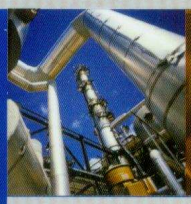
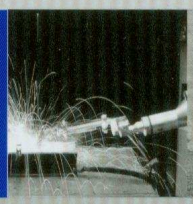
中国名牌产品 CHINA TOP BRAND

中国驰名商标 CHINA WELL-KNOWN TRADEMARK

国家大型企业 NATIONAL LARGE ENTERPRISE



包络蜗轮蜗杆减速器

江苏泰隆机械集团
JIANGSU TAILONG MACHINERY GROUP COMPANY
江苏泰隆减速机股份有限公司
JIANGSU TAILONG DECELERATOR MACHINERY CO.,LTD.

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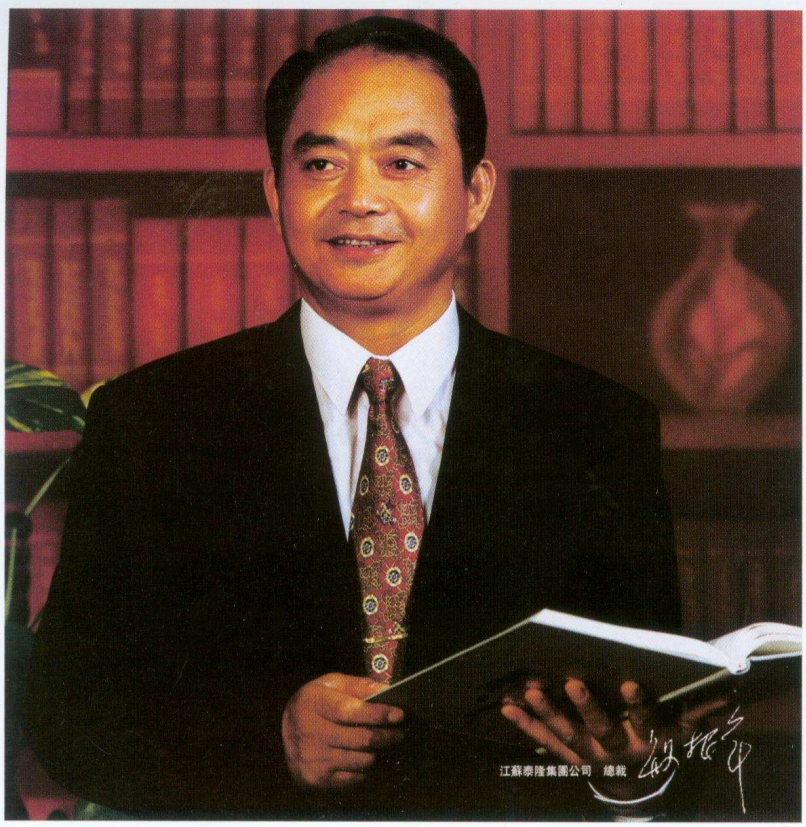


公司简介

泰隆集团地处扬子江畔的泰兴市区，是泰兴人引以为豪的国家大型企业。集团在全国优秀企业家、江苏省劳动模范董事长殷根章的领导下，经过20多年的悉心经营，昂首迈进了中国机械工业500强，成为全国减变行业龙头老大。

集团现拥有总资产5.8亿元，固定资产3.6亿元，占地面积60万平方米，员工近2612人，专业工程技术人员896人，年销售额15亿元。从美国、德国、日本、俄罗斯等国家引进的大型数控磨齿机、蜗杆磨床、加工中心、碳氮共渗炉等一批高精尖的生产设备和检测设备占48%。建立了全国同行业中检测功能最全、检测功率最大、仪器最先进的测试中心，创建了省级工程技术中心。公司产品在原有的平面二次包络蜗杆减速器、9000系列摆线针轮减速机、圆柱齿轮减速器、行星齿轮减速器等十几个系列，几十万种规格的基础上，采用先进的模块化、点线等技术开发出了TL模块化齿轮减速电机；TPB行星模块化减速器、重载模块式减速器、点线啮合减速器。多年来，起重机用硬齿面、中硬齿面减速器一直在为用户提供最佳的传动方案，在风力发电、水力发电领域捷足先登，做出了不菲的业绩。重载齿轮箱在建材行业、冶金行业成功得到了应用，开发出了建材行业的立式磨机及边缘传动磨机齿轮箱，冶金行业的开卷、卷取齿轮箱、三环减速器、星轮减速器。另外公司还为用户提供榨糖机齿轮箱、螺杆升降机、电动滚筒及各类非标齿轮箱。公司荣获“中国名牌”，“全国首批守合同重信用企业”，“全国重点高新技术企业”、“全国机械工业质量效益型先进企业”、“全国机械工业质量管理奖”、“全国用户满意服务”等殊誉，泰隆商标被评为“中国驰名商标”，在同行业中率先通过质量、环境、安全三位一体认证及ISO10012计量体系确认。

泰隆人将遵循自己一贯的质量承诺、服务承诺和信誉承诺，把顾客满意当作我们的最高追求！

Company Brief

Tailong Group is located in Taixing urban area at the border of Yangtse River and it is a state-owned large-sized enterprise boasted by Taixing people. Under the leadership of Mr. Yin genzhang, a nation-wide excellent entrepreneur and a model worker of Jiangsu Province, after more than twenty years of operation with concentrated efforts, has proudly marched into the Top 500 enterprises in Chinese Mechanical Industry and has become the industry leader.

At present, the group owns a total assets of RMB 580m, and fixed of RMB 360m, and it covers an area of 600,000 square meters and owns almost 2,612 employees, including 896 technicians, the annual turnover surpasses 1b RMB. The introduced large-sized numerical controlled gear grinding machine, worm grinder, machining center and carbonitriding kiln and etc. advanced, precise and leading manufacturing facilities and inspection apparatus from USA, Germany, Japan and Russia has taken part 48% share in all. At the same time, the group has established a test center with the most complete test functions, the biggest test power, the most advanced instrument and the provincial science & technology park. At the basis of the primary secondary envelope, 9000 series cycloid pinwheel reducer, cylindrical gear, planetary reducer and so on, more than ten series, and several ten thousands specifications, adopting the advanced modularization, point-line technique, ultimately develop TL modular reducer, TPB planetary modular reducer, heavy load modular and point-line meshing decelerator. Along many years, harden-faced reducer for crane, moderate rigid reducer provide the best transmission project for customer all the times; On the other hand, at the wind and water power area, we have taken the swift-footed arrive first, and taken out outstanding success. The heavy load gearboxes has successfully applied in architecture, metallurgy industry, and developed vertical grinder, marginal transmission grinder gearbox which fit for architecture industry, open, convolute gearbox, three-ring, star reducer which special for metallurgy. In addition, the company also supply sugar mill gearbox, worm lifter, electrical roller and various non-standard gearboxes.

The company has been awarded successively with such honorable titles as“China top brand”, “National first batch of enterprise honoring contracts and keeping promises”, “National key new & hi-tech enterprise”, “National mechanical industry quality & benefit type enterprise”, “National mechanical industry QC award” and “National customer satisfaction service”. Tailong brand is recognized as “the Chinese famous brand” by national industrial and commercial bureau It has taken the lead in passing the quality, environment and security three in one system certification and ISO10012 metering system certification.

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

包络蜗轮蜗杆减速器概述
Brief of enveloping worm gearing reducer

环面蜗轮蜗杆减速器一种新型的传动装置，其承载能力大，传动效率高，结构紧凑、合理，主要适用于冶金、矿山、起重、运输、石油、化工，建筑、橡塑、船舶等机械设备的减速传动。

Enveloping worm gearing reducer is a new type gearing. It has large loading capacity, high efficiency, compact reasonable dimension. They are mainly used for decelerate drive of metallurgy, mining, lifting, transportation, oil, chemistry, building, rubber & plastic, shipping etc.

适用的工作条件 The working：

a. 两轴交交错角为 90° ；

b. 蜗杆转速不超过 1500r/min；

c. 蜗杆中间平面分度圆滑动速度不超过 16m/s；

d. 工作环境温度为 0～40℃，当环境温度低于 0℃ 或高于 40℃ 时，润滑油要相应加热或冷却；

e. 蜗杆轴可正、反向运转。

a. The interlaced degree of two shafts is 90° .

b. Worm rotation speed ≤ 1500m/min.

c. Sliding velocity of reference toroid of worm is less than 16m/s.

d. Service ambient temperature:0-40℃ .if the temperature is below 0℃ or over 40℃ ,the lubricating oil must be heated up or cooling.

e. The worm shaft can rotate towards positive and negative.

TP 系列平面二次包络环面蜗杆减速器
TP series planar double-enveloping worm gearing reducer
(引用标准 JB/T9051-1999 Reference standard JB/T9051-1999)

一、型式与基本参数 Type and basic datas

1、型式 Type

a) TPU 型——蜗杆在蜗轮之下，见图 1、图 2；

TPU type —— worm below worm gear, see graph 1,2;

b) TPS 型——蜗杆在蜗轮之侧，见图 3、图 4；

TPS type —— worm beside worm gear, see graph 3,4;

c) TPA 型——蜗杆在蜗轮之上，见图 5、图 6。

TPA type —— worm on worm gear, see graph 5,6;

2、基本参数 Basic datas

2.1 减速器的中心距 a 应符合表 1 的规定。

The center space a of reducer should be in accordance with stipulation in table 1.

表 1　减速器中心距 α　　Table 1. Center space α of reducer　　mm

中心距 α　Center space α														
第一系列 No.1 series	100	125	—	160	—	200	—	250	—	315	—	400	—	500
第二系列 No.2 series	—	—	140	—	180	—	224	—	280	—	355	—	450	—

注：优先选用第一系列，表中第二系列的中心距仅提出型式规格。
Note: No.1 series reducer is superior and No.2 series space only provide spec and type.

2.2 减速器的公称传动比 i 应符合表 2 的规定.
The reducer s nominal transmission ratio i should be in accordance with stipulation in table 2.

表 2　传动比 i　Table 2. Transmission ratio i

型号 type					TPU		TPS		TPA					
第一系列 No.1 series	10.0	12.5		16.0		20.0		25.0		31.5		40.0		50.0		63.0
第二系列 No.2 series			14.0		18.0		22.4		28.0		35.5		45.0		56.0	

注：优先选用第一系列　Note: No.1 series reducer is superior.

2.3 减速器可以承受的短时间峰值负荷为额定转矩的 1.5 倍。
The temporary peak load reducer can sustain is 1.5 times of the rated torque.

3、型号与标记示例 Type and symbol example

3.1 型号 Type

3.2 标记示例 Symbol example

例　蜗杆在蜗轮之下，中心距为 200mm，公称传动比为 10，第二种装配型式，有风扇冷却的平面包络环面蜗杆减速器：

Example: Worm under worm gear, center space of 200m, nominal transmission ratio of 10, the second installing form fan cooling.

减速器 Symbol: reducer　TPU200-10-2F　JB/T 9051-1999

4、减速器的结构尺寸 Structure size

4.1 TPU 系列蜗杆减速器 TPU series worm decelerator

a) 整体箱体，中心距为 100mm 的减速器尺寸见图 1、表 3：
Drawing 1 and table 3 show size of mono-box decelerator with center space of 100mm

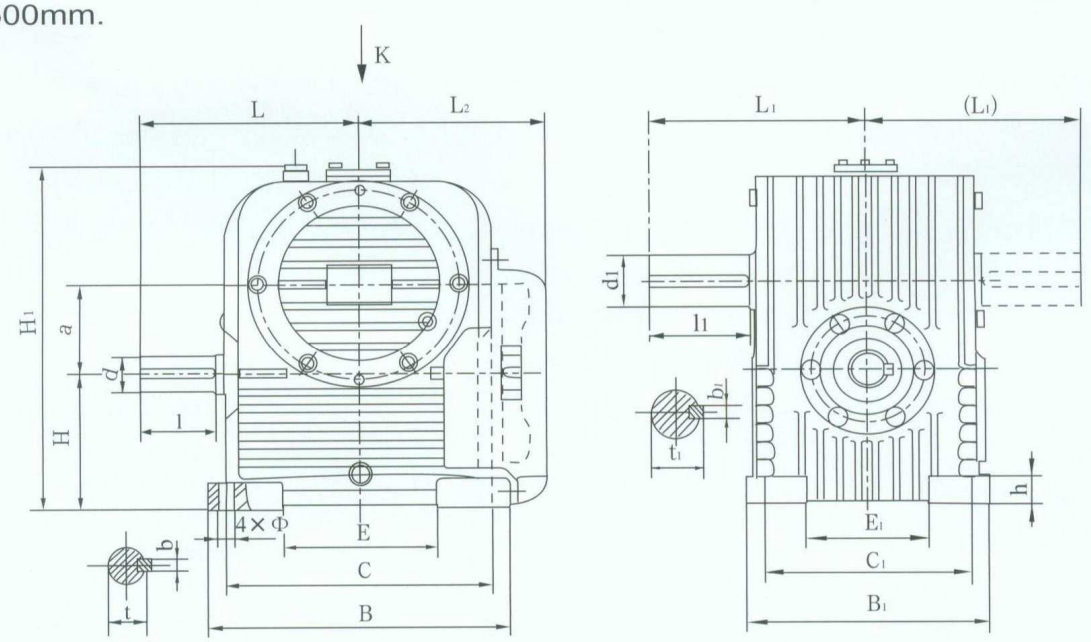
b) 分箱式箱体，中心距为 125-500mm 的减速器尺寸见图 2、表 4。
Drawing 2 and table 4 show size of sub-box decelerator with center space of 125-500mm.

4.2 TPS 系列蜗杆减速器 TPS series worm decelerator

a)整体箱体，中心距为 100mm 的减速器尺寸见图 3、表 5：
Drawing 3 and table 5 show size of mono-box decelerator with center space of 100mm.
b)分箱式箱体，中心距为 125-500mm 的减速器尺寸见图 4、表 6。
Drawing 4 and table 6 show size of sub-box decelerator with center space of 125-500mm.

4.3 TPA 系列蜗杆减速器 TPA series worm decelerator

a)整体箱体，中心距为 100mm 的减速器尺寸见图 5、表 7：
Drawing 5 and table 7 show size of mono-box decelerator with center space of 100mm.
b)分箱式箱体，中心距为 125-500mm 的减速器尺寸见图 6、表 8。
Drawing 6 and table 8 show size of sub-box decelerator with center space of 125-500mm.



装配型式（K向） Intalling Form (K direction)

F为带风扇 F means fan cooling

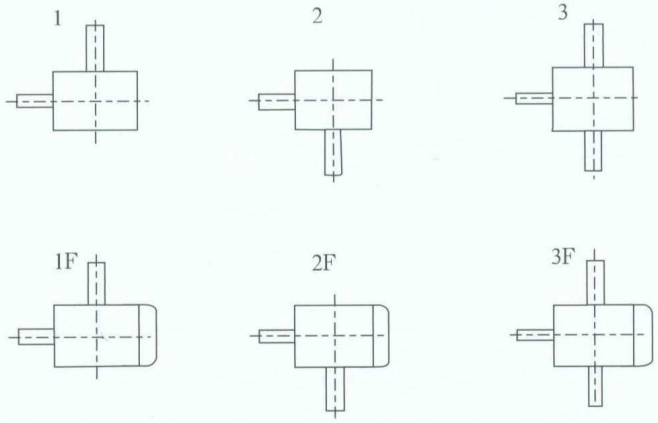
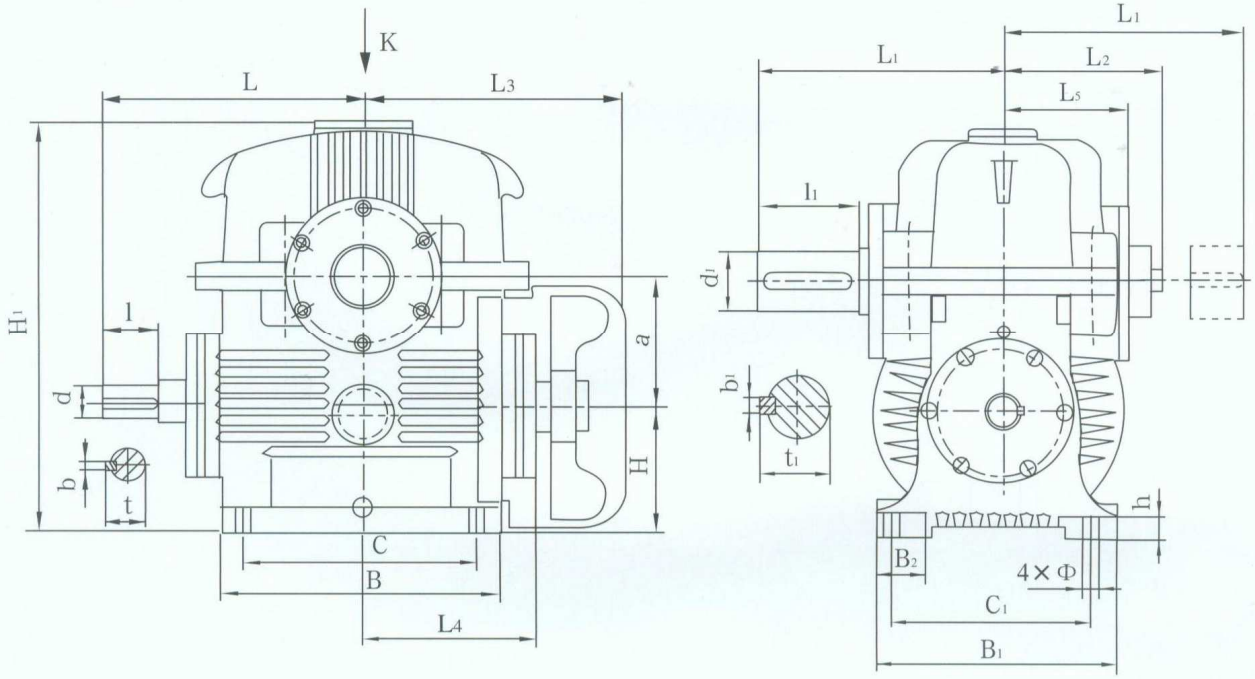


图 1 Drawing 1

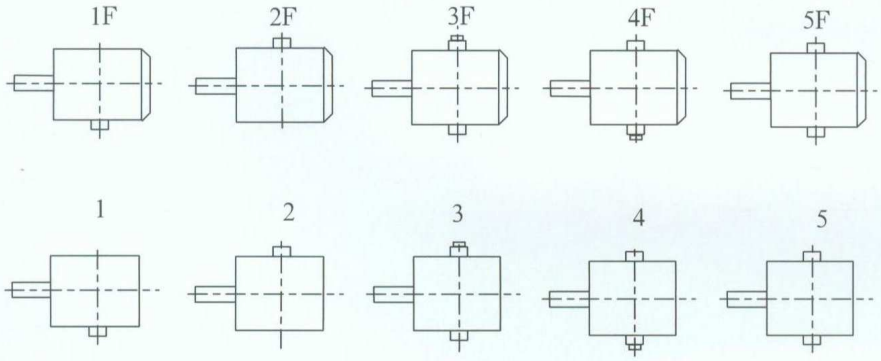
表 3 TPU 型减速器的尺寸（整箱式） mm
Table 3. Dimension of TPU decelerator (mono-box type)

型号 Type	a	B	B1	C	C1	E	E1	H	H1	L	L1	L2	l	l1	d	d1	b	b1	t	t1	h	ø	重量 Weight kg
TPU100	100	320	260	280	220	160	130	150	382	235	237	200	82	110	40	55	12	16	43	59	30	19	88



装配型式（K向）　Installing Form (K direction)

