TAIZHOU
ETERNAL HYDRAULIC

Internal Curve Radial Piston

Low Speed High Torque Hydraulic Motors

High output torque, output shaft rotation

high radial and axial load carrying capacity, single or multi-stage displacement

内曲线径向柱塞低速大扭矩液压马达

输出扭矩大 输出轴转动

径问、 轴向承载力大 单级或多级排量

台州永畅液压机械有限公司

Taizhou Eternal Hydraulic Machine Co., Ltd

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HMS SERIES
HYDRAULIC MOTORS
HMS系列液压马达

BRIEF INTRODUCTION

HMS series low speed and high torque hydraulic motors is also called Incurve Multicam Radial-piston、Low Speed HighTorque Hydraulic Motor, Which has many features as follow :

1、**Modular design**
The entire structure is designed as modular, those parts is consists of hydraulic function unit, machinery brake unit machinery output unit、and forms complete unit, It's combine with afferent main machines easily.

2、**High efficiency**
The muliticam flat distributors technology is adopted to compensate automatically the loss of frictions, low sensibility to pressure and temperature, high volumetric efficiency. The rolling pistons structure are used simultaneously to make transmission easy, less friction, higher mechanical efficiency.

3、**High pressure and smooth running even at very low speeds**
Peak pressure is up to 40 Mpa. Because of small transmission inertia and piston assemblies is sealed with piston rings, it has high starting efficiency.

4、**Permissible Ridial and Axial load**
Tapered roller bearings capable of trunsmitting high axial and radial forces.

5、**Motor with multi-disc brake(holding brake)**
Freeuheeling switching to halt displace meat.

6、**Motor emission control**
Controlled by motor displacement, which divided by single-displacement and double-displacement.
The single-displacement is complete displacement output, and the double-displacement controlled by valve to carry out the speed by its complete displacement or half displacement output.

简 介

HMS系列低速大扭矩液压马达是内曲线多作用径向柱塞式马达，具有如下特点：

1、**模块化设计**
整体结构按模块化设计，片式叠装，分机械输出模块、液压功能模块、配流模块、机械制动模块四部分，能方便与各种主机优化配套。

2、**效率高**
采用平面配流技术，对压力、温度敏感度低，自动补偿配流摩擦副间的磨损，可长期保证马达高容积效率，同时采用滚柱、柱塞结构，传力结构简单，摩擦副少，提高了机械效率。

3、**工作压力高，低速性能好**
与QJM 系列马达相比采用滚柱、柱塞替代了钢球、球塞；通过优化定子曲线的设计，在保证输出扭矩，转速无脉动的同时，降低了定子接触应力，并采用新材料、新工艺制造定子从而使液压马达的工作压力大大提高，最高压力可达40MPa，由于传力机构惯量小，柱塞副有密封活塞环，滚柱挡块采用减摩材料，因而起动效率高，低速性能好，最低稳定转速≤0.5rpm。

4、**可承受径向和轴向负荷**
采用独立设置机械输出模块，和大直径的输出轴和轴承，马达可承受较大的轴向力和径向力，可直接连接齿轮输出或直接安装在车辆驱动轮上。

5、**可带机械制动器**
采用模块化片式机构，可叠加机械制动装置，实现输出轴直接安全制动和停车制动。

6、**马达排量控制**
马达分为单排量马达和双排量马达，单排量马达为全排量输出，双排量马达的排量可通过控制阀控制实现全排量和半排量输出，实现速度控制。

NOTICE

Radial Load:
(1)Different model has different radial load.
(2)Same model has different radial load if force location is different.
(3)We provides some HMS model performance curve, this curve is just showing the relation of radial location and radial load. Motor should be in optimal range, it can ensure lifetime of motor.

Performance Curve:
(1)Maximum immobile load curve means the relation between max immobile and force position under the motor permanent plastic never appear.
(2)Maximum mobile load curve means the relation between max load and resultant force when all load parts has no bend tired damage under motor normal rotation.
(3)Lifetime curve means the relation between radial load and resultant force when the rotation bearing life is normal (example : 1×10E+6 or 4×10E+7 times round)This is the index which is relevant with bearing inner circle touch stress.
(4)The load curve of this brochure is not including Axial load, please contact us for any doubt.

Oil contamination:
Polluted oil is the main failed reason of hydraulic system. Whether polluted oil remained in system or another contamination inside. It shorten lifetime and system reliability.

Oil viscosity:
HMS series motor viscosity range: 9cst~2000cst, optimal viscosity range: 20-50cst, oil temperature : -20℃~70℃
Recommended using Hv46 and Hv68 hydraulic oil.

Motor Efficiency:
We marked mechanical efficiency and volumetric efficiency in this catalogue, normal mechanical efficiency be used in 70% -80% when started the power.

Selection Instruction:
(1)Motors work pressure less than rated pressure.
(2)Motors output pressure less than Maximum power marked in this catalogue.
(3)Ensure motors works in high efficiency and reliability, started efficiency less than rated efficiency.
(4)Motors displacement try to using Code 0 displacement.

Installation:
(1)The hydraulic motor can be installed at any position. The support frame should have enough strength. The output shaft and connected transmission shaft must ensure to be aligned when installation.
(2)Leakage: usually drain port should be connected to tank alone. Please contact us if the customer requests to eliminate drain line, but the backpressure of shell should be less than 0.05Mpa
(3)Before sharing up at the first time,, filled the motor casing with hydraulic oil to prevent motors damaged . The maximum position of drain line should be higher than the central line of motor casing to avoid draining off.

注意事项

HMS马达可承受较大的径向载荷，实际使用时请注意以下事项：
(1)不同基型的马达，其径向承载能力不同。
(2)同一基型的马达，受力位置不同时，径向承载能力不同。
(3)产品样本中提供了马达在各种情况下的径向承载力曲线图，该曲线表明了某基型马达所能承受的径向力与马达承载力位置之间的关系。实际使用中，应使马达在最佳区域内承受径向载荷，由此获得设计的使用寿命。

样本中一般提供3种载荷曲线，并标明了相应的工作压力。
(1)最大静载曲线：表示马达不产生永久塑性变形所允许的最大静态载荷与受力位置的关系。
(2)最大动载曲线：在马达旋转工作时，各受力部件（除轴承外）不致出现弯曲疲劳破坏的最大载荷与加载合力作用点的关系。
(3)寿命曲线：表示马达中的滚动轴承在一定寿命（例如1×10E+6或4×10E+7次旋转）所对应的许用径向载荷与载荷合力作用点的关系。这是与轴承内循环接触应力有关的一项指标。
(4)产品样本中提供的承载曲线图不包括轴向载荷的因素，如实际使用中，马达同时承受轴向载荷，请向本公司咨询。

油液的污染度
油液污染是造成液压马达失效的主要原因之一，无论是马达内部残留，还是从外部进入马达的污染物，都将严重影响马达的可靠性和元件的使用寿命。HMS系列液压马达对所用油液的污染度要求为：不大于IS04406中的18/13等级。一般要求在系统中设置一个名义过滤精度优于10μm（绝对过滤精度约25μm）的精滤器。

