







Plastic And Rubber Special Reducer

产品样本 NO.006 版本 V1.0-2023

Product Overview 产品总览



NO.002

NO.001





<mark>摆线针轮减速机</mark> Cycloidal Reducer

NO.003





ZY系列圆柱齿轮减速机

ZY Series Cylindrical Gear Reducer

NO.003B





NO.005





NO.005B



DBY/DCY系列圆锥圆柱 齿轮减速机

DBY/DCY Series Sevel Gear Reducer

HB系列齿轮箱

HB Series Gear Box

GM系列齿轮减速机

GM Series Reducer

GMC系列齿轮减速机

GMC Series Reducer

NO.006







橡塑专用减速机 Plastic and Rubber Special Reducer





NO.010



NO.011





NO.012







NO.007





GX系列行星齿轮减速机

GX Series Planetary Gear Reducer

NO.008





工程机械减速机 Engineering Machinery Reducer



精密减速机

Precision Reducer



重载齿轮箱

Heavy-duty Gearbox

交流感应伺服电机

Ac Induction Servo Motor



起重专用减速机

Lifting Special Reducer





Plastic And Rubber Special Reducer 橡塑专用减速机

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Reducer for single screw extruder

1.1 Product overview

This product is a special gear transmission device designed for plastic and rubber single screw extruder equipment. Its gear parts are made of high-strength alloy steel, and the gears are processed by carburizing, guenching, and high-precision gear grinding. The gear accuracy level is 6 (GB10095), and the tooth surface hardness is HRC58~62. A large-size thrust bearing is configured at the front end of the hollow output shaft to withstand the axial thrust generated when the screw is working.

The whole machine has the advantages of compact design structure, high load-bearing capacity, stable transmission. low noise, and high efficiency.

1.2 Application scope

The speed of the reducer input shaft should not exceed 1500 rpm.

Note: When the reducer input shaft is connected to the prime mover (motor, internal combustion engine, etc.) through a pulley (gear, sprocket, etc.), the speed and input torque of the reducer input shaft will change, and additional radial load will be generated, which usually leads to changes in the selection or requirements of the reducer.

- Operation environment temperature: -40°C~50°C. Operation under low ambient temperature might require a lubricant preheating before starting, or the use of low-temperature lubricant.
- The reducer can be operated in both positive and negative directions.

Note: When the reducer input shaft is equipped with a shaft end lubrication pump for forced lubrication, the default rotation direction is: facing the output shaft direction (thrust pack connection end) and rotating clockwise (i.e., configured as a right-hand screw). If there are different requirements, please indicate them when orderina.

1.3 Notes

- All exposed rotating parts of the reducer should be equipped with protective covers by the user in accordance with the corresponding local safety regulations to prevent accidents.
- The instruction manual must be carefully read before the reducer is tested.
- The drawings in the sample are only examples and are not binding. The company reserves the right to change.
- The weights in the sample are average values and are not binding.
- The amount of lubricating oil added in the sample is only a reference value. The actual lubricating oil should be based on the oil mark.
- The viscosity of the lubricating oil should comply with the data shown on the reducer nameplate.
- When the reducer is installed outdoors, it should be avoided from sunlight, and the user should configure appropriate protective devices.
- The installation form of the reducer shall comply with the provisions of the Appendix 3 of the cover -General Rules for the Installation Form of Guomao Reducer.
- The relevant graphic symbols of the reducer are as follows:





Breather plug

Fuel filler port

Oil level mark



1.4 Product selection

1. Determine the nominal transmission ratio $i_{\rm N}$: Example: The speed of the reducer input shaft n = 1500rpm, the speed of the output shaft n₂=152rpm,

Required transmission ratio: $i_s = \frac{n_1}{n} = \frac{1500}{152} = 9.868$

Select the nominal transmission ratio:

2. Select the reducer model and specifications T_≥T).

Example: Input power P=45kW.

According to table A-1, ZLYJ200 should be selected. Rated power is P₁ =60kW, 60kW≥45kW, meets the requirements

3. Check the heat power of the reducer The standard configuration of the reducer meets the following conditions: According to table A-2: The standard configuration cooling coil meets the use requirements.

4. Determine the assembly form of the reducer Determine the assembly form of the reducer according to the installation requirements.

5. Calculation of axial thrust $Fa = \pi \times \frac{d_s^2 \times Ps}{d_s} [kN]$ Screw diameter d_s=90mm Screw pressure P_S = 26MPa Axial thrust $Fa = \pi \times \frac{90^2 \times 26}{4 \times 1000} = 165.4$ [kN]

6. Calculate thrust bearing life $L_{h10} = \frac{10^6}{60 \times n_2} \times (\frac{C_a}{F_a})^{(\frac{10}{3})}$ (Unit: hours)

Thrust bearing rated load C_=923 kN

Note:

- speed n (rpm): $T = 9550 \times \frac{p}{2}$
- ratio iex of the reducer.
- method, the allowable additional radial load Fr at the input shaft extension must be verified.
- recommended to use a lubrication pump driven by a motor.

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The conversion formula of the rotating shaft transmission power P (kW) and torque T (Nm) and rotation

When there is a high requirement for the transmission ratio accuracy, please check the actual transmission

If there is a large additional radial load on the reducer input shaft due to factors such as the connection If the actual speed of the reducer input shaft is lower than 600rpm and forced lubrication is required, it is



Product Series 1.5

1.5.1 ZLYJ Series

ZLYJ series reducer is a special transmission device designed for single-screw extruders with the advantages of compact structure, high load-bearing capacity, smooth transmission, high efficiency, low noise, and high reliability.



1.5.1.1 ZLYJ Series model illustration

The basic elements of the reducer model include: reducer series code, specification number, nominal transmission ratio and installation form.



1.5.1.2 **ZLYJ Series recommended specifications**

Reducer speci cations	112	133	146	173	180	200	225	250	280	315	330	375	395	420	450
Transmission rate	8	8	10	10	10	12.5	12.5	16	16	16	16	16	16	16	16
Motor power (kW)	5.5-4P	7.5-4P	11-4P	18.5-4P	22-4P	25-4P	45-4P	45-4P	55-6P	75-6P	110-6P	132-6P	132-6P	160-6P	200-6P
Output speed (rpm)	100	100	90	90	90	80	80	70	60	60	60	60	60	60	60
Screw diameter (mm)	35	45/50	55	65	65	75	90	100	105/110	120	130/150	150/160	160	165	165
Screw trust (kN)	41	54	60	153	153	187	250	268	356	403	448	495	515	545	590

