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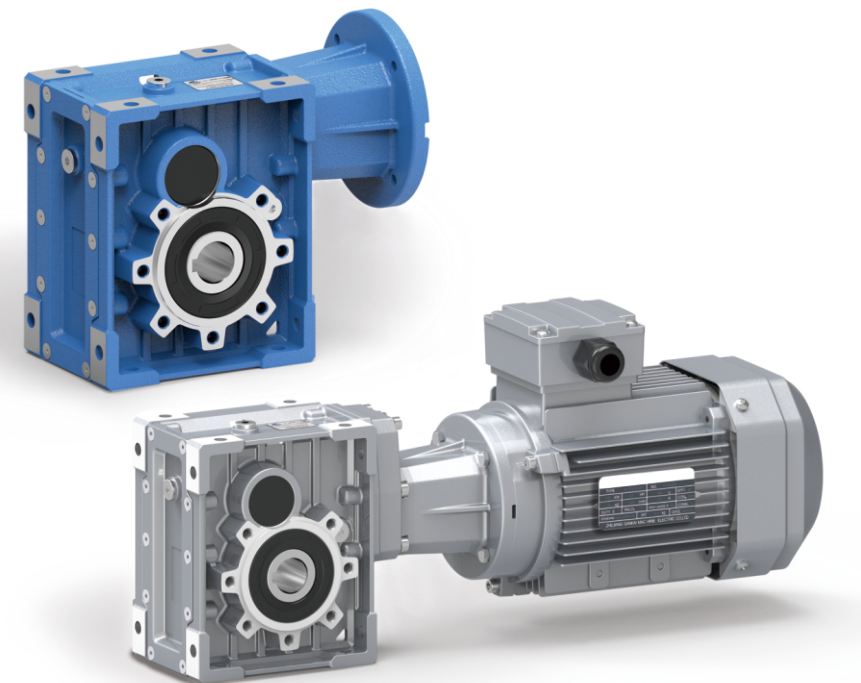
Http://www.micro-reducer.com

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MAILI 迈力

服务铸品牌 · 创新领未来



MLM 系列

斜齿-准双曲面齿轮减速机

MLM SERIES HELICAL-HYPOID GEAR REDUCER

浙江邁力機電有限公司

ZHEJIANG MAILI ELETRICAL AND MECHANICAL CO.,LTD



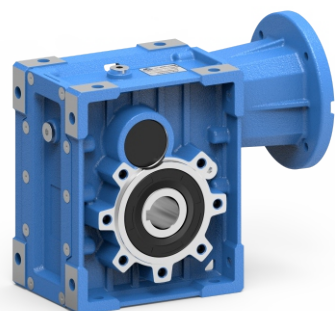
QUALITY DRRIVE
FROM MAILI
REPUTATION COME ALONG

真诚与您沟通
精心打造您的品牌

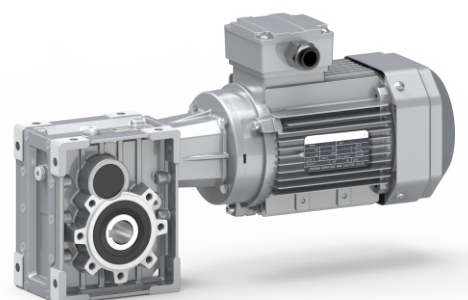
目录 / CONTENTS

产品图片	01
PRODUCT PICTURE	
产品概述	02
PRODUCTS OVERVIEW	
型号说明	03
MODEL ILLUMINATE	
选型相关参数	05
RELEVANT PARAMETER	
减速机选型表	12
GEAR UNIT SELECTION TABLES	
输入尺寸图表	29
INPUT SIZE DIAGRAM	
外形尺寸图表	31
OUTLINE DIMENSION SHEET	
附件尺寸图表	36
ACCESSORIES DIMENSION SHEET	
安装方位图	38
INSTALLATION POSITIONS DIAGRAM	
安装	41
INSTALLATION	
润滑油	43
LUBRICATION	
维护	44
MAINTENANCE	
定货须知	45
NOTICE FOR ORDER	
减速机运转故障	46
GEAR UNIT MALFUNCTIONS	
减速机负载特征表(参考件)	47
MCHARGE CHARACTERISTIC CHART(FOR REFEREBCE)	
产品构造原理	49
PRODUCT STRUCTURE PRINCIPLE	

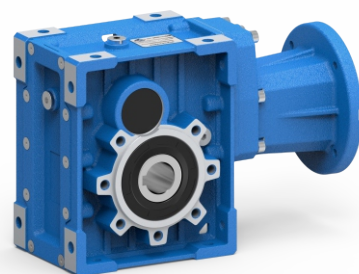
产品图片 / PRODUCT PICTURE



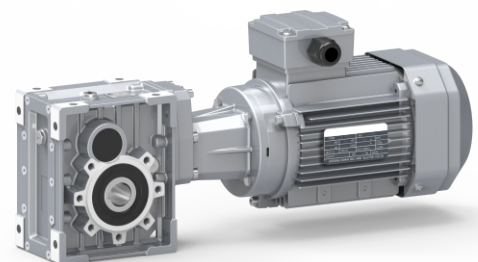
MLM50B(28B)-90B(58B)(IEC)



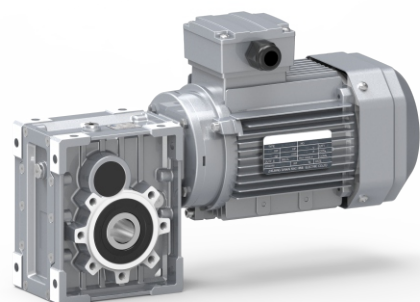
MLM50B(28B)-90B(58B)(MV)



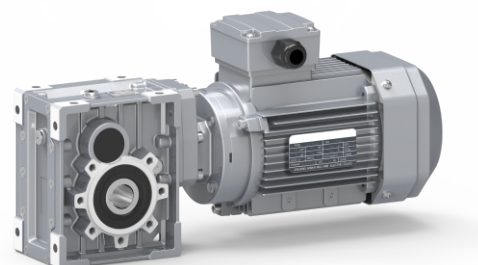
MLM50C(28C)-90C(58C)(IEC)



MLM50C(28C)-90C(58C)(MV)



MLM50B(28B)-90B(58B)(MV)直连



MLM50C(28C)-90C(58C)(MV)直连

产品概述 / PRODUCTS OVERVIEW

产品特点 / Products features

MLM 系列斜齿-准双曲面齿轮减速机是我公司自主研发的新一代实用性产品。融合了国内外先进技术，具有以下一些主要特点：

1. 采用准双曲面齿轮传动，传动比大；
2. 输出扭矩大，传动效率高，节能环保；
3. 优质铝合金铸造，重量轻，不生锈；
4. 传动平稳，噪音小，适合在恶劣环境中长期连续工作；
5. 美观耐用，体积小；
6. 可适应全方位安装，应用广泛，使用方便；
7. SKM系列减速机安装尺寸与NMRV系列蜗轮蜗杆减速机完全兼容（SKM28与NMRV050部分尺寸不同）；
8. 模块化组合，可多种形式组合，满足各种传动条件的需求。

MLM series helical-hypoid gear units is a new-generation of product developed by our company, with a compromise of advanced technology both at home and abroad, its main features are as follows:

1. Driven by hypoid gear, has big ratios.
2. Large in output torque, high efficiency, energy saving and environmental protection.
3. Made of high-quality aluminum alloy, light in weight and nonrusting.
4. Smooth in running and low in noise, can work long time in dreadful conditions.
5. Good-looking in appearance, durable in service life and small in volume.
6. Suitable for all round installation, wide application and easy of use.
7. The mounting dimension of SKM series are compatible with NMRV series worm gear unit (A part of NMRV050 dimensions are different from SKM28).
8. Modular and multistructure can meet the demands of various conditions.

主要材料 / Main materials

1. 外壳：铝合金（机座：50-90(28-58)）
2. 齿轮：20CrMnTi，渗碳淬火，齿面硬度56-62HRC，精磨后保持渗碳层厚度0.3-0.5mm。

1. Housing: die-cast aluminum alloy (frame size: 50 to 90 (28 to 58));
2. Gear wheel: 20CrMnTi, carbonize & quencher heat treatment make the hardness of gear's surface up to 56-62 HRC, retain carburization layer's thickness 0.3 and 0.5mm after precise grinding.

表面涂装 / Surface painting

铝合金外壳：

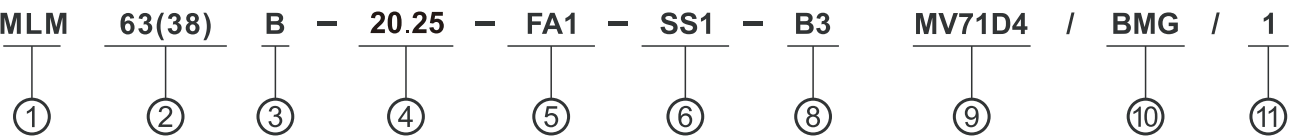
1. 先抛丸处理，再经过特种防腐处理，保持银白金属感，并耐汽油，二甲苯等有机溶剂的腐蚀；
2. 磷化处理后，再喷PAL5010蓝色或银灰色涂料。

Aluminum alloy housing：

1. Shot blasting and special antiseptic treatment on the aluminum alloy surface.
2. After phosphating, spray the paint PAL5010 in blue or in grey.

型号说明 / MODEL ILLUMINATE

减速电机 / Geared motor



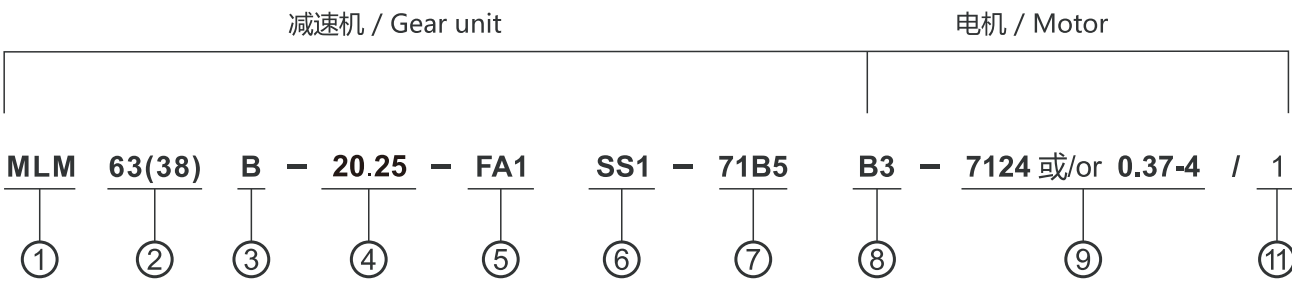
NO	说 明	Comments
1	减速机系列代号：MLM	Code for gear units series: MLM
2	减速机规格代号：50(28)、63(38)、75(48)、90(58)	Specification code of gear units: 50(28)、63(38)、75(48)、90(58)
3	1) B：表示2级传动 2) C：表示3级传动	1) B: Means 2 stages 2) C: Means 3 stages
4	减速机速比 i	Speed ratio of reducer i
5	1.无代号表示不带输出法兰 2.FA,FB,FC,FD,FE(1/2):输出法兰代号和位置	1.No mark means without output flange 2.FA, FB, FC, FD, FE(1/2):output Flange and position
6	1.无代号表示孔输出 2.SS(1/2):单向输出轴和位置 3.DS：双向输出轴	1.No mark means hole output 2.SS(1/2):Single output shaft and position 3.DS:Double output shaft
8	安装方位代号	Installation position code
9	电机型号规格	motor type
10	1.无代号表示不带制动器 2.BMG:制动器	1.No mark means without brake 2.BMG:brake
11	电机接线盒位置，默认位置1可以不写	Position of motor terminal box default position 1 not to write out is ok

备注：准双曲面齿轮减速机与RV减速机安装机座对照

准双曲面齿轮减速机	↔	RV减速机
28		50
38		63
48		75
58		90

型号说明 / MODEL ILLUMINATE

减速机或减速机+IEC电机 / Gear unit or gear unit + IEC motor



NO	说 明	Comments
1	减速机系列代号：MLM	Code for gear units series: MLM
2	减速机规格代号：50(28)、63(38)、75(48)、90(58)	Specification code of gear units: 50(28)、63(38)、75(48)、90(58)
3	1) B：表示2级传动 2) C：表示3级传动	1) B: Means 2 stages 2) C: Means 3 stages
4	减速机速比 i	Speed ratio of reducer i
5	1.无代号表示不带输出法兰 2.FA,FB,FC,FD,FE(1/2):输出法兰代号和位置	1.No mark means without output flange 2.FA, FB, FC, FD, FE(1/2):output Flange and position
6	1.无代号表示孔输出 2.SS(1/2):单向输出轴和位置 3.DS：双向输出轴	1.No mark means hole output 2.SS(1/2):Single output shaft and position 3.DS:Double output shaft
7	1) 输入法兰规格代号(63B5、71B5、71B14.....) 2) HS：表示轴输入	1) Input flange code (63B5、71B5、71B14.....) 2) HS: means shaft input
8	安装方位代号	Installation position code
9	1.无代号表示不带电机 2.电机型号或功率、极数	1.No mark means without motor 2.Model motos (poles of power)
11	电机接线盒位置，默认位置1可以不写	Position of motor terminal box default position 1 not to write out is ok

注：订单时请说明是否带电机，一般按不带电机供应。

NOTE: When ordering , you should show whether the reducers are equipped with motors , otherwise reducers aren’ t supplied with motors.

示例Example：SKM75C(48C) - 149.33 - B3 - MV71D4
SKM75B(48B) - 59.44 - FA1 - 90B5

选型相关参数 / RELEVANT PARAMETER

功率 P

$P_1 = P_2 / \eta \text{ (kW)}$
 $P_{1n} \geq P_1 \cdot fs \text{ (kW)}$

P_1 输入功率 P_2 输出功率
 P_{1n} 输入电机额定功率 fs 使用系数
 η 传动效率

SKM系列减速机的效率是根据传动级数确定，2级传动效率 η 为92%，3级传动效率 η 为90%。

POWER P

$P_1 = P_2 / \eta \text{ (kW)}$
 $P_{1n} \geq P_1 \cdot fs \text{ (kW)}$

P_1 Input power P_2 Output power
 P_{1n} Rated input motor power fs Service factor
 η Transmission efficiency

The efficiency of SKM gear units varies with the number of gear stages, which is 92% for 2-stage, 90% for 3-stage.

转速 n / Rotation speed n

n_1 减速机输入转速
 n_2 减速机输出转速

n_1 Gear units input speed
 n_2 Gear units output speed

若是齿轮箱外部传动装置驱动，为了优化工作条件和提高使用寿命，建议使用1400r/min或更低转速。允许输入较高的输入转速，但在这种情况下，额定扭矩 M_2 会下降。

If driven by the external gearing, 1400r/min or lower rotation speed is suggested so as to optimize the working conditions and prolong the service life. Higher input rotation speed is permitted, but in this situation, the rated torque M_2 will be reduced.

传动比 i / Transmission ratio i

$i = n_1 / n_2$

传动比通常为小数，在选型表中保留两位小数。
Usually transmission ratio is decimal fraction with 2 radix point tagged in selection tables.

扭矩 M / Torque m

$M_2 = 9550 \cdot P_1 \cdot \eta / n_2 \text{ (Nm)}$
 $M_{2n} \geq M_2 \cdot fs \text{ (Nm)}$

M_2 输出扭矩
 M_{2n} 额定输出扭矩
 P_1 输入功率
 η 传动效率
 fs 使用系数

$M_2 = 9550 \cdot P_1 \cdot \eta / n_2 \text{ (Nm)}$
 $M_{2n} \geq M_2 \cdot fs \text{ (Nm)}$

M_2 Output torque
 M_{2n} Rated output torque
 P_1 Input power
 η Transmission efficiency
 fs Service factor

选型相关参数 / RELEVANT PARAMETER

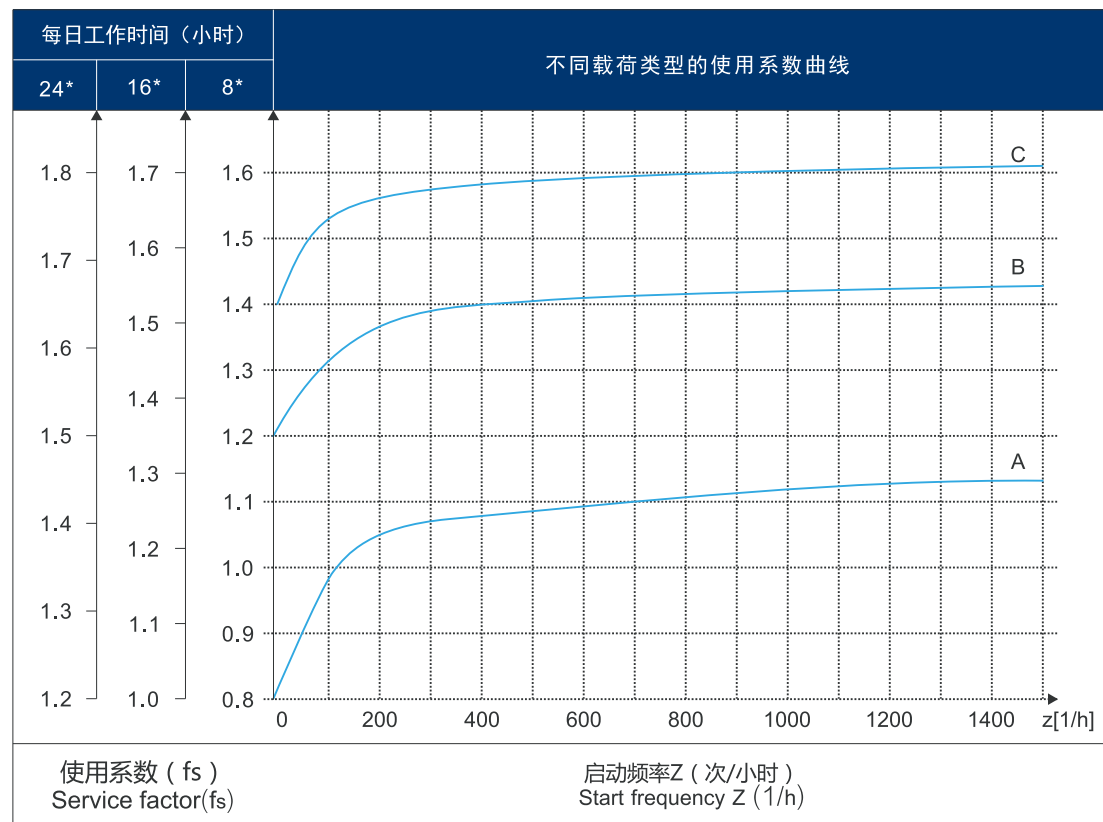
使用系数 fs / Service factor fs

使用减速机时，应考虑一定的使用系数 fs ，它是根据每天的运转时间和启停频率 Z 确定的。

根据惯性加速系数确定三种负载类型，在下图中可以读取实际应用的使用系数，按下图选取的使用系数必须小于或等于从性能参数表中提供的使用系数。

The effect of the driven machine on the gear unit is taken into account to a sufficient level of accuracy using the service factor fs . The service factor is determined according to the daily operating time and the starting frequency Z .