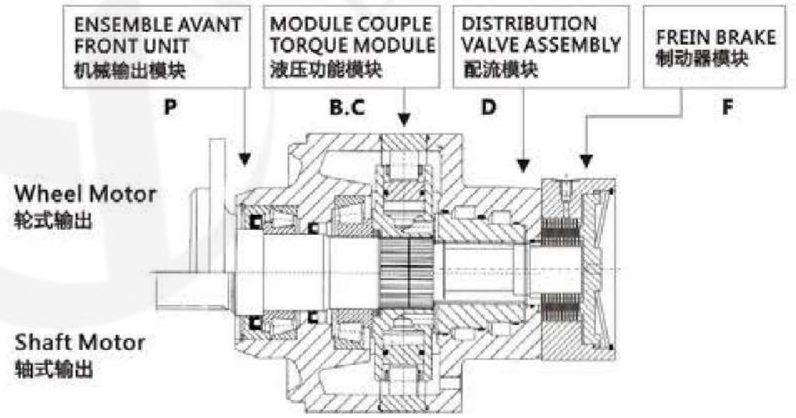
油液的粘度
HMS系列液压马达所用油液粘度范围为9cst~2000cst，最佳粘度范围为20~50cst，油温范围：-20℃~70℃。除特殊气候条件，一般推荐：固定设备上的HMS系列液压马达使用HV46号或HV68 抗磨液压油；行走机械上的HMS系列液压马达使用相同的牌号，粘温特性更佳的低温液压油。

马达的效率
HMS系列液压马达的机械效率和容积效率都标于其产品样本上。实际使用时应注意马达在带载起动时的效率，其通常为额定工况下机械效率的70%至80%。

选用原则
(1)马达长期工作压力低于额定压力。
(2)马达实际输出功率小于样本上所标的马达最大的功率。
(3)为使马达长期可靠地工作，最好将马达的工况选定在高效区（见样本特性曲线），并注意马达的起动效率比额定工况下的效率要低。
(4)马达排量应尽量选用各基型中的0组排量。

安装要求
(1)液压马达有多种安装方式，安装马达的支架必须有足够的刚性，安装时应保证液压马达所连接的传动轴与输出轴同心。
(2)泄漏：泄油口应单独连接回油箱，一般情况下壳体允许最大压力为0.05MPa，如用户有自由轮工况要求时，向本公司咨询，特殊订购。
(3)液压马达首次启动前，必须向马达壳体内注满洁净液压油，以防损坏马达，同时泄油管的最高水平位置应高于马达壳体的最高水平位置，以防马达内的油液排空。

TECHNICAL SPECIFICATIONS
技术明细图



HMCR03 系列液压马达
HMCR03 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

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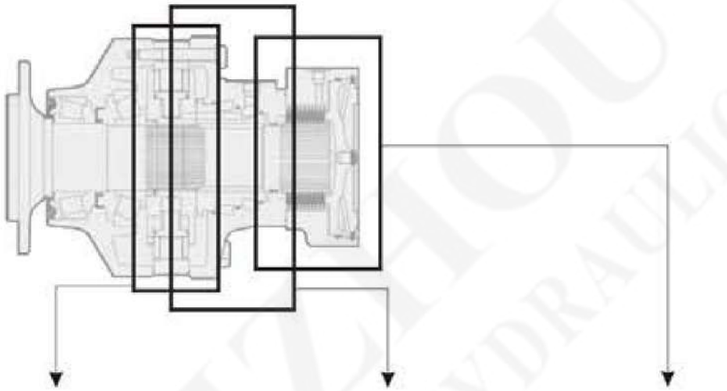
MOTOR NUMBER 马达编号



B 1

2	2 displacement 双排量
1	1 displacement 单排量

C 1

H M C R 0 3

对称内曲线滚道 **Cams with equal lobes**

	ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMCR03	160 [9.8]	80 [4.9]
	225 [13.7]	113 [6.8]
	280 [17.1]	140 [8.5]
	325 [19.8]	163 [9.9]
	365 [22.2]	183 [11.1]
	400 [24.4]	200 [12.2]

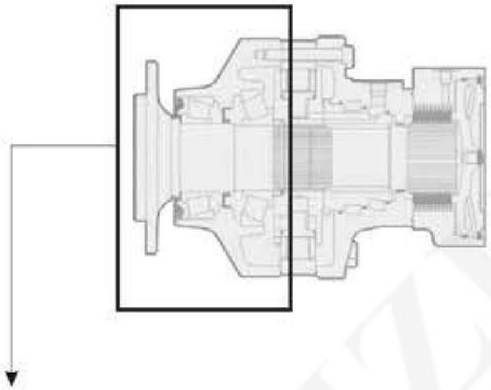
D 1

SAE connection SAE 连接	A
ISO 228/1 连接	1

F 1 2 3

Without brake(simple plate) 无制动器（普通端盖） A 0 3

Brake 制动器 B 0 3



P 1 2 3 4

Without mounting 不带耳环安排	1
Lug mounting 带耳环安排	2

5×∅ 18 on ∅140	1
5×M14 on ∅100	2
For male shaft bearing support 轴输出	A

Without studs 无螺栓	1
With studs+nuts 带螺栓+螺母	2
With studs 带螺栓	3
Male shaft 轴输出	
GB3478.1 splines GB3478.1 花键	5

Without drum brake 无鼓式制动器	0

S 1 2 3 4 5 6

Fluorinated elastomer seals 氟橡胶密封	1
Hollow shaft 空心轴	2
Drain on the bearing support 前盖泄油口	3

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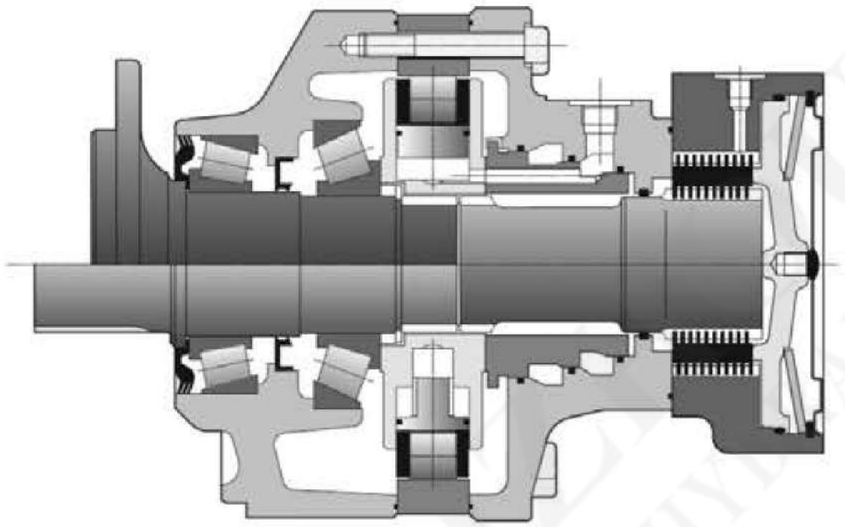


马达惯量 =0.01 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMCR03 液压马达技术参数

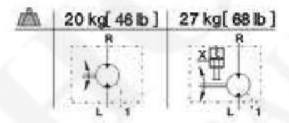
马达规格 Motor specifications	160	225	255	280	325	365	400
排量 Displacement (ml/r)	160	225	255	280	325	365	400
连续输出功率 Continuous wattage output (KW)	18	18	18	18	22	22	22
压差10MPa扭矩 Differential pressure 10MPa torque (N.m)	225	358	405	445	517	580	636
额定扭矩 Rated torque (N.m)	598	840	953	1046	1214	1363	1494
额定压力 Rated pressure (Mpa)	25	25	25	25	25	25	25
最高压力 Max Pressure (Mpa)	40	40	40	40	40	40	40
最高持续转速 Maximum continuous speed (r.p.m)	320	320	280	260	240	240	240
转速范围 Speed range (r.p.m)	0-400	0-400	0-360	0-330	0-310	0-280	0-260

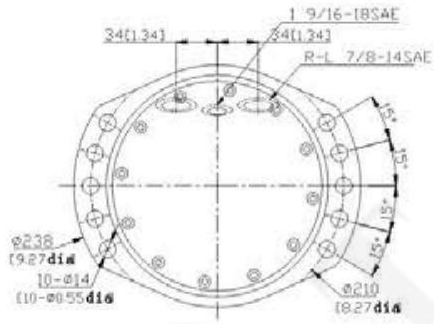
B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M C R 0 3 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