F为带风扇　F means fan cooling



3、3F、4、4F带控制器用轴端

3, 3F, 4, 4F with shaft edge of controler

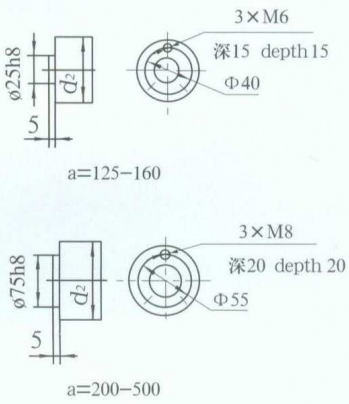
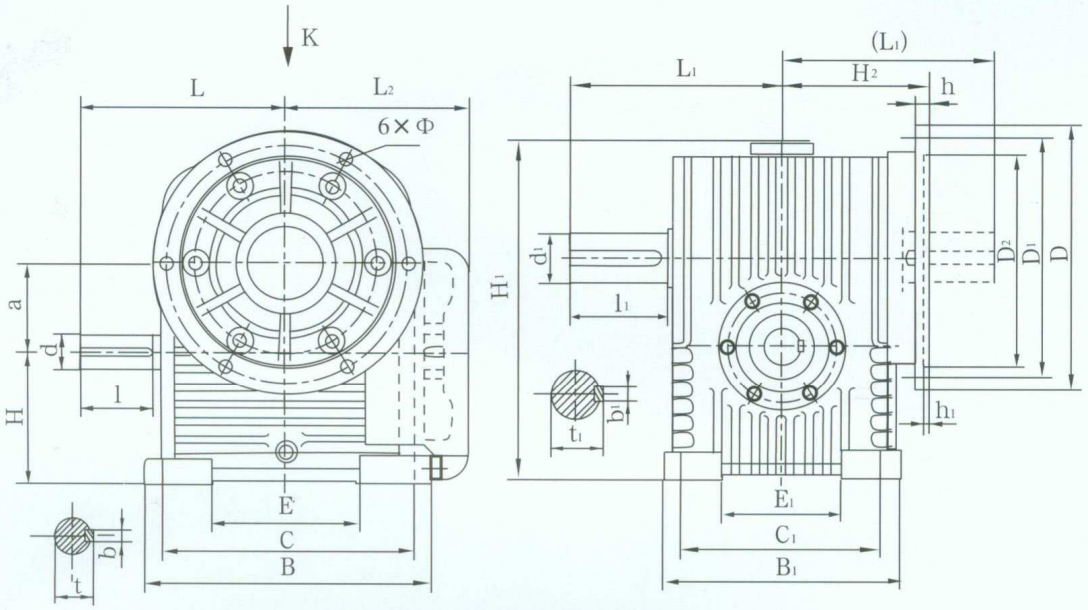


图2　Drawing 2

表4　TPU型减速器的尺寸（分箱式）　mm

Table 4. Dimension of TPU decelerator (sub-box)

型号 Type	a	B	B1	B2	C	C1	H	H1	h	L	L1	L2	L3	L4	L5	l	l1	d	d1	d2	b	b1	t	t1	ø	重量 Weight kg
TPU125	125	300	300	70	250	250	125	422	30	307	320	185	280	205	175	82	140	40	70	80	12	20	43	74.5	19	157
TPU160	160	380	375	100	320	310	160	540	40	375	375	210	360	280	192	82	170	50	85	95	14	25	53.5	90	24	258
TPU200	200	450	450	125	370	370	200	650	40	420	400	235	435	345	228	82	170	55	95	110	16	28	59	101	28	475
TPU250	250	600	550	150	500	450	225	820	50	530	495	290	520	408	273	110	210	65	120	140	18	32	69	127	35	800
TPU315	315	720	590	150	630	500	280	990	65	630	600	360	605	492	349	130	250	80	140	160	22	36	85	148	39	1450
TPU400	400	850	720	160	750	620	320	1200	75	720	720	425	692	558	412	165	300	100	180	200	28	45	106	190	48	2500
TPU500	500	1060	900	200	920	760	400	1490	90	850	840	495	845	686	497	165	350	110	220	240	32	50	117	231	56	4500



装配型式（K向旋转） Installing Form (K rotation)

F为带风扇 F means fan cooling

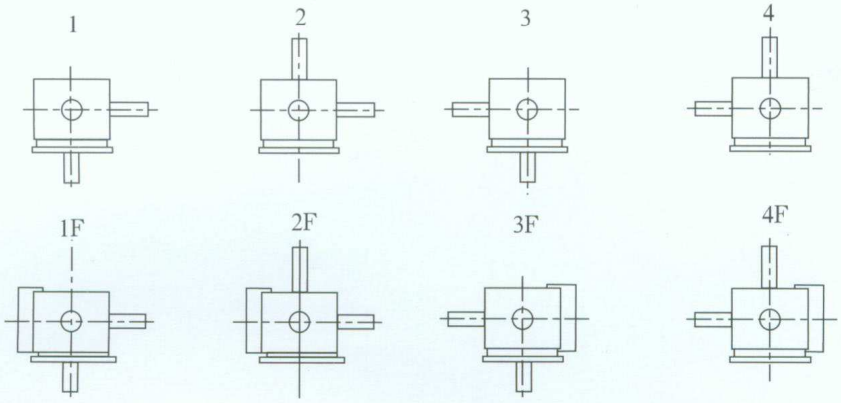
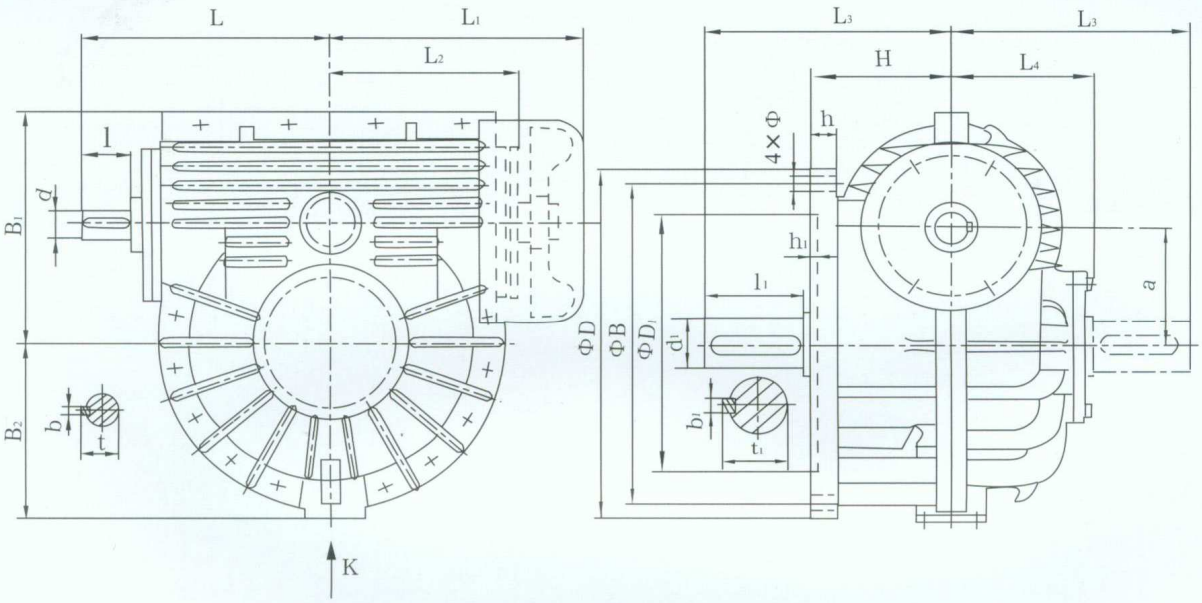


图3 Drawing 3

表5 TPS型减速器的尺寸（整箱式） mm

Table 5. Dimension of TPS decelerator (mono-box)

型号 Type	a	B	B1	C	C1	E	E1	H	H1	H2	L	L1	L2	l	l1	d	d1	b	b1	t	t1	D	D1	D2	ø	h	h1	重量 Weight kg
TPS100	100	320	260	280	220	160	130	150	382	160	235	237	200	82	110	40	55	12	16	43	59	300	275	240	14	16	6	90



装配型式 (K向)　Installing Form (K direction)

F为带风扇　F means fan cooling

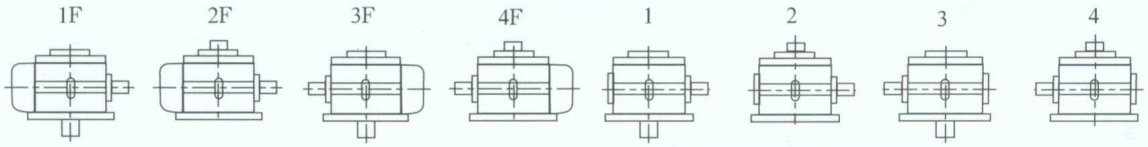
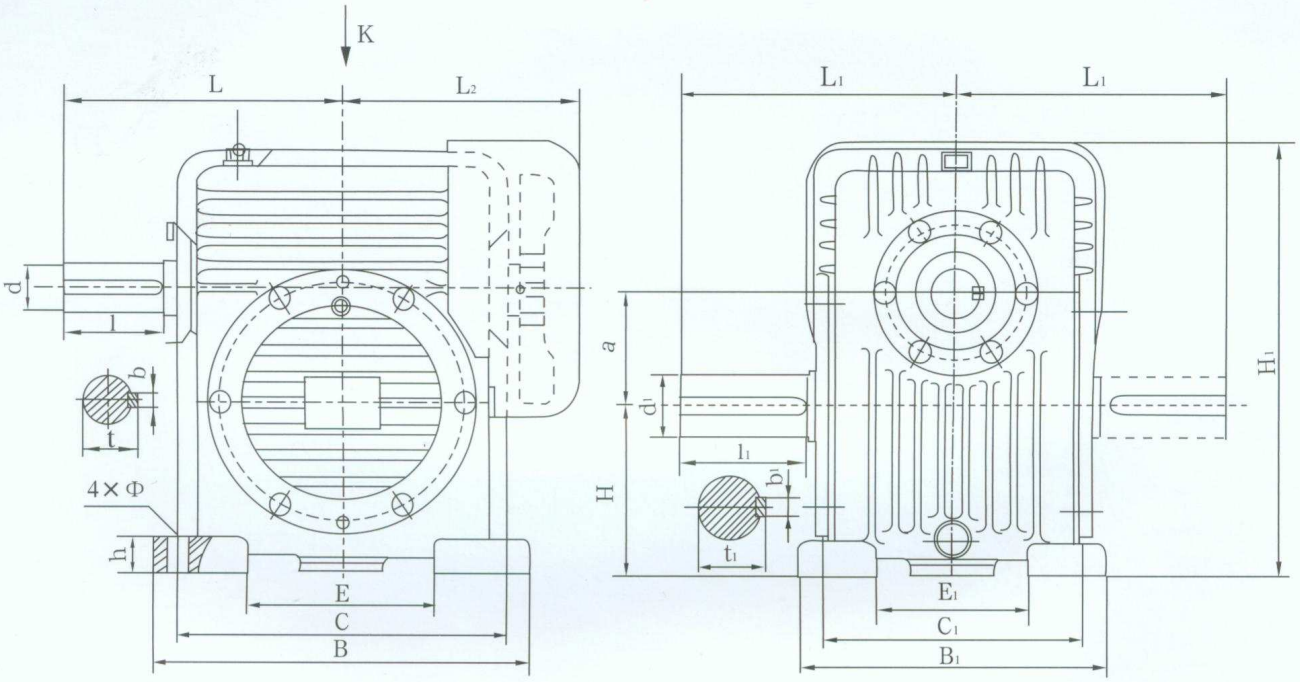


图4　Drawing 4

表 6　TPS 型减速器的尺寸（分箱式）　mm

Table 6. Dimension of TPS decelerator (sub-box)

型 号 Type	a	D	D1	h1	B	B1	B2	H	L	L1	L2	L3	L4	I	I1	d	d1	b	b1	t	t1	h	ø	重量 Weight kg
TPS125	125	380	280	6	330	265	193	180	307	280	209	320	175	82	140	40	70	12	20	43	74.5	25	19	170
TPS160	160	530	380	10	470	330	265	200	375	365	280	375	192	82	170	50	85	14	25	53.5	90	35	24	290
TPS200	200	650	480	10	580	400	325	250	420	436	336	400	228	82	170	55	95	16	28	59	101	40	32	530
TPS250	250	800	600	12	700	495	400	280	530	520	408	495	273	110	210	65	120	18	32	69	127	50	35	930
TPS315	315	920	710	15	820	625	460	355	630	605	497	600	349	130	250	80	140	22	36	85	148	65	39	1650
TPS400	400	1100	850	15	1000	740	550	420	720	692	558	720	412	165	300	100	180	28	45	106	190	75	48	2800
TPS500	500	1340	1060	20	1200	920	675	530	850	845	686	840	497	165	350	110	220	32	50	117	231	90	56	4800



装配型式(K向) Installing Form (K direction)

F为带风扇 F means fan cooling

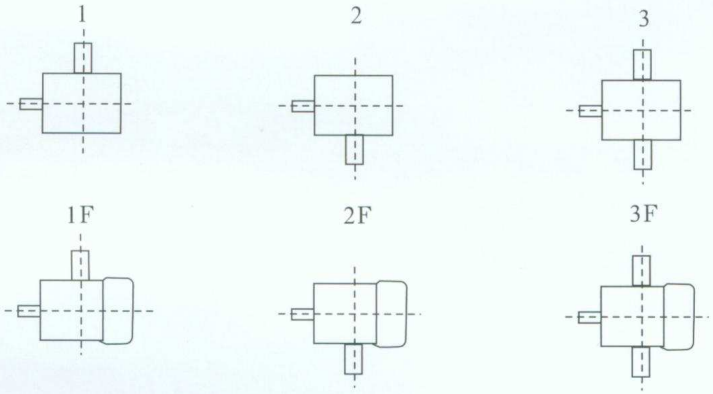


图5 Drawing 5

表7 TPA型减速器的尺寸（整箱式） mm

Table 7. Dimension of TPA decelerator (mono-box)

型号 Type	a	B	B1	C	C1	E	E1	H	H1	L	L1	L2	l	l1	d	d1	b	b1	t	t1	h	ø	重量 Weight kg
TPA100	100	320	260	280	220	160	130	150	389	235	237	200	82	110	40	55	12	16	43	59	30	19	88

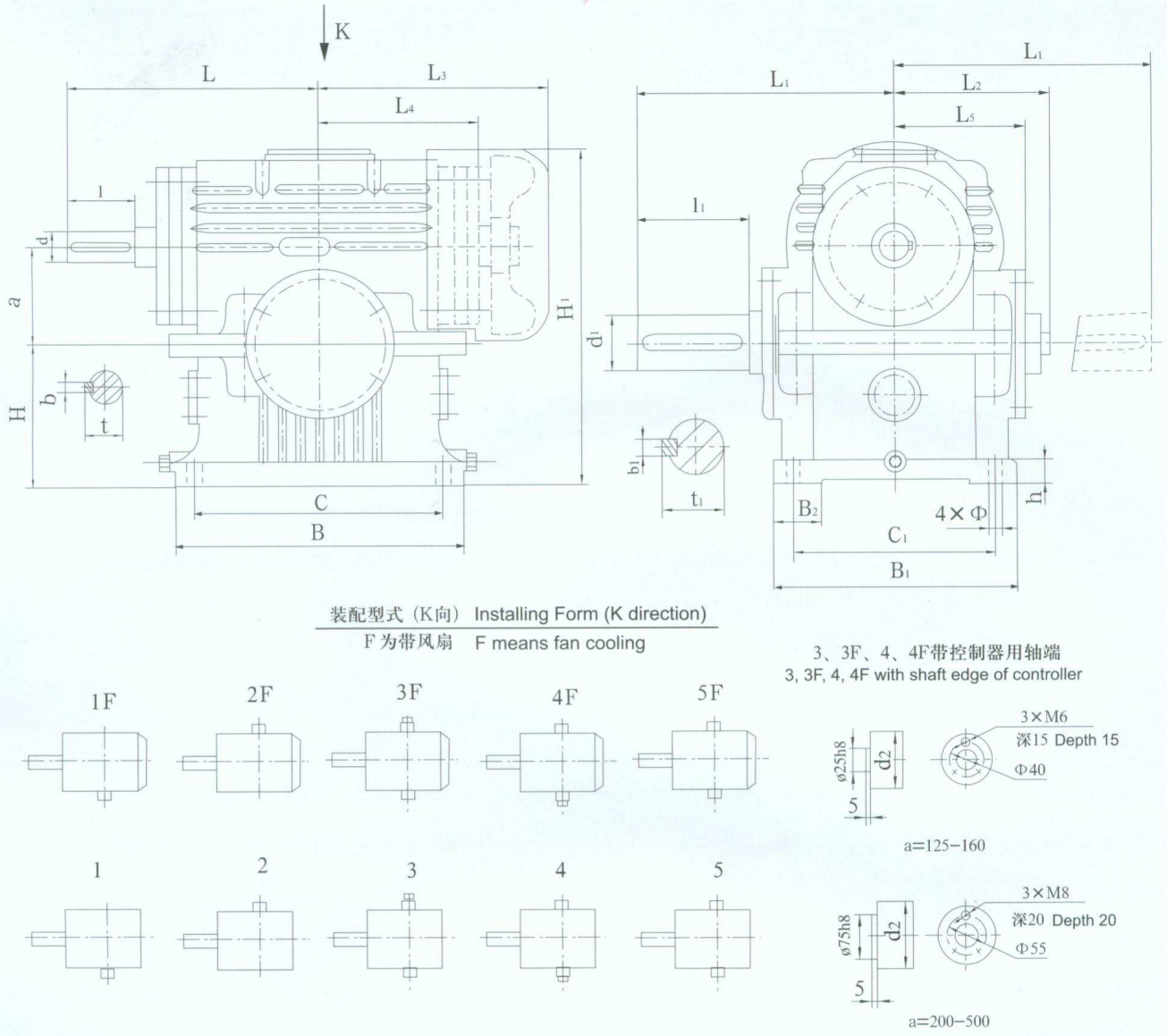


图 6　Drawing 6

表 8　TPA 型减速器的尺寸（分箱式）　　mm

Table 8. Dimension of TPA decelerator (sub-box)

型号 Type	a	B	B1	B2	C	C1	H	H1	h	L	L1	L2	L3	L4	L5	l	l1	d	d1	d2	b	b1	t	t1	ø	重量 Weight kg
TPA125	125	360	300	50	310	250	180	438	30	307	320	185	280	205	175	82	140	40	70	80	12	20	43	74.5	19	165
TPA160	160	460	320	80	400	260	225	550	40	375	375	210	365	280	190	82	170	50	85	95	14	25	53.5	90	24	285
TPA200	200	540	400	100	450	320	250	658	40	420	400	235	436	345	228	82	170	55	95	110	16	28	59	101	28	510
TPA250	250	720	480	120	620	380	315	792	50	530	495	290	520	406	270	110	210	65	120	140	18	32	69	127	35	900
TPA315	315	850	600	140	750	500	400	1000	65	630	600	360	605	492	345	130	250	80	140	160	22	36	85	148	39	1550
TPA400	400	950	720	170	850	620	500	1200	75	720	720	425	690	540	410	165	300	100	180	200	28	45	106	190	48	2650
TPA500	500	1180	900	200	1040	760	630	1530	90	850	840	495	845	680	488	165	350	110	220	240	32	50	117	231	56	4700

PW 系列平面二次包络环面蜗杆减速器
PW series planar double-enveloping worm gearing reducer

（引用标准 GB/T16444-1996 **Reference standard GB/T16444-1996**）

一、型式与基本参数 Type and basic datas

1、型式 Type

a) PWU 型——蜗杆在蜗轮之下，见图 1、图 2；
PWU type —— worm below worm wheel, see drawing 1, drawing 2;

b) PWO 型——蜗杆在蜗轮之上，见图 3、图 4；
PWO type —— worm on worm wheel, see drawing 3, drawing 4;

c) PWS 型——蜗杆在蜗轮之侧，见图 5。
PWS type —— worm beside worm wheel, see drawing 5.

2、基本参数 Basic datas

2.1 减速器的中心距 a 应符合表 1 的规定 表 1 Table 1

The centre distance a of reducer should be in accordance with stipulation in table 1.

中 心 距 α Centre distance α																	
第一系列 No.1 series	80	100	125	—	160	—	200	—	250	—	315	—	400	—	500	—	630	—
第二系列 No.2 series	—	—	—	140	—	180	—	225	—	280	—	355	—	450	—	560	—	710

注：优先选用第一系列 Note: No.1 series is superior.

2.2 减速器的速比 i 应符合表 2 的规定 表 2 Table 2

The transmission ratio i of reducer should be in accordance with stipulation in table 2.

速 比 i Transmission ratio i																	
第一系列 No.1 series	10	12.5	—	16	—	20	—	25	—	31.5	—	40	—	50	—	63	
第二系列 No.1 series	—	—	14	—	18	—	22.4	—	28	—	35.5	—	45	—	56	—	

注：优先选用第一系列 Note: No.1 series is superior.

