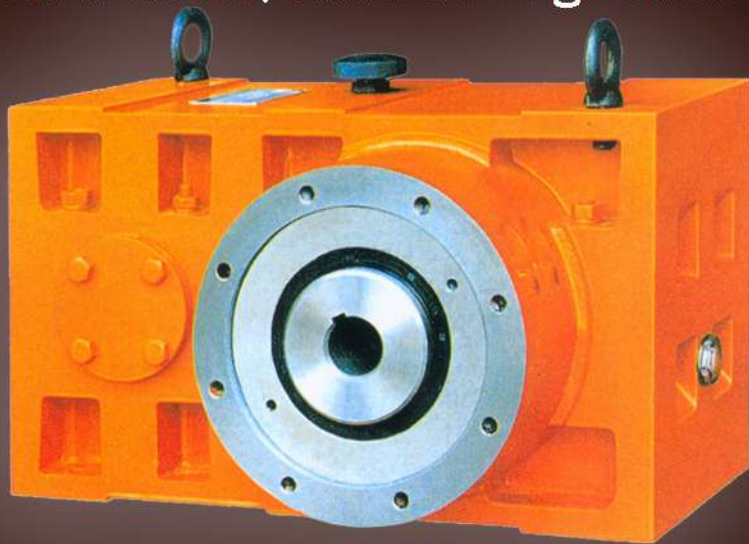


ZLYJ 系列
挤出机专用硬齿面减速机

ZLYJ speed reducer especially for
extruder/extruding machine



NER GROUP CO., LIMITED
www.sogears.com

ZLYJ塑料橡胶挤出机专用减速机

ZLYJ Serial Plastic Extruding Gear Reducer

一、概述 Introduction

ZLYJ系列减速机是为塑料、橡胶螺杆挤出机配套设计的高精度硬齿面带推力包的齿轮传动装置。产品设计参照JB/T8853-2001《圆柱齿轮减速机》规定的各项技术规范。其特点是齿轮和轴类零件采用了高强度合金钢材质。齿轮经渗碳、淬火、磨齿工艺加工。齿轮精度为GB10095-88, 6级。齿面硬度HRC54~62。在空心输出轴前端配置有大规格推力轴承, 承受螺杆工作时的轴向推力。整机具有体积小、承载能力高、传动平稳、噪声低、效率高等特点

ZLYJ reducers are a kind of high-precision rigid gear assembly specially designed for the single-screw plastic/rubber extruder. Taking the JB/T 8853-2001 Cylindrical Gear Reducer as a reference for design, the products applies the high-strength low-carbon alloy steel for gears and gear shaft, with tooth flank carbureted, quenched and ground, to meet the gear precision at Level 6 (GB/T 10095) and hardness of tooth flank HRC54-62. A huge thrust bearing is mounted on the front of the output shaft to bear the thrust from the screw.

二、适用范围 Applicable Scope

1. 高速轴转速不大于1500转/分。
2. 齿轮传动圆周速度不大于20米/秒。
3. 工作环境温度为-40~45℃, 如果低于0℃, 启动前润滑油应预热至0℃以上, 本减速机可用于正反两个方向运转, 但部分机型高速轴带单向油泵, 默认方向为: 面对输出轴, 输出轴为顺时针旋转。如果方向改变, 请再订货时说明。

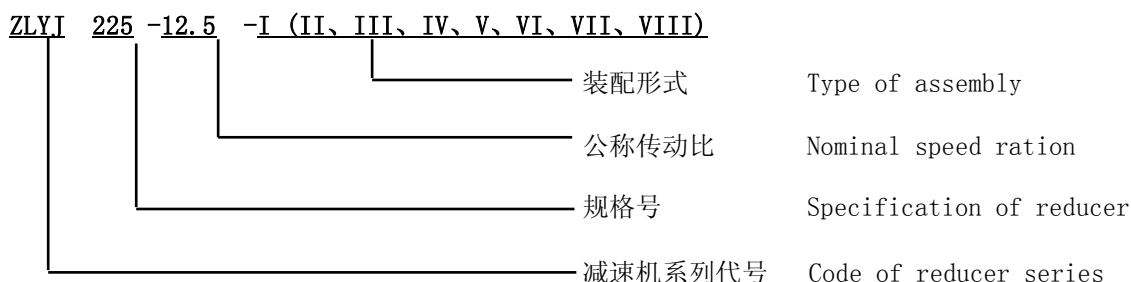
1. The input rotation of prime mover shall be ≤ 1500 rpm.
2. The peripheral speed of gear drive shall be ≤ 20 m/s.
3. The working ambient temperature shall be within $-40^{\circ}\text{C} \sim 45^{\circ}\text{C}$. Preheat the lubricating oil to above 0°C when the ambient temperature is below 0°C . Rotation is available both forwards and backwards. However, the high-speed shaft of some types of reducers has a single-way oil pump directing as defaulted to the output shaft which rotates clockwise. If you want to change the direction, please make detailed description while placing order.