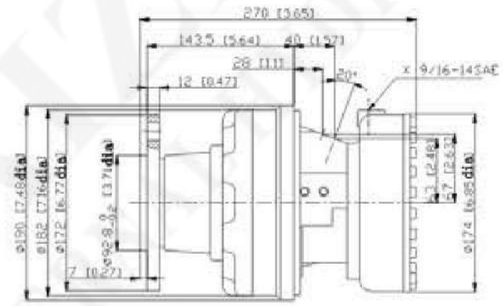
WHEEL MOTOR 轮式马达

The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

Dimensions for standard(1110) 1-displacement motor
（1110）标准单排量马达尺寸







SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M C R 0 3 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 1 1 0 (P: 1 2 3 4)	ø 92.8 [3.65dia.]	ø140 [5.51dia.]	ø172 [6.77dia.]	143.5 [5.56]	ø182 [7.07dia.]	ø18 [0.71dia.]	5×M14*1.5	12 [0.47]

轮辋式安装

STUDS螺栓

	Screws	P mm [in]	Cmin mm [in]	Cmax mm [in]	D mm [in]		Class 等级	Torque (1) 扭距(1) Nm [lb.ft]	Torque (2) 扭距(2) Nm [lb.ft]
Various Studs 各式螺栓	M14×1.5	45 [1.77]	5 [0.20]	18 [0.71]	16.5 [0.65]	P D C	12.9	200 [147.5]	250 [184.4]
	M14×1.5	50 [1.97]		23 [0.91]					
	M14×1.5	62 [2.44]		33 [1.30]					
	M16×1.5	50 [1.97]		23 [0.91]	21 [0.83]			300 [221.3]	380 [280.3]
Screws 螺纹	M12×1.75						10.9	120 [88.5]	
	1/2"-20 UNF						8.8		

(*)The tightening torques are given for the indicated loads.

(*)指上述负载的预紧扭距

(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])

(1)轮辋：建议轮辋式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）

(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）

(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载

Test conditions 检测条件

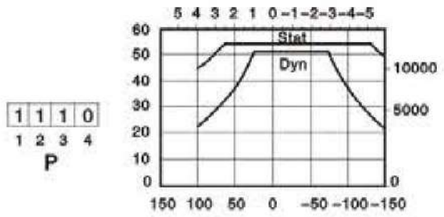
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]

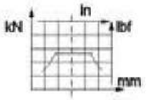
Dynamic : 0 r/min[0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

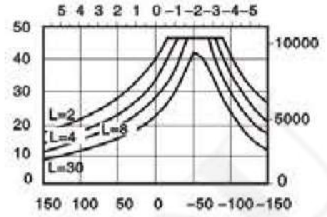
Service life of bearings 使用寿命

Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

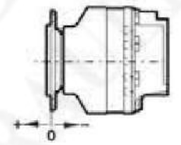






The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

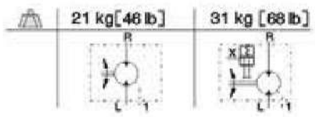
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。

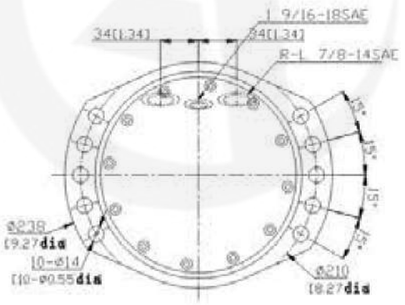


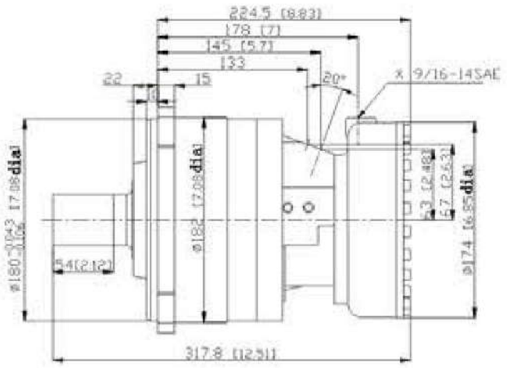
SHAFT MOTOR 轴式马达

The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

Dimensions for standard(2A50) 1-displacement motor
（2A50）标准单排量马达尺寸



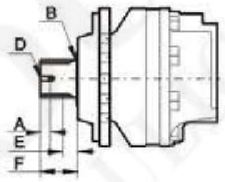




SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — HMCR03 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C		A	B	D	E	F
2 A 5 0 (P: 1 2 3 4)	GB 3478.1 spline 花键	25 [0.98]	R5 [0.2]	M12	25 [0.98]	70 [2.75]
	Module 模数 2					
	Z 24					



LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载

Test conditions 检测条件

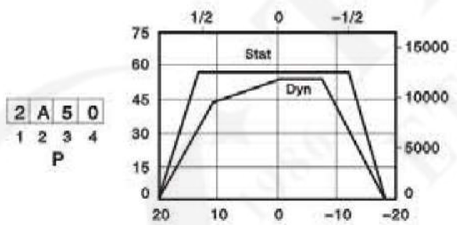
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态 : 0 r/min [0 RPM] 0bar [0 PSI]

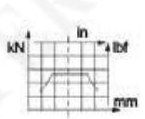
Dynamic : 0 r/min[0 RPM] ,code 0 displacement,
动态 : 0 r/min[0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

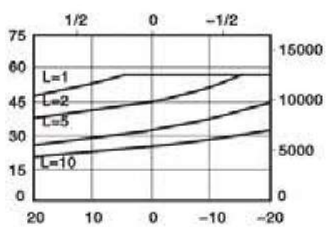
Service life of bearings 使用寿命

Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure), with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次



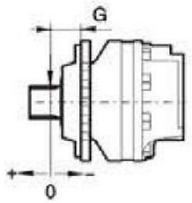




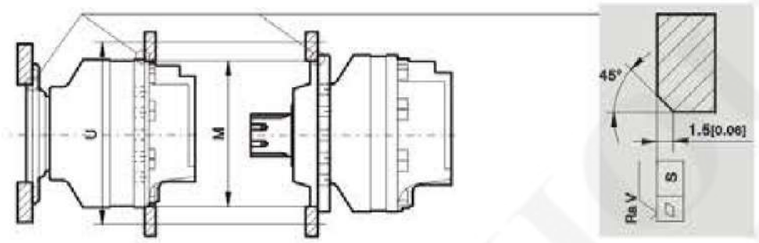
C	G
2 A 5 0	66.45 [2.62]

The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



CHASSIS MOUNTING 支架安装



安装时注意清洁 Take care over the immediate environment of the connections

⌀M(1)	⌀U	S	Ra V	Studs 螺栓	Class 等级	Torque 扭距 *
180.25	240	0.2	12.5 µm	10	10.9	120N.m
[7.10]	[9.45]	[0.008]	[0.49 µin]	M12×2		[89 lb.ft]

(1) $^{+0.3[+0.012]}_{+0.2[+0.008]}$

* : Min.Values for torque and load to be transmitted
* : 指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — HMCR03 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

	Old Standards 旧标准	Standards 新标准	进出油口 Power supply R–L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1,2	制动器控制油口 Control of Parking break X
A	SAE J514	ISO 11926–1	7/8 "–14UNF	9/16" –18UNF	9/16 "–18UNF	9/16" –18UNF
1		ISO 228/1	G1/2	G1/4	G3/8	G3/8
Max Pressures	MS	bar [PSI]	400 [5800] 350 [5075]	30 [440]	1 [10]	30 [440]