1.5.1.2 ZLYJ Series rated power and output torque

-				F	ated pov	/er P ₁ (kW) and rate	d output	torque T ₂	(kNm)							Table	e A-1
Nominal	Nomin	al speed							Redu	cer speci	cations							
ratio	(rp	om)	1	12	13	33	14	16	17	'3	18	80	20	0	22	25	25	50
ĬN	Input n ₁	Output n ₂	Pı	T ₂	P ₁	T ₂	P1	T ₂	Pı	T ₂	P ₁	T ₂	P ₁	T ₂	Pı	T ₂	P1	T ₂
	1500	188	12.8	0.65	20.8	1.06	28.3	1.44	46.9	2.39	52	2.65	73	3.7	100	5.1	139	7.1
8	1000	125	8.6	0.66	14.4	1.10	19.4	1.48	32.7	2.50	37.2	2.84	50	3.9	69	5.3	96	7.4
	750	94	6.8	0.69	11.2	1.14	14.9	1.52	24.6	2.51	27.6	2.81	39	4.0	53	5.4	74	7.6
	1500	150	10.4	0.66	17.0	1.08	22.5	1.43	37.9	2.41	43.6	2.78	60	3.8	82	5.2	114	7.2
10	1000	100	7.2	0.69	11.7	1.12	15.5	1.48	26.0	2.48	30	2.87	41	3.9	57	5.4	79	7.5
	750	75	5.6	0.71	9.0	1:15	11.8	1.50	19.9	2.54	23.2	2.95	32	4.1	44	5.6	61	7.7
	1500	120	8.4	0.67	13.6	1.08	18.1	1.44	29.7	2.36	33.2	2.64	47	3.7	66	5.3	92	7.3
12.5	1000	80	5.6	0.67	9.5	1.13	12.4	1.48	20.3	2.42	22.8	2.72	32	3.9	46	5.4	64	7.6
-	750	60	4.4	0.70	7.2	1.15	9.5	1.51	15.6	2.49	17.6	2.80	25	4.0	35	5.6	49	7.8
	1500	107	7.4	0.66	12.2	1.09	16.2	1.44	26.4	2.35	29.6	2.64	42	3.7	59	5.3	82	7.4
14	1000	71	5.0	0.67	8.5	1,14	11,1	1.49	18.2	2.43	20.4	2.73	29	3.9	41	5.5	57	7.6
	750	54	3.9	0.70	6.4	1.14	8.5	1.52	13.9	2.48	15.6	2.78	22	4.0	32	5.6	44	7.8
	1500	94			10.6	1.08	14.2	1.45	24.5	2.50	28.2	2.87	39	4.0	53	5.4	74	7.5
16	1000	63	10	590	7.3	1.11	9.8	1.49	16.8	2.57	19.6	2.99	27	4.2	37	5.6	51	7.8
	750	47		18	5.7	1.16	7.7	1.56	13.1	2.66	15.2	3.10	21	4.3	28	5.8	40	8.1
	1500	83	100		9.5	1.09	12.8	1.47	21.5	2.46	24.2	2.77	34	3.9	46	5.3	64	7.4
18	1000	56	1.40	-	6.6	1.14	8.8	1.52	14.8	2.54	16.8	2.89	24	4.1	32	5.5	44	7.6
	750	42			5.1	1,17	6.8	1.55	11.3	2.58	12.8	2.93	18	4.2	24	5.6	34	7.9
	1500	75	1.20	-	8.7	1211	11.5	1.47	20.1	2.56	23.6	3.01	31	3.9	41	5.3	57	7.2
20	1000	50	- 250	100	6.0	1.14	8.1	1.55	14.0	2.67	16.4	3.13	21	4.1	29	5.5	38	7.3
	750	38	100	15	4.7	1.20	6.2	1.58	10.8	2.74	12.8	3.26	16	4.2	22	5.6	30	7.7
transmission	Nomin	al speed		20	2	5	0	0	Redu	cer speci	cations		40	0		0	1	
ratio	Input n	Output n	P. 20	50	P.	5 Т.	30		D.	J Т.	- 37 P.	5	42 P.	20 T.	- 43 P.	50 T.		Î -
IN	1500	188	188	9.6	271	13.8	340	17.3	136	22 2	524	26.7	607	30.9	748	38.1		-
	1000	125	130	0.0	188	14.4	236	18.0	302	22.2	363	20.7	420	32.1	520	39.7		
0	750	94	100	10.2	145	14.9	182	18.5	233	23.7	280	28.5	324	33.0	400	40.7		1
1.	1500	150	153	9.8	221	14.0	278	17.7	357	20.7	129	20.5	195	31.5	400	39.0		
10	1000	100	107	10.2	154	147	193	18.4	247	23.6	297	28.4	343	32.8	424	40.5		
10	750	75	82	10.2	119	151	148	18.9	190	24.2	228	29.1	265	33.7	327	41.6		
-	1500	120	124	9.9	180	14.3	225	17.9	289	23.0	348	27.7	402	32.0	496	39.5		
125	1000	80	86	10.3	125	14.9	156	18.6	200	23.9	240	28.7	278	33.2	343	41.0		
12.5	750		<u> </u>		120					20.7	1.10	20.0	1.0		0/5	42.2		1
-	1 7.50	60	67	10.6	96	15.3	120	19.1	154	24.5	185	29.5	214	34.1	203			
-	1500	60 107	67 112	10.6	96	15.3	120	19.1 18.0	154 259	24.5 23.1	185 312	29.5 27.8	214 361	34.1	447	39.8		
14	1500	60 107 71	67 112 77	10.6 10.0 10.3	96 162 112	15.3 14.4 15.0	120 202 140	19.1 18.0 18.7	154 259 180	24.5 23.1 24.0	185 312 216	29.5 27.8 28.9	214 361 250	34.1 32.2 33,4	447 309	39.8 41.3		
14	1500 1000 750	60 107 71 54	67 112 77 59	10.6 10.0 10.3 10.6	96 162 112 86	15.3 14.4 15.0 15.4	120 202 140 108	19.1 18.0 18.7 19.3	154 259 180 139	24.5 23.1 24.0 24.7	185 312 216 166	29.5 27.8 28.9 29.7	214 361 250 192	34.1 32.2 33.4 34.3	283 447 309 238	39.8 41.3 42.4		
14	1500 1000 750 1500	60 107 71 54 94	67 112 77 59 100	10.6 10.0 10.3 10.6 10.2	96 162 112 86 145	15.3 14.4 15.0 15.4 14.8	120 202 140 108 182	19.1 18.0 18.7 19.3 18.5	154 259 180 139 233	24.5 23.1 24.0 24.7 23.7	185 312 216 166 280	29.5 27.8 28.9 29.7 28.5	214 361 250 192 324	34.1 32.2 33.4 34.3 33.0	283 447 309 238 400	39.8 41.3 42.4 40.7		
14	750 1500 1000 750 1500 1000	60 107 71 54 94 63	67 112 77 59 100 69	10.6 10.0 10.3 10.6 10.2 10.6	96 162 112 86 145 100	15.3 14.4 15.0 15.4 14.8 15.3	120 202 140 108 182 126	19.1 18.0 18.7 19.3 18.5 19.2	154 259 180 139 233 161	24.5 23.1 24.0 24.7 23.7 24.6	185 312 216 166 280 194	29.5 27.8 28.9 29.7 28.5 29.6	214 361 250 192 324 224	34.1 32.2 33.4 34.3 33.0 34.2	283 447 309 238 400 277	39.8 41.3 42.4 40.7 42.4		