Three load classifications are considered depending on the mass acceleration factor. You can read off the service factor applicable to your application in following figure. The service factor selected using this diagram must be less than or equal to the service factor as given in the performance parameter table.



- 启动频率 Z ：周期包括所有启动、制动次数以及变速电机高低速变化时的次数。
- Starting frequency Z : The cycles include all starting and braking procedures as well as change overs from low to high speed.

选型相关参数 / RELEVANT PARAMETER

负载类型 / Load classifications

负载性质:	Type of load:
A. 均匀冲击负载，允许惯性加速系数Fa≤0.2	A. Uniform ,permitted mass acceleration factor Fa≤0.2
B. 中等冲击负载，允许惯性加速系数Fa≤3	B. Moderate shock load,permitted mass acceleration factor Fa≤3
C. 重冲击负载，允许惯性加速系数Fa≤10	C. Heavy shock load,permitted mass acceleration factor Fa≤10

轻负载的螺杆输送，风扇，装备线，输送带，小型搅拌器，电梯，清洗机器，过滤器，控制驱动。
卷扬机，木工机器进料器，货物起重机，平衡器，绞螺纹机器，中型搅拌器，重型输送带，绞盘，滑动闸门，刮料机，包装机械，混凝土搅拌机，行车驱动装置，铣床，齿轮泵。
大型搅拌器，剪床，压机，离心机，旋转支撑装置，重型绞盘和起重机，磨床，石材打磨机，翻斗机，钻床，冲床，凸轴压机，摺床，机床转盘，翻桶装置，震荡装置，破碎机。

Screw feeders for light materials, fans, assembly lines, conveyor belts for light materials, small mixers, lifts, cleaning machines, fillers, control machines.

Winding devices, woodworking machine feeders, goods lifts, balancers, threading machines, medium mixers, conveyor belts for heavy materials, winches, sliding doors, fertilize scrapers, packing machines, concrete mixers, crane mechanisms, milling cutters, folding machines, gear pumps.

Mixers for heavy materials, shears, presses, centrifuges, rotating supports, winches and lifts for heavy materials, grinding lathes, stone mills, bucket elevators, drilling machines, hammer mills, cam presses, folding machines, turntables, tumbling barrels, vibrators, shredders.

惯性加速系数 / Mass acceleration factor

惯性加速系数计算如下：	The mass acceleration factor is calculated as follows:
Fa=Jc/Jm	Fa=Jc/Jm
Fa惯性加速系数	Fa Mass acceleration factor
Jc所有外部传动惯量（kgm²）	Jc All external mass moments of inertia(kgm²)
Jm驱动电机的传动惯量（kgm²）	Jm Mass moment of inertia on the motor end(kgm²)
如果惯性加速系数Fa>10，请与我们技术部联系。	If mass acceleration factors fa>10,please call our Technical Service.

为了保持减速机的使用寿命，从产品样本中所选择的使用系数fs应等于或略高于计算出的使用系数fs。

To keep the service-life of gear units,use factor fs selected from the catalogue must be equal or slightly higher than the calculated use factor fs.

举例 / Example：

惯性加速系数2.5（负载类型B），运行时间14小时/天，（按16小时/天查图）和每小时200次起停，查图得使用系数fs=1.48。根据性能参数表所选择的使用系数fs≥1.48

Mass acceleration factor 2.5 (load classification B)，14hours/day operating time（read off at 16h/d）and 200 cycles/hour result in a service factor fs=1.48.

choose the service factor fs≥1.48 according to the parameter sheet.

选型相关参数 / RELEVANT PARAMETER

径向载荷和轴向载荷 / Overhung loads and axial forces

在决定影响径向载荷时，安装在轴端上的传动件类型必须考虑在内。不同类型的传动对应不同的传动附加系数fz，列表如下：

When determining the resulting radial loads,the type of transmission elements,mounted on the shaft end must be considered,Varous transmission elements are corresponding with following transmission element factors fz:

传动件 Transmission element	传动附加系数fz Transmission element factor fz	注释 Comments
齿轮 Gears	1.15	<17齿 teeth
链轮 Chain sprockets	1.25	<20齿 teeth
	1.40	<13齿 teeth
V 带轮 Narrow V-belt pulleys	1.75	有预紧力作用 Influence of the tensile force
平带轮 Flat belt pulleys	2.50	有预紧力作用 Influence of the tensile force
齿带轮 Toothed belt pulleys	2.50	有预紧力作用 Influence of the tensile force

作用在电机和齿轮轴上的径向载荷按如下公式计算：
The overhung loads exerted on the motor or gear shaft is then calculated as follows.

$$Fr = \frac{M \cdot 2000 \cdot fz}{d_o} \text{ (N)}$$

Fr 作用在轴上的载荷[N] Resulting radial load [N]
M 作用在轴上的扭矩[Nm] Torque on the shafts [Nm]
d_o 安装在轴上传动件的平均直径[mm] Mean diameter of the mounted transmission element in [mm]
fz 传动附加系数 Transmission element factor

许用径向载荷时根据轴承额定使用寿命L_{10n}来估算的（根据ISO0281）。对于特殊的运行条件，许用径向载荷时根据修正使用寿命Lna来确定。

The basis for determining the permitted radial loads is the computation of the rated service life L_{10n} of the bearings（according to ISO0281）For special operating conditions，the permitted radial loads can be determined with regard service life Lna.

当作用点偏离出轴中点时，许用径向载荷须按以下公式来计算，取在X点的许可数值F×L(根据轴承的使用寿命)

The permitted radial loads given in the selection tables must be calculated using the following formula in the event of force application not in the center of the shaft end.The smaller of the two values F×L（according to bearing service life）

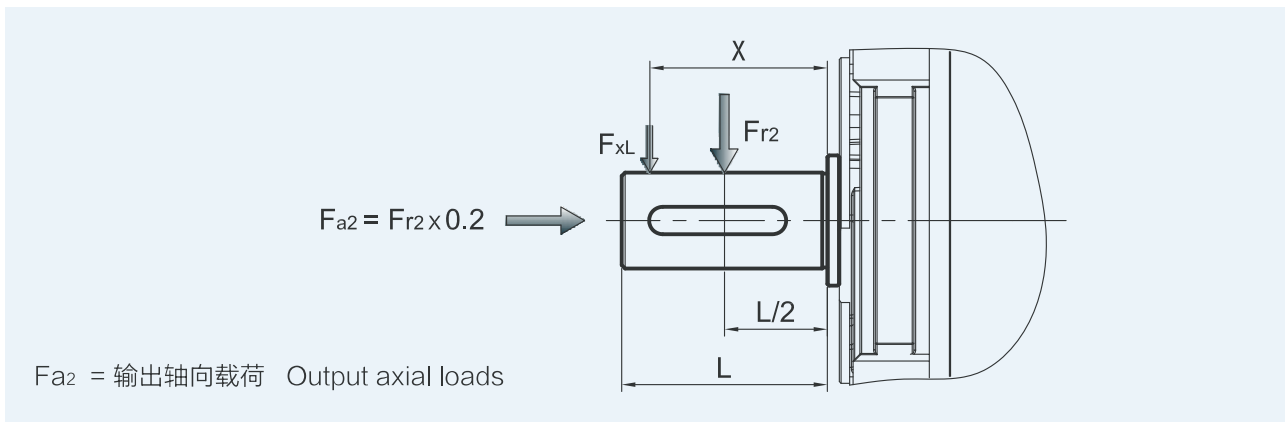
根据轴承的使用寿命公式 / according to bearing service life：

$$F \times L = Fr_{(1,2)} \cdot \frac{a}{b+x} \text{ [N]}$$

Fr₁,Fr₂ =性能参数表中的许用径向载荷（x=L/2）[N]
Permitted overhung load（x=L/2）for footmounted gear units according to he selection tables in [N]
X=从轴肩到受力点的距离[mm] Distance from the shaft shoulder to the force application point in [mm]
a,b =减速机径向转化常量[mm] Gear unit constant for overhung load conversion [mm]

选型相关参数 / RELEVANT PARAMETER

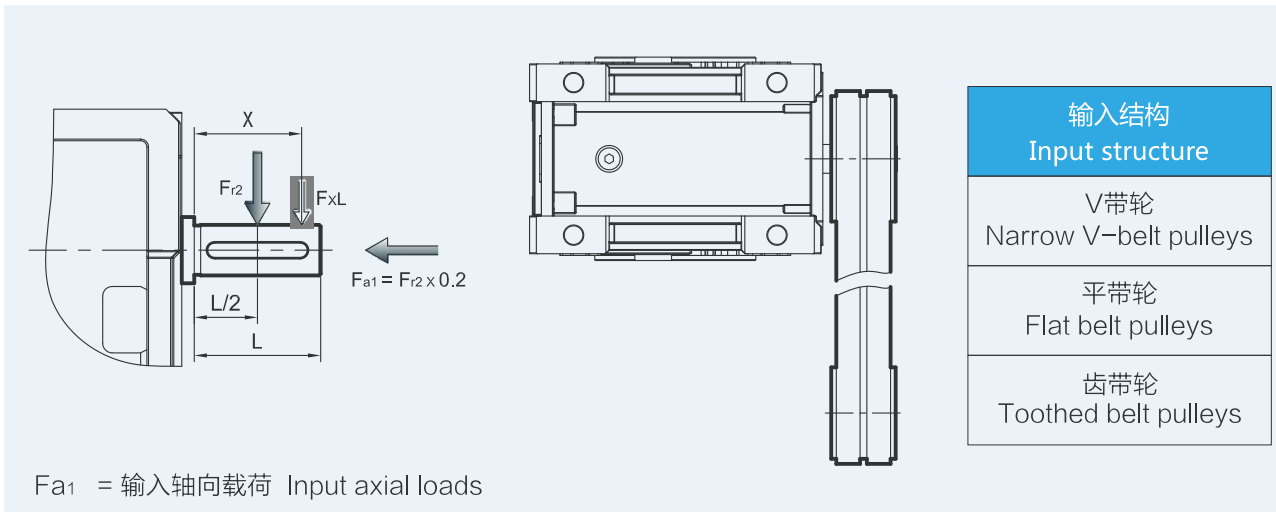
输出轴径向载荷 / Output shafts radial loads



MLM 减速机径向转化常量 Gear unit constants for overhung load conversion:

	MLM50B(28B)	MLM50C(28C)	MLM63B(38B)	MLM63C(38C)	MLM75B(48B)	MLM75C(48C)	MLM90B(58B)	MLM90C(58C)
a	104	104	118	118	131	131	159	159
b	78	78	93	93	101	101	119	119

输入轴径向载荷 / Input shafts radial loads



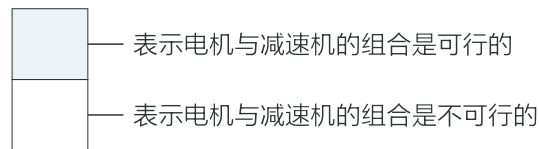
右示图的输入不被允许使用（包括三级输入）。
It is forbidden to use the input on the right chart (including 3 stage input) .

MLM减速机径向转化常量 Gear unit constants for overhung load conversion:

	MLM50B(28B)	MLM50C(28C)	MLM63B(38B)	MLM63C(38C)	MLM75B(48B)	MLM75C(48C)	MLM90B(58B)	MLM90C(58C)
a	51.5	56	58	56	73	70	81	70
b	40	44.5	43	44.5	53	55	61	55

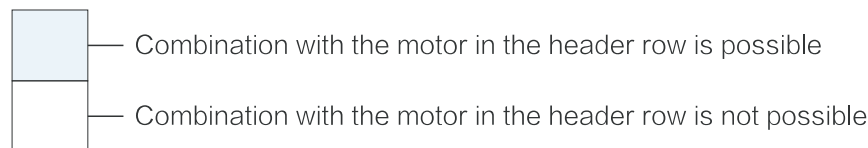
选型相关参数 / RELEVANT PARAMETER

选型表注释 / Selection tables comments



- * 表示速比可除尽
- P_{1n} 电机额定功率 [kW]
- n_2 输出转速 [r/min]
- M_{2n} 输出扭矩 [Nm]
- M_{2max} 最大允许输出扭矩 [Nm]
- F_{r2} 输出轴径向载荷 [N]
- i 减速机公称传动比

- i_a 减速机实际传动比
- f_s 使用系数
-  减速机型号
-  减速机型号
-  电机型号



- * Finite gear unit reduction ratio
- P_{1n} Rated power driving motor [kW]
- n_2 Output speed [r/min]
- M_{2n} Output torque [Nm]
- M_{2max} Max.permissible output torque[Nm]
- F_{r2} Permissible overhung load output side [N]
- i Gear unit nominal ratio

- i_a Gear unit actual ratio
- f_s Service factor
-  Geared motor type
-  Gear unit type
-  Motor type

选型相关参数 / RELEVANT PARAMETER

选型举例 / Selection example

减速电机 / Gear motor

例：被驱动设备所需要功率0.25kW，工作8小时/天，中等冲击，启动频率100次/小时，输出转速n₂=35r/min，减速机要求B3安装，则：

查P6使用系数图表即可选使用系数fs=1.3

Example：Required power 0.25kW on driven machine，work for 8 h/day，moderate shock load，start up frequency 100（1/h），n₂=35r/min，B3 mounted，So：

Check the service factor table on page 6，choose fs=1.3

$$i = \frac{n_1}{n_2} = \frac{1400}{35} = 40$$
$$P_{in} \geq P_1 \cdot fs = \frac{P_2}{\eta} \cdot fs = \frac{0.25}{0.94} \times 1.3 = 0.345 \text{ (kW)}$$

查MM系列性能参数表可确定减速机型号为：

Choose type:

MLM50B(28B)-40.29-MV71D4-B3

MLM50B(28B)-40.29-MV71D4-B3

减速机 / Gear units

例：被驱动设备所需扭矩为200Nm，工作8小时，均匀冲击负载，启动频率400次/小时，减速机要求FA1法兰安装，减速机要求输入转速n₁=900r/min，输出转速n₂=6r/min，查性能参数表可知，只选能三级传动形式。

查P6使用系数表即可选使用系数fs=1.05

Example:Required torque 200Nrn on driven machine,work 8 h/day,uniform load,Start up frequency 400(1/h) FA1 mounted, n₁= 900 r/min, n₂= 6 r/min, so the only selection is 3 stage after checked the table:

check the service factor table on page 6, choose fs=1.05

$$i = \frac{n_1}{n_2} = \frac{900}{6} = 150$$
$$M_{2N} \geq M_2 \cdot fs = 200 \times 1.05 = 210 \text{ (Nm)}$$
$$P_{in} \geq P_1 \cdot fs = \frac{M_2 \cdot n_1}{9550 \cdot \eta \cdot i} \cdot fs = \frac{210 \times 900}{9550 \times 0.92 \times 150} \times 1.05 = 0.151 \text{ (kW)}$$

查LKM系列性能参数表可确定减速机型号为：

Choose type:

MLM75C(48C)-149.32-FA1

MLM75C(48C)-149.32-FA1

减速机选型表 / GEAR UNIT SELECTION TABLES

MLM 50(28) ..减速机组合表 (n₁ =1400r/min)

MLM 50(28) ..Possible geometrical combinations (n₁ =1400r/min)

130Nm

减速机型号 Gear units	i 公称 Nominal	i 实际 Actual	n ₂ [r/min]	M _{2max} [Nm]	F _{r2} [N]	MV63	MV71	MV80	MV90
3级/Stage									
MLM50C(28C)	300	291.80	4.8	130	4100				
MLM50C(28C)	250	244.29	5.7	130	4100				
MLM50C(28C)	200	200.41	7.0	130	4100				
MLM50C(28C)	150	146.67	9.5	130	4000				
MLM50C(28C)	125	120.32	11.6	100	3770				
MLM50C(28C)	100	101.03	13.9	80	3560				
MLM50C(28C)	75	74.59	18.8	130	3220				
2级/Stage									
MLM50B(28B)	60	58.36	24	130	2960				
MLM50B(28B)	50	48.86	29	130	2790				
MLM50B(28B)	40	40.08	35	130	2610				
MLM50B(28B)	30	29.33	48	130	2350				
MLM50B(28B)	25	24.06	58	130	2200				
MLM50B(28B)	20	20.21	69	100	2080				
MLM50B(28B)	15	14.92	94	80	1880				
MLM50B(28B)	12.5	12.47	112	130	1770				
MLM50B(28B)	10	10.47	134	100	1670				
MLM50B(28B)	7.5	7.73	181	80	1510				

MLM 63(38) ..减速机组合表 (n₁ =1400r/min)

MLM 63(38) ..Possible geometrical combinations (n₁ =1400r/min)

200Nm

减速机型号 Gear units	i 公称 Nominal	i 实际 Actual	n ₂ [r/min]	M _{2max} [Nm]	F _{r2} [N]	MV63	MV71	MV80	MV90
3级/Stage									
MLM63C(38C)	300	304.46	4.6	200	4800				
MLM63C(38C)	250	243.57	5.7	200	4800				
MLM63C(38C)	200	196.43	7.1	180	4800				
MLM63C(38C)	150	151.56	9.2	200	4650				
MLM63C(38C)	125	122.22	11.5	180	4330				
MLM63C(38C)	100	101.27	13.8	150	4070				
MLM63C(38C)	75	73.33	19.0	110	3650				
2级/Stage									
MLM63B(38B)	60	60.89	23	200	3430				
MLM63B(38B)	50	48.71	29	200	3190				
MLM63B(38B)	40	39.29	36	180	2970				
MLM63B(38B)	30	30.31	46	200	2720				
MLM63B(38B)	25	24.44	57	180	2530				
MLM63B(38B)	20	20.25	69	150	2380				
MLM63B(38B)	15	14.67	95	110	2130				
MLM63B(38B)	12.5	12.67	110	180	2030				
MLM63B(38B)	10	10.50	133	150	1910				
MLM63B(38B)	7.5	7.60	184	110	1710				