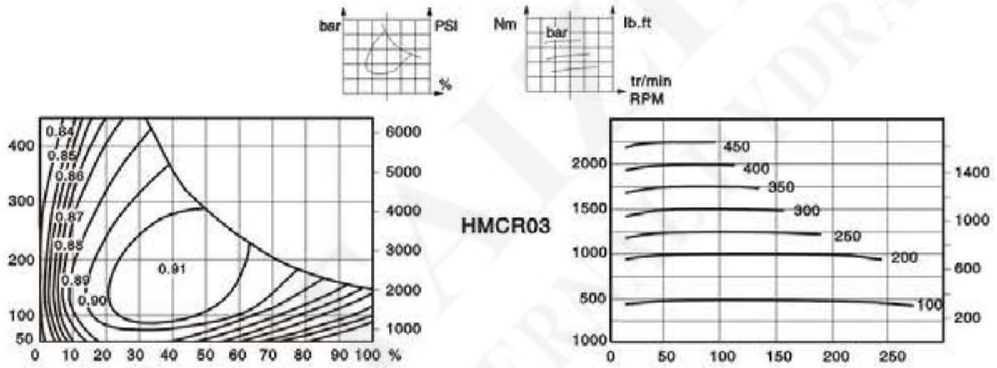
EFFICIENCY 效率

Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50℃ [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值。

Actual output torque 实际输出扭距



The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

HMCR03 系列液压马达
HMCR03 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

BRAKES 制动器

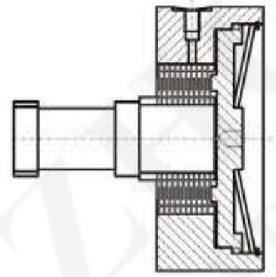
B		C	D	F	P	S
1	H M C R 0 3	1	1	1 2 3	1 2 3 4	1 2 3 4 5 6
	1 1 displacement 单排量			B 0 3		
	2 2 displacement 双排量					

REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	B 0 3
Parking brake torque at 0 bar on housing (New brake) 0 bar 静态驻车制动扭距(新制动器)	2200Nm [1618 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	1430 Nm [1052 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	1650Nm [1213 lb.ft]
Min.brake release pressure 最小自动开启压力	15 bar [217 PSI]
Oil capacity 油量	100 cm^3 [6.1 cu.in]
Volume for brake release 制动开启量	23 cm^3 [1.4 cu.in]
Max.energy dissipation 最大能耗数	

* After emergency brake has been used
* 指经过紧急制动后参数

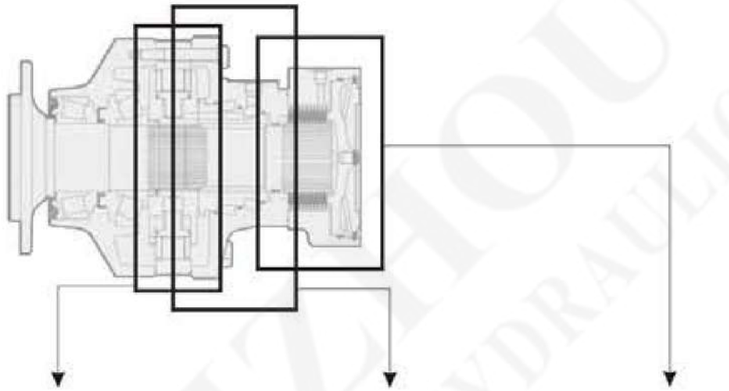
Do not run in multidisc brakes
马达运转前必须先行开启制动器

A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake), For all vehicles capable of speeds over 25 km/hour,please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMCR05 系列液压马达
HMCR05 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	1
2 displacement 双排量	1 displacement 单排量

C 1

H	M	C	R	0	5

对称内曲线滚道 Cams with equal lobes

		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMCR05	8	380 [15]	190 [7.5]
	0	470 [28.7]	235 [14.4]
	1	520 [31.7]	260 [15.8]
	2	565 [34.5]	282.5[17.3]

D 1

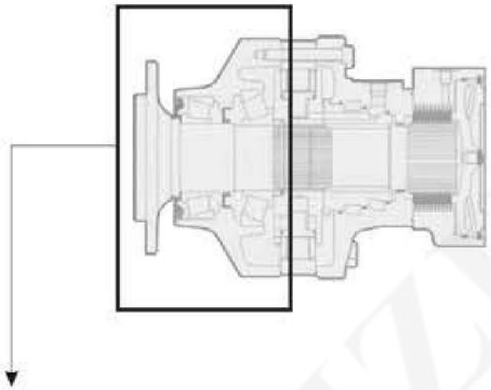
SAE	Comection	连接 1
ISO	228/1	连接 2

F 1 2 3

Without brake(simple plate) 无制动器（普通端盖）

Brake 制动器

A	0	5
B	0	3
B	0	5



P 1 2 3 4

Without mounting 不带耳环安排	1
Lug mounting 带耳环安排	2

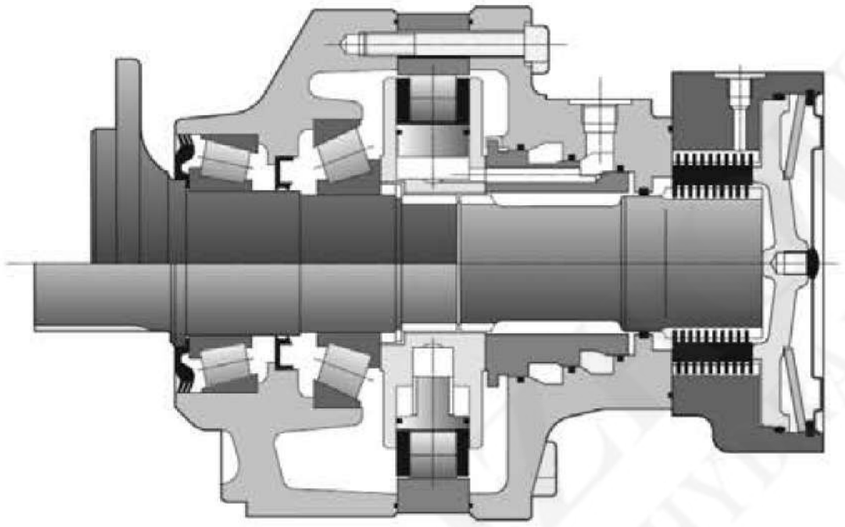
10× ∅ 18 on ∅140	2
For male shaft bearing support 轴输出	A

Without studs 无螺栓	1
With studs+nuts 带螺栓+螺母	2
With studs 带螺栓	3
Male shaft 轴输出	
ANSI B29-1 键轮	4
GB/T1096-1979 splines GB3478.1 splines 花键	5

Without drum brake 无鼓式制动器	0

S 1 2 3 4 5 6

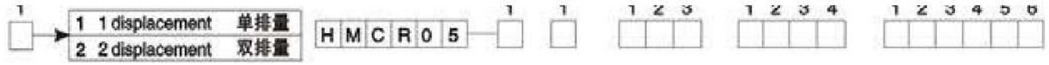
Fluorinated elastomer seals 氟橡胶密封	1
Hollow shaft 空心轴	2
Drain on the bearing support 前盖泄油口	3