14	1500 1000 750 1500 1000 750	60 107 71 54 94 63 47	67 112 77 59 100 69 54	10.6 10.0 10.3 10.6 10.2 10.6 10.9	96 162 112 86 145 100 77	15.3 14.4 15.0 15.4 14.8 15.3 15.7	120 202 140 108 182 126 97	19.1 18.0 18.7 19.3 18.5 19.2 19.7	154 259 180 139 233 161 124	24.5 23.1 24.0 24.7 23.7 24.6 25.3	185 312 216 166 280 194 149	29.5 27.8 28.9 29.7 28.5 29.6 30.4	214 361 250 192 324 224 173	34.1 32.2 33.4 34.3 33.0 34.2 35.2	285 447 309 238 400 277 213	39.8 41.3 42.4 40.7 42.4 43.4		
14	1500 1000 750 1500 1000 750 1500	60 107 71 54 94 63 47 83	67 112 77 59 100 69 54 90	10.6 10.0 10.3 10.6 10.2 10.6 10.9 10.3	96 162 112 86 145 100 77 130	15.3 14.4 15.0 15.4 14.8 15.3 15.7 14.9	120 202 140 108 182 126 97 163	19.1 18.0 18.7 19.3 18.5 19.2 19.7 18.7	154 259 180 139 233 161 124 209	24.5 23.1 24.0 24.7 23.7 24.6 25.3 24.0	185 312 216 166 280 194 149 252	29.5 27.8 28.9 29.7 28.5 29.6 30.4 28.8	214 361 250 192 324 224 173 291	34.1 32.2 33.4 34.3 33.0 34.2 35.2 33.4	285 447 309 238 400 277 213 360	39.8 41.3 42.4 40.7 42.4 43.4 41.2		
14	750 1500 1000 750 1500 1000 750 1500 1000 750 1500 1000 750	60 107 71 54 94 63 47 83 56	67 112 77 59 100 69 54 90 62	10.6 10.0 10.3 10.6 10.2 10.6 10.9 10.3 10.7	96 162 112 86 145 100 77 130 90	15.3 14.4 15.0 15.4 14.8 15.3 15.7 14.9 15.5	120 202 140 108 182 126 97 163 113	19.1 18.0 18.7 19.3 18.5 19.2 19.7 18.7 19.4	154 259 180 139 233 161 124 209 145	24.5 23.1 24.0 24.7 23.7 24.6 25.3 24.0 24.9	185 312 216 166 280 194 149 252 174	29.5 27.8 28.9 29.7 28.5 29.6 30.4 28.8 29.9	214 361 250 192 324 224 173 291 201	34.1 32.2 33.4 34.3 33.0 34.2 35.2 33.4 34.6	283 447 309 238 400 277 213 360 249	39.8 41.3 42.4 40.7 42.4 43.4 41.2 42.8		
14 16 18	750 1500 1000 750 1500 1000 750 1500 1000 750 1500 1000 750	60 107 71 54 94 63 47 83 56 42	67 112 77 59 100 69 54 90 62 48	10.6 10.0 10.3 10.6 10.2 10.6 10.9 10.3 10.7 11.0	96 162 112 86 145 100 77 130 90 70	15.3 14.4 15.0 15.4 14.8 15.3 15.7 14.9 15.5 16.0	120 202 140 108 182 126 97 163 113 87	19.1 18.0 18.7 19.3 18.5 19.2 19.7 18.7 19.4 20.0	154 259 180 139 233 161 124 209 145 112	24.5 23.1 24.0 23.7 23.7 24.6 25.3 24.0 24.9 25.6	185 312 216 166 280 194 149 252 174 134	29.5 27.8 28.9 29.7 28.5 29.6 30.4 28.8 29.9 30.7	214 361 250 192 324 224 173 291 201 155	34.1 32.2 33.4 34.3 33.0 34.2 35.2 33.4 34.6 35.6	283 447 309 238 400 277 213 360 249 192	39.8 41.3 42.4 40.7 42.4 43.4 41.2 42.8 43.9		
14 16 18	750 1500 1000 750 1500 1000 750 1500 1000 750 1500 1500 1500 1500 1500 1500	60 107 71 54 94 63 47 83 56 42 75	67 112 77 59 100 69 54 90 62 48 82	10.6 10.0 10.3 10.6 10.2 10.6 10.9 10.3 10.7 11.0 10.4	96 162 112 86 145 100 77 130 90 70 119	15.3 14.4 15.0 15.4 14.8 15.3 15.7 14.9 15.5 16.0 15.1	120 202 140 108 182 126 97 163 113 87 150	19.1 18.0 18.7 19.3 18.5 19.2 19.7 18.7 19.4 20.0 19.1	154 259 180 139 233 161 124 209 145 112 196	24.5 23.1 24.0 24.7 23.7 24.6 25.3 24.0 24.9 25.6 24.9	185 312 216 166 280 194 149 252 174 134 235	29.5 27.8 28.9 29.7 28.5 29.6 30.4 28.8 29.9 30.7 29.9	214 361 250 192 324 224 173 291 201 155 272	34.1 32.2 33.4 34.3 33.0 34.2 35.2 33.4 34.6 35.6 34.6	283 447 309 238 400 277 213 360 249 192 335	39.8 41.3 42.4 40.7 42.4 43.4 41.2 42.8 43.9 42.7		
14 16 18 20	750 1500 1000 750 1500 1000 750 1500 1000 750 1500 1000 750 1500 1000 750 1500 1000	60 107 71 54 94 63 47 83 56 42 75 50	67 112 77 59 100 69 54 90 62 48 82 57	10.6 10.0 10.3 10.6 10.2 10.6 10.9 10.3 10.7 11.0 10.4 10.8	96 162 112 86 145 100 77 130 90 70 119 82	15.3 14.4 15.0 15.4 14.8 15.3 15.7 14.9 15.5 16.0 15.1 15.7	120 202 140 108 182 126 97 163 113 87 150 102	19.1 18.0 18.7 19.3 18.5 19.2 19.7 18.7 19.4 20.0 19.1 19.5	154 259 180 139 233 161 124 209 145 112 196 130	24.5 23.1 24.0 24.7 23.7 24.6 25.3 24.0 24.9 25.6 24.9 24.9	185 312 216 166 280 194 149 252 174 134 235 157	29.5 27.8 28.9 29.7 28.5 29.6 30.4 28.8 29.9 30.7 29.9 29.9	214 361 250 192 324 224 173 291 201 155 272 182	34.1 32.2 33.4 34.3 33.0 34.2 35.2 33.4 34.6 35.6 34.6 34.6 34.7	283 447 309 238 400 277 213 360 249 192 335 224	39.8 41.3 42.4 40.7 42.4 43.4 41.2 42.8 43.9 42.7 42.8		

