



# NER GROUP CO., LIMITED

Yantai Bonway Manufacturer Co., Ltd





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## 1. 概述 Summary

圆锥圆柱齿轮减速器为输入，输出轴位于垂直状态的外啮合齿轮传动结构，主要传动零件采用优质合金钢制造。齿轮经渗碳淬火磨齿工艺制造，6级精度。产品具有承载能力高，寿命长，体积小，效率高，重量轻等优点。

Cone cylindrical gear reducer is the outer meshing gears transmission structure of input and output axis in vertical state, the main transmission parts adopt high quality alloy steel to manufacture.

Gears by carburization, quenching, and grinding process manufacturing, 6 degree precision.

The product has the advantages of high loading capacity, long life, small volume, high efficiency, and light weight, etc.

本减速器系列标准号为JB/T9002-1999, 是国家更新换代产品。可取代SS型垂直轴减速器和ZQ、ZL等旧型号减速器。亦可替代同类型国外进口减速器。

The standard number of this series speed reducer is JB/T9002-1999, which is our country's generation-substituting product. It can replace SS type vertical shaft speed reducer and ZQ, ZL old type speed reducer, and so on. Also it can replace the same type speed reducer imported from foreign countries.

## 2. 用途和适用范围 Usage and scope of application

### 2.1 用途 Usage

圆锥圆柱齿轮减速器（以下简称减速器），用于输入轴与输出轴呈垂直方向布置的转动装置。主要用于带式输送机等各种运输机械，也可用于冶金、矿山、化工、煤炭、建材、轻工、石油等各种通用机械。

Cone cylindrical gear reducer (Hereinafter referred to as speed reducer), which use in the rotating equipment for input and output shaft in vertical direction layout. It mainly used in belt conveyor and other conveying equipment, it also can be used in metallurgy, mine, chemical engineering, coal, building materials, light industry, petroleum, and other general machinery.

### 2.2 适用范围 Scope of application

2.2.1 减速器输入轴最高转速不大于1500r/min; The maximum input speed of speed reducer should be no larger than 1500r/min;

2.2.2 齿轮圆周速度不大于20m/s; The peripheral speed of gear should be no larger than 20m/s;

2.2.3 工作环境温度 $-40\sim+45^{\circ}\text{C}$ 。当环境温度低于 $0^{\circ}\text{C}$ 时，启动前润滑油应加热（另配电热管）。

2.2.3 The ambient temperature is  $-40\sim+45^{\circ}\text{C}$ . When ambient temperature is lower than  $0^{\circ}\text{C}$ , we should heat the oil lubrication before starting. (Heat pipe is needed)

## 3. 减速器型式与标记 Speed reducer type and mark

### 3.1 型式 Type

3.1.1 DBY型为二级转动硬齿面齿轮减速器，DCY型为三级转动硬齿面齿轮减速器，第一级传动为格里森弧齿锥齿轮，第二、第三级传动则为渐开线圆柱斜齿轮。

3.1.1 DBY type is the secondary rotating hard surface gear reducer, DCY type is third rotating hard surface gear reducer, the secondary and third rotating is involute cylinder helical gear.

3.1.2 减速器按出轴形式可分 I、II、III、IV 四种装配型式，按输出轴旋转方向可分顺时针（S）和逆时针（N）两种。（面对输出轴）

3.1.2 Speed reducer can be divided into I、II、III、IV four assembly types according to output shaft type, and also can be divided into clockwise and anticlockwise two types according to output shaft rotating directions. (Face output shaft)

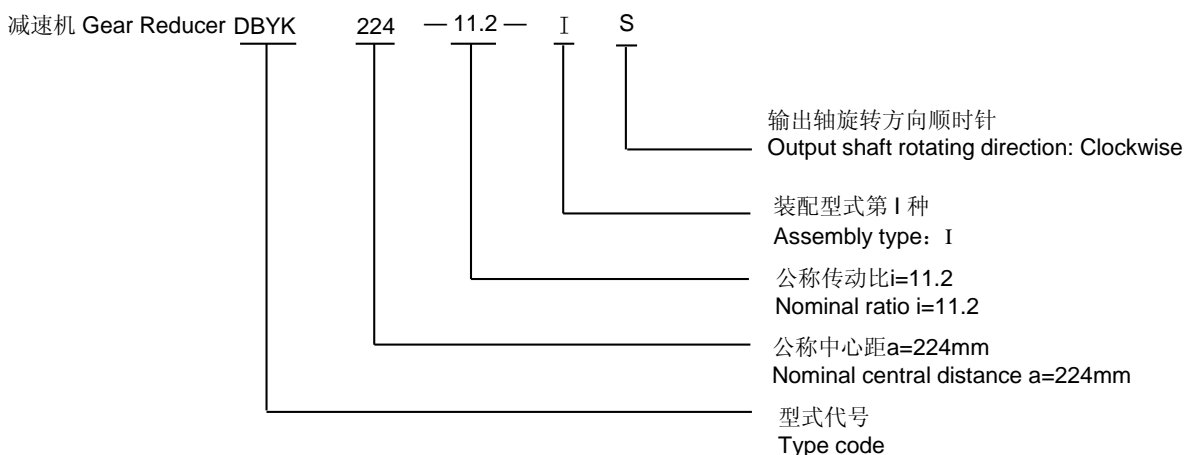
### 3.2 标记 Mark

3.2.1 减速器的标记代号中包括减速器型号、公称中心距、公称传动比，装配型式和输出轴旋转方向。

3.2.1 The mark code of speed reducer include speed reducer type, nominal central distance, nominal ratio, assembly type and output shaft rotating direction.

#### 3.2.2 标记示例 Mark example

减速器 Speed reducer



3.2.3 需配置逆止器应另外声明 Need to configure the backstop should be another statement

(D带式输送机类代号, B(C)-二级(三级)传动, Y-硬齿面轮, K-空心轴)

(D ribbo comveyer code, B(C)-double stage (third stage) transmission, Y-hard gear surfacegear, K-hollow shaft)

4、外形尺寸、装配尺寸、承载能力及热功率。Outline size, assembly size, loading capacity and thermal power.

4.1 装配形式 Assembly type

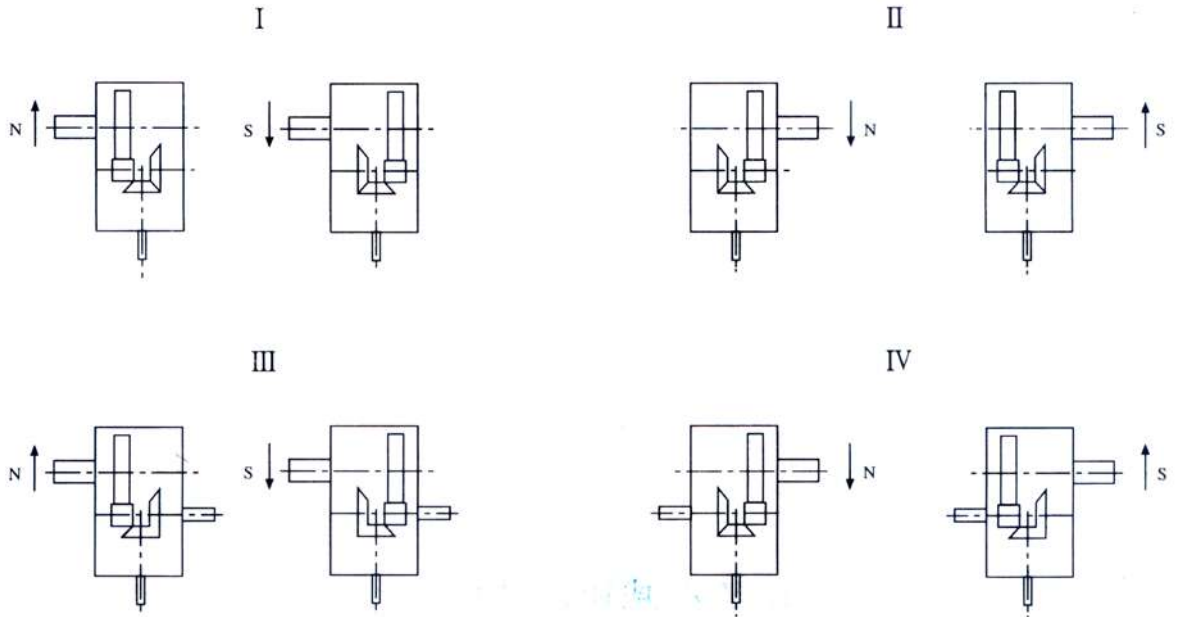


图1 DBY装配型式 (Picture1 DBY assembly type)

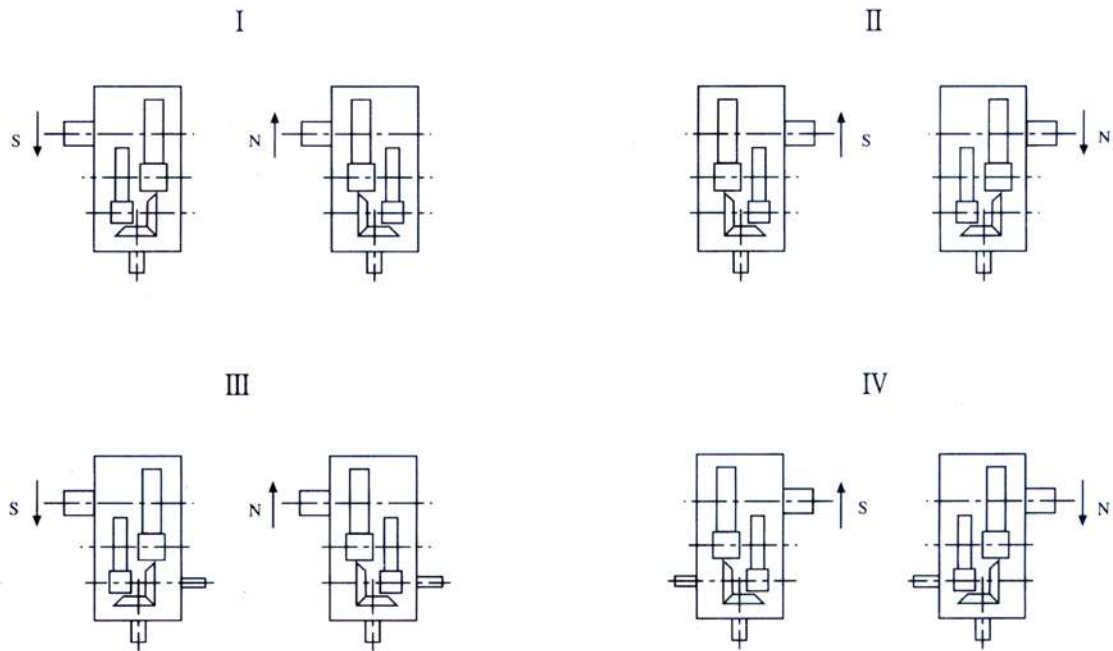


图2 DCY装配型式 (Picture2 DCY assembly type)



4.2 DBY减速器外形尺寸及承载能力和热功率 (DBY speed reducer outline dimension and loading capacity and thermal power.)  
外观尺寸见图3、表1；承载能力见表2；热功率见表3。

Outline dimension see picture3、form 1；loading capacity see form2；thermal power see form 3.