马达惯量 =0.03 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMCR05 液压马达技术参数

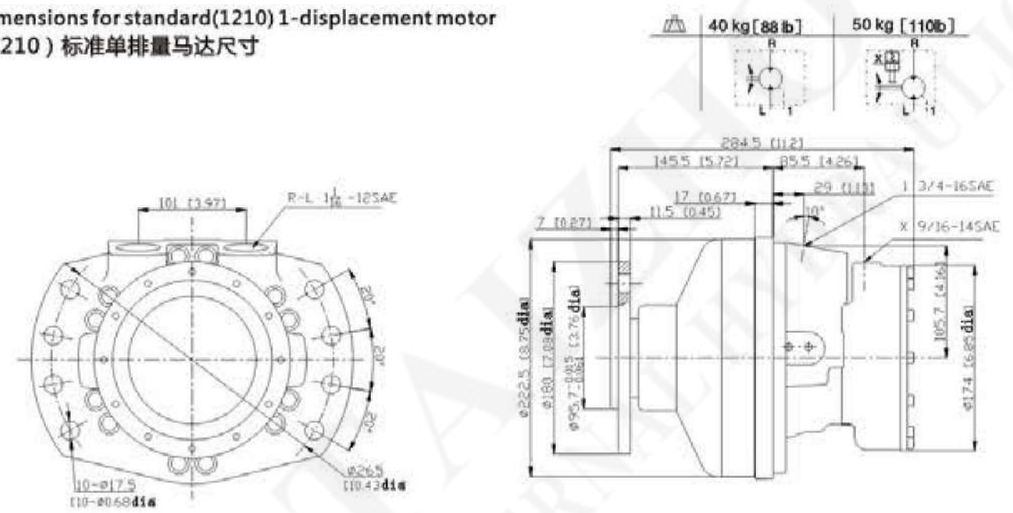
液压马达规格 (Hydraulic Motor Specifications)		380	470	520	565	680	750	820
排量 (Displacement)	ml/r	380	470	520	565	680	750	820
连续输出功率 (Continuous wattage output)	KW	29	29	29	29	35	35	35
压差10MPa扭矩 (Differential pressure 10MPa torque)	Nm	604	748	827	899	1082	1194	1305
额定扭矩 (Rated torque)	Nm	1419	1756	1942	2111	2540	2802	3063
额定压力 (Pressure rating)	Mpa	25	25	25	25	25	25	25
最高压力 (The highest pressure)	Mpa	40	40	40	40	40	40	40
最高转速 (Maximum speed)	r.p.m	220	220	220	220	220	170	150



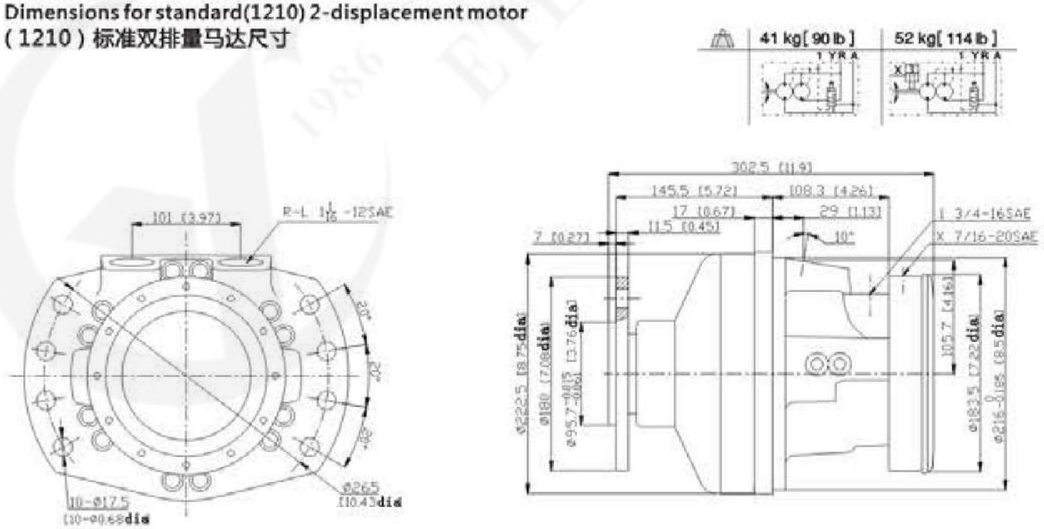
WHEEL MOTOR 轮式马达

The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

Dimensions for standard(1210) 1-displacement motor
（1210）标准单排量马达尺寸



Dimensions for standard(1210) 2-displacement motor
（1210）标准双排量马达尺寸



SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M C R 0 5 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 2 1 0 (P: 1 2 3 4)	∅95.7 [3.76dia.]	∅140 [5.51dia.]	∅180 [7.08dia.]	145.5 [5.72]	∅182 [7.16 dia.]	∅18 [0.71dia.]	10×M14*1.5	11.5 [0.45]

轮辋式安装

STUDS 螺栓

	Screws	P mm [in]	Cmin mm [in]	Cmax mm [in]	D mm [in]		Class 等级	Torque (1) 扭距(1) Nm [lb.ft]	Torque(2) 扭距(2) Nm [lb.ft]
Various Studs 各式螺栓	M14×1.5	45 [1.77]	5 [0.20]	18 [0.71]	16.5 [0.65]	P / D C	12.9	200 [147.5]	250 [184.4]
	M14×1.5	50 [1.97]		23 [0.91]					
	M14×1.5	62 [2.44]		33 [1.30]					
	M18×1.5	65 [2.56]		28 [1.10]	23 [0.91]			420 [309.8]	550 [405.7]
Screws 螺纹	M12×1.75						10.9	120 [88.5]	120 [88.5]
	1/2"-20 UNF						8.8		

(*)The tightening torques are given for the indicated loads.
(*)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮辋：建议轮辋式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）
(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）
(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载

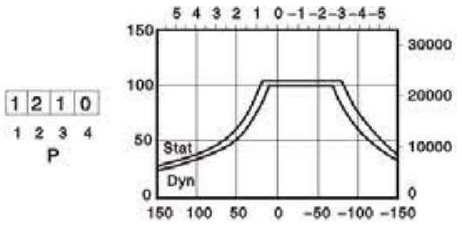
Test conditions 检测条件

Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

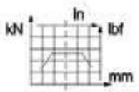
Service life of bearings 使用寿命

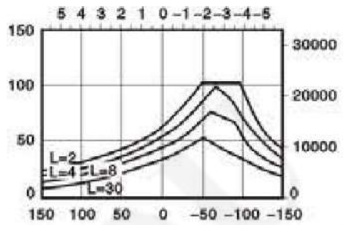
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次



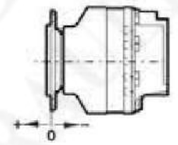
1 2 1 0
1 2 3 4
P





The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

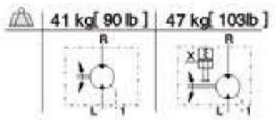
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。