P _{1n} [kW]	N ₂ [r/min]	M _{2n} [Nm]	i 公称 Nominal	i 实际 Actual	F _{r2} [N]	f _s			Page	
0.18	24	66	60	58.36	2960	2.0	MLM50B(28B)	63B5	6324	31
	29	55	50	48.86	2790	2.4				
	35	45	40	40.08	2610	2.9				
	48	33	30	29.33	2350	3.9				
	58	27	25	24.06	2200	4.8				
	69	23	20	20.21	2080	4.4				
	94	16.9	15	14.92	1880	4.7				
	16.4	103	60	58.36	3430	1.3	MLM50B(28B)	71B5/B14	7116	31
	19.6	86	50	48.86	3240	1.5				
	24.0	70	40	40.08	3030	1.8				
	32.7	52	30	29.33	2730	2.5				
	39.9	42	25	24.06	2550	3.1				
	47.5	36	20	20.21	2410	2.8				
	64.3	26	15	14.92	2180	3.1				
	77.0	22	12.5	12.47	2050	5.9				
	91.7	18.4	10	10.47	1930	5.4				
	124.2	13.6	7.5	7.73	1750	5.9				
	9.2	167	300	304.46	4650	1.2	MLM63C(38C)	63B5	6312	32
	11.5	135	250	243.57	4330	1.5				
	14.3	109	200	196.43	4030	1.7				
	18.5	84	150	151.56	3690	2.4				
	22.9	68	125	122.22	3440	2.7				
	27.6	56	100	101.27	3230	2.7				
	38.2	41	75	73.33	2900	2.7				
	7.1	217	200	196.43	4800	0.83	MLM63C(38C)	63B5	6324	32
	9.2	167	150	151.56	4650	1.2				
	11.5	135	125	122.22	4330	1.3				
	13.8	112	100	101.27	4070	1.3				
	19.0	81	75	73.33	3650	1.4	MLM63B(38B)	63B5	6324	32
	23	68	60	60.89	3430	2.9				
	29	55	50	48.71	3190	3.6				
	36	44	40	39.29	2970	4.1				
	7.9	210	125	122.22	4800	0.86	MLM63C(38C)	71B5/B14	7116	32
	9.5	174	100	101.27	4720	0.86				
	13.1	126	75	73.33	4230	0.87				
	15.8	106	60	60.89	3970	1.9	MLM63B(38B)	71B5/B14	7116	32
	19.7	86	50	48.71	3690	2.3				
	24.4	69	40	39.29	3440	2.6				
	31.7	53	30	30.31	3150	3.8				
	39.3	43	25	24.44	2930	4.2				
47.4	36	20	20.25	2760	4.2					
65.4	26	15	14.67	2470	4.3					
9.4	164	300	297.21	6320	2.1	MLM75C(48C)	63B5	6312	33	
11.6	133	250	240.89	5890	2.6					
14.0	111	200	200.66	5540	2.7					
18.8	84	150	149.32	5040	4.2					
4.7	328	300	297.21	6500	1.1	MLM75C(48C)	63B5	6324	33	
5.8	266	250	240.89	6500	1.3					
7.0	222	200	200.66	6500	1.4					
9.4	167	150	149.32	6500	2.1					
11.6	139	125	121.02	5980	2.2					
13.9	110	100	100.81	5520	2.2					
17.6	83	75	79.41	5040	2.4					

P _{1n} [kW]	n ₂ [r/min]	M _{2n} [Nm]	i 公称 Nominal	i 实际 Actual	F _{r2} [N]	f _s			Page	
0.18	4.0	414	250	240.89	6500	0.85	MLM75C(48C)	71B5/B14	7116	33
	4.8	345	200	200.66	6500	0.87				
	6.4	260	150	149.32	6500	1.3				
	7.9	217	125	121.02	6500	1.4				
	9.5	171	100	100.81	6400	1.4				
	12.1	130	75	79.41	5840	1.5				
	16.1	104	60	59.44	5390	3.4	MLM75B(48B)	71B5/B14	7116	33
	18.9	85	50	48.18	5030	4.1				
	23.9	71	40	40.13	4730	4.3				
	9.4	163	300	297.21	7990	3.1	MLM90C(58C)	63B5	6312	34
	11.6	133	250	240.89	7470	3.8				
	14.0	111	200	200.66	7030	4.3				
	4.7	326	300	297.21	8300	1.5	MLM90C(58C)	63B5	6324	34
	5.8	266	250	240.89	8300	1.9				
	7.0	222	200	200.66	8300	2.2				
	9.3	167	150	151.20	8050	3.0				
	11.1	139	125	125.95	7580	3.4				
	14.1	110	100	99.22	7000	3.5				
	18.6	83	75	75.45	6390	3.6	MLM90C(58C)	71B5/B14	7116	34
	3.2	507	300	297.21	8300	0.99				
	4.0	414	250	240.89	8300	1.2				
	4.8	345	200	200.66	8300	1.4				
	6.3	260	150	151.20	8300	1.9				
	7.6	217	125	125.95	8300	2.2				
	9.7	171	100	99.22	8110	2.2	MLM50C(28C)	63B5	6322	31
	12.7	130	75	75.45	7400	2.3				
0.25	19.1	113	150	146.67	3200	1.2				
	23.3	92	125	120.32	2990	1.4				
	27.7	78	100	101.03	2820	1.3				
	37.5	57	75	74.59	2550	1.4				
	24	92	60	58.36	2960	1.4	MLM50B(28B)	71B5/B14	7114	31
	29	77	50	48.86	2790	1.7				
	35	63	40	40.08	2610	2.1				
	48	46	30	29.33	2350	2.8				
	58	38	25	24.06	2200	3.4				
	69	32	20	20.21	2080	3.2	MLM50B(28B)	71B5/B14	7126	31
	94	23	15	14.92	1880	3.4				
	16.4	142	60	58.36	3430	0.91				
	19.6	119	50	48.86	3240	1.1				
	24.0	98	40	40.08	3030	1.3				
	32.7	72	30	29.33	2730	1.8				
	40.0	59	25	24.06	2550	2.2				
	47.5	49	20	20.21	2410	2.0				
	64.3	36	15	14.92	2180	2.2				
	77.0	30	12.5	12.47	2050	4.3				
	91.7	26	10	10.47	1930	3.9				
	124.2	18.9	7.5	7.73	1750	4.2				

P _{1n} [kW]	n ₂ [r/min]	M _{2n} [Nm]	i 公称 Nominal	i 实际 Actual	F _{r2} [N]	f _s			Page	
0.37	15.8	219	60	60.89	3970	0.92	MLM63B(38B)	80B5/B14	8016	32
	19.7	176	50	48.71	3690	1.1				
	24.4	142	40	39.29	3440	1.3				
	31.7	109	30	30.31	3150	1.8				
	39.3	88	25	24.44	2930	2.0				
	47.4	73	20	20.25	2760	2.1				
	65.4	53	15	14.67	2470	2.1				
	75.8	46	12.5	12.67	2360	3.9				
	91.4	38	10	10.50	2210	4.0				
	126.3	27	7.5	7.60	1990	4.0				
	9.4	338	300	297.21	6320	1.0	MLM75C(48C)	71B5/B14	7112	33
	11.6	274	250	240.89	5890	1.3				
	14.0	228	200	200.66	5540	1.3				
	18.8	172	150	149.32	5040	2.0				
	23.1	143	125	121.02	4750	2.1				
	27.8	113	100	100.81	4380	2.1				
	35.3	86	75	79.41	4000	2.3				
	9.4	343	150	149.32	6500	1.0	MLM75C(48C)	71B5/B14	7124	33
	11.6	286	125	121.02	5980	1.0				
	13.9	225	100	100.81	5520	1.1				
	17.6	171	75	79.41	5040	1.2				
	24	138	60	59.44	4660	2.5	MLM75B(48B)	71B5/B14	7124	33
	29	112	50	48.18	4340	3.1				
	35	93	40	40.13	4080	3.2				
	16.1	215	60	59.44	5390	1.6	MLM75B(48B)	80B5/B14	8016	33
	19.9	174	50	48.18	5030	2.0				
	23.9	145	40	40.13	4730	2.1				
	32.2	109	30	29.86	4310	3.2				
	39.7	91	25	24.20	4050	3.3				
	47.6	72	20	20.16	3740	3.3				
	60.5	55	15	15.88	3410	3.7				
	9.4	335	300	297.21	7990	1.5				
	11.6	274	250	240.89	7470	1.8				
	14.0	228	200	200.66	7030	2.1				
	18.5	172	150	151.20	6390	2.9				
	22.2	143	125	125.95	6010	3.4				
	28.2	113	100	99.22	5550	3.4				
	37.1	86	75	75.45	5070	3.5				
	4.7	671	300	297.21	8300	0.75	MLM90C(58C)	71B5/B14	7124	34
	5.8	547	250	240.89	8300	0.91				
	7.0	456	200	200.66	8300	1.1				
	9.3	343	150	151.20	8050	1.5				
	11.1	286	125	125.95	7580	1.7				
	14.1	225	100	99.22	7000	1.7				
	18.6	171	75	75.45	6390	1.8				

P _{1n} [kW]	n ₂ [r/min]	M _{2n} [Nm]	i 公称 Nominal	i 实际 Actual	F _{r2} [N]	f _s			Page	
0.37	24	137	60	59.44	5890	3.6	MLM90B(58B)	71B5/B14	7124	34
	29	112	50	48.18	5500	4.5				
	6.3	534	150	151.20	8300	0.94	MLM90C(58C)	80B5/B14	8016	34
	7.6	445	125	125.95	8300	1.1				
	9.7	351	100	99.22	8110	1.1				
	12.7	267	75	75.45	7400	1.1				
	16.2	213	60	59.44	6820	2.3	MLM90B(58B)	80B5/B14	8016	34
	19.9	174	50	48.18	6370	2.9				
23.9	145	40	40.13	6000	3.3					
0.55	35	138	40	40.08	2610	0.94	MLM50B(28B)	80B5/B14	8014	31
	48	101	30	29.33	2350	1.3				
	58	83	25	24.06	2200	1.6				
	69	70	20	20.21	2080	1.4				
	94	51	15	14.92	1880	1.6				
	112	43	12.5	12.47	1770	3.0				
	134	36	10	10.47	1670	2.8				
	181	27	7.5	7.73	1510	3.0				
	39.9	129	25	24.06	2550	1.0	MLM50B(28B)	80B5/B14	8026	31
	47.5	109	20	20.21	2410	0.92				
	64.3	80	15	14.92	2180	1.00				
	77.0	67	12.5	12.47	2050	1.9				
	91.7	56	10	10.47	1930	1.8				
	124.2	42	7.5	7.73	1750	1.9				
	22.9	206	125	122.22	3440	0.87	MLM63C(38C)	71B5/B14	7122	32
	27.6	171	100	101.27	3230	0.88				
	38.2	124	75	73.33	2900	0.89				
	23	209	60	60.89	3430	0.96	MLM63B(38B)	80B5/B14	8014	32
	29	168	50	48.71	3190	1.2				
	36	136	40	39.29	2970	1.3				
	46	105	30	30.31	2720	1.9				
	57	84	25	24.44	2530	2.1				
	69	70	20	20.25	2380	2.1				
	95	51	15	14.67	2130	2.2				
	110	44	12.5	12.67	2030	4.1				
	133	36	10	10.50	1910	4.1				
	184	26	7.5	7.60	1710	4.2				
	24.4	211	40	39.29	3440	0.85				
	31.7	163	30	30.31	3150	1.2				
	39.3	131	25	24.44	2930	1.4				
	47.4	109	20	20.25	2760	1.4				
	65.4	79	15	14.67	2470	1.4				
	75.8	68	12.5	12.67	2360	2.6				
	91.4	56	10	10.50	2210	2.7				
126.3	41	7.5	7.60	1990	2.7					

P _{1n} [kW]	n ₂ [r/min]	M _{2n} [Nm]	i 公称 Nominal	i 实际 Actual	F _{r2} [N]	f _s			Page 	
0.55	11.6	407	250	240.89	5890	0.86	MLM75C(48C)	71B5/B14	7122	33
	14.0	339	200	200.66	5540	0.89				
	18.8	255	150	149.32	5040	1.4				
	23.1	213	125	121.02	4750	1.4				
	27.8	168	100	100.81	4380	1.4				
	35.3	127	75	79.41	4000	1.6				
	17.6	255	75	79.41	5040	0.79	MLM75C(48C)	80B5/B14	8014	33
	24	205	60	59.44	4660	1.7	MLM75B(48B)	80B5/B14	8014	33
	29	166	50	48.18	4340	2.1				
	35	139	40	40.13	4080	2.2				
	47	104	30	29.86	3720	3.4				
	58	87	25	24.20	3500	3.5				
	69	68	20	20.16	3230	3.5				
	88	52	15	15.88	2950	3.8				
	16.2	319	60	59.44	5390	1.1				
	19.9	259	50	48.18	5030	1.4				
	23.9	215	40	40.13	4730	1.4				
	32.2	162	30	29.86	4310	2.2				
	39.7	135	25	24.20	4050	2.2				
	47.6	107	20	20.16	3740	2.3				
	60.5	81	15	15.88	3410	2.5				
	9.4	498	300	297.21	7990	1.0	MLM90C(58C)	71B5/B14	7122	34
	11.6	407	250	240.89	7470	1.2				
	14.0	339	200	200.66	7030	1.4				
	18.5	255	150	151.20	6390	2.0				
	22.2	213	125	125.95	6010	2.3				
	28.2	168	100	99.22	5550	2.3				
	37.1	127	75	75.45	5070	2.4				
	9.3	511	150	151.20	8050	0.98	MLM90C(58C)	80B5/B14	8014	34
	11.1	425	125	125.95	7580	1.1				
	14.1	335	100	99.22	7000	1.1				
	18.6	255	75	75.45	6390	1.2				
	24	204	60	59.44	5890	2.5	MLM90B(58B)	80B5/B14	8014	34
29	166	50	48.18	5500	3.0					
35	139	40	40.13	5170	3.5					
46	104	30	30.24	4710	4.8					
16.2	317	60	59.44	6820	1.6	MLM90B(58B)	80B5/B14	8026	34	
19.9	259	50	48.18	6370	1.9					
23.9	215	40	40.13	6000	2.2					
31.7	162	30	30.24	5460	3.1					
38.1	135	25	25.19	5130	3.5					
48.4	107	20	19.84	4740	3.6					
63.6	81	15	15.09	4330	3.7					

P _{1n} [kW]	n ₂ [r/min]	M _{2n} [Nm]	i 公称 Nominal	i 实际 Actual	F _{r2} [N]	f _s			Page ←→	
0.75	48	138	30	29.33	2350	0.94	MLM50B(28B)	80B5/B14	8024	31
	58	113	25	24.06	2200	1.1				
	69	95	20	20.21	2080	1.1				
	94	70	15	14.92	1880	1.1				
	112	59	12.5	12.47	1770	2.2				
	134	49	10	10.47	1670	2.0				
	181	36	7.5	7.73	1510	2.2				
	77.0	91	12.5	12.47	2050	1.4	MLM50B(28B)	90B5/B14	90S6	31
	91.7	77	10	10.47	1930	1.3				
	124.2	57	7.5	7.73	1750	1.4				
	29	229	50	48.71	3190	0.87	MLM63B(38B)	80B5/B14	8024	32
	36	185	40	39.29	2970	0.97				
	46	143	30	30.31	2720	1.4				
	57	115	25	24.44	2530	1.6				
	69	95	20	20.25	2380	1.6				
	95	69	15	14.67	2130	1.6				
	110	60	12.5	12.67	2030	3.0				
	133	49	10	10.50	1910	3.0				
	184	36	7.5	7.60	1710	3.1				
	31.7	222	30	30.31	3150	0.90	MLM63B(38B)	90B5/B14	90S6	32
	39.3	179	25	24.44	2930	1.0				
	47.4	148	20	20.25	2760	1.0				
	65.4	107	15	14.67	2470	1.0				
	75.8	93	12.5	12.67	2360	1.9				
	91.4	77	10	10.50	2210	2.0				
	126.3	56	7.5	7.60	1990	2.0				
	18.8	348	150	149.32	5040	1.0	MLM75C(48C)	80B5/B14	8012	33
	23.1	290	125	121.02	4750	1.0				
	27.8	228	100	100.81	4380	1.1				
	35.3	174	75	79.41	4000	1.2				
	24	280	60	59.44	4660	1.3				
	29	227	50	48.18	4340	1.5	MLM75B(48B)	80B5/B14	8024	33
	35	189	40	40.13	4080	1.6				
	47	142	30	29.86	3720	2.5				
	58	119	25	24.20	3500	2.5				
	69	93	20	20.16	3230	2.6				
	88	71	15	15.88	2950	2.8				
	19.9	353	50	48.18	5030	0.99				
	23.9	294	40	40.13	4730	1.0				
	32.2	221	30	29.86	4310	1.6				
	39.7	184	25	24.20	4050	1.6				
	47.6	145	20	20.16	3740	1.7				
	60.5	110	15	15.88	3410	1.8				
	76.9	91	12.5	12.49	3210	3.3				
	97.6	72	10	9.84	2960	3.3				
	128.3	55	7.5	7.48	2700	3.7				