Notes:

The above table shows the data of ordinary reducers. For reinforced reducers, please multiply the corresponding ordinary data by a factor of 1.12.

The power and torque in the table have taken into account the operating factor and safety factor, and can be directly selected when used for plastic extruders. For rubber extruders, multiply by a factor of 0.9.

						Redu	cer thermal p	oower (kW)						Table	A-2
Reducer speci cations	112	133	146	173	180	200	225	250	280	315	330	375	395	420	450
Thermal power P _{G1}	13.4	17.4	23.4	25.3	33.8	45.9	51.1	64.1	72.3	97.5	100.9	118.4	130.9	154.0	182.8
Thermal power P _{G2}	-	-	-	52.6	64.6	81.5	89.1	108.2	118.3	-	-	-	-	-	-
Thermal power P _{G3}	-		-			110.6	115.8	128.9	184.5	209.7	230.4	277.4	289.9	387.7	416.6

Notes:

Thermal power P_{G1}: Thermal power when the reducer has no auxiliary cooling measures. Thermal power P_{G2} : Thermal power when the reducer has built-in cooling coil. Thermal power P_{G2} : Thermal power when the reducer is equipped with forced circulation and cooler. The shadow marks the standard configuration of the reducer.

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1.5.1.5 ZLYJ Series appearance and installation dimensions



1.5.2 JE high-load series

JE high load-bearing series single screw extruder reducer is a high-efficiency transmission device designed for extruders. Adopting modular design and equipped with high-specification thrust bearings, this product has the advantages of compact structure, high load-bearing capacity, stable transmission, high efficiency, low noise and high reliability.



1.5.2.1 JE series model illustration



Model information description:

Model information only applies to standard configuration of reducer. The standard configuration of JE series reducer is natural cooling and oil immersion lubrication. The configuration of forced lubrication and cooling device should be indicated. When the input and output shaft dimensions or installation form do not meet the standards, the requirements must be indicated.

×2 in b2 indicates a symmetrical double bond. The output connection methods and dimensions of the three speci cations of 450, 560 and 630 are for reference only. The speci c method can be determined when ordering. The weight in the table is an estimated weight, which will change due to factors such as installation form and product structure, so the value is for reference only. The refueling amount is the reference refueling amount under horizontal installation condition



1.5.2.2 JE series rated power and output torque

							R	ated pov	ver P ₁ (k	W) and	rated ou	Itput torq	ue T ₂ (kl	Nm)							Table	e A-6
Nominal	Nomina	al speed								F	Reducer	speci ca	tions									
ratio	(rp	m)		3		4		5	0	5		7		8		9	1	0	1	1	1:	2
ĪN	Input n ₁	Output n ₂	Pı	T ₂	P ₁	T ₂	P1	T ₂	Pı	T ₂	Pı	T ₂	Pı	T ₂	Pı	T ₂	Pı	T ₂	Pı	T ₂	P۱	T ₂
	1500	238	70		-		-		-				-						-		-	
6.3	1000	159	47	2.81	<u></u>	1 22	92	5.52	2	2	193	11.63	27	2	722	20.04	120	2	1.2	31.88	12	. a .
	750	119	35		-	1 1	69				145			1	250		-		397		- 10	
	1500	211	60		7 .		121					Ĩ			1.5						-	
7,1	1000	141	40	2.69	(e.	(\approx)	81	5.49		9	175	11.87	14	2	293	19.85	1.000	2	-	32.32	÷1	
	750	106	30				61				131		18		220		1.00		357			[]
	1500	188	50		68		100				223								N.		¥.	
8	1000	125	33	2.55	45	3.46	67	5.11	92	7.06	149	11.38	-	15.54	249	19.04) œ	25.52	392	29.95	+:	39.33
	750	94	25		34		50		69		112		153		187		251		294		386	
	1500	167	46		58		101		123		201		-		325	6	241		-		- X.	
9	1000	111	31	2.66	39	3.32	67	5.78	82	7.02	134	11.53	174	14.94	217	18.65	293	25.19	358	30.73		39.87
	750	83	23		29		50		61		101		130		163		220		268		348	
	1500	150	43		49		92		103		185		222		299				43		- 22	I
10	1000	100	28	2.71	33	3.15	62	5.88	68	6.53	123	11.77	148	14.15	199	19.01	253	24.15	328	31.36	387	36.95
	750	75	21		25		46		51		92		111	L	149		190		246		290	
11.0	1500	134	39	0.77	50	0.50	84	(01	100		168	11.04	206	1 4 71	271	10.00	338	0.110	448	21.00		00 (1
11.2	1000	89	26	2.77	34	3.59	56	6.01	67	/.14	112	11.96	138	14.71	180	19.29	226	24.12	298	31.92	361	38.61
	750	67	19		25		42		50		84		103		135		169		224		271	
10.5	1500	120	35	2 01	46	215	77	4.00	91	7.04	153	10.10	189	15.01	247	10.77	309	24 50	408	20.40	-	20 41
12.5	1000	80	24	2.01	31	3.05	51	0.07	61	/.20	102	12.10	126	15.01	165	17.0/	206	24.39	272	32.49	330	37.41
	750	60	18		23		38		46		//		94	/	124		154		204		248	
14	1500	10/	31	2 77	42	3 73	69	6 19	83	7 41	139	12 /1	1/1	15 25	226	20.11	280	24.95	3/2	33 17	450	40.11
17	750	/1	21	2.77	28	0.70	46	0.17	55	/	93	12.41	114	10.20	150	20.11	187	24.70	248	00.17	300	40.11
	750	54	16		21		35		42		, 70		86	+	113	-	140	-	186	-	225	· · · · · ·
16	1500	94	25	2.52	3/	3 78	49	5.02	/4	7.53	75	11 41	152	15.53	185	18.81	250	25 44	2/1	27 57	401	40.83
	750	03	10	2.02	25		33	0.02	49		15		102		123		100		125	2,10,	207	
_	1500	4/	12		21		23	-	27		30	-	120		147	-	123		133	-	200	
18	1000	54	15	2.55	20	3.52	31	5.41	45	7.67	61	10.53	02	15.82	00	16.89	151	26.01	144	28.47	242	41.68
	750	42	11		15	i i	24	-	33		46		69		74	r,	113		124		182	f I
	1500	75	20		25		43	-	49		84		112		135		184		227		270	
20	1000	50	14	2.59	17	3.19	29	5.53	33	6.28	56	10.75	74	14.21	90	17.13	123	23.41	151	28.91	180	34.36
8	750	38	10		13	8 8	22		25		42		56		67	3	92		114		135	1
	1500	67	17		24	1	39		46		76		91		122		141		188		252	
22.5	1000	44	H	2.41	16	3.49	26	5.57	30	6.53	51	10.93	61	13.05	81	17.51	94	20.14	125	26.93	168	36.07
	750	33	8		12		19	1	23	1	38		46	1	61		70		94		126	
	1500	60	÷.		22		1		42		1.528		84		1.52		128		1.1		230	
25	1000	40	-		15	3.55	-1	-	28	6.68		- *÷	56	13.32	194		86	20.43	-1	-	153	36.64
	750	30	-		11				21	1	1253		42	1	1.15		64		12		115	
	1500	54	-		16		-	2	38		100		76	1	1		117		- 2		187	
28	1000	36	-	1	11	2.91	+	_ = <u>8</u>	25	6.78	242		51	13.54	×	- 5	78	20.87	-	-	125	33.34
	750	27			8		π.	9	19				38		100		59		-	1	94	

Notes:

The power and torque in the table have taken into account the operating factor and safety factor, and can be directly selected when used for plastic extruders. For rubber extruders, multiply by a factor of 0.9.

When the error between the input speed or output speed and the nominal speed in the table is greater than 4%, the power conversion should be carried out according to the

principle of equal fine torque with reference to the nearest speed.