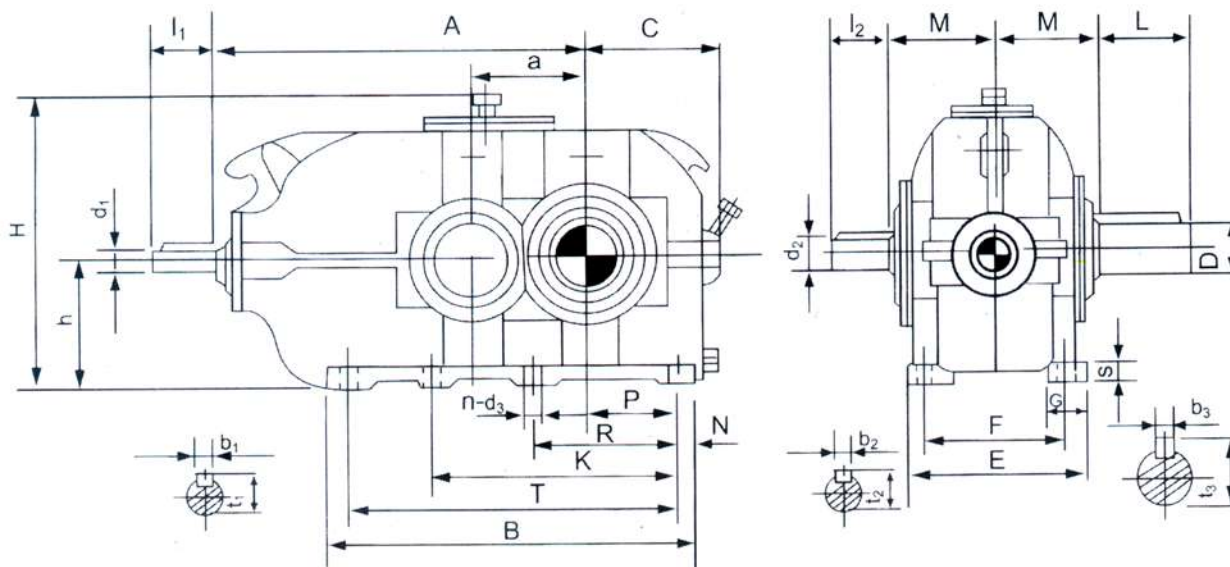


图3 DBY型减速器 (Picture3 DBY speed reducer)

表1 (Form 1) DBY型减速器外型尺寸 DBY type speed reducer outline dimension mm

名义中心距a Nominal central distance a	d1	I1	d2	I2	D	L	A	B	C	E	F	G	S	h	H	M
160	40		48		70	140	500	500	190	250	210	65	35	180	430	145
180	42		50	110	80		565	565	215	270	230	70		200	475	160
200	50	110	55		90	170	625	625	240	300	250	75	40	225	520	175
224	55		65	140	100		705	705	260	320	270	80	45	250	570	190
250	60		75		110	210	785	785	290	370	310	90	50	280	626	210
280	65	140	85		120		875	875	325	400	340	200	55	315	702	230
315	75		95	170	140	250	975	975	355	450	380	110	60	355	809	260
355	90	170	100		160	300	1085	1085	390	480	410	120	65	400	900	285
400	100		110	210	170		1215	1215	440	530	460	130	70	450	970	305
450	110	210	130		190	350	1365	1365	490	600	510	140	80	500	1071	345
500	120		150	250	220		1525	1525	570	650	560	150	90	560	1210	435
560	130	250	160	300	250	410	1705	1705	610	750	640	160	100	630	1325	475

名义中心距a Nominal central distance a	n-d3	N	P	R	K	T	b1	t1	b2	t2	b3	t3	平均重量 kg Weight	油量I Oil level	图号 Drawing No.
160			115	210		440		43		51.5	20	75	173	7	DBY160.0
180	6-18	30	135	240		505	12	45	14	53.5	22	85	232	9	DBY180.0
200			145	255		555	14	53.5	16	59	25	95	305	13	DBY200.0
224	6-23	35	165	290		635	16	59	18	69		106	415	218	DBY224.0
250		40	180	315		705		64	20	79.5	28	116	573	25	DBY250.0
280	6-27	45	200	355		785	18	69	22	90	32	127	760	36	DBY280.0
315		50	220	405		875	20	79.5	25	100	36	148	1020	51	DBY315.0
355	6-33	55	245	450		975	25	95	28	106	40	169	1436	69	DBY355.0
400			280	510		1105	28	106		116		179	1966	95	DBY400.0
450		60	315	575	940	1245		116	32	137	45	200	2532	130	DBY450.0
500	8-39	70	350	645	1050	1385		127	36	158	50	231	3633	185	DBY500.0
560	8-45	80	390	715	1165	1545	32	137	40	169	56	262	5020	260	DBY560.0

表Form 2 DBY, DBYK 型减速器承载能力 DBY, DBYK Type speed reducer loading capacity

公称传动比 Ratio	公称传动 Rated speed r/min		名义中心距 a Nominal central distance a											
			160	180	200	224	250	280	315	355	400	450	500	560
i	输入 input n1	输出 output n2	公称输入功率 P1/kw Nominal input power P1/kw											
8	1500	188	81	115	145	205	320	435	610	750	1080	1680*	2100*	-
	1000	125	56	86	110	155	245	325	465	560	810	1260	1700	2200*
	750	94	42	55	88	125	185	250	340	465	660	950	1400	1800
10	1500	150	67	92	130	165	255	345	480	610	910	1370	1900*	-
	1000	100	44	69	94	125	195	260	360	465	620	950	1270	1700
	750	75	34	46	73	105	155	210	295	380	510	710	950	1300
11.2	1500	134	59	81	115	150	235	325	450	560	840	1200	1550	-
	1000	89	40	61	84	130	175	245	340	430	630	810	1030	1380
	750	67	31	41	65	98	140	185	240	350	470	610	780	1040
12.5	1500	120	53	75	105	140	210	285	390	500	760	980	1260	1550
	1000	80	36	56	74	105	145	215	265	380	480	660	850	1110
	750	60	27	36	56	76	110	150	190	270	365	500	640	840
14	1500	107	48	66	81	125	190	260	345	465	580	780	1000	1150
	1000	71	31	42	54	84	110	165	205	310	415	520	680	900
	750	53	23	31	38	60	80	115	145	235	310	400	510	690

注: \* 需采用循环润滑 Note: \* It needs to adopt recycling oil lubrication.

表Form 3 DBY, DBYK 型减速器热功率 DBY, DBYK type speed reducer thermal power

环境条件 Environment condition	空气流速 Air velocity m/s		名义中心距 a Nominal central distance a											
			160	180	200	224	250	280	315	355	400	450	500	560
			减速器不附加冷却装置的热功率PG1/kw Thermal power of speed reducer without cooling equipment's PG1/kw											
狭小车间内 In Narrow Workshop	≥0.5		32	40	50	61	76	95	118	143	180	225	279	355
中、大型车间 内 In M / L Workshop	≥1.4		45	57	71	85	106	133	165	201	252	316	391	497
室外 Outdoor	≥3.7		62	77	96	116	144	181	224	272	342	429	531	675

注: 减速器附冷却管时的热功率PG2可根据需要进行设计

Note: The thermal power PG2 of speed reducer attached with cooling pipe can be designed as request.

4.3 DCY减速器外形尺寸及承载能力和热功率(DCY speed reducer outline dimension and loading capacity and thermal power.)  
 外观尺寸见图4、表4；承载能力见表5；热功率见表6。  
 Outline dimension see Picture 4, Form 4; loading capacity see Form 5; thermal power see Form 6.