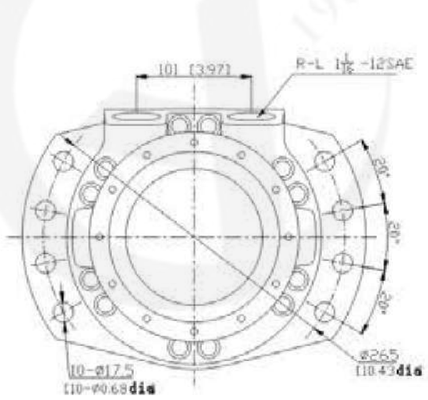


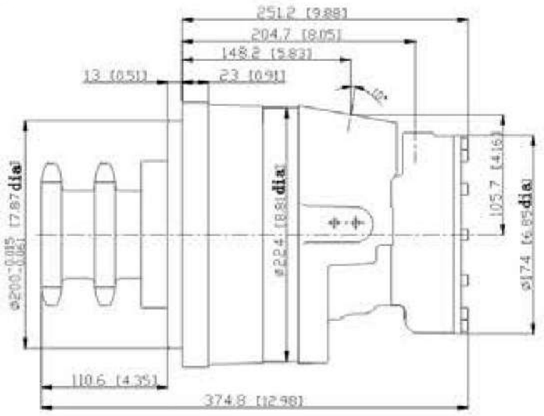
SHAFT MOTOR 轴式马达

The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

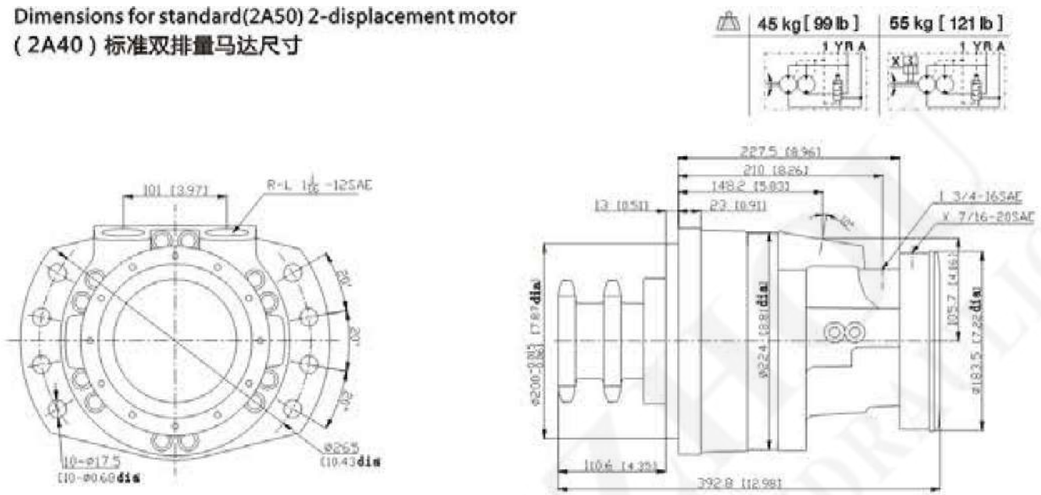
Dimensions for standard(2A50) 1-displacement motor
（2A40）标准单排量马达尺寸



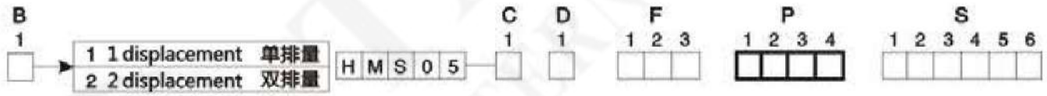




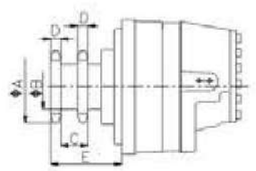
Dimensions for standard(2A50) 2-displacement motor
（2A40）标准双排量马达尺寸



SUPPORT TYPES 前盖类型



C		A	B	C	D	E
2 A 4 0 (1 2 3 4 P)	ANSI B29-1	12.7	77	46.8	17.5	23.6
	节距 31.753					
	Z 11					



LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载

Test conditions 检测条件

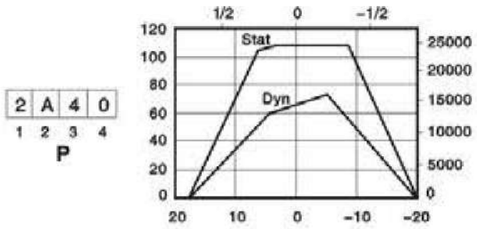
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]

Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

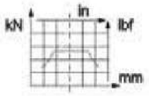
Service life of bearings 使用寿命

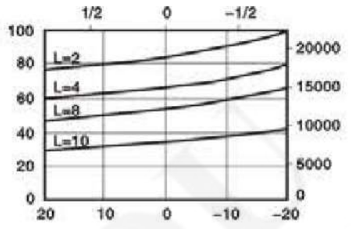
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure), with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次



2 A 4 0
1 2 3 4
P

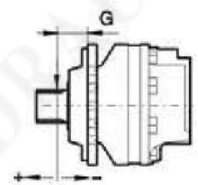




C	G
2 A 4 0	81.75 [3.22]

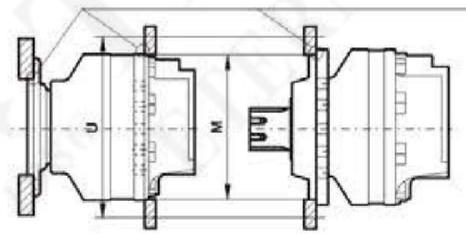
The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

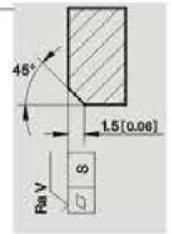
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



0

CHASSIS MOUNTING 支架安装





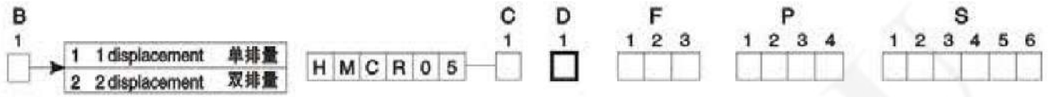
安装时注意清洁 Take care over the immediate environment of the connections

	∅ M(1)	∅ U	S	Ra V	Studs 螺栓	Class 等级	Torque 扭距 *
WHEEL MOTOR 轮式马达	216 [8.50]	267 [10.51]	0.2 [0.008]	12.5 µ m [0.49 µ in]	10	8.8	
					M16×2		210N.m
	224 [8.82]	265 [10.43]			2×4		[155 lb.ft]
					M16×2		
SHAFT MOTOR 轴式马达	200 [7.87]	265 [10.43]			2×4		
					M16×2		

(1) +0.3[+0.012] +0.2[+0.008]

* : Min.Values for torque and load to be transmitted
* : 指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接



Old Standards 旧标准	Standards 新标准	进出油口 Power supply R–L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1,2	制动器控制油口 Control of Parking break X
A SAEJ514	ISO11926–1	1 1/16 "–12UNF	3/4 "–16UNF	3/4" –16UNF	9/16 "–18UNF
	ISO228/1	G3/4	G1/4	G1/2	G1/4
Max Pressures	MS bar [PSI]	400 [5800] 350 [5075]	30 [440]	1 [10]	30 [440]

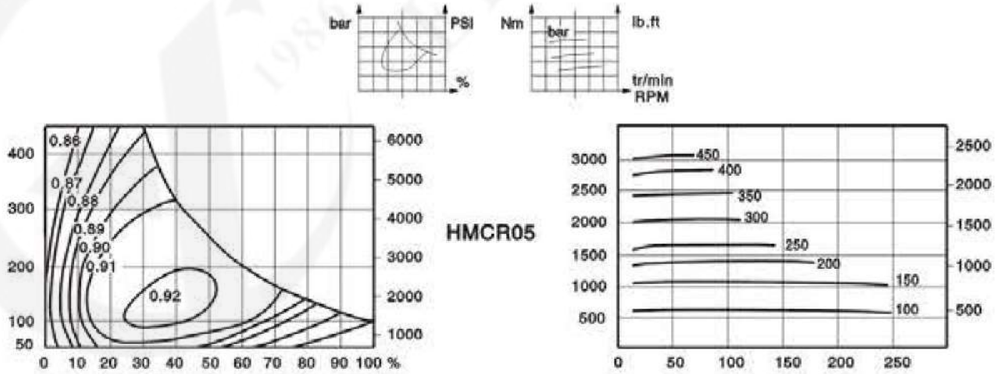
EFFICIENCY 效率

Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50℃ [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值。