三、减速机的型号 Reducer Model

在减速机型号中, 含系列代号、规格号、公称传动比、装配形式。

Product nameplates: When delivered, all reducers are attached with nameplates to specify the type, capability, production date, ex-factory number and other features for the purpose of maintenance, which shall not be removed at random.

标记示例 Nameplate explanation:



四、减速机选用 The reducers' selection:

ZLYJ减速机选型必须校核机械功率、轴向推力和热功率，详细步骤见下 ZLYJ reducer's selection must check mechanical power, axial thrust and thermal power, detailed procedures see below:

- 第一步** 选速比 (表1) Select Ratio (Table 1)
 输入转速 Input speed $n_1=1000\text{rpm}$, 输出转速 Output speed $n_2=70\text{rpm}$
 $i=n_1/n_2=1000/70=14.28$ 选速比 Select speed ratio 14
- 第二步** 选减速机的规格 (表1) Select reducer's model (Table 1)
 根据用户提供的输入功率以及输出转速选择机型。According to users offered Input power and Output speed select the model.
 输入功率 Input power $P=26\text{KW}$
 查表, $29\text{KW} > 26\text{KW}$, 且最经济, 选 ZLYJ200 Refer the table, $29\text{KW} > 26\text{KW}$, and the most cost-effective, so select ZLYJ200
- 第三步** 选减速机的装配型式 (图1) Select reducer's assembly type (Picture 1)
 根据用户的安装方式选择减速机的装配型式。According to users' mounting pattern select reducer's assembly type.
- 第四步** 计算轴向推力 Calculate axial thrust
 $F_a = \pi \times d_s^2 \times PS / (4 \times 1000)$
 螺杆直径 Screw diameter: $d_s=75\text{mm}$ 螺杆压强 Screw Pressure: $PS=26\text{MPa}$
 推力 Thrust $F_a = \pi \times 75^2 \times 26 / (4 \times 100) = 114.8\text{KN}$
 $187\text{KN} > 114.8\text{KN}$, ZLYJ200能承受此轴向推力。ZLYJ200 can bear this axial thrust.
- 第五步** 确定联接尺寸 (图1, 表2) Confirm the connection size. (Picture1, Form2)
 1. 核对空心输出轴的孔径, 键宽或花键参数, 轴孔深度。Check the hole diameter of hollow output shaft, key width or spline parameter, the axle hole depth.
 2. 核对地脚安装孔尺寸以及推力包螺孔的大小。Check foot mounting hole diameter and thrust package screwed hole size.
- 第六步** 确定冷却方式 (表3) Confirm the cooling type (Form 3)
 小规格减速机一般采用飞溅润滑, 自然冷却。大规格减速机采用强制润滑和冷却器冷却, 如用户要求超出附表配置, 订货时必须声明。 Small size reducer usually adopts splash lubrication, natural cooling. Big size reducer adopts forced lubrication and cooler for cooling, if users request equipments above attachment, then it should be declared when order.

减速机许用轴向推力

减速机 Reducer	ZLYJ112	ZLYJ133	ZLYJ146	ZLYJ173	ZLYJ200	ZLYJ225	ZLYJ250
推力 Thrust (KN)	41	54	60	153	187	250	268
减速机 Reducer	ZLYJ280	ZLYJ315	ZLYJ330	ZLYJ375	ZLYJ420	ZLYJ450	
推力 Thrust (KN)	356	403	448	495	545	590	