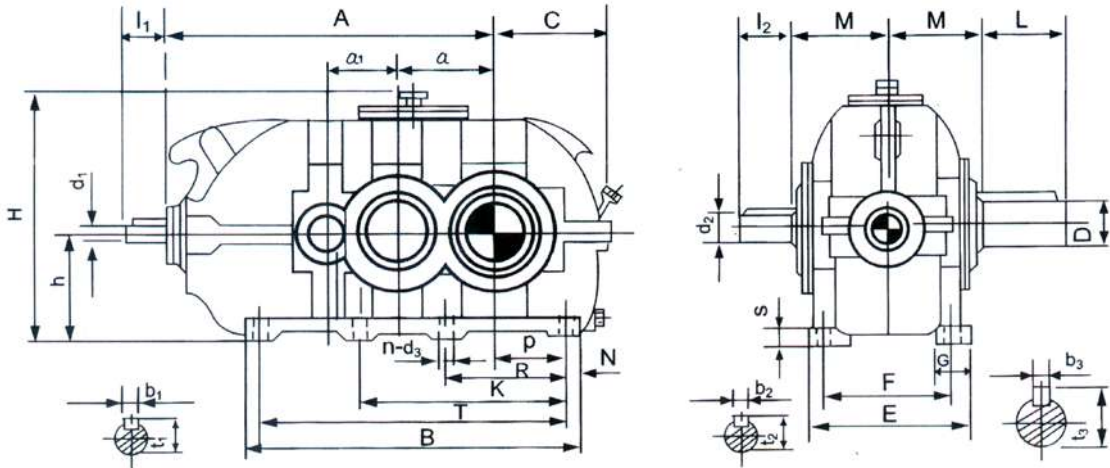


图4 DCY型减速器 (Picture4 DCY speed reducer)

表4 (Form 4) DCY型减速器外型尺寸 DCY type speed reducer outline dimension mm

名义中心距a Nominal central distance a	a1	i=16~56				i=63~90				d2	I2	D	L	A	B	C	E	F	G	S	h	H	M
		d1	I1																				
160	112	25	60	20	50	32	80	70	140	510	555	190	250	210	65	35	180	430	145				
180	125	30		25	60	38		80		575	625	215	270	230	70		200	468	160				
200	140	35	80	30		42		90	170	640	685	240	300	250	75	40	225	520	175				
224	160	40		35	80	48		100		725	775	260	320	270	80	45	250	570	190				
250	180	42	110	38		50	110	110	210	815	860	290	370	310	90	50	280	626	210				
280	200	50		42	110	55		120		905	970	325	400	340	200	55	315	702	230				
315	224	55		50		65	140	140	250	1020	1085	355	450	380	110	60	355	809	260				
355	250	60		55		75		160		1140	1220	390	480	410	120	65	400	900	285				
400	280	65	140	60	140	85	170	170	300	1275	1355	440	530	460	130	70	450	970	305				
450	315	75		65		95		190		1425	1520	490	600	510	140	80	500	1065	345				
500	355	90	170	75		100	210	220	350	1585	1690	570	650	560	150	90	560	1208	435				
560	400	100		90	170	110		250	410	1775	1895	610	750	640	160	100	630	1325	475				
630	450	110	210	100		130	250	300	470	1995	2145	675	800	690	170	110	710	1460	525				
710	500	120		110	210	150		340	550	2235	2400	760	900	770	190	125	800	1665	570				
800	560	130	250	120		160	300	400	650	2505	2700	840	1000	870	200	140	900	1870	625				

名义中心距a Nominal central distance a	n-d3	N	P	R	K	T	i=16~56		i=63~90		b2	t2	b3	t3	平均重量kg Weight	油量l Oil level	图号 Drawing No.
							b1	t1	b1	t1							
160	6-18		115	210		495		28	6	22.5		35	20	74.5	200	9	DCY160.0
180		30	135	240		565	8	33		28	10	41	22	85	255	13	DCY180.0
200	6-23		145	255		615	10	38	8	33	12	45	25	95	325	18	DCY200.0
224		35	165	290	-	705		43		38		52		106	453	26	DCY224.0
250	6-27	40	180	315		780	12	45	10	41	14	54	28	116	586	33	DCY250.0
280		45	200	355		880	14	54	12	45	16	59	32	127	837	46	DCY280.0
315	8-33	50	220	405	655	985	16	59	14	53.5	18	69	36	148	1100	65	DCY315.0
355		55	245	450	740	1110		64	16	59	20	80	40	169	1550	90	DCY355.0
400	8-39		280	510	840	1245	18	69		64	22	90		179	1967	125	DCY400.0
450		60	315	575	940	1400	20	80	18	69	25	100	45	200	2675	180	DCY450.0
500		70	350	645	1050	1550	25	95	20	79.5		106	50	231	4340	240	DCY500.0
560		80	390	715	1165	1735		106	25	95	28	116	56	262	5320	335	DCY560.0
630	8-45		445	800	1305	1985	28	116		106	32	137	70	314	7170	480	DCY630.0
710		90	500	900	1490	2220		127	28	116	36	158	80	355	9600	690	DCY710.0
800			560	1100	1680	2520	32	137	32	127	40	169	90	417	13340	940	DCY800.0

表5 Form 5

DCY、DCYK型减速器承载能力 DCY、DCYK speed reducer loading capacity

公称传动比 Nominal Rtio i	公称传动 r/min		名义中心距 a Nominal central distance a														
	输入n1	输出n2	160	180	200	224	250	280	315	355	400	450	500	560	630	710	800
			公称输入功率P1/kW Nominal input power P1/kW														
16	1500	94	45	61	80	120	160	230	305	440	600	830*	1350*	1850*	-	-	-
	1000	63	30	43	60	85	115	170	230	330	440	630	1010	1420	2200*	2500*	2850*
	750	47	24	35	45	70	85	140	185	270	360	510	830	1180	1600	2300*	2600*
18	1500	83	42	58	75	110	150	210	290	440	560	780	1350	1850*	-	-	-
	1000	56	30	40	53	75	105	155	215	330	420	590	1000	1400	1860*	2500*	2850*
	750	42	23	32	42	65	80	120	175	260	345	480	790	1120	1460	2180	2500*
20	1500	75	39	53	68	100	135	195	270	430	550	780	1320*	1800*	-	-	-
	1000	50	27	36	48	70	95	140	200	315	380	550	880	1240	1640*	2400*	2850*
	750	38	20	25	38	55	75	110	160	245	310	445	700	1000	1290	1920	2500
22.4	1500	67	34	50	65	94	130	175	250	400	510	730	1170	1540*	-	-	-
	1000	45	23	34	48	65	90	130	185	290	360	520	780	1100	1450	2120*	2600*
	750	33	17	25	36	49	70	95	140	220	275	400	620	880	1140	1710	2460
25	1500	60	30	44	62	83	115	160	225	350	450	650	1030	1460	-	-	-
	1000	40	20	30	42	57	80	110	165	255	315	460	730	1040	1350	2010*	2600*
	750	30	15	23	32	43	60	85	125	195	240	350	550	780	1010	1510	2180
28	1500	54	22	37	48	75	92	140	215	320	405	590	910	1290	-	-	-
	1000	36	15	25	34	52	66	94	150	225	285	420	640	910	1190	1770*	2500*
	750	27	12	19	26	39	50	71	115	170	215	315	490	690	890	1330	1920
31.5	1500	48	20	33	44	69	85	120	195	290	385	550	820	1170	-	-	-
	1000	32	14	22	31	46	59	83	130	200	225	370	580	820	1070	1600	2310*
	750	24	10	17	23	34	44	62	100	150	190	280	440	620	800	1200	1740
35.5	1500	42	18	30	40	62	77	110	180	260	345	500	770	1100	1430	2120*	-
	1000	28	12	20	28	42	53	75	120	180	230	340	510	720	950	1410	2030
	750	21	9	15	21	31	40	56	90	135	175	250	385	540	710	1060	1540
40	1500	38	17	27	36	56	69	98	160	235	310	450	690	990	1290	1920	-
	1000	25	11	18	25	41	47	67	120	160	225	330	465	660	860	1280	1850
	750	19	8.5	14	19	29	36	52	82	125	155	230	350	495	640	960	1390
45	1500	33.5	15	24	33	50	64	90	145	215	275	400	620	880	1150	1720	2100
	1000	22	10	16	22	33	42	60	95	145	180	265	455	640	840	1250	1810
	750	16.6	7.5	12	17	26	32	46	74	110	140	205	320	455	600	870	1260
50	1500	30	13	21	30	44	57	80	130	195	245	360	550	780	1030	1540	2050
	1000	20	9	14	20	31	38	54	87	130	165	240	365	520	680	1020	1480
	750	15	7	11	15	23	29	41	65	99	120	180	290	410	540	780	1130
56	1500	27	12	19	26.5	38	50	72	115	160	220	310	500	700	910	-	-
	1000	18	8	13	17.5	26	35	48	75	110	140	200	340	480	630	940	1300
	750	13.4	6	10	13	20	25	35	58	85	110	160	250	350	470	680	980
63	1500	24	11	16	23	35	45	64	100	150	200	280	440	610	800	-	-
	1000	16	7.5	12	15	24	30	43	68	100	130	190	300	400	550	820	1080
	750	12	5.5	8.5	12	17	23	30	50	76	95	140	220	310	420	620	830
71	1500	21	9	15	21	30	40	56	91	130	180	230	400	550	720	-	-
	1000	14	6	9.5	14	21	27	38	60	85	120	160	260	370	500	680	890
	750	10.6	4.5	7.5	11	15.5	21	28	45	60	90	120	200	280	370	500	670
80	1500	18.5	8.5	12	19	27	38	50	73	110	160	210	340	480	600	-	-
	1000	12.5	5.5	8	13	18	25	35	50	75	110	140	230	340	400	560	720
	750	9.4	4.2	6	10	13.5	19	25.5	38	55	80	110	180	240	300	420	550
90	1500	16.7	8	10	18	25	35	43	65								
	1000	11.1	5	6.8	12	17	23	30	43								
	750	8.3	4	5	9	12.5	17	22	32								

注：\*需采用循环油润滑

Note:\*It need to adopt recyding oil lubrication



表Form 6 DCY、DCYK型减速器热功率 DCY、DCYK type speed reducer thermal power

环境条件 Environment conditon	空气流速 m/s	名义中心距 a															
		160	180	200	224	250	280	315	335	400	450	500	560	630	710	800	
		减速器不附加冷却装置的热功率PG1/Kw Thermal power of speed reducer without cooling equipment PG1/Kw															
狭小车间内 In small plant	≥0.5	22	27	34	41	52	65	81	99	124	156	192	245	299	384	482	
中、大型车间内 In middle, large plant	≥1.4	31	38	48	58	73	91	114	139	174	218	270	343	419	537	675	
室外 Outdoor	≥3.7	42	52	65	79	99	124	155	189	237	296	366	465	568	730	910	

注：减速器附冷却管时的热功率PG2可根据需要进行设计

Note:The thermal power PG2 of speed reducer attach with cooling pipe, can be designed as request.

