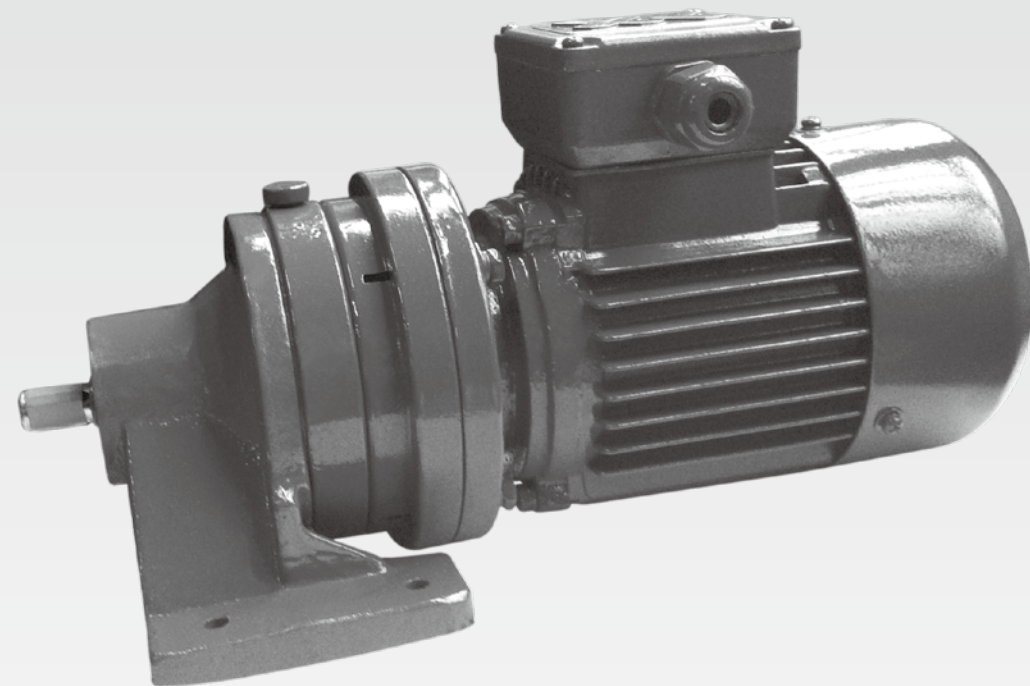


# WB 系列摆线针轮减速机

## WB Series of Cycloid Reducer



### ■ 概述 | Introduction

减速比大，效率高。本系列减速机单级减速比范围为 9~87，双级减速比范围为 121~1849，若采用三级减速，其减速比更大，机械效率达 80% 以上。

- 由于采用行星传动结构，输入轴与输出轴在同一轴心线上，故体积小，重量轻。
- 由于采用滚动轴承接触，主要零件采用高碳铬钢 (GCr15) 并经热处理淬火，硬度达 HRC58-62。所以经久耐用、使用可靠、寿命长。
- 本系列减速机具有普通减速机的一切特点，并采用润滑脂润滑，不易漏油，根据用户需要，可以任何角度，任何方向安装使用。
- 本系列减速机适用于食品机械、印刷机械、纺织机械、橡塑机械、制药机械、陶瓷机械及各种工业生产流水线的减速装置与传动装置。

Large ratio of deceleration, high efficiency. With this series reducer, the ratio of deceleration in single-stage is 9-87, in double-stage 121-1894 and in triple-stage, if used, the ratio is larger, up to over 80% of the mechanical efficiency.

- Small volume and light weight. Both input and output shafts are on one axis because of using the planetary driving structure.
- Reliable poeration and long durability. Because of using rolling bearing for contacting and high-carbonate Crsteel(GCr15) hardened by heat treatment and with a hardness up to HRC58-62 for the main parts.
- Besides all characteristics the ordinary decelerators have, this series decelerator also features being not easyto oil leak due to the use of grease for lubrication and able to be mounted in any angles and any directions to neet with the requirements of the users.
- This series reducer is suitable for the deceleration and driving decices on food, printing, textile, rubber and plastic, pharmaceutical, ceramic machineries and various industrial production lines.

### ■ WB 系列微型摆线减速机的机型号，减速比及其表示方式

Model, Transmission Ratio and Expressing of WB Series Cycloidal Microreducer

#### 机型及减速比:

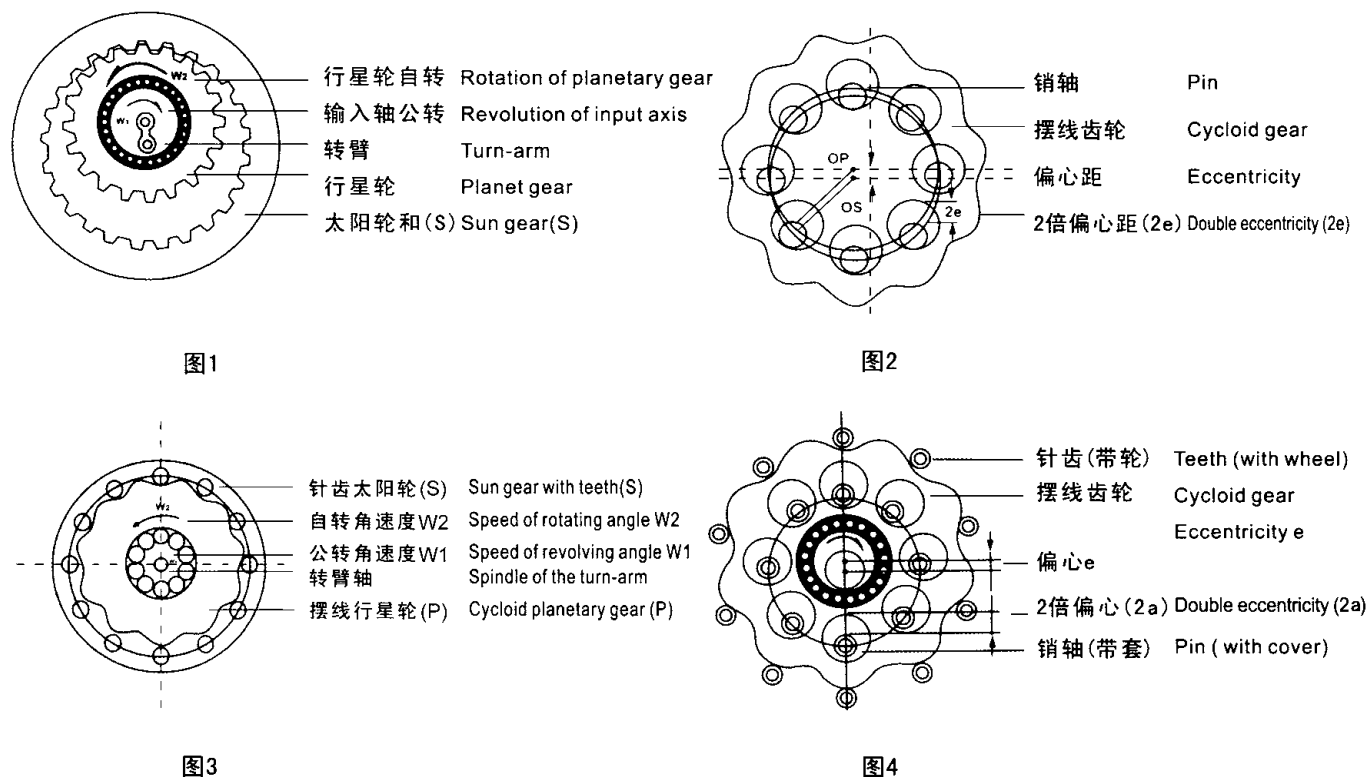
- 单级减速机机型有 WB65、WB85、WB100、WB120、WB150 等五种机型号，其减速比分别有 9、11、17、23、29、35、43、59、71、87 等十种减速比。
- 双级减速机机型有 WBE1065、WBE1285、WBE1510 等三种机型。其减速比分别有 121、187、289、385、473、595、731、989、1225、1849 等十种减速比。

#### Model and transmission ratio:

- For single-stage reducer, there are WB65, WB85, WB100, WB120, and WB150 five models with the transmission ratios 9, 11, 17, 23, 29, 35, 43, 59, 71, 87 ten kinds.
- For double-stage one, there are WBE1065, EB1285 and WBE1510 there models with the trasmission ratios 121, 187, 289, 385, 473, 595, 731, 989, 1225, 1849 ten kinds.

## WB 系列微型摆线减速机传动原理

### WB Series Cycloidal Microreducer Driving Principle



摆线针轮减速机是一种采用齿差行星传动原理设计的新型传动机械，图 1 是简单的啮合行星齿轮机构，设行星轮的齿数为 P，固定的内齿轮齿数为 S，偏心转臂的公转角速度为 W2，行星轮的自转角速度 W，则根据行星齿轮传动原理，W1 对 W2 的角速比有下列关系：

$$\frac{W1}{W2} = 1 - \frac{S}{P} - \frac{S-P}{P}$$

如能在式中 S 和 P 的齿数差为 1，则可以得到最大减速比： $i = \frac{W2}{W1} = -\frac{1}{P}$  这种情况若使用渐开线齿廓，就会发生齿顶干涉，而以针齿作内齿轮齿廓，短幅外摆线作行星（摆线轮）齿廓构成的摆线减速机（如图 2 所示）就实现了没有齿顶干涉的理想的一齿差传动。

行星一方面以高速公转，同时又以低速自转，将这个被减速的自转取出，就可以实现减速的目的。图 3 所示的圆弧齿廓的等速内齿机构就是低速输出机构。在转臂（高速轴）中心 OS 的同心圆上，以相等的节距排列销轴，在行星轮（摆线轮）中心 OP 的同心圆上，以同样的节距排列圆孔齿形（即销轴孔），圆孔直径比销轴直径大，其差为转臂偏心距 e 的 2 倍（2a），当销轴和销轴孔啮合时，可以去掉由行星轮产生偏心运动，减速的自转运动则通过锁轴传给与输入轴同轴上的低速轴。图 4 为上述两个机构组合的摆线减速机传动原理。

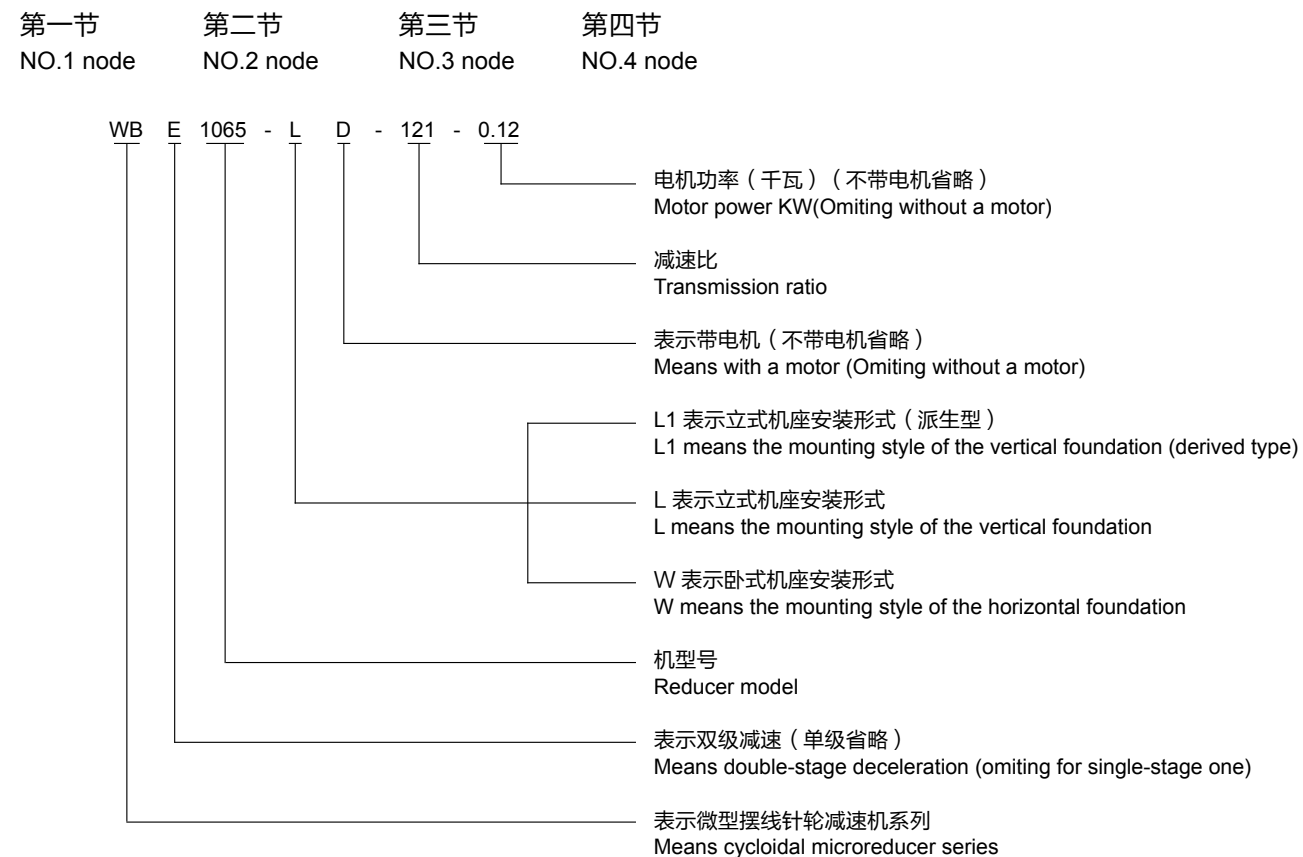
The cycloidal microreducer is a driving machinery of new style designed per the principle of the planetary rotation with one-tooth difference, Figure 1 shows the simple mechanism of the inner mating planetary gear, A relation as below exists between the two angular speed ratios of W1, the one of revolution of the eccentric rotary arm, and W2, the one of rotation of the planetary wheel:

$$\frac{W1}{W2} = 1 - \frac{S}{P} - \frac{S-P}{P}$$

per the planetary gear driving principle, of which, P is supposed the number of the planetary gear and S as the number of the inner gear, The largest deceleration ratio can be obtained as:  $i = \frac{W2}{W1} = -\frac{1}{P}$  if the gear difference between S and P equals 1, with such a condition, the disturbance on the gear top may occur if an involute flank profile is used. Which has been overcome on the cycloidal reducer (shown in Fig.2) consisting of the needle gear as the flank profile of the inner.

WB in Fig.2) consisting of the needle gear as the flank profile of the inner.

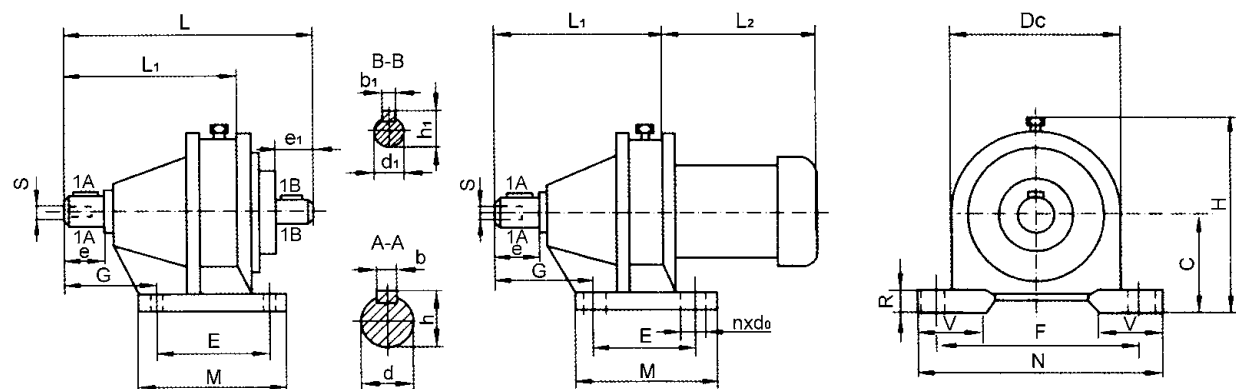
## WB 系列型号规格表示方式 | Denotation of Specification & Dimension of WB Series



- 第一节表示微型摆线减速机单级减速还是双级减速及机型号。
- 第二节表示机座安装形式及是否带电机。
- 第三节表示减速比。
- 第四节表示电机功率，以千瓦为单位。
- 示例 1: WB100-WD-43-0.25 表示微型摆线减速机，机型号 100 型，单级减速，卧式安装，带三相四极交流电机。减速比 1:43，电机功率 0.25 千瓦。
- 示例 2: WB85-W-35 表示微型摆线针轮减速机，机型号 85 型，单级减速，卧式安装，不带电机，减速比 1:35。
- 示例 3: WBE1065-LD-121-0.12 表示微型摆线减速机，机型号 1065 型。双级减速，立式机座安装形式，带三相四极交流电动机，减速比 1:121，电机功率 0.12 千瓦。
- No.1 node means the microreducer has either a single-stage or double-stage deceleration and its model.
- No.2 node means the mounting style of the foundation with or without a motor.
- No.3 node means the transmission ratio.
- No.4 node means the motor's power, with W as the unit.
- Example 1: WB100-WD-43-0.25 means a cycloidal microreducer, model 100, single-stage deceleration horizontal mounting, with an AC 3-phase 4-pole motor.
- Example 2: WB85-W-35 means a cycloidal microreducer, model 85, single-stage deceleration, horizontal mounting, with an AC 3-phase 4-pole motor.
- Example 3: WBE1065-LD-121-0.12 means a cycloidal microreducer, model 1065, double-stage deceleration, vertical mounting style of the foundation, with an AC 3-phase 4-pole motor, transmission ratio 1:121, motor's power 0.12W.

### WB 系列单级卧式外形及安装尺寸

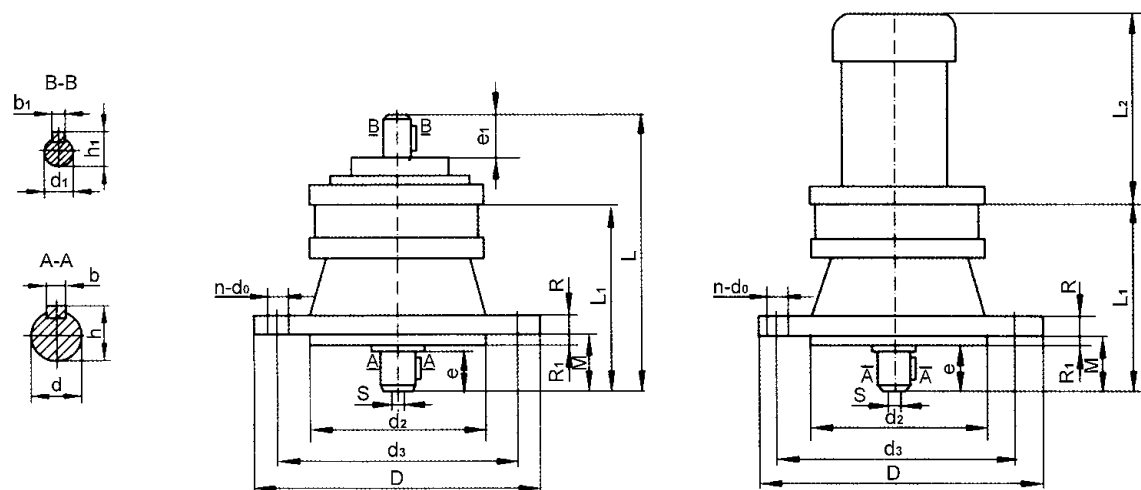
Shape and Assembling Dimension of WB Series Single-stage Horizontal Type



机型 Model	外形尺寸 Overall dimensions							安装尺寸 Installation dimension							输入轴尺寸 Input shaft dimension				输出轴尺寸 Output shaft dimension					
	H	M	N	Dc	L	L1	L2	C	G	R	E	F	S	V	n	d <sub>0</sub>	b <sub>1</sub>	h <sub>1</sub>	d <sub>1js6</sub>	e <sub>1</sub>	b	h	d <sub>js6</sub>	e
WB65	120	90	150	110	135	95	见电机 一览表 See Motor list	60	45	8	60	130	M4	25	4	7	3	11	10	16	4	13.5	12	20
WB85	140	100	175	127	148	110		70	53	10	70	150	M5	30	4	9	3	13	12	16	5	16	14	23
WB100	155	110	185	145	174	130		80	63	12	80	160	M6	32	4	9	4	16.5	14	20	6	20.5	18	25
WB120	190	120	185	168	215	165		100	93	15	90	150	M8	35	4	11	5	17	15	22	8	33	30	35
WB150	235	160	250	210	260	200		120	115	18	120	210	M8	50	4	15	6	22.5	20	30	10	38.5	35	55

### WB-L 系列单级立式外形及安装尺寸

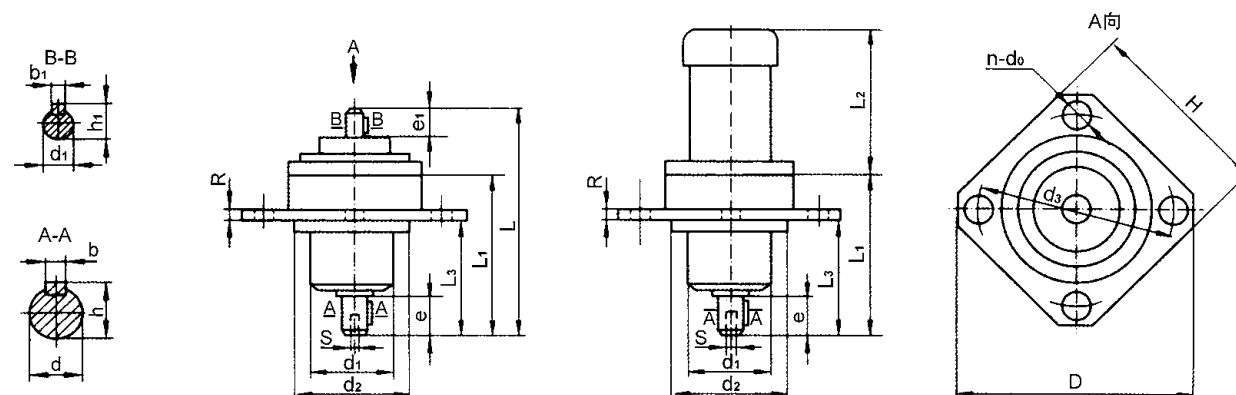
Overall and Link Dimensions of Single-stage Vertical Type WB-L



机型 Model	外形尺寸 Overall dimensions				安装尺寸 Installation dimension							输入轴尺寸 Input shaft dimension				输出轴尺寸 Output shaft dimension				
	D	L1	L	L2	d <sub>3</sub>	n	d <sub>0</sub>	R	R <sub>1</sub>	M	d <sub>2h8</sub>	S	b <sub>1</sub>	h <sub>1</sub>	d <sub>1js6</sub>	e <sub>1</sub>	b	h	d <sub>js6</sub>	e
WB65	120	95	135	见电机 一览表 See Motor list	100	4	7	8	2.5	24	65	M5	3	11	10	16	4	13.5	12	20
WB85	140	110	148		120	4	9	9	2.5	27	85	M5	3	13	12	16	5	16	14	23
WB100	160	130	174		134	4	9	10	3	30	100	M6	4	16.5	14	20	6	20.5	18	25
WB120	190	165	215		160	4	11	10	3	39	140	M8	5	17	15	22	8	33	30	35
WB150	230	200	260		200	6	11	14	4	60	170	M8	6	22.5	20	30	10	38.5	35	55

### WB-L1 系列单级立式外形及安装尺寸

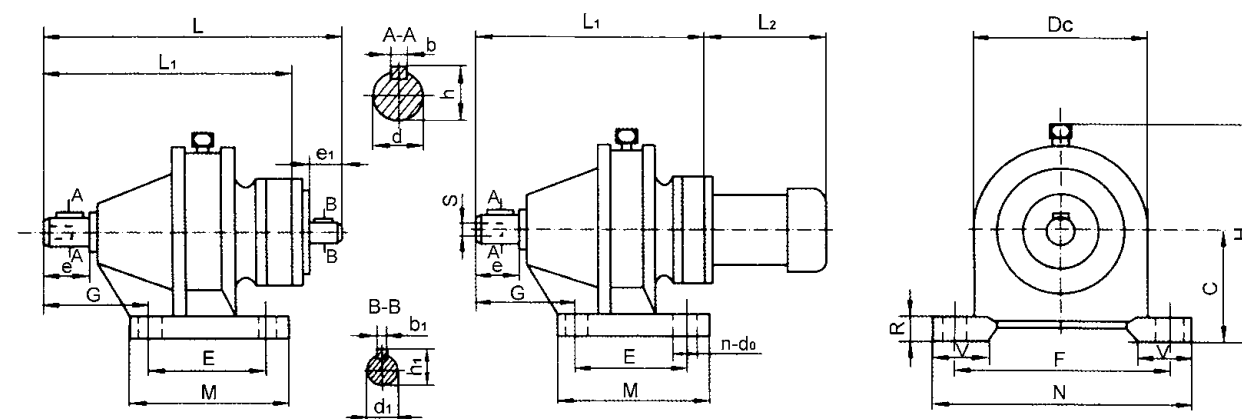
Overall and Link Dimensions of Single-stage Vertical Type WB-L1



机型 Model	外形尺寸 Overall dimensions						安装尺寸 Installation dimension						输入轴尺寸 Input shaft dimension				输出轴尺寸 Output shaft dimension				
	D	H	d <sub>1</sub>	L1	L	L2	d <sub>3</sub>	n	d <sub>0</sub>	R	d <sub>2h8</sub>	L <sub>3</sub>	S	b <sub>1</sub>	h <sub>1</sub>	d <sub>1js6</sub>	e <sub>1</sub>	b	h	d <sub>js6</sub>	e
WB65	145	105	50	95	135	见电机 一览表 See Motor list	125	4	7	9	65	65	M4	3	11	10	16	4	13.5	12	20
WB85	165	125	55	110	148		140	4	9	10	85	82	M5	3	13	12	16	5	16	14	23
WB100	185	140	65	130	174		160	4	9	12	100	93	M6	4	16.5	14	20	6	20.5	18	25
WB120	210	170	90	165	215		185	4	11	12	120	118	M8	5	17	15	22	8	33	30	35
WB150	270	210	115	200	260		240	4	13	15	150	140	M8	6	22.5	20	30	10	38.5	35	55

### WBE 系列双级卧式外形及安装尺寸

Overall and Link Dimensions of Double-stage Horizontal Type WBE

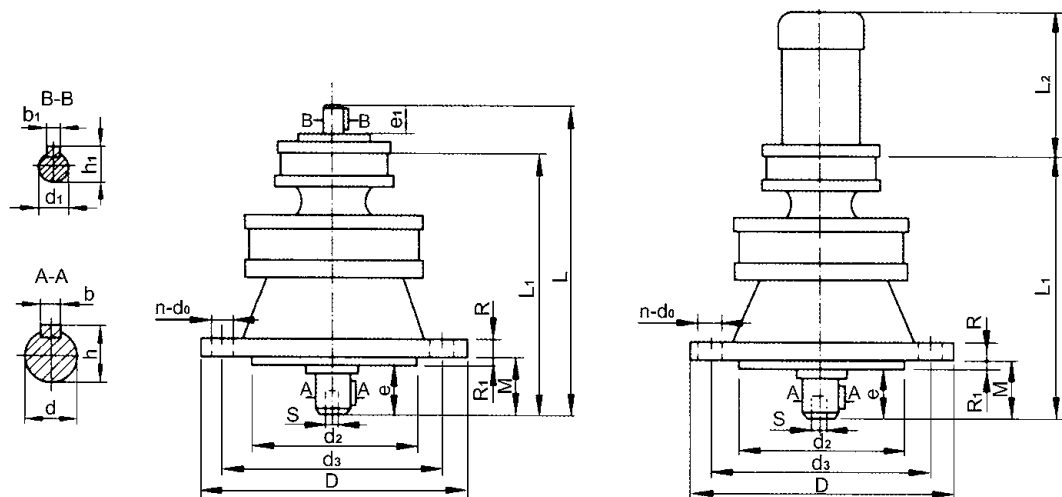


机型 Model	外形尺寸 Overall dimensions							安装尺寸 Installation dimension							输入轴尺寸 Input shaft dimension				输出轴尺寸 Output shaft dimension					
	H	M	N	Dc	L	L1	L2	C	G	R	E	F	S	V	n	d <sub>0</sub>	b <sub>1</sub>	h <sub>1</sub>	d <sub>1js6</sub>	e <sub>1</sub>	b	h	d <sub>js6</sub>	e
WBE1065	155	110	185	145	225	185	见电机 一览表 See Motor list	80	63	12	80	160	M6	32	4	9	3	11	10	16	6	20.5	18	15
WBE1285	190	120	185	168	268	230		100	93	15	90	150	M8	35	4	11	3	13	12	16	8	33	30	35
WBE1510	235	160	250	210	325	295		120	115	18	120	210	M8	50	4	15	4	16.5	14	20	10	38.5	35	55



### WBE-L 系列双级立式外形及安装尺寸

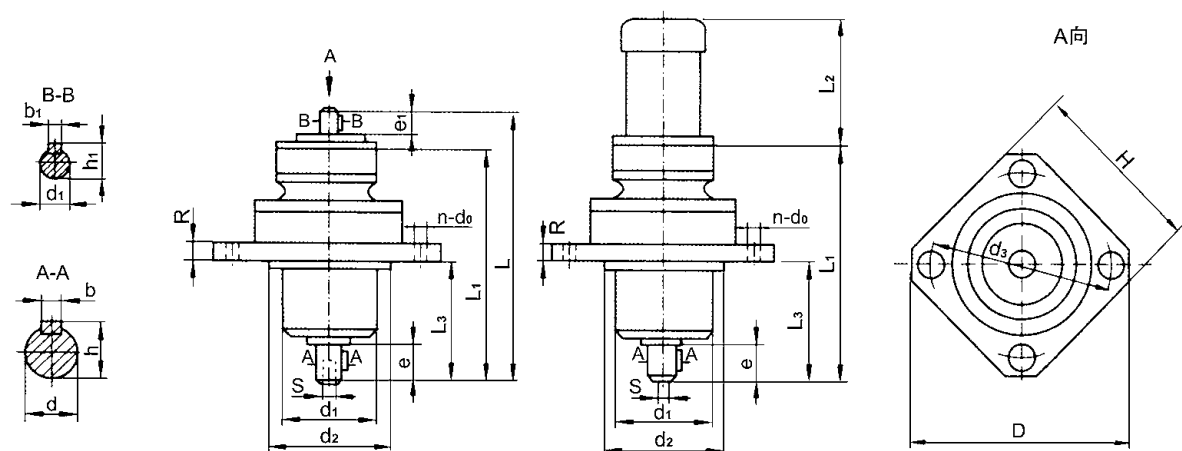
Overall and Link Dimensions of Double-stage Vertical Type WBE-L



机型 Model	外形尺寸 Overall dimensions				安装尺寸 Installation dimension								输入轴尺寸 Input shaft dimension				输出轴尺寸 Output shaft dimension			
	D	L <sub>1</sub>	L	L <sub>2</sub>	d <sub>3</sub>	n	d <sub>0</sub>	R	R <sub>1</sub>	M	d <sub>2</sub> h8	S	b <sub>1</sub>	h <sub>1</sub>	d <sub>1</sub> js6	e <sub>1</sub>	b	h	djs6	e
WBE1065	160	185	220	见电机 一览表 See Motor list	134	4	9	10	3	30	100	M6	3	11	10	16	6	20.5	18	25
WBE1285	190	230	268		160	4	11	10	3	39	140	M8	3	13	12	16	8	33	30	35
WBE1510	230	295	325		200	6	11	14	4	60	170	M8	4	16.5	14	20	10	38.5	35	55

### WBE-L<sub>1</sub> 双级立式外形及安装尺寸

Overall and Link Dimensions of Double-stage Vertical Type WBE-L<sub>1</sub>



机型 Model	外形尺寸 Overall dimensions					安装尺寸 Installation dimension								输入轴尺寸 Input shaft dimension				输出轴尺寸 Output shaft dimension			
	D	H	d <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	d <sub>3</sub>	n	d <sub>0</sub>	R	d <sub>2</sub> h8	L <sub>3</sub>	S	b <sub>1</sub>	h <sub>1</sub>	d <sub>1</sub> js6	e <sub>1</sub>	b	h	djs6	e	
WBE1065	185	140	65	185	225	见电机 一览表 See Motor list	160	4	9	12	100	93	M6	3	11	10	16	6	20.5	18	25
WBE1285	210	170	90	230	268		185	4	11	12	120	118	M8	3	13	12	16	8	33	30	35
WBE1510	270	210	115	295	325		240	4	13	15	150	140	M8	4	16.5	14	20	10	38.5	35	55

### WB 系列选型参数 | Parameter List Selections of WB Series

机型 Model	配置电动机功率 (KW) Equipped motor's power (KW)				减速比 Transmission ratio					
	三相电动机 Three-phase motor	单相电动机 Single-phase motor	直流伺服电机 DC servo motor	三相制动电机 Three-phase braking motor	11	17	23	29	35	43
WB65	0.04	0.04 ★			2.70	4.20	5.60	7.20	8.55	10.5
	0.06	0.06 ★	0.05		4.00	6.30	8.55	10.5	12.8	15.8
	0.09	0.09 ★	0.08		6.05	9.35	12.7	15.9	19.2	23.7▲
	0.12				8.00	12.5	16.7	21.3	25.7▲	31.7▲
当输入转速 1400r/min 时, 减速机输出转速 r/min The output speed when input speed is at 1400r/min					127	82	60	48	40	32

机型 Model	配置电动机功率 (KW) Equipped motor's power (KW)				减速比 Transmission ratio						
	三相电动机 Three-phase motor	单相电动机 Single-phase motor	直流伺服电机 DC servo motor	三相制动电机 Three-phase braking motor	9	11	17	23	29	35	43
WB85	0.09	0.09▲	0.08		5.00	6.05	9.35	12.7	15.9	19.2	23.7
	0.12	0.12▲	1.123		6.60	8.00	12.5	16.7	21.3	25.7	31.7
	0.18				9.90	12.1	18.7	25.4	31.2	38.6	47.4
	0.25			0.25	13.8	16.9	26.1	35.4	44.5	53.7	66.0▲
	0.37			0.37	20.4	24.9	38.5	52.1	65.7▲	79.3▲	97.2▲
当输入转速 1400r/min 时, 减速机输出转速 r/min The output speed when input speed is at 1400r/min					155	127	82	60	48	40	32

机型 Model	配置电动机功率 (KW) Equipped motor's power (KW)				减速比 Transmission ratio							
	三相电动机 Three-phase motor	单相电动机 Single-phase motor	直流伺服电机 DC servo motor	三相制动电机 Three-phase braking motor	9	11	17	23	29	35	43	59
WB100	0.18	0.18 ★	0.185		9.90	12.1	18.7	25.4	31.2	38.6	47.4	65.0
	0.25	0.25 ★		0.25	13.8	16.9	26.1	35.4	44.5	53.7	66.0	90.0
	0.37	0.37 ★	0.355	0.37	20.4	24.9	38.5	52.1	65.7	79.3	97.2	133▲
	0.55				30.3	37.1	57.4	77.6	97.2	117	145▲	199▲
	0.75				41.4	50.5	78.3	106	133▲	161▲	198▲	271▲
当输入转速 1400r/min 时 When input speed is at 1400r/min					其输出转速 r/min The output speed r/min							
当输入转速 960r/min 时 When input speed is at 960r/min					155	127	82	60	48	40	32	23
					105	86	56	41	33	27	22	16

机型 Model	配置电动机功率 (KW) Equipped motor's power (KW)				减速比 Transmission ratio								
	三相电动机 Three-phase motor	单相电动机 Single-phase motor	直流伺服电机 DC servo motor	三相制动电机 Three-phase braking motor	9	11	17	23	29	35	43	59	71
WB120	0.37	0.37 ★	0.355	0.37	20.4	24.9	38.5	52.1	65.7	79.3	97.2	133	161▲
	0.55	0.55 ★		0.55	30.3	37.1	57.4	77.6	97.2	117	145	199▲	239▲
	0.75	0.75 ★		0.75	41.4	50.4	78.3	106	133	161▲	198▲	271▲	326▲
	1.1			1.1	60.5	74.0	114	155	195▲	235▲	289▲	397▲	478▲
	1.5			1.5	82.9	100	156	211▲	266▲	322▲	396▲	542▲	653▲
当输入转速 1400r/min 时 When input speed is at 1400r/min					其输出转速 r/min The output speed r/min								
当输入转速 960r/min 时 When input speed is at 960r/min					155	127	82	60	48	40	32	23	20
					105	86	56	41	33	27	22	16	13

▲: 所配置的电机功率大于减速机的设计功率, 只能在许用转矩范围内使用。下同。  
The motor's power is used to be in the extent of torque, it that greater than design power of reducer, same follow.

机型 Model	配置电动机功率 (KW) Equipped motor's power (KW)				减速比 Transmission ratio										
	三相电动机 Three-phase motor	单相电动机 Single-phase motor	直流伺服电机 DC servo motor	三相制动电机 Three-phase braking motor	9	11	17	23	29	35	43	59	71	87	
					输出转矩 N.m Output torque N.m										
WB150	0.55	0.55 ★		0.55	30.3	37.1	57.4	77.6	97.2	117	145	199	239	293▲	
	0.75	0.75 ★		0.75	41.4	50.5	78.3	106	133	161	198	271	326▲	400▲	
	1.1			1.1	60.5	73.9	114	155	195	235	289▲	397▲	478▲	587▲	
	1.5			1.5	82.8	100	156	211	266	322▲	396▲	542▲	653▲	801▲	
	2.2			2.2	121	148	229	310▲	391▲	472▲	560▲	796▲	958▲	1174▲	
	3.0			3.0	165	202	313▲	423▲	533▲	644▲	792▲	1086▲	1307▲	1602▲	
当输入转速 1400r/min 时 When input speed is at 1400r/min				其输出转速 r/min The output speed r/min											
当输入转速 960r/min 时 When input speed is at 960r/min															
				155	127	82	60	46	40	32	23	20	17		
				105	86	56	41	33	27	22	16	13	14		

WBE 系列选型参数 | Parameter List Selections of WBE Series

机型 Model	配置电动机功率 (KW) Equipped motor's power (KW)				减速比 Transmission ratio										
	三相电动机 Three-phase motor	单相电动机 Single-phase motor	直流伺服电机 DC servo motor	三相制动电机 Three-phase braking motor	121	187	289	385	473	595	731	989	1255	1849	
					输出转矩 N.m Output torque N.m										
WBE 1065	0.04	0.04※			26.3	40.7	63.0	83.2	103	129	160▲	215▲	267▲	403▲	
	0.06	0.06※	0.05		40.0	61.0	94.4	125	154▲	194▲	239▲	323▲	400▲	604▲	
	0.09	0.09※	0.08		59.4	92.0	143▲	198▲	232▲	292▲	358▲	485▲	601▲	908▲	
	0.12				79.2	121	186▲	254▲	309▲	388▲	478▲	647▲	801▲	1209▲	
当输入转速 1400r/min 时, 减速机输出转速 r/min The output speed when input speed is at 1400r/min															
				11.5	7.5	4.8	3.6	3	2.3	1.9	1.4	1.1	0.7		

机型 Model	配置电动机功率 (KW) Equipped motor's power (KW)				减速比 Transmission ratio										
	三相电动机 Three-phase motor	单相电动机 Single-phase motor	直流伺服电机 DC servo motor	三相制动电机 Three-phase braking motor	121	187	289	385	473	595	731	989	1255	1849	
					输出转矩 N.m Output torque N.m										
WBE 1285	0.09	0.09▲	0.08		59.4	92.0	143	188▲	232▲	292▲	358▲	485▲	601	908▲	
	0.12	0.12▲	0.123		79.2	121	188▲	254▲	309▲	388▲	478▲	647▲	801▲	1209▲	
	0.18				118	183▲	283▲	377▲	464▲	583▲	716▲	969▲	1201▲	1815▲	
	0.25			0.25	164	255▲	255▲	525▲	645▲	812▲	997▲	1350▲	1672▲	2524▲	
	0.37			0.37	244▲	376▲	376▲	776▲	953▲	1200▲	1473▲	1978▲	2470▲	3728▲	
当输入转速 1400r/min 时, 减速机输出转速 r/min The output speed when input speed is at 1400r/min															
				11.5	7.5	4.8	3.6	3	2.3	1.9	1.4	1.1	0.7		

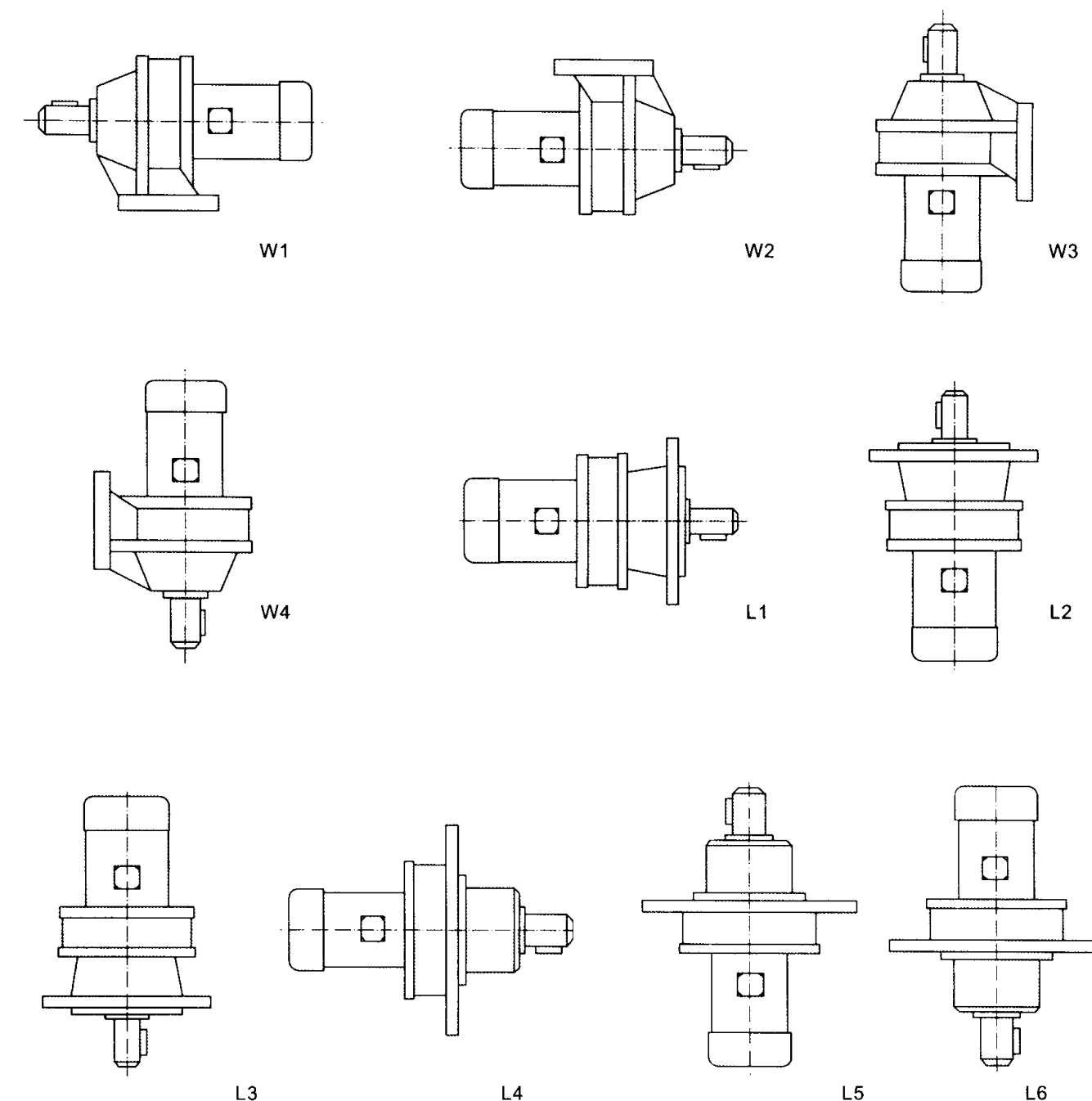
机型 Model	配置电动机功率 (KW) Equipped motor's power (KW)				减速比 Transmission ratio										
	三相电动机 Three-phase motor	单相电动机 Single-phase motor	直流伺服电机 DC servo motor	三相制动电机 Three-phase braking motor	121	187	289	385	473	595	731	989	1255	1849	
					输出转矩 N.m Output torque N.m										
WBE 1510	0.18	0.18 ★			118	183	283	377▲	464▲	583▲	716▲	969▲	1201▲	1815▲	
	0.25	0.25 ★		0.25	164	255	394▲	525▲	645▲	812▲	997▲	1350▲	1672▲	2524▲	
	0.37	0.37 ★	0.355	0.37	244	376▲	582▲	776▲	953▲	1200▲	1473▲	1978▲	2470▲	3728▲	
	0.55				363▲	560▲	867▲	1156▲	1420▲	1786▲	2194▲	2969▲	3672▲	5551▲	
	0.75				495▲	765▲	1183▲	1576▲	1936▲	2436▲	2992▲	4048▲	5015▲	7569▲	
当输入转速 1400r/min 时 When input speed is at 1400r/min				其输出转速 r/min The output speed r/min											
当输入转速 960r/min 时 When input speed is at 960r/min															
				11.5	7.5	4.8	3.6	3	2.3	1.9	1.4	1.1	0.7		
				8	5.1	3.3	2.5	2	1.6	1.3	0.9	0.8	0.5		

注: 单相电机栏目中带 ※ 者为单相电容运转电动机, 带 ▲ 者为单相电阻启动电动机, 带 ★ 者为单相电容启动电动机。  
Note: In the column for single-phase motors, those marked ※ are single-phase capacitor running motors, those marked ▲ are single-phase resistor starting motors and marked ★ are single-phase capacitor starting motor.

WB 系列—微型摆线减速机许用转矩  
Allowed Torque for WB Series Cycloidal Microreducer

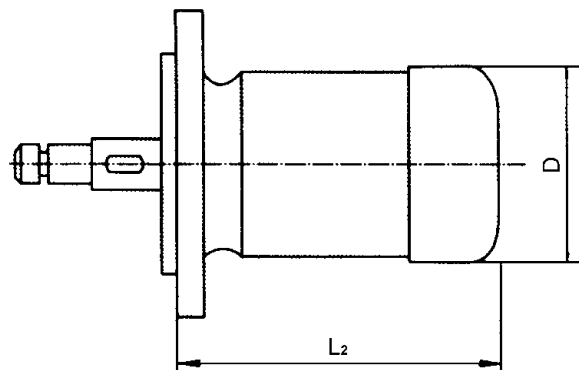
机型 / Model	WB65	WB85	WB100	WB120	WB150	WBE1065	WBE1285	WBE1510
许可转矩限值 (N.m) Limited value of allowed torques	25	60	120	150	250	120	150	250

WB 系列安装形式 | Installation Type of WB Series



### ■ 本系列减速机常用电机及电机外型尺寸一览表

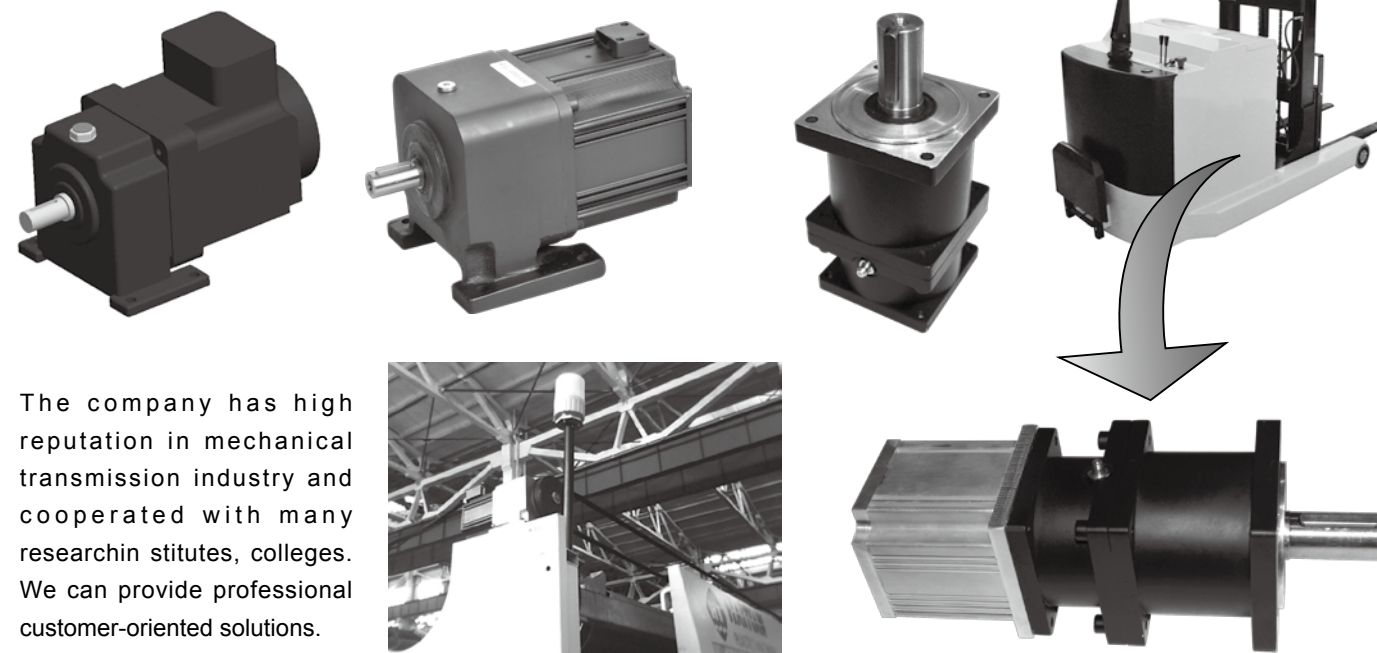
Table of the Motors and Their Overall Dimensions Constantly Used with this Series Reducer



电机类型 Motor type	功率 (KW) Power(KW)	转速 (r/min) Speed	电压 (V) Electric volts	L <sub>2</sub>	D	配置相应机型 To equip the relative model
三相异步电动机 Three-phase asynchronous motor	0.04	1400	380	130	95	65 1065
	0.06	1400				
	0.09	1400		170	115	65 85 1065 1285
	0.12	1400				
	0.18	1400		190	130	85 100 1285
	0.25	1400				
	0.37	1400		225	150	100 120 1510
	0.55	1400				
	0.75	1400		260	175	120 150
	1.1	1400				
	1.5	1400		285	205	150
	2.2	1400				
	3	1400		820	205	150
	0.18	950				
	0.25	950		225	150	100 120 1510
	0.37	950				
0.55	950	285	175	120 150		
0.75	950					
1.1	950	320	205	150		
1.5	950					
单相电容运转电动机 Monometallic capacitor running motor	0.04	1400	220	130	95	65 1065
	0.06	1400				
	0.09	1400				
单相电阻启动电动机 Monometallic resistor starting motor	0.09	1400	170	115	65 85 1065 1285	
	0.12	1400				
单相电容启动电动机 Monometallic capacitor starting motor	0.18	1400	195	130	85 100 1285	
	0.25	1400				
	0.37	1400				
	0.55	1400				
SZ 型微型直流伺服电动机 Model SZ micro DC servo motor	0.05	1400	110 220	160	95	65 1065
	0.08	1400				
	0.123	1400		200	115	85 100 1285
	0.185	1400				
	0.355	1400				
制动电动机 Braking motor	0.55	1400	380	375	165	120 150
	0.75	1400				
	1.1	1400		410	180	120 150
	1.5	1400				
	2.2	1400		430	180	120 150
	3	1400				

## 个性化服务 Customer-oriented Service

本公司在机械传动领域中拥有较高的知名度，并与多所研究所、院校保持长期的交流和合作关系，可以提供国内一流的传动机械非标化、专用化设计、制造方案，为客户提供特殊性服务，量身定做各类专业化的传动装置以及技术支持。



The company has high reputation in mechanical transmission industry and cooperated with many research institutes, colleges. We can provide professional customer-oriented solutions.

### 为确保减速机的正确操作，以延长其使用寿命，请仔细阅读以下事项：

Please read the following instruction carefully for correct operation and extension of the service life of the reducer:

#### ■ 安装 | Installation

- 安装时要检查减速机铭牌与电动机铭牌是否符合订货要求。
- 减速机安装方位应与订货时指定的方位一致，且使加油（透气）螺孔朝上。
- 减速机安装时配合面要平整，底座要求强度高、刚性好且具有减震性，避免共振。
- 在输出轴上安装联轴器、带轮、链轮、齿轮、制动器、离合器等联接件时，应利用轴端螺孔等将联接件压装（在轴头涂上润滑油），严禁用锤重击。
- 减速机输出采用联轴器联接时（尽量不要使用刚性联轴器），必需校正轴线使其同心，其安装误差允许大于联轴器的允许偏差。
- 为防止事故的发生，所有的旋转部位应按装防护罩或盖板。
- 立卧机型安装时应注意过定位，影响装配精度。
- 电源接线必须符合电机接线要求并安装接地装置，以防触电。
- 电动机要接有过载保护装置，以免电机烧坏。
- 安装孔输出的减速机时，与其配合的轴应用木锤轻轻敲击，装配到位（要求在轴上加润滑油）。
- 需要装扭力臂时，应在相互自由状态下安装。
- Checking the nameplates on the products whether meet the ordering requests.
- Installation position should be same as that ordered. And the fuel (air) screw right side up.
- The surface where the products installed on should be smooth, high strength, high rigidity and shock absorption, which can avoid resonance.
- When install couplings, pulleys sprockets, gears, brakes, clutches and other connections on the output shaft, using Screw shaft to press-fit (paint oil in the shaft), hammer is strictly prohibited.
- When connecting with couplings (not use rigid couplings), correcting axis to make them concentric. The installation error must be less than coupling's allowable deviation.
- Avoiding the accidents, all install parts should be covered with protective covers.
- When install vertical or horizontal models, please pay attention to the location, in case of the assemble precision.
- Power wiring must comply with the requirements of electrical wiring and install a grounding device to prevent electric shock.
- Product should be connected with overload protection device to avoid the burning out.
- Mounting hole when output gear-worn gearing, the shaft can be into the hole with gently tap. And add lubricating oil in the shaft at the mean time.
- Install torque arm at the free states.



**使用 | Usage**

- 减变速机运转前，应根据负载大小及工作状况来确定是否会引起过载现象，必要时应在输出轴上安装过载保护装置。
- 减变速机可以连续工作，同时允许正反反转，特别注意：换向时应让机器停止后再反向运转，减少换向冲击。
- 减变速机使用前请旋松透气帽（或拔掉红塑料塞头），以利通气。
- 无级变速器应尽量在中高速范围内使用，避免低速长时间使用，以显示其优良特性。
- ZH、SPT 无级变速器摩擦部分严禁加油。在摩擦环盘严重磨损，传动失效时，只需调整锥盘与摩擦环盘的间隙（0.3 ~ 0.8mm）或更换摩擦环盘，即可重新使用。
- UD 系列无级变速器在停机时严禁调速，限位螺钉在出厂前已调整好转速范围，切勿任意调整，以免损坏机器。
- 工作环境温度在 -15℃ ~ 50℃，负载温度如下表：

规格型号 Type and specification	负载温度 Over loading temperature	机体表面温度 Surface temperature of the reducer
SPT ZH	≤ 40℃	≤ 90℃
UD02~UD40	≤ 40℃	≤ 90℃
UD75~UD150	≤ 55℃	≤ 105℃
G800~G805	≤ 40℃	≤ 90℃
G807~G809	≤ 50℃	≤ 100℃
C CJ R	≤ 40℃	≤ 90℃
W WS	≤ 50℃	≤ 90℃
WJL WJ	≤ 50℃	≤ 90℃
B X WB	≤ 40℃	≤ 90℃

- Before operation, determining whether would cause overload according to the load size and working conditions, install protective device on the output shaft if needed.
- Variable Speeds Gearing can work continuously, and can work reversely.
- Attention: The machines have to be stopped before work reversely.
- Loosen the breathable cap or remove the red plastic plug before operation to facilitate ventilation.
- Infinitely variable speeds gearing should be used in high-speed range to show the excellent properties.
- ZH,SPT Infinitely variable speeds gearing is strictly prohibit adding oil in the friction part. When under the condition of mechanical wear in the friction ring-disk and drive failure, adjust the gap between the cone and friction ring-disk (0.3-0.8mm) or replace the friction ring-disk.
- UD Series Infinitely Variable speeds gearing is strictly prohibited adjust speed during shutdown. Limit screw has been adjusted the speed range, do not adjust arbitrarily.
- Work ambient temperature should be -15℃ ~50℃, and the over loading temperature is listed in the following table.

**保养 | Maintenance**

- 减变速机使用中应保持表面清洁，以利散热。
- 露天使用的机器要加防雨罩。
- 平时应注意机器油位的高低，发现不足应及时补充，严禁无油或缺油运转。
- 减变速机因使用时间长而引起的漏油、渗油时，应及时检查更换密封件。
- 更换润滑油时，不同型号的润滑油绝对不能混合使用。
- 使用中如发现减变速机有异常声音，应及时停机检查，切记不可继续使用，以免质量事故。
- 润滑油应定期更换，一般首次加油运转 500 小时后更换新油，以后每 2000 小时更换一次，如遇特殊情况（工况恶劣，连续运转，发现油已浑浊）应提早换油。
- 减变速机要定期保养，一般一年保养一次，必要时可运至我公司全面保养。

- Keep the surface clean during operation to facilitate heat dissipation.
- Use rain cover when using outdoors.
- Pay attention to the oil level, promptly add oil when need, oil-free operation is strictly prohibited.
- When oil leakage caused by long time using, please check and replace the seals.
- When replacing oil, do not mix different types of oils.
- When hearing unusual sound, stop to check immediately, in case of the accidents.
- Change oil regularly, refueling after first 500 hrs, and every 2000hrs after then. In special circumstances (poor working conditions, continuous operation, oil turbidity, etc.), oil should be changed more frequently.
- Products should be scheduled maintain, generally once a year. You can ship to company to have comprehensive maintenance if necessary.

规格型号 Specification	润滑油牌号 Brand of lubricant	润滑油更换 Replacement of lubricant
SPT ZH	变速部分严禁加油，齿轮部分加 CKC150 中负荷工业齿轮油 (SPT 立式机型加注二硫化钼) No lubricant can be added in the transmission part, and CKC150 medium-loading industry gear lubricant should be added in the gear parts. (for SPT vertical type, please add MoS2-2)	首次加油运转 500 小时后更换新油，以后每 2000 小时换一次油 (SPT 立式机型运转六个月后更换润滑油，以后每两年更换一次)，油位处于油标中心 The first replacement of lubricant should be carried out after it runs for 500 hours, and after then the replacement shall be carried out every 2000 hours. (For SPT vertical type, the first replacement should be carried out after it works for 6 months, and after then the replacement will be carried out every 2 years), the oil-level should be maintained in the middle of oil scale.
UD	变速部分加 Ub-3X 变速器专用油；带齿轮部分加 CKC150 中负荷工业齿轮油 Special lubricant should be applied for the transmission part. CKC150 medium-loading industry gear lubricant should be applied for the parts with gears.	首次加油运转 500 小时后更换新油，以后每 2000 小时换一次油，油位处于油标中心 The first replacement of lubricant should be carried out after it runs for 500 hours, and after then the replacement shall be carried out every 2000 hours.the oil-level should be maintained in the middle of oil scale.

规格型号 Specification	润滑油牌号 Brand of lubricant	润滑油更换 Replacement of lubricant
G800	CKC150 中负荷工业齿轮油 CKC150 medium-loading industry gear lubricant	首次加油运转 500 小时后更换新油，以后每 2000 小时换一次油，油位处于油标中心 The first replacement of lubricant should be carried out after it runs for 500 hours, and after then the replacement shall be carried out every 2000 hours.the oil-level should be maintained in the middle of oil scale.
C CJ R	CKC150 中负荷工业齿轮油 CKC150 medium-loading industry gear lubricant	首次加油运转 500 小时后更换新油，以后每 2000 小时换一次油，油位处于油标中心 The first replacement of lubricant should be carried out after it runs for 500 hours, and after then the replacement shall be carried out every 2000 hours.the oil-level should be maintained in the middle of oil scale.
W WS	CKE460 蜗轮蜗杆油 CKE460 worm-gear lubricant	首次加油运转 500 小时后更换新油，以后每 2000 小时换一次油，油位处于油标中心 The first replacement of lubricant should be carried out after it runs for 500 hours, and after then the replacement shall be carried out every 2000 hours.the oil-level should be maintained in the middle of oil scale.
WJL WJ	30~90 壳牌 TIVELA OIL SC320; 美孚 GLYGOYLE30 Shell TIVELA OIL SC320; Mobil GLYGOYLE30	全封闭结构，无需更换润滑油 Enclosed construction, no replacement of lubricant is needed.
B X WB	110~130 CKE460 蜗轮蜗杆油 CKE460 worm-gear lubricant	首次加油运转 500 小时后更换新油，以后每 2000 小时换一次油，油位处于油标中心 The first replacement of lubricant should be carried out after it runs for 500 hours, and after then the replacement shall be carried out every 2000 hours.the oil-level should be maintained in the middle of oil scale.
	WB 系列、X4(B18) 及以下机型加注润滑油 (建议用二硫化钼锂基脂)，X4(B18) 以上加注 CKC150 中负荷工业齿轮油 For reducers & variators below WB series or X4 (B18), please add lubricating grease, (we suggest MoS2-2 Lithium complex grease); for reducers above WB series or X4 (B18), please add CKC150 medium-loading industry gear lubricant.	<b>润滑脂:</b> 首次加油运转 1000 小时后更换新油，以后定期补加润滑脂； <b>润滑油:</b> 首次加油运转 500 小时后更换新油，以后每 2000 小时换一次油，油位处于油标中心 <b>Lubricating grease:</b> The first replacement of lubricant should be carried out after it runs for 1000 hours, and then the replacement should be carried out regularly. <b>Lubricating grease:</b> The first replacement of lubricant should be carried out after it runs for 500 hours, and after then the replacement shall be carried out every 2000 hours, the oil-level should be maintained in the middle of oil scale.

**UD 系列变速器油对照表 | The Comparison Table of UD Series Variable Speed Transmission**

国内广研	ISO	美孚 Mobil	壳牌 Shell	BP	埃索 Esso
Ub-3X	VG32	A.T.F.220	A.T.F.DEXRON	AUTRAN DX	A.T.F.DEXRON

**齿轮油对照表 | The Comparison Table of The Gear Compound**

统一润滑油	Mobil	BP	Shell	Esso
MonarchCKD100	MobilGEAR627	ENERGOLGR-EP100	SPARTANEP100	MACOMA100
MonarchCKD150	MobilGEAR629	ENERGOLGR-EP150	SPARTANEP150	MACOMA150
MonarchCKD220	MobilGEAR630	ENERGOLGR-EP220	SPARTANEP220	MACOMA220
MonarchCKD320	MobilGEAR632	ENERGOLGR-EP320	SPARTANEP320	MACOMA320
MonarchCKD460	MobilGEAR634	ENERGOLGR-EP460	SPARTANEP460	MACOMA460

**质量服务 | Quality Service**

- 凡按本公司《使用说明书》规定安装、使用，整机未经私自拆装，确属本公司制造质量问题而引起的故障或损坏，自出厂之日起，一年内实行“三包”。对于使用不当造成的故障或损坏，不属于“三包”范围。
- 凡确定为“三包”的零部件或整机，我公司免费修理，“三包”期外的零部件或整机修理，可运至我公司，酌情收取工本费。
- Customers are covered with one year limited warranty if installing and operating according to instruction manual and without disassemble machine. For damage caused by improper use, the products are not covered with the warranty.
- The parts under warranty can be repaired without charge, otherwise can be repaired with appropriate charge when ship to our company.