1.60	1.70	1.80	1.70
1500	输入轴 Input shaft	≤M5 连续型 Continuous	16.45	14.30	13.60	11.75	11.00	10.60	10.00	9.70
		≤M5 连续型 Continuous	15.35	14.40	12.60	11.20	10.10	9.10	8.02	7.55

续表 Continued

转速n (r/min)	轴类 Shaft	工作制度 Duty	4.50	4.50	3.85	3.70	3.60	2.50	2.30	1.90	1.50
ZQA 750 轴伸最大允许径向载荷 Max allowable radical load on shaft and of ZQA 750											
800	输入轴 Input shaft	≤M5 连续型 Continuous	4.50	4.50	3.85	3.70	3.60	2.50	2.30	1.90	1.50
	输出轴 Output shaft	≤M5 连续型 Continuous	113.00	105.80	98.90	88.90	85.20	79.00	73.70	69.50	65.00
750	输入轴 Input shaft	≤M5 连续型 Continuous	4.30	4.20	3.40	3.25	3.20	2.00	1.80	1.50	1.10
	输出轴 Output shaft	≤M5 连续型 Continuous	106.30	99.40	92.50	83.90	79.60	74.20	68.60	65.20	63.70
1000	输入轴 Input shaft	≤M5 连续型 Continuous	3.80	3.75	2.90	2.70	2.60	1.50	1.30	1.00	1.00
	输出轴 Output shaft	≤M5 连续型 Continuous	97.60	91.40	84.70	77.20	73.40	68.60	64.20	60.20	56.80
1250	输入轴 Input shaft	≤M5 连续型 Continuous	3.30	3.20	2.45	2.30	2.25	1.10	0.90	0.70	0.56
	输出轴 Output shaft	≤M5 连续型 Continuous	91.00	81.60	79.80	72.20	69.00	64.40	60.10	56.00	53.40
1500	输入轴 Input shaft	≤M5 连续型 Continuous	3.10	3.05	2.20	2.00	1.95	0.95	0.80	0.60	0.48
	输出轴 Output shaft	≤M5 连续型 Continuous	89.00	81.25	75.90	68.45	65.70	61.00	57.00	53.00	50.00
ZQA 750 轴伸最大允许径向载荷 Max allowable radical load on shaft and of ZQA 750											
800	输入轴 Input shaft	≤M5 连续型 Continuous	6.70	6.10	5.60	5.40	5.30	4.00	3.70	3.30	2.90
	输出轴 Output shaft	≤M5 连续型 Continuous	113.30	106.40	96.60	87.40	83.60	76.70	71.50	67.30	63.20
750	输入轴 Input shaft	≤M5 连续型 Continuous	6.30	6.20	5.20	5.00	4.90	3.60	3.00	2.90	2.40
	输出轴 Output shaft	≤M5 连续型 Continuous	105.00	98.60	90.60	81.20	77.10	72.20	68.20	63.00	59.40
1000	输入轴 Input shaft	≤M5 连续型 Continuous	3.50	3.40	2.60	2.40	2.30	1.20	1.00	0.80	0.60
	输出轴 Output shaft	≤M5 连续型 Continuous	86.10	89.50	83.80	75.10	72.20	68.70	62.50	58.75	55.00
1250	输入轴 Input shaft	≤M5 连续型 Continuous	5.00	5.00	3.90	3.80	3.60	2.30	2.30	1.90	1.50
	输出轴 Output shaft	≤M5 连续型 Continuous	89.70	84.00	78.40	70.80	67.25	62.90	58.00	54.50	51.00
1500	输入轴 Input shaft	≤M5 连续型 Continuous	1.90	1.80	1.50	1.40	1.30	0.70	0.70	0.50	0.40
	输出轴 Output shaft	≤M5 连续型 Continuous	89.20	80.70	75.80	68.10	64.70	59.00	54.00	50.00	47.50

续表 Continued

转速n (r/min)	轴类 Shaft	工作制度 Duty	14.00	14.00	13.00	13.00	12.50	11.50	11.00	7.00	10.50
ZQA 600 轴伸最大允许径向载荷 Max allowable radical load on shaft and of ZQA 600											
600	输入轴 Input shaft	≤M5 连续型 Continuous	14.00	14.00	13.00	13.00	12.50	11.50	11.00	7.00	10.50
	输出轴 Output shaft	≤M5 连续型 Continuous	183.20	153.00	144.00	125.90	120.80	109.30	101.80	95.60	88.80
750	输入轴 Input shaft	≤M5 连续型 Continuous	11.50	11.50	8.40	9.20	9.00	7.80	7.30	6.80	9.00
	输出轴 Output shaft	≤M5 连续型 Continuous	152.20	142.30	129.70	117.60	112.20	101.80	95.60	88.80	83.25
1000	输入轴 Input shaft	≤M5 连续型 Continuous	10.00	10.00	8.10	7.90	8.10	7.30	7.00	6.80	9.00
	输出轴 Output shaft	≤M5 连续型 Continuous	137.80	192.60	117.40	106.90	103.00	94.50	85.70	73.60	70.00
1250	输入轴 Input shaft	≤M5 连续型 Continuous	8.80	8.90	7.90	7.40	7.20	7.70	7.00	6.80	9.00
	输出轴 Output shaft	≤M5 连续型 Continuous	127.80	120.60	111.20	100.00	95.50	88.80	83.25	70.00	67.00
1500	输入轴 Input shaft	≤M5 连续型 Continuous	8.3	8.40	8.10	7.60	7.40	7.70	7.00	6.80	9.00
	输出轴 Output shaft	≤M5 连续型 Continuous	124.40	113.60	113.50	106.00	95.20	88.80	83.25	70.00	67.00
ZQA 1000 轴伸最大允许径向载荷 Max allowable radical load on shaft and of ZQA 1000											
600	输入轴 Input shaft	≤M5 连续型 Continuous	9.10	8.80	5.50	4.60	4.60	2.30	2.30	2.80	2.80
	输出轴 Output shaft	≤M5 连续型 Continuous	199.00	186.00	169.00	15.60	143.80	133.80	125.20	116.00	110.20
750	输入轴 Input shaft	≤M5 连续型 Continuous	7.80	7.50	8.20	4.00	3.60	3.20	3.00	2.80	2.80
	输出轴 Output shaft	≤M5 连续型 Continuous	184.30	173.00	158.20	142.30	135.20	126.20	118.40	110.80	104.00
1000	输入轴 Input shaft	≤M5 连续型 Continuous	6.50	6.20	8.10	4.30	4.60	4.60	4.60	4.60	4.60
	输出轴 Output shaft	≤M5 连续型 Continuous	168.20	157.00	145.20	131.20	126.10	117.20	110.80	104.00	99.20
1250	输入轴 Input shaft	≤M5 连续型 Continuous	6.20	5.50	5.30	4.80	4.80	4.80	4.80	4.80	4.80
	输出轴 Output shaft	≤M5 连续型 Continuous	157.00	147.00	137.20	123.00	117.20	110.80	104.00	99.20	94.40
1500	输入轴 Input shaft	≤M5 连续型 Continuous	8.30	8.00	5.80	5.80	5.80	5.80	5.80	5.80	5.80
	输出轴 Output shaft	≤M5 连续型 Continuous	154.00	140.00	131.10	122.40	115.90	105.80	95.40	85.40	80.00

注：ZQA型减速器的设计计算是按QJ型减速器的计算方法，其选用原则与选择计算可按QJ型减速器的方法进行。ZQ、ZQH型减速器的设计计算是按前苏联的老齿轮强度工况标准计算的，其承载能力与QJ型减速器的承载能力不能类比。

Note: The design of ZQA type decelerator is same to QJ type, so the selecting method and calculation can according to the QJ type too. The design of ZQ, ZQH type decelerator is according to old gear strength of Pre-Soviet Russia, so the load capacity is not analogy to QJ type.

ZQ Great Moweing Cylindrcal Gear Decelerators

Type ZQ decelerator with high drive ratio mean that a high-speed class is added on type ZQ decelerator and Class 3 decelerator is obtained to increase decelerator drive ratio.