推荐配置 Recommend equipments

减速机 Reducer	112	133	146	173	200	225	250	280	315	330	375	420	450
传动比 ratio	8	8	10	10	12.5	12.5	16	16	16	16	16	16	16
螺杆直径 Screw Diameter (mm)	35	45.5	55	65	75	90	100	105 110	120	130 150	150 160	165	165
电机功率 Motor Power (KW)	5.5-4P	7.5-4P	11-4P	18.5-4P	25-4P	45-4P	45-4P	55-6P	75-6P	132-6P	132-6P	160-6P	200-6P
输入转速 Input Speed (rpm)	800	800	900	900	1000	1000	1120	960	960	960	960	960	960
输出转速 Output Speed (rpm)	100	100	90	90	80	80	70	60	60	60	60	60	60
备注 Note	电机与减速机通过皮带轮传动 The motor and Reducer are connected by belt.							电机与减速机用联轴器连接 The motor is connected with reducer through coupling.					

表1 ZLYJ减速机功率、扭矩表 Forms 1 ZLYJ Reducers power, Torque Forms

公称传动比 Nominal ratio	公称转速rpm		减速机规格 Reducers sizes																											
	输入n1 Input	输出n2 Output	112		133		146		173		200		225		250		280		315		330		375		420		450			
			许用输出功率P1 (KW)、输出扭矩T2 (N.m) Nominal Input Power (KW)、Output Toque (N.m)																											
			P1	T2	P1	T2	P1	T2	P1	T2	P1	T2	P1	T2	P1	T2	P1	T2	P1	T2	P1	T2	P1	T2	P1	T2	P1	T2	P1	T2
8	1500	188		652	20.8	1060	28.2	1436	47	2393	73	3698	100	5093	139	7070	188	9555	271	13813	340	17298	435	22178	606	30872	748	38078		
	1200	150	10	654	17	1079	22.9	1457	38.4	2445	59	3774	82	5190	113	7217	153	9744	221	14088	277	17642	355	22622	495	31497	611	38872		
	1000	125	8.6	657	14.4	1098	19.3	1478	32.7	2498	50	3851	69	5287	96	7365	130	9932	188	14363	235	17986	302	23067	420	32122	519	39667		
	750	94	6.8	693	11.2	1141	14.9	1521	24.6	2510	39	3952	53	5419	74	7579	100	10227	145	14750	181	18479	233	23710	324	33019	400	40747		
	600	75	5.4	693	8.9	1141	11.9	1521	19.7	2510	31	3952	43	5419	60	7579	80	10227	116	14750	145	18479	186	23710	259	33019	320	40747		
10	1500	150	10	662	17	1083	22.4	1428	37.8	2407	60	3795	82	5195	114	7233	153	9754	222	14134	278	17690	356	22663	495	31545	612	38964		
	1200	120	8.5	675	13.9	1104	18.3	1456	30.7	2443	49	3865	67	5310	93	7379	125	9957	181	14401	227	18031	290	23114	404	32178	499	39747		
	1000	100	7.2	688	11.8	1125	15.5	1484	26	2479	41	3935	57	5424	79	7525	106	10161	154	14669	192	18372	247	23565	344	32812	424	40530		
	750	75	5.6	713	9	1148	11.8	1504	19.9	2535	32	4075	44	5552	61	7742	82	10390	118	15076	148	18883	190	24199	264	33667	327	41613		
	600	60	4.5	713	7.2	1148	9.5	1504	15.9	2535	26	4075	35	5552	49	7742	65	10390	95	15076	119	18883	152	24199	212	33667	261	41613		
12.5	1500	120	8.4	669	13.6	1083	18	1436	29.7	2360	47	3709	66	5253	92	7290	124	9900	180	14325	225	17931	289	22991	402	32024	497	39537		
	1200	96	6.7	669	11.1	1108	14.7	1460	24	2388	38	3788	54	5348	75	7441	102	10107	147	14612	184	18285	236	23430	328	32622	405	40301		
	1000	80	5.6	669	9.5	1134	12.4	1484	20.2	2415	32	3868	46	5444	64	7592	86	10314	125	14898	156	18638	200	23868	278	33221	344	41065		
	750	60	4.4	700	7.2	1148	9.5	1508	15.7	2491	25	4011	35	5603	49	7767	66	10569	96	15280	120	19138	154	24527	214	34124	265	42211		
	600	48	3.5	700	5.8	1148	7.6	1508	12.5	2491	20	4011	28	5603	39	7767	53	10569	77	15280	96	19138	123	24527	172	34124	212	42211		