4.4 DBYK减速器外形尺寸 DBYK speed reducer outline dimension

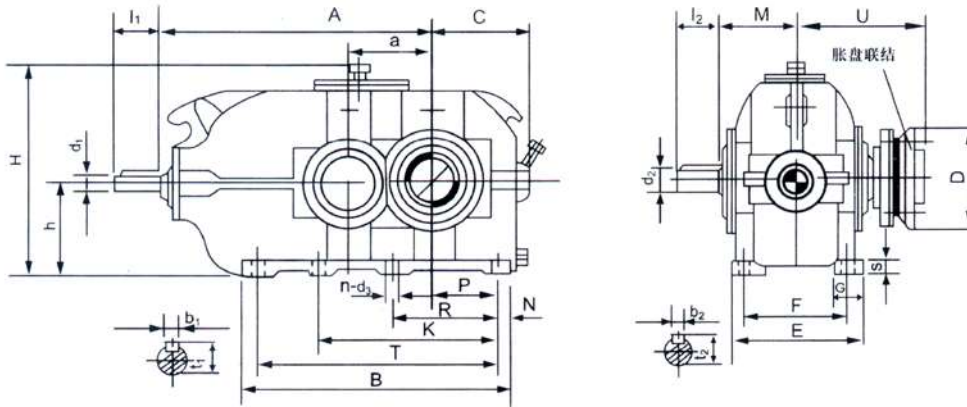


图5 DBYK型减速器 Picture 5 DBYK type speed reducer

表Form 7 DBYK型减速器外形尺寸 DBYK type speed reducer outside dimension

mm

名义中心距 a Nominal central distance a	d1	I1	d2	I2	dw	U	A	B	C	E	F	G	S	h	H	M
160	40		48		80	225	500	500	190	250	210	65	35	180	430	145
180	42	110	50	110	90	250	565	565	215	270	230	70	35	200	475	160
200	50		55		100	275	625	625	240	300	250	75	40	225	520	175
224	55		65	140	110	295	705	705	260	320	270	80	45	250	570	190
250	60		75		120	325	785	785	290	370	310	90	50	280	626	210
280	65	140	85	170	135	360	875	875	325	400	340	100	55	315	702	230
315	75		95		160	420	975	975	355	450	380	110	60	355	809	260
355	90	170	100	210	180	450	1085	1085	390	480	410	120	65	400	900	285
400	100		110		200	490	1215	1215	440	530	460	130	70	450	970	305
450	110	210	130	250	220	550	1365	1365	490	600	510	140	80	500	1071	345
500	120		150		280	715	1525	1525	570	650	560	150	90	560	1210	435
560	130	250	160	300	310	760	1705	1705	610	750	640	160	100	630	1325	475

名义中心距 a Nominal central distance a	n-d3	N	P	R	K	T	b1	t1	b2	t2	D	平均重量 Weight	油量 Oil leve l	图号 Prawing NO.
160	6-18	30	115	210		440	12	43	14	51.5	185	173	7	DBYK160.0
180			135	240		505		45		53.5	215	232	9	DBYK180.0
200	6-23	35	145	255		555	14	53.5	16	59	230	305	13	DBYK200.0
224			165	290		635	16	59	18	69	263	415	18	DBYK224.0
250	6-27	40	180	315	—	705	18	64	20	79.5	290	573	25	DBYK250.0
280		45	200	355		785		69	22	90	300	760	36	DBYK280.0
315		50	220	405		875	20	79.5	25	100	370	1020	51	DBYK315.0
355	6-33	55	245	450		975	25	95	28	106	405	1436	69	DBYK355.0
400			280	510		1102	28	106		116	430	1966	95	DBYK400.0
450	6-39	60	315	575	940	1245		116	32	137	460	2532	130	DBYK450.0
500		70	350	645	1050	1385	32	127	36	158	570	3633	185	DBYK500.0
560	6-45	80	390	715	1165	1545		137	40	169	660	5020	260	DBYK560.0

注：承载能力及选用方法与DBY相同

Note:Loading capacity and using method is same as DBY

4.5 DCYK 减速器外形尺寸 (图6 表8)

4.5 DCYK Gear Reducer Outline Dimension (Picture 6 Form 8)

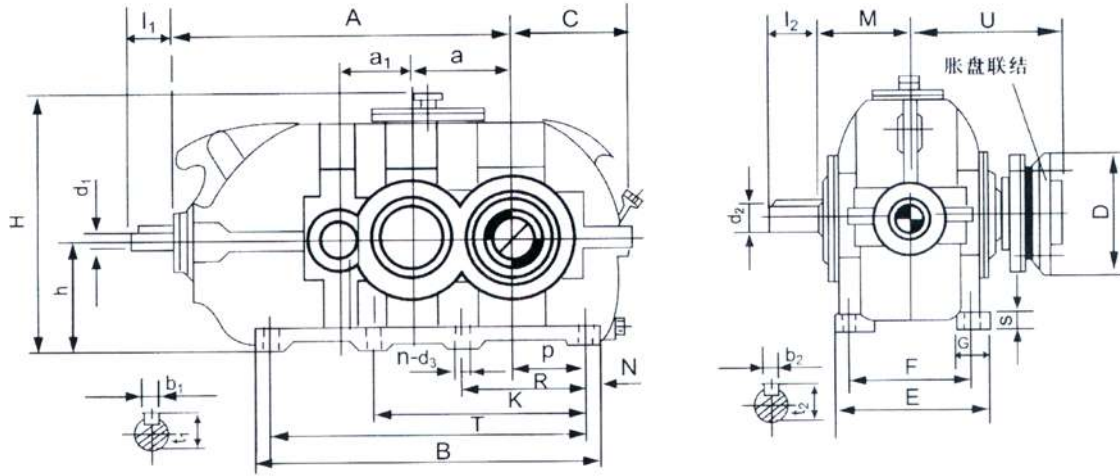


图6 DCYK型减速器  
Picture 6 DCYK Gear Reducer

表8

DCYK 型减速器外形尺寸

Form 8

DBYK Gear Reducer Outline Dimension

mm

名义中心距a Nominal Central Distance a	a1	i=16~56		i=63~90		d2	l2	dw	U	A	B	C	E	F	G	S	h	H	M
		d1	l1	d1	l1														
160	112	25	60	20	50	32	80	80	225	510	555	190	250	210	65	35	180	423	145
180	125	30	80	25	60	38	90	90	250	575	625	215	270	230	70	40	200	468	160
200	140	35	80	30	60	42	100	100	275	640	685	240	300	250	75	40	225	520	175
224	160	40	110	35	80	48	110	110	295	725	775	260	320	270	80	45	250	570	190
250	180	42	110	38	80	50	120	120	325	815	860	290	370	310	90	50	280	626	210
280	200	50	110	42	80	55	135	135	360	905	970	325	400	340	100	55	315	702	230
315	224	55	140	50	110	65	140	160	420	1020	1085	355	450	380	110	60	355	809	260
355	250	60	140	55	110	75	170	180	450	1140	1220	390	480	410	120	65	400	900	285
400	280	65	170	60	140	85	210	200	490	1275	1355	440	530	460	130	70	450	970	305
450	315	75	170	65	140	95	250	220	550	1425	1520	490	600	510	140	80	500	1065	345
500	355	90	210	75	170	100	300	280	715	1585	1690	570	650	560	150	90	560	1208	435
560	400	100	210	90	170	110	350	310	760	1775	1895	610	750	640	160	100	630	1325	475
630	450	110	250	100	210	130	400	340	840	1995	2145	675	800	690	170	110	710	1460	525
710	500	120	250	110	210	150	450	380	890	2235	2400	760	900	770	190	125	800	1665	570
800	560	130	250	120	210	160	500	420	955	2505	2700	840	1000	870	200	140	900	1870	625

名义中心距a Nominal Central Distance a	n-d3	N	P	R	K	T	i=16~56		i=63~90		b2	t2	D	平均重量 kg	油量 l	图号
							b1	t1	b1	t1						
160	6-18	30	115	210		495	8	28	6	22.5	10	35	185	200	9	DCY160.0
180	6-18		135	240		565	8	33	8	28	10	41	215	255	13	DCY180.0
200	6-23	35	145	255		615	10	38	8	33	12	45	230	325	18	DCY200.0
224	6-23		165	290		705	12	43	10	38	14	51.5	263	453	26	DCY224.0
250	6-27	40	180	315		780	12	45	10	41	14	53.5	290	586	33	DCY250.0
280	6-27	45	200	355		880	14	53.5	12	45	16	59	300	837	46	DCY280.0
315	8-33	50	220	405	655	985	16	59	14	53.5	18	69	370	1100	65	DCY315.0
355	8-33	55	245	450	740	1110	18	64	16	59	20	79.5	405	1550	90	DCY355.0
400	8-39		280	510	840	1245	18	69	18	64	22	90	430	1967	125	DCY400.0
450	8-39	60	315	575	940	1400	20	79.5	18	69	25	100	460	2675	180	DCY450.0
500		70	350	645	1050	1550	25	95	20	79.5	28	106	570	4340	240	DCY500.0
560		80	390	715	1165	1735	28	106	25	95	28	116	660	5320	335	DCY560.0
630	8-45		445	800	1305	1985	28	116	28	106	32	137	690	7170	480	DCY630.0
710		90	500	900	1490	2220	32	127	28	116	36	158	770	9600	690	DCY710.0
800			560	1100	1680	2520	32	137	32	127	40	169	850	13340	940	DCY160.0

注：承载能力及选用方法与DCY型相同

Note: Loading capacity and usage method are same as DCY type.

## 5、减速器的润滑 Lubrication of Gear Reducers

5.1 减速器一般采用油池润滑，自然冷却。当减速器工作平衡温度超过90℃时，或承载功率超过热功率PG1时，可采用循环油润滑，或采用加冷却管的油池润滑。

The gear reducers generally adopt oil pool lubricating and natural cooling. When the reducers' work balance temperature exceeds 90 °C, or load power overpass thermal power PG1, we can use oil circulating lubrication, or oil pool lubricating plus cooling pipe.

当减速器连续停机超过24h后再启动时，应使齿轮和轴承润滑正常后再带负荷运转。

When the reducers restart after continuous stopping more than 24h, they should be operated with load after normal lubrication of gears and bearings.

减速器润滑油应选用GB/T5903标准中的L-CKC220、L-CKC320。

The lubricant of reducers should use L-CKC220, L-CKC320 of GB/T5903 standard.

5.2 轴承一般采用飞溅润滑，润滑油与齿轮油品相同。

The bearings generally use splash lubrication; the lubricant oil is same as gears' standard.

## 6、安装、使用与维护 Installation, Use and Maintenance

6.1 减速器的输入轴轴线和输出轴轴线，与联接部分的轴线保证同轴，其误差不得大于所用联轴器的允许值。

The reducers' input shaft axis and output shaft axis must be ensured coaxial with axis of part, the error can not be greater than used couplings' allowable value.

