



WB系列



微型减速器特点 Features of Midget Reducer

- 1、减速比大、效率高。本系列减速单级减速比有9~87，双级减速比有121~1849，若采用三级减速，其减速比更大，机械效率达90%以上。
- 2、由于采用行星传动结构。输入轴与输出轴在同一轴心线上，使机型尽可能获得最小尺寸，故结构紧凑、体积微小、重量极轻。
- 3、由于采用滚动接触，主要零件采用了高碳铬钢Gcr并经淬火处理，硬度达HRC58~65。所以经久耐用，使用可靠寿命长。
- 4、本系列减速器具有普通减速器的一切特点外，由于采用润滑脂润滑，不易漏油，同时实现了根据用户需要可在任何位置，任何角度方向安装使用。

1. Big reduction ratio, high efficiency. The single stage reduction ratio of the series of reducer is 9~87, the doublestage reduction ratio is 121~1849, the reduction ratio will be bigger if adopting the third-stagereduction ratio, and the machine efficiency can go to over 90%.
2. Adopting the structure planetary transmission that puts the input and output shafts on the same axis, themodel can get the smallest size possible, so the model has compact structure, midget cubage and exceeding light weight.
3. Adopting scroll contact, high-carbon chrome steel Gcr and quencher treatment for the main parts, the rigidity can go to HRC58~65. So it has the dependable durability and long lift-span.
4. Adopting the grease and not easy to leak oil, this series reducer has all the features of mommon reducer, besides, it can be installed in any location and angle according to the user's need.

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微型减速机型号，减速比及其表示方法 Model of midget reducer, reduction ration and the expressions

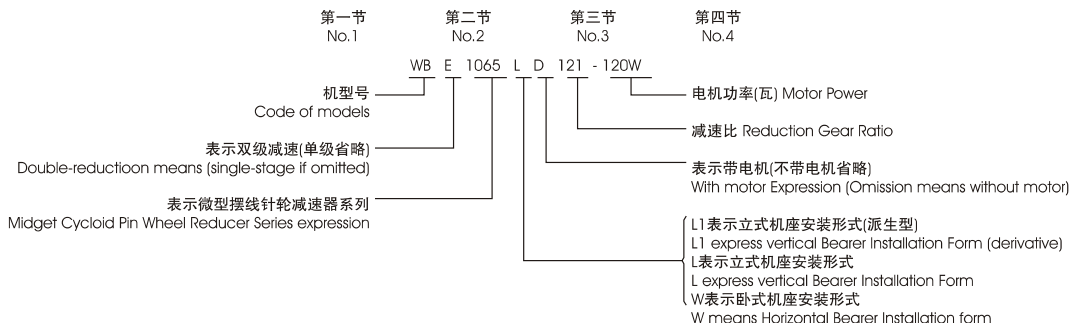
1、机型及减速比:

- a、单级减速比机型有WB65型、WB85型、WB100型、WB120型、WB150型。其减速比分别有9、11、17、23、29、35、43、59、71、87。
- b、双级减速比机型有WBE1065型、WBE1285型、WBE1510型。其减速比分别有：121、187、289、385、473、595、731、989、1225、1849。

1. Model and reduction ratio:

- a. Model of single-stage reduction ratio: Model WB65, Model WB85, Model WB100, Model WB120, Model WB150, the reduction gear ratio: 9, 11, 17, 23, 29, 35, 43, 59, 71, 87.
- b. Model of double-stage reduction ratio: Model WBE1065, Model WBE1285, Model WBE1510, the reduction gear ratio: 121, 187, 289, 385, 473, 595, 731, 989, 1225, 1849.

2、机型表示方法 Model expressions:



第一节表示微型摆线减速器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是否带电机；第三节表示减速比；第四节表示电机功率，以瓦为单位。示例：WB100-WD-43-250表示微型摆线针轮减速器，机型号100型，单级减速卧式安装带三相四级交流电机。减速比：1:43，电机功率250瓦。

WB85-W-35表示微型摆线针轮减速器，机型号85型，单级减速，卧式安装，不带电机，减速：1:35。

WBE1065-LD-121-120表示微型摆线针轮减速器，机型号1065型，双级减速，立式机座安装形式，带三相四级交流电动机，减速比：1:121，电机功率120瓦。

The first para means whether the midget cycloid reducer is single-stage or double stage reduction and the code of model; the second para means whether there is the motor in the installation form or not; the third-stagepara means the reduction ratio; the fourth-stagemmeans the motor power, the unit is W.

Examples: WB100-WD-43-250 means midget cycloid reducer, code of model 100, single-stage reduction, horizontal installation, equipped with triphase quartemary alternating current dynamo, reduction ratio: 1:43, motor power: 250W.

WB85-W-35 means midget cycloid pin wheel reducer, code of model 85, single-stage reduction, horizontal installation, without motor, reduction gear ratio: 1:35.

WBE1065-LD-121-120 means midget cycloid reducer, code of model 1065, double-stage reduction, vertical bearer installation form, equipped with triphase quartemary alternating current, reduction ratio: 1:121, motor power: 120W.

机型代号说明 Code of model Explanation

本系列减速器单级机型65型、85型、100型、120型、150型的含义分别以针齿壳中心圆直径而确定。

双级机型的1065型是本系列的单级机型100型与65型的组合机型。

双级机型的1285型是本系列的单级机型120型与85型的组合机型。

双级机型的1510型是本系列的单级机型150型与100型的组合机型。

The signification of the reducer single-stage model 65, model 85, model 100, model 120, model 150 in this series are confirmed by their pin tooth shuck center round diameter.

The double-stage model 1065 is the combination model of the single-stage model 100 and model 65 in this series.

The double-stage model 1285 is the combination model of the single-stage model 120 and model 85 in this series.

The double-stage model 1510 is the combination model of the single-stage model 150 and model 100 in this series.



型号规格表选型说明 Explanations for Choice of Model Specifications

a、根据机型大小不同，在同一机型中的不同减速比所选用的电机功率也不同，表中列出了根据同一机型中的不同电机功率所配置的减速比。表七、表八中标有“●”者是表示可使用电机全容量。标有“○”者是表示所配置的电机功率小于减速器的设计功率，用于有制动器电机，由于启动停止频繁及制动转矩产生过负荷的情况。标有“△”者是表示所配置的电机功率大于减速器的设计功率，减速器应在许用扭矩范围内使用，或在输出轴上设安全过载装置，以防止给减速器过大力矩。

b、表七、表八中已列有各机型输出轴的许用扭矩，选用时，实际工作扭矩应≤本机的额定扭矩最大的瞬时负荷应≤本机额定负荷的150%。

c、表七、表八中电机栏中带“※”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。

d、选取机型时，应注意使用电动机的启动扭矩大小、考虑启动、制动、正反转频繁情况等因素。一般用三相异步电动机的起转矩，在稳定负荷不超过电动机额定值或有轻微的冲击负荷每日工作8小时的工作场合，工作系数取 $K=1$ 。在启动扭矩大或正反转频繁的恶劣条件下，工作系数取 $K>1$ 。在工作稳定条件下，工作系数取 $K>1$ 。将工作系数 K 乘以所需功率作为选择机型的设计功率。设计功率= $K \times$ 所需功率。

a. Different motor powers selected for different speed reduction rate in accordance with differences in the size of the machines. The tables listed different speed reduction ratios for different motor powers of a model. "●" In table 7 and 8 means the full capacity of the motor can be used. Items marked with "○" means the power of the motor is less than the designed power of the reducer, the motor can be used in situations where the motors are equipped with brakes and when the machine is started frequently and load is produced by braking the torque. Items marked with "△" means the power of the motor is greater than the designed power of the reducer, the reducer can be used within the allowed scope, or overload prevention device should be fixed on the output shaft in order to prevent to strong moment on the reducer.

b. Table 7 and 8 list all the allowed twisting moment of the output shaft of various models. When using, the actual working twisting moment should not be greater than the rated twisting moment and the greatest instantaneous load should not be greater than 150% of the rated load of the machine.

c. The items marked with "※" are single-phased capacitor run motor, those marked with "▲" are resistance start motors, and those marked with "★" are single capacitor start motors.

d. When choosing the models, factors to be considered include the start twisting moment, braking, frequency of corotation and reversal rotation. Generally for a three-phased asynchronous motor whose start twisting moment works 8 hours every day with the steady load no greater than the rated value of the motor and with slight impact load, the coefficient of operating conditions shall be $K=1$. For a motor with greater start twisting moment and frequent co-rotation and reversal rotation, the coefficient of operating conditions shall be set to $K>1$. Under steady working condition, the coefficient of operating conditions shall be less than 1. The designed power as a criterion for the model selection shall be calculated by multiplying the needed power be K . Designed power= $K \times$ Needed power.

使用安装和维护 Installation and maintenance

(一) 使用条件

1、本系列减速器可以在室内或室外各种场合使用，环境温度可在 $-15^{\circ}\text{C} \sim +40^{\circ}\text{C}$ 范围内使用。

2、本系列减速器允许连续工作，同时允许正反转运转。

3、输入额定转速为 $1500r \cdot P \cdot m$ 为宜，不宜过高。

4、本系列减速器允许在任何方向和角度位置安装使用。

(二) 安全注意事项

1、本系列减速器的输出轴不能承受较大的轴向和径向力，所以在输出轴加装联轴器及皮带轮等联接件时，不允许采用锤击方法，需用输出轴端螺孔将联接件压入。

(三) 润滑和维护

1、本系列减速器采用润滑油润滑，出厂时已在内部充满油脂，在初使用3个月，由于在运转中会产生少量油脂损耗，应适量注入一些润滑油，建议采用二硫化钼或钙基润滑油。

2、注油时可旋开针壳上部的通气帽，即可注油。

I. Working conditions

1. Reducers of this series can be used indoors and outdoors with an environment temperature tolerance range between $-15^{\circ}\text{C} \sim +40^{\circ}\text{C}$.

2. This series of reducers allows continuous working and co-rotation and reversal rotation.

3. The input rated rotation is $1500r \cdot P \cdot m$, which should be arbitrarily exceeded.

4. This series of reducers can be used in any direction and angle.

II. Safety Cautions

1. This series of reducers output shaft cannot withstand big axial radial force, therefore when installing the joint shaft coupling and band pulley to the output shaft, be careful not to use hammers. They should be fixed by pressing the joint part into spiral hole of the output shaft.

III. Lubrication and maintenance

1. This series of reducers use the grease lubrication. Grease has been applied to the reducers at ex-factory time. In the first three months of use, there will be a small loss of grease, therefore, grease should be added. It is advisable to use the molybdenum disulfide of the calcium base lubricant.

2. Please remove the air cap on top of the shell to fill grease.

工况系数K Coefficient of Operating Conditions

原动机种类 Type of Prime	工作条件 Operating conditions	负荷性质 Property of Load		
		稳定 Smooth	中等冲击 Medium impact	大的冲击 Huge impact
电机驱动 Motor drive	3~4小时/每天 3~4 hours/day	0.8	1.0	1.35
	8~10小时/每天 8~10 hours/day	1.0	1.2	1.5
	24小时/每天 24 hours/day	1.2	1.35	1.6

本系列减速器常用电机及电机外型尺寸一览表

Schedule of motors and size of motors used with reducers of this series

—表九(一)—
—Table 9(一)—

电机类别 Motor type	功率 (W) Power	转速(r/min) Rotation speed	电压 (V)	L2	D	配置相应机型 Corresponding model of motor
三相异步 电动机 Three-phase asynchronous motor	40	1400	380	130	95	65 1065
	60	1400		170	115	65 85 1065 1285
	90	1400		190	130	85 100 1285 1510
	120	1400		225	150	100 120 1510
	180	1400		260	175	120 150
	250	1400		285	195	120 150
	370	1400		320	205	150
	550	1400		225	150	100 120 1510
	750	1400		285	175	120 150
	1100	1400		320	205	150
	1500	1400		320	205	150
	40	950		130	95	65 1065
	60	950		170	115	65 85 1065 1285
	90	950		195	130	85 100 1285
	120	950		225	150	100 120 1510

—表九(二)—
—Table 9(二)—

电机类别 Motor type	功率 (W) Power	转速(r/min) Rotation speed	电压 (V)	L2	D	配置相应机型 Corresponding model of motor
三相异步 电动机 Three-phase asynchronous motor	40	1400	220	130	95	65 1065
	60	1400		170	115	65 85 1065 1285
	90	1400		195	130	85 100 1285
	120	1400		225	150	100 120 1510
	180	1400		285	195	120 150
	250	1400		320	205	150
	370	1400		320	205	150
	550	1500		375	165	120 150
	750	1500		410	180	120 150
	1100	1500		430	180	120 150
	1500	1500		465	205	150
	2200	1500		465	205	150
	3000	1500		465	205	150
	40	1500		112	95	65 1065
	80	1500		130	95	65 85 1065 1285



减速器型号规格及选型参考表 Specifications of Reducer Types and Reference List for Type Choices

1. WB单级减速器型号规格 Model code of WB single grade reducer

—表七 (—) —
Table7 (—) —

机型 Code of Models	三相电动机 (W) Three-phase motor	单相电动机 (W) Single-phase motor	直流伺服电机 (W) DC servo motor	制动电动机 (W) Braking motor	减 速 比 Reduction Gear Ratio										低速轴 许用扭矩 (N·m) Allowable Output Torque(N·m)
					9	11	17	23	29	35	43	59	71	87	
65	40	40※				○	○	○	○	○	○				25
	60	60※	50			○	○	○	○	○	●				
	90	90※				○	○	○	○	●	△				
	120					○	○	○	●	△	△				
85	90	90▲	80			○	○	○	○	○	○				60
	120	120▲	123			○	○	○	○	○	●				
	180			200		○	○	○	○	●	△				
	250					○	○	○	●	△	△				
100	370					○	○	●	△	△	△				120
	180	180★	185	200	○	○	○	○	○	○	○	○			
	250	250★			○	○	○	○	○	○	○	●			
	370	370★	355	400	○	○	○	○	○	○	○	●	△		
120	550				○	○	○	○	●	●	△	△			150
	750				○	○	○	○	△	△	△	△			
	370	370★	355	400	○	○	○	○	○	○	○	●	△		
	550	550★		500	○	○	○	○	○	●	●	△	△		
150	750	750★		750	○	○	○	○	○	○	○	○	△	△	250
	1100			1100	○	○	○	○	○	○	○	○	△	△	
	1500			1500	○	○	○	○	○	○	○	○	△	△	
	2200			2200	○	○	○	○	○	○	○	○	△	△	
输出轴转速 Output shaft rotation speed (r/min)	电机转速(1400r/min)时 Rotation Speed of motor(1400r/min)				155	127	82	60	48	40	32	23	20	17	
	电机转速(900r/min)时 Rotation Speed of motor(900r/min)				105	86	56	41	33	27	22	16	13	11	

WB

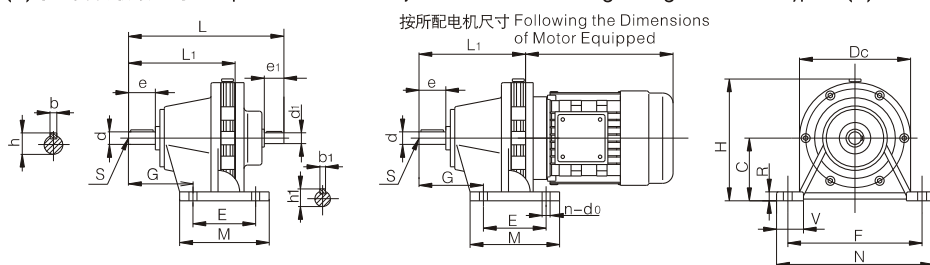
2. WBE双级减速器型号规格 Types and specifications of WBE double-grade reducer

—表八 (—) —
Table8 (—) —

机型 Code of Models	三相电动机 (W) Three-phase motor	单相电动机 (W) Single-phase motor	直流伺服电机 (W) DC servo motor	制动电动机 (W) Braking motor	减 速 比 Reduction Gear Ratio										低速轴 许用扭矩 (N·m) Allowable Output Torque(N·m)
					(11×11) 121	(11×17) 187	(17×17) 289	(11×35) 385	(11×43) 473	(17×35) 595	(17×43) 731	(23×43) 989	(35×35) 1225	(43×43) 1849	
1065	40	40※			○	○	○	○	○	●	△	△	△	△	120
	60	60※	50		○	○	●	△	△	△	△	△	△	△	
	90	90※			○	●	△	△	△	△	△	△	△	△	
	120				●	△	△	△	△	△	△	△	△	△	
1285	90	90▲	80		○	○	○	●	△	△	△	△	△	△	150
	120	120▲	123		○	○	●	△	△	△	△	△	△	△	
	180			200	○	●	△	△	△	△	△	△	△	△	
	250				●	△	△	△	△	△	△	△	△	△	
1510	370				△	△	△	△	△	△	△	△	△	△	250
	550				△	△	△	△	△	△	△	△	△	△	
	750				△	△	△	△	△	△	△	△	△	△	
	180	180★		200	△	△	●	△	△	△	△	△	△	△	
当电机转速1400/min时其输出轴转速 Output shaft rotation speed when the rotation speed of motor is 1400r/min					11.5	7.5	4.8	3.6	3	2.3	1.9	1.4	1.1	0.7	

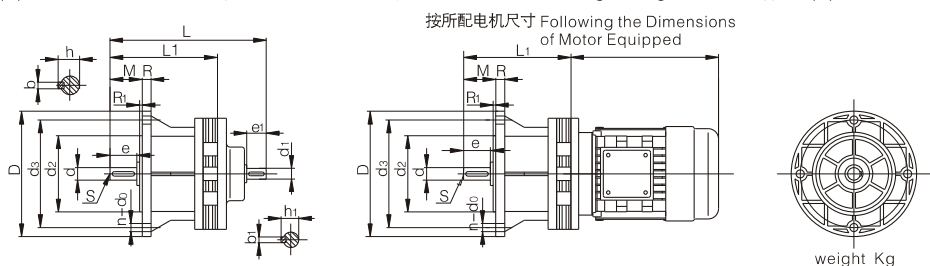


单级卧式W(D)外型安装联接尺寸 Shape and installation joint dimensions of single-stage horizontal type W(D)



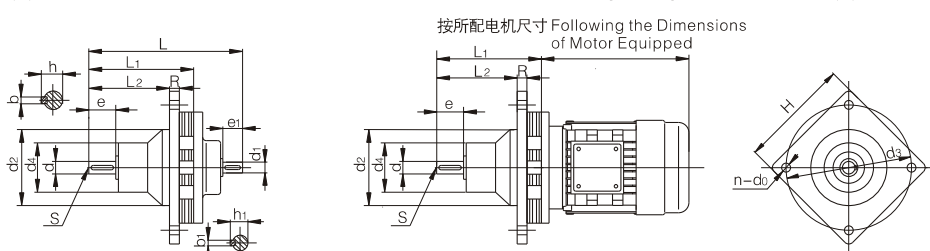
机型 Model	外型尺寸 Dimensions						安装尺寸 Mounting Dimensions								输入端尺寸 Dimensions of Input End					输出端尺寸 Dimensions of Output End					重量 Weight (kg)	
	H	M	N	Dc	L	L1	C	G	R	E	F	S	V	n	d0	d1	b1	h1	e1	d	b	h	e	带D	不带D	
WB65	120	90	150	110	135	95	60	45	8	60	130	M4	25	4	7	10	3	11	16	12	4	13.5	20	7	5	
WB85	140	100	175	127	148	110	70	53	10	70	150	M5	30	4	9	12	3	13	16	14	5	16	23	9	6	
WB100	155	110	185	145	174	130	80	63	12	80	160	M6	32	4	9	14	4	16.5	20	18	6	20.5	25	13	9	
WB120	190	120	185	168	215	165	100	93	15	90	150	M8	35	4	11	15	5	17	22	30	8	33	35	18	14	
WB150	235	160	250	210	260	200	120	115	18	120	210	M8	50	4	15	20	6	22.5	30	35	10	38.5	55	35	20	

单级立式L(D)外型安装联接尺寸 Shape and installation joint dimensions of single-stage vertical type L(D)



机型 Model	外型尺寸 Dimensions			安装尺寸 Mounting Dimensions								输入端尺寸 Dimensions of Input End				输出端尺寸 Dimensions of Output End				重量 Weight (kg)	
	D	L ₁	L	d ₂	d ₃	d ₀	n	R	R ₁	M	S	d ₁	b ₁	h ₁	e ₁	d	b	h	e	带D	不带D
WB65	120	95	135	65	100	7	4	8	2.5	24	M4	10	3	11	16	12	4	13.5	20	6.5	4.5
WB85	140	110	148	85	120	9	4	9	2.5	27	M5	12	3	13	16	14	5	16	23	8.5	4.5
WB100	160	130	174	100	134	9	4	10	3	30	M6	14	4	16.5	20	18	6	20.5	25	12	8
WB120	190	165	215	140	160	11	4	10	3	39	M8	15	5	17	22	30	8	33	35	17	13
WB150	230	200	260	170	200	11	6	14	4	60	M8	20	6	22.5	30	35	10	38.5	55	35	20

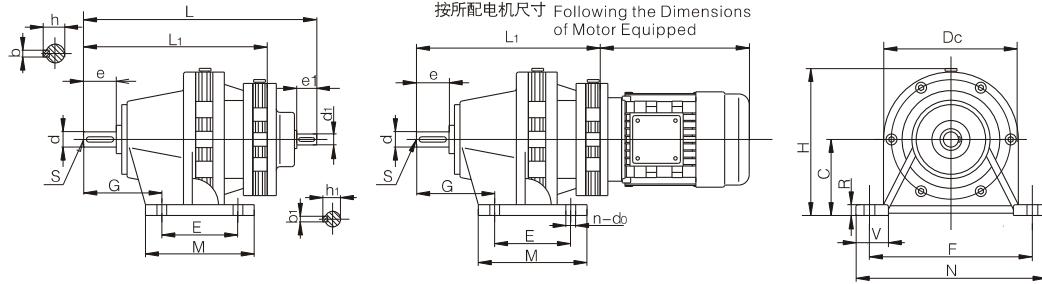
单级立式L1(D)外型安装联接尺寸 Shape and installation joint dimensions of single-stage vertical type L1(D)



机型 Model	外型尺寸 Dimensions					安装尺寸 Mounting Dimensions							输入端尺寸 Dimensions of Input End				输出端尺寸 Dimensions of Output End				重量 Weight (kg)	
	D	H	d ₄	L	L ₁	d ₂	d ₃	d ₀	n	L ₂	R	S	d ₁	b ₁	h ₁	e ₁	d	b	h	e	带D	不带D
WB65	145	105	50	135	95	65	125	7	4	65	9	M4	10	3	11	16	12	4	13.5	20	6.5	4.5
WB85	165	125	55	148	110	85	140	9	4	82	10	M5	12	3	13	16	14	5	16	23	8.5	4.5
WB100	185	140	65	174	130	100	160	9	4	93	12	M6	14	4	16.5	20	18	6	20.5	25	12	8
WB120	210	160	85	215	165	120	185	11	4	118	12	M8	15	5	17	22	30	8	33	35	17	13
WB150	270	210	115	260	200	150	240	13	4	165	15	M8	20	6	22.5	30	35	10	38.5	55	35	20



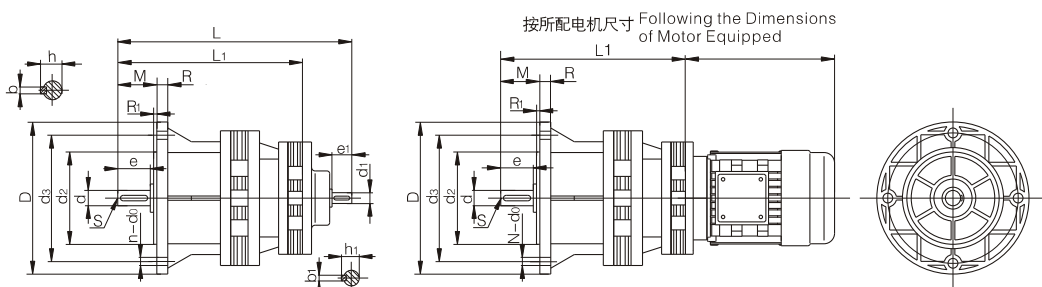
双级卧式WE(D)外型安装联接尺寸 Shape and installation joint dimensions of double-stage horizontal type WE(D)



机型 Model	外型尺寸 Dimensions					安装尺寸 Mounting Dimensions										输入端尺寸 Dimensions of Input End					输出端尺寸 Dimensions of Output End					重量 Weight (kg)	
	H	M	N	Dc	L	L1	C	G	R	E	F	S	V	n	d0	d1	b1	h1	e1	d	b	h	e	带D	不带D	带D	不带D
WB1065	155	110	185	145	225	185	80	63	12	80	160	M6	32	4	9	10	3	11	16	18	6	20.5	25	15.5	13.5	15.5	13.5
WB1285	190	120	185	168	268	230	100	93	15	90	150	M8	35	4	11	12	3	13	16	30	8	33	35	20	16	20	16
WB1510	235	160	250	210	325	295	120	115	18	120	210	M8	50	4	15	14	4	16.5	20	35	10	38.5	55	40	25	40	25

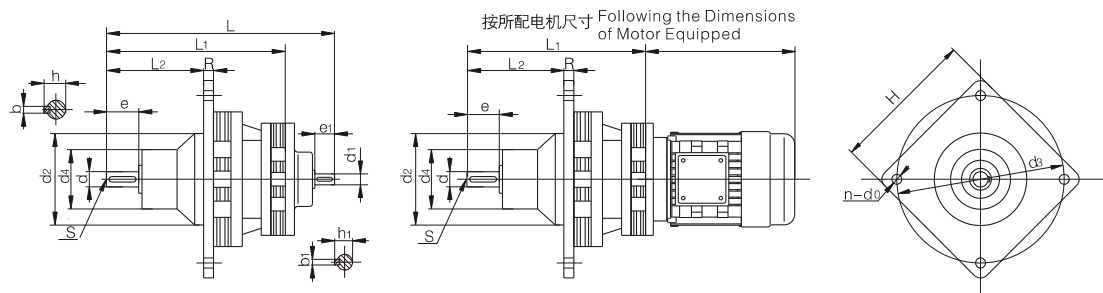
WB

双级立式LE(D)外型安装联接尺寸 Shape and installation joint dimensions of double-stage vertical type LE(D)



机型 Model	外型尺寸 Dimensions					安装尺寸 Mounting Dimensions										输入端尺寸 Dimensions of Input End					输出端尺寸 Dimensions of Output End					重量 Weight (kg)	
	D	L1	L2	d2	d3	d0	n	R	R1	M	S	d1	b1	h1	e1	d	b	h	e	带D	不带D	带D	不带D	带D	不带D	带D	不带D
WB1065	160	185	220	100	134	9	4	10	3	30	M6	10	3	11	16	18	6	20.5	25	13.5	11.5	13.5	11.5	13.5	11.5	13.5	11.5
WB1285	190	230	268	140	160	11	4	10	3	39	M8	12	3	13	16	30	8	33	35	19.5	16.5	19.5	16.5	19.5	16.5	19.5	16.5
WB1510	230	295	325	170	200	11	6	14	4	60	M8	14	4	16.5	20	35	10	38	55	40	25	40	25	40	25	40	25

双级立式L1E(D)外型安装联接尺寸 Shape and installation joint dimensions of double-stage vertical type L1E(D)



机 型 Model	外型尺寸 Dimensions					安装尺寸 Mounting Dimensions								输入端尺寸 Dimensions of Input End				输出端尺寸 Dimensions of Output End				重量 Weight (kg)	
	D	H	d4	L	L1	d2	d3	d0	n	L2	R	S	d1	b1	h1	e1	d	b	h	e	带D	不带D	
WB1065	165	140	65	225	185	100	160	9	4	93	12	M6	10	3	11	16	18	6	20.5	25	13.5	11.5	
WB1285	210	160	85	268	230	120	185	11	4	118	12	M8	12	3	13	16	30	8	33	35	19.5	16.5	
WB1510	270	210	115	325	295	150	240	13	4	165	15	M8	14	4	16.5	20	35	10	38	55	40	25	