3、型号与标记示例 Type and symbol example

3.1 型号 Type

PW U 200 — 20 — I F GB/T16444-1996

- GB/T16444-1996：标准号 Standard number
- F：冷却方式（风扇冷却 "F"，自然冷却不标注） Cooling wise (cooling with fan" F", no means cooling without fan)
- I：装配形式 Installing form
- 20：公称传动比 Nominal transmission ratio
- 200：中心距，mm Centre distance
- U：蜗杆位置，"U" 为下置，"O" 为上置，"S" 为侧置 Worm position U: worm below worm wheel, O: worm on worm wheel, S: worm beside worm wheel
- PW：平面二次包络环面蜗杆减速器 Planar double-enveloping worm gearing reducer

3.2 标记示例 Symbol example

中心距400mm，公称传动比20，第一种装配，蜗杆下置的平面二次包络环面蜗杆减速器，自然冷却。Centre distance of 400mm, nominal transmission ratio of 20, the first installing, wormunder worm wheel, cooling without fan, planar double-enveloping worm gearing reducer.

减速器 Reducer PWU400-20- I GB/T16444-1996

4、减速器的外形与结构尺寸　Shape and structure dimension of reducer

4.1 PWU 型减速器的外形与结构尺寸见图 1、图 2，表 3、表 4；

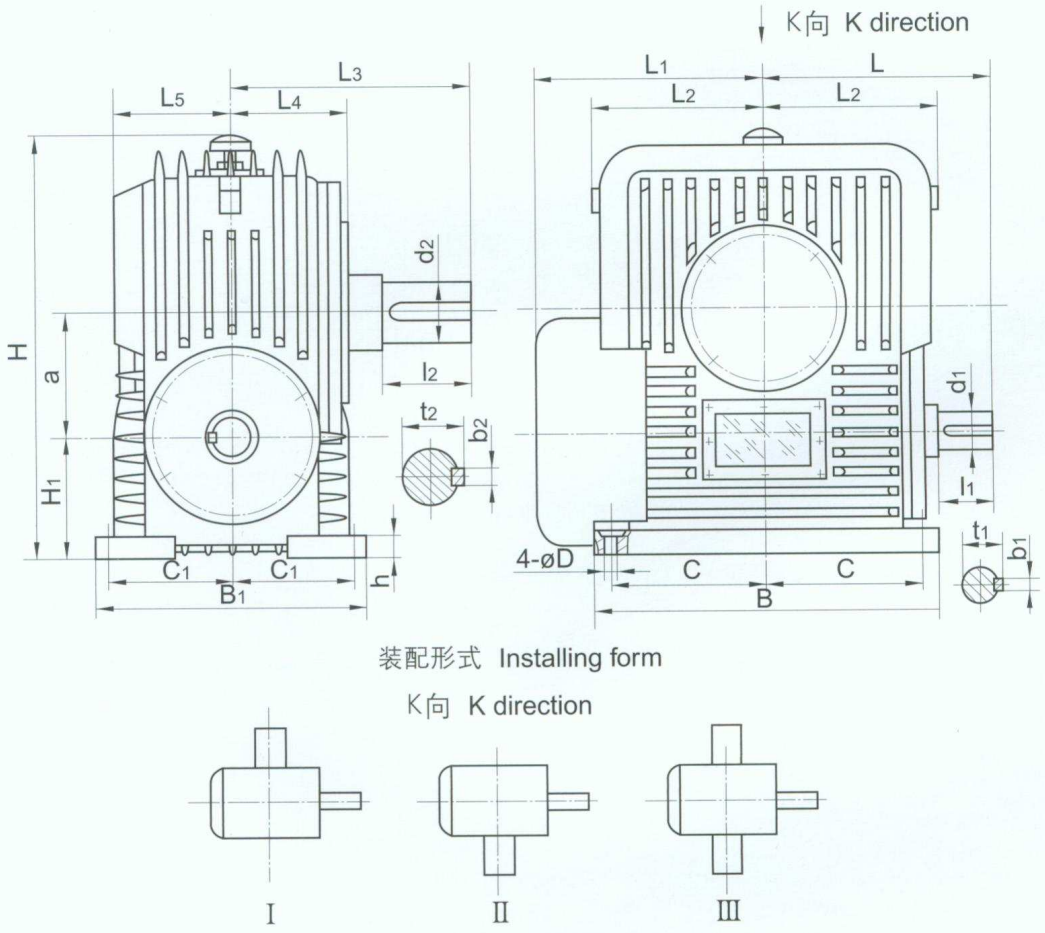
Shape and structure dimension of PWU type reducer see drawing 1, drawing 2, table 3, table 4;

4.2 PWO 型减速器的外形与结构尺寸见图 3、图 4，表 5、表 6；

Shape and structure dimension of PWO type reducer see drawing 3, drawing 4, table 5, table 6;

4.3 PWS 型减速器的外形与结构尺寸见图 5、图 7。

Shape and structure dimension of PWS type reducer see drawing 5, drawing 7.



装配形式 Installing form

图 1　Drawing 1

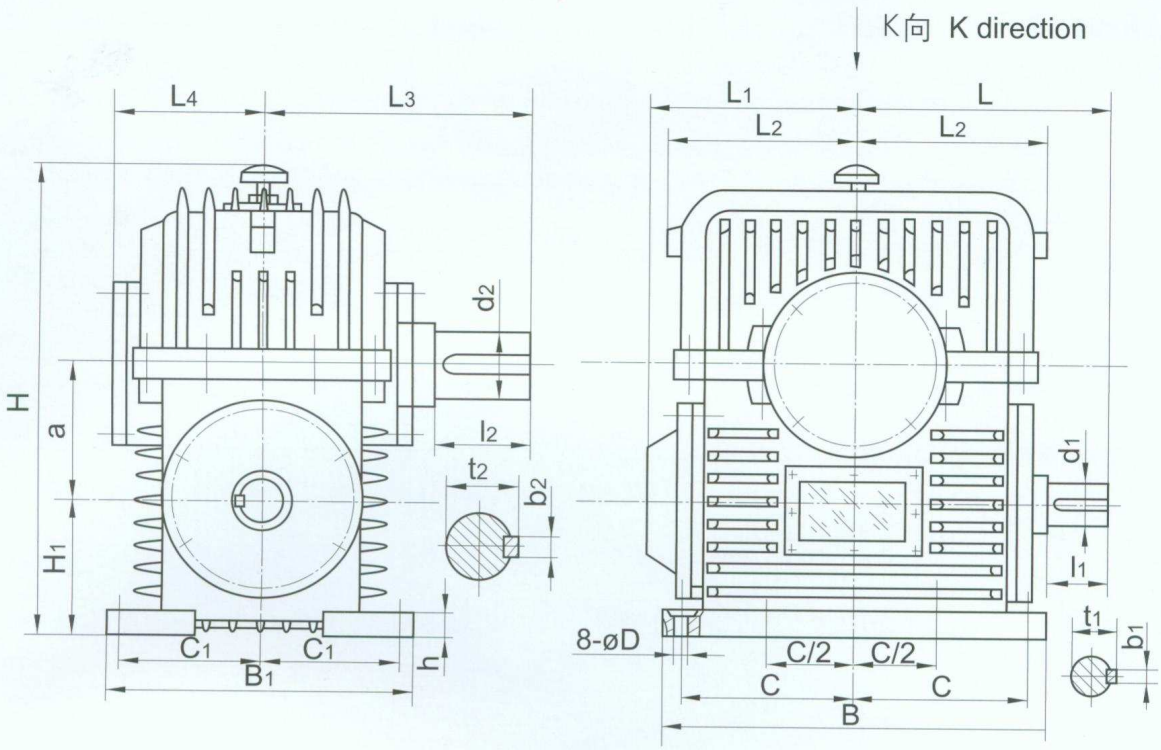
表 3　PWU 型减速器的外形与结构尺寸（整体式）

Table 3　Shape and structure dimension of PWU type reducer (mono-box)

a	H_1	B	B_1	C	C_1	D	H	L	L_1	L_2	L_3	L_4	L_5	d_1	b_1	t_1	l_1	d_2	b_2	t_2	l_2	h
80	100	250	190	112	80	14	315	160	160	125	180	100	90	25	8	28	42	45	14	48.5	82	30
100	112	300	236	130	100	16	355	200	200	160	212	125	118	32	10	35	58	55	16	59	82	35
125	125	355	280	160	125	18	450	236	236	190	250	150	140	38	10	41	58	65	18	69	105	38
140	140	400	315	180	140	20	500	265	265	212	280	160	160	42	12	45	82	70	20	74.5	105	40
160	160	450	355	200	160	21	560	300	300	236	315	190	180	48	14	51.5	82	80	22	85	130	42
180	180	500	400	225	180	22	630	335	335	265	355	212	200	56	16	60	82	90	25	95	130	45
200	200	560	450	250	200	24	710	355	355	300	400	236	224	60	18	64	105	100	28	106	165	50
225	225	630	500	280	225	26	800	400	400	315	450	265	250	65	18	69	105	110	28	116	165	53
250	250	670	540	300	250	28	850	450	450	355	500	280	280	70	20	74.5	105	125	32	132	165	56
280	280	800	610	355	280	30	950	475	475	400	560	315	315	85	22	90	130	140	36	148	200	60
315	315	900	720	375	315	32	1060	560	560	450	630	355	355	90	25	95	130	150	36	158	200	67
355	355	1000	765	425	355	35	1250	670	670	500	710	400	365	100	28	106	165	170	40	179	240	75

注：中心距 125~355 减速器箱体结构为剖分式

note:the divisioned type boxbody are adopted when the center distance is between 125~355mm.



装配形式 Installing form

K向 K direction

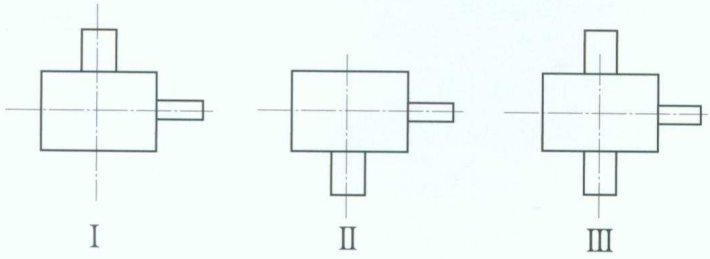
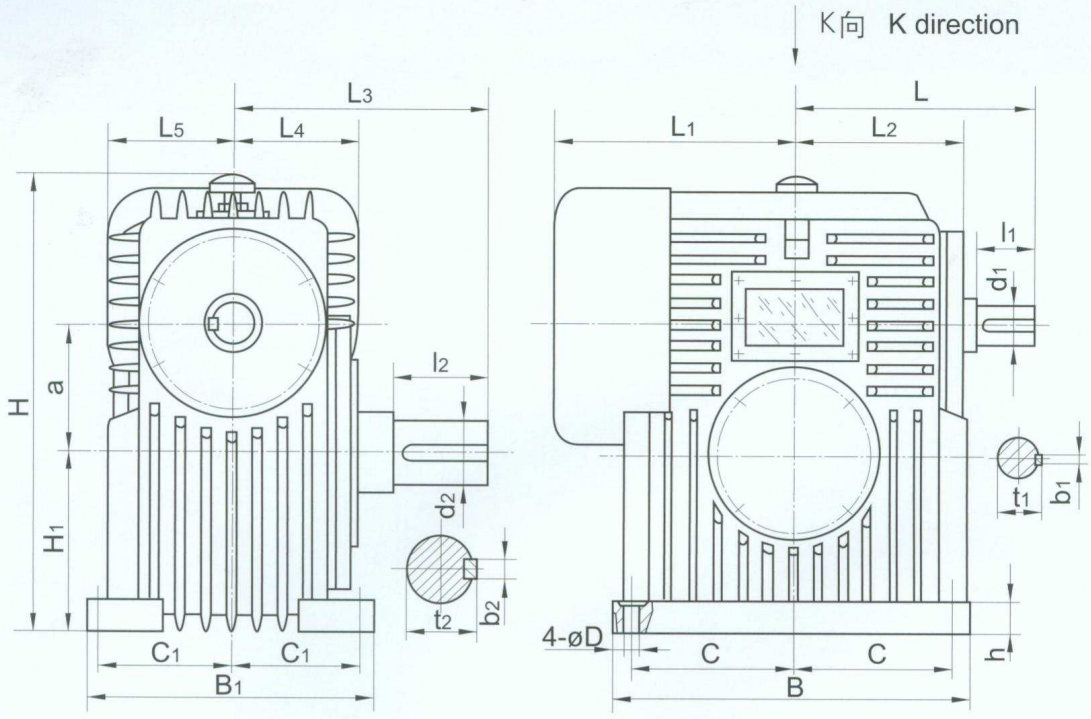


图 2 Drawing 2

表 4 PWU 型减速器的外形与结构尺寸（剖分式）

Table 4 Shape and structure dimension of PWU type reducer (sub-box)

a	H_1	B	B_1	C	C_1	D	H	L	L_1	L_2	L_3	L_4	d_1	b_1	t_1	l_1	d_2	b_2	t_2	l_2	h
400	355	900	800	400	355	35	1250	600	600	450	630	375	110	28	116	165	180	45	190	240	55
450	400	1000	900	450	400	39	1400	670	670	500	710	425	125	32	132	165	200	45	210	280	60
500	450	1120	1000	500	450	42	1600	750	750	560	800	475	130	32	137	200	220	50	231	280	65
560	500	1250	1120	560	500	45	1800	850	850	630	900	530	150	36	158	200	250	56	262	330	72
630	560	1400	1250	630	560	48	2000	950	950	710	1000	600	170	40	179	240	280	63	292	380	80
710	630	1600	1400	710	630	52	2240	1060	1060	800	1250	670	190	45	200	280	320	70	334	380	88



装配形式 Installing form

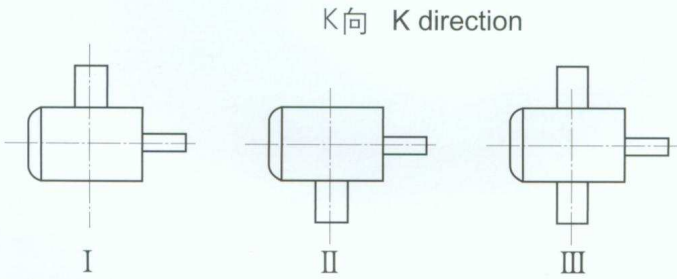


图 3 Drawing 3

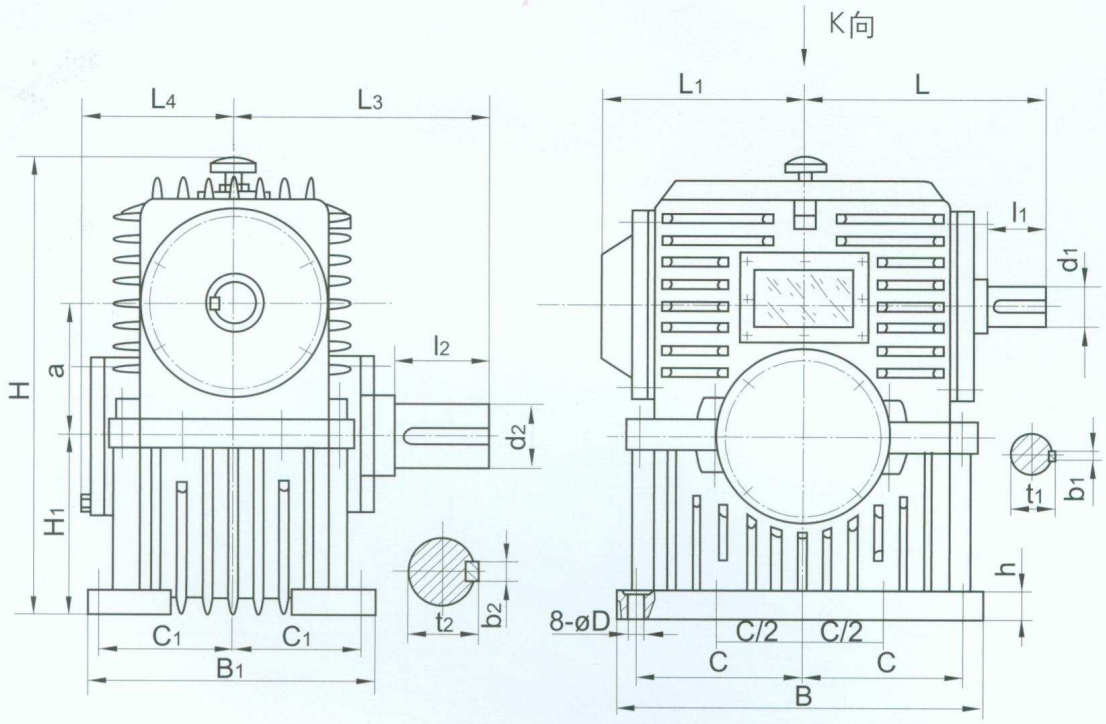
表 5 PWO 型减速器的外形与结构尺寸（整体式）

Table 5 Shape and structure dimension of PWO type reducer (mono-box)

a	H_1	B	B_1	C	C_1	D	H	L	L_1	L_2	L_3	L_4	L_5	d_1	b_1	t_1	l_1	d_2	b_2	t_2	l_2	h
80	125	250	190	112	80	14	300	160	160	125	180	100	90	25	8	28	42	45	14	48.5	82	30
100	160	300	236	130	100	16	375	200	200	160	212	125	118	32	10	35	58	55	16	59	82	35
125	180	355	280	160	125	18	425	236	236	190	250	150	140	38	10	41	58	65	18	69	105	38
140	200	400	315	180	140	20	475	265	265	212	280	160	160	42	12	45	82	70	20	74.5	105	40
160	215	450	355	200	160	21	530	300	300	236	315	190	180	48	14	51.5	82	80	22	85	130	42
180	250	500	400	225	180	22	600	335	335	265	355	212	200	56	16	60	82	90	25	95	130	45
200	280	560	450	250	200	24	670	355	355	300	400	236	224	60	18	64	105	100	28	106	165	50
225	315	630	500	280	225	26	750	400	400	315	450	265	250	65	18	69	105	110	28	116	165	53
250	355	670	540	300	250	28	850	450	450	355	500	280	280	70	20	74.5	105	125	32	132	165	57
280	400	800	610	355	280	30	900	475	475	400	560	315	315	85	22	90	130	140	36	148	200	60
315	450	900	720	375	315	32	1000	560	560	450	630	355	355	90	25	95	130	150	36	158	200	67
355	500	1000	765	425	355	35	1180	670	670	500	710	400	400	100	28	106	165	170	40	179	240	75

注：中心距 125~355 减速器箱体结构为剖分式

note:the divisioned type boxbody are adopted when the center distance is between 125~355mm.