6.2 由于采用硬齿面，中心距缩小造成输入轴轴颈减小，往往比想配套的电机轴细。当采用液力耦合器拖动时，会由于安装对中心不好，给较细的输入轴的危险截面造成过大的附加应力而出现断轴的可能。为此，建议用户在设计选用时，把液力耦合器面置在电机轴端，而把弹性联轴器装在输入轴端。

Due to adopting hardened tooth-surface gear, the center distance are shorten which cause our input shafts reduced, so input shafts are usually thinner than equipped motor shafts. When dragg fluid coupling, may as unsuitable installation the coupling's center isn't in accordance with red which bring additional stress for thinner input shaft's dangerous cross-section and may cause th broken. Therefore, we suggest the user place the fluid coupling surface on motor's axle end and e flexible couplings on axle end of input shaft while design and select.

6.3 安装好后，箱体油池内必须注入润滑油，油面应达到规定高度（油标中心线）

After installation the lubricant must be injected into oil tank, and the oil level should reach the required height (oil gauge centerline).

6.4 减速器在正式使用前，用手转动，必须灵活，无卡住现象，然后进行空载运转，时间不得少于2小时。运转应平稳，无冲击、振动、杂声及漏油等现象，发现故障应及时排除。

Before putting into use, gear reducers must be flexible and no stuck situation while hand rotation, then no-load operation can not be less than 2 hours. Operation should be smooth and no shock, noise and oil spills and other complex phenomena. And if find any failure they should be immediately repaired.

6.5 首次注入的润滑油需在运转300~600小时后更换。此后，每运转1500~5000小时更换一次，最长更换时间不应超出18个月。在换油时应同时清洗磁性油塞。

The lubricant injected first time need to be renewed after running 300 to 600 hours. Thereafter, the lubricant should be renewed after each running of 1,500 to 5,000 hours, and the longest time should not exceed 18 months. The magnetic oil plug should also be cleaned when renew oil.

6.6 在运转中，出现油温突然升高及不正常噪声时，应立即停车检查。在正确排除故障后方可再次投入运转。

In operation, if the reducer appears sudden increase of oil temperature and abnormal noise, please immediately stop and inspect it. Then it can only be placed into use after correct troubleshooting.

## 7 减速机的选用 gearbox selection

选用减速机时，承载能力必须通过机械强度和热功率两项功率核算，选用步骤如下：

The capacity of gearbox has to pass the calculation of mechanical strength and thermal power.

Kindly check the following items.

7.1 确定减速机的传动比按式 (1) determine the ration of gearbox as per (1)

$$i = n_1/n_2 \text{----- (1)}$$

式中：n<sub>1</sub>—输入转速，r/min n<sub>1</sub>—input speed, r/min  
n<sub>2</sub>—输出转速，r/min n<sub>2</sub>—output speed, r/min

7.2 确定减速器的参数 determine the main parameters of gearbox

7.2.1 选型计算：确定减速机的名义中心距按式 (2)

Model selection calculation: Determine the nominal center distance as per (2)

$$P_1 \geq P_2 * K_A * S_A \text{----- (2)}$$

式中：P<sub>1</sub>—减速机公称输入功率，按表2，表5，KW  
P<sub>1</sub>—input power, as per table 2, table 5, KW  
P<sub>2</sub>—减速机所连接的工作机械所需要功率，KW  
P<sub>2</sub>—operation machine power, KW  
K<sub>A</sub>—工作机械工况系数，表9  
K<sub>A</sub>—operation machine working factor, table 9  
S<sub>A</sub>—减速机安全系数，表10  
S<sub>A</sub>—SF, table 10

7.2.2 验算启动转矩按式 (3) calculate start torque as per (3)

$$T_K * n_1 / P_1 * 9550 \leq 2.5 \text{----- (3)}$$

式中：T<sub>K</sub>—启动转矩或最大输入转矩，N.M

T<sub>K</sub>—start torque or Max. input torque, N.M

7.3 验算热功率按式 (4) calculate thermal power as per (4)

当减速机不附加外冷却装置时：In case no outer cooling device

$$P_2 \leq P_G1 * f_w * F_A \text{----- (4)}$$

如果，P<sub>2</sub>>P<sub>G1</sub>\*F<sub>w</sub>\*F<sub>A</sub>时，则必须重新选用增大一级中心距的减速机或提供附加冷却管进行冷却。

当减速机附加散热器冷却时按式 (5) 进行校核

In case, P<sub>2</sub>>P<sub>G1</sub>\*F<sub>w</sub>\*F<sub>A</sub>, then we have to choose larger center distance gearbox or provide assistant cooling pipe.

当减速机附加散热器冷却时按式 (5) 进行校核

In case gearbox with radiator cooling device as per (5)

$$P_2 \leq P_G2 * F_w * F_A \text{----- (5)}$$

式中：P<sub>G1</sub>, P<sub>G2</sub>—减速机热功率，表3，表6，KW  
P<sub>G1</sub>, P<sub>G2</sub>—gearbox power, table 3, table 6, KW  
F<sub>w</sub>—环境温度系数，表11  
F<sub>w</sub>—ambient temperature factor, table 11  
F<sub>A</sub>—功率利用系数，表12  
F<sub>A</sub>—power utilization factor, table 12

表9 工作机械工况系数 K<sub>A</sub>

Table 9 operation machine working factor K<sub>A</sub>

原动机 Operation machine	每天工作小时数 Working hours per day	载荷种类 load type		
		平稳载荷 Steady load U	中等冲击载荷 Medium shock load M	重型冲击载荷 Heavy shock load H
电动机 electric motor 涡轮机 turbine unit	≤3	1.0	1.0	1.50
	>3-10	1.25	1.25	1.75
	≥10-24	1.25	1.50	2.0
4-6缸活塞发动机 4-6 piston engine	≤3	1.0	1.25	1.75
	>3	1.25	1.50	2.0
	>10-24	1.50	1.75	2.25
1-3缸活塞发动机 1-3 piston engine	≤3	1.25	1.50	2.0
	>3-10	1.50	1.75	2.25
	>10-24	1.75	2.00	2.25

注：每天连续工作24小时，上表系数应乘以1.1。

Note: continuous working 24 hours, all the factor need to multiply by 1.1.

表10 Table 10

## 减速安全系数

## Gear Reducer Safety Factor SA

重要性与安全要求 Importance and safety demand	一般设备, 减速器失效仅引起单机停产且易更换备件 General equipment, reducer's invalid work cause single machine stop production only, and easy to replace spare parts	重要设备, 减速器失效仅引起机组、生产线或全厂停产 Important equipment, speed reducer's invalidation only cause sets, production line or the whole factory stop production	高度安全要求, 减速器失效引起设备、人身事故 High safety demand, reducer's invalid work cause accident of equipment and person
SA	1.1~1.3	1.3~1.5	1.5~1.7

表11 Table 11

## 环境温度系数

## Ambient Temperature Factor fw

冷却方式 Cooling Type	环境温度 Ambient ℃	每小时运转率 Running Rate Per Hour				
		100%	80%	60%	40%	20%
减速器不附加外冷却方式 Reducer without outer cooling way	10	1.12	1.18	1.3	1.51	1.93
	20	1	1.06	1.16	1.35	1.78
	30	0.89	0.93	1.02	1.33	1.52
	40	0.75	0.87	0.9	1.01	1.34
	50	0.63	0.67	0.73	0.85	1.12
Reducer with radiator	10	1.1	1.32	1.54	1.76	1.98
	20	1	1.2	1.4	1.6	1.8
	30	0.9	1.08	1.26	1.44	1.62
	40	0.85	1.02	1.19	1.36	1.53
	50	0.8	0.96	1.12	1.29	1.44

表12 Table 12

## 功率利用系数

## Power Utilizing Factor fa

型式 Type	利用率 Utilization Rate $\frac{P_2}{P_1} \times 100\%$			
	100	80	60	40
DBY	1.0	0.96	0.89	0.79
DCY				

## 7.4 选用例题 Type Selection Example:

电机功率 Motor power P=75kw  
 电机转速 Motor speed n1=1500r/min  
 启动转矩 Start torque Tk=955N.m

工作机械 带式输送机, 输送大块废岩, 重型冲击, 一般安全要求。

Working machine: Belt conveyor, to transport big waste rock, heavy impact, general safety requirements.

所需功率 Required power:  $P_2=65\text{kw}$

滚筒转速 Roller's rotate speed:  $n_2=60\text{r/min}$

每天工作 Work time per day: 24h, 每小时运转率100% The running rate is 100% per hour;

环境温度 Ambient temperature:  $40^\circ\text{C}$  露天作业 Outdoor work at  $40^\circ\text{C}$ ;

风速 Wind speed :  $3.7\text{m/s}$

选用减速器 Selecting reducer:

a. 按式 (1) 确定减速器的传动比和型式 Confirm reducer's ratio and type as formula (1):

$$i = \frac{1500}{60} = 25 \quad \text{选择DCY型三级减速器 Select DCY type three stages reducer}$$

b. 按式 (2) 确定减速器的名义中心距 Confirm reducer's nominal central distance as formula (2):

$$P_1 \geq P_2 \cdot K_A \cdot S_A$$

根据附表9载荷特性为H, 查表9得 $K_A=2.0$ , 每天连续工作24h, 系数应增大10%, 则 $K_A=2.0+2 \times 0.1=2.2$ ; 查表10得 $S_A=1.2$ ;

According to appendix form 9 its loading features is H, check table 9 to get  $K_A=2.0$ , and it continuously work 24h everyday, the factor should increase 10%, then  $K_A=2.0+2 \times 0.1=2.2$ ; Check Form 10 to get  $S_A=1.2$ ;

$$P_2 \cdot K_A \cdot S_A = 65 \times 2.2 \times 1.2 = 171.6\text{kw}$$

按表5选用DCY315-25, 其公称输入功率 Select DCY315-25 as table 5, and it's nominal input power  $P_1=225\text{kw}$

$$P_1 \geq 171.6\text{kw}$$

c. 按式样 (3) 验算起转矩 Check start torque as type (3):

$$\frac{T_k \cdot n_1}{P_1 \cdot 9550} = \frac{955 \times 1500}{225 \times 9550} = 0.667 < 2.5$$

d. 按式 (4) 校核减速器的热功率 Check reducer's thermal power as formula (4):

没有附加外冷却装置时 When no add outer cooling device:  $P_2 < P_{G1} \cdot F_W \cdot F_A$

根据表6查出 According to table 6 get:  $P_{G1} = 155\text{kW}$

根据表11查出 According to table 11 get:  $f_W = 0.75$

$$\frac{P_2}{P_1} \cdot 100\% = \frac{65}{225} \times 100\% = 28.9\% \approx 40\%$$

$$f_A = 0.79$$

根据表12查出 According to table 12 get:

$P_{G1} \cdot F_W \cdot F_A = 155 \times 0.75 \times 0.79 = 91.8\text{kw} > P_2$ , 符合式 (5) 要求 which meet requirement of formula (5).