P _{1n} [kW]	n ₂ [r/min]	M _{2n} [Nm]	i 公称 Nominal	i 实际 Actual	F _{r2} [N]	f _s			Page	
0.75	11.6	555	250	240.89	7470	0.90	MLM90C(58C)	80B5/B14	8012	34
	14.0	462	200	200.66	7030	1.0				
	18.5	348	150	151.20	6390	1.4				
	22.2	290	125	125.95	6010	1.7				
	28.2	228	100	99.22	5550	1.7				
	37.1	174	75	75.45	5070	1.7				
	11.1	580	125	125.95	7580	0.83	MLM90C(58C)	80B5/B14	8024	34
	14.1	457	100	99.22	7000	0.83				
	18.6	347	75	75.45	6390	0.86				
	24	278	60	59.44	5890	1.8	MLM90B(58B)	80B5/B14	8024	34
	29	227	50	48.18	5500	2.2				
	35	189	40	40.13	5170	2.5				
	46	142	30	30.24	4710	3.5				
	56	119	25	25.19	4430	4.0				
	71	93	20	19.84	4090	4.1				
	93	71	15	15.09	3730	4.2				
	16.2	432	60	59.44	6820	1.2	MLM90B(58B)	90B5/B14	90S6	34
	19.9	353	50	48.18	6370	1.4				
	23.9	294	40	40.13	6000	1.6				
	31.7	221	30	30.24	5460	2.3				
	38.1	184	25	25.19	5130	2.6				
	48.4	145	20	19.84	4740	2.6				
63.6	110	15	15.09	4330	2.7					
1.1	112	86	12.5	12.47	1770	1.5	MLM50B(28B)	90B5/B14	90S4	31
	134	72	10	10.47	1670	1.4				
	181	53	7.5	7.73	1510	1.5				
	77.0	134	12.5	12.47	2050	0.97	MLM50B(28B)	90B5/B14	90L6	31
	92.7	112	10	10.47	1930	0.89				
	124.2	83	7.5	7.73	1750	0.96				
	46	209	30	30.31	2720	0.96	MLM63B(38B)	90B5/B14	90S4	32
	57	169	25	24.44	2530	1.1				
	69	140	20	20.25	2380	1.1				
	95	101	15	14.67	2130	1.1				
	110	87	12.5	12.67	2030	2.1				
	133	72	10	10.50	1910	2.1				
	184	52	7.5	7.60	1710	2.1				
	75.8	136	12.5	12.67	2360	1.3	MLM63B(38B)	90B5/B14	90L6	32
	91.4	113	10	10.50	2210	1.3				
	126.3	82	7.5	7.60	1990	1.3				
	24	410	60	59.44	4660	0.85	MLM75B(48B)	90B5/B14	90S4	33
	29	333	50	48.18	4340	1.1				
	35	277	40	40.13	4080	1.1				
	47	209	30	29.86	3720	1.7				
	58	174	25	24.20	3500	1.7				
	69	137	20	20.16	3230	1.8				
	88	104	15	15.88	2950	1.9				
	112	86	12.5	12.49	2770	3.5				
	142	68	10	9.84	2550	3.5				
	187	52	7.5	7.48	2330	3.9				

P _{1n} [kW]	n ₂ [r/min]	M _{2n} [Nm]	i 公称 Nominal	i 实际 Actual	F _{r2} [N]	f _s			Page	
1.1	32.2	325	30	29.86	4310	1.1	MLM75B(48B)	90B5/B14	90L6	33
	39.7	271	25	24.20	4050	1.1				
	47.6	213	20	20.16	3740	1.1				
	60.5	162	15	15.88	3410	1.2				
	76.9	134	12.5	12.49	3210	2.2				
	97.6	106	10	9.84	2960	2.3				
	128.3	80	7.5	7.48	2700	2.5				
	18.5	511	150	151.20	6390	0.98	MLM90C(58C)	80B5/B14	8022	34
	22.2	425	125	125.95	6010	1.1				
	28.2	335	100	99.22	5550	1.1				
	37.1	255	75	75.45	5070	1.2				
	24	408	60	59.44	5890	1.2	MLM90B(58B)	90B5/B14	90S4	34
	29	333	50	48.18	5500	1.5				
	35	277	40	40.13	5170	1.7				
	46	209	30	30.24	4710	2.4				
	56	174	25	25.19	4430	2.8	MLM90B(58B)	90B5/B14	90S4	34
	71	137	20	19.84	4090	2.8				
	93	104	15	15.09	3730	2.9				
	16.2	634	60	59.44	6820	0.79	MLM90B(58B)	90B5/B14	90L6	34
	19.9	517	50	48.18	6370	0.97				
	23.9	431	40	40.13	6000	1.1				
	31.7	325	30	30.24	5460	1.5				
	38.1	271	25	25.19	5130	1.8				
	48.4	213	20	19.84	4740	1.8				
	63.6	162	15	15.09	4330	1.9				
	76.9	134	12.5	12.49	4060	3.6				
97.6	106	10	9.84	3750	3.6					
128.3	80	7.5	7.48	3420	3.7					
1.5	112	117	12.5	12.47	1770	1.1	MLM50B(28B)	90B5/B14	90L4	31
	134	99	10	10.47	1670	1.0				
	181	73	7.5	7.73	1510	1.1				
	57	230	25	24.44	2530	0.8	MLM63B(38B)	90B5/B14	90L4	31
	69	191	20	20.25	2380	0.79				
	95	138	15	14.67	2130	0.80				
	110	119	12.5	12.67	2030	1.5				
	133	99	10	10.50	1910	1.5				
	184	72	7.5	7.60	1710	1.5				
	29	454	50	48.18	4340	0.77	MLM75B(48B)	90B5/B14	90L4	33
	35	378	40	40.13	4080	0.79				
	47	285	30	29.86	3720	1.2				
	58	237	25	24.20	3500	1.3				
	69	187	20	20.16	3230	1.3				
	88	142	15	15.88	2950	1.4				
	112	118	12.5	12.49	2770	2.6				
	142	93	10	9.84	2550	2.6				
	187	70	7.5	7.48	2330	2.8				

P _{1n} [kW]	N ₂ [r/min]	M _{2n} [Nm]	i 公称 Nominal	i 实际 Actual	F _{r2} [N]	f _s			Page	
1.5	47.6	291	20	20.16	3740	0.83	MLM75B(48B)	100B5/B14	100L6	33
	60.5	221	15	15.88	3410	0.91				
	76.9	183	12.5	12.49	3210	1.6				
	97.6	144	10	9.84	2960	1.7				
	128.3	110	7.5	7.48	2700	1.8				
	22.2	580	125	125.95	6010	0.83	MLM90C(58C)	90B5/B14	90S2	34
	28.2	457	100	99.22	5550	0.83				
	37.1	347	75	75.45	5070	0.86				
	24	556	60	59.44	5890	0.90	MLM90B(58B)	90B5/B14	90L4	34
	29	454	50	48.18	5500	1.1				
	35	378	40	40.13	5170	1.3				
	46	285	30	30.24	4710	1.8				
	56	237	25	25.19	4430	2.0				
	71	187	20	19.84	4090	2.0				
	93	142	15	15.09	3730	2.1				
	112	118	12.5	12.49	3510	4.1				
	142	93	10	9.84	3240	4.1				
	187	70	7.5	7.48	2950	4.3				
	31.7	443	30	30.24	5460	1.1	MLM90B(58B)	100B5/B14	100L6	34
	38.1	369	25	25.19	5130	1.3				
	48.4	291	20	19.84	4740	1.3				
	63.6	221	15	15.09	4330	1.4				
	76.9	183	12.5	12.49	4060	2.6				
	97.6	144	10	9.84	3750	2.6				
	128.3	110	7.5	7.48	3420	2.7				
	2.2	47	418	30	29.86	3720	0.84	MLM75B(48B)	100B5/B14	100LA4
58		348	25	24.20	3500	0.86				
69		274	20	20.16	3230	0.88				
88		208	15	15.88	2950	0.96				
112		172	12.5	12.49	2770	1.7				
142		136	10	9.84	2550	1.8				
187		103	7.5	7.48	2330	1.9				
76.9		268	12.5	12.49	3210	1.1	MLM75B(48B)	112B5/B14	112M6	33
97.6		211	10	9.84	2960	1.1				
128.3		161	7.5	7.48	2700	1.2				
35		554	40	40.13	5170	0.87	MLM90B(58B)	100B5/B14	100LA4	34
46		418	30	30.24	4710	1.2				
56		348	25	25.19	4430	1.4				
71		274	20	19.84	4090	1.4				
93		208	15	15.09	3730	1.4				
112		172	12.5	12.49	3510	2.8				
142		136	10	9.84	3240	2.8				
187		103	7.5	7.48	2950	2.9				
38.1		541	25	25.19	5130	0.89	MLM90B(58B)	112B5/B14	112M6	34
48.4		426	20	19.84	4740	0.89				
63.6		324	15	15.09	4330	0.93				
76.9		268	12.5	12.49	4060	1.8				
97.6		211	10	9.84	3750	1.8				
128.3	161	7.5	7.48	3420	1.9					

P _{1n}	n ₂	M _{2n}	i 公称	i 实际	F _{r2}	f _s			Page	
[kW]	[r/min]	[Nm]	Nominal	Actual	[N]					
3	112	235	12.5	12.49	2770	1.3	MLM75B(48B)	100B5/B14	100LB4	33
	142	185	10	9.84	2550	1.3				
	187	141	7.5	7.48	2330	1.4				
	46	569	30	30.24	4710	0.88	MLM90B(58B)	100B5/B14	100LB4	34
	56	474	25	25.19	4430	1.0				
	71	374	20	19.84	4090	1.0				
	93	284	15	15.09	3730	1.1				
	112	235	12.5	12.49	3510	2.0				
	142	185	10	9.84	3240	2.1				
187	141	7.5	7.48	2950	2.1					
4	112	314	12.5	12.49	2770	0.96	MLM75B(48B)	112B5/B14	112M4	33
	142	247	10	9.84	2550	0.97				
	187	188	7.5	7.48	2330	1.1				
	112	314	12.5	12.49	3510	1.5	MLM90B(58B)	112B5/B14	112M4	34
	142	247	10	9.84	3240	1.5				
	187	188	7.5	7.48	2950	1.6				

MLM.. HS性能参数 / Performance parameter

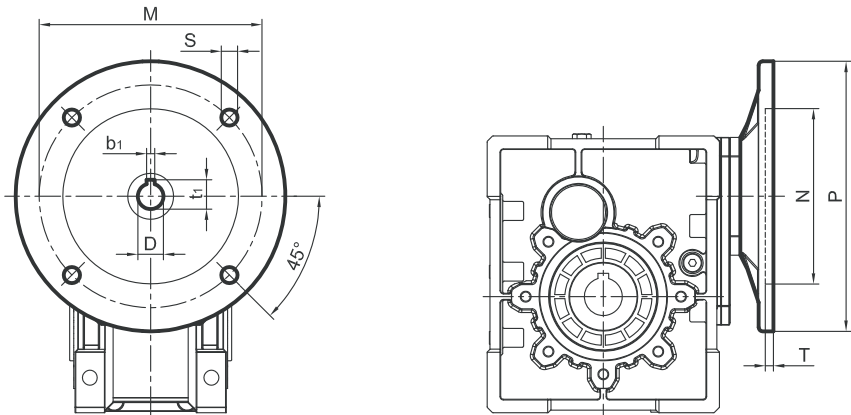
n₁=1400r/min

M ₂ max [Nm]	n ₂ [r/min]	i 公称 Nominal	i 实际 Actual	P _{1n} [kW]	Fr ₂ [N]	Fr ₁ [N]	 	Page
130	4.8	300	291.80	0.07	4100	400	MLM50C(28C)..HS	35
130	5.7	250	244.29	0.09	4100	400		
130	7.0	200	200.41	0.11	4100	400		
130	9.5	150	146.67	0.14	4000	400		
130	11.6	125	120.32	0.18	3770	400		
100	13.9	100	101.03	0.16	3560	400		
80	18.8	75	74.59	0.17	3220	400		
130	24	60	58.36	0.35	2960	400		
130	29	50	48.86	0.42	2790	400	MLM50B(28B)..HS	35
130	35	40	40.08	0.52	2610	400		
130	48	30	29.33	0.71	2350	400		
130	58	25	24.06	0.86	2200	400		
100	69	20	20.21	0.79	2080	400		
80	94	15	14.92	0.85	1880	400		
130	112	12.5	12.47	1.7	1770	400		
100	134	10	10.47	1.5	1670	400		
80	181	7.5	7.73	1.6	1510	400		
200	4.6	300	304.46	0.11	4800	400	MLM63C(38C)..HS	35
200	5.7	250	243.57	0.13	4800	400		
180	7.1	200	196.43	0.15	4800	400		
200	9.2	150	151.56	0.21	4650	400		
180	11.5	125	122.22	0.24	4330	400		
150	13.8	100	101.27	0.24	4070	400		
110	19.0	75	73.33	0.24	3650	400		
200	23	60	60.89	0.53	3430	530	MLM63B(38B)..HS	35
200	29	50	48.71	0.65	3190	530		
180	36	40	39.29	0.73	2970	530		
200	46	30	30.31	1.1	2720	530		
180	57	25	24.44	1.2	2530	530		
150	69	20	20.25	1.2	2380	530		
110	95	15	14.67	1.2	2130	530		
180	110	12.5	12.67	2.3	2030	530		
150	133	10	10.50	2.3	1910	530		
110	184	7.5	7.60	2.3	1710	530		
350	4.7	300	297.21	0.19	6500	560	MLM75C(48C)..HS	35
350	5.8	250	240.89	0.24	6500	560		
300	7.0	200	200.66	0.24	6500	560		
350	9.4	150	149.32	0.38	6500	560		
300	11.6	125	121.02	0.39	5980	560		
240	13.9	100	100.81	0.39	5520	560		
200	17.6	75	79.41	0.43	5040	560		

M ₂ max [Nm]	n ₂ [r/min]	i 公称 Nominal	i 实际 Actual	P _{1n} [kW]	Fr ₂ [N]	Fr ₁ [N]	 	Page
350	24	60	59.44	0.94	4660	860	MLM75B(48B)..HS	35
350	29	50	48.18	1.2	4340	860		
300	35	40	40.13	1.2	4080	860		
350	47	30	29.86	1.8	3720	860		
300	58	25	24.20	1.9	3500	860		
240	69	20	20.16	1.9	3230	860		
200	88	15	15.88	2.1	2950	860		
300	112	12.5	12.49	3.8	2770	860		
240	142	10	9.84	3.9	2550	860		
200	187	7.5	7.48	4.3	2330	860		
500	4.7	300	297.21	0.27	8300	560	MLM90C(58C)..HS	35
500	5.8	250	240.89	0.34	8300	560		
480	7.0	200	200.66	0.39	8300	560		
500	9.3	150	151.20	0.54	8050	560		
480	11.1	125	125.95	0.62	7580	560		
380	14.1	100	99.22	0.62	7000	560		
300	18.6	75	75.45	0.65	6390	560		
500	24	60	59.44	1.3	5890	1260	MLM90B(58B)..HS	35
500	29	50	48.18	1.7	5500	1260		
480	35	40	40.13	1.9	5170	1260		
500	46	30	30.24	2.6	4710	1260		
480	56	25	25.19	3.0	4430	1260		
380	71	20	19.84	3.1	4090	1260		
300	93	15	15.09	3.2	3730	1260		
480	112	12.5	12.49	6.1	3510	1260		
380	142	10	9.84	6.2	3240	1260		
300	187	7.5	7.48	6.4	2950	1260		

输入尺寸图表 / INPUT SIZE DIAGRAM

MLM ..IEC 输入法兰尺寸/ Input Flange Dimension

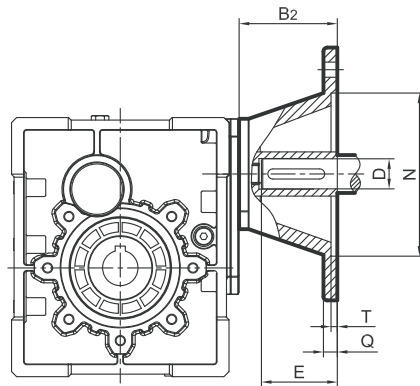
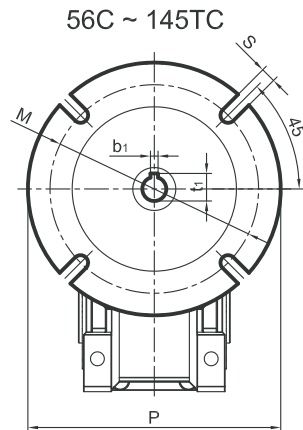


MLM	IEC接口						键槽/keyway		i(速比/ratio)																			
	PAM-IEC	N	M	P	S	T	b1	t1	7.5	10	12.5	15	20	25	30	40	50	60	75	100	125	150	200	250	300			
									D																			
									B										C									
50 (28)	63B5	95	115	140	9	4	4	12.8	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11			
	71B5	110	130	160	9	5	5	16.3	14	14	14	14	14	14	14	14	14	14	14	14	14	14	-	-	-	-		
	71B14	70	85	105	7	5	5	16.3	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	-	-	-	-	
	80B5	130	165	200	11	5	6	21.8	19	19	19	19	19	19	19	19	19	19	19	19	-	-	-	-	-	-		
	80B14	80	100	120	7	5	6	21.8	19	19	19	19	19	19	19	19	19	19	19	19	-	-	-	-	-	-		
	90B5	130	165	200	11	5	8	27.3	24	24	24	24	24	24	24	24	-	-	-	-	-	-	-	-	-	-		
	90B14	95	115	140	9	5	8	27.3	24	24	24	24	24	24	24	24	-	-	-	-	-	-	-	-	-	-		
63 (38)	63B5	95	115	140	9	4	4	12.8	-	-	-	-	-	-	11	11	11	11	11	11	11	11	11	11	11	11		
	71B5	110	130	160	9	5	5	16.3	-	-	-	14	14	14	14	14	14	14	14	14	14	14	-	-	-	-		
	71B14	70	85	105	7	5	5	16.3	-	-	-	14	14	14	14	14	14	14	14	14	14	14	-	-	-	-		
	80B5	130	165	200	11	5	6	21.8	19	19	19	19	19	19	19	19	19	19	19	19	-	-	-	-	-	-		
	80B14	80	100	120	7	5	6	21.8	19	19	19	19	19	19	19	19	19	19	19	19	-	-	-	-	-	-		
	90B5	130	165	200	11	5	8	27.3	24	24	24	24	24	24	24	24	24	24	-	-	-	-	-	-	-	-		
	90B14	95	115	140	9	5	8	27.3	24	24	24	24	24	24	24	24	24	24	-	-	-	-	-	-	-	-		
75 (48)	63B5	95	115	140	9	4	4	12.8	-	-	-	-	-	-	-	-	-	-	11	11	11	11	11	11	11	11		
	71B5	110	130	160	9	5	5	16.3	-	-	-	-	-	-	-	14	14	14	14	14	14	14	14	14	14	14		
	80B5	130	165	200	11	5	6	21.8	-	-	-	19	19	19	19	19	19	19	19	19	19	19	19	-	-	-		
	80B14	80	100	120	7	5	6	21.8	-	-	-	19	19	19	19	19	19	19	19	19	19	19	19	-	-	-		
	90B5	130	165	200	11	5	8	27.3	24	24	24	24	24	24	24	24	24	24	24	-	-	-	-	-	-	-		
	90B14	95	115	140	9	5	8	27.3	24	24	24	24	24	24	24	24	24	24	24	-	-	-	-	-	-	-		
	100/112B5	180	215	250	13	5	8	31.3	28	28	28	28	28	28	28/-	28/-	-	-	-	-	-	-	-	-	-	-		
90 (58)	100/112B14	110	130	160	9	5	8	31.3	28	28	28	28	28	28	28/-	28/-	-	-	-	-	-	-	-	-	-	-		
	63B5	95	115	140	9	4	4	12.8	-	-	-	-	-	-	-	-	-	-	11	11	11	11	11	11	11	11		
	71B5	110	130	160	9	5	5	16.3	-	-	-	-	-	-	-	-	14	14	14	14	14	14	14	14	14	14		
	80B5	130	165	200	11	5	6	21.8	-	-	-	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19		
	80B14	80	100	120	7	5	6	21.8	-	-	-	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19		
	90B5	130	165	200	11	5	8	27.3	24	24	24	24	24	24	24	24	24	24	24	-	-	-	-	-	-	-		
	90B14	95	115	140	9	5	8	27.3	24	24	24	24	24	24	24	24	24	24	24	-	-	-	-	-	-	-		
100/112B5	180	215	250	13	5	8	31.3	28	28	28	28	28	28	28	28	28	28/-	28/-	-	-	-	-	-	-	-			
100/112B14	110	130	160	9	5	8	31.3	28	28	28	28	28	28	28	28	28	28/-	28/-	-	-	-	-	-	-	-			