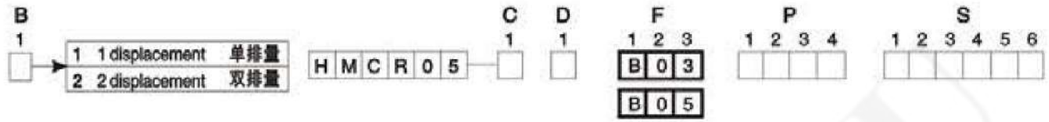
Actual output torque 实际输出扭距



The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

BRAKES 制动器

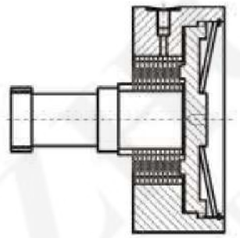


REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	B 0 3	B 0 5
Parking brake torque at 0 bar on housing (New brake) 0 bar 静态驻车制动扭距(新制动器)	2200Nm [1618 lb.ft]	952Nm [700 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	1430 Nm [1052 lb.ft]	620Nm [455 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	1650Nm [1213 lb.ft]	714Nm [525 lb.ft]
Min. Brake release pressure 最小自动开启压力	15 bar [217 PSI]	15 bar [217 PSI]
Oil capacity 油量	100 cm^3 [6.7 cu.in]	100 cm^3 [6.1 cu.in]
Volume for brake release 制动开启量	23 cm^3 [1.4 cu.in]	23 cm^3 [1.4 cu.in]
Max. Energy dissipation 最大能耗数		38179 J

* After emergency brake has been used
* 指经过紧急制动后参数

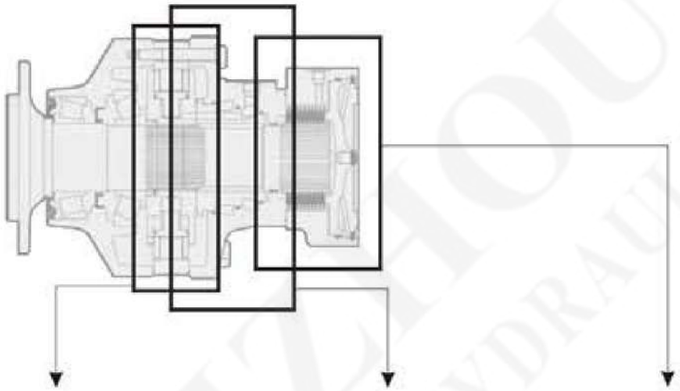
Do not run in multidisc brakes
马达运转前必须先行开启制动器

A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake), For all vehicles capable of speeds over 25 km/hour, please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMS02 系列液压马达
HMS02 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	1
2 displacement 双排量	1 displacement 单排量

C 1

H	M	S	0	2

对称内曲线滚道 Cams with equal lobes

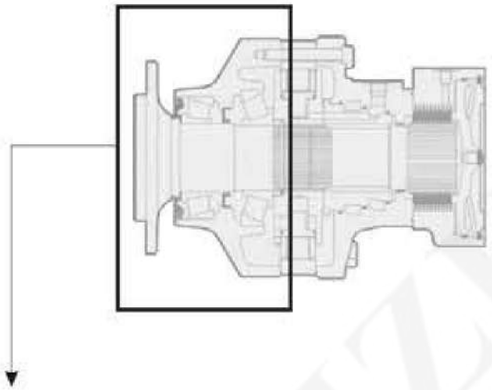
		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMS02	8	172 [10.5]	86 [5.2]
	0	213 [13.0]	107 [6.5]
	1	235 [14.3]	118 [7.2]
	2	255 [15.6]	128 [7.8]

D 1

SAE connection SAE 连接	A
NF E48 050 ISO9974-1 连接	2
BSPP connection BSPP 连接	1

F 1 2 3

Without brake(simple plate) 无制动器（普通端盖）	A	0	2
Brake 制动器	F	0	2
	F	0	3
Without brake(reinforced plate) 无制动器（加强端盖）	R	0	2



P 1 2 3 4

Without mounting 不带耳环安排	1
Lug mounting 带耳环安排	2

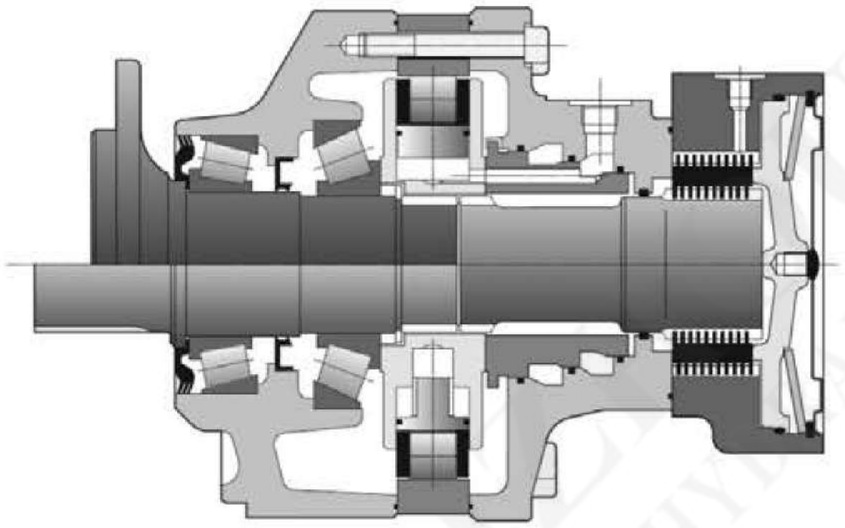
5× ∅ 18 on ∅140	1
10×M12 on ∅100	2
For male shaft bearing support 轴输出	A

Without studs 无螺栓	1
With studs+nuts 带螺栓+螺母	2
With studs 带螺栓	3
Male shaft 轴输出	
GB3478.1 splines GB3478.1 花键	5

Without drum brake 无鼓式制动器	0

S 1 2 3 4 5 6

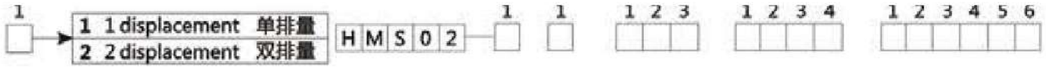
Fluorinated elastomer seals 氟橡胶密封	1
Hollow shaft 空心轴	2
Drain on the bearing support 前盖泄油口	3



马达惯量 =0.01 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMS02 液压马达技术参数

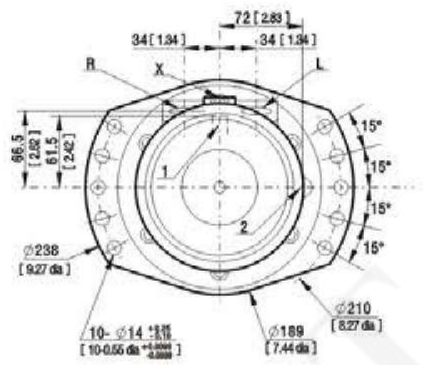
排量分组	8		9		0		1		2	
	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ
排量 Displacement (ml/r)	172				213		235	118	255	
最大功率 Max Power (kw)	16				16		16		16	
压差10MPa扭矩 Theoric torque at 10MPa (N.m)	273				340		351		405	
额定扭矩 Rated torque (N.m)	643				796		878		953	
额定压力 Rated pressure (MPa)	25				25		25		25	
最高压力 Max Pressure (MPa)	40				40		40		35	
额定转速 Rated speed (r/min)	140				140		140		120	
转速范围 Speed range (r/min)	0-310				0-310		0-310		0-260	