表Form 13

DBY 系列减速机额定输入、输出扭矩 DBY Series Speed Reducer Rated Input and Output Torque

公称 传动 比I Rated Ratio	公称转速 Speed		额定输入转矩T1、额定输出转矩T2 Rated Input Torque T1, Rated Input Torque T2																									
	r/min		DBY160		DBY180		DBY200		DBY224		DBY250		DBY280		DBY315		DBY355		DBY400		DBY450		DBY500		DBY560			
	输入 n1	输出 n2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
8	1500	188	516	4125	732	5878	923	7385	1305	10440	2037	16297	2769	22154	3883	31066	4775	38196	6875	55002	10695	85559	13369	106949				
	1000	125	535	4278	821	6570	1050	8403	1480	11841	2340	18716	3103	24827	4440	35522	5347	42780	7735	61878	12032	96254	16233	129866	21008	168062		
	750	94	535	4278	700	5602	1120	8963	1592	12732	2355	18843	3183	25464	4329	34631	5920	47363	8403	67225	12095	96793	17825	142598	22918	183341		
10	1500	150	427	4265	586	5857	828	8276	1050	10504	1623	16233	2196	21963	3056	30557	3883	38833	5793	57931	8721	87214	12095	120954				
	1000	100	420	4202	659	6589	898	8976	1194	11936	1862	18621	2483	24827	3438	34376	4440	44403	5920	59204	9072	90716	12127	121272	16233	162333		
	750	75	443	4329	586	5857	929	9294	1337	13369	1973	19735	2674	26737	3756	37559	4838	48382	6493	64933	9040	90397	12095	120954	16552	165516		
11.2	1500	134	376	4207	516	5775	732	8199	955	10695	1496	16755	2069	23172	2865	32085	3565	39928	5347	59891	7639	85559	9867	110514				
	1000	89	382	4278	582	6524	802	8984	1241	13903	1671	18716	2340	26202	3247	36363	4106	45988	6016	67378	7735	86629	9835	110157	13178	147589		
	750	67	395	4421	522	5847	828	9296	1248	13975	1782	19964	2355	26381	3056	34224	4456	49909	5984	67021	7767	86985	9931	111227	13241	148302		
12.5	1500	120	337	4217	477	5968	668	8355	891	11141	1337	16711	1814	22679	2483	31034	3183	39788	4838	60477	6239	77984	8021	100265	9867	123341		
	1000	80	344	4297	535	6684	707	8833	1003	12533	1385	17308	2053	25663	2530	31631	3629	45358	4584	57294	6302	78779	8117	101458	10599	132492		
	750	60	344	4297	458	5729	713	8912	968	12095	1401	17507	1910	23873	2419	30239	3438	42971	4647	58090	6366	79575	8148	101856	10695	133686		
14	1500	107	306	4278	420	5882	516	7219	796	11141	1210	16934	1655	23172	2196	30748	2960	41443	3692	51692	4965	69517	6366	89124	7321	102493		
	1000	71	296	4144	401	5615	516	7219	802	11230	1050	14705	1576	22058	1958	27406	2960	41443	3963	55480	4965	69517	6493	90906	8594	120317		
	750	53	293	4100	395	5526	484	6773	764	10695	1019	14260	1464	20499	1846	25846	2992	41888	3947	55257	5093	71299	6493	90906	8785	122991		

7、额定输入、输出转矩 Rated Input, Output Torque

表14 Form14

DCY系列减速器额定输入、输出扭矩 DCY series speed reducer rated input and output torque

公称传动比 Nominal Ratio i	公称传动比 I Rated input		额定输入扭矩T1、额定输出扭矩T2 (N.M) Rated input torque T1, rated output torque T2 (N.M)																													
	r/min		DCY160		DCY180		DCY200		DCY224		DCY250		DCY280		DCY315		DCY355		DCY400		DCY450		DCY500		DCY560		DCY630		DCY710		DCY800	
	输入 n1	输出 n2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
16	1500	94	286	4584	388	6213	509	8148	764	12223	1019	16297	1464	23427	1942	31066	2801	44817	3820	61114	5284	84540	8594	137506	11777	188434						
	1000	63	286	4585	411	6570	573	9167	812	12987	1098	17570	1623	25973	2196	35140	3151	50419	4202	67225	6016	96254	9644	154312	13560	216953	21008	336125	23873	381960	27215	435434
	750	47	306	4889	446	7130	573	9167	891	14260	1082	17316	1782	28520	2355	37687	3438	55002	4584	73336	6493	103893	10568	169081	15024	240380	20371	325939	29284	468538	33103	529651
18	1500	83	267	4813	369	6646	477	8594	700	12605	955	17188	1337	24063	1846	33231	2801	50419	3565	64169	4965	89379	8594	154694	11777	211988						
	1000	56	286	5156	382	6875	506	9110	716	12891	1003	18048	1480	26642	2053	36955	3151	56721	4011	72190	5634	101410	9549	171882	13369	240635	17761	319701	23873	429705	27215	489864
	750	42	293	5271	407	7334	535	9625	828	14896	1019	18334	1528	27501	2228	40106	3310	59586	4393	79066	6111	110004	10058	181049	14260	256677	18589	334597	27756	499604	31830	572940
20	1500	75	248	4965	337	6748	433	8658	637	12732	859	17188	1241	24827	1719	34376	2737	54748	3501	70026	4965	99310	8403	168062	11459	229176						
	1000	50	258	5156	344	6875	458	9167	668	13369	907	18143	1337	26737	1910	38196	3008	60159	3629	72572	5252	105039	8403	168062	11841	236815	15660	313207	22918	458352	27215	544293
	750	38	255	5093	356	7130	484	9676	700	14005	955	19098	1401	28010	2037	40742	3119	62387	3947	78938	5666	113315	8912	178248	12732	254640	16424	328486	24445	488909	31830	636600
22	1500	67	216	4848	318	7130	414	9269	598	13404	828	18538	1114	24955	1592	35650	2546	57039	3247	72725	4647	104097	7448	166840	9804	219602						
	1000	45	220	4920	325	7273	458	10267	621	13903	859	19251	1241	27807	1767	39571	2769	62030	3438	77003	4965	111227	7448	166840	10504	235287	13846	310152	20224	453463	24827	556134
	750	33	216	4848	318	7130	458	10267	624	13975	891	19964	1210	27094	1782	39928	2801	62743	3501	78429	5093	114079	7894	176822	11204	250973	14514	325124	21772	487687	31321	705184
25	1500	60	191	4775	280	7003	395	9867	528	13209	732	18302	1019	25464	1432	35809	2228	55703	2865	71618	4138	103448	6557	163925	9294	232359						
	1000	40	191	4775	286	7162	401	10026	544	13607	764	19098	1050	26260	1576	39390	2435	60875	3008	75198	4393	109814	6971	174269	9931	248274	12891	322279	20244	506097	24827	620685
	750	30	191	4775	293	7321	407	10186	547	13687	764	19098	1082	27056	1592	39788	2483	62069	3056	76392	4456	111405	7003	175065	9931	248274	12859	321483	19225	480633	27756	693894
28	1500	54	140	3921	236	6595	306	8556	477	13369	586	16399	891	24955	1369	38323	2037	57039	2578	72190	3756	105166	5793	162206	8212	229940						
	1000	36	143	4011	239	6684	325	9091	497	13903	630	17647	898	25133	1432	40106	2149	60159	2721	76201	4011	112296	6111	171118	8690	243309	11363	318173	16902	473248	23873	668430
	750	27	153	4278	242	6773	331	9269	497	13903	637	17825	904	25311	1464	40997	2164	60604	2737	76647	4011	112296	6239	174683	8785	245982	11331	317281	16934	474140	24445	684472
32	1500	48	127	4011	210	6617	280	8823	439	13837	541	17045	764	24063	1241	39103	1846	58153	2451	77204	3501	110291	5220	164434	7448	234619						
	1000	32	134	4211	210	6617	296	9325	439	13837	563	17747	793	24966	1241	39103	1910	60159	2435	76702	3533	111294	5538	174460	7830	246651	10217	321849	15278	481270	22058	694833
	750	24	127	4011	216	6818	293	9224	433	13636	560	17647	789	24866	1273	40106	1910	60159	2419	76201	3565	112296	5602	176466	7894	248656	10186	320846	15278	481270	22154	697841
36	1500	42	115	4068	191	6780	255	9040	395	14012	490	17401	700	24859	1146	40679	1655	58758	2196	77968	3183	112997	4902	174015	7003	248592	9103	323170	13496	479105		
	1000	28	115	4068	191	6780	267	9492	401	14238	506	17966	716	25424	1146	40679	1719	61018	2196	77968	3247	115256	4870	172885	6875	244072	9072	322040	13464	477975	19384	688149
	750	21	115	4068	191	6780	267	9492	395	14012	509	18079	713	25311	1146	40679	1719	61018	2228	79098	3183	112997	4902	174015	6875	244072	9040	320910	13496	479105	19607	696058