1.5.2.3 JE Series reducer heat power rate

			Reducer t	hermal pow	ver (kW)				Tab	ole A-5
Reducer speci cations	3	4	5	6	7	8	9	10	11	12
Thermal power P _{G1}	25	29	39	42	56	59	75	79	106	111
Thermal power P _{G2}	51	58	73	78	98	104	123	130	164	173
Thermal power P _{G3}	89	93	104	107	169	218	308	313	411	417

Notes:

Thermal power P_{c1}: Thermal power when the reducer has no auxiliary cooling measures.

Thermal power P_{ca}: Thermal power when the reducer has built-in cooling coil.

Thermal power P_{ca}: Thermal power when the reducer is equipped with forced circulation and cooler.

The shadow marks the standard configuration of the reducer.



5

8

9

1.5.3 Precise transmission ratio

1.5.3.1 ZLYJ Series precise transmission ratio

Nominal						Re	ducer spe	ecification	S					Tabl	e A-7
ratio	112	133	146	173	180	200	225	250	280	315	330	375	395	420	450
ไท่					Precise	e transmis	sion ratio	İex							
8	7.761	7.989	7.789	8.096	8.233	8.097	7.836	7.969	7.856	7.794	7.808	7.804	-	8.100	8.280
10	9.991	9.827	10.124	9.880	10.270	10.119	9.812	9.990	10.025	10.066	9.755	10.059	÷	9.813	9.963
12.5	12.467	12.582	12.351	12.730	12.209	12.342	12.620	12.930	12.364	12.571	12.566	12.370	12.600	12.334	12.756
14	13.718	13.672	13.958	13.576	14.182	14.184	14.316	13.960	14.087	14.313	13.647	14.246	14.444	13.800	14.526
16	-	15.758	16.222	15.535	15.800	16.026	16.471	16.412	15.778	16.235	15.686	15.945	15.765	16.381	16.438
18	2	18.623	18.333	17.814	18.000	18.144	17.684	17.719	18.098	18.062	17.941	18.353	18.222	17.400	17.731
20	-	18.623	19.632	19.167	19.588	20.418	20.235	20.102	20.160	20.520	20.184	19.931	19.579	19.778	20.055

Note: The precise transmission ratio is for reference only and is not legally binding. The company reserves the rights to make changes.

1.5.3.2 JE High-load Series precise transmission ratio

Nominal				Reduc	er specificatio	ns			т	able A-8
ratio	3	4	5	6	7	8	9	10	11	12
ÎN			Precise	e transmissior	n ratio l _{ex}					
6.3	6.382	2	6.250		6.184		6.250	5	6.257	
7,1	7.018	2	6.974	-	7.059	~	7.083	÷	7.142	-
8	8.053	7.895	7.941	7.969	7.813	7.696	7.794	7.917	8.010	7.730
9	8.916	8.681	8.824	8.891	8.876	8.784	8.906	8.972	8.731	8.824
10	9.804	9.961	9.845	10.125	10.131	9.722	10.094	9.873	9.965	9.896
11.2	11.250	11.284	11.211	11,167	11.213	11.059	11.107	11.094	11:176	11.286
12.5	12.353	12.407	12.353	12.460	12.559	12.623	12.574	12.573	12.549	12.882
14	14.118	14.238	13.910	14.188	14.577	13.971	14.250	13.835	14.314	14.448
16	15.765	15.633	16.000	15.633	16.027	15.647	15.809	15.662	15.765	16.222
18	18.250	17.867	17.489	17.604	18.027	18.162	17.882	17.750	17.997	18.503
20	20.379	19.951	20.117	20.249	19.821	19.969	19.838	19.691	19.821	20.379
22.5	22.544	22.118	21.926	21.958	21.910	22.924	22.632	22.667	22.188	22.306
25	æ	24.698	-	25.257	-	25.205	÷	25.146	-	24.567
28	- 2	27.322	140. 1	27.529	2	27.862	21	28.688	9	27.500

Note: The precise transmission ratio is for reference only and is not legally binding. The company reserves the rights to make changes.

- 2 Special reducer for twin-screw extruder
- 2.1 SZ/SZL series special reducer for conical twin-screw extruder
- 2.1.1 Product overview

SZ/SZL series special reducer is a special transmission device for conical twin-screw plastic extruder, which consists of a reducer and a distribution box. The input power is decelerated and torque-increased by the reducer, and then output to the distribution box, which then drives the two conical screws to run synchronously in opposite directions.



The parameters and structure of SZ/SZL series special reducers are optimized. The gears are made of high-strength low-carbon alloy steel, which is treated by carburizing and quenching, and the gear grinding process is adopted. The distribution box body is made of ductile iron. The product has the advantages of high load-bearing capacity, low noise, stable operation, and high transmission efficiency.

2.1.2 Application scope

- The input speed of the reduction box is not higher than 1500 rpm.
- The input shaft and the motor shaft are connected through an elastic coupling.

2.1.3 Cautions

- water. The cooling water inlet temperature must not be higher than 30°C.
- After installation, please check manually to confirm that all parts rotate flexibly without any jamming.
- eliminate the error.

2.1.4 Technical parameters

	SZ Series t	echnical par	ameters			S	ZL Series teo	chnical para	meters	
Model	Input speed	Output speed	Input power	Single shaft output torque		Model	Input speed	Output speed	Input power	Single shaft output torque
SZ45	1500	44.9	18.5	1972		SZL51	1500	38.4	22	2779
SZ50	1500	37.5	22	2779		SZL55	1500	39.1	30	3663
SZ55	1500	38	30	3820		SZL55F	1500	39.1	30	3663
SZ55F	1500	38	30	3820		SZL65	1500	39.1	37	4518
SZ65	1500	38.9	37	4518		SZL80	1500	38.9	55	6786
SZ80	1500	39.2	55	6786		SZL80/173	1500	38.4	90	11320
SZ92	1500	40.2	110	13130	1	SZL92	1500	40.1	110	13130



There are serpentine cooling water pipes inside the reduction box and distribution box, which are cooled by circulating

The reduction gearbox and distribution box should be mounted on a plane of the same horizontal height. When the outer spline of the long shaft of the distribution box is inserted into the spline hole of the output shaft of the reduction box, check the clearance between the bottom surface of the two boxes and the mounting plane under the condition of loosening of the ground nut, and make appropriate adjustments if necessary, so as to ensure that the coaxiality between the output shaft of the reduction box and the long shaft of the distribution box meets the requirements.