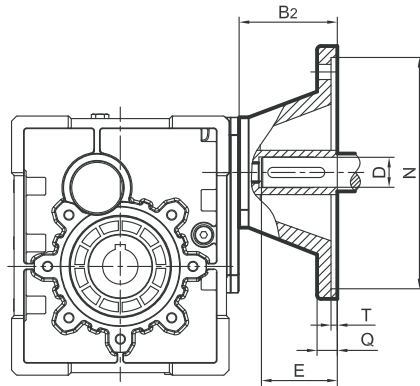
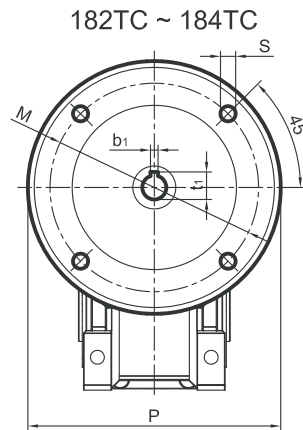
输入尺寸图表 / INPUT SIZE DIAGRAM

MLM ..NEMA输入法兰尺寸 / Input Flange Dimension

56C-145TC



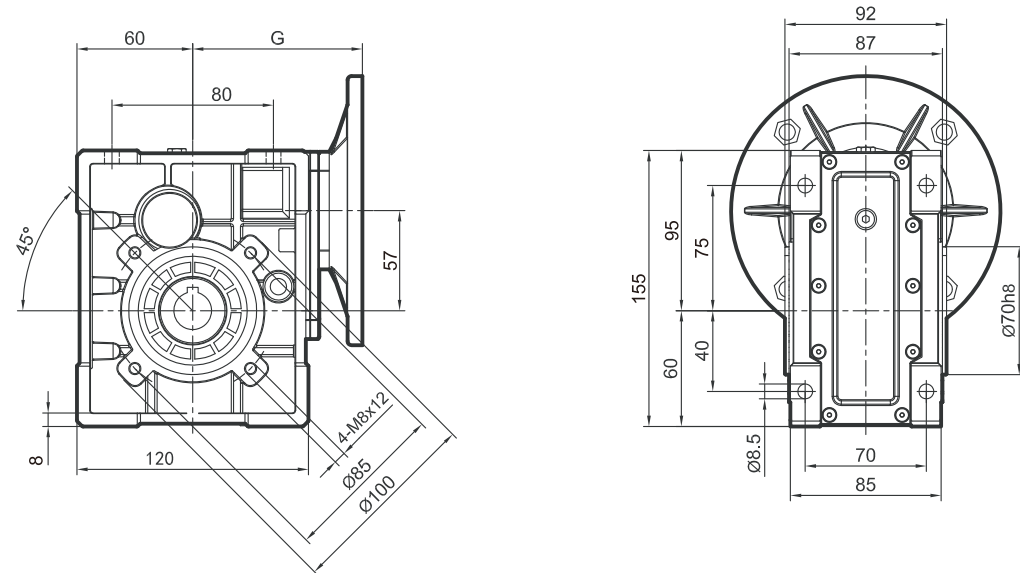
182TC-184TC



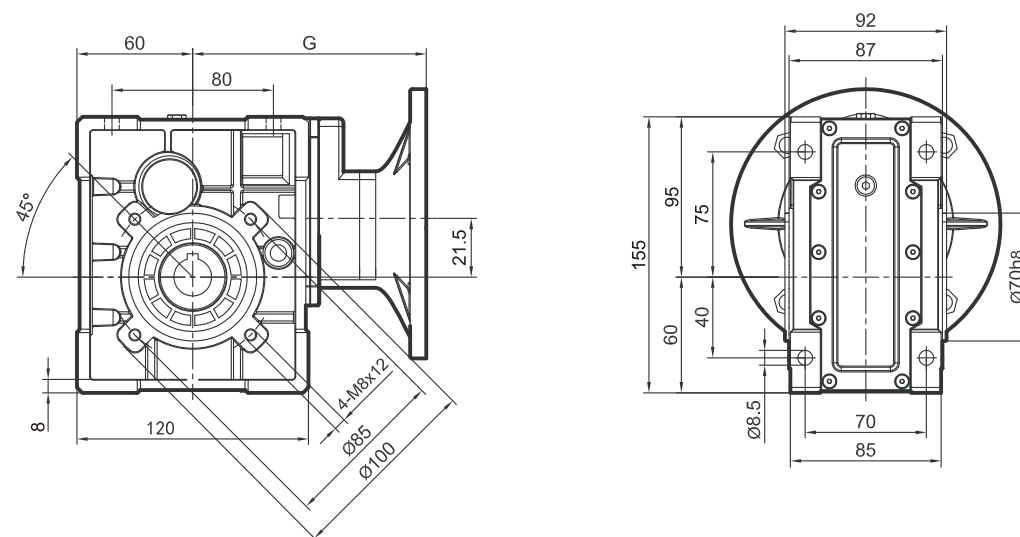
MLM	NEMA Flange	B2	D	E	b1	t1	M	N	P	Q	S	T
SKM50(28)	56C	2.953	0.625	2.06	0.188	0.713	5.875	4.5	6.5	0.433	0.413	0.177
SKM63(38)	56C	2.953	0.625	2.06	0.188	0.713	5.875	4.5	6.5	0.433	0.413	0.177
	143TC	2.953	0.875	2.12	0.188	0.963	5.875	4.5	6.5	0.433	0.413	0.177
SKM75(48) SKM90(58)	145TC	3.228	0.625	2.06	0.188	0.713	5.875	4.5	6.5	0.433	0.413	0.177
	143TC	3.228	0.875	2.12	0.188	0.963	5.875	4.5	6.5	0.433	0.413	0.177
	145TC	3.228	0.875	2.12	0.188	0.963	5.875	4.5	6.5	0.433	0.413	0.177
	182TC 184TC	3.937	1.125	2.62	0.250	1.240	7.250	8.5	9.0	0.472	0.551	0.197

外形尺寸图表 / OUTLINE DIMENSION SHEET

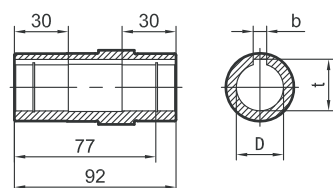
MLM50(28)..B..IEC



MLM50(28)..C..IEC



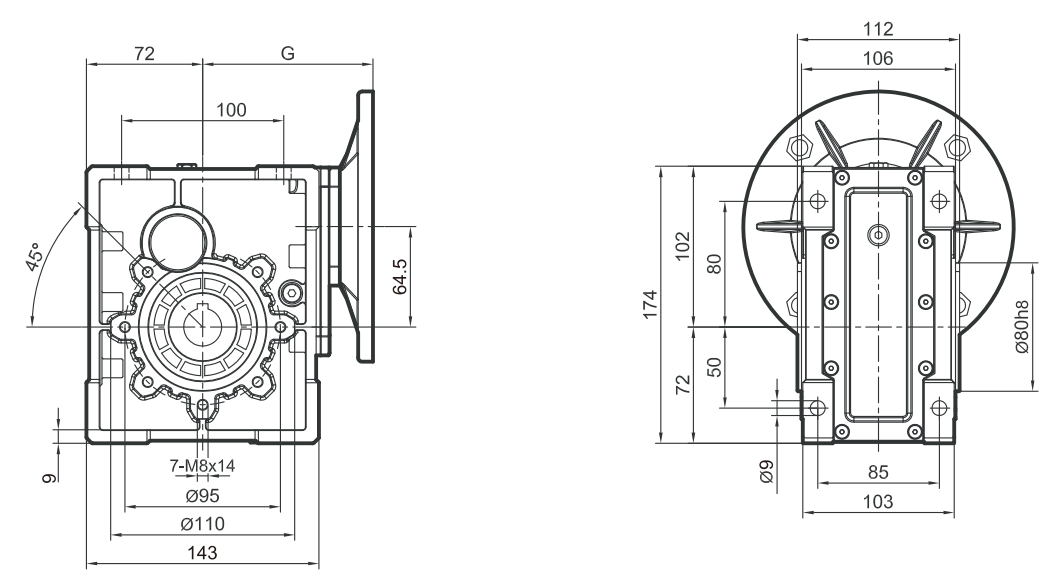
输出孔/Output hole



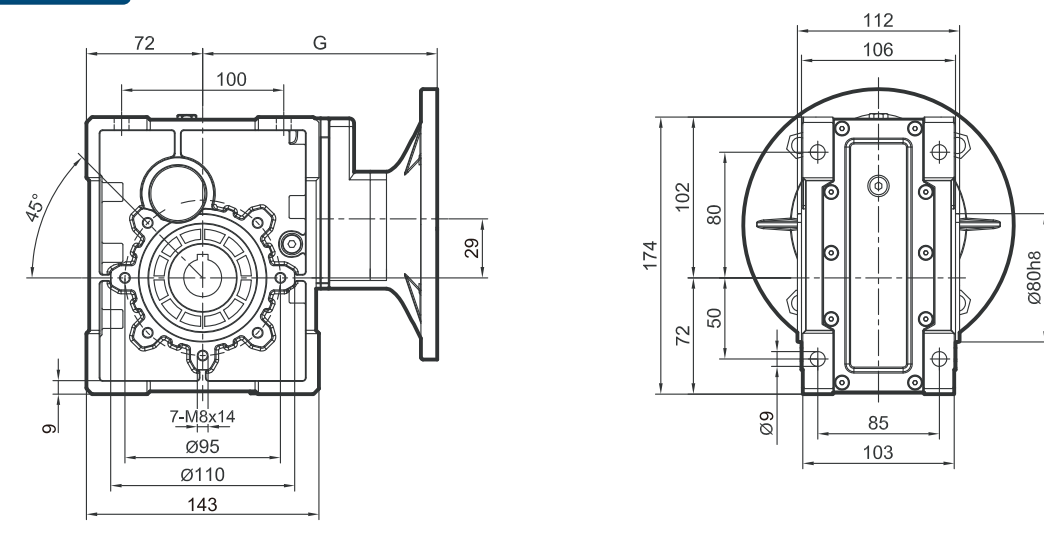
IEC	MLM	G	D _{H8}	b	t	MLM	Kg(重量)
63B5	50B(28B)	133	20*	6	22.8	50B(28B)	4.2
	50C(28C)	167	25	8	28.3	50C(28C)	5
71B5/B14	50B(28B)	113	*非标孔, 订单时请说明。 *Only on request			不包括马达 Weight without motor	
	50C(28C)	147					
80B5/B14	50B(28B)	133					
90B5/B14	50B(28B)	167					

外形尺寸图表 / OUTLINE DIMENSION SHEET

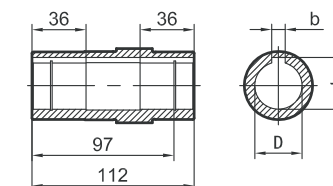
MLM63(38)..B..IEC



MLM63(38)..C..IEC



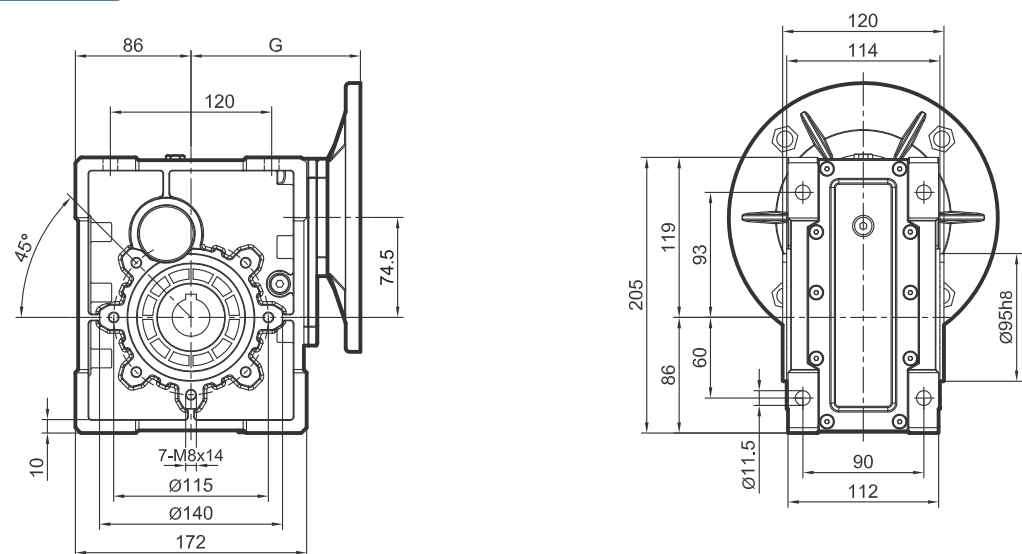
输出孔/Output hole



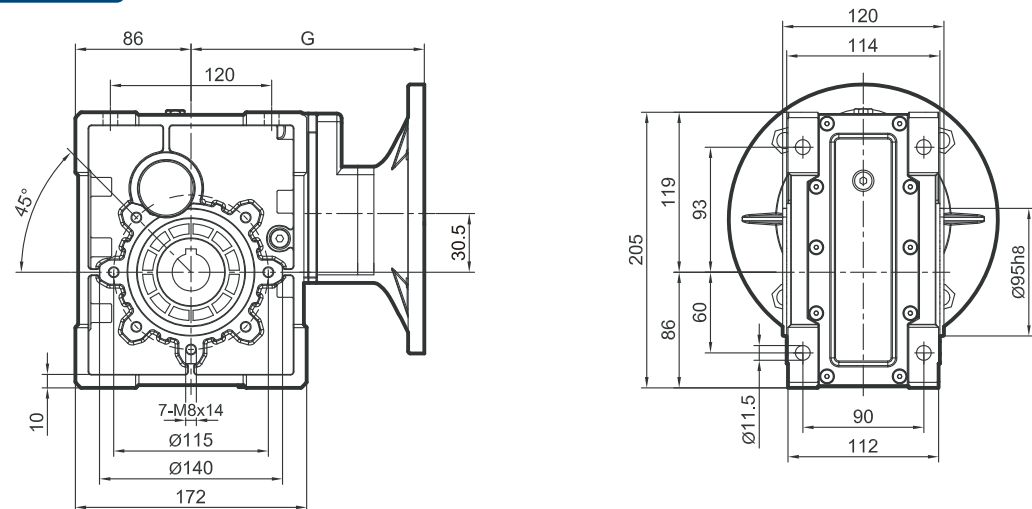
IEC	MLM	G	D _{H8}	b	t	MLM	Kg(重量)
63B5	63B(38B)	144	25	8	28.3	63B(38B)	6.0
	63C(38C)	178	28*	8	31.3	63C(38C)	6.8
71B5/B14	63B(38B)	124	*非标孔, 订单时请说明。 *Only on request			不包括马达 Weight without motor	
	63C(38C)	158					
80B5/B14	63B(38B)	144					
	63C(38C)	178					
90B5/B14	63B(38B)	144					

外形尺寸图表 / OUTLINE DIMENSION SHEET

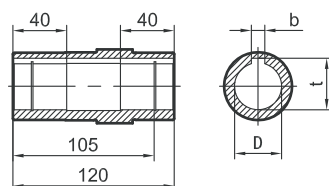
MLM75(48)..B..IEC



MLM75(48)..C..IEC



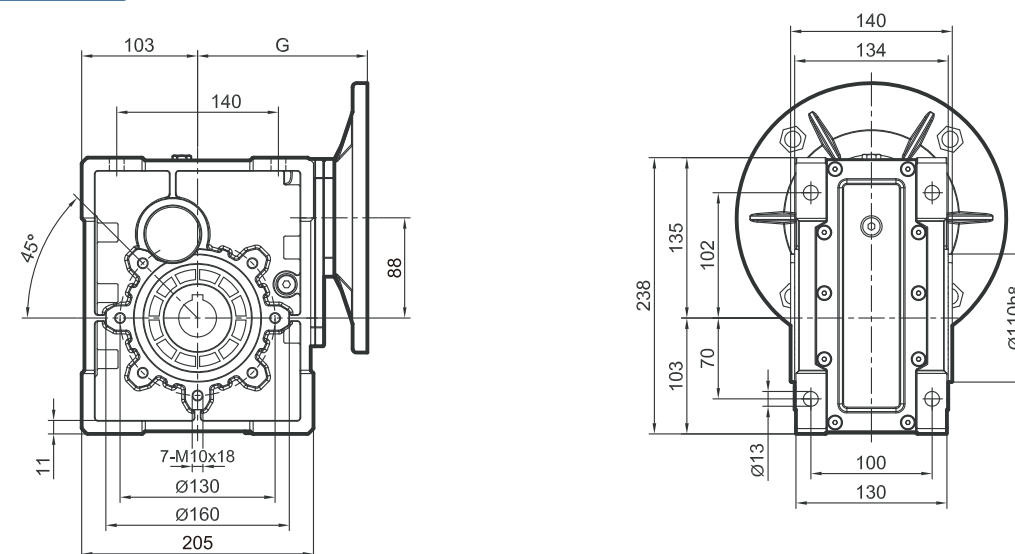
输出孔/Output hole



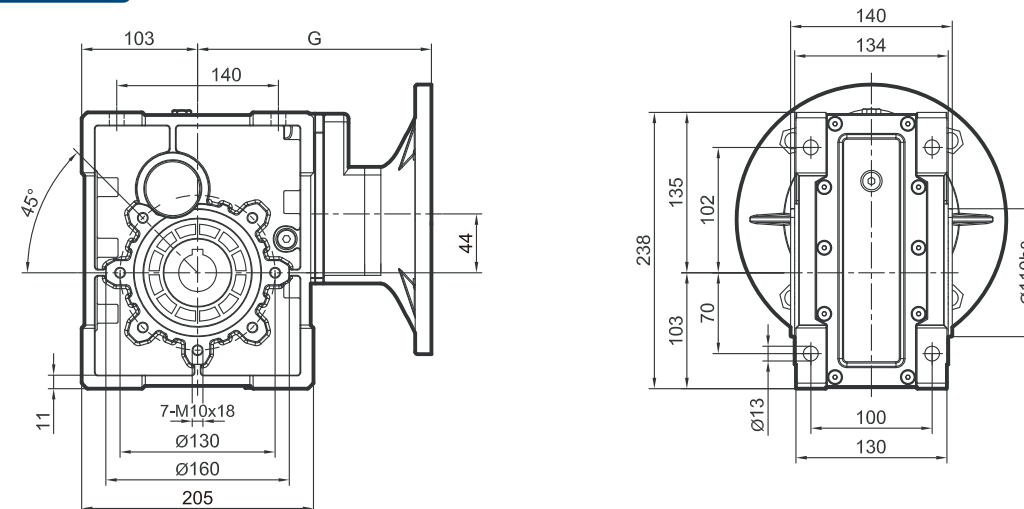
IEC	MLM	G	D _{H8}	b	t	MLM	Kg(重量)
63B5	75C(48C)	166	28	8	31.3	75B(48B)	9.2
71B5	75B(48B)	146	30*	8	33.3	75C(48C)	10.8
	75C(48C)	217	35*	10	38.3		
80B5/B14	75B(48B)	166	*非标孔, 订单时请说明。 *Only on request				不包括马达 Weight without motor
	75C(48C)	207					
90B5/B14	75B(48B)	166					
	75C(48C)	207					
100/112B5	75B(48B)	176					
100/112B14	75B(48B)	176					

外形尺寸图表 / OUTLINE DIMENSION SHEET

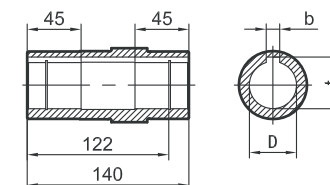
MLM90(58)..B..IEC



MLM90(58)..C..IEC

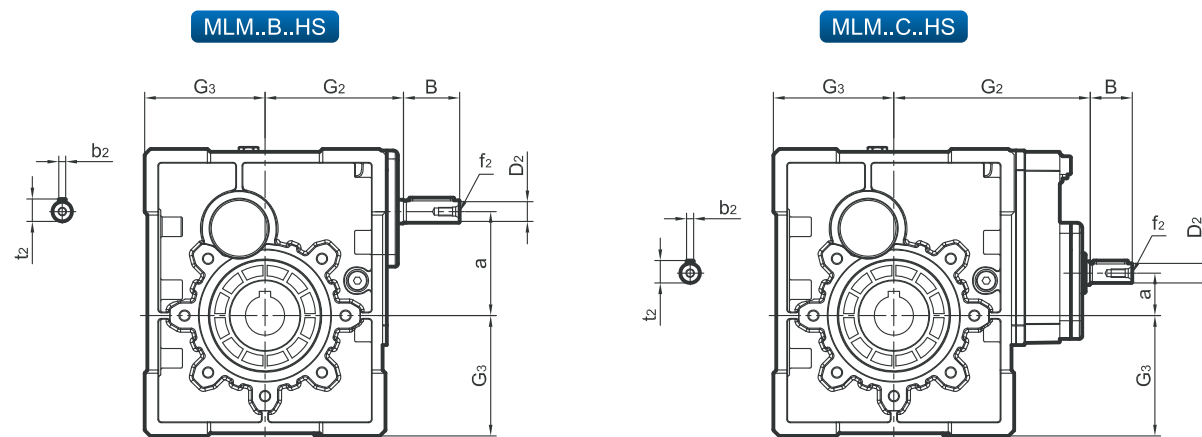


输出孔/Output hole



IEC	MLM	G	D _{H8}	b	t	MLM	Kg(重量)
63B5	90C(58C)	222	35	10	38.3	90B(58B)	13.3
71B5	90B(58B)	162	38*	10	41.3	90C(58C)	14.8
	90C(58C)	232					
80B5/B14	90B(58B)	182	*非标孔, 订单时请说明。 *Only on request				不包括马达 Weight without motor
	90C(58C)	222					
90B5/B14	90B(58B)	182					
	90C(58C)	222					
100/112B5	90B(58B)	192					
100/112B14	90B(58B)	192					

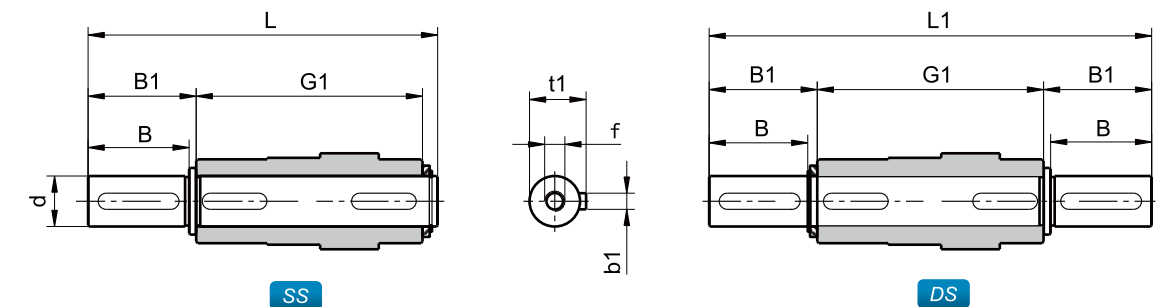
外形尺寸图表 / OUTLINE DIMENSION SHEET



MLM	B	D _{2f6}	G ₂	G ₃	a	b ₂	t ₂	f ₂
50B(28B)	23	11	70	60	56.5	4	12.5	-
50C(28C)	23	11	88	60	28	4	12.5	-
63B(38B)	30	14	85	72	69.1	5	16	M6
63C(38C)	23	11	110	72	35.6	4	12.5	-
75B(48B)	40	16	99	86	80	5	18	M6
75C(48C)	30	14	129	86	41.5	5	16	M6
90B(58B)	40	19	112	103	93	6	21.5	M6
90C(58C)	30	14	152	103	52.5	5	16	M6

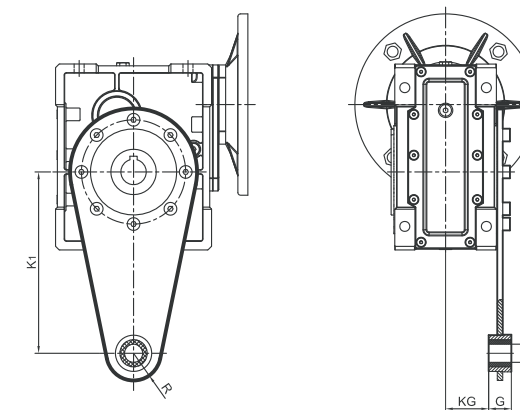
附件尺寸图表 / ACCESSORIES DIMENSION SHEET

输出轴/Output Shafts



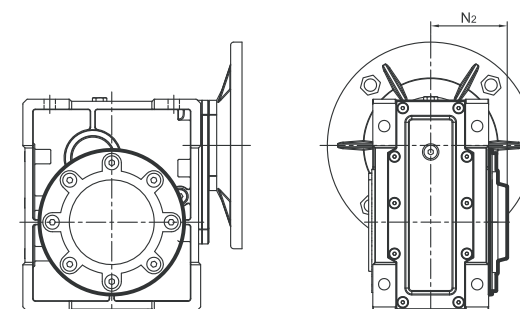
MLM	d _{h6}	B	B ₁	G ₁	L	L ₁	f	b ₁	t ₁
50(28)	25	50	53.5	92	153	199	M10*27	8	28
63(38)	25	50	53.5	112	173	219	M10*27	8	28
75(48)	28	60	63.5	120	192	247	M10*27	8	31
90(58)	35	80	84.5	140	234	309	M12*34	10	38

扭力臂/Torque Arm



MLM	K1	G	KG	KH	R
50(28)	100	14	38.5	10	18
63(38)	150	14	49	10	18
75(48)	200	25	47.5	20	30
90(58)	200	25	57.5	20	30

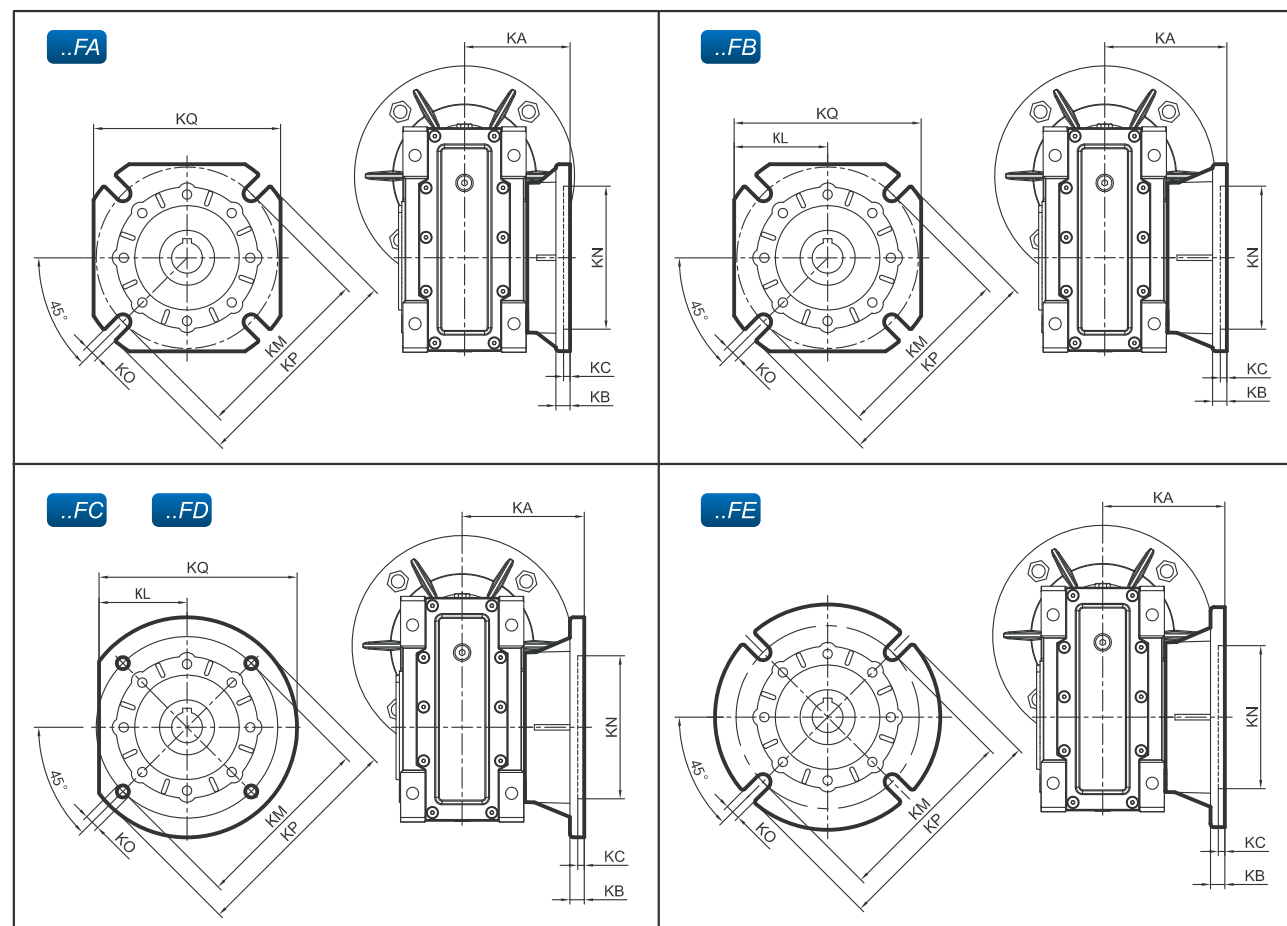
防尘盖/Cover



MLM	N2
50(28)	58
63(38)	69
75(48)	74
90(58)	85

附件尺寸图表 / ACCESSORIES DIMENSION SHEET

输出法兰 / Output flange



MLM	FA							
	KA	KB	KC	KM	KN _{H8}	KO	KP	KQ
50(28)	90	9	5	85	70	11(n=4)	125	110
63(38)	82	10	6	150	115	11(n=4)	180	142
75(48)	111	13	6	165	130	14(n=4)	200	170
90(58)	111	13	6	175	152	14(n=4)	210	200

MLM	FB							
	KA	KB	KC	KM	KN _{H8}	KO	KP	KQ
50(28)	120	9	5	85	70	11(n=4)	125	110
63(38)	112	10	6	150	115	11(n=4)	180	142
75(48)	90	13	6	130	110	11(n=4)	160	-
90(58)	122	18	6	215	180	14(n=4)	250	105

MLM	FC								
	KA	KB	KC	KM	KN _{H8}	KO	KP	KQ	KL
50(28)	89	10	5	130	110	9(n=4)	160	-	66
63(38)	98	10	5	165	130	11(n=4)	200	-	80
90(58)	110	17	6	165	130	11(n=4)	200	-	-

MLM	FD								
	KA	KB	KC	KM	KN _{H8}	KO	KP	KQ	KL
50(28)	72	14.5	5	115	95	11(n=4)	140	-	60
63(38)	107	10	5	165	130	11(n=4)	200	-	80
90(58)	151	13	6	175	152	14(n=4)	210	200	-

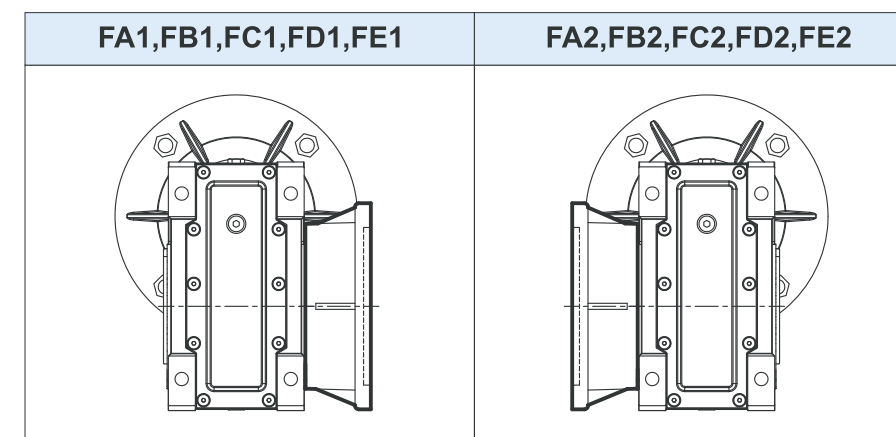
MLM	FE						
	KA	KB	KC	KM	KN _{H8}	KO	KP
63(38)	80.5	16.5	5	130	110	11(n=4)	160

* 当KQ不存在时,说明法兰为圆形。
* If KQ isn't existing, the flange is circular.

* 当KL存在时,说明法兰为圆形且切边。
* If KL is existing, the flange isn't completely circular.

安装方位图 / INSTALLATION POSITIONS DIAGRAM

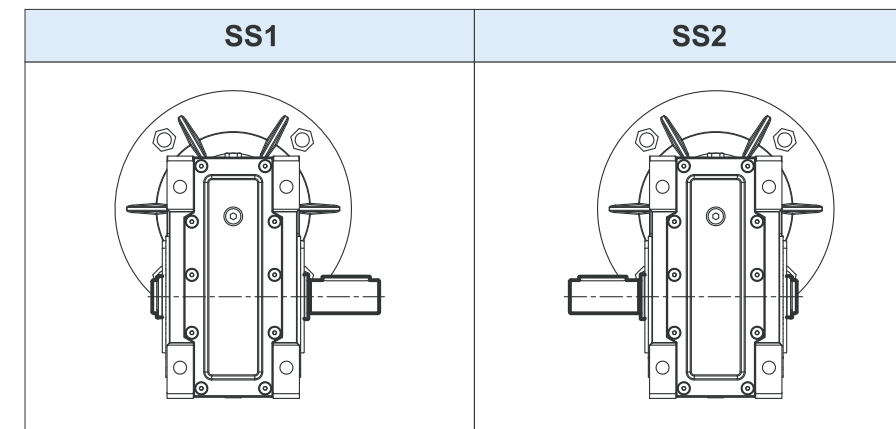
输出法兰位置 / Position diagram for output flange



如果没有特殊要求,一般按出厂标准位置如图F..1方式和B3位置提供。

Unless specified otherwise, the gear units is supplied with the flange in pos. F..1 referred to position B3.

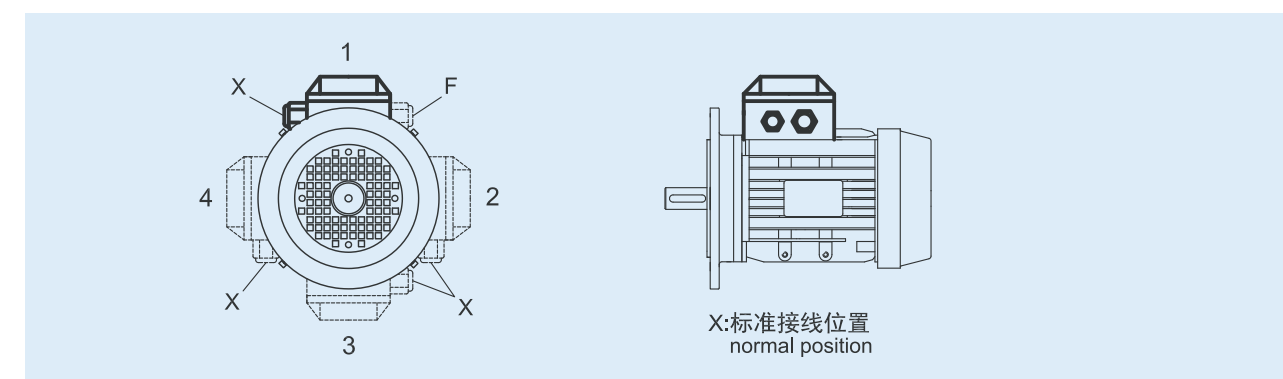
单向输出轴位置 / Position diagram for single output shaft



如果没有特殊要求,一般按出厂标准位置如图SS1方式和B3位置提供。

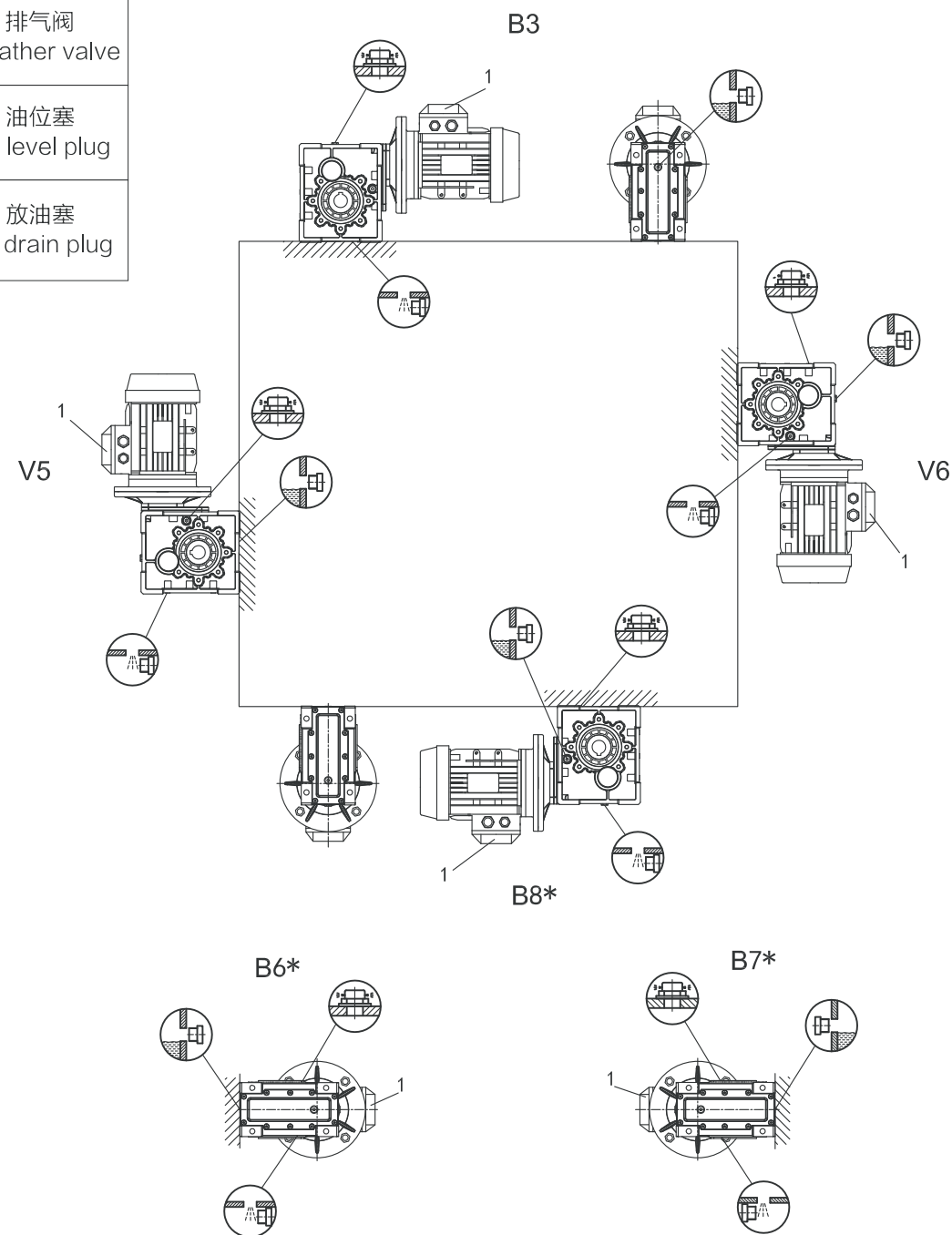
Unless specified otherwise, the gear units is supplied with the flange in pos. SS1 referred to position B3.

电机接线盒方位/Position of motor terminal box



安装方位图 / INSTALLATION POSITIONS DIAGRAM

符号/Symbol	含义/Meaning
	排气阀 Breather valve
	油位塞 Oil level plug
	放油塞 Oil drain plug

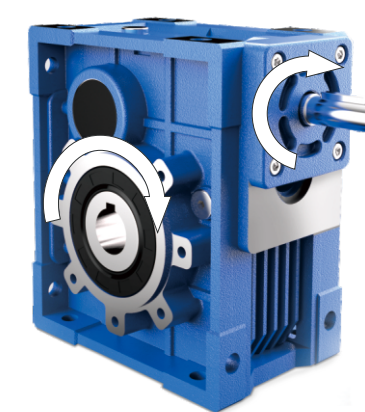


* 表示在此安装方式，不能仅凭油位塞加注润滑油，油位需高出油位塞，加注量按表内所示。

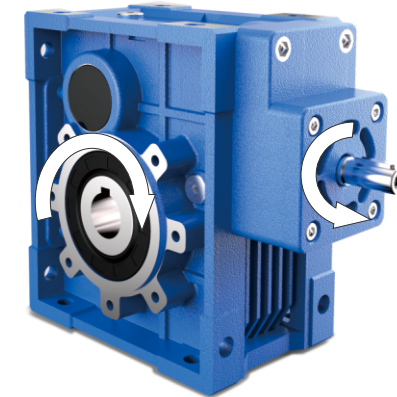
* It means the lubricant can't be added according to the oil level line plug, but also higher the plug to fill quantity as shown in the table.

安装方位图 / INSTALLATION POSITIONS DIAGRAM

旋转方向 / Direction of rotation



MLM..B..HS



MLM..C..HS

减速机在使用时，电机可正反转输入使用，推荐使用上图所示输入轴旋转方向为准双曲面齿轮最佳啮合方向。

The motor can be run either CW or CCW while using with gearbox, the left chart is recommended.

安装 / INSTALLATION

注意事项 / Matters needing attention

安装减速机时要注意以下一些事项：

1. 减速机与机械设备装配之前，要检查减速机输出轴的旋转方向是否正确；
2. 减速机与原动机、设备装配之前，应检查各轴径、孔径、键和键槽的偏差尺寸，避免装配过紧、过松影响减速机性能；
3. 减速机必须牢固地安装在机械设备上，避免有松动或振动；
4. 尽可能地避免减速机暴露在烈日阳光下和恶劣环境中；
5. 如果减速机存放时间长达4-6个月，应检查油封是否浸润在润滑油中，可能油封唇口会粘在轴上，甚至失去了弹性，由于适合的弹性是油封必须的工作条件，所以推荐更换油封；
6. 所有橡胶件和透气孔不能沾有油漆；
7. 与减速机的空心轴或实心轴配合连接时，应在轴上配合部分涂上润滑油，以免卡死或氧化；
8. 使用时必须检查油位（如油位镜孔或打开油塞，小型号是没有的）；
9. 使用新减速机时，不能满负载起动，应该逐步增大负载；
10. 使用各类电机直连型减速机时，若电机重量偏大，应设支撑装置；
11. 确保电机风扇附近有良好的通风环境，以免影响散热效果；
12. 减速机的标准工作环境温度是-5℃至40℃，如果不在这范围时，请与我们技术服务人员联系。

To install the gear units it is necessary to note the following recommendations:

1. Check the correct direction of rotation of the gear units output shaft before fitting the unit to the machine.
2. Before mount with the prime mover and device, please check the reducer's every axial diameter, aperture, key and not key and key slot, to be sure their dimensions are not deviation, and avoid assembling too tight or too loose, unless it will influence the reducer's performance.
3. The mounting on the machine must be stable to avoid any vibration.
4. Whenever possible, protect the gear units against solar radiation and bad weather.
5. In the case of particularly lengthy periods of storage (4-6 months), if the oil seal is not immersed in the lubricant inside the unit, it is recommended to change it since the rubber could stick to the shaft or may even have lost the elasticity it needs to function properly.
6. Painting must definitely not go over rubber parts and the holes on the breather plugs, if any.
7. When connect with hollow or solid shaft, please grease the joint to avoid lock or oxidation.
8. Check the correct level of the lubricant through the indicator, if there is one.
9. Starting must take place gradually, without immediately applying the maximum load.
10. Supporting unit is required when using various of reducer matched with motor directly and the weight of motor is a little bigger than common.
11. Ensure the motor cools correctly by assuring good passage of air from the fan side.
12. In the case of ambient temperatures $< -5^{\circ}\text{C}$ or $> +40^{\circ}\text{C}$ call the Technical Service.

安装 / INSTALLATION

使用限制 / Critical applications

这本样本给出的参数基本上是按B3安装方位来编的，即第一级没有完全浸入油中。对于其他安装方位和输入转速，请参考下面表格中相应参数。当遇到下列应用情况时，如有必要请与我们技术服务人员联系。

1. 在原有上提高转速时；
2. 应用在惯性特别大的设备上时；
3. 应用在如升降机（需要自锁考虑）时；
4. 当减速机出现故障有可能会对操作者造成危害时；
5. 应用在减速机过度疲劳状态时；
6. 工作环境温度低于-5℃或高于40℃时；
7. 在化学腐蚀环境中使用时；
8. 在盐性环境中使用时；
9. 在辐射性高的环境中使用时；
10. 在环境气压不在正常大气压力下使用时；
11. 安装方位在这样本中没有被提到时。

避免把减速机部分或整台浸入水中或其他液体中。

减速机承受的最大负载扭矩不能超过两倍于性能参数表中规定的正常扭矩（当使用系数 $f_s=1$ 时）；这里最大负载扭矩是指承受瞬间短暂的过载，他出现在过载启动、刹车、振动或其他动态操作环境中。

1. As a speed increasing;
2. Applications with especially high inertia;
3. Use as a lifting winch;
4. Use in services that could be hazardous for people if the reduction unit fails.
5. Applications with high dynamic strain on the case of the reduction unit.
6. In places with T° under -5° or over 40° .
7. Use in chemically aggressive environments.
8. Use in a salty environment.
9. Use in radioactive environments.
10. Use in environments pressures other than atmospheric pressure.
11. Mounting positions not envisaged in the catalogue.

Avoid applications where even partial immersion of the reduction unit is required.

The maximum torque that the gear reducer can support must not exceed two times the nominal torque ($f_s=1$) stated in the performance tables. Intended for momentary overloads due to starting at full load, braking, shocks or other causes, particularly those are dynamic.

润滑油 / LUBRICATION

润滑油型号 / Types of lubrication

	环境温度(°C) Ambient Tempreatur(°C)	ISO粘度 ISO Viscosity Class				润滑油类型 Lubrication type
	°C -50 0 50 +100		SHELL	MOBIL	BP	
MLM	-10 +40	VG220	Shell Omala S2G220	Mobil gear 630	BP Energol GX-XP 220	矿物油 Mineral oil
	-20 +25	VG150 VG100	Shell Omala S2G220	Mobil gear 627	BP Energol GX-XP 100	
	-30 +10	VG68-46 VG32	Shell Tellus S2V32	Mobil D.T.E.13M		
	-40 -20	VG22 VG15	Shell Tellus S2V15	Mobil D.T.E.11M	BP Energol HLP-HM 15	
	-40 +80	VG220	Shell Omala S4GX220	Mobil SHC630		合成油 Synthetic oil
	-40 +40	VG150		Mobil SHC629		
	-40 +10	VG32		Mobil SHC624		

润滑油加注量/Lubricant fill quantity

减速机型号 Gear units		加注量 Fill quantity in liters				单位：升（L）	
		B3	B6	B7	B8	V5	V6
MLM	SKM50B(28B)	0.22	0.20*	0.13*	0.15	0.25	0.14
	SKM50C(28C#)	0.07	0.04	0.04	0.05	0.08	0.09
	SKM63B(38B)	0.42	0.35*	0.24*	0.22	0.46	0.25
	SKM63C(38C#)	0.07	0.04	0.04	0.05	0.08	0.09
	SKM75B(48B)	0.70	0.58*	0.42*	0.42	0.75	0.45
	SKM75C(48C#)	0.13	0.09	0.09	0.09	0.15	0.17
	SKM90B(58B)	1.21	0.95*	0.72*	0.67	1.30	0.74
	SKM90C(58C#)	0.13	0.09	0.09	0.09	0.15	0.17

规定的加注量为参考值。精准值的变化与级数和传动比有关。请您在加注润滑油时一定要注意油位螺栓所指示的精确油量。后期调整安装方式时，您必须根据改变后的安装方式相应调整加注润滑剂。下表中列出了不同安装方式（B3、B6、B7.....）的减速机相应的标准参考润滑油注入量值。

The specified fill quantities are recommended values.The precise values vary depending on the number of stages and gear ratio.When filling,it is essential to check the oil level plug since it indicates the precise oil capacity. The following tables show guide values for lubricant fill quantities in relation to the mounting position （B3、B6、B7.....）

#: 采用3级传动减速机时，各自加注3级箱体和2级箱体的润滑油，润滑油互不相通，表中的加注量为3级箱体润滑油加注量。
#: Means the oil quantity in the 3rd stage housing,as this one is separated from the 2nd housing,please fill them separately while in 3 stages.

*: 表示在此安装方式，不能仅凭油位塞加注润滑油，油位需高出油位塞，加注量按表中所示。

*: It means the lubricat can't be according to the oil level line plug, but also higher the plug the fill quantity sa shown in the table.

维护 / MAINTENANCE

1) 对于齿轮箱，首次换油必须在工作大约300小时（齿轮磨合期）后进行，在换油时应使用合适的清洗剂小心的冲洗齿轮箱，不得将矿物油和合成油混合。

2) 每3000工作小时，最低程度半年，应检测油以及油位，有密封不严引起滴漏的常规检测，若是IEC输入的减速机，则检测检查弹性体，必要时进行更换。

3) 格局不同的工作条件（见下图）而定，最长每三年检测一次，更换矿物油，更换轴承润滑油脂。

4) 根据不同的工作条件而定，更换输出轴上的油封。

5) 产品出现故障时，不要拆卸部件，与本公司销售服务部门联系（需提供减速机规格、出厂日期、编号、已使用时间、主机名称、主机生产单位和故障类型）后，再采取合理的措施。

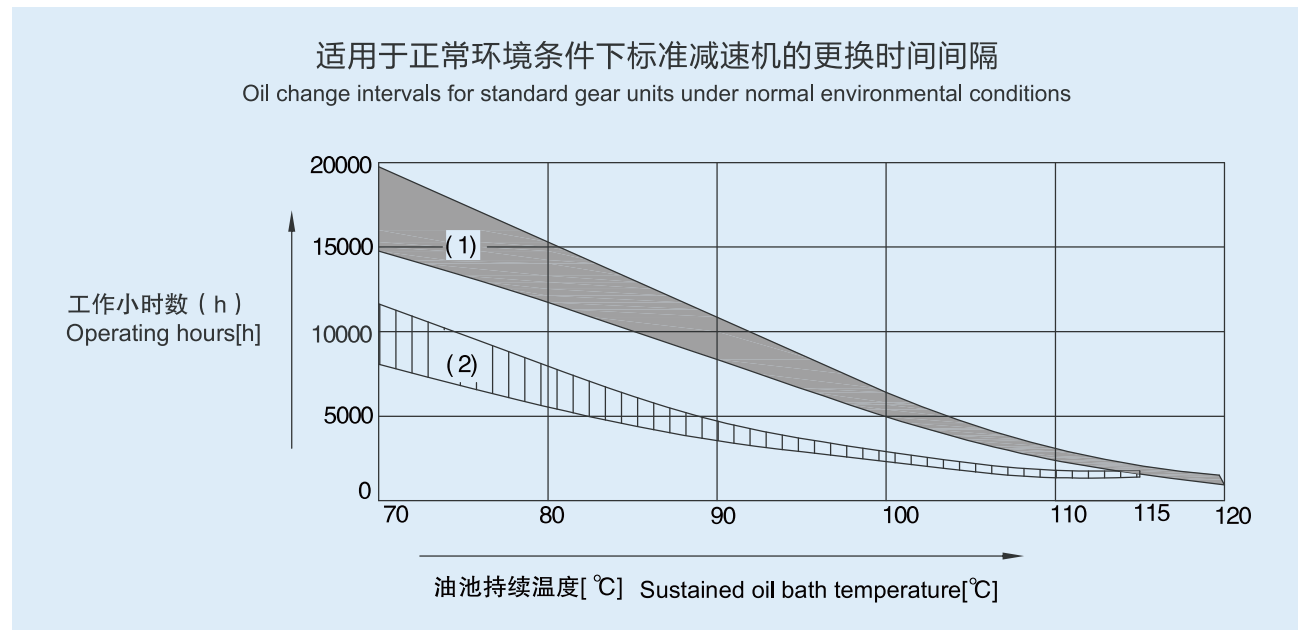
1) For gear units,first oil change should be after about 300 hours (run-in period).The right lotion is required to clean the gear units with care.Never mix the synthetic oil and mineral oil together.

2) Every 3000 working time,at least every 6 months,you have to check the oil and oil level,the seals visually for leakage.For IEC input gear units,the elastomer should be tested or replaced if necessary.

3) Depending on the operating conditions(see chart below),every 3 years at the latest for inspection is needed.Then change the mineral oil and replace the bearing grease.

4) Depending on the operating conditions,change the oil seals on output shaft.

5) Once the malfunctions appear,stop disassembling the parts,and firstly please contact the customer service (the information about specification,delivery date,series number,time used,name of machine,machine manufacturer,malfunction problems is required), then take the reasonable measures.



● 每种机油类型的平均值为70°C / Average value per oil type at 70°C

（1）合成油 / Synthetic oil

（2）矿物油 / Mineral oil

维护 / MAINTENANCE

存放 / Storage

1. 有顶棚，防雨雪，无振动。

2. 在设备和地面之间垫放木块或其他材料。

3. 开箱后暂不使用的减速机在其加工表面涂上防锈油，并应及时放回包装箱内。

4. 在定期检查的情况下，两年以及更长时间。在进行检查时，应检查清洁度和机械损伤，检查防锈层是否完好。
1. Under roof"protected against rain and snow"no shock loads.

2. Underlay the block and other material between the ground and equipment.

3. The opened but not used gear units should be added with the anti-corrosive oil on its surface,and then return to the packing containers timesly.

4. Two years or more given regular inspections.Check for cleanliness and mechanical damage as part of the inspection,Check corrosion protection.

定货须知 / NOTICE FOR ORDER

- 减速机订单请向我们提供以下信息：
1. 减速机型号标记（减速机类型、速比、功率和安装方式）。

2. 减速机表面喷涂颜色，一般按银白色提供。

3. 订购数量。

4. 其他特殊要求。

单位名称、联系人、联系电话。

- Please offer the following information when place the orders:
1. The model mark of the gear units(type,ratio,power and mounting position).

2. Generally the gear units paint in silver.

3. Quantity ordered.

4. Qther special requirements.

Company,contact and telephone.

减速机运转故障 / GEAR UNIT MALFUNCTIONS

故障 Problem	可能的原因 Possible cause	解决方法 Remedy
异常、均匀的运转噪声 Unusual,regular running noise	A.滚动/碾压噪声:轴承损坏 B.冲击型噪声:齿轮啮合不均匀 A.Meshing/grinding noise:Bearing damage. B.Knocking noise:Irregularity in the gearing	A.检测润滑油,更换轴承 B.请向客户服务部咨询 A.Check the oil,change bearings B.Contact customer service
异常、不均匀的运转噪声 Unusual,irregular running noise	机油中有异物 Foreign bodies in the oil	A.检测润滑 B.停止运转传动装置,向客户服务部咨询 A.Check the oil B.Stop the drive,contact customer service
机油泄漏 A.在减速机盖上 B.在电机凸缘上 C.在电机轴密封圈上 D.在减速机凸缘上 F.在输出端轴密封圈上 Oil leaking A. From the gear cover plate B. From the motor flange C. From the motor oil seal D. From the gear unit flange F. From the output end oil sea	A. 减速机底座上的橡胶密封发生渗漏 B. 密封圈损坏 C. 减速机没有排气 A. Rubber seal on the gear cover plate leaking B. Seal defective C. Gear unit not vented	A.拧紧各个外盖上的螺钉并且观察减速机。如果机油继续泄露，请向客服服务部咨询 B.请向客户服务部咨询 C.给减速机排气(参见"安装方式") A.Tighten the bolts on the gear cover plate and observe the gear unit.Oil still leaking: Contactcustomer service B.Contact customer service C.Vent the gear unit(see "Mounting Positions")
机油从排气阀门旁渗出 Oil leaking from breaking valve	A. 机油太多 B. 传动装置安装方式错误 C. 频繁冷启动（机油起泡沫）和/或者较高的油位 A. Too much oil B. Drive operated in incorrect mounting position C. Frequent cold starts(oil foams)and/or high oillevel	A.修正油量(参见"润滑油") B.正确安装排气阀并且矫正油位（参见"安装方式") A.Correct the oil level("see Sec.Inspection and Maintenance") B.Mount the breather valve correctly(see Sec."Mounting Positions")and correct the oil leve(see"Lubricants")
尽管电机在运转或者传动轴已经被驱动,但是传动轴不转动 Oil leaking from breaking valve	减速机中的轴轮毂联接断裂 Connection between shaft and hub in gear unit interrupted	将减速机或减速电机送修 Send in the gear unit/gearmotor for repair

- 在磨合试运转阶段（24小时的运转时间内），轴密封圈有可能出现短期内的漏油/油脂的现象
Short-term oil/grease leakage at the oil seal is possible in the run-in phase (24 hours running time)

减速机负载特征表(参考件) / MCHARGE CHARACTERISTIC CHART(FOR REFEREBCE)

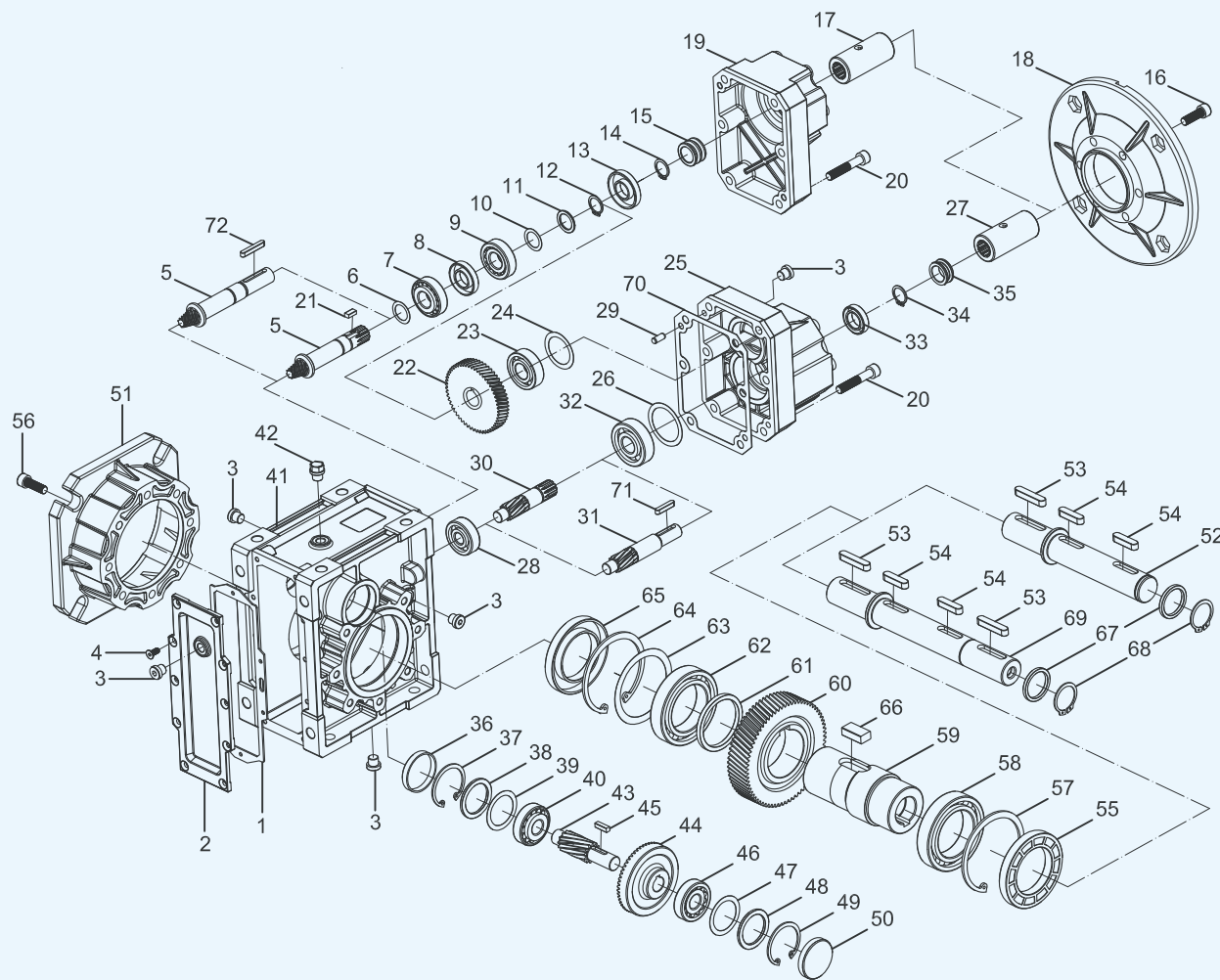
风机类 AIR BLOWERS		转臂式起重传动齿轮装置 Bracket swing gear assembly	B
风机（轴向和径向） Air blower（axial or radial）	A	吊杆起落齿轮传动装置 Derrick gear assembly	B
冷却塔风扇 Fan of cooling tower	B	转向齿轮传动装置 Steering gear assembly	B
引风机 Induced draught fan	B	行走齿轮传动装置 Moving gear assembly	C
螺旋活塞式风机 Rotary piston type fan	B	挖泥机类 LAND DREDGER	
蜗轮式风机 Turbo-fan	A	筒式传送机 Drum-type conveyer	C
建筑机械类 CONSTRUCTION MACHINERY		筒式转动机 Drum-type rotation wheel	C
混凝土搅拌机 Concrete mixer	B	挖泥头 Dredger head	C
卷扬机 Hoist	B	机动绞车 Powered crab	B
路面建筑机械 Road building machinery	B	泵 Pump	B
钻孔机 Boring mill	B	泵转向齿轮传动装置 Pump turning gear assembly	B
化工机械类 CHEMICAL MACHINERY		行走齿轮传动装置（履带） Moving gear assembly（apron wheel）	C
搅拌机（液体） Mixer（liquid）	A	行走齿轮传动装置（铁轨） Moving gear assembly（track）	B
搅拌机（半液体） Mixer（half liquid）	B	食品工业机械类 FOODSTUFF PROCESSING MACHINERY	
离心机（重型） Centrifuge（heavy）	B	灌注及装箱机器 Placer or box filler	A
离心机（轻型） Centrifuge（light）	A	甘蔗压榨机 Cane crusher	A
冷却滚筒** Cooling rolling drum	B	甘蔗切断机** Cane cutter	B
干燥滚筒** Dry rolling drum	B	甘蔗粉碎机** Cane crasher	C
搅拌机 Mixer	B	搅拌机 Mixer	B
压缩机类 COMPRESSOR		酱状物吊筒 Paste bucket	B
活塞式压缩机 Piston type compressor	C	包装机 Packager	A
蜗轮式压缩机 Turbo-compressor	B	糖甜菜切断机 Beet slicer	B
传送运输机类 TRANSMISSION FREIGHTER		糖和甜菜清洗机 Beet washing machine	B
平板传送机 Pan conveyer	B	发动机及转换器类 MOTOR AND CONVERSION EQUIPMENTS	
平衡块升降机 Balance lifter	B	频率转换器 Frequency converter	C
槽式传送机Trough conveyer	B	发动机 Motor	C
带式传送机（大件） Ribbon conveyer（large piece）	C	焊接发动机 Welding motor	C
带式传送机（碎料） Ribbon conveyer（small piece）	B	洗衣机类 WASHING MACHINE	
筒式面粉传送机 Drum-type flour conveyer	A	滚筒 Rolling drum	B
链式传送机 Chain conveyer	B	洗衣机 Washing machine	B
环式传送机 Ring type conveyer	B	金属滚轧机类 METAL ROLLER MACHINE	
货物升降机 Lifter	B	钢坯剪断机** Steel cutter	C
卷扬机 Hoist	B	链式输送机** Chain converter	B
连杆式传送机 Crank-connecting conveyer	B	冷轧机** Cold mill	C
载入升降机 Lifter	B	连铸成套设备 Continuous casting equipments	B
螺旋式传送机 Worm conveyer	B	冷床** Cold bed	B
钢带式传送机 Steel-band conveyer	B	剪料机头** Cropper	C
链式槽型传送机 Chain reed-type conveyer	B	交叉转弯输送机** Cross steering transmitter	B
绞车运输机 Crab freighter	B	除锈机** Druster	C
起重机械类 HOIST		重型和中型板轧机** Heavy and medium steel mill	C
卷扬机齿轮传动装置 Hoist gear assembly	A	棒坯切轧机** Bar mill	C

减速机负载特征表(参考件) / MCHARGE CHARACTERISTIC CHART(FOR REFEREBCE)

棒坯转运机类 BAR TRANSMISSION EQUIPMENTS		泵类 PUMPS	
棒坯推料机 Bar pusher	B	离心泵（稀液体） Centrifugal pump(thin liquid)	A
推床 Push bed	B	离心泵（半液体） Centrifugal pump(half liquid)	B
剪板机** Shears	C	活塞泵 Displacement pump	C
板材摆升降台** Lumber elevator platform	B	柱塞泵 Plunger pump	C
轧辊调整装置 Roll adjusting equipments	B	压力泵 Force pump	C
辊式矫直机 Roller leveling machine	B	塑料机械类 PLASTIC EQUIPMENTS	
轧钢机辊道（重型）** Mill rolling way(heavy)	C	压光机** Glazing press	B
轧钢机辊道（轻型）** Mill rolling way(light)	B	挤压机** Ejecting press	B
薄板轧机** Sheet rolling mill	C	螺旋压出机** Spiral extruding machine	B
修整剪切机** Trimming shears	B	混合机** Mixing machine	B
焊管机 Pipe welder	C	橡胶机械类 RUBBER EQUIPMENT	
焊管机（带材和线材） Soldering machine(belt material and wire rod)	B	压光机** Glazing press	B
线材拉拔机 Wire drawbench	B	挤压机** Ejecting press	C
金属加工机床类 METAL PROCESSING MACHINE TOOLS		混合搅拌机** Mixing stir machin	B
动力轴 Power shaft	A	捏合机 Kneading machine	B
锻造机** Forging machine	C	滚压机** Roller machine	C
锻锤 Drop hammer	C	石料、瓷土料加工机械类 STONE PORCELAIN CLAY PROCESSING EQUIPMENTS	
机床及辅助装置 Machine tool and necessary	A	球磨机 Ball crusher	B
机床及主要传动装置 Machine tool and main driving equipment	B	挤料粉碎机 Ejecting press and breaker	C
金属刨床 Metal facing machine	C	破碎机 Breaker	C
板材矫直机床 Plate-leveling machine tool	C	压砖机 Brick press	C
冲床 Backing-out punch	C	锤料碎机** Beating crusher	C
冲压机床 Press machine tool	C	转炉** Converter	C
剪床 Cutting machine	B	筒型磨机** Cylinder mill	C
薄板弯曲机床 Sheet bending machine tool	B	石油工业机械类 PETROLEUM PROCESSING MACHINERY	
石油工业机械类 PETROLEUM PROCESSING MACHINERY		纺织机械类 TEXTILE MACHINERY	
输油管油泵** Pump of oil pipe line	B	送料机 Feeding machine	B
转子钻井设备 Rotary drilling equipment	C	织布机 Loom machine	B
制纸机类 PAPERING MACHINE		印染机 Dyeing machine	B
压光机** Glazing press	C	精致筒 Purified drum	B
多层纸板机** Multilayer paper board machine	C	威罗机 Welon machine	B
干燥滚筒** Drying cylinder	C	水处理设备类 WASTER TREATMENT EQUIPMENTS	
上光滚筒** Glazing cylinder	C	鼓风机** Air blast	B
搅浆机** Masher	C	螺杆泵 Screw pump	B
搅浆擦碎机** Mashing and breaking machine	C	木料加工机床 WOOD PROCESSING MACHINE TOOL	
吸水滚** Suction oil	C	剥皮机 Barker	C
潮纸滚压机** Wet paper roller machine	C	刨床 Facing machine	B
吸水滚压机木** Water absorbing roller machine	C	锯床 Saw bench	C
威罗机 Welon machine	C	木材加工机床 Wood processing machine tool	A

注：A—均匀冲击负载；B—中等冲击负载；C—重冲击负载；**—用于24小时工作制。
Note：A-Uniform load；B-Moderate shock load；C-Heavy shock load；**-for 24hour system.

产品构造原理 / PRODUCT STRUCTURE PRINCIPLE



1	橡胶垫 / Rubber gasket	38	垫圈 / Washer
2	齿轮箱盖板 / Gearcase cover	39	调整垫片 / Shim ring
3	油塞 / Oil plug	40	轴承 / Bearing
4	内六角沉头螺钉 / Hexagon sunk screw	41	齿轮箱体 / Gearcase
5	主动齿轮轴 / Pinion shaft	42	透气阀 / Breather valve
6	调整垫片 / Shim ring	43	主动齿轮轴 / Pinion shaft
7	轴承 / Bearing	44	从动齿轮 / Gear
8	油封 / Oil seal	45	键 / Key
9	轴承 / Bearing	46	轴承 / Bearing
10	调整垫片 / Shim ring	47	调整垫片 / Shim ring
11	垫圈 / Washer	48	垫圈 / Washer
12	轴用挡圈 / Shaft-circlip	49	孔用挡圈 / Hole-circlip
13	油封 / Oil seal	50	油封盖 / Closing cap
14	轴用挡圈 / Shaft-circlip	51	输出法兰 / Output flange
15	橡胶套 / Rubber boot	52	单向输出轴 / Single output shaft
16	内六角螺钉 / Inner hex screw	53	键 / Key
17	输入轴 / Input shaft	54	键 / Key
18	输入法兰 / Input flange	55	油封 / Oil seal
19	两级输入箱盖 / 2 stage input box cover	56	内六角螺钉 / Inner hex screw
20	内六角螺钉 / Inner hex screw	57	孔用挡圈 / Hole-circlip
21	键 / Key	58	轴承 / Bearing
22	从动齿轮 / Gear	59	输出轴 / Hollow shaft
23	轴承 / Bearing	60	从动齿轮 / Gear
24	调整垫片 / Shim ring	61	垫圈 / Washer
25	三级输入箱盖 / 3 stage input box cover	62	轴承 / Bearing
26	调整垫片 / Shim ring	63	调整垫片 / Shim ring
27	输入轴 / Input shaft	64	孔用挡圈 / Hole-circlip
28	轴承 / Bearing	65	油封 / Oil seal
29	圆柱销 / Stifte	66	键 / Key
30	主动齿轮 / Pinion	67	垫圈 / Washer
31	主动齿轮轴 / Pinion shaft	68	轴用挡圈 / Shaft-circlip
32	轴承 / Bearing	69	输出双向轴 / Double output shaft
33	油封 / Oil sea	70	密封纸垫 / Housing gasket
34	轴用挡圈 / Shaft-circlip	71	键 / Key
35	橡胶套 / Rubber boot	72	键 / Key
36	油封盖 / Closing cap		
37	孔用挡圈 / Hole-circlip		