注: H2尺寸有“+”“-”的表示其位置在减速器安装平面之上。

Note: H2 size with *** represents its position in the speed reducer is installed above the plane

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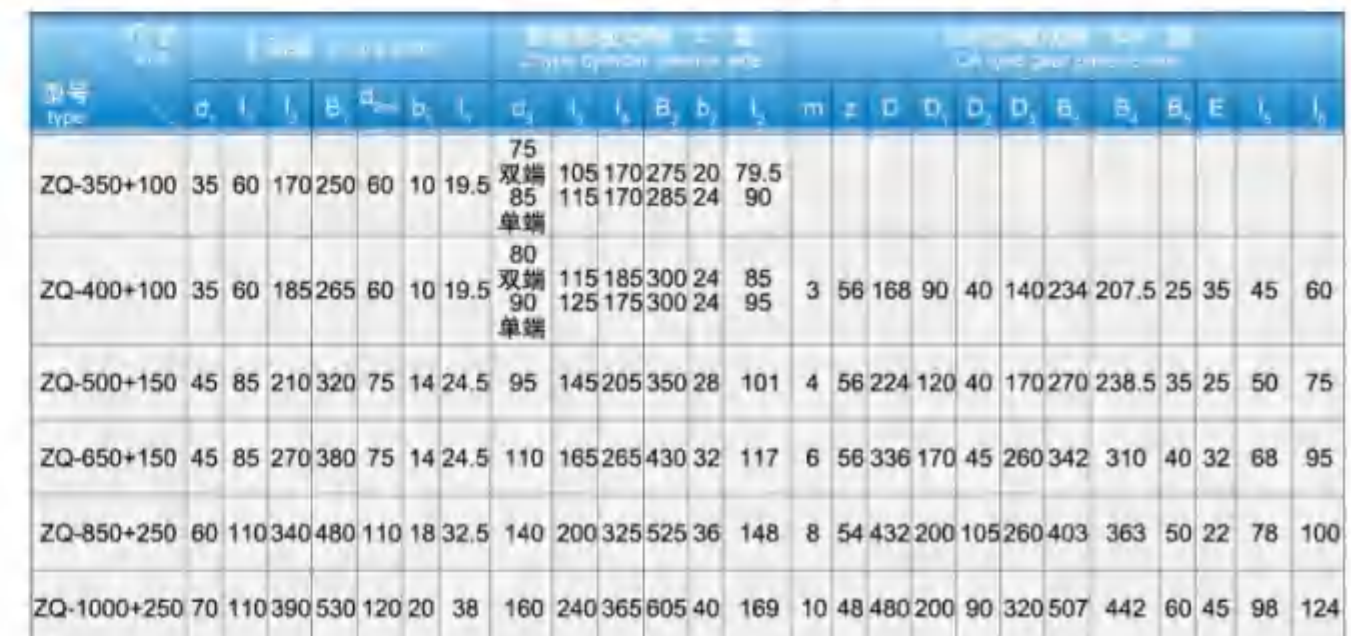
www.supplychainalliance.cn

sales@tailonggearbox.com

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传动比 ratio of transmission ratio	i	i _{II}	i _{III}	i _{IV}	i _V	i _{VI}	i _{VII}	i _{VIII}	i _{IX}	i _X	i _{XI}	i _{XII}
传动比 transmission ratio	317.28	291.19	265.71	243.86	223.80	191.22	163.38	141.73	121.10	92.21	81.70	65.54
公称传动比 nominal transmission ratio	315	300	280	250	224	200	160	140	125	90	80	63

Axle edge size of ZQ type large transmission-ratio reducer



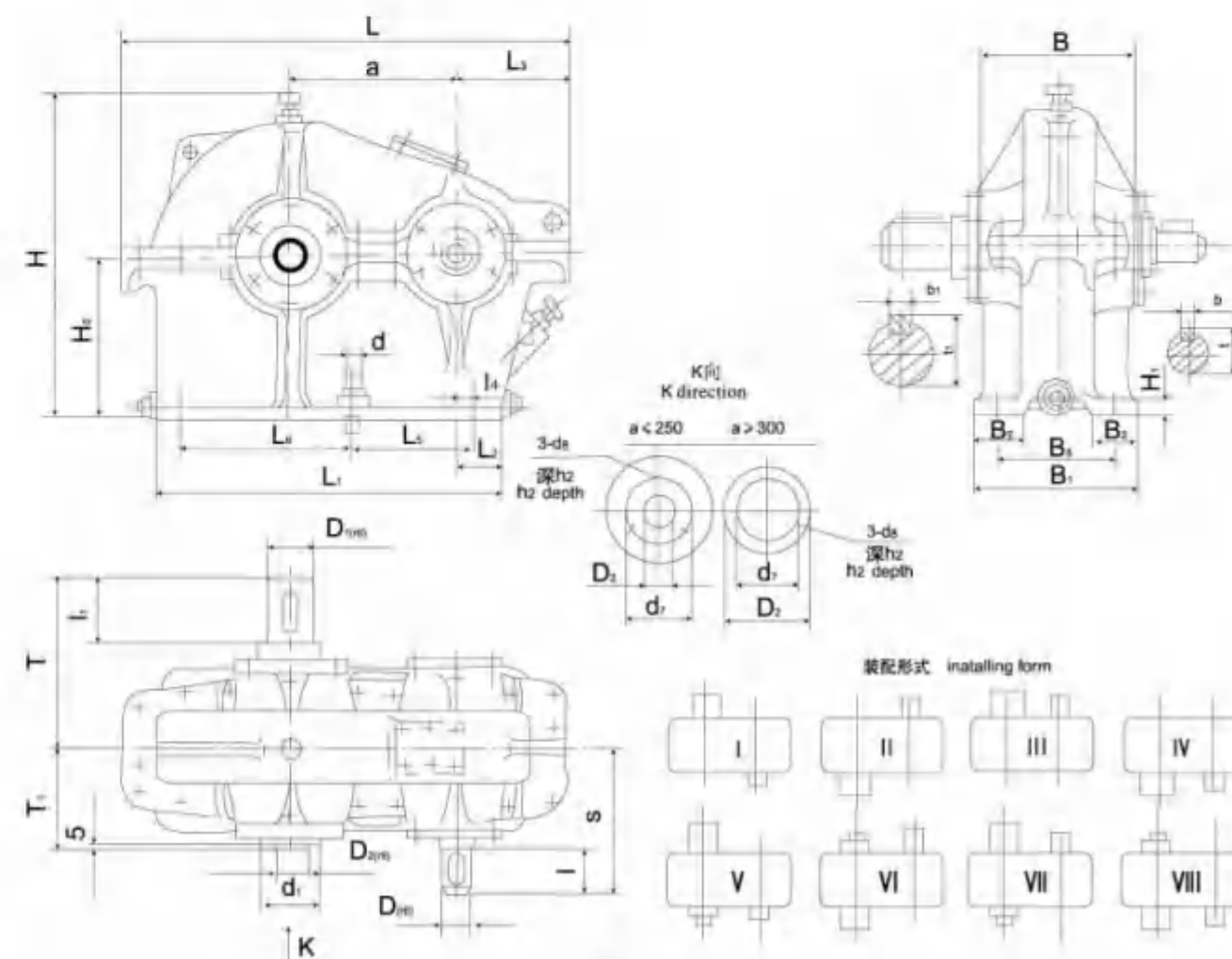
ZQ型大传动比减速器容许输入最大功率(kW)

Bearing capacity of ZQ type large transmission-reducer

传动比 Transmission ratio	工作类型 Service type	转速 (r/min) Wheeling speed (r/min)											
		ZQ-350~1000				ZQ-400~1500				ZQ-650~2500			
		1000	750	1000	750	1000	750	1000	750	1000	750	1000	75
I	317.28	轻级 light rank	-	-	1.56	1.35	4.75	4.10	6.1	5.5	17.7	15.3	26.5
		中級 middle rank	-	-	1.05	0.95	3.20	2.75	4.0	3.8	11.8	10.2	18.0
II	291.19	轻级 light rank	-	-	1.67	1.52	5.05	4.50	6.8	6.1	19.3	16.9	28.0
		中級 middle rank	-	-	1.12	1.02	3.35	3.00	4.5	4.0	12.9	11.3	18.6
III	265.71	轻级 light rank	-	-	1.92	1.72	5.05	4.50	7.6	6.7	21.2	17.8	30.0
		中級 middle rank	-	-	1.28	1.15	3.35	3.00	4.0	4.6	14.0	11.9	20.0
IV	243.86	轻级 light rank	1.80	1.82	1.92	1.72	5.50	4.86	8.2	7.25	24.8	21.2	31.5
		中級 middle rank	1.20	1.22	1.28	1.15	3.70	3.25	5.4	5.0	16.5	14.0	21.0
V	223.80	轻级 light rank	1.95	1.82	2.05	1.80	6.00	5.10	8.8	8.0	27.0	24.0	33.8
		中級 middle rank	1.30	1.22	1.38	1.26	4.00	3.40	5.9	5.5	18.1	16.0	22.5
VI	191.22	轻级 light rank	2.30	1.95	2.35	1.86	6.90	5.40	9.8	9.1	31.2	29.8	34.5
		中級 middle rank	1.55	1.30	1.60	1.25	4.60	3.60	6.6	6.3	20.9	19.8	23.0
VII	163.38	轻级 light rank	2.60	2.24	2.90	2.32	8.10	6.35	10.6	9.8	35.2	33.0	35.5
		中級 middle rank	1.74	1.50	2.00	1.56	5.40	4.26	7.1	6.8	23.6	22.2	23.6
VIII	141.73	轻级 light rank	3.00	2.45	3.10	2.65	9.40	7.60	14.5	12.8	36.8	34.2	39.0
		中級 middle rank	2.00	1.65	2.15	1.77	6.30	5.12	9.5	8.7	24.6	22.8	26.0
IX	121.10	轻级 light rank	3.30	2.55	3.25	2.65	11.50	9.60	16.0	14.5	44.2	40.5	45.0
		中級 middle rank	2.20	1.70	2.20	1.77	7.80	6.50	10.7	10.0	29.5	27.2	29.8
V	92.21	轻级 light rank	4.26	3.40	4.27	3.55	15.0	12.5	16.8	15.3	48.0	44.0	49.5
		中級 middle rank	2.85	2.30	2.85	2.40	10.50	8.58	11.2	10.6	32.0	29.5	33.0
VI	81.70	轻级 light rank	4.87	4.20	4.85	3.80	17.20	14.0	18.5	16.7	52.5	49.5	56.0
		中級 middle rank	3.25	2.80	3.25	2.55	11.60	9.35	12.3	11.6	35.0	33.2	37.5
VII	65.54	轻级 light rank	5.60	4.85	5.50	4.40	20.0	15.5	23.6	21.0	-	-	70.0
		中級 middle rank	3.75	3.25	3.75	2.98	13.5	10.5	15.5	14.5	-	-	46.6

ZD和ZDH系列圆柱齿轮减速器

ZD and ZDH Cylindrical Gear Decelerators



Bearing capacity

Interval (Days)	1	2	3	4	5	6	7	8	9	10	11
$\bar{y}$	2	2.24	2.5	2.8	3.15	3.55	4	4.5	5	5.6	6.3

[illegible]

This table lists allowable power for decelerator high-speed shaft under 2 different numbers of input revolution as well as service types. Other number of turns, type, and nature of load may refer to this list. However, if service time of each circulation is $t_{\text{service}} > 20\text{min}$, selection should be made according to continuous type; if peak load is applicable, the value 2-3.5 times bigger than that of continuous type should be selected.