The coaxiality of the screw and the output spline shaft of the distribution box directly affects the service life of the gears, bearings and other important parts of the distribution box. When installing, the spline should be removed, applying a percentage gauge, and meticulously check the radial runout of the spline shaft. Please use a plug ruler to check whether the contact between the screw and the end face of the spline shaft of the distribution box is good, and



2.1.5 SZ Series appearance and installation dimensions

	<u>2-2</u> 野	2	S						F A7 A7 A7 A7 A8 A8						-L	Spline sle	eve				
Madal		• •	4.2			F	E)	Φ.	-Ød3		Ba	.			71	70	110	112	0.1	PO	a dal
wodel	A	A2	A3	A4	H.)	E	CI	(H7)		JC2	ΨC3	A5	ні	Ζ1	12	H2	пз	ы	62	η-φάτ
SZ45	500	100	75	765	240	40	10	Φ27	0 1	50 0	₽270	Φ290	150	60	ZG 1/2"	ZG 1/2"	30	390	335	380	4-Φ22
SZ50	580	70	75	722	240	40	10	Φ21	0 1	50 0	₽270	Φ290	160	80	ZG 1/2"	ZG 1/2"	35	390	440	490	4- Φ 22
SZ55	660	100	75	860	250	40	10	Φ23	30 1	60 0	₽290	Φ318	160	80	ZG 1/2"	ZG 1/2"	35	430	410	460	4- Φ 22
SZ55F	660	100	75	860	250	40	10	Φ23	80 1	60 (D290	Φ318	160	80	ZG 1/2"	ZG 1/2"	35	430	410	460	4-Ф22
SZ65	770	80	75	910	250	40	10	Φ25	53 1	70 0	₽260	Φ280	160	85	ZG 1/2"	ZG 1/2"	40	430	550	590	4- Φ 22
SZ80	800	120	85	10/0	280	40	10	Φ30	02 1	/0 0	D300	Φ340	180	100	ZG 1/2"	ZG 1/2"	45	465	605	655	4-Φ22
\$292	950	200	125	1350	360	50	15	Φ3/	2	80 0	Þ370	Φ412	250	150	ZG 1/2"	ZG 1/2"	60	620	650	/20	4-Φ30
Model	L	L	-1	L2	(GB/	D 1114-	4)	L3	L4	L5	A6	A7	A8	Α9	n-Фd3	Φd (k6)	м	H4-0.	5 L6	E2	E3
SZ45	1388	13	35	90.51	8×42	× 48 >	< 8	133	60	15	255	255	558	95	4- Φ 22	Φ32	162	180	58	10	35
SZ50	1390	102	2.09	98.77	8×46	×54>	< 9	112	40	15	280	280	705	105	6-Φ22	Φ38	175	180	80	10	41
SZ55	1560	19	90	108.535	8×52>	× 60 ×	10	138	65	15	300	300	720	100	6-Φ22	Φ42	180	200	82	12	45
5255F	1560	19	7U	108.535	6×53:	× 60 ×	14	138	65	15	300	300	/20	100	6-Ψ22	Φ42	180	200	82	12	45
\$790	1050	20	13	137.54	0 X 56	× 00 X	12	200	05	15	350	330	830	1/0	6-Ψ22	Φ55	210	225	90	16	59
SZ92	2402	27	75	164.117	10×92	×98>	<14	230	105	20	395	395	980	140	6-Φ35	Φ60	245	160	105	18	64
Mode	I	3	B4	B5	Н5	Н	6	H7	Н	3	F	(G)		N	Y						
SZ45	3	00	360	100	60	4	0	543	30	5 T	190	315	20	02	2°40	,					
SZ50	3	60	430	100	60	3	6	652	30	o	197.5	227	28	36	2° 58'	12"					
SZ55	3.	50	400	100	70	4	0	740	3.	5	200	292	30	07	2° 36′	14″					
SZ55F	3	50	400	100	70	4	0	740	3.	5	200	292	30	07	2° 36′	14"					
SZ65	3	80	450	100	75	4	0	740	30)	324	257	34	40	2°11′	16"					
SZ80	4	35	525	130	70	4	5	788	30	D	249.5	360	30	59	2°0′1	8″					
SZ92	5	00	600	130	70	5	0	860	40	D	290	523	5	12	1° 52'	4″					
											11	-									

2.1.6 SZL Series appearance and installation dimensions



Notes:

The input shaft of SZL92 is located on the outside.

The dimensions in the table are for reference only. The company reserves the right to change them. Please verify when ordering.

											TH TH	H2	I	* H3	3		
2	Φ	С3	C4		C5		C6	H .1		Н	1	H2	-0.5	Н	13	(GB/1	D 1144)
0	Φ2	290	17	0	210	1	170	717		35	;	18	0	10	52	8×46	x54x9
0	ФЗ	318	18	0	220	1	180	773.8	7	35	;	22	25	11	14	8×52>	< 60 × 10
0	Ф3	318	18	0	220	1	180	773.8	7	35	;	22	5	11	14	6×53>	<60×14
С	Φ2	280	18	0	220	1	180	773.8	7	35	;	22	25	11	14	8×56>	<65×10
С	Ф3	340	18	5	230	1	185	825		40)	25	i0	118	87	8×62>	<72 × 12
0	ФЗ	380	22	6	276	1	226	850		60)	25	i0	12	62	10×72	×82×12
С	Φ4	412	217	'.5	277.5	2	17.5	850		60)	25	i0	13:	24	10×92	×98×14
L2	2	L	6	м	Φα	ł	I	b		t	Φ	d1	d	2		Y	Z
98.	77	1030	0.153	180	Φ42	k6	82	12	4	45	Φ	22	М	16	2° .	58′12 *	RC1/2"
)8.	535	1158	3.796	203	Φ55ι	m6	90	16	Ļ	59	Ф	26	M	20	2° 3	36' 14"	RC1/2"
)8.	535	1158	3.796	203	Φ55ι	m6	90	16	ę	59	Φ	26	M2	20	2° :	36' 14 '	RC1/2"
5.	371	1209	.026	203	Φ55ι	m6	90	16		59	Φ	26	M	20	2°	11' 16'	RC1/2"
37	.54	1400).175	210	Φ55ι	m6	105	16	4	59	Φ	26	м	20	2° (00′18″	RC1/2"
57.	813	165	7.27	230	Φ55	m6	105	16		59	Φ	33	M	20	2° :	24' 56"	RC3/4*
54.	117	1776	.974	290	Φ60	k6	105	18	~	54	Φ	33	M2	20	1° 5	2′ 3.64	RC3/4"

3 Special reducer for rubber machinery

The reducer for rubber machinery is a special transmission device designed and developed to adapt to the characteristics of various rubber machinery and meet the special operating requirements of the equipment. With gears manufactured using the hard tooth surface process, the product has many advantages such as high precision, strong load-bearing capacity, low noise, high transmission efficiency, stable and reliable operation and long service life.

Special reducer for EXTR series 3.1

The EXTR series special reducer is used in the rubber and plastics industry. It is a high-precision and high-loading gear transmission device for supporting transmission of multi-compound or single-screw extruders.

The output shaft of the reducer adopts spline connection gear sleeve design.

The reducer is equipped with a forced circulation lubrication cooling system, and is equipped with automatic protection systems such as oil pressure, oil volume and oil temperature to ensure safe and reliable operation of the reducer.

3.1.1 Application scope

- The input speed of the reduction box is not higher than 1500 rpm.
- The input shaft and the motor shaft are connected through an elastic coupling.