装配形式 Installing form

K向 K direction

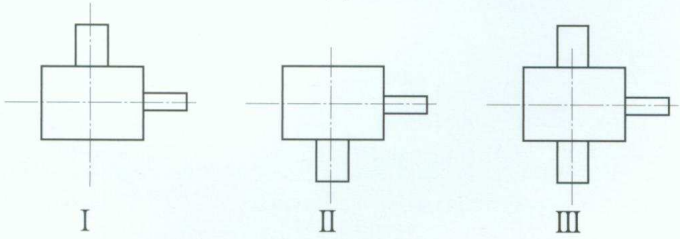


图 4 Drawing 4

表 6 PWO 型减速器的外形与结构尺寸（剖分式）

Table 6 Shape and structure dimension of PWO type reducer (sub-box)

a	H_1	B	B_1	C	C_1	D	H	L	L_1	L_3	L_4	d_1	b_1	t_1	l_1	d_2	b_2	t_2	l_2	h
400	500	900	800	400	355	35	1250	600	600	630	375	110	28	116	165	180	45	190	240	55
450	560	1000	900	450	400	39	1400	670	670	710	425	125	32	132	165	200	45	210	280	60
500	630	1120	1000	500	450	42	1600	750	750	800	475	130	32	137	200	220	50	231	280	65
560	710	1250	1120	560	500	45	1800	850	850	900	530	150	36	158	200	250	56	262	330	72
630	800	1400	1250	630	560	48	2000	950	950	1000	600	170	40	179	240	280	63	292	380	80
710	900	1600	1400	710	630	52	2240	1060	1060	1250	670	190	45	200	280	320	70	334	380	88

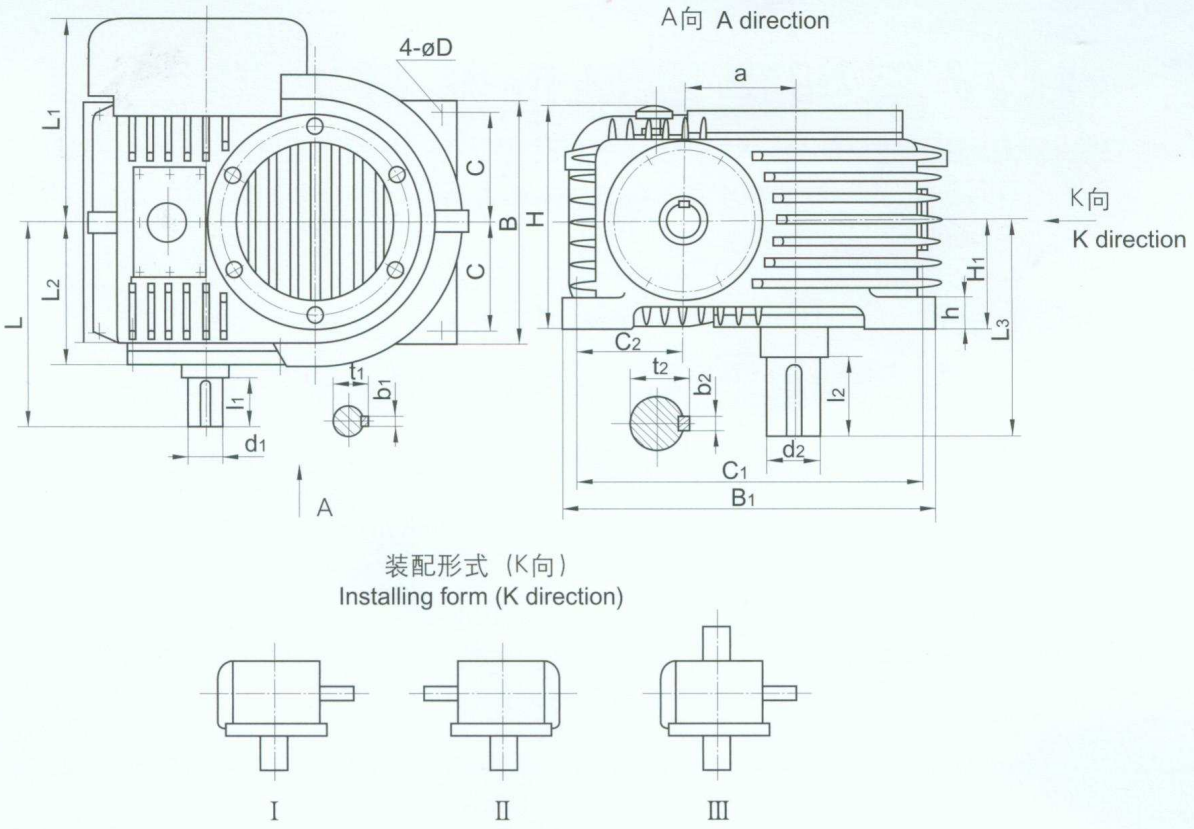


图 5　Drawing 5

表 7　PWS 型减速器的外形与结构尺寸（整体式）
Table 7 Shape and structure dimension of PWS type reducer

a	H_1	B	B_1	C	C_1	C_2	D	H	L	L_1	L_2	L_3	d_1	b_1	t_1	l_1	d_2	b_2	t_2	l_2	h
80	95	100	315	80	265	80	14	200	160	118	118	170	25	8	28	42	45	14	48.5	82	30
100	125	125	355	100	315	100	16	236	200	140	140	212	32	10	35	58	55	16	59	82	35
125	140	140	400	118	355	118	18	280	236	170	170	250	38	10	41	58	65	18	69	105	38
140	160	160	450	132	400	132	20	300	265	190	190	280	42	12	45	82	70	20	74.5	105	40
160	180	180	500	150	450	150	21	335	300	212	212	315	48	14	51.5	82	80	22	85	130	42
180	200	200	560	170	500	160	22	375	335	236	236	355	56	16	60	82	90	25	95	130	45
200	224	224	630	190	560	170	24	425	355	265	265	400	60	18	64	105	100	28	106	165	48
225	250	250	710	212	630	190	26	475	400	300	300	425	65	18	69	105	110	28	116	165	50
250	280	280	800	245	710	200	28	530	450	355	355	475	70	20	74.5	105	125	32	132	165	52
280	315	315	900	265	800	224	30	600	500	375	375	530	85	22	90	130	140	36	148	200	55
315	355	355	1000	300	900	250	32	670	560	425	425	560	90	25	95	130	150	36	158	200	58
355	400	400	1120	335	1000	265	35	750	600	450	450	670	100	28	106	165	170	40	179	240	62
400	450	450	1250	375	1120	315	35	850	670	500	500	710	110	28	116	165	180	45	190	240	65
450	500	500	1400	425	1250	355	39	950	750	560	560	800	125	32	132	165	200	45	210	280	70

a	H_1	B	B_1	C	C_1	C_2	D	H	L	L_1	L_2	L_3	d_1	b_1	t_1	l_1	d_2	b_2	t_2	l_2	h
500	560	560	1600	475	1400	400	42	1060	800	600	600	900	130	32	137	200	220	50	231	280	75
560	630	630	1800	530	1600	450	45	1180	900	670	670	1000	150	36	158	200	250	56	262	330	78
630	710	710	2000	600	1800	500	48	1320	1000	750	750	1100	170	40	179	240	280	63	292	380	82
710	800	800	2240	670	2000	560	52	1500	1120	850	850	1250	190	45	200	280	320	70	334	380	88

注：中心距 125~710 减速器箱体结构为剖分式
note:the divisioned type boxbody are adopted when the center distance is between 125~710mm.

HW 系列直廓环面蜗杆减速器

HW series enveloping worm with straight line generatrix reducer

（引用标准 reference standard GB/T9148-1988）

一、型式与基本参数 Type and basic datas

1、型式 Type

a) HWB 型——蜗杆在蜗轮之下，见图 1、图 2；

HWB type —— worm below worm wheel, see drawing 1, drawing 2;

b) HWT 型——蜗杆在蜗轮之上，见图 3、图 4；

HWT type —— worm on worm wheel, see drawing 3, drawing 4.

2、基本参数 Basic datas

2.1 减速器的中心距 a 应符合表 1 的规定。

The centre distance a of reducer should be in accordance with stipulation in table 1.

表 1 Table 1

中心距 Centre distance α										
100	125	160	200	250	280	315	355	400	450	500

2.2 减速器的速比 i 应符合表 2 的规定。

The transmission ratio i of reducer should be in accordance with stipulation in table 2.

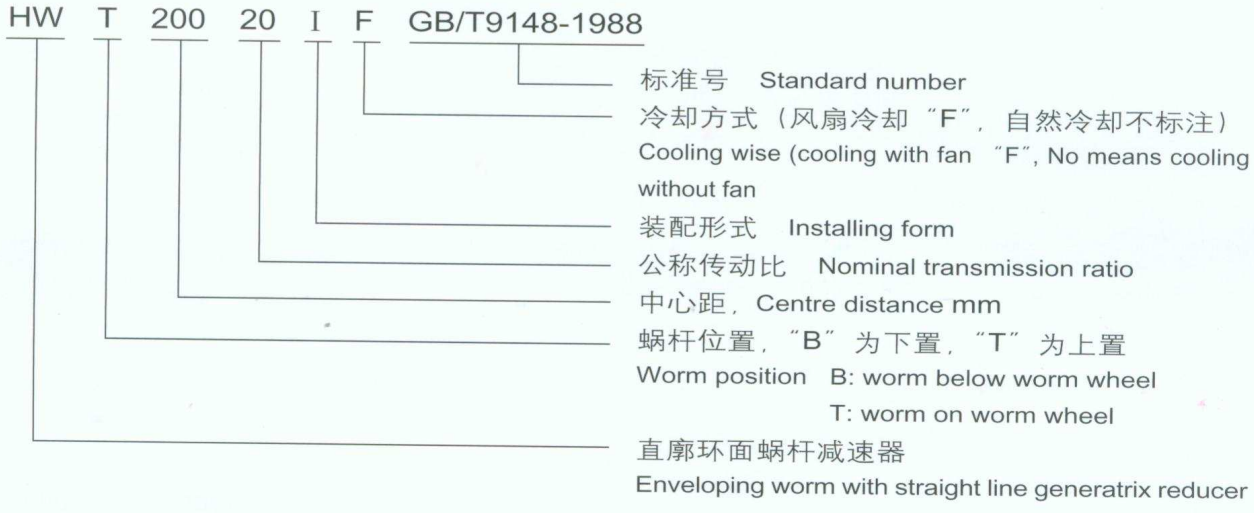
表 2 Table 2

中心距 Centre distance α																
第一系列 No.1 series	10	12.5	—	16	—	20	—	25	—	31.5	—	40	—	50	—	63
第二系列 No.2 series	—	—	14	—	18	—	22.4	—	28	—	35.5	—	45	—	56	—

注：优先选用第一系列 Note: No.1 series is superior

3、型号与标记示例 Type and symbol example

3.1 型号 Type



3.2 标记示例 Symbol example

中心距125mm，公称传动比20，第一种装配，蜗杆下置的直廓环面蜗杆减速器，自然冷却。

Centre distance of 125mm, nominal transmission ratio of 20, the first installing, worm below worm wheel, cooling without fan. Enveloping worm with straight line generatrix reducer.

减速器 Reducer HWB125-20- Ⅰ GB/T9148-1988

4、减速器的外形与结构尺寸

Shape and structure dimension of reducer

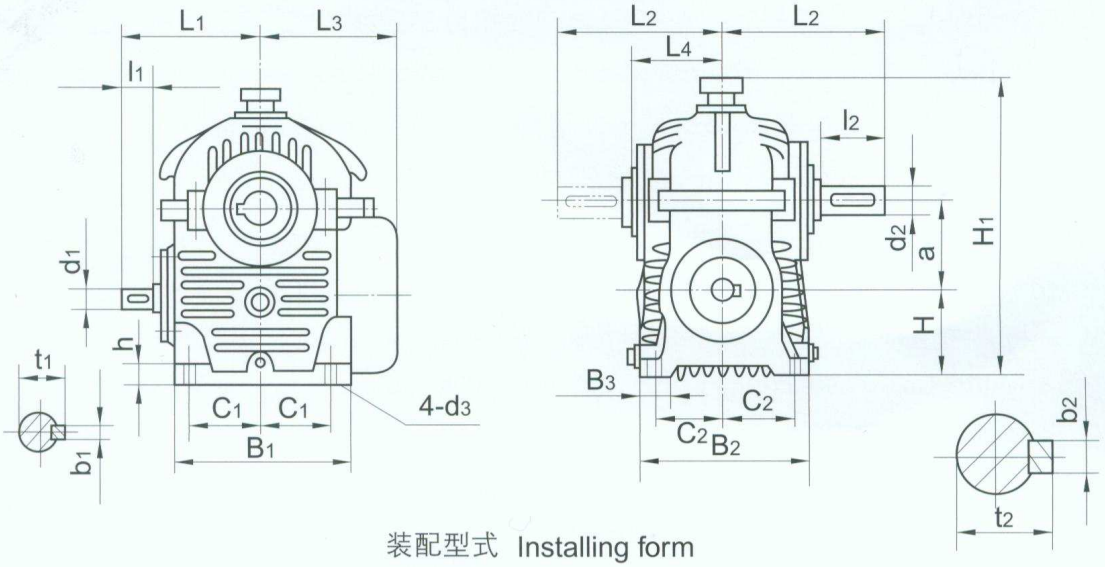
4.1 HWB 型减速器的外形与结构尺寸见图 1、表 3；

Shape and structure dimension of HWB type reducer see drawing 1, table 3;

4.2 HWT 型减速器的外形与结构尺寸见图 2、表 4。

Shape and structure dimension of HWT type reducer see drawing 2, table 4.

HWB 型减速器　HWB type reducer



装配型式　Installing form

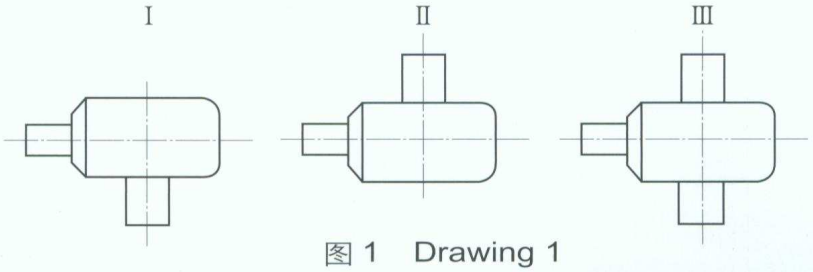


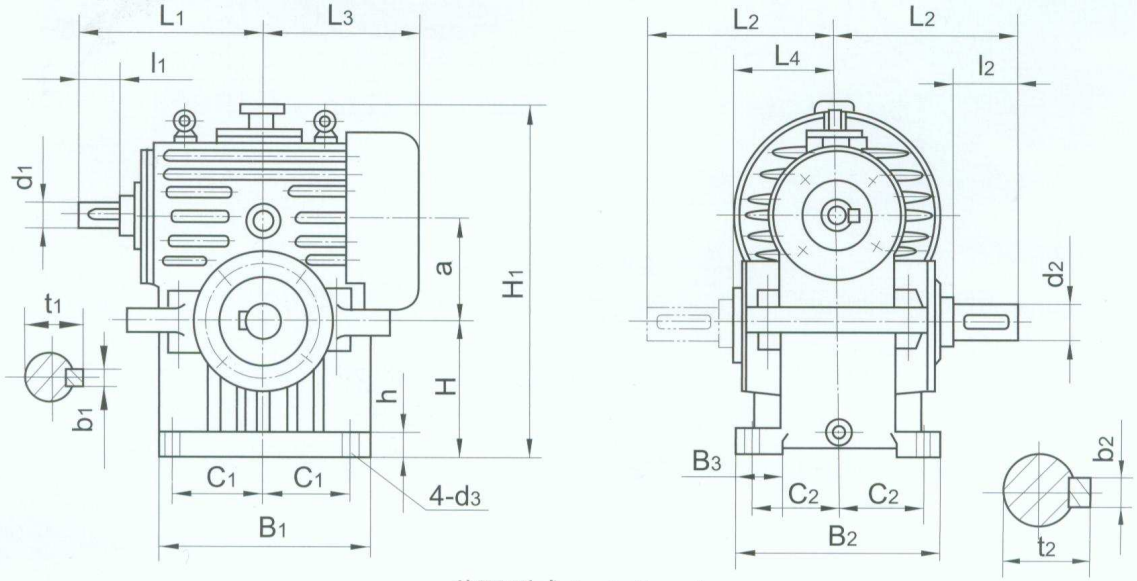
图 1　Drawing 1

表 3　Table 3　　mm

型　号 Type	a	B_1	B_2	B_3	C_1	C_2	H	d_1	l_1	b_1	t_1	L_1
HWB100	100	250	220	50	100	90	100	28js6	60	8	31	220
HWB125	125	280	260	60	115	105	125	35k6	80	10	38	260
HWB160	160	380	310	70	155	130	160	45k6	110	14	48.5	340
HWB200	200	450	360	80	185	150	180	55m6	110	16	59	380
HWB250	250	540	430	90	225	180	200	65m6	140	18	69	460
HWB280	280	640	500	110	270	210	225	75m6	140	20	79.5	530
HWB315	315	700	530	120	280	225	250	80m6	170	22	85	590
HWB355	355	750	560	130	300	245	280	85m6	170	22	90	610
HWB400	400	840	620	140	315	260	315	95m6	170	25	100	660
HWB450	450	930	700	150	355	300	355	100m6	210	28	106	740
HWB500	500	1020	760	170	400	320	400	110m6	210	28	116	790

型　号 Type	d_2	l_2	b_2	t_2	L_2	L_3	L_4	H_1	h	d_3	油量 L Oil volume	重量 kg Weight
HWB100	50k6	82	14	53.5	220	220	120	373	25	16	3	70
HWB125	60m6	82	18	64	240	260	142	445	30	20	4	132
HWB160	75m6	105	20	79.5	310	320	177	560	35	24	8	170
HWB200	90m6	130	25	95	350	380	192	655	40	24	13	280
HWB250	110m6	165	28	116	430	440	230	800	45	28	21	475
HWB280	120m6	165	32	127	470	530	255	910	50	35	27	725
HWB315	130m6	200	32	137	500	555	260	963	55	35	35	1030
HWB355	140m6	200	36	148	530	590	300	1082	60	35	48	1590
HWB400	150m6	200	36	158	560	655	310	1230	70	42	60	2140
HWB450	170m6	240	40	179	640	705	360	1375	75	42	85	2510
HWB500	180m6	240	45	190	670	775	390	1510	80	42	110	3370

HWT 型减速器 HWB type reducer



装配型式 Installing form

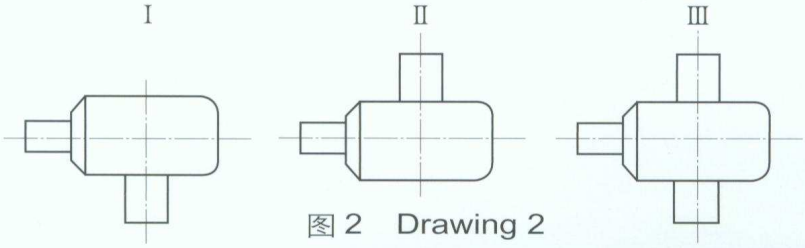


图 2 Drawing 2

表 4 Table 4 mm

型 号 Type	a	B_1	B_2	B_3	C_1	C_2	H	d_1	l_1	b_1	t_1	L_1
HWT100	100	250	220	50	100	90	140	28js6	60	8	31	220
HWT125	125	280	260	60	115	105	160	35k6	80	10	38	260
HWT160	160	380	310	70	155	130	200	45k6	110	14	48.5	340
HWT200	200	450	360	80	185	150	250	55m6	110	16	59	380
HWT250	250	540	430	90	225	180	280	65m6	140	18	69	460
HWT280	280	640	500	110	270	210	315	75m6	140	20	79.5	530
HWT315	315	700	530	120	280	225	355	80m6	170	22	85	590
HWT355	355	750	560	130	300	245	400	85m6	170	22	90	610
HWT400	400	840	620	160	315	260	450	95m6	170	25	100	660
HWT450	450	930	700	190	355	300	500	100m6	210	28	106	740
HWT500	500	1020	760	200	400	320	560	110m6	210	28	116	790

型 号 Type	d_2	l_2	b_2	t_2	L_2	L_3	L_4	H_1	h	d_3	油量 L Oil volume	重量 kg Weight
HWT100	50k6	82	14	53.5	220	220	120	374	25	16	7	69
HWT125	60m6	82	18	64	240	260	142	430	30	20	9	129
HWT160	75m6	105	20	79.5	310	320	177	530	35	24	18	175
HWT200	90m6	130	25	95	350	380	192	640	40	24	38	290
HWT250	110m6	165	28	116	430	440	230	765	45	28	55	490
HWT280	120m6	165	32	127	470	530	255	855	50	35	71	750
HWT315	130m6	200	32	137	500	555	260	930	55	35	95	1030
HWT355	140m6	200	36	148	530	590	300	1040	60	35	126	1640
HWT400	150m6	200	36	158	560	655	310	1225	70	42	170	2170
HWT450	170m6	240	40	179	640	705	360	1345	75	42	220	2690
HWT500	180m6	240	45	190	670	775	380	1490	80	42	275	3410

KW 系列锥面包络圆柱蜗杆减速器

KW series milled helicoids worm reducer

（引用标准 reference standard JB/T5559-1991）

一、型式与基本参数 Type and basic datas

1、型式 Type

a) KWU 型——蜗杆在蜗轮之下，见图 1、图 2；

KWU type —— worm below worm wheel, see drawing 1, drawing 2;

b) KWO 型——蜗杆在蜗轮之上，见图 3、图 4；

KWO type —— worm on worm wheel, see drawing 3, drawing 4;

a) KWS 型——蜗杆在蜗轮之侧，见图 5、图 6；

KWS type —— worm beside worm wheel, see drawing 5, drawing 6;

b) KWSB 型——蜗杆在蜗轮之侧，见图 7。

KWSB type —— worm beside worm wheel, see drawing 7.

2、基本参数 Basic datas

2.1 减速器的中心距 a 应符合表 1 的规定。

The centre distance a of reducer should be in accordance with stipulation in table 1.

表 1 Table 1

中 心 距 Centre distance α											
32	40	50	63	80	100	125	160	180	200	225	250

2.2 减速器的速比 i 应符合表 2 的规定。

The transmission ratio i of reducer should be in accordance with stipulation in table 2.