14	1500	107	-	-	12.2	1087	16.1	1439	26.4	2354	42	3744	59	5277	82	7345	112	9947	162	14404	202	18033	259	23104	361	32152	446	39753		
	1200	86	-	-	10	1112	13.1	1464	21.5	2391	34	3824	48	5366	67	7469	91	10134	132	14689	165	18382	211	23553	294	32792	364	40520		
	1000	71	-	-	8.5	1137	11.1	1490	18.2	2428	29	3904	41	5455	57	7594	77	10322	112	14974	140	18731	180	24001	250	33431	309	41287		
	750	54	-	-	6.4	1139	8.5	1516	13.9	2478	22	3993	32	5633	44	7844	60	10625	86	15402	108	19259	138	24660	193	34339	238	42356		
	600	43	-	-	5.1	1139	6.8	1516	11.1	2478	18	3993	25	5633	35	7844	48	10625	69	15402	86	19259	111	24660	154	34339	190	42356		
16	1500	94	-	-	10.6	1081	14.2	1452	24.5	2498	39	3993	53	5419	74	7538	100	10227	145	14750	181	18479	233	23710	324	33019	400	40747		
	1200	75	-	-	8.6	1098	11.5	1470	19.9	2532	32	4075	43	5521	60	7681	82	10431	118	15046	148	18845	190	24163	264	33632	326	41551		
	1000	63	-	-	7.3	1115	9.7	1488	16.8	2566	27	4156	37	5623	51	7823	70	10635	100	15341	126	19211	161	24615	224	34245	277	42356		
	750	47	-	-	5.7	1158	7.7	1560	13.1	2662	21	4319	28	5786	40	8086	54	10920	77	15728	97	19722	124	25299	173	35188	213	43436		
	600	38	-	-	4.6	1158	6.1	1560	10.5	2662	17	4319	23	5786	32	8068	43	10920	62	15728	77	19722	99	25299	138	35188	171	43436		
18	1500	83	-	-	9.5	1089	12.8	1468	21.5	2462	34	3942	46	5272	64	7380	90	10314	130	14944	163	18712	209	23982	291	33378	360	41210		
	1200	67	-	-	7.8	1113	10.4	1495	17.5	2502	28	4017	38	5386	52	7506	73	10520	106	15242	133	19076	171	24434	237	34002	293	41989		
	1000	56	-	-	6.6	1137	8.9	1522	14.8	2542	24	4019	32	5501	44	7632	62	10727	90	15540	113	19440	145	24885	201	34625	249	42769		
	750	42	-	-	5.1	1169	6.8	1546	11.2	2577	18	4217	24	5592	34	7884	48	11002	70	15952	87	19970	112	25567	155	35554	192	43915		
	600	33	-	-	4.1	1169	5.4	1546	9	2577	15	4217	20	5592	28	7884	38	11002	56	15952	70	19970	89	25567	124	35554	153	43915		
20	1500	75	-	-	8.7	1109	11.6	1472	20.1	2557	31	3922	41	5246	57	7233	82	10441	118	15076	150	19133	195	24865	272	34611	336	42733		
	1200	60	-	-	7.1	1125	9.5	1510	16.4	2614	25	4005	34	5373	46	7245	67	10645	97	15369	121	19326	156	24883	218	34640	269	42759		
	1000	50	-	-	6	1142	8.1	1549	14	2670	21	4087	29	5501	38	7258	57	10849	82	15662	102	19518	130	24901	182	34669	224	42784		
	750	38	-	-	4.7	1194	6.2	1583	10.7	2735	16	4177	22	5603	30	7742	44	11103	63	16095	78	19829	98	24988	137	34787	168	42784		
	600	30	-	-	3.8	1194	5	1583	8.6	2735	13	4177	18	5603	24	7742	35	11103	51	16095	62	19829	78	24988	109	34787	134	42784		

备注: 1、上表功率和扭矩已考虑工况系数和安全系数,可直接选用。About the power and Torque of the above table, we have considered Service Factor and Safety Factor, and they can be used directly.
 2、上表功率和扭矩主要针对塑料挤出机用减速机,当用户于橡胶机械时上表功率和扭矩乘以系数0.9。The power and Torque of the above table are mainly used for gearbox specially for plastic extruder, please the power and torque of the above table should be multiplied by 0.9 when customers use it for rubber equipments.
 3、输入转速或输出转速与上表误差大于4%时,应参照最近一档转速,进行功率折算。When the error of input speed or output speed is over 4% than the above talve, then please refer the nearest gears speed to calculate power.