3.1.2 EXTR Series technical parameters

Model	Supporting screw speci cations (mm)	Input power (kW)	Input speed (rpm)	Transmission ratio	Input power (Nm)	Input speed (kN)
EXTR60	Φ60	22	1500	18.75	2625	80
EXTR90	Φ90	55	1500	25/30	10505	190
EXTR120A	Φ120	90/110	1500	30/37.5	26260	340
EXTR150LH	Φ150	220/250	1500	33/37.279	59390	530
EXTR200	Φ200	315/355	1500	45.5/53	121080	940
EXTR250	Φ250	450/500	1000	38.46/50	183850	1470

Notes:

The data in the table have taken into account the operating factor and safety factor. •

3.1.3 EXTR Series appearance and installation dimensions



W	ork	stati	on la	ayoı	ut		S	Shaft e	exte	nsio	n a	ssem	bly	
The second	and			2.				1	.24 •••)		123 		
						/	\geq		4	,		13	3	
		E	^						T	9		Ţ	-	
				_	-	-			7	_	-			
DD2		c2	_	ΦC)3		E	El	ŀ	h,	_	H	L	L1
ФD2 260Н 285Н	17	c2 -15	_	Φ D Φ35	50	3	E 340	E1	1	h 1 240	5	H 18	L 720	L1 235
DD2 260H 285H 425H	17 17	c2 -15 -12 -20		Φ D Φ35 Φ40 Φ55	03 50 00 50	3	E 340 30 545	E1 - 125 160	 2 2 3	n 1 240 280	5	H 18 48 78	L 720 990 1150	L1 235 330 375
DD2 260H 285H 425H 470h	17 17 17 16	c2 -15 -12 -20 +25		Φ D Φ35 Φ40 Φ55 Φ68	03 50 00 50 30	3 4 5 7	E 340 330 545 725	E1 - 125 160 185	 2 2 3 4	240 280 660	5 6 7 1(H 118 48 78 000	L 720 990 1150 1438	L1 235 330 375 458
DD2 260H 285H 425H 470h 620H	17 17 17 16	c2 -15 -12 -20 +25 -18		Φ D Φ35 Φ40 Φ55 Φ68	50 50 50 50 30 55	3 4 5 7	E 40 340 545 725 860	E1 - 125 160 185 250	 2 2 3 4 5	240 280 660 660	5 6 7 1(H 118 48 78 000 172	L 720 990 1150 1438 1710	L1 235 330 375 458 520
DD2 260H 285H 425H 470h 620H 770H	17 17 16 17 17	c2 -15 -12 -20 +25 -18 -30		Φ D Φ35 Φ40 Φ55 Φ68 Φ80 Φ95	 3 50 50 50 30 50 50 	3 4 5 7 7 8	E 40 40 545 545 545 545 545 545 545 545 5	E1 125 160 185 250 300	 2 2 3 4 5 6	240 280 660 660 660 630	5 6 7 10 1	H 118 448 778 000 172 357	L 720 990 1150 1438 1710 2340	L1 235 330 375 458 520 760
DD2 260H 285H 425F 470h 620H 770H	17 17 16 17 17 17	c2 -15 -12 -20 +25 -18 -30		Φ D Φ35 Φ40 Φ55 Φ68 Φ80 Φ95	03 50 50 50 80 05 50 50	3 4 5 7 8 10	E 40 4 30 4 545 4 645 4 545 4	E1 - 125 160 185 250 300 B	I 2 2 3 4 5 6 1	60 60 60 60 60 60 60 60 60 60 60 60 60 6	5 6 7 1(1) 1;	H 48 78 000 172 357	L 720 990 1150 1438 1710 2340	L1 235 330 375 458 520 760 G4
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DD2 260H 285H 425F 470h 620H t 11 15 59 9.5 35 06	17 17 17 17 17 17 17 17 17 22 23 33 33 4 5	c2 -15 -20 +25 -18 -30 G1 -30 C15 -00 -15 -00 -40 -40 -30	111 66 111 12 13 16	Φ D Φ35 Φ40 Φ55 Φ80 Φ80 Φ80 Φ80 Φ80 Φ80 Φ80 Φ80 Φ80 Φ80	03 50 00 50 50 05 50 55 33 35 47 55 62 76	3 4 5 7 8 10 2 0 0 5 0 0 5 5	E 440 440 445 445 445 445 445 445 445 445	E1 125 160 185 250 300 B 44 73 73 100 14 16	I 2 2 2 3 4 5 6 1 5 5 5 500 49 600 49	240 880 860 880 30 200 222 322 322 348 480 570	5 6 7 10 1 1 1 1 3 3 0 0 0 5 5 0 0 0	H 48 78 78 78 78 78 78 78 78 78 78 78 78 78	L 720 990 1150 1438 7710 2340 2340 2340 18 18 18 18 18 18 18 30 30 30	L1 235 330 375 458 520 760 760 C4 236 360 408 460 527 735
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The installation form of the reducer shall comply with the provisions of the cover three: Appendix: General Rules for Installation of Guomao Reducer

Special reducer for internal mixer 3.2

The reducer for internal mixer is a special transmission device designed and developed for closed rubber mixer. The reducer is designed as a parallel double output shaft structure.



Technical parameters of reducer for internal mixer

Model	Renery volume (L)	Re nery volume Transmission Output torque (L) ratio (kNm)		Output speed (rpm) Output shaft 1/output shaft 2			
M50	50	18	36	41/35.8			
M75	75	18	50	40/34			
M110	110	17	64	40/36			
M160	160	25	120	40/36			

Note:

Please consult for detailed parameters, dimensions and more customized specifications.

3.3 Special reducer for open mixer

The reducer for open mixing mill is a special transmission device designed and developed for open rubber mixing mill. The reducer is designed as a parallel double output shaft structure.





Technical parameters of reducer for open mixer

Model	Roller diameter (mm)	Transmission ratio	Output torque (kNm)	Output speed (rpm) Output shaft 1/output shaft 2
SK400	400	43	24	22/18
SK450	450	50	36	19/16
SK560	560	55	58	18/16
SK610	610	40	82	18/15
SK660	660	50	168	16/14
XK710	710	63	192	16/14
XK5061	610	59	90	17/15
XK5866	660	59	144	17/15

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Note:

Please consult for detailed parameters, dimensions and more customized specifications.

Special reducer for kneading machine 3.4 The reducer for reducer for kneading machine is a special transmission device designed for pressurized kneading machine.



Special reducer for calender 3.5 The calender special reducer is a combination of special transmission devices designed and developed for multi-roll calenders. It has high transmission accuracy and stable and reliable operation.





Model	a	А	В	Н	h	ml	m2	m3	m4	m5	m6	m7	d1 (m6)	Gl	11	b١	†1	d2 (m6)	G2	12	b2	†2	n2-d4
ZSYF200	440	760	360	180	25	110	220	180	220	220	310	180	Ф32	217	58	10	35	Φ90	200	130	25	95	8- D 18
ZSYF215	487	830	400	200	30	130	260	140	260	260	350	200	Ф38	237	58	10	41	Φ95	220	130	25	100	8- D 18
ZSYF232	504	920	450	225	40	130	260	190	260	260	280	225	Ф38	262	58	10	41	Φ95	245	130	25	100	8- Φ 22
ZSYF262	588	1023	396	250	50	146	292	208	292	292	326	250	• 42	243	82	12	45	Φ110	243	165	28	116	8-Φ22
ZSYF300	640	1105	420	280	50	165	330	230	330	330	350	280	Ф42	255	82	12	45	Φ110	255	165	28	116	8-Ф22
ZSYF315	699	1220	440	305	50	175	350	260	350	350	374	305	Ф48	255	82	14	51.5	Φ140	270	200	36	148	8-Φ26
ZSYF355	785	1320	465	330	45	215	430	230	430	430	400	330	Φ60	275	105	18	64	Φ170	290	240	40	179	8-Φ33
ZSYF400	880	1500	520	400	60	190	380	420	380	380	440	400	Φ60	305	105	18	64	Φ180	320	240	45	190	8-Φ33

Technical parameters							
Model	Output speed (rpm)	Output torque (kNm)					
ML35	32	16					
ML55	32	22					
ML75	32	33					
ML110	32	66					

Note:

Please consult for detailed parameters.