ZD80, ZDH80减速器承载能力表

Bearing capacity of ZD80, ZDH80 reducer

n1=500r/min

中型 middle-sized	2	2.24	2.5	2.8	3.15	3.55	4	4.5	5	5.6	6.3
重型 heavy-duty sized	2219	1981	1775	1585	1409	1250	1110	965	853	699	604
特重型 special heavy-duty sized	1655	1496	1332	1187	1057	938	823	686	596	484	410
连续型 continued sized	1628	1453	1302	1163	1034	913	789	664	574	471	397
连续型 continued sized	1625	1443	1290	1151	999	853	729	600	514	416	346

n1=750r/min

中型 middle-sized	-	-	-	2197	1953	1728	1497	1248	1085	879	759
重型 heavy-duty sized	-	-	-	1736	1543	1347	1162	973	845	686	579
特重型 special heavy-duty sized	-	-	-	1736	1543	1295	1119	939	815	669	566
连续型 continued sized	-	-	-	1711	1480	1269	1081	896	767	622	514

n1=1000r/min

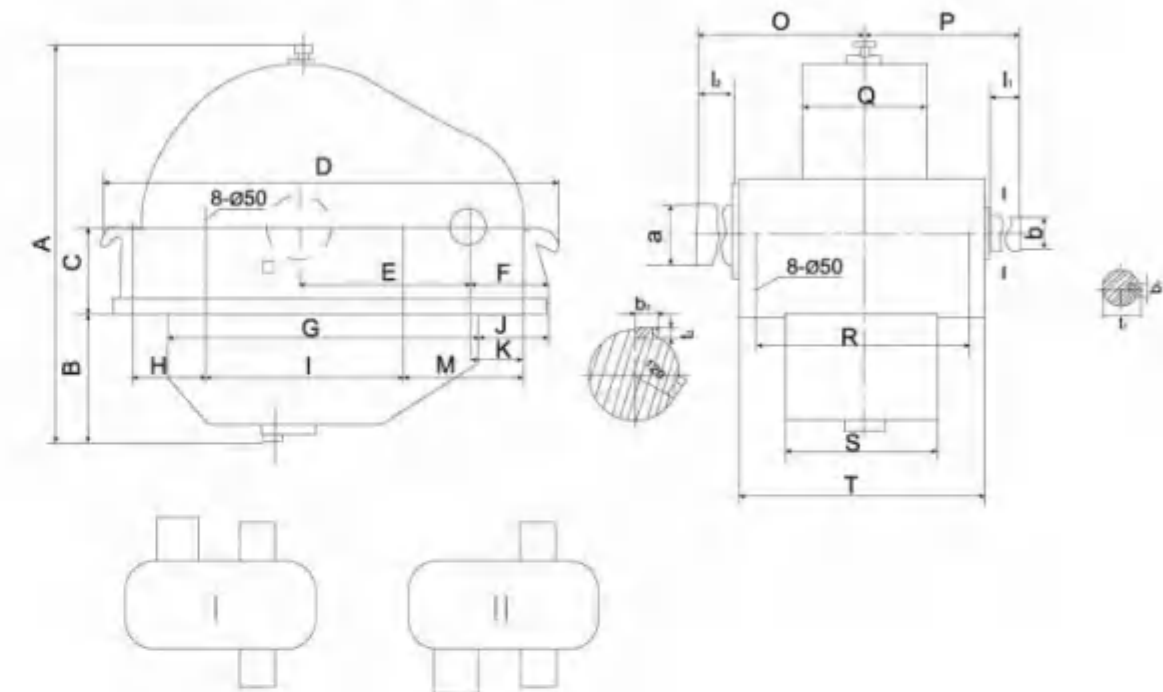
中型 middle-sized	-	-	-	-	-	-	1795	1535	1334	1076	913
重型 heavy-duty sized	-	-	-	-	-	-	1473	1244	1081	879	742
特重型 special heavy-duty sized	-	-	-	-	-	-	1432	1201	1042	853	720
连续型 continued sized	-	-	-	-	-	-	1428	1184	1016	823	686

注：若用户需要，本系列减速器可选用铸钢箱体

Note: such series of reducer can adopt cast steel casing if necessary.

ZD80, ZD100人字齿圆柱齿轮减速器

ZD80 ZD100 Herringbone Cylindrical Gear Decelerators



一、ZD80, ZD100的外形尺寸及装配型式

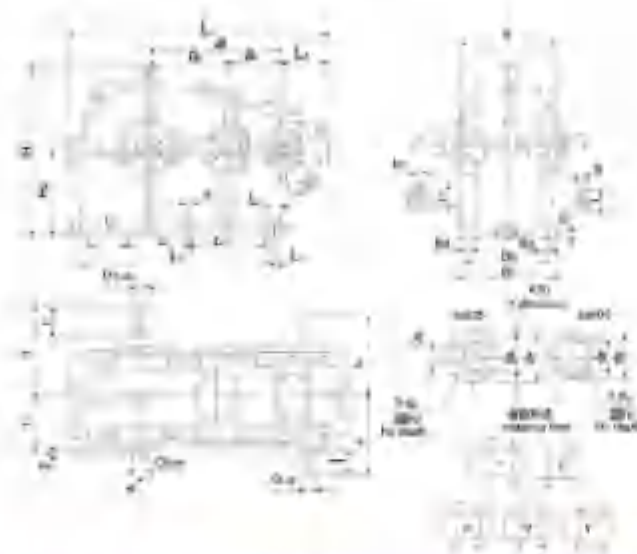
Outer size and installing form of ZD80, ZD100 decelerator

	A	B	C	D	E	F	G	H	I	J	K	M	O	P	Q	R	S	T	a	b	i	d	t	i ₂	b ₂	t ₂
ZD80	1853	582.5	400	2210	800	375	1570	300	950	310	280	610	905	815	590	1030	720	1200	220	120	160	32	129	240	66	22
ZD100	2540	790	500	2790	1000	480	1980	450	1150	480	350	780	1080	940	730	1220	880	1410	280	150	170	40	137	280	84	28

二、传动比 Transmission ratio

代号 NO.	传动比 Transmission ratio		
	公称 Nominal	实际 Actual	
		ZD80	ZD100
1	4.5	4.516	4.516
2	5.0	4.891	4.897
3	5.6	5.577	5.577
4	6.3	6.435	6.435
5	7.1	7.143	7.143
6	6.3	6.297	6.308

ZL系列和ZLH系列 圆柱齿轮减速器 ZL and ZLH Cylindrical Gear Decelerators



ZLH25					ZL25					250					100					150					200					250					300					350					400					450					500					550					600					650					700					750					800																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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ZL(ZLH)减速器承载能力表2

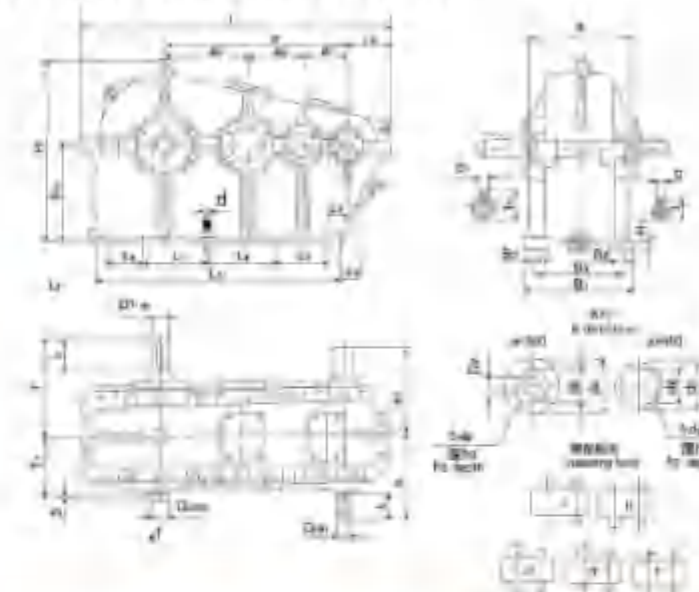
Table 2 of ZL(ZLH) Decelerator carrying capacity