表 2 Table 2

中 心 距 Centre distance α									
7.5	10	12.5	15	20	25	30	40	50	60

3、型号与标记示例 Type and symbol example

3.1 型号 Type

3.2 标记示例 Symbol example

中心距100mm，公称传动比20，第一种装配，蜗杆下置的锥面包络圆柱蜗杆减速器，自然冷却。

Centre distance of 100mm, nominal transmission ratio of 20, the first installing, worm below worm wheel, cooling without fan. Milled helicoids worm reducer.

减速器 KWU100-20- Ⅰ JB/T5559-1991

Reducer KWU100-20- Ⅰ JB/T5559-1991

4、减速器的外形与结构尺寸

Shape and structure dimension of reducer

4.1 KWU 型减速器的外形与结构尺寸见图 1、图 2、表 3、表 4；

Shape and structure dimension of KWU type reducer see drawing 1, drawing 2, table 3, table 4;

4.2 KWO 型减速器的外形与结构尺寸见图 3、图 4、表 5、表 6；

Shape and structure dimension of KWO type reducer see drawing 3, drawing 4, table 5, table 6;

4.3 KWS 型减速器的外形与结构尺寸见图 5、图 6、表 7、表 8；

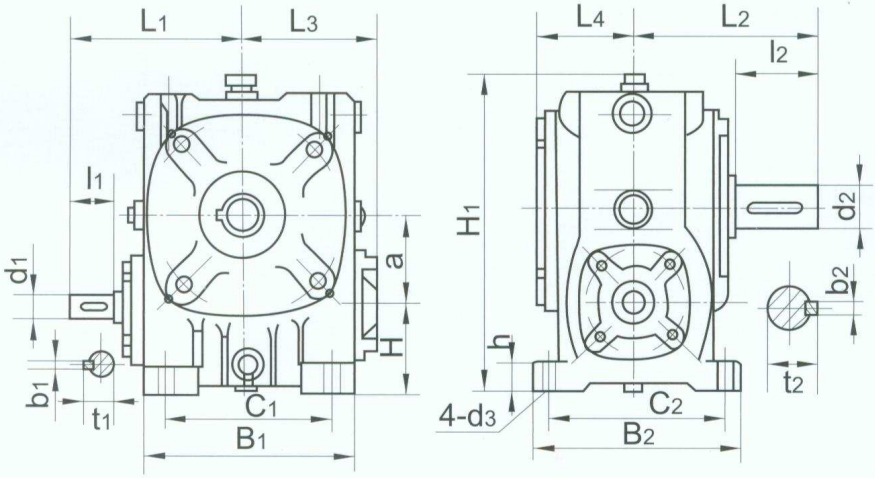
Shape and structure dimension of KWS type reducer see drawing 5, drawing 6, table 7, table 8;

4.4 KWSB 型减速器的外形与结构尺寸见图 7、表 9。

Shape and structure dimension of KWSB type reducer see drawing 7, table 9.

表 3 Table 3

型号 type / 尺寸 size	KWU32	KWU40	KWU50	KWU63	KWU80	KWU100
a	32	40	50	63	80	100
B_1	97	110	130	146	175	210
B_2	88	98	120	140	170	200
C_1	75	85	100	115	140	170
C_2	75	82	100	120	145	170
h	10	12	15	16	20	24
H	36	45	48	60	71	80
H_1	124	156	182	223	270	324
d_3	M5	M6	M8	M10	M12	M12
d_1	12j6	14j6	16j6	18j6	22j6	24j6
l_1	25	25	28	28	36	36
b_1	4	5	5	6	6	8
t_1	13.5	16	18	20.5	24.5	27
L_1	78	84	98	118	146	165
d_2	16j6	20j6	22j6	30j6	38k6	40k6
l_2	28	36	36	58	58	82
b_2	5	6	8	8	10	12
t_2	18	22.5	24.5	33	41	43
L_2	80	95	105	136	158	190
L_3				86	105	123
L_4	43	49	57	65	84	95
重量 kg Weight	3.5	7	9	16	28	43



装配型式 Installing form

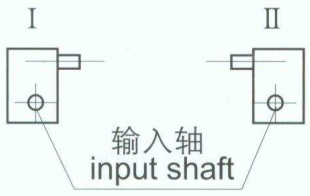
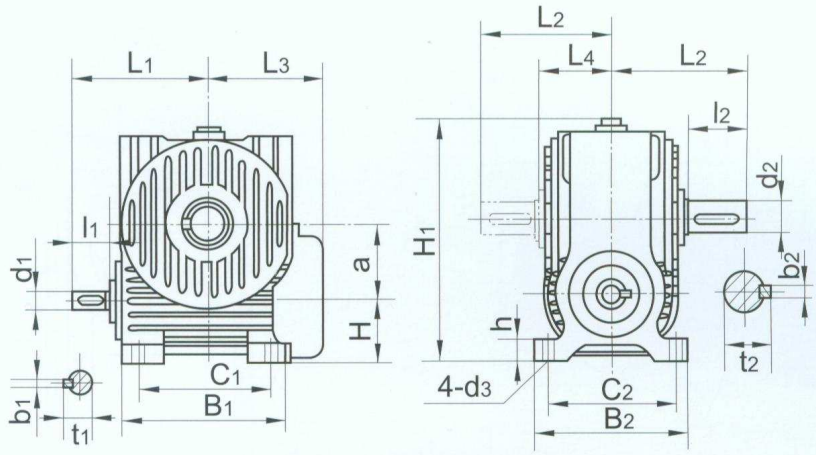


图 1 Drawing 1

表 4 Table 4

型号 type / 尺寸 size	KWU125	KWU160	KWU180	KWU200	KWU225	KWU250
a	125	160	180	200	225	250
B_1	270	325	368	410	450	500
B_2	245	295	325	350	380	415
C_1	220	270	290	315	350	435
C_2	210	255	280	295	325	355
h	32	40	45	50	55	65
H	112	140	160	170	190	200
H_1	418	514	578	623	690	765
d_3	M16	M16	M20	M20	M24	M24
d_1	32k6	42k6	45k6	48k6	48k6	55m6
l_1	58	82	82	82	82	82
b_1	10	12	14	14	14	16
t_1	35	45	48.5	51.5	51.5	59
L_1	218	276	300	324	342	374
d_2	55m6	65m6	75m6	80m6	90m6	100m6
l_2	82	105	105	130	130	165
b_2	16	18	20	22	25	28
t_2	59	69	79.5	85	95	106
L_2	215	266	280	321	337	390
L_3	202	242	267	299	320	343
L_4	125	157	167	185	198	219
重量 kg Weight	70	130	180	247	301	406



装配型式（F－带风扇）

Installing form (F - with fan)

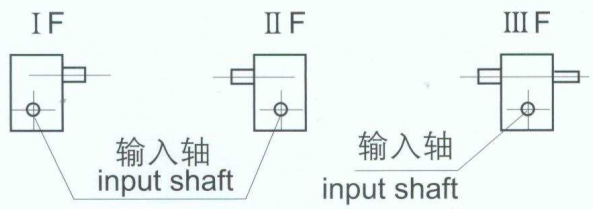
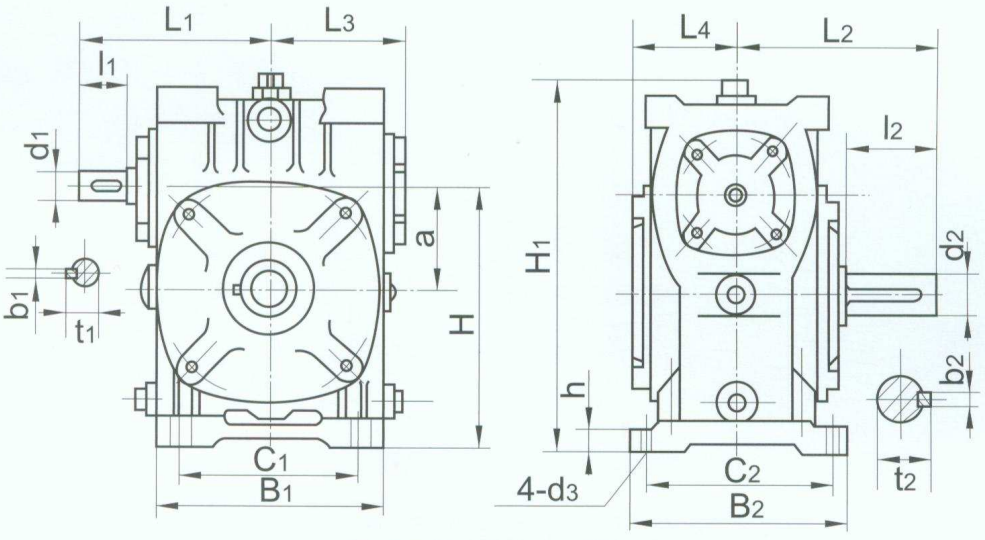


图 2 Drawing 2

表 5 Table 5

型号 type / 尺寸 size	KWO32	KWO40	KWO50	KWO63	KWO80	KWO100
a	32	40	50	63	80	100
B_1	97	110	130	146	175	210
B_2	88	98	120	140	170	200
C_1	75	85	100	115	140	170
C_2	75	82	100	120	145	170
h	10	12	15	16	20	24
H	90	112	132	160	200	250
H_1	126	156	189	221	270	339
d_3	M5	M6	M8	M10	M12	M12
d_1	12j6	14j6	16j6	18j6	22j6	24j6
l_1	25	25	28	28	36	36
b_1	4	5	5	6	6	8
t_1	13.5	16	18	20.5	24.5	27
L_1	78	84	98	118	146	165
d_2	16j6	20j6	22j6	30j6	38k6	40k6
l_2	28	36	36	58	58	82
b_2	5	6	8	8	10	12
t_2	18	22.5	24.5	33	41	43
L_2	80	95	105	136	158	190
L_3				86	105	123
L_4	43	49	57	65	84	95
重量 kg Weight	3.8	7.5	10	17	29.5	47

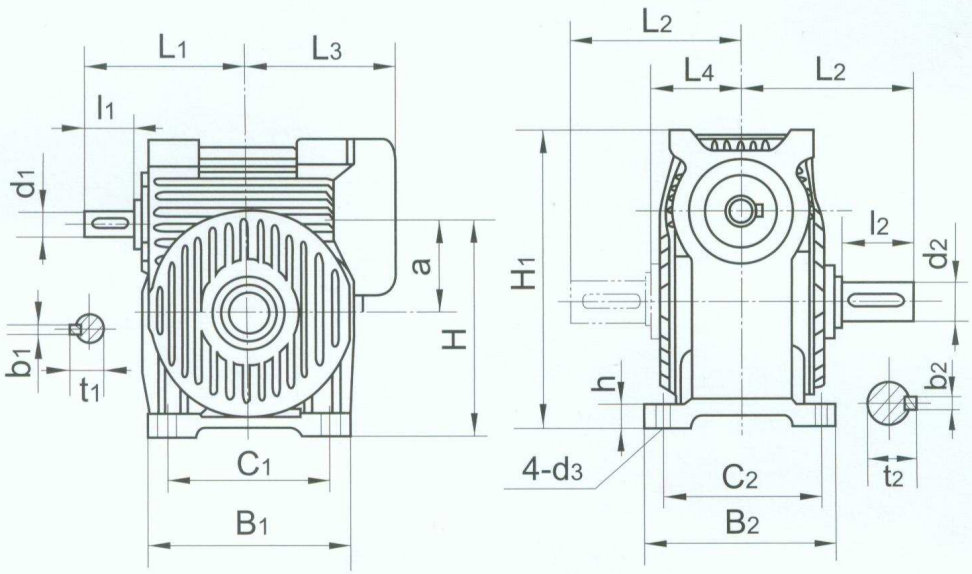


装配型式 Installing form

图 3 Drawing 3

表 6 Table 6

尺寸 size / 型号 type	KWO125	KWO160	KWO180	KWO200	KWO225	KWO250
a	125	160	180	200	225	250
B_1	270	325	368	410	450	500
B_2	245	295	325	325	380	415
C_1	220	270	290	315	350	435
C_2	210	255	280	295	325	355
h	32	40	45	45	55	65
H	315	385	430	475	530	600
H_1	427	535	590	645	720	800
d_3	M16	M16	M20	M20	M24	M24
d_1	32k6	42k6	45k6	48k6	48k6	55m6
l_1	58	82	82	82	82	82
b_1	10	12	14	14	14	16
t_1	35	45	48.5	51.5	51.5	59
L_1	218	276	300	324	342	374
d_2	55m6	65m6	75m6	80m6	90m6	100m6
l_2	82	105	105	130	130	165
b_2	16	18	20	22	25	28
t_2	59	69	79.5	85	95	106
L_2	215	266	280	321	337	390
L_3	202	242	267	299	320	343
L_4	125	155	167	185	198	219
重量 kg Weight	75	138	192	264	330	450



装配型式（F－带风扇）
Installing form (F - with fan)

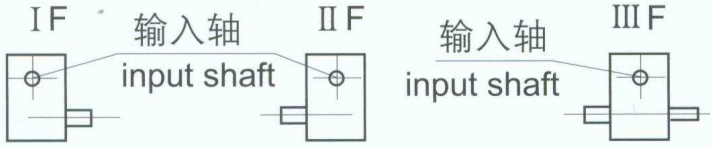
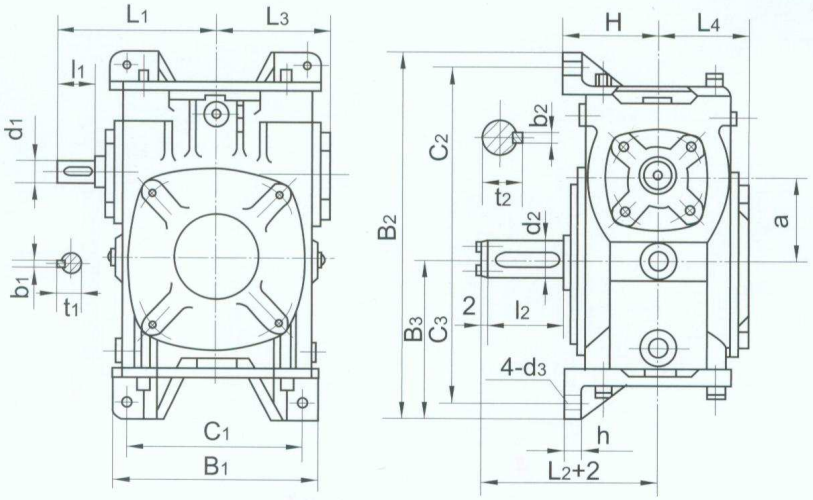


图 4 Drawing 4

表 7 Table 7

尺寸 size / 型号 type	KWS32	KWS40	KWS50	KWS63	KWS80	KWS100
a	32	40	50	63	80	100
B_1	105	120	140	160	195	230
B_2	157	193	225	269	331	384
B_3	66	84	87	111	140	164
C_1	85	95	120	136	160	190
C_2	81	101	118	146	176	205
C_3	56	76	87	99	125	149
d_1	12j6	14j6	16j6	18j6	22j6	24j6
l_1	25	25	28	28	36	36
b_1	4	5	5	6	6	8
t_1	13.5	16	18	20.5	24.5	27
L_1	78	84	98	118	146	165
d_2	16j6	20j6	22j6	30j6	38k6	40k6
l_2	28	36	36	58	58	82
b_2	5	6	8	8	10	12
t_2	18	22.5	24.5	33	41	43
L_2	80	95	105	128	158	190
L_3				86	105	123
L_4	44	50	58	65	85	96
h	10	12	15	16	20	24
H	56	63	71	75	100	112
d_3	M5	M6	M8	M10	M12	M12
重量 kg Weight	4	8	11	19	32	54



装配型式 Installing form

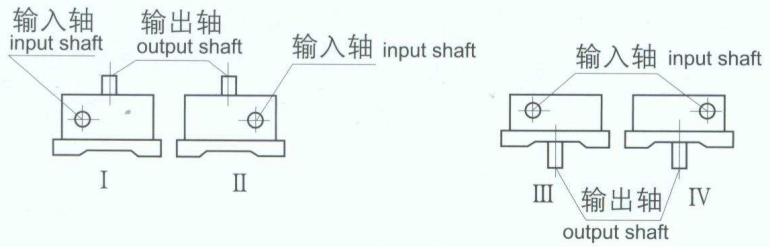
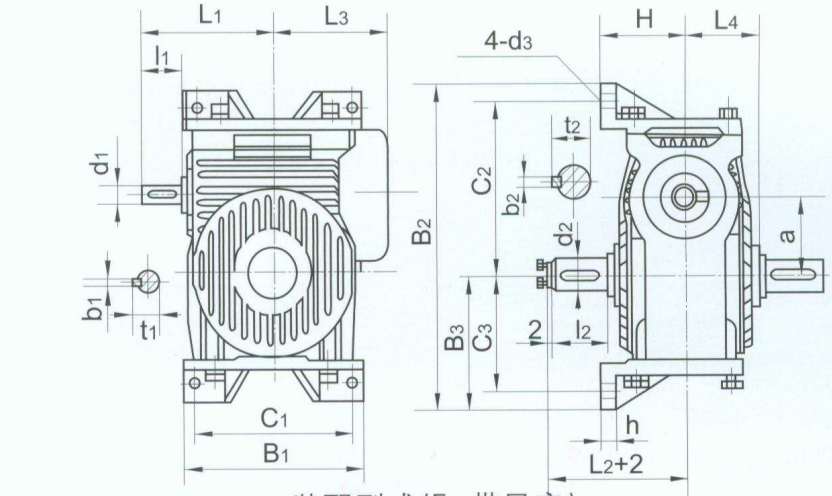


图 5 Drawing 5

表 8 Table 8

型号 type / 尺寸 size	KWS125	KWS160	KWS180	KWS200	KWS225	KWS250
a	125	160	180	200	225	250
B_1	290	350	390	430	470	525
B_2	501	605	685	739	815	895
B_3	211	245	275	300	325	365
C_1	245	300	330	370	380	430
C_2	272	340	385	420	465	510
C_3	193	225	250	275	300	345
d_1	32k6	42k6	45k6	48k6	48k6	55m6
l_1	58	82	82	82	82	82
b_1	10	12	14	14	14	16
t_1	35	45	48.5	51.5	51.5	59
L_1	218	276	300	324	342	374
d_2	55m6	65m6	75m6	80m6	90m6	100m6
l_2	82	105	105	130	130	165
b_2	16	18	20	22	25	28
t_2	59	69	79.5	85	95	106
L_2	215	266	280	321	337	390
L_3	202	242	267	299	320	343
L_4	125	155	167	185	198	219
h	32	40	45	50	55	65
H	140	180	190	200	225	250
d_3	M16	M16	M20	M20	M24	M24
重量 kg Weight	82	150	210	278	365	480



装配型式(F—带风扇)
Installing form (F - with fan)

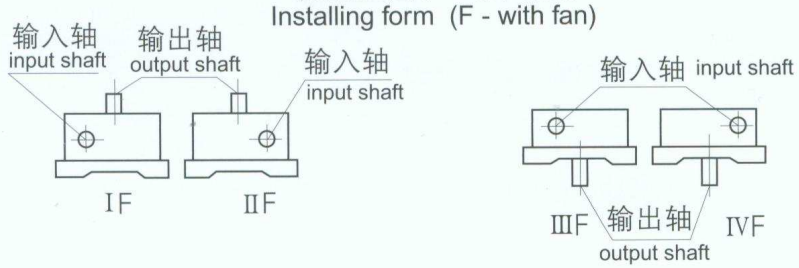


图 6 Drawing 6

KWSB 锥面包络圆柱蜗杆减速器是在 KWS 型基础上的改进型产品，直接用大法兰安装，除法兰尺寸外，其余均与 KWS 型尺寸相一致，用户可直接按 KWS 型选用。

KWSB series milled helicoids worm reducer is improved on the basic of KWS type. It is installed with big flange. Except flange dimension, other is the same as KWS, user can select KWS type directly.

装配型式 Installing form

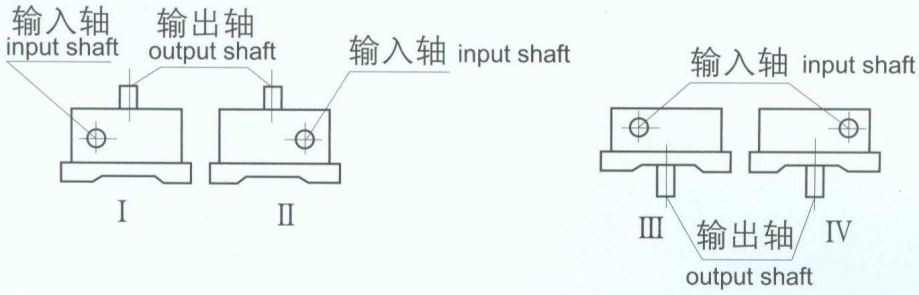


图 7 Drawing 7

表 9 Table 9

型号 type / 尺寸 size	KWSB 32	KWSB 40	KWSB 50	KWSB 63	KWSB 80	KWSB 100	KWSB 125	KWSB 160	KWSB 180	KWSB 200	KWSB 225	KWSB 250
D	172	180	205	240	275	320	400	490	530	580	660	705
D_0	150	155	180	210	240	285	355	455	480	530	605	640
D_1	115H8	130H8	150H8	170H8	200H8	245H8	300H8	394H8	425H8	475H8	525H8	580H8
L_4	80	95	105	128	158	190	215	266	280	321	337	390
H_0	65	75	85	100	125	140	160	195	210	230	250	270
h_1	10	12	15	15	15	16	20	25	28	30	30	32
d_3	7	8	10	12	14	14	18.5	18.5	22	22	27	27
T	5	5	5	5	5	5	6	6	6	6	6	6
l_2	28	36	36	58	58	82	82	105	105	130	130	165
L_1	78	84	98	118	146	165	218	276	300	324	342	374

注：其余尺寸请查阅 KWS 型产品样本。

Other dimension can look up KWS catalogue.

所有平面包络减速器的润滑 Reducer lubrication

1、减速器一般采用油池润滑，当蜗杆计算圆滑动速度 v_s>10m/s 时，采用强制润滑。

2、减速器用润滑油粘度指数(VI)应大于 100。

3、减速器采用合成蜗轮蜗杆油。

4、减速器润滑油油品按表 8 规定。允许采用润滑性能相当或更高的油品。

1. Oil pool lubrication is normally used for reducer. If sliding velocity of reference circle of worm at throat Vs>10m/s, forced lubrication is used.

2. Reducer lubrication viscosity index VI>100.

3. Synthetic worm & worm wheel oil is used for reducer.

4. Oil brand should be in accordance with table 8, the same or good performance is permitted.

表 8 Table 8

输入转速 Input rotate speed r/min	中心距 α mm Centre distance α										
	80	100	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710
1500													320蜗轮蜗杆油[1)] 320 worm & worm wheel oil					
1000											460蜗轮蜗杆油 460 worm & worm wheel oil							
750					680蜗轮蜗杆油 680 worm & worm wheel oil													
500																		

注：1) 建议采用强制润滑。 Note: Forced lubrication must be suggested.

5、减速器轴承采用飞溅润滑，也可用脂润滑。

5. Splash lubrication or fat lubrication should be used for bearing of reducer.

所有平面包络减速器的承载能力及传动效率 Carrying capacity and transmission efficiency of reducer

1、减速器的额定输入功率 P_1(kW)和额定输出转矩 T_2(N·m)见表 9。

1. Nominal input power P_1(kW) and nominal output torque T_2(N·m) of reducer see table 9.

表 9　Table 9

公称传动比 Norminal transmission ratio i	输入转速 Input rotate speed n1 r/min	功率转矩 Pow torque	中心距 mm Centre distance																
			80	100	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710
			额定输入功率 Nominal input power P_1，kW ／额定输出转矩 Nominal output torgue T_2 N・m																
10	1500	P_1	6.71	11.5	19.7	25.9	35.7	47.5	61.2	81.4	105	138	183	245	261	347				
		T_2	384	666	1 141	1 516	2 093	2 811	3 626	4 870	6 280	8 343	11 087	14 795	15 787	20 979				
	1000	P_1	6.20	10.6	18.2	23.9	33.0	43.9	56.6	75.2	97.0	127	169	226	241	320	413	543	722	963
		T_2	533	923	1 581	2 102	2 901	3 897	5 025	6 749	8 703	11 563	15 366	20 505	21 881	29 076	37 495	49 291	65 499	87 408
	750	P_1	5.22	8.94	15.3	20.1	27.8	36.9	47.6	63.3	81.6	107	143	190	203	270	348	457	608	811
		T_2	591	1 019	1 755	2 333	3 220	4 326	5 579	7 494	9 664	12 842	17 064	22 772	24 300	32 290	41 640	54 740	72 740	97 071
	500	P_1	4.20	7.20	12.3	16.2	22.4	29.7	38.3	50.9	65.7	86.3	115	153	163	217	280	368	489	652
		T_2	697	1 202	2 071	2 754	3 801	5 107	6 586	8 849	11 412	15 167	20 145	26 896	28 700	38 137	49 181	64 653	85 913	114 649
12.5	1500	P_1	5.88	10.1	17.3	22.7	31.3	41.7	53.7	71.4	92.0	121	161	215	229	304	392			
		T_2	417	722	1 237	1 645	2 270	3 066	3 954	5 311	6 849	9 100	12 092	16 137	17 220	22 882	29 508			
	1000	P_1	5.26	9.00	15.4	20.3	28.0	37.2	48.0	63.8	82.2	108	144	192	205	272	351	461	612	817
		T_2	558	968	1 658	2 204	3 042	4 109	5 298	7 117	9 178	12 194	16 204	21 624	23 074	30 661	39 540	51 980	69 072	92 176
	750	P_1	4.31	7.39	12.7	16.7	23.0	30.5	39.4	52.3	67.5	88.7	118	157	168	223	288	378	503	671
		T_2	604	1 041	1 794	2 386	3 293	4 448	5 737	7 665	9 884	13 135	17 454	23 292	24 854	33 027	42 591	55 993	74 401	99 287
	500	P_1	3.29	5.65	9.67	12.7	17.6	23.3	30.1	40.0	51.5	67.8	90.0	120	128	170	220	289	384	512
		T_2	676	1 166	2 009	2 672	3 688	4 956	6 392	8 589	11 076	14 722	19 563	25 819	27 857	37 018	47 737	62 755	83 390	111 283
14	1500	P_1	5.45	9.34	16.0	21.0	29.0	38.6	49.8	66.1	85.3	112	149	199	212	282	364	478		
		T_2	430	745	1 277	1 688	2 330	3 165	4 082	5 483	7 070	9 395	12 484	16 660	17 777	23 623	30 463	40 047		
	1000	P_1	4.90	8.40	14.4	18.9	26.1	34.7	44.8	59.5	76.7	101	134	179	191	254	327	430	571	762
		T_2	580	1 005	1 723	2 277	3 143	4 269	5 506	7 396	9 537	12 673	16 840	22 472	23 980	31 865	41 092	54 020	71 783	95 793
	750	P_1	4.00	6.85	11.7	15.4	21.3	28.3	36.5	48.5	62.6	82.3	109	146	156	207	267	351	466	622
		T_2	620	1 075	1 853	2 464	3 401	4 544	5 860	7 917	10 209	13 568	18 029	24 060	25 674	34 116	43 995	57 836	76 854	102 560
	500	P_1	3.06	5.24	8.98	11.8	16.3	21.7	27.9	37.1	47.8	62.9	83.6	112	119	158	204	268	356	476
		T_2	695	1 205	2 078	2 761	3 814	5 097	6 572	8 833	11 391	15 143	20 122	26 852	28 653	38 075	49 101	64 548	85 773	114 463

续表 9　Table 9

公称传动比 Norminal transmission ratio i	输入转速 Input rotate speed n1 r/min	功率转矩 Pow torque	中心距 mm Centre distance																	
			80	100	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710
			额定输入功率 Nominal input power P_1，kW ／额定输出转矩 Nominal output torgue T_2 N・m																	
16	1500	P_1	4.98	8.54	14.6	19.2	26.5	35.3	45.5	60.4	77.9	102	136	182	194	258	332	437		
		T_2	446	774	1 326	1 763	2 433	3 233	4 169	5 663	7 303	9 706	12 897	17 211	18 365	24 441	31 470	41 372		
	1000	P_1	4.51	7.73	13.2	17.4	24.0	31.9	41.2	54.7	70.6	92.8	123	165	176	233	301	395	525	701
		T_2	606	1 051	1 801	2 394	3 305	4 391	5 663	7 692	9 920	13 183	17 517	23 377	24 945	33 147	42 746	56 194	74 604	99 648
	750	P_1	3.65	6.25	10.7	14.1	19.4	25.8	33.3	44.3	57.1	75.0	99.7	133	142	189	243	320	425	567
		T_2	643	1 108	1 920	2 553	3 524	4 735	6 106	8 114	10 464	14 062	18 685	24 935	26 608	35 357	45 595	59 940	79 650	106 292
	500	P_1	2.62	4.84	8.29	10.9	15.0	20.0	25.8	34.3	44.2	58.1	77.2	103	110	146	188	248	329	439
		T_2	725	1 250	2 154	2 865	3 954	5 316	6 855	9 214	11 881	15 797	20 991	28 013	29 892	39 721	52 223	67 338	89 480	119 410
18	1500	P_1	4.59	7.86	13.5	17.7	24.4	32.5	41.9	55.7	71.8	94.4	125	167	179	237	306	402		
		T_2	460	793	1 359	1 817	2 508	3 351	4 321	5 742	7 405	9 951	13 223	17 646	18 829	25 021	32 266	42 417		
	1000	P_1	3.92	6.72	11.5	15.1	20.9	27.8	35.8	47.6	61.4	80.7	107	143	153	203	262	344	457	610
		T_2	587	1 017	1 742	2 316	3 197	4 296	5 540	7 362	9 493	12 757	16 952	22 623	24 140	32 078	41 367	54 381	72 263	96 434
	750	P_1	3.29	5.65	9.67	12.7	17.6	23.3	30.1	40.0	51.5	67.8	90.0	120	128	170	220	289	384	512
		T_2	646	1 113	1 929	2 565	3 540	4 785	6 170	8 246	10 633	13 978	18 574	24 787	26 743	35 537	45 827	60 245	80 055	106 832
	500	P_1	2.51	4.30	7.37	9.69	13.4	17.8	22.9	30.5	39.3	51.6	68.6	91.6	97.7	130	167	220	292	390
		T_2	716	1 235	2 128	2 831	3 908	5 254	6 776	9 109	11 746	15 620	20 756	27 698	29 556	39 275	50 647	66 582	88 475	118 068
20	1500	P_1	4.20	7.19	12.3	16.2	22.4	29.7	38.3	50.9	65.7	86.3	115	153	163	217	280	368		
		T_2	462	797	1 365	1 815	2 505	3 386	4 367	5 835	7 524	9 882	13 144	17 541	18 925	25 148	32 431	42 634		
	1000	P_1	3.61	6.18	10.6	13.9	19.2	25.5	32.9	43.8	56.5	74.2	98.6	132	140	187	241	316	420	561
		T_2	593	1 021	1 761	2 341	3 231	4 367	5 632	7 525	9 704	12 757	16 952	22 623	24 408	32 434	41 826	54 985	73 066	97 505
	750	P_1	2.98	5.11	8.75	11.5	15.9	21.1	27.2	36.2	46.6	61.3	81.5	109	116	154	199	261	347	463
		T_2	641	1 106	1 917	2 549	3 519	4 783	6 168	8 243	10 629	14 052	18 672	24 918	26 598	35 332	45 563	59 898	79 594	106 217
	500	P_1	2.31	3.97	6.79	8.93	12.3	16.4	21.1	28.1	36.2	47.6	63.2	84.4	90.1	120	154	203	270	360
		T_2	725	1 250	2 154	2 866	3 956	5 320	6 860	9 223	11 894	15 817	21 018	28 049	29 930	39 772	51 289	67 425	89 596	119 561

续表 9　Table 9

公称传动比 Norminal transmission ratio i	输入转速 Input rotate speed n1 r/min	功率转矩 Pow torque	中心距 mm Centre distance																
			80	100	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710
			额定输入功率 Nominal input power P_1，kW ／额定输出转矩 Nominal output torgue T_2 N・m																
22.4	1500	P_1	3.84	6.59	11.3	14.8	20.5	27.2	35.1	46.6	60.1	79.1	105	140	150	199	256	337		
		T_2	496	808	1 384	1 841	2 541	3 435	4 429	5 919	7 633	10 147	13 483	17 993	19 200	25 514	32 902	43 253		
	1000	P_1	3.29	5.65	9.67	12.7	17.6	23.3	30.1	40.0	51.5	67.8	90.0	120	128	170	220	289	384	512
		T_2	599	1 039	1 780	2 367	3 267	4 416	5 695	7 610	9 813	13 046	17 336	23 134	24 686	32 803	42 302	55 611	73 897	98 614
	750	P_1	2.75	4.70	8.06	10.6	14.6	19.4	25.1	33.3	43.0	56.5	75.0	100	107	142	183	241	320	427
		T_2	654	1 134	1 943	2 584	3 567	4 851	6 256	8 360	10 781	14 334	19 048	25 419	27 124	36 043	46 480	61 103	81 195	108 353
	500	P_1	2.12	3.63	6.22	8.18	11.3	15.0	19.3	25.7	33.1	43.6	57.9	77.2	82.4	110	141	186	247	329
		T_2	729	1 258	2 155	2 868	3 959	5 325	6 867	9 234	11 908	15 935	21 174	28 257	30 857	41 004	52 878	69 513	92 371	123 268
25	1500	P_1	3.45	5.91	10.1	13.3	18.4	24.4	31.5	41.9	54.0	71.0	94.3	126	134	178	230	303		
		T_2	467	810	1 387	1 845	2 546	3 423	4 414	5 898	7 606	10 056	13 363	17 832	19 028	25 285	32 607	42 866		
	1000	P_1	2.94	5.04	8.64	11.4	15.7	20.8	26.9	35.7	46.0	60.5	80.4	107	114	152	196	258	343	457
		T_2	590	1 023	1 773	2 358	3 255	4 376	5 643	7 541	9 724	12 856	17 083	22 797	24 326	32 325	41 685	54 800	72 819	97 176
	750	P_1	2.51	4.30	7.37	9.69	13.4	17.8	22.9	30.5	39.3	51.6	68.6	91.6	97.7	130	167	220	292	390
		T_2	663	1 143	1 971	2 622	3 619	4 865	6 274	8 434	10 876	14 463	19 218	25 646	27 367	36 365	46 896	61 650	81 921	109 323
	500	P_1	1.88	3.23	5.53	7.27	10.0	13.3	17.2	22.8	29.5	38.7	51.5	68.7	73.3	97.4	126	165	219	293
		T_2	710	1 225	2 112	2 811	3 880	5 187	6 689	9 052	14 091	15 716	20 883	27 869	29 738	39 516	50 959	66 991	89 019	118 795
28	1500	P_1	3.10	5.31	9.10	12.0	16.5	21.9	28.3	37.6	48.7	63.7	84.7	113	121	160	207	272		
		T_2	453	786	1 354	1 791	2 472	3 324	4 287	5 763	7 432	9 940	13 209	17 627	18 810	24 995	32 232	42 373		
	1000	P_1	2.71	4.64	7.95	10.4	14.4	19.2	24.7	32.8	42.3	55.7	74.0	98.7	105	140	180	237	315	421
		T_2	593	1 023	1 764	2 346	3 239	4 355	5 616	7 550	9 737	13 023	17 306	23 094	24 643	32 746	42 229	55 514	73 768	98 443
	750	P_1	2.27	3.90	6.68	8.78	12.1	16.1	20.8	27.6	35.6	46.8	62.2	83.0	88.5	118	152	199	265	354
		T_2	657	1 133	1 953	2 589	3 587	4 823	6 220	8 364	10 786	14 346	19 063	25 439	27 146	36 072	46 517	61 152	81 260	108 441
	500	P_1	1.80	3.09	5.30	6.96	9.61	12.8	16.5	21.9	28.2	37.1	49.3	65.8	70.2	93.3	120	158	210	280
		T_2	743	1 281	2 196	2 905	4 010	5 397	6 959	9 365	12 077	16 174	21 492	28 681	30 604	40 668	52 444	68 943	91 613	122 257

续表 9　Table 9

公称传动比 Norminal transmission ratio i	输入转速 Input rotate speed n1 r/min	功率转矩 Pow torque	中心距 mm Centre distance																
			80	100	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710
			额定输入功率 Nominal input power P_1，kW ／额定输出转矩 Nominal output torgue T_2 N・m																
31.5	1500	P_1	2.78	4.77	8.18	10.7	14.8	19.7	25.4	33.8	43.6	57.3	76.1	102	108	144	186	244		
		T_2	447	770	1 328	1 768	2 440	3 282	4 232	5 691	7 339	9 763	12 974	17 313	18 475	24 550	31 658	41 618		
	1000	P_1	2.43	4.17	7.14	9.39	13.0	17.2	22.2	29.5	38.0	50.0	66.5	88.7	94.6	126	162	213	283	378
		T_2	585	1 009	1 740	2 315	3 196	4 299	5 543	7 455	9 614	12 789	16 994	22 678	24 199	32 156	41 468	54 514	72 440	96 670
	750	P_1	1.80	3.09	5.30	6.96	9.61	12.8	16.5	21.9	28.2	37.1	49.3	65.8	70.2	93.3	120	158	210	280
		T_2	572	986	1 700	2 263	3 123	4 201	5 418	7 287	9 397	12 502	16 613	22 170	23 657	31 436	40 539	53 293	70 818	94 505
	500	P_1	1.57	2.69	4.61	6.06	8.36	11.1	14.3	19.0	24.5	32.3	42.9	57.2	61.1	81.1	105	138	183	244
		T_2	708	1 221	2 106	2 787	3 847	5 146	6 636	8 932	11 519	15 337	20 380	27 196	29 021	38 563	49 730	65 376	86 873	115 930
35.5	1500	P_1	2.43	4.17	7.14	9.39	13.0	17.2	22.2	29.5	38.0	50.0	66.5	88.7	94.6	126	162	213		
		T_2	431	744	1 283	1 697	2 343	3 152	4 065	5 468	7 051	9 439	12 543	16 738	17 861	23 734	30 606	40 235		
	1000	P_1	2.20	3.76	6.45	8.48	11.7	15.6	20.0	26.6	34.4	45.2	60.0	80.1	85.5	114	146	193	256	341
		T_2	584	1 008	1 738	2 299	3 174	4 270	5 507	7 408	9 553	12 788	16 993	22 677	24 198	32 155	41 466	54 512	72 437	96 666
	750	P_1	1.88	3.23	5.53	7.27	10.0	13.3	17.2	22.8	29.5	38.7	51.5	68.7	73.3	97.4	126	165	219	293
		T_2	655	1 130	1 949	2 595	3 582	4 820	6 216	8 363	10 784	14 352	19 072	25 451	27 158	36 089	46 539	61 180	81 298	108 490
	500	P_1	1.49	2.55	4.38	5.75	7.94	10.6	13.6	18.1	23.3	30.6	40.7	54.4	58.0	77.1	99.4	131	174	232
		T_2	738	1 273	2 196	2 906	4 011	5 402	6 966	9 318	12 016	16 108	21 405	28 565	30 481	40 503	52 232	68 665	91 243	121 762
40	1500	P_1	2.27	3.90	6.68	8.78	12.1	16.1	20.8	27.6	35.6	46.8	62.2	83.0	88.5	118	152	199	265	
		T_2	440	759	1 310	1 744	2 408	3 240	4 178	5 623	7 251	9 651	12 825	17 115	18 263	24 268	31 295	41 141	54 669	
	1000	P_1	1.88	3.23	5.53	7.27	10.0	13.3	17.2	22.8	29.5	38.7	51.5	68.7	73.3	97.4	126	165	219	293
		T_2	547	943	1 626	2 165	2 989	4 022	5 187	6 980	9 001	11 981	15 920	21 246	22 671	30 125	38 849	51 071	67 864	90 564
	750	P_1	1.65	2.82	4.84	6.36	8.78	11.7	15.0	20.0	25.8	33.9	45.0	60.1	64.1	85.2	110	144	192	256
		T_2	629	1 085	1 872	2 494	3 442	4 633	5 975	8 041	10 370	13 805	18 345	24 481	26 123	34 712	44 764	58 847	78 198	104 354
	500	P_1	1.22	2.08	3.57	4.69	6.48	8.61	11.1	14.8	19.0	25.0	33.2	44.3	47.3	62.9	81.1	107	142	189
		T_2	659	1 138	1 964	2 617	3 613	4 867	6 276	8 452	10 900	14 520	19 295	25 748	27 475	36 510	47 082	61 895	82 247	109 758

续表 9　Table 9

公称传动比 Norminal transmission ratio i	输入转速 Input rotate speed n1 r/min	功率转矩 Pow torque	中心距 mm Centre distance																
			80	100	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710
			额定输入功率 Nominal input power P_1，kW ／ 额定输出转矩 Nominal output torgue T_2 N・m																
45	1500	P_1	2.04	3.49	5.99	7.87	10.9	14.4	18.6	24.7	31.9	41.9	55.7	74.4	79.4	105	136	179	238	
		T_2	435	751	1 304	1 737	2 397	3 227	4 161	5 600	7 222	9 614	12 776	17 049	18 193	24 175	31 175	40 983	54 459	
	1000	P_1	1.76	3.02	5.18	6.81	9.40	12.5	16.1	21.4	27.6	36.3	48.2	64.4	68.7	91.3	118	155	206	274
		T_2	565	975	1 693	2 293	3 112	4 189	5 401	7 270	9 375	12 480	16 584	22 131	23 615	31 381	40 468	53 199	70 692	94 338
	750	P_1	1.57	2.69	4.61	6.06	8.36	11.1	14.3	19.0	24.5	32.3	42.9	57.2	61.1	81.1	105	138	183	244
		T_2	661	1 140	1 966	2 602	3 592	4 837	6 238	8 343	10 759	14 237	18 918	25 246	26 939	35 797	46 163	60 686	80 641	107 615
	500	P_1	1.29	2.22	3.80	5.00	6.90	9.16	11.8	15.7	20.2	26.6	35.4	47.2	50.4	66.9	86.3	113	151	201
		T_2	773	1 334	2 303	3 069	4 238	5 712	7 364	9 852	12 705	17 046	22 651	30 227	32 255	42 861	55 272	72 661	96 554	128 849
50	1500	P_1	1.84	3.16	5.41	7.12	9.82	13.1	16.8	22.4	28.8	37.9	50.4	87.2	71.7	95.3	123	162	215	
		T_2	428	744	1 275	1 699	2 345	3 157	4 072	5 482	7 069	9 414	12 510	16 694	17 814	23 671	30 525	40 129	53 324	
	1000	P_1	1.61	2.76	4.72	6.21	8.57	11.4	14.7	19.5	25.2	33.1	43.9	58.6	62.6	83.2	107	141	187	250
		T_2	560	974	1 668	2 223	3 068	4 132	5 328	7 173	9 250	12 318	16 369	21 844	23 309	30 974	39 943	52 509	69 776	93 115
	750	P_1	1.33	2.28	3.92	5.15	7.10	9.44	12.2	16.2	20.9	27.4	36.4	48.6	51.9	69.0	88.9	117	155	207
		T_2	611	1 055	1 820	2 425	3 347	4 508	5 814	7 828	10 095	13 446	17 867	23 843	25 442	33 808	43 598	57 315	76 161	101 636
	500	P_1	1.02	1.74	2.99	3.94	5.43	7.22	9.31	12.4	16.0	21.0	27.9	37.2	39.7	52.7	68.0	89.4	119	159
		T_2	662	1 143	1 973	2 631	3 632	4 895	6 313	8 507	10 970	14 622	19 430	25 929	27 668	36 766	47 412	62 328	82 823	110 526
	1500	P_1	1.69	2.89	4.95	6.51	8.99	11.9	15.4	20.5	26.4	34.7	46.1	61.5	65.6	87.2	112	148	196	
		T_2	430	747	1 280	1 706	2 355	3 172	4 090	5 471	7 150	9 523	12 654	16 887	18 019	23 944	30 878	40 592	53 940	
	1000	P_1	1.45	2.49	4.26	5.60	7.73	10.3	13.2	17.6	22.7	29.8	39.7	52.9	56.5	75.0	96.8	127	169	226
		T_2	555	964	1 652	2 202	3 039	4 094	5 279	7 062	9 228	12 291	16 332	21 795	23 257	30 905	39 854	52 393	69 620	92 907
56	750	P_1	1.33	2.28	3.92	5.14	7.10	9.44	12.2	16.2	20.9	27.4	36.4	48.6	51.9	69.0	88.9	117	155	207
		T_2	670	1 157	1 996	2 661	3 673	4 948	6 381	8 595	11 083	14 766	19 621	24 184	27 940	37 128	47 879	62 942	83 639	111 615
	500	P_1	1.10	1.88	3.22	4.24	5.85	7.78	10.0	13.3	17.2	22.6	30.0	40.1	42.7	56.8	73.2	96.3	128	171
		T_2	787	1 359	2 345	3 106	4 287	5 780	7 453	10 118	13 048	17 274	22 954	30 631	32 686	43 434	56 011	73 633	97 845	130 572

续表 9　Table 9

公称传动比 Norminal transmission ratio i	输入转速 Input rotate speed n1 r/min	功率转矩 Pow torque	中心距 mm Centre distance																
			80	100	125	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710
			额定输入功率 Nominal input power P_1，kW ／额定输出转矩 Nominal output torgue T_2 N・m																
63	1500	P_1	1.49	2.55	4.38	5.75	7.94	10.6	13.6	18.1	23.3	30.7	40.7	54.4	58.0	77.1	99.4	131	174	
		T_2	418	727	1 246	1 661	2 293	3 090	3 984	5 367	6 921	9 221	12 254	16 352	17 449	23 187	29 901	39 308	52 234	
	1000	P_1	1.33	2.28	3.92	5.15	7.10	9.44	12.2	16.2	20.9	27.4	36.4	48.6	51.9	69.0	88.9	117	155	207
		T_2	562	976	1 673	2 230	3 078	4 147	5 347	7 203	9 289	12 376	16 446	21 946	23 419	31 119	40 130	52 756	70 103	93 551
	750	P_1	1.22	2.08	3.57	4.69	6.48	8.61	11.1	14.8	19.0	25.0	33.2	44.3	47.3	62.9	81.1	107	142	189
		T_2	673	1 162	2 005	2 673	3 690	4 972	6 412	8 638	11 279	14 845	19 726	26 324	28 090	37 327	48 135	63 279	84 087	112 213
	500	P_1	0.82	1.41	2.42	3.18	4.39	5.83	7.52	9.99	12.9	16.9	22.5	30.0	32.1	42.6	54.9	72.2	96.0	128
		T_2	644	1 112	1 921	2 563	3 538	4 771	6 153	8 297	10 699	14 269	18 961	25 303	27 000	35 879	46 268	60 824	80 825	107 859

2、减速器输出轴轴端许用径向力 F_r 见图 6 和表 10。

2. Allowed radial load Fr in extended output shaft end of reducer see drawing 6 and table 10.

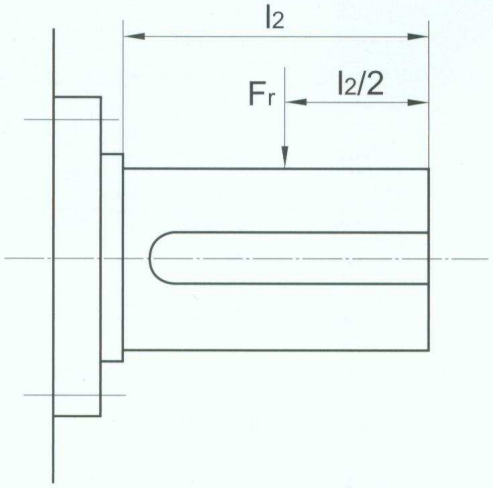


图 6 Drawing 6

表 10 Table 10

中心距 mm Centre distance	80	100	125	140	160	180	200	225	250
许用径向力 N Allowed radial load	2 250	3 500	5 000	6 500	9 000	11 000	14 000	17 000	21 700
中心距 mm Centre distance	280	315	355	400	450	500	560	630	710
许用径向力 N Allowed radial load	27 000	31 000	35 000	40 000	43 000	46 000	49 000	52 000	56 000

3、减速器的传动效率 η 见表 11。 Reducer transmission efficiency η see table 11.

表 11 Table 11

公称传动比 Nominal transmission ratio i	输入转速 Input rotate spped n1 r/min	中心距 mm Centre distance									
		80	100	125	140	160	180	200	225	250	280～710
		传动效率η Transmission efficiency η, %									
10	1500	90	91	91	92	92	93	93	94	94	95
	1000	90	91	91	92	92	93	93	94	94	95
	750	89	89.5	90	91	91	92	92	93	93	94
	500	87	87.5	88	89	89	90	90	91	91	92
12.5	1500	89	90	90	91	91	92.5	92.5	93.5	93.5	94.5
	1000	89	90	90	91	91	92.5	92.5	93.5	93.5	94.5
	750	88	88.5	89	90	90	91.5	91.5	92	92	93
	500	86	86.5	87	88	88	89	89	90	90	91
14	1500	88.5	89.5	89.5	91	91	92	92	93	93	94
	1000	88.5	89.5	89.5	91	91	92	92	93	93	94
	750	87	88	88.5	89.5	89.5	91	91	91.5	91.5	92.5
	500	85	86	86.5	87.5	87.5	88	88	89	89	90

续表 11 Table 11

公称传动比 Nominal transmission ratio i	输入转速 Input rotate spped n1 r/min	中心距 mm Centre distance									
		80	100	125	140	160	180	200	225	250	280～710
		传动效率η Transmission efficiency η，%									
16	1500	88	89	89	90	90	91	91	92	92	93
	1000	88	89	89	90	90	91	91	92	92	93
	750	86.5	87	88	89	89	90	90	91	91	92
	500	84	84.5	85	86	86	87	87	88	88	89
18	1500	87.5	88	88	89.5	89.5	90	90	91	91	92
	1000	87	88	88	89	89	90	90	91	91	92
	750	85.5	86	87	88	88	89.5	89.5	90	90	91
	500	83	83.5	84	85	85	86	86	87	87	88
20	1500	86.5	87	87	88	88	89.5	89.5	90	90	91
	1000	86	86.5	87	88	88	89.5	89.5	90	90	91
	750	84.5	85	86	87	87	89	89	89.5	89.5	90
	500	82	82.5	83	84	84	85	85	86	86	87
22.4	1500	85.5	86	86	87	87	88.5	88.5	89	89	90
	1000	85	86	86	87	87	88.5	88.5	89	89	90
	750	83.5	84.5	84.5	85.5	85.5	87.5	87.5	88	88	89
	500	80.5	81	81	82	82	83	83	84	84	85.5
25	1500	85	86	86	87	87	88	88	88.5	88.5	89
	1000	84	85	86	87	87	88	88	88.5	88.5	89
	750	83	83.5	84	85	85	86	86	87	87	88
	500	79	79.5	80	81	81	81.5	81.5	83	84	85
28	1500	82.5	83	83.5	84	84	85	85	86	86	87.5
	1000	82	82.5	83	84	84	85	85	86	86	87.5
	750	81	81.5	82	83	83	84	84	85	85	86
	500	77	77.5	77.5	78	78	79	79	80	80	81.5
31.5	1500	80	80.5	81	82	82	83	83	84	84	85
	1000	80	80.5	81	82	82	83	83	84	84	85
	750	79	79.5	80	81	81	82	82	83	83	84
	500	75	75.5	76	76.5	76.5	77	77	78	78	79
35.5	1500	78.5	79	79.5	80	80	81	81	82	82	83.5
	1000	78.5	79	79.5	80	80	81	81	82	82	83.5
	750	77	77.5	78	79	79	80	80	81	81	82
	500	73	73.5	74	74.5	74.5	75.5	75.5	76	76	77.5

续表 11

公称传动比 Nominal transmission ratio i	输入转速 Input rotate spped n1 r/min	中心距 mm Centre distance									
		80	100	125	140	160	180	200	225	250	280～710
		传动效率η Transmission efficiency η，%									
40	1500	76	76.5	77	78	78	79	79	80	80	81
	1000	76	76.5	77	78	78	79	79	80	80	81
	750	75	75.5	76	77	77	78	78	79	79	80
	500	71	71.5	72	73	73	74	74	75	75	76
45	1500	74.5	75	76	77	77	78	78	79	79	80
	1000	74.5	75	76	77	77	78	78	79	79	80
	750	73.5	74	74.5	75	75	76	76	76.5	76.5	77
	500	69.5	70	70.5	71.5	71.5	72.5	72.5	73	73	74.5
50	1500	73	74	74	75	75	76	76	77	77	78
	1000	73	74	74	75	75	76	76	77	77	78
	750	72	72.5	73	74	74	75	75	76	76	77
	500	68	68.5	69	70	70	71	71	72	72	73
56	1500	71.5	72.5	72.5	73.5	73.5	74.5	74.5	75	76	77
	1000	71.5	72.5	72.5	73.5	73.5	74.5	74.5	75	76	77
	750	70.5	71	71.5	72.5	72.5	73.5	73.5	74.5	74.5	75.5
	500	67	67.5	68	68.5	68.5	69.5	69.5	71	71	71.5
63	1500	70	71	71	72	72	73	73	74	74	75
	1000	70	71	71	72	72	73	73	74	74	75
	750	69	69.5	70	71	71	72	72	73	73	74
	500	65	65.5	66	67	67	68	68	69	69	70

减速器的选用方法 Reducer selection method

（参考件）

A1、减速器的选用条件 Selection condition

选用减速器应知原动机、工作机类型及载荷性质，每日平均运转时间，启动频率和环境温度。

Prime mover type, working machine type and load character, operating duration per day, Start frequency and ambient temperature should be show for selecting reducer.

A2、减速器的选用方法 Selection method

A2.1 表9中的额定输入功率 P_1 及额定输出转矩 T_2 适用于减速器工作载荷平稳，每日工作8h，每小时启动次数不大于10次，启动转矩为额定转矩的2.5倍，小时负荷率Jc=100%，环境温度为20℃。

其他工作状态的减速器的额定输入功率 P_1 及额定输出转矩 T_2 可按表9选取，用工作状况系数（见表A1～表A5）进行修正。

A2.2 计算输入功率 P_1 或计算输出转矩 T_2

机械功率 $P_1 \geqslant P_{1W}K_AK_1K_5$

或 $T_2 \geqslant T_{2W}K_AK_1K_5$

热 功 率 $P_1 \geqslant P_{1W}K_2K_3K_4$

或 $T_2 \geqslant T_{2W}K_2K_3K_4$

式中：P_{1W}——减速器实际输入功率，kW；

T_{2W}——减速器实际输出转矩，N·m；

K_A——使用系数，见表A1；

K_1——启动频率系数，见表A2；

K_2——小时负荷率系数，见表A3；

K_3——环境温度系数，见表A4；

K_4——冷却方式系数，见表A5。

K_5——减速器安全系数，见表A6。

A2.3 在下列间歇工作中可不校验输入热功率

a. 在1h内多次起动并且运转时间总和不超过20min的场合。

b. 在一个工作周期内运转时间不超过40min并且间隔2h以上起动一次的场合。

A2.4 实际输入功率超过许用输入热功率，则须采用强制冷却措旋或选用更大规格的减速器。

A2.1 Nominal input power P_1 and nominal output torque T_2 in table 9 is used for below. uniform load, operating 8hours per day, start times per hour is less than 10, start torque is 2.5 times of nominal torque, duty ratio per hour Jc=100%, ambient temperature is 20 ℃.

Nominal input power P_1 and nominal output torque T_2 of reducer in other working condition can be selected from table 9. conforming with service factor (see table A1-A5).

A2.2 calculated input power P1 or calculated output torque T_2

mechanical power $P_1 \geqslant P_{1W}K_AK_1K_5$

or $T_2 \geqslant T_{2W}K_AK_1K_5$

thermal power $P_1 \geqslant P_{1W}K_2K_3K_4$

or $T_2 \geqslant T_{2W}K_2K_3K_4$

where, P_{1W} —— actual input power of reducer ,kW;

T_{2W} —— actual input torque of reducer ,Nm;

K_A —— service factor, see table A1;

K_1 —— start frequency factor, see table A2;

K_2 —— factor of duty ratio per hour, see table A3;

K_3 —— ambient temperature factor, see table A4;

K_4 —— heat radiating factor ,see table A5;

K_5 —— Safety factor ,see table A6;

A2.3 In below intermittent working , input thermal power should not be checked.

a. If condition of the reducer frequently starts up within on hour, operating duration is less than 20 minutes.

b. Operating duration is less than 40 minutes and frequently starts up again after stopped for more than 2hours.

A2.4 if actual input power is more than allowed input power ,cooling method or select much big mode reducer should be use.

表 A1 Table A1

原动机 Prime mover	载荷性质（工作机特性）Load characterstics	每日工作时间 h Operating duration perday				
		≤0.5	>0.5~1	>1~2	>2~10	>10
		K_A				
电动机，汽轮机燃气轮机（起动转矩小，偶尔作用）Electric motor, steam turbine	均匀 Uniform load	0.6	0.7	0.9	1	1.2
	轻度冲击 Light shock load	0.8	0.9	1.0	1.2	1.3
	中等冲击 Moderate shock load	0.9	1.0	1.2	1.3	1.5
	强烈冲击 Heavy shock load	1.1	1.2	1.3	1.5	1.75
汽轮机、燃气轮机、液动机或电动机(起动转矩大，经常作用)	均匀 Uniform load	0.7	0.8	1	1.1	1.3
	轻度冲击 Light shock load	0.9	1	1.1	1.3	1.4
	中等冲击 Moderate shock load	1	1.1	1.3	1.4	1.6
	强烈冲击 Heavy shock load	1.1	1.3	1.4	1.6	1.9
多缸内燃机 Many crockes gas engine	均匀 Uniform load	0.8	0.9	1.1	1.3	1.4
	轻度冲击 Light shock load	1.0	1.1	1.3	1.4	1.5
	中等冲击 Moderate shock load	1.1	1.3	1.4	1.5	1.8
	强烈冲击 Heavy shock load	1.3	1.4	1.5	1.8	2
单缸内燃机 Single crock gas engine	均匀 Uniform load	0.9	1.1	1.3	1.4	1.6
	轻度冲击 Light shock load	1.1	1.3	1.4	1.6	1.8
	中等冲击 Moderate shock load	1.3	1.4	1.6	1.8	2
	强烈冲击 Heavy shock load	1.4	1.6	1.8	2	2.3或更大

注：工作机工作情况举例

Note: Operating condition example of working machine

均匀载荷：发电机、均匀装料的带式或板式输送机，螺旋输送机，轻型卷扬机，包装机械，机床进给装置，通风机，轻型离心机，离心泵，稀液料和密度均匀物料搅拌机和混合机，按最大剪切力矩设计和冲压机。
轻度冲击：不均匀装料的带式或板式输送机，机床主传动装置，重型卷扬机，起重机旋转机构，工矿通风机，重型离心机，离心泵，粘性液料及密度不均匀物料搅拌机和混合机，多缸缸柱塞泵，给料泵，挤压机，压延机，回转窑，锌、铝带材、线材、型材轧机。
中等冲击：橡胶挤压机，经常起动的橡胶和塑料混合机，轻型球磨机，木材加工机械，钢坯初轧机，单缸活塞泵。
强烈冲击：铲斗链传动，筛传动装置，单斗挖土机，重型球磨机，橡胶混炼机，冶金机械，重型给料泵，旋转式钻探设备，压砖机，除鳞机，冷轧机，压块机。

Uniform load
Electrical machine, belt or apron transporter by uniformly load, screw transporter, light winch, pack machine, machine tool mobile unit, flow fan, light centrifugal machine and pump, washiness and symmetrical goods agitators and mixer.
Light shock load
Belt or apron transporter by uniformly load, machine tool prime drive unit, heavy winch, rotary unit of cranes, industrial & mine flow fan, heavy centrifugal machine and pump, viscous luquid and not symmetrical goods agitators and mixer. Multicylinder reciprocating, extruder, flattener, rotary kiln, metal mill.
Moderate shock load
Rubber extruder, start continually rubber and plastics mixes, light ball mills, timber working machines, binet rolling mills, single urn piston pumps.
Heavy shock load
Cutter heads chain transfers, screen driving gear, heavy ball mills, rubber refiners, metallurgy machine, heavy feeder pumps, screw drill to explore the equipments, brick presses, descaling machines, cold rolling mills, presses.

表 A2 Table A2

每小时启动次数 Start times per hour	≤10	>10～60	>60～400
启动频率系数 Start frequercy factor K_1	1	1.1	1.2

表 A3 Table A3

小时负荷率 Duty ratio perhour J_C %	100	80	60	40	20
小时负荷率系数 Factor of duty ratio perhour K_2	1	0.95	0.88	0.77	0.6

注：1) $Jc=\frac{1h\text{内负荷作用时间(min)}}{60}\times 100\%$
2) Jc < 20% 时按 Jc=20% 计

Note：1) $Jc=\frac{\text{Time of load in 1 hour (min)}}{60}\times 100\%$
2) If Jc < 20%, make Jc=20%

表 A4 Table A4

环境温度°C Ambient temperature	0～10	>10～20	>20～30	>30～40	>40～50
环境温度系数 Ambient temperature factor K_3	0.89	1	1.14	1.33	1.6

表 A5 Table A5

冷却方式 Cooling method	减速器中心距 Centre distance a mm	蜗杆转速 Worm rotate speed n_1 r/min			
		1 500	1 000	750	500
		冷却方式系数 Cooling method factor K_4			
自然冷却（无风扇）Cooling without fan	80	1	1	1	1
	100～225	1.37	1.59	1.59	1.33
	250～710	1.51	1.85	1.89	1.78
风扇冷却 Cooling with fan	80～710	1			

表 A6 Table A6

减速器安全系数			K5	Safety factor			K5
重要性与安全要求	一般设备，减速器失效仅引起单机停产且易更换备件	重要设备，减速器失效引起机组、生产线或全厂停产	高度安全要求减速器失效引起设备、人身事故	Importance and safety request	ordinary equipment, malfunction only cause accident of single-machine and easily replaced.	Important equipment, malfunction cause the accident of assembling production-line or whole factory	Safety request highly, malfunction cause the accident of equipmentunit, and personal injury.
K5	1.3~1.7	1.5~2.0	1.7~2.5	K5	1.3~1.7	1.5~2.0	1.7~2.5

A3、选用示例

例：某重型卷扬机用平面二次包络环面蜗杆减速器（带风扇），电动机功率 P_{1W}=15kW，减速器输入转速 n_1=1000r/min，传动比 i=40，每日工作 8h，每小时启动 15 次，每次工作 3min，环境温度 30℃。

选用计算：由表 A_1 查得 K_A=1.3，由表 A_2 查得 K_1=1.1，由 $Jc=\frac{3\times 15}{60}\times 100\%=75\%$，由表 A_3 得 K_2=0.93，由表 A_4 查得 K_3=1.14，由表 A_5 查得 K_4=1，由表 A_6 查得 K_5=1.3,计算输入功率：

机械功率 $P_1 \geqslant P_{1W}K_AK_1K_5$

$= 15 \times 1.3 \times 1.1 \times 1.3 = 27.885kW$

热 功 率 $P_1 \geqslant P_{1W}K_2K_3K_4$

$= 15 \times 0.93 \times 1.14 \times 1 = 15.9kW$

查表 9 选择减速器中心距 a=250mm，n_1=1000r/min，i=40，额定输入功率 P_1=29.5kW，可用。

Selection example

Special-purpose Planar double-enveloping worm gearing reducer with fan for heavy winch, motor power P_{1w}=15kW, input rotate speed n_1=1000r/min, transmission ratio i=40, operating 8hours per day, start 15 times per hour, operating 3 min per time, ambient temperature 30℃.

Selection calculated: look up table A1 to get K_A=1.3, look up table A_2 to get K_1=1.1, $JC=\frac{3\times 15}{60}$, from table A_3, K_2=0.93, from table A_4, K_3=1.14, from table A_5, K_4=1, calculating input power:

mechanical power $P_1 \geqslant P_{1W}K_AK_1K_5$

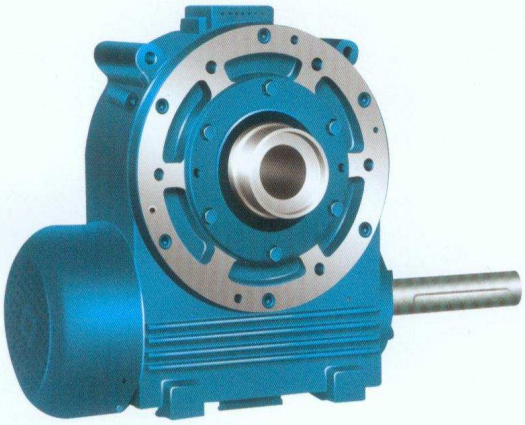
$= 15 \times 1.3 \times 1.1 \times 1.3 = 27.885kW$

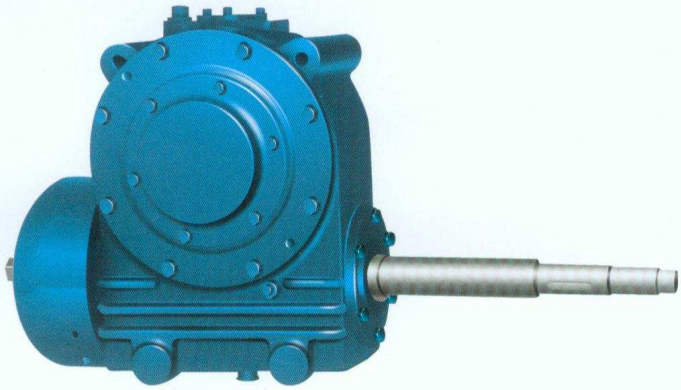
thermal power $P_1 \geqslant P_{1W}K_2K_3K_4$

$= 15 \times 0.93 \times 1.14 \times 1 = 15.9kW$

selecting reducer from table9, centre distance a=250mm, n_1=1000r/min, i=40, nominal input power P_1=29.5kW, it conforms with the requirements.

干粉压机专用减速器
Special-purpose reducers for dried powder press





用途

广泛应用于粉末冶金，陶瓷材料，磁性材料等制品的自动干压成型机构。

产品特点

工作可靠，压制力大，结构紧凑，外观精美，噪音低，效率高。

Application

They are widely used for the forming mechanism of dried powder automatic press in power metallurgy, ceramics and magnetic material, etc.

Features

It makes features of reliable work, large pressing force, compact dimensions, good looking and lower noise as well as higher efficiency, etc.

规格 Specification

型号 Type	中心距 mm Centre distance	传动比 Transmission ratio	输入功率 Input power kW	输入转速 Input speed r/min	传动效率 Transmission efficiency (%)	允许工作油温 Allowed working oil temperature (.C)
18TU125	125	10	3	750	92	10-100
10TU200	200	12	15	750	91	10-100

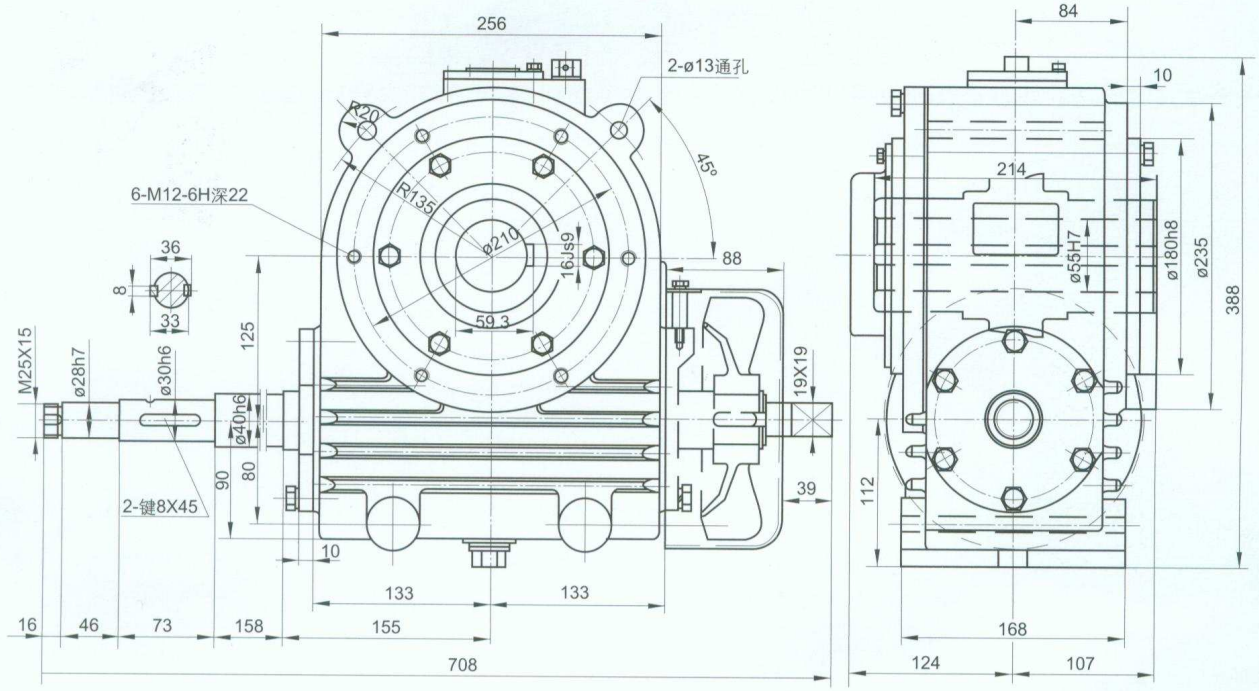
注意事项 Hints for users

1. 必须使用 N320 蜗轮油或 Mobil SHC 634 合成齿轮油。

2. 尺寸及规格如有变更，恕不另行通知。

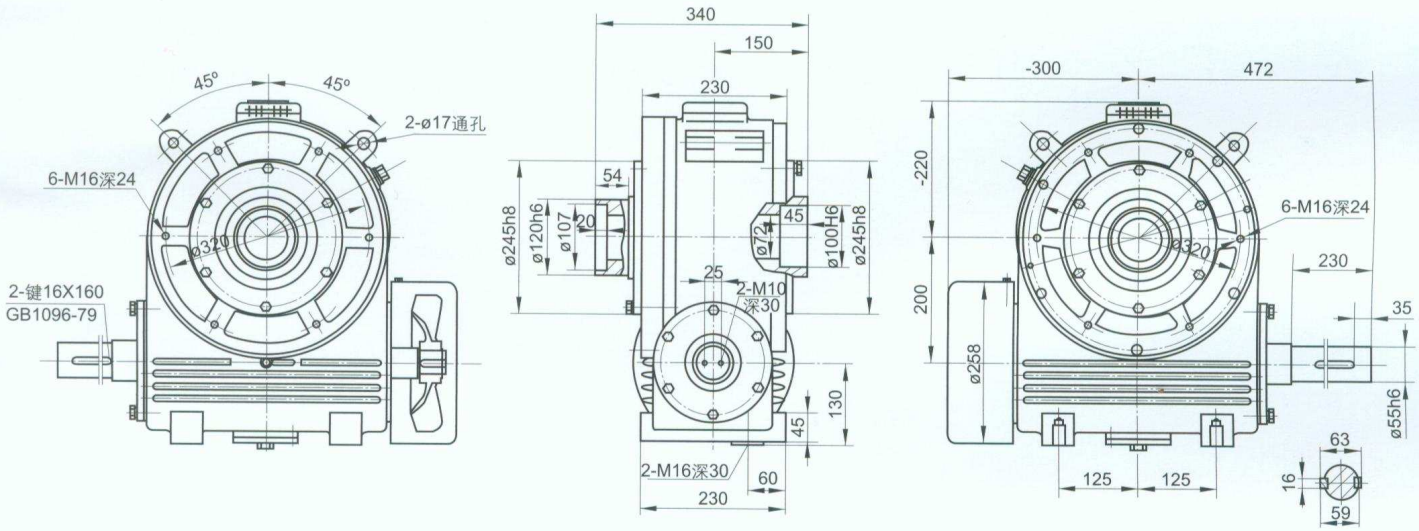
1. It is required to use N320 worm wheel oil or Mobil SHC 634 synthetic gear oil for lubricating the reducers.

2. The dimensions and specifications are subject to change without notice.



型号：18TU125

Model



型号：10TU200

Model

RD 系列连铸机用减速器

RD series special-purpose reducer for Continuous casting plant

本系列减速器是引进美国罗可普公司（ROKOPCO/U.S.A）专利技术而生产的冶金行业专用减速器，结构为齿轮传动与蜗杆传动复合而成，其承载能力大，结构紧凑、合理、体积小、广泛适用于冶金扎钢机组中拉矫机，引锭杆存放装置及振动装置。

This series of decelerators, professional in metallurgy, are produced by importing. patented technolotigy of ROKOPCO/U.S.A to be used especially in emtallnrgy. It has large loading capacity, complete and reasonable dimension and small volume, which can be widely used in pulling-strightening machines of metallurgy rolling mill, and vibration gride ingot-bar.

采用轴装式结构，易于同工作机械相联，箱体采用树脂砂铸造，结构紧凑，外形美观传动比可随用户要求而变：

Shaft assembly structure is used for easy connection with service mechanism; cabinet is cast with resin-bonded-sand to achieve compact structure and good appearance, drive ratio can be changed to meet customer's requirement.

型 号 Model	中心距 center distance (mm)	传动比 Ratio	输入功率 Input power (kW)	输入转速 Input speed (rpm)	传动效率 Transmission efficienty(%)	允许工作油温 Allowed working temperature(°C)	用途 Application
RD-11-7.5	125	7.5	11	1750	90	10-100	①*
RD-11-10	125	10	11	1750	90	10-100	①
RD-11-12.5	125	12.5	11	1750	89	10-100	①
RD-4-240	180	240	4	1500	63	10-100	②*
RD-5.5-200	200	200	5.5	1500	66	10-100	③*
RD-5.5-280	200	280	5.5	1500	60	10-100	③

* 1 振动装置 Vibration deviees
2 引锭杆存放装置 Storage devices for guidein got-bar
3 拉矫机 Pulling-straightening machines

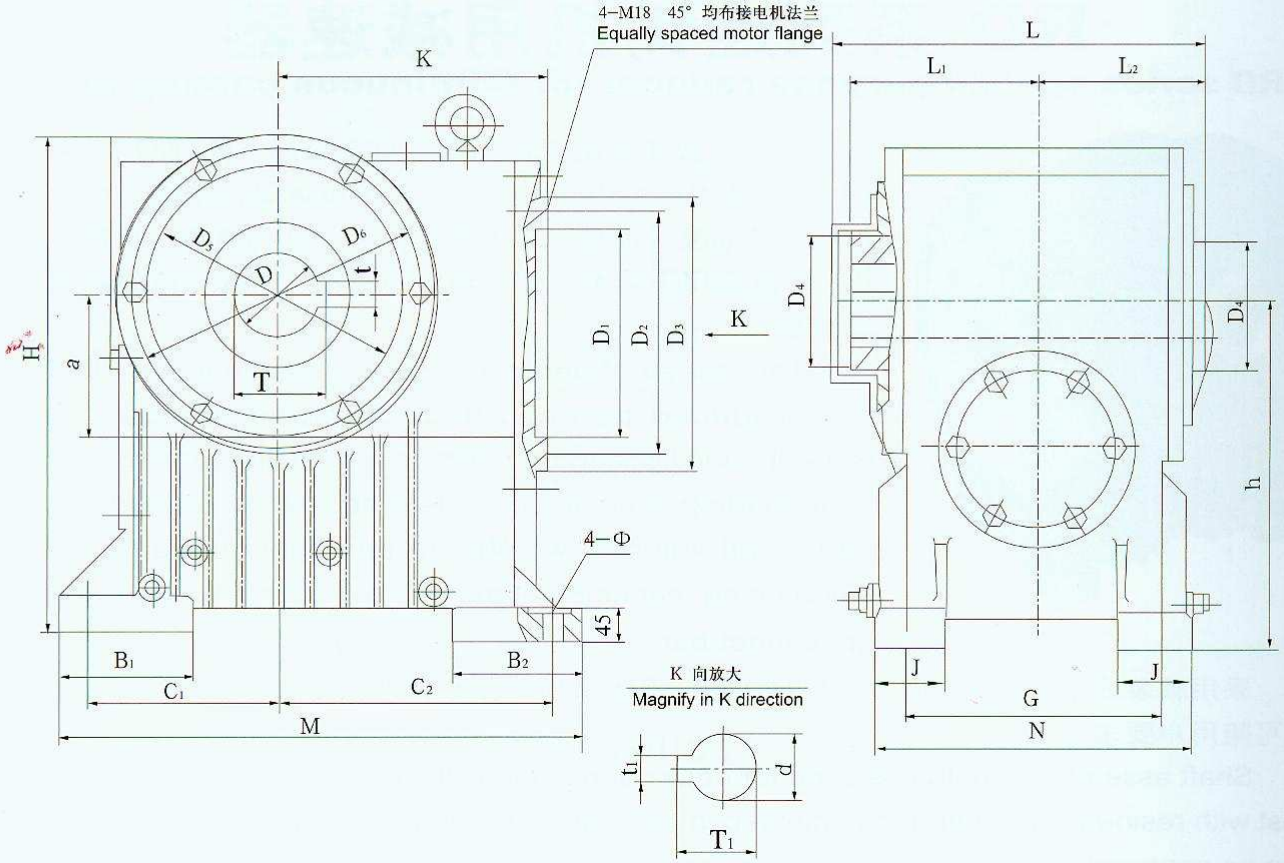
型号说明 Symbol explanation

RD — 5.5 — 200

- 200 — 总传动比 Total transmission ratio
- 5.5 — 输入功率 Input power
- RD — 减速器代号 Symbol for the reducer

注： 1.必须使用 N320 蜗轮油或 Mobil SHC634 合成齿轮油。
2.尺寸及规格如有变更，恕不另行通知。

Note: 1.It is required to use N320.worm gear oil or Mobil SHC 634 synthetic gear oil for lubricating the relucers.
2.The dimensions and specifications are subjected without notice.



RD 系列减速器外形及安装尺寸

Contour assembling dimension of RD series decelerator

尺寸Size / 型号Type	a	B1	B2	C1	C2	M	J	G	N	H	h	K	L	L1
RD-11 -7.5 -10 -12.5	125	115	190	175	255	480	68	230	280	495	300	243	340	150
RD-4-240	180	162	150	225	325	620	85	300	375	612.5	420	318	453	220
RD-5.5 -200 -280	200	80	80	145	305	500	80	340	390	636	440	373	484	210

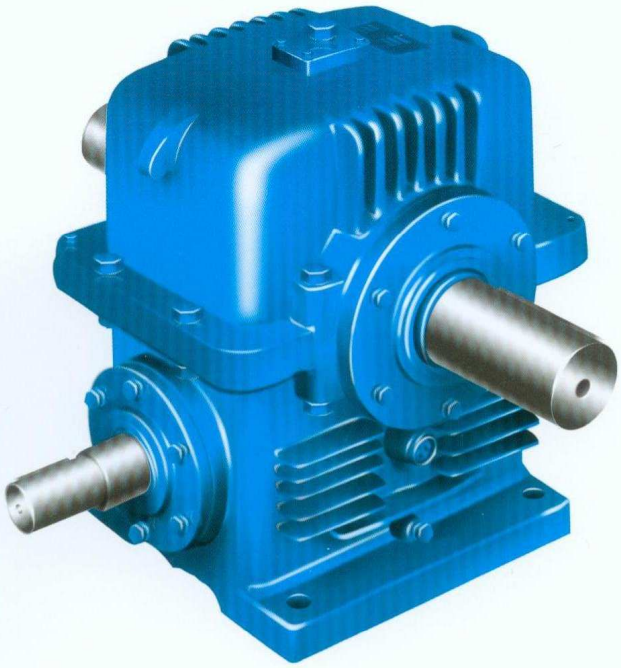
尺寸Size / 型号Type	L2	D1	D2	D3	D4	D5	D6	D	T	t	d	T1	t1	ø
RD-11 -7.5 -10 -12.5	150	ø280	ø315	/	ø125	/	/	ø90	95.4	25	ø32	35.3	10	ø20
RD-4-240	200	ø260	ø300	ø340	ø160	/	/	ø100	106.4	28	ø28	31.3	8	ø24
RD-5.5 -200 -280	210	ø280	ø315	ø355	ø160	ø315	370	ø100	106.4	28	ø32	35.3	10	ø20

注： RD-5.5-200 根据用户要求安装冷却水管.

Note: The cooning coils are assembied RD-5.5-200 on the request of customers.

本厂拥有对本说明书的解释权，若有疑问请与本厂技术部门联系。一般每年一版，选用时请以最新版本为准。

The manufacturer has the right to interpret this instruction book, and any questions may refer to our technical department. This instruction book is updated every year, so the latest edition should be identified for reference.



T A I L O N G

中国驰名商标
CHINA WELL-KNOWN
TRADEMARK

地址(ADD)：江苏省泰兴市大庆东路88号
NO.88,Daqing Rd.(E) Taixing City,jiangsu province
电话(TEL):0086-523-87635698 87668018 87668028
传真(FAX):0086-523-87665426 87665000
邮编(P.C):225400
网址 Http://www.tailong.com 电子信箱E-mail:tlgrp.tx@public.tz.js.cn

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