图1 外形尺寸及安装形式
Table 1 Outline Dimensions and Assembly type

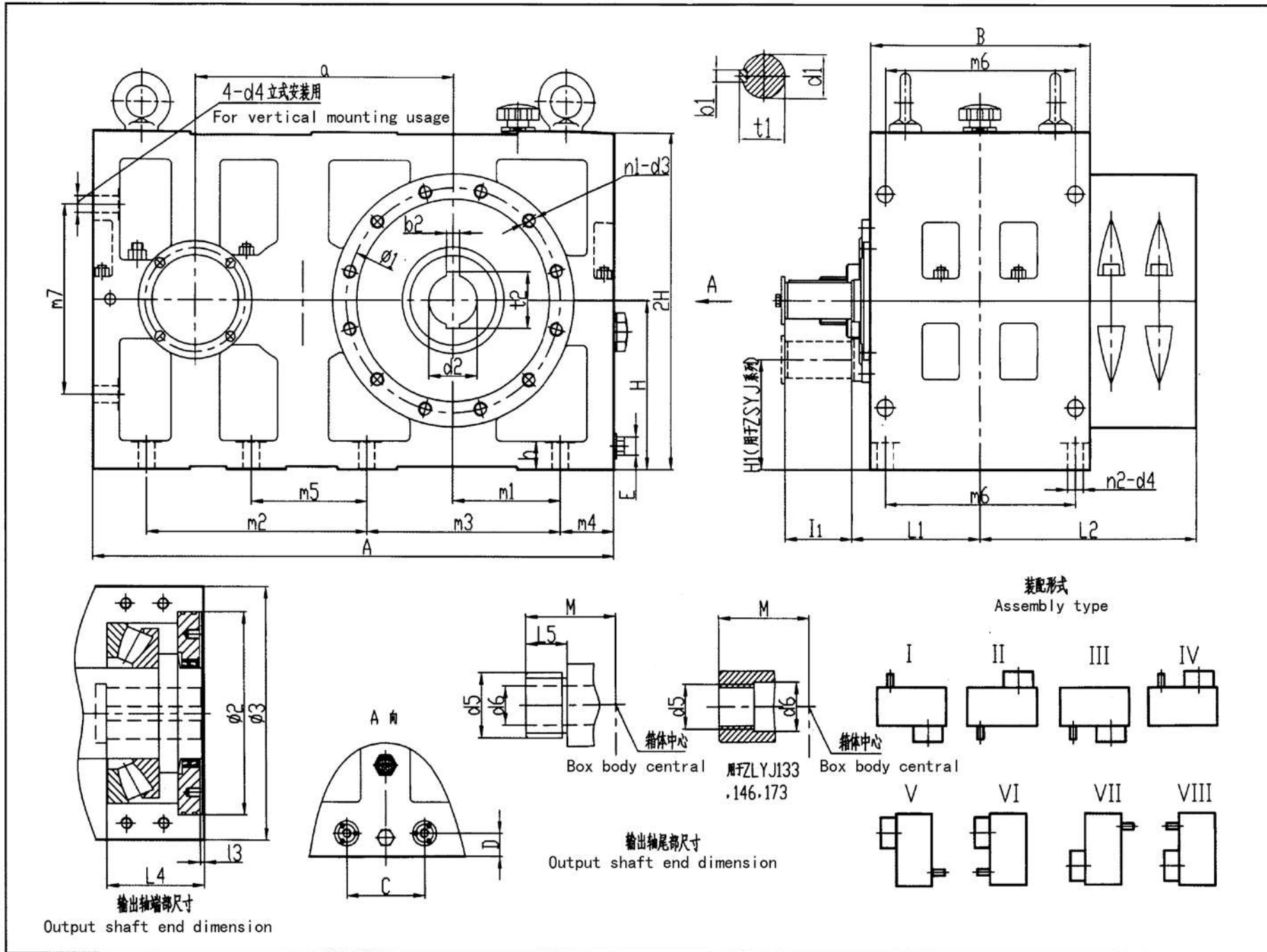


表2 外形尺寸 Form 2 Outline Dimensions

规格 Sizes	a	外形尺寸 Outline Dimensions					地脚安装尺寸 Foot Mounted dimensions										输入轴尺寸 Input shaft Dimensions						
		A	B	H	H1	h	n2	d4	m1	m2	m3	m4	m5	m6	m7	L1	T1	d1(m6)	t1	b1			
ZLYT112	184	426	170	130		18	4	14	96		326	50		136	170	106	60	28	31	8			
ZLYT133	218	478	215	140		20	6	16	104	185	185	61		180	184	125	60	28	31	8			
ZLYT146	256	560	250	160		22	6	16	118	190	235	72		210	210	148	70	32	35	10			
ZLYT173	285	576	256	170		22	6	18	113.5	220	220	68		225	214	148	80	38	41	10			
ZLYT200	340	750	340	240		36	6	18	150	275	275	100		290	310	200	80	45	48.5	14			
ZLYT225	385	800	360	250		36	6	26	165	310	310	90		315	330	205	110	55	59	16			
ZLYT250	430	930	380	280		45	6	26	205	360	360	105		330	340	220	110	60	64	18			
ZLYT280	480	970	410	300		50	6	30	200	385	385	100		355	380	240	125	65	69	18			
ZLYT315	539	1160	450	350		55	6	30	260	450	450	130		390	460	250	140	75	79.5	20			
ZLYT330	575	1160	450	350		60	6	30	225	450	450	130		390	425	260	170	85	90	22			
ZLYT375	625	1280	466	400		60	8	32	250	475	500	165	265	400	500	265	170	85	90	22			
ZLYT420	695	1420	550	460		60	8	32	305	580	540	150	328	480	580	310	130	95	100	25			
ZLYT450	765	1550	600	500		60	8	32	300	600	600	190	300	520		350	130	100	106	28			
ZLYT630	1070	2000	770	630		80	8	48	400	850	800	200	450	670		430	165	120	127	32			
ZLYT450	765	1550	600	500	276	60	8	32	300	600	600	190	300	520		350	105	75	79.5	20			
ZLYT560	960	1850	610	580	324	80	8	48	390	730	780	170		510		355	130	95	100	25			
ZLYT630	1070	2000	770	630	350	80	8	48	400	850	800	200	450	670		430	165	110	116	28			
规格 Sizes	输出轴尺寸 Output shaft Dimensions				输出轴尾部尺寸 Size of Output Shaft End				推力包联接尺寸 Thrust package connecting dimensions							冷却管接头 Cooling pipe joint			平均重量 Average Weight	润滑油量 Lubricating Oil Level			
	d2 (H8)	t2	b2 (F9)	L4	d5	d6	L5	M	L2	φ1	φ2 (H7)	13	φ3	n1	d3	C	D	E	kg	L			
ZLYT112	35	38.3	10	52	M16	18		125	203	185	160	8	210	6	M10				95	4			
ZLYT133	38	41.3	10	80	M16	20		137	205	205	180	8	230	8	M12				144	7			
ZLYT146	45	48.8	14	120	M16	20		167	245	230	200	8	260	8	M12				205	10			
ZLYT173	50	57.6	14*2	140	20	25		167	250	260	230	8	300	8	M16	85	38		256	12			
ZLYT200	60	68.8	18*2	170	M85*4	40	50	250	330	300	270	8	350	12	M16	120	40	ZG1/2"	500	28			
ZLYT225	70	78.8	18*2	170		265		355	370	330	8	420	12	M20	140	50	650		33				
ZLYT250	80	90.8	22*2	180		285		380	370	330	8	420	12	M20	160	50	815		46				
ZLYT280	90	100.8	25*2	180		300		405	400	360	8	450	12	M24	160	50	1020		55				
ZLYT315	100	112.8	28*2	200	M90*4	60	60	335	440	405	365	8	450	12	M24	160	55	ZG3/4"	1410	84			
ZLYT330	110	122.8	28*2	220	M85*4			350	445	450	400	10	500	12	M24	160	55		1520	87			
ZLYT375	110	122.8	28*2	255	M90*4			345	445	450	400	10	500	12	M24	160	55		1800	110			
ZLYT420	120	134.8	32*2	270				370	535	580	500	10	660	12	M30	200	60		2750	166			
ZLYT450	170	188.8	40*2	250				425	600	610	500	15	700	12	M30	200	60		3560	215			
ZLYT630	180	200.8	45*2	340				520	760	720	650	25	805	12	M36	300	80						
ZLYT450	170	188.8	40*2	250				425	600	610	520	10	700	12	M36	200	60		3800	210			
ZLYT560	160	178.8	40*2	300				435	670	720	620	25	805	12	M36	270	80						
ZLYT630	180	200.8	45*2	340				520	760	720	650	25	805	12	M36	300	80						

注：450, 560, 630, 三种规格、输出联接方式及尺寸仅供参考，具体方式可在订货时说明。The output connecting method and dimensions of the three types 450,560,630 is only for your reference, please confirm the specific method when place orders.

表3 冷却方式 Form 3 Cooling Type

型号 Type	油泵 Oil Pump	冷却盘管 (内冷却) Cooling Coil Pipe (Internal Cooling)	冷却器 Cooler	备注 Note
ZLYJ112	无 No	无 No	无 No	自然冷却 Natural Cooling
ZLYJ133	无 No	无 No	无 No	自然冷却 Natural Cooling
ZLYJ146	无 No	无 No	无 No	自然冷却 Natural Cooling
ZLYJ173	无 No	有 Yes	无 No	配置冷却器应在订货时声明 Please declare about equipping cooler when place orders
ZLYJ200	有 Yes	有 Yes	无 No	配置冷却器应在订货时声明 Please declare about equipping cooler when place orders
ZLYJ225	有 Yes	有 Yes	无 No	配置冷却器应在订货时声明 Please declare about equipping cooler when place orders
ZLYJ250	有 Yes	有 Yes	无 No	配置冷却器应在订货时声明 Please declare about equipping cooler when place orders
ZLYJ280	有 Yes	有 Yes	无 No	配置冷却器应在订货时声明 Please declare about equipping cooler when place orders
ZLYJ315	有 Yes	无 No		
ZLYJ330	有 Yes	无 No		
ZLYJ375	有 Yes	无 No		
ZLYJ420	有 Yes	无 No		
ZLYJ450	有 Yes	无 No		

五、安装使用和维护 Installation, Usage and Maintainance

1. 减速机在运输和存放过程中应注意防潮，半年内未安装应对外露的加工面重涂防锈油。The reducers should be noticed moistureproof in course of translation and storage, and if the reducer will be uninstalled within half a year, the exposed part should be repainting antirust oil.
2. 减速机应安装在平整的基础上，在地角螺栓均匀紧固的情况下，应保证插入输出轴中的螺杆能无卡滞的均匀回转，以免给输出轴轴承增加附加力而影响轴承寿命。不得采用强力装拆螺杆。Make sure the installing foundation of reducer is level, secure and stable. Carefully lay out the installation in special working environment. When all anchor bolts are evenly tightened, ensure that the screw inserted into the output shaft turns freely regularly.
3. 在减速机安装完毕后，注润滑油至油标中心线，该油位应在润滑油在箱内分布均匀后确定，油位应经常检查，任何情况下，油位不应低于下油标位置。请使用中负荷工业齿轮油L-CKC220或L-CKC320，首次使用300~600小时后，应换油一次。以后每3000小时换油一次。更换应在减速机停车，润滑油尚未冷却时排放。箱体内应用同品质的油冲洗干净。若因粘度高而不宜冲洗可先加热或用低粘度的油。After installation, fill into the reducer the lubricating oil until reaching the center line of oil pointer when evenly distributing. The oil level should inspect frequently, it should not be lower than the oil gauge position. Please use middle duty industrial gear oils L-CKC200 or L-CKC320, after first using of 300~600 hours, it should be changed oil one time, then after changing oil once every 3000 hours. The oil should be discharged when reducer stop working and the oil uncooled. Housings should be washed out with equivalent quality oil. If the oil are difficult to wash due to high viscosity, they can be heated or using low viscosity oil.
4. 装有油泵强制润滑的减速机，在开车初始阶段，可能会因油粘度过高，油泵吸油阻力大而造成进油不足，发出过高的噪声。该现象一般在润滑油温度升高后，自行消失。带电机油泵的减速机，在加载前应先开启电机油泵，空车运转一段时间以利于各润滑点的充分润滑。The reducer with forced lubrication pump, at the early stage of operation, the oil pump may incur loud noise resulted from the high viscosity of lubricating oil and the large suction resistance against the oil pump, which would gradually die away along with the temperature rise of the lubricating oil. The reducer with motor oil pump, it should start the motor oil pump before loading, it takes a period of time for the empty motor, in order for enough lubricated of every lubrication place.
5. 在正常运转中，如出现油泵噪声增高，一般情况可能是油路阻力过大。此时情况请清洗滤清器及其他相关部件。无论哪种规格的减速机，在长期不用或气温过低时启动使用，都应空车运转一段时间，待各轴承处充分润滑后方可加载运载。In normal operation, if it happens the oil pump noise increased, at normally, may because of oversize oil-way resistance. At this situation, please wash filter and other spare parts. Nomatter which type of reducer, when start working after a long time stop-work or at lower temperature, it should work for a period when empty, then to load and carry when every bearing enough lubricated.
6. 在工作中当发现油温显著升高，温升超过70℃或油温超过100℃时，油的质量下降，以及产生不正常的噪声等现象，应停止使用，检查原因，如因齿面胶合等原因所致，必须修复排除故障，更换润滑油后再用。When it finds the oil temperature increased notably, temperature rise exceeds 70℃ or oil temperature exceeds 100℃, the oil quality will reduce, and happens abnormal noise and other phenomenon, then stop usage, check the reasons, such as because of tooth surfacescoring and other causes, it must repair and clear troubles, change lubrication then reusage.