减速器 Decelerator	1000 mm	1250 mm	1600 mm	2000 mm	2500 mm	3150 mm	4000 mm	5000 mm	6300 mm	8000 mm	10000 mm	12500 mm
7.1	1000	7.92	21.4	40.7	60.0	111	114	192	316	471	654	875
	1500	10.4	28.5	52.7	77.2	146	158	263				
8	1000	7.92	18.8	36.5	60.0	98.4	114	192	280	471	654	875
	1500	10.4	24.7	47.5	77.2	127	158	263				
9	1000	7.17	17.7	34.3	54.5	92.7	104	175	264	431	600	830
	1500	9.47	22.8	44.0	70.4	118	145	241	333			
10	1000	6.46	16.7	32.3	49.3	87.5	94.0	159	47	361	47	733
	1500	8.54	21.1	40.7	63.8	110	121	220	310	487		
11.2	1000	5.75	15.7	29.8	44.0	82.4	84.2	142	222	324	493	662
	1500	7.62	19.6	37.8	57.2	102	108	198	290	441		
12.5	1000	5.06	14.7	26.3	38.9	74.4	74.4	126	197	228	403	591
	1500	6.72	18.3	34.4	50.7	95.9	96.2	162	272	395	547	
14	1000	5.06	12.9	25.0	38.9	68.0	74.4	126	195	228	403	591
	1500	6.72	16.1	31.2	50.7	89.4	96.2	162	241	395	547	
16	1000	4.41	11.8	22.9	34.0	62.3	65.2	111	173	253	355	479
	1500	5.86	15.1	29.3	44.4	79.2	84.5	142	227	349	485	649
18	1000	3.8	10.5	19.9	29.5	55.5	56.6	96.3	150	221	310	419
	1500	5.08	14.1	26.2	38.7	73.7	73.7	124	193	307	427	572
20	1000	3.28	9.34	17.2	25.4	48.9	48.9	83.3	130	192	269	364
	1500	4.38	13.2	22.7	33.5	63.9	63.9	108	168	246	473	501
22.4	1000		8.00	15.6	25.4	42.5	48.9	83.3	123	192	269	364
	1500	4.38	11.7	22.7	33.5	62.0	63.9	108	168	246	373	501
25	1000	5	7.21	14.0	22.2	38.3	42.7	72.8	111	168	236	320
	1500	3.81	10.8	19.8	29.2	56.0	56.0	94.8	148	216	302	443
28	1000	2.38	6.46	12.5	18.5	34.3	35.7	60.9	95.6	141	198	269
	1500	3.18	9.62	16.1	24.5	46.9	46.9	79.6	124	182	255	344
31.5	1000	2.01	5.37	10.6	15.7	30.3	30.3	51.8	81.3	120	169	229
	1500	2.69	8.56	14.1	20.8	40.0	40.4	67.9	106	156	218	295
35.5	1000	1.95	4.70	9.16	17.5	25.0	30.3	51.8	72.5	120	169	229
	1500	2.69	7.02	13.7	20.8	37.3	40.4	67.9	106	156	218	295
40	1000	1.69	4.17	8.13	13.2	22.2	25.6	43.7	64.5	101	143	194
	1500	2.26	6.24	11.9	17.6	33.1	33.8	57.5	89.9	132	186	251
45	1000	1.47	3.47	6.77	11.7	18.5	25.6	39.2	53.7	92.5	143	194
	1500	2.20	5.1	10.1	17.4	27.6	33.8	57.5	79.9	132	186	251

表1.2仅列出两种不同的输入转速及工作类型情况下高速轴的许用功率,其他情况可近似地参考此表,但当每一工作循环时间 $t_2 > 20$ 分钟时,应按表1选用,有尖峰载荷时,要选此连续型大2~3.5倍。

Table 1 and 2 list allowed power for high-speed shaft under 2 different numbers of input revolution as well as service types. Other situations may refer to this list. However, if each service circulation time is $t_2 > 20$ min, selection should be made according to Table 1; if peak load is applicable, the value 2-3.5 times bigger than that of continuous type should be selected.

ZS和ZSH系列圆柱齿轮减速器
ZS and ZSH Cylindrical Gear Decelerators



		中心距				轴径				轴间距				轴径				轴间距				轴径				轴间距			
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减速器 Decelerator		1000 mm						1250 mm						1600 mm						2000 mm						2500 mm						3150 mm						4000 mm						5000 mm						6300 mm						8000 mm						10000 mm						12500 mm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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带负号的尺寸在高速轴轴心线的右侧,不带负号的尺寸位置与图示位置相同。

The negative size lies in the right part of the center line of high-speed axes. The positions of the general sizes are as per the graphs.

ZS(H)型减速器传动比 Transmission ratio of ZS(H) type decelerator

总传动比 Total transmission ratio	50	56	63	71	80	90	100	112	125	140	160	180	200	224	250	280
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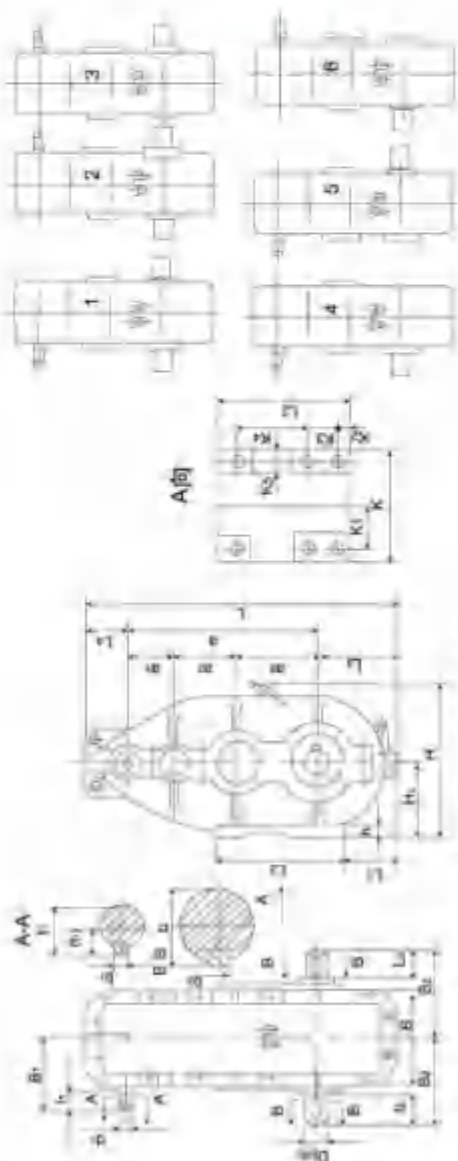
ZS(ZSH)减速器承载能力表

Table of ZS(ZSH) Decelerator carrying capacity

		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150	160	170	180	190	200	220	250	280
		n ₂ =1500 (转/分) r/min																													
ZS50	中型 middle type	6.46	5.75	5.06	5.06	4.41	3.81	3.28	2.85	2.65	2.37	2.12	1.89	1.67	1.39	1.24	1.10														
	连续型 continuous type	3.70	3.30	2.96	2.65	2.32	2.06	1.86	1.66	1.37	1.23	1.09	0.973	0.864	0.718	0.637	0.567														
ZS65	中型 middle type	12.5	11.1	9.98	8.92	7.81	6.95	6.25	5.59	4.58	4.10	3.66	3.26	2.89	2.40	2.13	1.90														
	连续型 continuous type	6.38	5.70	5.11	4.57	4.00	3.56	3.20	2.86	2.36	2.12	1.89	1.68	1.49	1.24	1.10	0.979														
ZS75	中型 middle type	19.7	17.6	15.8	14.1	12.4	11.0	9.92	8.86	7.26	6.51	5.81	5.17	4.59	3.82	3.39	3.10														
	连续型 continuous type	10.1	9.04	8.11	7.25	6.35	5.65	5.09	4.54	3.75	3.36	3.00	2.67	2.37	1.97	1.75	1.55														
ZS82.5	中型 middle type	29.4	26.3	23.6	21.1	18.5	16.4	14.8	13.2	10.8	9.71	8.67	7.71	6.85	5.70	5.06	4.49														
	连续型 continuous type	15.1	13.5	12.1	10.8	9.47	8.42	7.58	6.78	5.59	5.01	4.47	3.98	3.53	2.94	2.61	2.32														
ZS95	中型 middle type	41.8	37.4	33.6	30.0	26.3	23.4	21.1	18.8	15.4	13.8	12.3	11.0	9.75	8.11	7.20	6.40														
	连续型 continuous type	21.4	19.2	17.2	15.4	13.5	12.0	10.8	9.64	7.95	7.13	6.37	5.66	5.03	4.18	3.71	3.30														
ZS110	中型 middle type	57.3	51.3	46.0	41.1	36.0	32.1	28.9	25.8	21.1	18.9	16.9	15.1	13.4	11.1	9.87	8.77														
	连续型 continuous type	29.4	26.3	23.6	21.1	18.5	16.4	14.8	13.2	10.9	9.78	8.73	7.77	6.90	5.73	5.09	4.53														
ZS125	中型 middle type	94.0	84.2	74.4	70.9	62.1	55.3	48.9	42.7	36.5	32.7	29.2	26.0	23.1	19.2	17.0	15.2														
	连续型 continuous type	50.6	45.3	40.6	36.3	31.8	28.3	25.5	22.8	18.8	16.9	15.1	13.4	11.9	9.90	8.79	7.82														
ZS145	中型 middle type	156	140	126	112	98.5	87.7	79.0	70.6	57.8	51.9	46.4	41.2	36.6	30.5	27.0	24.1														
	连续型 continuous type	80.1	71.7	64.4	57.6	50.5	44.9	40.5	36.2	29.8	26.8	23.9	21.3	18.9	15.7	14.0	12.4														
ZS165	中型 middle type	233	208	187	167	147	131	118	105	86.2	77.4	69.1	61.5	54.6	45.4	40.3	35.9														
	连续型 continuous type	119	107	95.8	85.7	75.2	66.9	60.3	53.9	44.5	39.9	35.7	31.7	28.2	23.4	20.8	18.5														

		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150	160	170	180	190	200	220	250	280
		n ₂ =1500 (转/分) r/min																													
ZS50	中型 middle type	8.54	7.62	6.72	6.72	5.86	5.08	4.38	3.81	3.81	3.56	3.18	2.69	2.51	2.09	1.85	1.65														
	连续型 continuous type	5.53	4.94	4.43	3.96	3.47	3.09	2.78	2.48	2.05	1.84	1.64	1.46	1.29	1.08	0.955	0.849														
ZS65	中型 middle type	18.6	16.6	14.9	13.3	11.7	10.4	9.36	8.36	6.85	6.14	5.49	4.88	4.33	3.60	3.20	2.84														
	连续型 continuous type	9.53	8.52	7.64	6.83	5.99	5.32	4.80	4.29	3.53	3.17	2.83	2.52	2.23	1.86	1.65	1.47														
ZS75	中型 middle type	27.8	24.9	22.0	21.1	18.5	16.5	14.4	12.6	10.9	9.75	8.71	7.74	6.87	5.72	5.08	4.51														
	连续型 continuous type	15.1	13.5	12.1	10.8	9.49	8.45	7.61	6.80	5.61	5.03	4.49	4.00	3.55	2.95	2.62	2.33														
ZS82.5	中型 middle type	40.7	37.8	34.4	31.2	27.6	24.6	22.1	19.8	16.2	14.5	13.0	11.6	10.3	8.53	7.57	6.73														
	连续型 continuous type	22.5	20.1	18.1	16.1	14.1	12.6	11.3	10.1	8.36	7.50	6.70	5.96	5.29	4.40	3.91	3.47														
ZS95	中型 middle type	62.3	55.8	50.1	44.8	39.3	34.9	31.5	28.1	23.1	20.7	18.5	16.4	14.6	12.1	10.8	9.59														
	连续型 continuous type	31.9	28.6	25.7	22.9	20.1	17.9	16.1	14.4	11.9	10.7	9.53	8.48	7.53	6.26	5.56	4.95														
ZS110	中型 middle type	85.3	76.4	68.6	61.3	53.8	47.9	43.1	38.6	31.6	28.3	25.3	22.5	20.0	16.6	14.8	13.1														
	连续型 continuous type	43.7	39.1	35.1	31.4	27.6	24.5	22.1	19.8	16.3	14.6	13.1	11.6	10.3	8.59	7.63	6.78														
ZS125	中型 middle type	121	108	96.2	96.2	84.5	73.7	63.9	56.0	54.5	48.9	43.7	38.9	34.5	28.7	25.5	22.7														
	连续型 continuous type	75.2	67.3	60.5	54.1	47.6	42.3	38.1	34.1	28.1	25.2	22.6	20.1	17.8	14.8	13.2	11.7														
ZS145	中型 middle type	220	198	162	162	142	124	108	94.8	86.4	77.5	69.3	61.7	54.8	45.6	40.5	36.0														
	连续型 continuous type	119	107	95.7	85.7	75.2	67.0	60.4	54.0	44.6	40.0	35.8	31.8	28.3	23.5	20.9	18.6														
ZS165	中型 middle type	310	290	272	241	218	193	168	140	129	116	103	91.9	81.7	68.0	60.4	53.7														
	连续型 continuous type	177	158	142	127	122	99.7	90.0	80.5	66.4	59.6	53.3	47.4	42.1	35.1	31.1	27.7														

ZSC(L)型立式圆柱齿轮减速器



Note: Only the driving shaft edge of ZSC-750 type decelerator is taper and others are cylinder

型番 Type	寸法 Dimension			重量 Weight	寸法 Dimension			重量 Weight	寸法 Dimension			重量 Weight	寸法 Dimension			重量 Weight	寸法 Dimension			重量 Weight	寸法 Dimension			重量 Weight	寸法 Dimension			重量 Weight	寸法 Dimension			重量 Weight																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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传动比代号及参数	No. of transmission ratio and parameters.
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
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90	90
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92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

Weighted AVE No of transactions ratio	I	II	III	IV	V	VI	VII	VIII	IX
ZSC350	35.1	17.2							
ZSC400	22.4	16.4	37.33	49.86	32.4	27			
ZSC600	77.5	59	46.7	37.9	27.3	31.2	21.15	17.16	14.19
ZSC750	166.86	133.87	54.75	34.4	38.97				

ZSC立式圆柱齿轮减速器承载能力表

Table of ZSCvertical type cylindrical gear decelerator carrying capacity

[illegible]

订货时选用代号示意图

Example of selecting model

ZSC -400 -II -2

減速器

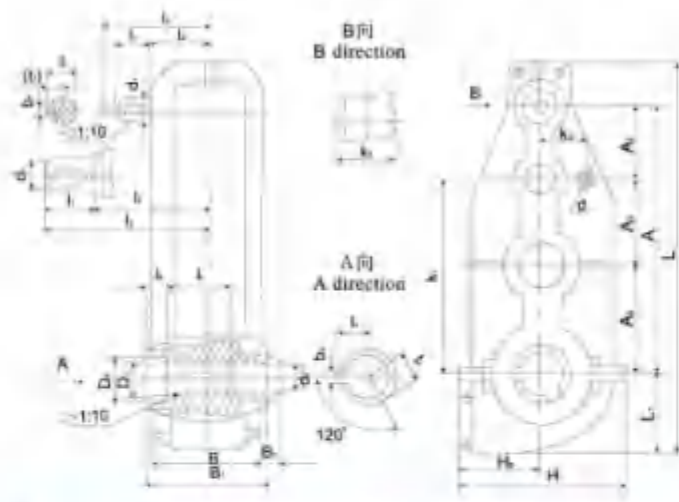
Reducers

装配型式: Installing form

传动比代号 Transmission ratio

规格: Specifications

型号	Type of reducer
YD100	YD100
YD150	YD150
YD200	YD200
YD250	YD250
YD300	YD300
YD350	YD350
YD400	YD400
YD450	YD450
YD500	YD500
YD550	YD550
YD600	YD600
YD650	YD650
YD700	YD700
YD750	YD750
YD800	YD800
YD850	YD850
YD900	YD900
YD950	YD950
YD1000	YD1000
YD1050	YD1050
YD1100	YD1100
YD1150	YD1150
YD1200	YD1200
YD1250	YD1250
YD1300	YD1300
YD1350	YD1350
YD1400	YD1400
YD1450	YD1450
YD1500	YD1500
YD1550	YD1550
YD1600	YD1600
YD1650	YD1650
YD1700	YD1700
YD1750	YD1750
YD1800	YD1800
YD1850	YD1850
YD1900	YD1900
YD1950	YD1950
YD2000	YD2000
YD2050	YD2050
YD2100	YD2100
YD2150	YD2150
YD2200	YD2200
YD2250	YD2250
YD2300	YD2300
YD2350	YD2350
YD2400	YD2400
YD2450	YD2450
YD2500	YD2500
YD2550	YD2550
YD2600	YD2600
YD2650	YD2650
YD2700	YD2700
YD2750	YD2750
YD2800	YD2800
YD2850	YD2850
YD2900	YD2900
YD2950	YD2950
YD3000	YD3000
YD3050	YD3050
YD3100	YD3100
YD3150	YD3150
YD3200	YD3200
YD3250	YD3250
YD3300	YD3300
YD3350	YD3350
YD3400	YD3400
YD3450	YD3450
YD3500	YD3500
YD3550	YD3550
YD3600	YD3600
YD3650	YD3650
YD3700	YD3700
YD3750	YD3750
YD3800	YD3800
YD3850	YD3850
YD3900	YD3900
YD3950	YD3950
YD4000	YD4000
YD4050	YD4050
YD4100	YD4100
YD4150	YD4150
YD4200	YD4200
YD4250	YD4250
YD4300	YD4300
YD4350	YD4350
YD4400	YD4400
YD4450	YD4450
YD4500	YD4500
YD4550	YD4550
YD4600	YD4600
YD4650	YD4650
YD4700	YD4700
YD4750	YD4750
YD4800	YD4800
YD4850	YD4850
YD4900	YD4900
YD4950	YD4950
YD5000	YD5000
YD5050	YD5050
YD5100	YD5100
YD5150	YD5150
YD5200	YD5200
YD5250	YD5250
YD5300	YD5300
YD5350	YD5350
YD5400	YD5400
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YD5600	YD5600
YD5650	YD5650
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YD5950	YD5950
YD6000	YD6000
YD6050	YD6050
YD6100	YD6100
YD6150	YD6150
YD6200	YD6200
YD6250	YD6250
YD6300	YD6300
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YD6450	YD6450
YD6500	YD6500
YD6550	YD6550
YD6600	YD6600
YD6650	YD6650



减速机型号 Type of decelerator	主要尺寸 (mm) Main dimensions										性能参数 Performance parameters						
	A	A ₁	A ₂	A ₃	d ₁	b ₁	l ₁	l ₂	l ₃	l ₄	D ₁	D ₂	L ₁	L ₂	S ₁	S ₂	d ₀
ZSC-320	320	84	106	130	直22	6	24.5	55	105	-	44.5	53	85	50	200	40	40
ZSC-400	400	105	130	165	直30	8	33	55	115	-	64.5	75	105	60	230	50	50
ZSC-500	500	100	150	250	锥35	10	(19.5)	60	152.5	232.5	79.5	95	130	65	303	72	66
ZSC-600	600	150	200	250	锥40	12	(21.5)	85	160	265	89.5	98	130	140	330	80	105
ZSC-650	650	150	200	300	锥40	12	(21.5)	85	185	295	99.5	112	165	65	380	72	85
ZSC-800	800	200	250	350	锥50	16	(28)	85	265	375	119.5	136	165	95	470	77	85
减速机型号 Type of decelerator	d	K ₁	K ₂	K ₃	L	H ₀	H	L ₁	t ₂	t ₃	b ₂	B	P ₂	质量(kg) weight	空心轴 键个数		
ZSC-320	25	240	90	120	525	150	300	120	24.7	-	14	175	52.5	63	1		
ZSC-400	25	350	110	130	650	182.5	366	155	35.6	-	18	210	60	114	1		
ZSC-500	28	400	140	205	822	255	511	225	44.2	-	24	285	81	253	1		
ZSC-600	28	420	180	312	955	268	530	235	46.7	-	24	312	-	273	1		
ZSC-650	32	470	200	270	1060	307(325)	614(632)	277	54.2	54.2	28	360	82	435	2		
ZSC-800	40	600	285	305	1340	400(430)	800(830)	340	65.2	65.2	32	450	80	866	2		

2. The values with "*" are the sizes for oil tubes

Model	1	2	3	4	5	6
ZSC320	21.6					
ZSC400	12.45	24.9	45.8	32.8	9.58	
ZSC500	16.18	24.08	33.1	44.1		
ZSC600	77.5	59	46.7	37.9	27.3	21.5
ZSC650	96.5	81.9	62.4	51.7	37.6	
ZSC800	31.6	37.4	48.9	62.5		

Energy level diagram for the ZSC system. The diagram shows four energy levels: ZSC at the top, followed by -400, -II, and -2 at the bottom. Vertical lines connect the levels, and horizontal lines indicate transitions between them.

— 型号 Type of reducer

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	轻级 Light Duty	24.6	4.5	24.9	45.4	32.6	8.58	16.18	24.06	33.14	4.5	77.5	59	46.7	37.9	27.3	21.75	96.5	81.9	62.4	51.7	37.6	24.03	21.6	37.4	48.9	62.5					
600	中级 Middle Duty	2.02	4.1	3.0	2.16	2.45	9.27	6.02	5.56	5.4	4.3	4.1	5.4	6.9	8.5	12.0	15	7.1	8.1	8.8	9.7	11.4			18.5	15.7	12	9.2				
	重级 Heavy Duty	1.76	3.65	2.61	1.88	2.13	4.92	5.24	4.9	4.68	3.72	4.1	5.4	6.9	8.5	12.0	14	6.19	7	7.6	8.4	9.85	14.4	16.1	13.6	10.4	8					
	轻级 Light Duty	1.3	2.9	2.1	1.62	1.65	3.01	4.45	4.16	4.0	3.16	2.2	2.8	3.2	3.6	4.7	6	5.26	5.95	6.5	7.15	8.5			13.7	11.5	8.8	6.8				
750	中级 Middle Duty	2.53	5.15	3.76	2.7	3.06	10.6	7.5	7.1	6.74	5.35	5.2	6.8	8.7	10.5	15	18.5	8.9	10.2	10.9	12.1	13			23	19.5	15	11.5				
	重级 Heavy Duty	2.2	4.46	6.26	2.35	2.66	5.66	6.54	6.15	5.85	4.6	5.2	6.8	8.2	10.5	13	16	7.74	8.8	9.45	10.5	12.3	18	20.1	17	13	10					
	轻级 Light Duty	1.6	3.6	2.6	2.02	2.06	3.96	5.53	5.2	5	3.95	2.3	2.8	3.2	4.1	5.2	6.5	6.58	7.5	8.1	8.55	10.5			17	14.5	11	8.5				
10-00	中级 Middle Duty	3.4	6.85	5.0	3.6	4.1	13.15	10	9.45	9	7.15	7.0	9.2	11.5	14.4	20	24	11.8	13.5	14.5	16.2	19			31	26.1	20	15.4				
	重级 Heavy Duty	2.34	5.95	4.35	3.14	3.55	6.08	8.72	8.2	7.8	6.2	7.0	9.2	11.5	14	18	21	10.3	11.7	12.6	14	16	24	26.8	22.7	17.3	13.3					
	轻级 Light Duty	2.1	4.8	3.45	2.68	2.75	4.72	7.4	7.0	6.6	5.26	3.3	3.8	4.6	5.4	7	9	8.75	10	10.7	12	14			22.8	19.3	14.7	11.3				

外形尺寸 Outer size

机座号 Frame No.	A	B	C	D	E	F	G	H	K	L	M	N	重量 Weight (kg)
501	310	250	100	35	80	10	38	250	19	370	30	310	90
502	310	250	100	35	80	10	38	250	19	370	30	310	95
561	370	300	121	50	110	16	54	280	19	430	35	368	130
562	370	300	121	50	110	16	54	280	19	430	35	368	140
751	500	360	147	60	140	18	64	375	24	580	45	446	260
752	500	360	147	60	140	18	64	375	24	580	45	446	275
902	550	360	155	70	140	20	74.5	450	24	640	50	450	385
903	550	360	155	70	140	20	74.5	450	24	640	50	450	455

技术参数 Technical Data

型号 Type	功率 / 极数 Power	电压 Voltage	电流 Current	转速 (r/min) Wheeling speed	额定电流 Rated current	额定转矩 Rated turning moment	额定转矩 Rated turning moment
YTC501	0.75/6P	380	2.3	31.35.39.44	6.0	2.0	2.0
501	1.1/4P	380	2.7	48.53.59.67.75.88.97.102 114.129.140.164.180.196.219	6.5	2.2	2.2
502	1.1/6P	380	3.2	31.35.39.44	6.0	2.0	2.0
502	1.5/4P	380	3.7	48.53.59.67.75.88.97.102.114. 129.150. 164.171.184.219	6.5	2.2	2.2
561	1.5/6P	380	4.0	31.35.39.44	6.0	2.0	2.0
561	2.2/4P	380	5.0	48.53.59.67.75.88.97.102.114. 129.150. 164.171.184.219	7.0	2.2	2.2
562	2.2/6P	380	5.6	31.35.39.44	6.0	2.0	2.0
562	3/4P	380	6.8	48.53.59.67.75.88.97.102.114. 129.150. 164.171.184.219	7.0	2.2	2.2
751	4/6P	380	9.4	31.35.39.44	6.5	2.0	2.0
751	5.5/4P	380	11.6	48.53.59.67.75	7.0	2.2	2.2
752	5.5/6P	380	12.6	31.35.39.44	6.5	2.0	2.0
752	7.5/4P	380	15.4	48.53.59.67.75	7.0	2.2	2.2
902	7.5/6P	380	17	33	6.5	2.0	2.0
902	11/4P	380	22.6	50.59	7.0	2.2	2.2
903	11/6P	380	24.6	33	6.5	2.0	2.0
903	15/4P	380	30.3	50.59	7.0	2.2	2.2

ZJ型减速器

ZJ decelerator

ZJ型减速器是平行轴成折线布置，二级圆柱中硬齿面齿轮传动，是采用胀圈无键联接和接触式楔块逆止器等结构的套式减速器。

ZJ型减速器主要用于固定式输送机，特别在斗式提升机中得到广泛应用，也运用于其它多种机械传动中。

ZJ decelerator is a set decelerator with equql shaft diagonal in stallation,two stage hard tooth gear driving,up ring no-shaft connection and tangent model arrester.

Zj decelerator is applied in fitting transporter,especially in lifter.