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续表14 Continued Table 14

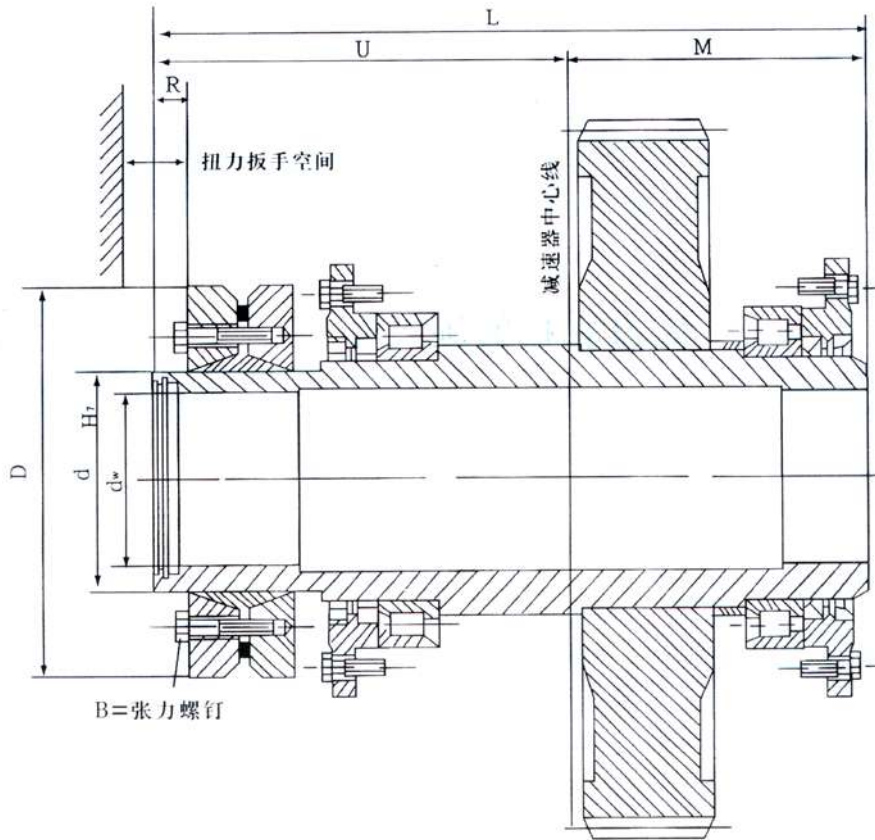
DCY系列减速器额定输入、输出扭矩 DCY series speed reducer rated input and output torque

公称 传动 比 i	公称传动比 i Nominal Ratio i		Rated Input Torque T1 额定输入扭矩T1, 额定输出扭矩T2 Rated Output Torque T2																													
	r/min		DCY160		DCY180		DCY200		DCY224		DCY250		DCY280		DCY315		DCY355		DCY400		DCY450		DCY500		DVY560		DCY630		DCY710		DCY800	
	输入 n1	输出 n2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
40	1500	38	108	4329	172	6875	229	9167	356	14260	439	17570	624	24955	1019	40742	1496	59840	1973	78938	2865	114588	4393	175702	6302	252094	8212	328486	12223	488909	-	-
	1000	25	105	4202	172	6875	239	9549	392	15660	449	17952	640	25591	1146	45835	1528	61114	2149	85941	3151	126047	4440	177611	6302	252094	8212	328486	12223	488909	17666	706626
	750	19	108	4329	178	7130	242	9676	369	14769	458	18334	662	26483	1044	41761	1592	63660	1973	78938	2928	117134	4456	178248	6302	252094	8148	325939	12223	488909	17697	707899
45	1500	33.5	95	4297	153	6875	210	9454	318	14324	407	18334	573	25782	923	41538	1369	61591	1751	78779	2546	114588	3947	177611	5602	252094	7321	329441	10950	492728	13369	601587
	1000	22	95	4297	153	6875	210	9454	315	14180	401	18048	573	25782	907	40822	1385	62307	1719	77347	2530	113872	4345	195516	6111	275011	8021	360952	11936	537131	17284	777766
	750	16.6	95	4297	153	6875	216	9740	331	14896	407	18334	586	26355	942	42398	1401	63023	1782	80212	2610	117453	4074	183341	5793	260688	7639	343764	11077	498458	16042	721904
50	1500	30	83	4138	134	6684	191	9549	280	14005	363	18143	509	25464	828	41379	1241	62069	1560	77984	2292	114588	3501	175065	4965	248274	6557	327849	9804	490182	13050	652515
	1000	20	86	4297	134	6684	191	9549	296	14801	363	18143	516	25782	831	41538	1241	62069	1576	78779	2292	114588	3485	174269	4965	248274	6493	324666	9740	486999	14133	706626
	750	15	89	4456	140	7003	191	9549	293	14642	369	18461	522	26101	828	41379	1260	63023	1528	76392	2292	114588	3756	187797	5220	261006	6875	343764	9931	496548	14387	719358
56	1500	27	76	4278	121	6773	169	9447	242	13547	318	17825	458	25668	732	40997	1019	57039	1401	78429	1973	110514	3183	178248	4456	249547	5793	324411	-	-	-	-
	1000	18	76	4278	124	6952	167	9358	248	13903	334	18716	458	25668	716	40106	1050	58822	1337	74864	1910	106949	3247	181813	4584	256677	6016	336889	8976	502659	12414	695167
	750	13.4	76	4278	127	7130	166	9269	255	14260	318	17825	446	24955	738	41354	1082	60604	1401	78429	2037	114079	3183	178248	4456	249547	5984	335106	8658	484835	12477	698732
63	1500	24	70	4412	102	6417	146	9224	223	14037	286	18048	407	25668	637	40106	955	60159	1273	80212	1782	112296	2801	176466	3883	244645	5093	320846	-	-	-	-
	1000	16	72	4512	115	7219	143	9024	229	14438	286	18048	411	25868	649	40908	955	60159	1241	78206	1814	114302	2865	180476	3820	240635	5252	330873	7830	493301	10313	649714
	750	12	70	4412	108	6818	153	9625	216	13636	293	18449	382	24063	637	40106	968	60961	1210	76201	1782	112296	2801	176466	3947	248656	5347	336889	7894	497312	10568	665756
71	1500	21	57	4068	95	6780	134	9492	191	13560	255	18079	356	25311	579	41131	828	58758	1146	81357	1464	103957	2546	180794	2228	158195	4584	325430	-	-	-	-
	1000	14	57	4068	91	6441	134	9492	201	14238	258	18305	363	25763	573	40679	812	57628	1146	81357	1528	108477	2483	176275	3533	250852	4775	338990	6493	461026	8499	603401
	750	10.6	57	4068	95	6780	140	9944	197	14012	267	18983	356	25311	573	40679	764	54238	1146	81357	1528	108477	2546	180794	3565	253112	4711	334470	6366	451986	8530	605661
80	1500	18.8	54	4329	76	6111	121	9676	172	13751	242	19353	318	25464	465	37177	700	56021	1019	81485	1337	106949	2164	173155	3056	244454	3820	305568	-	-	-	-
	1000	12.5	53	4202	76	6111	124	9931	172	13751	239	19098	334	26737	477	38196	716	57294	1050	84031	1337	106949	2196	175702	3247	259733	3820	305568	5347	427795	6875	550022
	750	9.4	53	4278	76	6111	127	10186	172	13751	242	19353	325	25973	484	38705	700	56021	1019	81485	1401	112042	2292	183341	3056	244454	3820	305568	5347	427795	7003	560208
90	1500	16.7	51	4584	64	5729	115	10313	159	14324	223	20053	274	24636	414	37241	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1000	11.1	48	4297	65	5844	115	10313	162	14610	220	19766	286	25782	411	36955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	750	8.3	51	4584	64	5729	115	10313	159	14324	216	19480	280	25209	407	36668	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

9、附录A Appendix A

9.1 DBYK、DCYK减速器空心轴套及联接轴机构（参考）

9.1 DBYK、DCYK speed reducer hollow shaft sleeve and connection shaft structure. (For reference)



附图1 空心轴套结构 Attached Picture 1 Hollow shaft sleeve structure

附表1

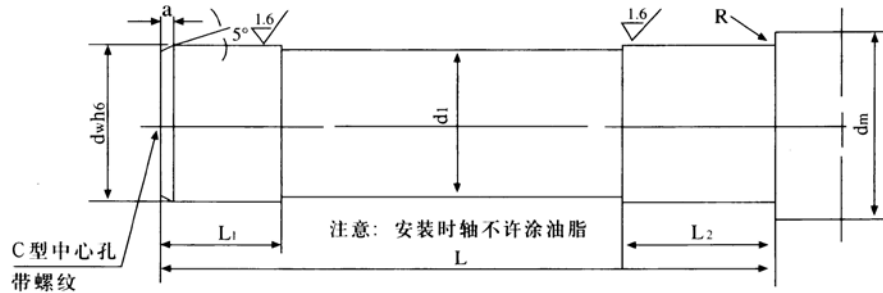
Attached Form 1

mm

减速器 名义中心距 Nominal central distance of speed reducer a	空心轴套 Hollow Shaft Sleeve					胀盘 Expansion plate						
	d <sub>w</sub>	L	M	R	U	型号 Type	D	d	T <sub>t</sub> N.m	B	Ta	重量 Weight kg
											N.m	
160	80	370	145	26	225	110-72	185	110	9000	M10	58	5.9
180	90	410	160	27	250	125-72	215	125	13000	M10	58	8.3
200	100	450	175	32	275	140-71	230	140	17600	M12	100	10
224	110	485	190	33	295	140-71	230	140	17600	M12	100	10
250	120	535	210	37	325	165-71	290	165	35000	M12	240	22
280	135	590	230	35	360	175-71	300	175	48000	M16	240	22
315	160	680	260	37	420	220-71	370	220	100000	M16	240	54
355	180	735	285	38	450	240-71	405	240	138000	M20	470	67
400	200	795	305	46	490	260-71	430	260	184000	M20	470	82
450	220	895	345	48	550	280-71	460	280	245000	M20	470	102
500	280	1190	475	61	715	350-71	570	350	500000	M20	470	204
560	310	1270	510	67	760	390-71	660	390	710000	M20	470	260
630	340	1400	560	71	840	420-71	690	420	840000	M20	470	316
710	380	1490	600	73	890	460-71	770	460	1140000	M20	470	420
800	420	1600	645	82	955	500-71	850	500	1600000	M20	470	575