六、故障、原因及排除办法 Faults、Analysis、Solutions

可能会发生的故障 Faults may occur:

故障 Faults	原因 Causes	排除方法 Solutions
<p>减速机噪声变化 Reducer noise change</p>	<p>齿轮啮合部位有损伤 Damage of gear meshing parts</p> <p>齿轮间隙增大 Gear clearance increased</p> <p>轴承损坏 Bearing damaged</p>	<p>检查啮合部件，可能需要更换损伤部件。 Check the gear meshing part, maybe It needs to replace damaged parts</p> <p>调整轴承间隙。 Adjust the clearance of gears</p> <p>更换损坏的轴承。 Replace the damaged bearing</p>
<p>减速机固定部位中有强烈噪声 Strong noise in fixed parts of reducer</p>	<p>减速机固定件有松动 The fixed parts of reducer loose</p>	<p>使用规定的扭矩拧紧螺栓/螺母。 Use the specified torque to tighten the bolt/nut.</p> <p>更换损坏的螺栓/螺母。 Replace the damaged bolt/nut.</p>
<p>轴承部位温度升高 The temperature of Bearing increases</p>	<p>减速机油位太低 Too low lubricating oil</p> <p>机油已老化 Aging and deterioration of lubricating oil</p> <p>轴承损坏 Damage of bearing</p> <p>油泵损坏 Damage of lubricating pump</p>	<p>在室温下检查油位，可能需要补充机油。 Check oil level at room temperature and make modification if required</p> <p>检查上次换油是在什么时候，可能需要更换机油。 Check the replacement time of lubricating oil</p> <p>检查油泵，可能需要更换。 Check the lubricating pump and replace it</p> <p>检查轴承，可能需要更换。 Check the bearing and replace it</p>
<p>减速机有油污 The greasy dirt happens in Reducer</p> <p>机油从外壳中漏出 The engine oil leaked off from the outer shell</p>	<p>箱体分界面密封不好 The sealing of interface is not good.</p>	<p>将密封面密封好。 The sealing face seals well.</p>
<p>机油中有水分 Water happens in Lubricating oil</p>	<p>机油产生泡沫 Foam happens in Lubricating oil</p>	<p>通过试剂玻璃杯试样来检查机油的含水状态。 Through the reagent glass sample to check the water content of engine oil.</p> <p>通过化学实验室检查机油，冲洗与更换。 Through the chemical laboratory to check the engine oil, then wash and replace.</p>
<p>工作温度升高 The working temperature increases</p>	<p>减速机中的油位太高 The oil level of reducer is too high</p> <p>机油已老化 Aging and deterioration of lubricating oil</p> <p>机油严重污染 Plentiful impurity in lubricating oil</p> <p>油泵损坏 Damage of bearing</p>	<p>检查油位。可能需要纠正油位 Check oil level and make modification if required</p> <p>检查上次换油是在什么时候， Check the replacement time of lubricating oil</p> <p>可能需要更换机油。 Check the lubricating pump and replace it</p> <p>检查油泵的功能，可能需要检修或者更换油泵。 Check the bearing and replace it</p>