	Technical parameters								
	Model	Transmission ratio	Output torque (Nm)						
	ZSYF200	45	4300						
	ZSYF215	63	7400						
	ZSYF232	50	9800						
	ZSYF262	56	13200						
	ZSYF300	63	15200						
	ZSYF315	40	19100						
j.	ZSYF355	50	28600						
	ZSYF400	50	35000						



General technical description of reducer

Safety instructions 4.1

All operations related to transportation, storage, installation, assembly, connection, operation, maintenance and overhaul must be performed by gualified operators in accordance with the following requirements:

- Read the product manual and circuit diagram carefully and keep them properly.
- Pay attention to the warning and safety signs of the reducer.
- Comply with the specific regulations and requirements related to the equipment.
- Follow the relevant regulations on safety and accident prevention formulated by the national/local government/specific industry.

Usage conditions 4.2

Generally, reducer products should be used under the following conditions:

- Ambient temperature: -40°C~50°C. When the ambient temperature is low, the lubricating oil should be preheated before starting, or low-temperature lubricating oil should be used. The working temperature rise of the reducer should be \leq 70°C, and the working oil temperature should be \leq 90°C.
- Environmental humidity: ≤85%
- The place of use should be free of corrosive and explosive gases or vapors and should be well ventilated.

Transportation and storage 4.3

During transportation, the reducer should be reliably fixed, necessary protective measures should be taken and the reducer lubricating oil should be drained completely.

If the reducer is out of service for a long time, it must be operated every 2 to 3 weeks.

Additional anti-rust measures are necessary for reducers that have been out of service for more than 6 months: the interior should be filled with lubricating oil, the shaft ends and unpainted surfaces should be treated with wax anti-rust coating, and grease should be applied to the oil seal lip to prevent the penetration of anti-rust agent.

Before the reducer is put into operation again after being out of service for a long time, the oil seal must be checked for aging and failure and maintained and replaced.

Installation and connection 4.4

- The reducer must be installed on a flat, reliable, stable and vibration-free solid foundation.
- The connection between the reducer and the input prime mover should give priority to the elastic connection method for error compensation.
- When the reducer and the input prime mover are connected using pulleys, gears, sprockets, etc., the attached radial load must be checked.
- It is forbidden to hammer the reducer shaft end.
- The exposed rotating parts of the reducer (coupling, pulley) should be covered with protective covers.
- When performing installation and connection operations, the power supply should be cut off and measures should be taken to prevent the power supply from being accidentally connected.
- After installation, lubricating oil must be added to the reducer.

Start-up and operation 4.5

- Before starting the reducer, please first check whether the lubricating oil has been filled. When the ambient temperature is lower than 100°C, check whether the pour point of the lubricating oil meets the starting requirements according to the instructions.
- Before starting, check whether all connections are loose and whether the safety protection devices are complete.
- When the reducer is equipped with a motor-driven lubrication pump, the lubrication pump should be turned on before the reducer is started.
- Before loading and using, the reducer should be run at no load for 5 to 10 minutes to fully lubricate the bearings and gears inside the reducer. When the reducer is used for the first time, before normal opsration, it must be loaded step by step after no-load operation, with 20% of the rated load added each time and run for 1 to 2 hours until the rated load is reached and without any abnormal phenomena.

Inspection and maintenance 4.6

followed when the machine is stopped:



- The reducer should be inspected daily for normal operation.

4.7 Lubrication and cooling

Generally, reducer products should be used under the following conditions:

- The reducer lubricating oil should be CKD220 or CKD320 heavy-duty industrial closed gear oil.
- When the reducer is equipped with a forced lubrication device, the oil supply pressure of the lubrication pipeline is generally between 0.1MPa and 0.4MPa.
- be 1.5:1.

4.8 Troubleshooting

Fault phenomenon	Possible factors	Possible solutions
Abnormal, uniform operating noise or vibration	Rolling/crushing noise: gear/bearing damage	Check gears/bearings
	Knocking noise: uneven gear meshing	Consult us
	Incorrect coupling installation	Check couplings
Abnormal, uneven operating noise or vibration	Lubricant impurities/deterioration	Check lubricants
	Reducer installation foundation	Consult us
Abnormal noise in the xed area of the reducer	Reducer xings loose	Check xtures
Oil leakage at the shaft seal (oil seal)	Seals severely worn/aged	Replace seals
	Incorrect seal installation	Install correctly
	Lubricant impurities/excessive amount of lubricant	Check lubricants
	Loose local pressure at the seal/poor oil return	Improve exhaust/oil return
Oil leakage at the joint surface of the components	Loose fasteners for component connection	Check fasteners
	Loose component connection	Check mating surfaces
High operating temperature of the reducer	Excessive lubricant	Check lubricant level
	Lubricant impurities/deterioration	Replace lubricant
Sector And	Poor lubrication/damaged lubricating pump	Check/replace lubricating elements
	Cooling system failure	Check cooling device
	Poor ventilation around the reducer	Maintain ventilation and prevent accumulation of debris
High bearing temperature	Poor lubricant supply	Check lubricant level
	Lubricant impurities/deterioration	Replace lubricant
	Bearing damage/impurities	Check/replace bearings
	Bearings bear additional loads	Check load/consult us
	Bearing clearance	Check/adjust clearance
Forced lubrication oil pressure is too low	Pipeline leakage	Check/tighten pipelines
	Low injection back pressure	Adjust injection elements
	Filter blockage	Clean/replace Iter element
	Oil pump damage/low oil pump ow	Replace oil pump
Nator		In

- If the fault is still not resolved after repair/replacement of spare parts, please consult.

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Plastic And Rubber Special Reducer

The speed reducer maintenance should be carried out when the machine is stopped. Generally the following steps are

(Lubrication device shutdown)

(Cooling device shutdown)

According to the service life and inspection results, the reducer should be maintained according to the instructions.

When the reducer is equipped with a water cooling device, the cooling water supply pressure should generally be between 02.MPa and 0.3MPa, and the cooling water inlet temperature should not be higher than 30°C. When the reducer is equipped with a forced lubrication cooling system, the ratio of cooling water flow to lubricating oil flow should

If the reducer fails during the warranty period and needs repair, it should be completed by our after-sales service personnel 18



Appendix: General Rules for Installation of Guomao Reducer This general rule applies to all situations where the installation form of this series of reducers is not described in detail.

The installation form of the reducer consists of two parts: the shaft extension assembly form and the station installation form. The complete installation form code is composed of the shaft extension assembly code + the station installation code. Shaft extension assembly form and shaft extension assembly code:



Workstation installation form and workstation installation code: Standard workstation installation form and standard workstation installation code:





Special station installation form and special station installation code representation method: