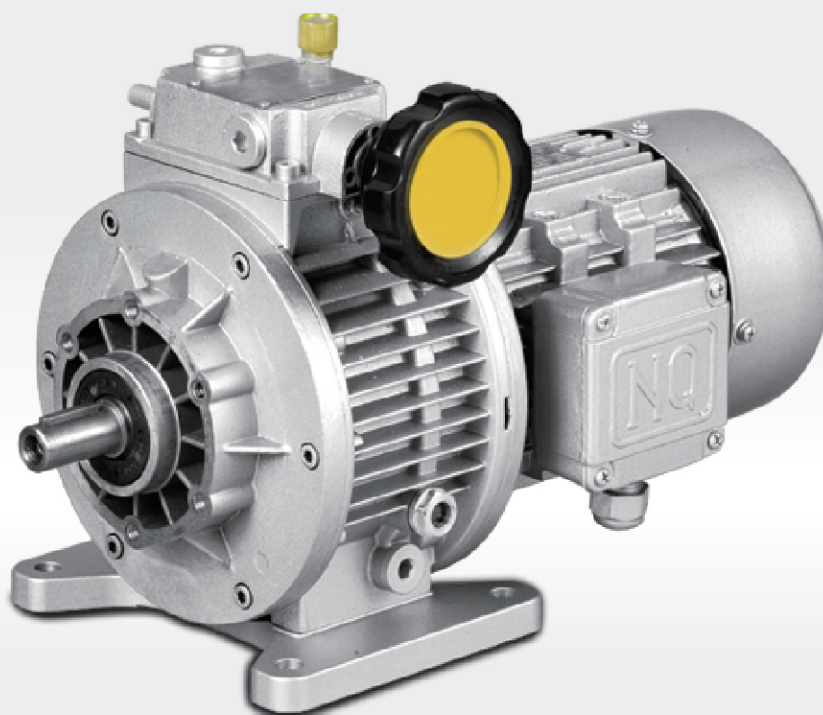
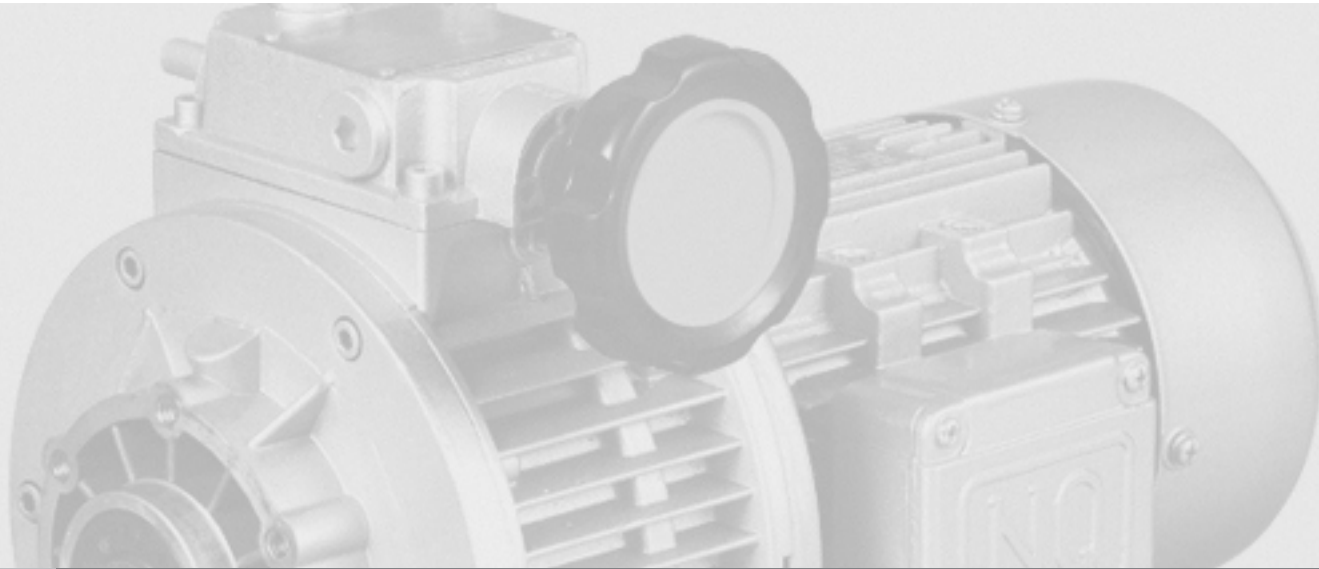


BONENG



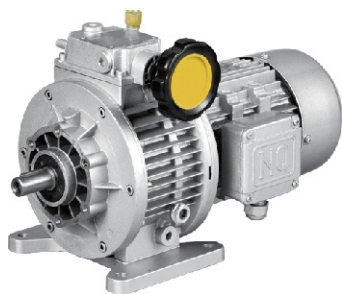
MB 系列行星摩擦式无级变速机

Series Planetary Mechanical Speed Driver



MB行星摩擦式无级变速器

Planetary Mechanical Speed Driver



- ◆ 变速范围大：调速范围200R/MIN-1000R/MIN(4极电机输入)，适合连续工作，可以正反转，能在负载启动及负载中按需要调节速度，适应工艺参数多变或连续变化的要求。
- ◆ 调速精度高、高强度、同轴结构，体积小，重量轻。
- ◆ 性能稳定，在允许负载下，选定的输出速度恒定。
- ◆ 运行平稳、噪声低、寿命长、维修少、操作简单、效率高。

- ◆ Variable speed range: 200 r/min ~ 1000 r/min. It is able to work continuously and rotate clockwise and counter-clockwise. It is capable of adjusting speed in the period of its starting and working.
- ◆ Accurate speed adjustment, high strength, coaxial structure, miniature and light weight.
- ◆ Stable output speed and property under allowable loading conditions.
- ◆ Low vibrations, quiet running, high endurance and easy operation.

在农业、食品、化工、环保、林木、造纸、建筑建材等等各个领域；

博能传动公司总部和各大区域技术专家以及各区域办事处的应用工程师、售后服务技师竭诚为您提供全面的技术咨询和完善的服务。

The products are widely applied in agriculture, food, chemical, environment protection, forest, paper making, and construction etc. The technical experts from headquarter and large arena, the application engineer from the regional offices and the after-sales service technician will provide you with comprehensive technical advice and perfect service.

注意事项！必须严格遵守以下各项！

Note: You must conform to the following instructions

- ◆ 样本中的结构示意图、外形图及其他附图只属范例，无严格比例要求。（未注尺寸单位均为mm）。
- ◆ 所注重量仅为平均值，并不具有约束力。
- ◆ 为防止意外事故发生，所有旋转部件均按照使用者所在国家和地区的安全规范由购置方加罩保护。
- ◆ 试车之前必须认真阅读使用说明书。
- ◆ 齿轮箱在供货时已处于准运行状态，运行前需加注润滑油。
- ◆ 本样本中注油量只作为参考值，实际注油量应以油镜上的标记为准。
- ◆ 润滑油粘度应按齿轮箱使用工况及使用环境温度选取。
- ◆ 只能采用国际知名品牌的润滑油。
- ◆ The structure scheme, appearance diagram and other attached diagrams in sample are examples, there is no strict proportion requirement. (The unmarked dimension units are mm).
- ◆ We can only refer to the marked weight in the manual.
- ◆ To prevent accidents, all the rotation parts should be added with protective covers according to local safety regulations and laws.
- ◆ Before testing, users should read instruction manual carefully.
- ◆ Gear unit has been tested before delivered, users should add lubrication oil before running.
- ◆ We can only refer to the marked oil in the manual. Actual oil filling level should be the same with the mark on oil immersion lens.
- ◆ Lubrication oil viscosity should be selected according to working conditions and the temperature of local environment.
- ◆ Users can only use high quality lubrication oil.

产品功能标识

Product Function Mark



油 镜 Oil immersion lens



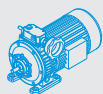
通气帽 Breather



进油孔 Oil filler

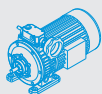


放油孔 Oil drainage



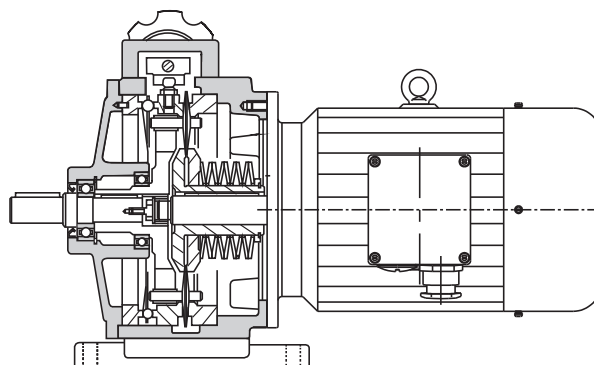
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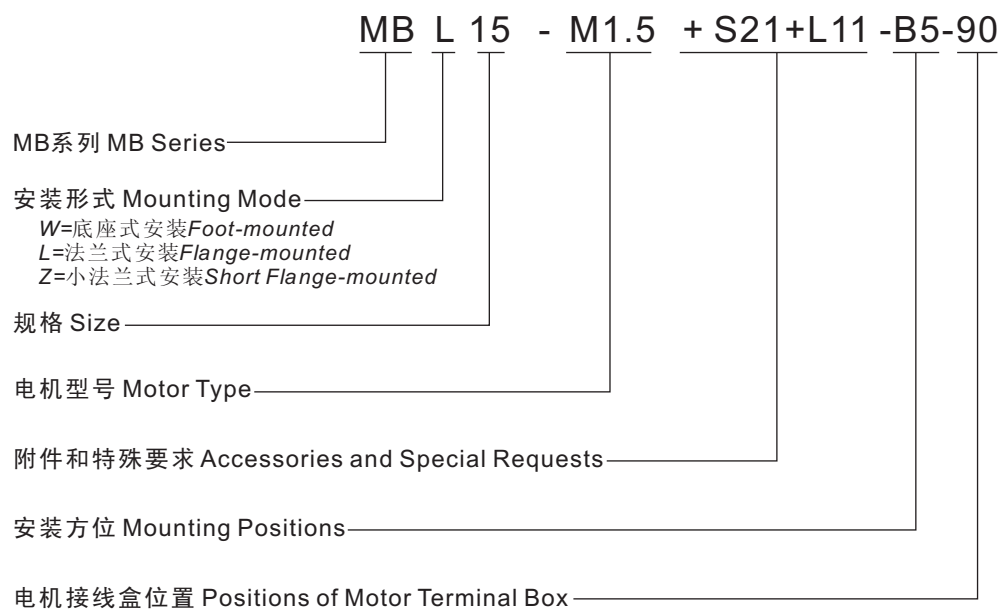
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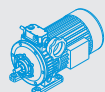
1 Sectional Drawings:



2 型号表示方法:

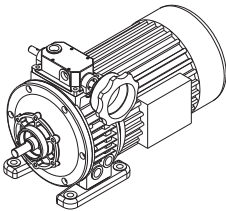
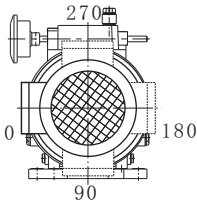
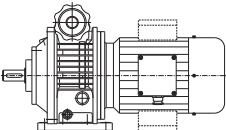
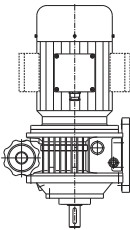
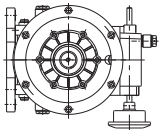
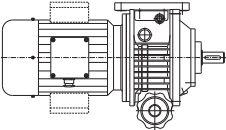
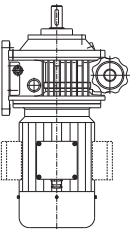
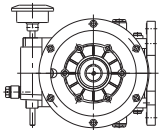
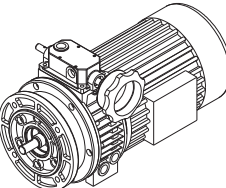
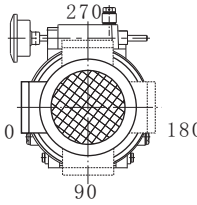
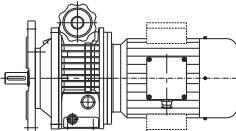
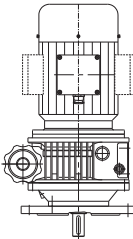
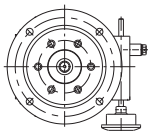
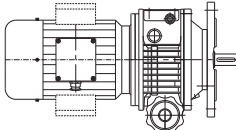
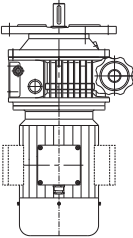
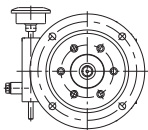
2 Type Designation

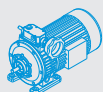




3 安装方位

3 Mounting Positions:

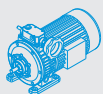
 MBW..		 B3	 V5	 B6A
		 B8B	 V6	 B6B
 MBL.. \ MBZ..		 B5	 V1	 B7A
		 B5B	 V3	 B7B



4 选型方法及举例：

4 Type Selection and Examples:

序号 Steps	说 明 Description	代号 Symbols	参 数 计 算 Parameters Calculation and Guidelines			
1	被驱动设备系数 Driven Machine Factor	f ₁	负荷性质 Load Characteristic	每天使用时间（小时）Operating hours per day (h)		
				≤2	2~10	10~24
			均匀负载 Uniform	1.00 (1.00)	1.00 (1.25)	1.25 (1.50)
			一般冲击 Moderate	1.00 (1.25)	1.25 (1.50)	1.50 (1.75)
			强烈冲击 Heavy	1.25 (1.50)	1.50 (1.75)	1.75 (2.00)
注：当每小时起动、停止次数在10次以上，请使用括号内数值。 Note: Apply values in the brackets when starts per hour are 10 times or more.						
2	输入转速 Input Speed	n ₁	750r/min≤n ₁ ≤1450r/min	更高转速请来电咨询 Consult us if higher speed required.		
3	根据被驱动设备的调速范围 确定变速机的调速范围 Calculation of the speed range of the variator according to that of the driven machine.	n ₂	查传动能力表第5页 See the table of transmission capacity on P5			
4	根据被驱动设备需要的扭矩， 查传动能力表确定变速机的 规格 Determination of the size of the variator according to the torque required by the driven machine with reference to the table of the transmission capacity	T ₂	被驱动设备需要的恒扭矩 Constant torque required by the driven machine $T_{2Natmax} \geq T_2 \cdot f_1$			
			被驱动设备需要变化的扭矩 Variable torque required by the driven machine $T_{2Natmax} \geq T_{2min} \cdot f_1$ $T_{2Natmin} \geq T_{2max} \cdot f_1$ 根据传动能力表确定变速机规格。 Determine the size with reference to the table of transmission capacity T _{2Natmax} -在最高转速时的额定输出扭矩 Rated output torque at max speed T _{2Natmin} -在最低转速时的额定输出扭矩 Rated output torque at min speed			
5	径向力、轴向力校核 Check the radial and axial forces on the output shaft.	F _{r1} /F _{r2} F _{a1} /F _{a2}	查第5页 系列Fr2表 See the table of Fr2 on P 5.			
6	确认润滑方式 Determination of Lubrication System		一般采用飞溅润滑 Generally Splash Lubrication			
7	确认冷却方式 Determination of Cooling System		自然冷却 Generally Air Cooling			
8	按型号表示方法确定各项 Determination of every item included in the Type Designation		型号表示方法见第1页 For details about Type Designation, see P 1.			
9	一般环境条件 Normal ambient conditions		环境温度：-10至40℃，空旷场地通风良好， 海拔高度1000米以下，一般工厂灰尘。 Ambient temperature -10 to 40℃, ample space, good ventilation, altitude not exceeding 1000m and common plant dust.			
10	特殊环境条件 Special ambient conditions		高温、低温、灰尘多，化学作用（例：酸碱等）， 露天（直接日照、冰、水淋等），请咨询。 For higher or lower temperature, dusty sites, chemical reaction(acids, alkaline, etc), or open field (sunlight, ice, rain, etc), please consult us!			



选型举例

Type selection example

已知条件:

- 1、被驱动设备所需转速范围1000~200r/min,所需恒扭矩6N·m
- 2、普通电机: 4极, 转速 $n_1=1450\text{r/min}$;
- 3、负荷性质: 一般冲击, 连续工作8小时/天,
- 4、安装输出形式: 法兰式安装, 安装方位B5, 接线盒位置为270.

选型步骤:

- 1、根据负荷性质查表可得出被驱动设备系数 $f_1=1.25$;

- 2、确定齿轮箱扭矩:

$$T_{2\text{natmax1}} \geq T_2 \cdot f_1 = 6 \times 1.25 = 7.5 \text{ N} \cdot \text{m}$$

查传动能力表得出MB15配1.1kW电机符合条件。

- 3、根据已知条件和以上数据, 查传动能力表可选出型号为:

MBL15-M1.1-B5-270

Known Criteria:

1. The speed required by the driven machine: 1000-2000r/min, constant torque required: 6N.m
2. Common motor: 4-pole, speed $n_1=1450\text{r/min}$
3. Load characteristics: moderate, operating 8 hours/d
4. Mounting mode: flange-mounted, mounting position B5, terminal box position 270

Selection Steps:

1. By referring to the table of Load Characteristic, we get the driven machine factor $f_1=1.25$

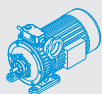
2. Calculation of the torque:

$$T_{2\text{natmax1}} \geq T_2 \cdot f_1 = 6 \times 1.25 = 7.5 \text{ N} \cdot \text{m}$$

In the table of transmission capacity, MB15 with 1.1kW motor is appropriate.

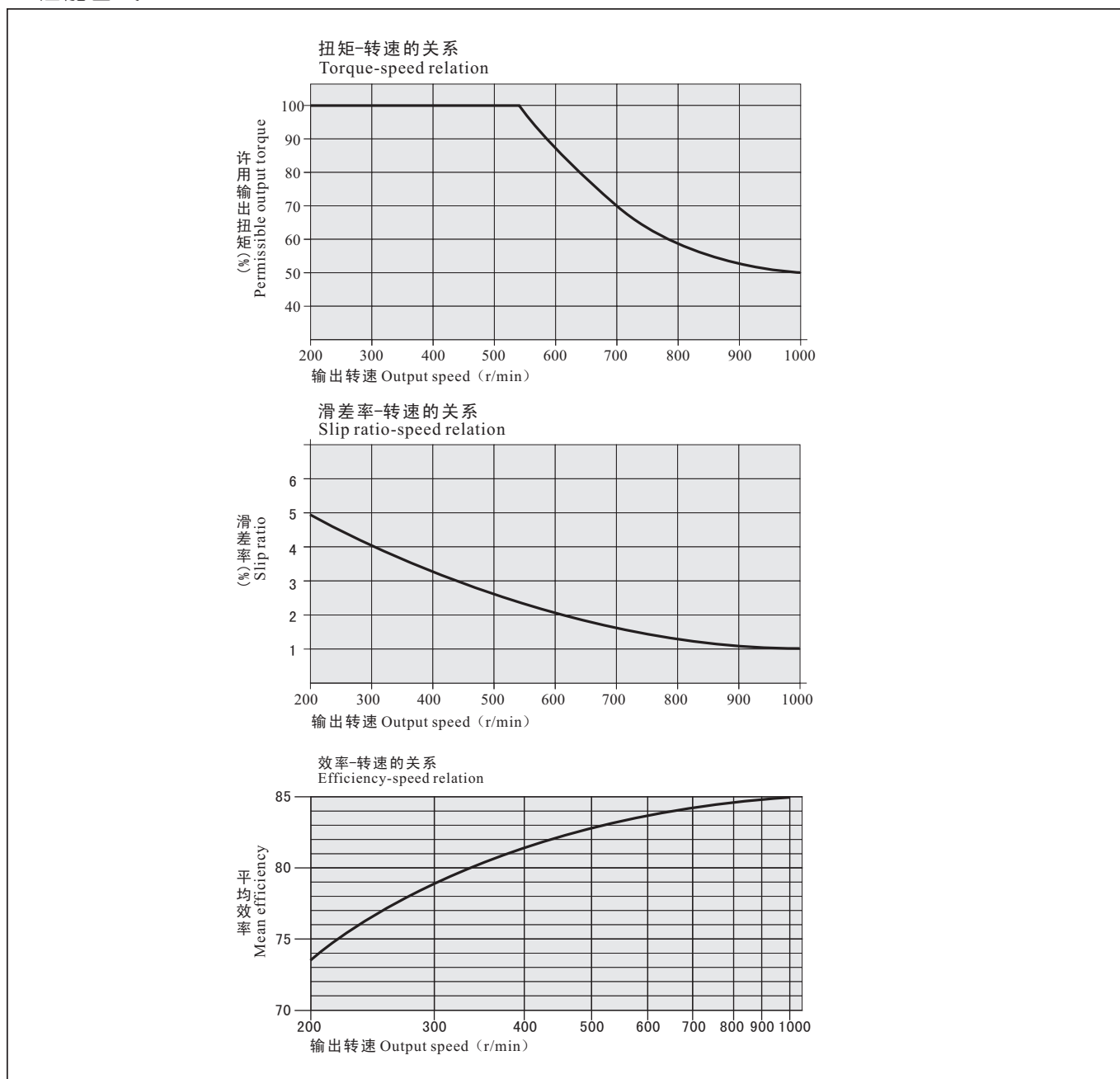
3. The Type selected:

MBL15-M1.1-B5-270



5 性能曲线:

5 Performance Curves:



6 传动能力表:

6 Transmission Capacity:

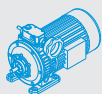
机座号 Size		04		07		15		40		75		220			
额定功率 Power of motor (kW)		0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22
输入转速 Input speed	调速范围 Variable speed	T2Natmax—T2Natmin (N·m)													
1450(r/min)	1000-200(r/min)	3-6	5-10	6-12	9-18	12-24	18-36	24-48	32-64	45-90	60-120	88-176	118-235	145-290	176-352

7 输出轴径向力Fr2(N)表:

7 Radial Force on Output Shaft(Fr2)(N):

规格 Size	04	07	15	40	75	220
Fr(N)	588	980	1270	1860	2160	4410

备注: 各规格与其它减速机组合查其它减速机的Fr2值。 Note: For combination with other Series, see their respective Fr2 tables.



8 外形尺寸图:

8 Outline Dimensions:

	04	07	15	40	75	220
A	160	190	210	300	365	480
A1	120	160	180	245	315	375
b	5	6	8	8	10	16
B	135	150	170	270	290	415
B1	105	125	140	230	250	355
C	15	15	18	20	35	45
C2	12	12	16	16	20	28
d	14k6	20k6	25k6	30k6	35k6	55m6
E	30	40	50	60	70	110
f2	3.5	3.5	4	4	5	5
f3	3.5	/	3.5	4	4	/
F	118	126	126	166	194	265
G	112	125	157	195	201	374
h	90	106	125	150	200	250
H	188	217	248	300	392	514
L	145	177	223	268	319	456
M2	165	165	215	265	300	400
M3	130	/	165	215	265	/
N2	130h7	130h7	180h7	230h7	250h7	350h7
N3	110h7	/	130h7	180h7	230h7	/
P	85	85	85	100	150	230
P2	200	200	250	300	350	450
P3	160	/	200	250	300	/
R	60	73	95	85	103	160
S	9	11	11	13.5	17.5	22
S2	11	11	13.5	13.5	17.5	17.5
S3	9	/	11	13.5	13.5	/
t	16	22.5	28	33	38	59
重量 [*] (kg) Weight	13	17	33	60	105	230

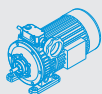
注:*重量不含电机和润滑油。

Note: * The weight of motor and lubricant is not included.

8.1 MB系列配M系列电机尺寸图表:

8.1 MB series with M series motor size chart:

4极功率(kW) 4-pole power	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22
Lm(mm)	223	251	251	287	287	351	351	361	416	416	553	566	589	589
D(mm)	147	170	170	178	178	199	199	227	279	279	339	339	382	382
重量 Weight (kg)	15	21	22	24	29	39	42	64	96	115	167	182	215	240



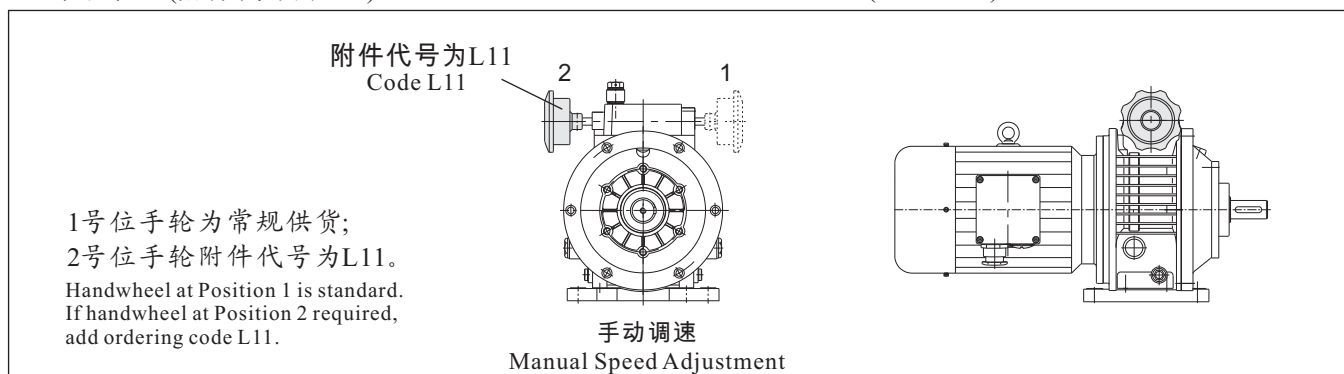
9 附件

9.1 数码显示测速仪(附件代号S21\S22)



9.2 手轮位置(附件代号为L11)

9.2 Handwheel (Code L11):



9.3 润滑油

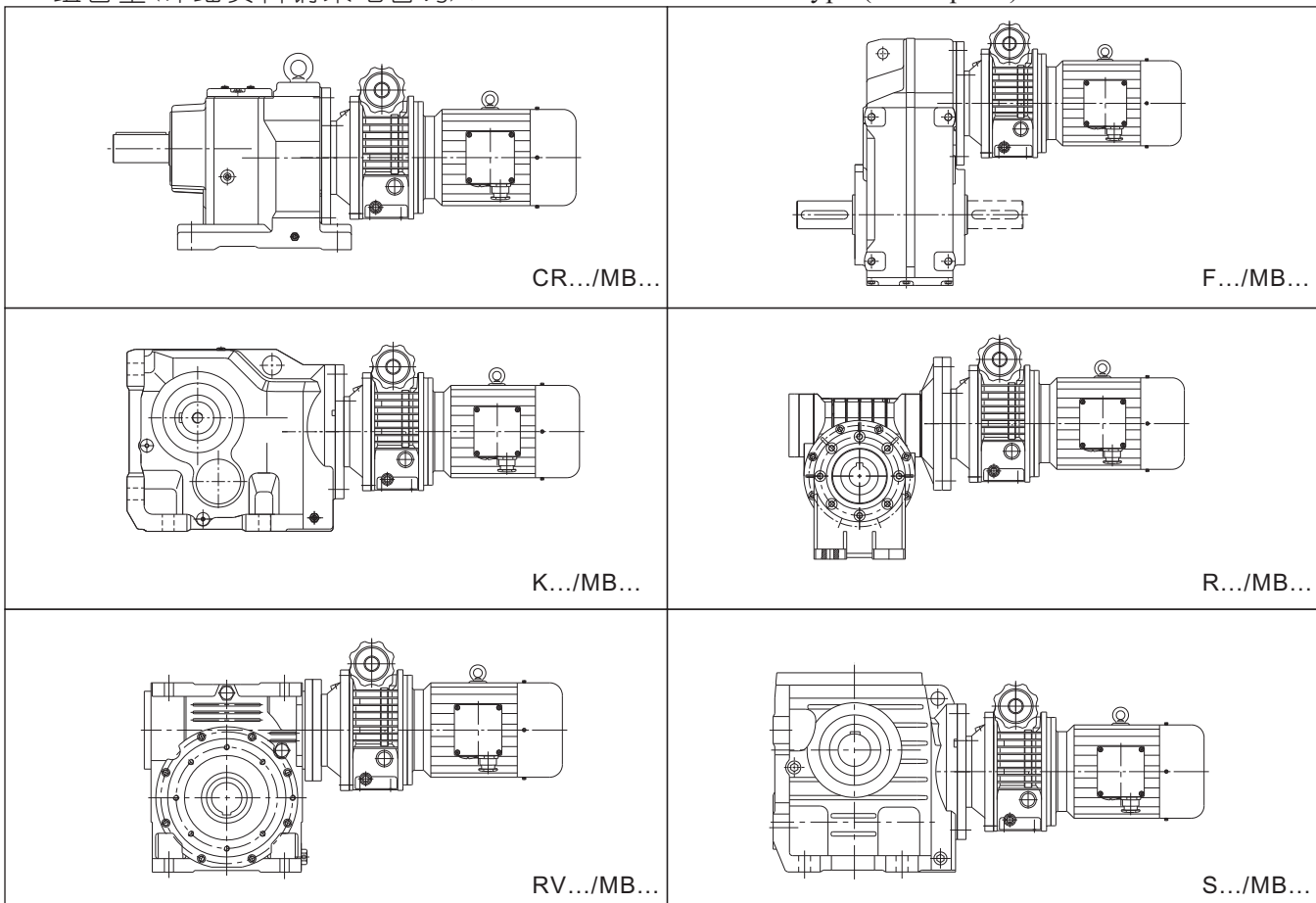
注:在环境温度-10℃~+40℃时, MB系列润滑油牌号为UB-3,附件代号UB3,出厂时已加入润滑油。

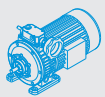
9.3 Oil

Note: When ambient temperature is between -10℃~+40℃, UB-3 lubricant should be used for MB series, accessory code is UB3, Lubrication oil already is filled before out-factory .