工作条件 working condition

输入轴转速不大于1500r/min;

工作环境温度为-20℃~+45℃，当环境温度低于0℃时，必须采用润滑油加热装置，使油温超过0℃时才能启动。

可正反两向运转。

The input shaft rotating speed in no more than 1500r/min

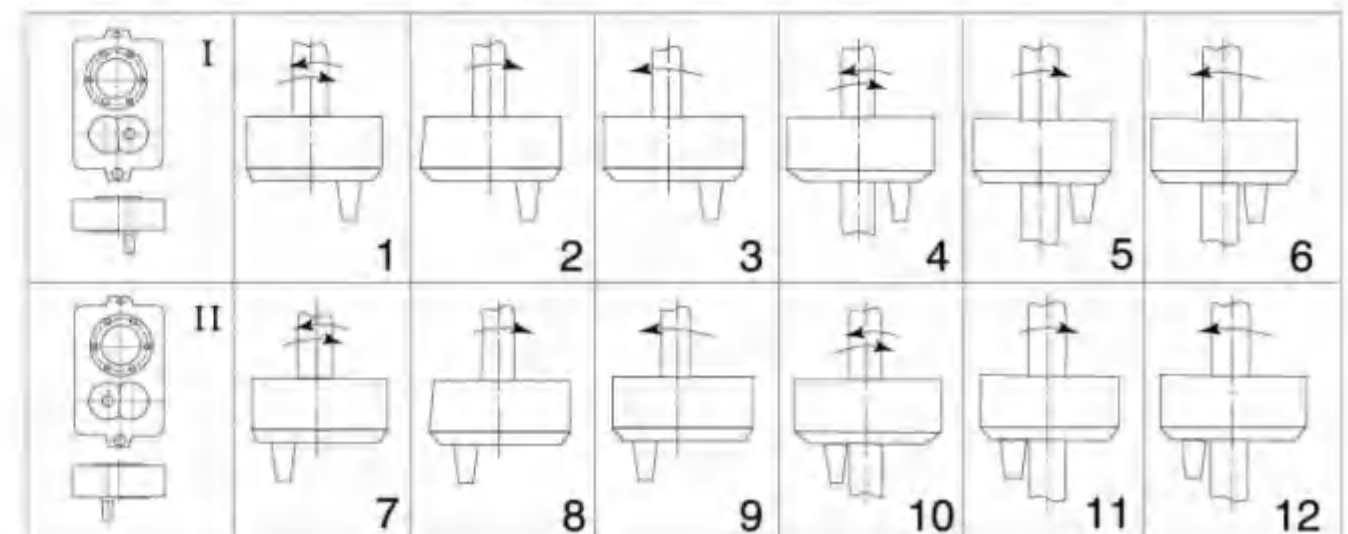
The ambient temperature is -20℃~+45℃ ,the lubricating oil must be heated up to 0℃ when it is below that. Both forward and backward operation are applied.

型式 Type

装配型式 ZJ型减速器按空心输出轴端分为闷盖 (m) 和通盖 (T)，输出端的旋转方向有双向 (L)、顺时针单向 (S)，逆时针单向 (N)；按输入轴装配型式分为右 (I) 装和左装 (II)。减速器共有12种装配型式。

Installing form

The hollow shaft edge of ZJdecelerator has type,hole edge and close edge.The rotating direction are double direction(L),"S"clockwise direction,"N"---anticlockwise and single direction. the shaft installing form are left and right installation.there are totally 12 installing form below.



代号	1	2	3	4	5	6	7	8	9	10	11	12
旋转方向代号 Rotating direction symbol	L	S	N	L	S	N	L	S	N	L	S	N
空心输出轴端盖型式代号 Type of hollow output shaft edge	M		T		M		T					
输入轴装配型式代号 Type of input shaft installing form	I						II					

安装型式 Installing Form

ZJ型减速器的输出端套装在被动轴上，一般采用直立工作位置。在有些特殊情况下，也可采用水平、倾斜、甚至倒置的工作位置。在箱体的一端装有双螺纹拉杆装置。

The output shaft of ZJreducer is installed on passive shaft,usually the vertical position is applied.Under special circumstance,the level,slope and reverse position are applied,the other edge of box is installed double worm pole fitting.

型号 Type

ZJ	160	10	S	T	I
					输入轴装配形式 "I" 右装, "II" 左装 input shaft installing form, "I" means right installation and "II" means left installation.
					空心输出轴端盖形式, 分带通孔盖 "T" (双端) 和闭盖 "M" (单端) Hollow output shaft edge type, Hole edge "T" and close edge "M"
					旋转方向代号: "L" 双向, "S" 顺时针单向, "N" 逆时针单向 Rotating direction mode: "L"-double direction, "S" clockwise and single direction, "N" anticlockwise and single direction.
					公称传动比, 分10和16两种 Nominal transmission ratio, 10 and 16
					额定输出扭矩的1/10(N.M) 1/10 of rated output torque (N.M)
					轴装式减速器 shaft fitting decelerator

基本参数 Type	ZJ63	ZJ100	ZJ160	ZJ250	ZJ400	ZJ630
额定输出转矩(Nm) Rated output torque	630	1000	1600	2500	4000	6300
公称传动比 nominal transmissior ratio	10 16	10 16	10 16	10 16	10 16	10 16
额定逆止力矩(Nm) rated arrested torque	1000	1600	2500	4000	6300	10000
质量(kg) weight	78	108	163	230	320	470

基本参数 Basic Parameter

ZJ型减速器的基本参数见表

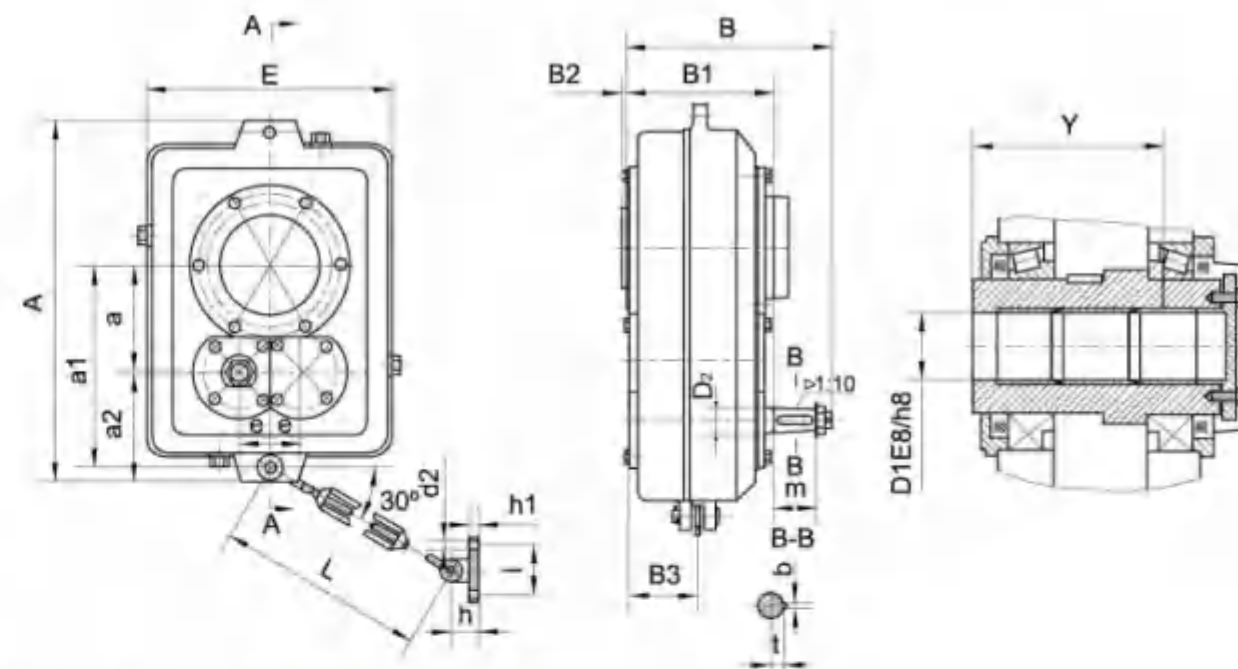
The basic parameters of ZJdecelerator are losted below

注: 额定输出扭矩为平衡负荷、连续工作时的值。

Note: The pated ouput torque is the valaeif of balanced load of continuous operation.

外形和安装尺寸 Contour and installing size

ZJ型减速器的外形和安装尺寸见表 The contour and installing size of ZJ decelerator are listed below



ZJ型减速器的外形安装尺寸

Installing size of ZJtype decelerator

Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
ZJ63	495	149	280	151	288	205	0	86	335	42	55	205	138	35	6	18.5	60	16	13	416	310	88	38	12		
ZJ100	552	174	315	161	334	222	2	90	385	47	70	215	155	40	10	20.9	85	16	13	416	310	88	38	12		
ZJ160	679	198	395	219	348	238	1	100	465	58	70	230	165	45	12	23.4	85	20	20	582	390	100	45	12		
ZJ250	755	223	420	222	382	272	2	116	530	63	90	260	180	50	12	25.9	85	22	20	582	390	100	45	12		
ZJ400	900	274	495	251	449	309	3	128	620	73	110	265	185	60	12	31.4	110	25	24	690	470	125	52	16		
ZJ630	995	298	545	282	487	347	3	141	680	84	110	275	195	65	16	33.9	110	25	24	690	470	125	52	16		

承载能力 Carrying Capacity

ZJ型减速器的额定输出功率, 当公称传动比为10时, 见表; 当公称传动比为16时, 见表减速机允许随短期超负荷能力为额定输出转矩的2.5倍。

When nominal transmission ratio is 10, rated output power of ZJ decelerator is showed on graph, when the ratio is 16, the allowed capacity is 2.5 times of rated output torque.