9.2 DBYK、DCYK型减速器联接轴（参考）

9.2 DBYK、DCYK type speed reducer connecting shaft (For reference)



附图2 胀盘联接的轴

Attached picture 2 Expansion plate connecting shaft

附表2 Attached form 2

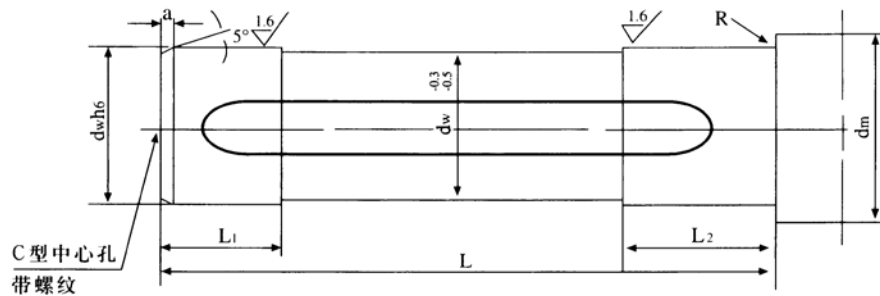
胀盘联接的轴尺寸 The dimension of expansion connecting shaft

mm

减速器名义中心距 Nominal central distance of speed reducer	a	dm	dw	d1	L	L1	L2	R
160	5	100	80	78	355	65	90	1.6
180	5	110	90	88	395	70	100	1.6
200	5	125	100	98	430	75	110	1.6
224	5	135	110	108	465	80	120	1.6
250	6	150	120	118	510	90	130	2.5
280	6	165	135	133	565	100	140	2.5
315	6	190	160	158	655	120	160	2.5
355	6	210	180	178	710	125	170	2.5
400	8	240	200	198	765	145	190	4
450	8	260	220	218	860	150	200	4
500	10	320	280	278	1145	240	290	4
560	10	350	310	308	1225	260	310	4
630	12	380	340	338	1355	280	330	6
710	12	430	380	378	1440	300	350	6
800	12	470	420	418	1550	320	380	6

注：dw≥160mm时配合公差采用g6

Note: When dw≥160mm, fit tolerance adopt g6



附图3 平键联接的轴

Attached picture 3 Flat key connecting shaft

附表3 Attached Form 3 键联接的轴头尺寸 Spindle head dimension of key connection.

mm

减速器名义中心距 Nominal central distance of speed reducer	a	dm	dw	L	L1	R
160	5	95	75	287	75	4
180	5	110	90	317	90	4
200	5	125	105	347	105	4
224	5	135	110	377	115	4
250	6	150	120	417	130	6

9.3 订货时，用户必须在合同中注明减速器是否用胀紧套，逆止器或键联接及其在减速器上的方位等附加说明和外形简图。

9.3 When ordering, end user should indicate whether need expansion sleeve, holdback or key connection, and the appendix specification and outline drawing on the speed reducer position.

## 10. 附录 B

## 10. Appendix B

## 附表4

## Attached Table 4

## 工作机械载荷分类

## Load Classification of Working Machine

工作机械 Working Machine	载荷种类 Load Type	工作机械 Working Machine	载荷种类 Load Type
输送机Conveyor		斗轮堆料机Bucket wheel stacker	M
平稳载荷和中等载荷Steady load and medium load		-- 堆废岩 Stack waste rock	H
螺旋输送机Screw conveyor	M	-- 堆煤 Stack coals	H
装配线输送机Assembly line conveyor	U	-- 堆石灰石 Stack limestone	H
斗式提升机Bucket elevator	M	切割头Cutting head	H
锅炉用输送机Boiler conveyor	M	旋转机构Rotary device	M
板式输送机Apron conveyor	M	钢缆卷筒Steel cable drum	M
链式输送机Chain conveyor	M	卷扬机Winches	M
中等载荷和重型载荷Medium load and heavy load		采矿 矿山工业Mining and Mine Industry	
装配线输送机Assembly line conveyor	M	混凝土搅拌机 Concrete mixer	M
带式输送机Belt conveyor	M <sup>0</sup>	破碎机Crusher Converter	H
载人电梯Manned elevator	M	回转炉Rotary kiln	H <sup>0</sup>
斜梯式输送机(梯扶) Inclined ladder conveyor (rotary ladder)	M <sup>0</sup>	分选机Sorting machine	M
斗式提升机Bucket elevator	H	混合机Mixing machine	M
带式输送机(件货, 大块散料) Belt conveyor (piece goods, large bulk)	H <sup>0</sup>	大型通风机(矿用) Large fan (for mining)	M <sup>0</sup>
链式输送机Chain conveyor	H	木材工业Wood Industry	
货物电梯Cargo elevator	H	滚式去皮机Roll-peeling machine	H
板式输送机Apron conveyor	H	刨销机Planing machine	M
振动输送机Vibrating conveyor	H	石油 化学工业Oil, chemical industry	
螺旋输送机Screw conveyor	H	钻井泵 drilling pump	M
吊斗提升机Bucket elevator conveyor	H <sup>0</sup>	回转炉Rotary kiln	M
挖掘机和堆料机Excavators and Stackers		管道泵Pipeline pump	M <sup>0</sup>
链斗式挖掘机Chain bucket excavator	H	换气泵Scavenging pump	M <sup>0</sup>
行走装置(履带式) Walking device (crawler type)	H	混料机Blender mixer	M
行走装置(轨道式) Walking device (track type)	H	搅拌机(液体和固体 各种液体) Mixer (liquid with solid & various liquid)	M

续附表4  
Continued Attached Table 4

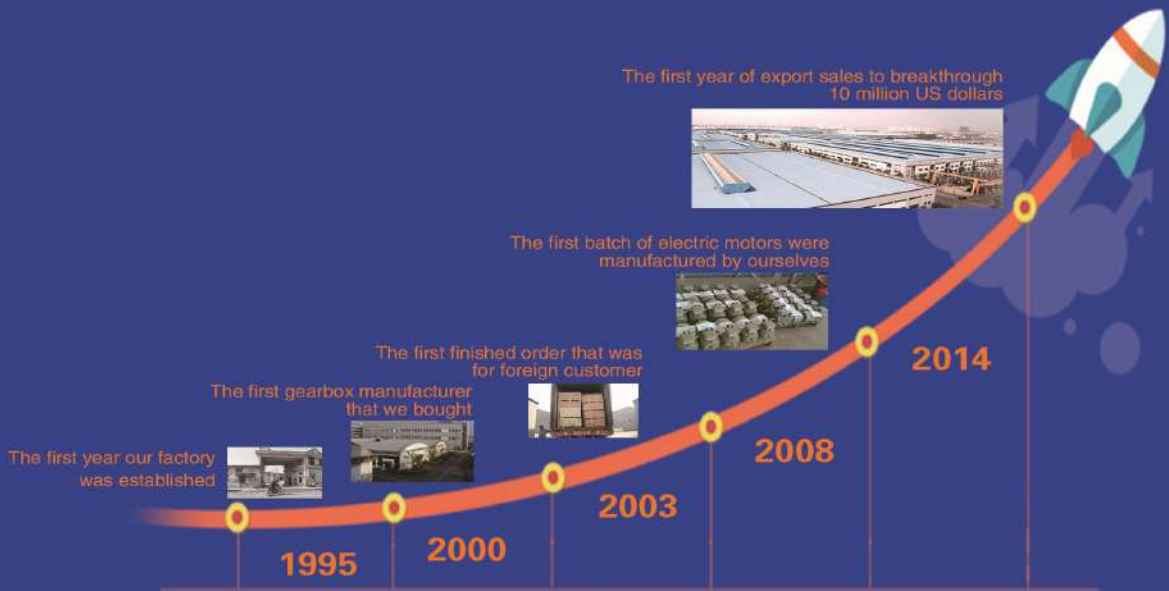
工作机械载荷分类  
Load Classification of Working Machine

工作机械 Working Machine	载荷种类 Load Type	工作机械 Working Machine	载荷种类 Load Type
钢铁工业 Steel Industry		起重机 Crane	
铸造起重机 (提升齿轮) Casting Crane (Upgrade Gear)	H°	臂架摆机构 Cantilever Tilting Mechanism	M
石渣机 Gravel Machine	U°	运行机构 Movement Mechanism	M
烧结机 Sintering Machine	M°	提升机构 Hoisting Mechanism	M
破碎机 Crusher	H°	变幅机构 Luffing Mechanism	M
汽车倾卸机 Car Dumpers	H°	卷扬机 Winches	U
金属加工 Metal Processing		磨机 Mill	
卷压机 Rolling and Processing Machine	H	锤式磨机 Hammer Mill	H
弯板机 Bending Machine	M°	球磨机 Ball Mill	H
钢板矫直机 Plate Straightening Machine	H	辊式磨机 Roller Mill	H
偏心压力机 Eccentric Presser	H	轧钢机 Steel Rolling Mill	
锻锤 Hammer	H	板材翻转机 Plate Turnover Machine	M
刨削机 Planing Machine	H°	推锭机 Ingot Pusher	H°
曲柄压力机 Crank Presser	H	拉管机 Pipe Drawing Bench	H°
锻压机 Forging Presser	H	连铸机 Continuous Casting Machine	H°
冲压机 Punching Machine	H	管材焊接机 Pipe Welding Machine	H°
橡胶与塑料 Rubber and Plastics		板材、钢坯剪切机 Plate, Billet Shearing Machine	H°
挤压机 Extruder		造纸机械 Paper Machinery	
-- 橡胶 Rubber	H°	送层机 Laminated Machine	H°
-- 塑料 Plastic	M°	打光机 Polishing Machine	H°
轮压机 Wheel Presser	M°	轮压机 Wheel Presser	M°
揉压机 (橡胶) Knead Presser (Rubber)	H°	混合机 Mixing Machine	M°
混合机 Mixer	M°	胶式压力机 Glue Type Presser	H°
粉碎机 (橡胶) Milling Machine (Rubber)	M°	湿性压榨机 Wet Presser	H°
辊式破碎机 (橡胶) Roll Crusher (Rubber)	H°	吸入式压榨机 Inhaling Type Presser	H°

注Note: 载荷种类中Load Type U—平稳载荷Steady load; M—中等载荷Medium load; H—重型载荷Heavy load;

°——每天总是24h连续工作时, 表2系数f应增大10-20%。When always 24h of continuously work a day, the coefficient in table 2 should be increased 10-20%.

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