10 组合型(详细资料请来电咨询):

10 Combi-type (On request):



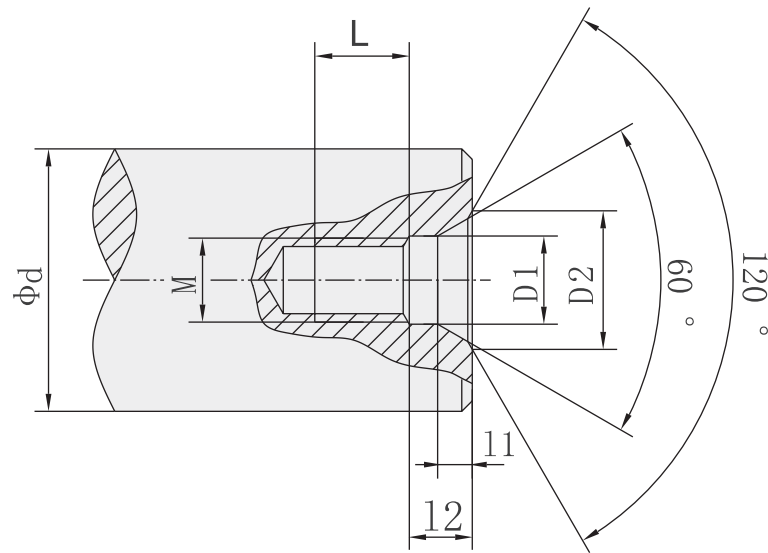


11 轴端中心孔：

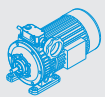
轴端C型螺纹中心孔

11 Shaft end central hole:

Shaft end C Type screw central hole

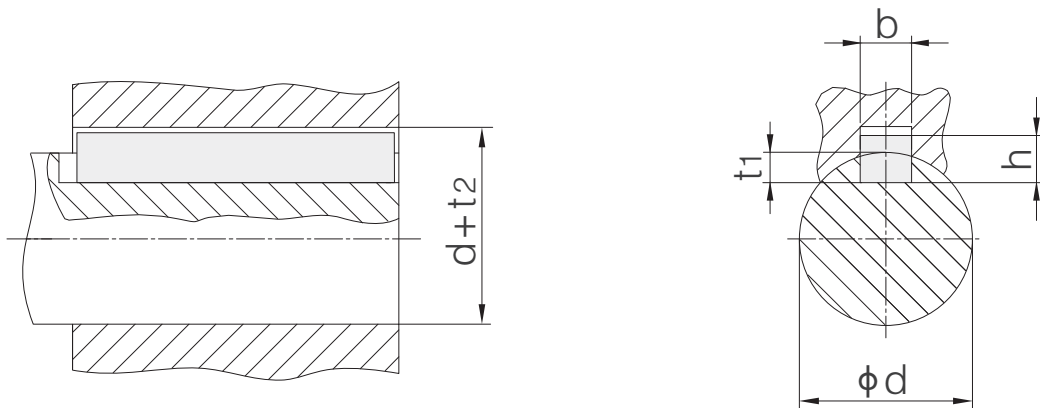


d	M	L	12	11	D1	D2
$7 < d \leq 10$	M3	10	2.6	1.8	3.2	5.8
$10 < d \leq 13$	M4	10	3.2	2.1	4.3	7.4
$13 < d \leq 16$	M5	10	4	2.4	5.3	8.8
$16 < d \leq 21$	M6	12	5	2.8	6.4	10.5
$21 < d \leq 24$	M8	12	6	3.3	8.4	13.2
$24 < d \leq 30$	M10	15	7.5	3.8	10.5	16.3
$30 < d \leq 38$	M12	20	9.5	4.4	13	19.8
$38 < d \leq 50$	M16	25	12	5.2	17	25.3
$50 < d \leq 85$	M20	30	15	6.4	21	31.3
$85 < d \leq 130$	M24	35	18	8	25	38
$130 < d \leq 225$	M30	45	18	11	31	48



12 平键与键槽的尺寸:

12 Dimension of parallel key and keyway:



d	b	h	t ₁	d + t ₂
8 < d ≤ 10	3	3	1.8	d + 1.4
10 < d ≤ 12	4	4	2.5	d + 1.8
12 < d ≤ 17	5	5	3	d + 2.3
17 < d ≤ 22	6	6	3.5	d + 2.8
22 < d ≤ 30	8	7	4	d + 3.3
30 < d ≤ 38	10	8	5	d + 3.3
38 < d ≤ 44	12	8	5	d + 3.3
44 < d ≤ 50	14	9	5.5	d + 3.8
50 < d ≤ 58	16	10	6	d + 4.3
58 < d ≤ 65	18	11	7	d + 4.4
65 < d ≤ 75	20	12	7.5	d + 4.9
75 < d ≤ 85	22	14	9	d + 5.4
85 < d ≤ 95	25	14	9	d + 5.4
95 < d ≤ 110	28	16	10	d + 6.4
110 < d ≤ 130	32	18	11	d + 7.4
130 < d ≤ 150	36	20	12	d + 8.4
150 < d ≤ 170	40	22	13	d + 9.4
170 < d ≤ 200	45	25	15	d + 10.4
200 < d ≤ 230	50	28	17	d + 11.4
230 < d ≤ 260	56	32	20	d + 12.4

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华南区 South china District		
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望城经济开发区普瑞大道1288号 TEL:0731-88382129 FAX:88383129		
广 州 GUANGZHOU	510630	
天河区华穗路172号星辰财富港西塔1506室 TEL:020-38372340 FAX:37592742		
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深 圳 SHENZHEN	518003	
罗湖区凤凰路193号海珑华苑海天阁1502室 TEL:0755-82305500 FAX:25490492		

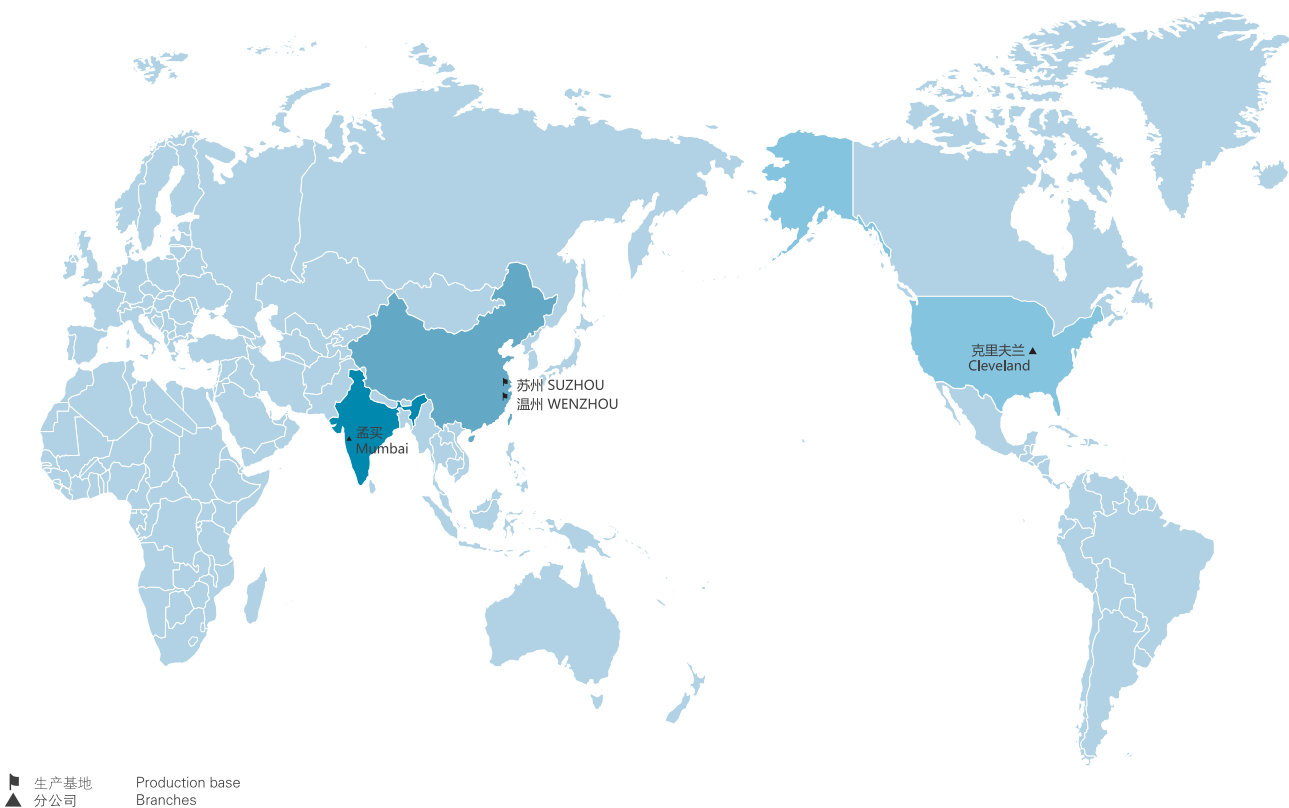
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南明区遵义路万象国际A栋18楼301室 TEL:0851-85877733 FAX:85877732		
昆 明 KUNMING	650021	
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华东区 East china District		
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