减速机型号 Type			ZJ63-10	ZJ100-10	ZJ160-10	ZJ250-10	ZJ400-10	ZJ630-10
电机转速 motor wheeling speed (r/min)	带传动速比 belt transmission speed ratio	输出轴转速 output shaft wheeling speed (r/min)	额定输出功率 Rated output power (KW)					
1500	1.00	147.00	9.7	15.4	24.6	38.5	61.6	97.0
	1.12	131.25	8.7	13.7	22.0	34.4	55.0	86.6
	1.25	118.55	7.8	12.4	19.9	31.5	49.7	78.2
	1.40	105.00	6.9	11.0	17.6	27.5	44.0	69.3
	1.60	91.88	6.1	9.6	15.4	24.1	38.5	60.6
	1.80	81.67	5.4	8.6	13.7	21.4	34.2	53.9
	2.00	73.50	4.8	7.7	12.3	19.2	30.8	48.5
	2.24	65.63	4.3	6.9	11.0	17.2	27.5	43.3
	2.50	58.80	3.9	6.2	9.9	15.4	24.6	38.8
1000	1.00	98.00	6.5	10.3	16.4	25.7	41.0	64.6
	1.12	87.50	5.8	9.2	14.7	22.9	36.6	57.7
	1.25	78.4	5.2	8.2	13.1	20.5	32.8	51.7
	1.40	70.00	4.6	7.3	11.7	18.3	29.3	46.2
	1.60	61.25	4.0	6.4	10.3	16.0	25.7	40.4
	1.80	54.44	3.6	5.7	9.1	14.3	22.8	35.9
	2.00	49.00	3.2	5.1	8.2	12.8	20.5	32.3
	2.24	43.75	2.9	4.6	7.3	11.5	18.32	28.9
	2.50	39.20	2.6	4.1	6.6	10.3	16.4	25.9
750	1.00	73.50	4.8	7.7	12.3	19.2	30.8	48.5
	1.12	65.63	4.3	6.9	11.0	17.2	27.5	43.3
	1.25	58.80	3.9	6.2	9.9	15.4	24.6	38.8
	1.40	52.50	3.5	5.5	8.8	13.7	22.0	34.6
	1.6	45.94	3.0	4.8	7.7	12.0	19.2	30.3
	1.80	40.83	2.7	4.3	6.8	10.7	17.1	26.9
	2.00	36.75	2.4	3.8	6.2	9.6	15.4	24.2
	2.24	32.81	2.2	3.4	5.5	8.6	13.7	21.6
	2.50	29.40	1.9	3.1	4.9	7.7	12.3	19.3

注: 1.本表是按减速机实际传动比 $i=9.82$ 计算编制的。

2.输出轴转速是按线绳结构的三角带计算即选取弹性滑动系数 $e=0.02$

Note: 1.The graph above is designed under actual transmission ratio $i=9.82$.

2.The output shaft wheeling speed is calulated under temperary factor $e=0.02$.

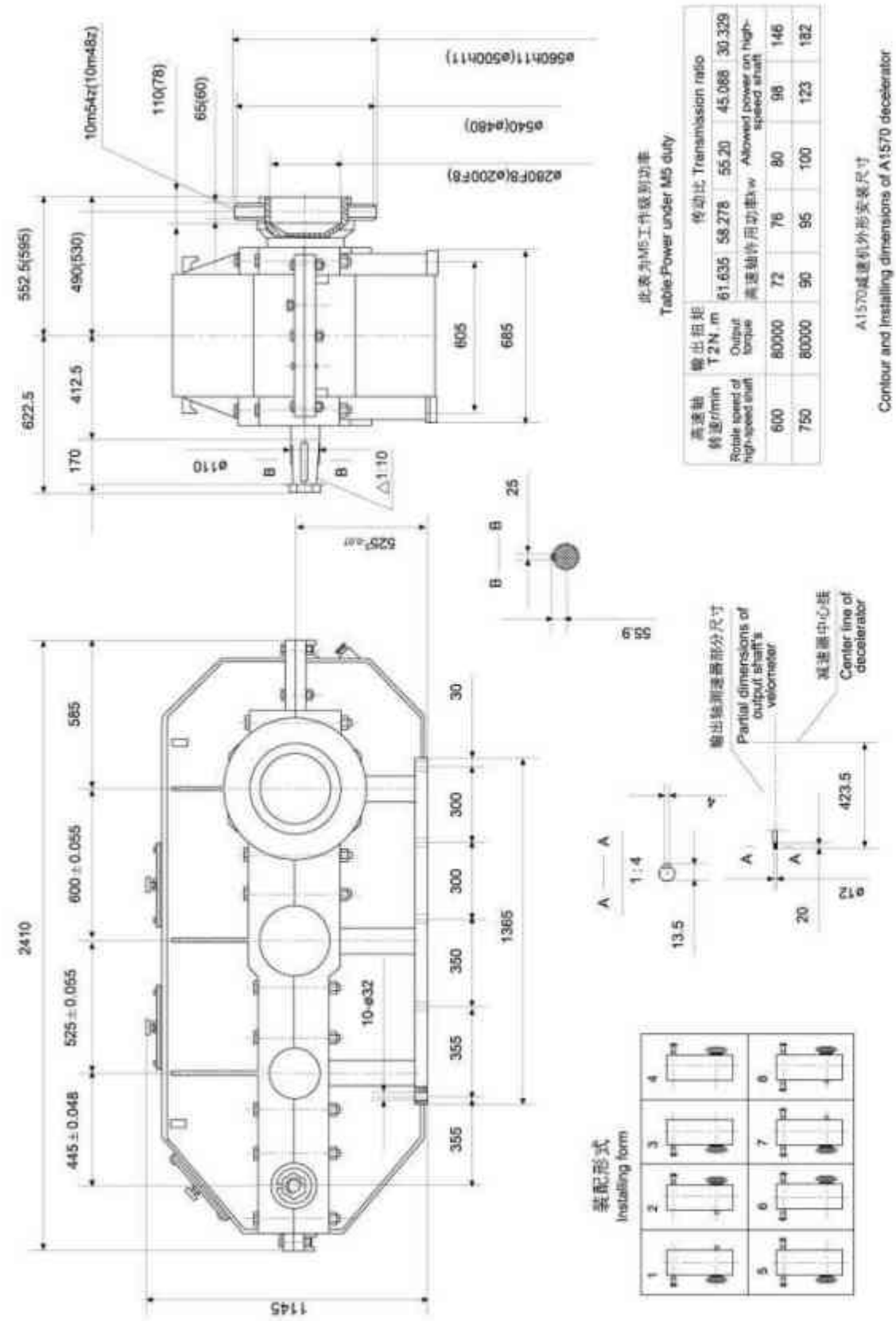
减速机型号 Type			ZJ63-16	ZJ100-16	ZJ160-16	ZJ250-16	ZJ400-16	ZJ630-16
电机转速 motor wheeling speed (r/min)	带传动速比 belt transmission wheel speed	输出轴转速 output shaft wheeling speed (r/min)	额定输出功率 Rated output power (KW)					
1500	1.00	93.67	6.2	9.8	15.7	24.5	39.2	61.8
	1.12	83.65	5.5	8.8	14.0	21.9	30.5	55.2
	1.25	74.95	4.9	7.8	12.6	19.6	31.4	49.0
	1.40	66.92	4.4	7.0	11.2	17.5	28.0	44.1
	1.60	58.56	3.9	6.1	9.8	15.3	24.5	38.6
	1.80	52.05	3.4	5.5	8.7	13.6	21.8	34.3
	2.00	46.85	3.1	4.9	7.8	12.3	19.6	30.9
	2.24	41.83	2.8	4.4	7.0	10.9	17.5	27.6
	2.50	37.48	2.5	3.9	6.3	9.8	15.7	24.7
1000	1.00	62.46	4.1	6.5	10.5	16.4	26.2	41.2
	1.12	55.77	3.7	5.8	9.3	14.6	23.4	36.8
	1.25	49.97	3.3	5.2	8.4	13.1	20.9	33.0
	1.40	44.61	2.9	4.6	7.5	11.7	18.7	29.4
	1.60	39.04	2.6	4.1	6.5	10.2	16.4	25.8
	1.80	34.70	2.3	3.6	5.8	9.1	14.5	22.9
	2.00	31.23	2.1	3.3	5.2	8.2	13.1	20.6
	2.24	27.88	1.8	2.9	4.7	7.3	11.7	18.4
	2.50	25.0	1.6	2.6	4.2	6.5	10.5	16.48
750	1.00	46.85	3.1	4.9	7.8	12.3	19.6	30.9
	1.12	41.83	2.8	4.4	7.0	10.9	17.5	27.6
	1.25	37.48	2.5	3.9	6.3	9.8	15.7	24.7
	1.40	33.46	2.2	3.5	5.6	8.8	14.0	22.1
	1.60	29.28	1.9	3.1	4.9	7.7	12.3	19.3
	1.80	26.03	1.7	2.7	4.4	6.8	10.9	17.2
	2.00	23.42	1.5	2.5	3.9	6.1	9.8	15.5
	2.24	20.91	1.4	2.2	3.5	5.5	8.8	13.8
	2.50	18.74	1.2	2.0	3.1	4.9	7.8	12.4

传动比代号 Transmission ratio symbol	i
I	48.57
II	40.17
III	31.5
IV	23.34
V	20.49
VI	15.75
VII	12.64
VIII	10.35
IX	8.23



传递矩阵 transmission	I	II	III	IV	V	VI	VII	VIII	IX	I
z_1	88	66	85	81	79	77	73	69	64	21
z_2	85	85	83	83	83	81	81	81	81	24
z_3	11	13	14	16	16	18	18	18	18	23
z_4	48.57	40.17	31.5	23.34	20.49	15.75	12.64	10.35	8.23	





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