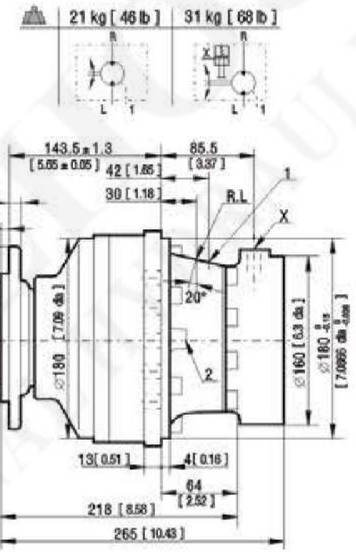


WHEEL MOTOR 轮式马达

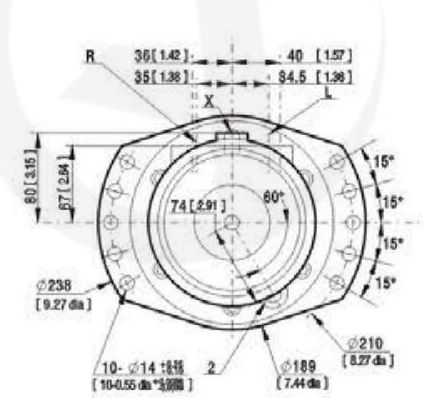
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

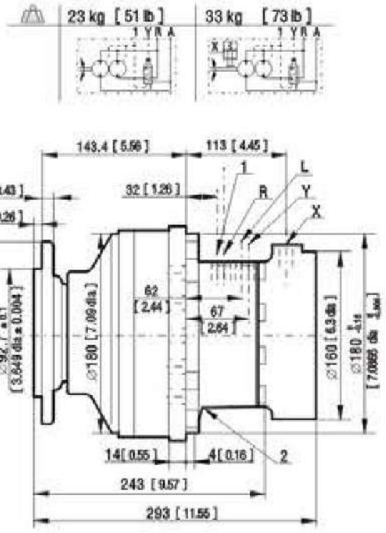
Dimensions for standard(1110) 1-displacement motor
（1110）标准单排量马达尺寸





Dimensions for standard(1110) 2-displacement motor
（1110）标准双排量马达尺寸



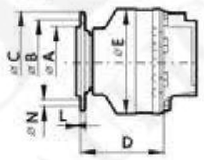


SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 0 2 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 1 1 0 (P 1 2 3 4)	⌀92.7 [3.65dia.]	⌀140 [5.51dia.]	⌀169 [6.65dia.]	143.4 [5.56]	⌀179.5 [7.07dia.]	⌀18 [0.71dia.]	5×M14*1.5	11 [0.43]

轮辋式安装



STUDS螺栓

	Screws	P mm [in]	Cmin mm [in]	Cmax mm [in]	D mm [in]		Class 等级	Torque (1) 扭距(1) Nm [ib.ft]	Torque (2) 扭距(2) Nm [ib.ft]
Various Studs 各式螺栓	M14×1.5	45 [1.77]	5 [0.20]	18 [0.71]	16.5 [0.65]		12.9	200 [147.5]	250 [184.4]
	M14×1.5	50 [1.97]		23 [0.91]					
	M14×1.5	62 [2.44]		33 [1.30]					
	M16×1.5	50 [1.97]		23 [0.91]	21 [0.83]			300 [221.3]	380 [280.3]
Screws 螺纹	M12×1.75						10.9	120 [88.5]	
	1/2"-20 UNF						8.8		

(#)The tightening torques are given for the indicated loads.
(#)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮辋：建议轮辋式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）
(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）
(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载

Test conditions 检测条件

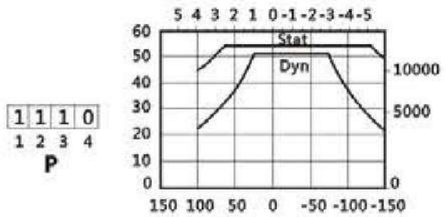
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min[0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

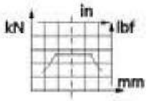
Service life of bearings 使用寿命

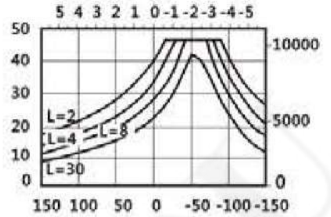
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

HMS02 系列液压马达
HMS02 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

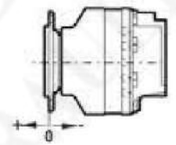






The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

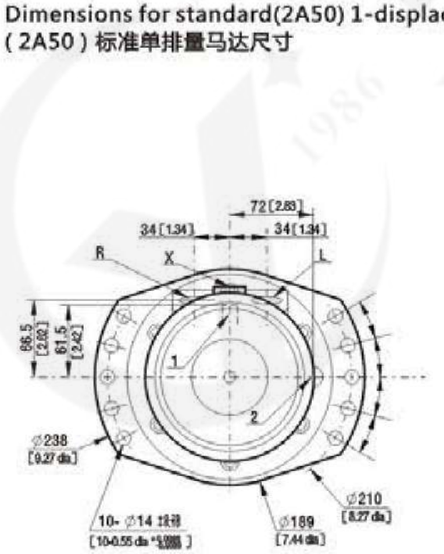
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。

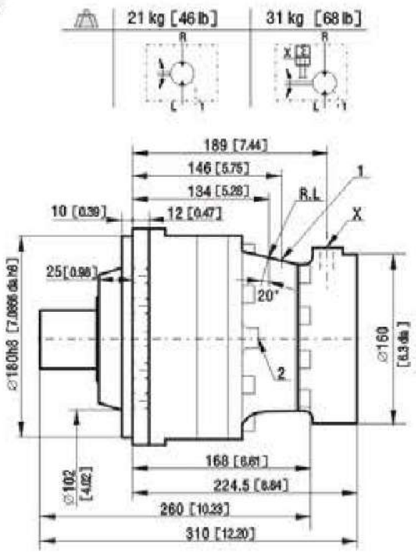


SHAFT MOTOR 轴式马达

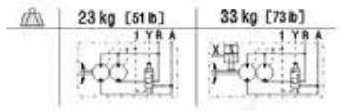
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

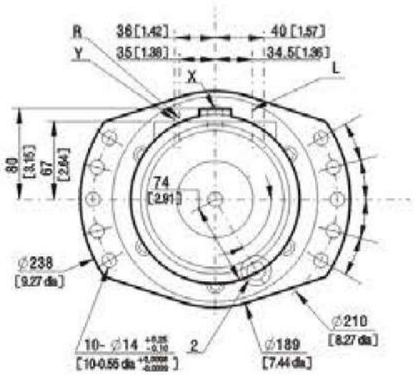
Dimensions for standard(2A50) 1-displacement motor
（2A50）标准单排量马达尺寸

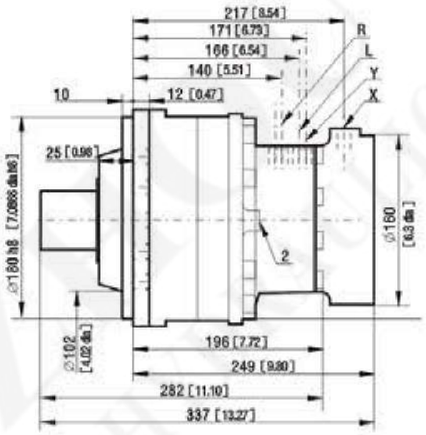




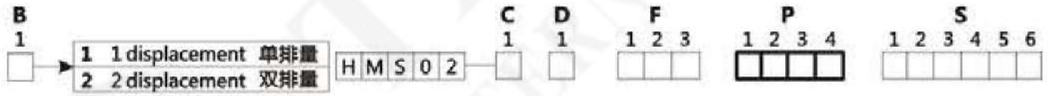
Dimensions for standard(2A50) 2-displacement motor
(2A50) 标准双排量马达尺寸



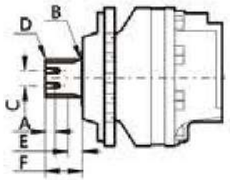




SUPPORT TYPES 前盖类型



C		A	B	C	D	E	F
2 A 5 0 (1 2 3 4) P	GB 3478.1 spline 花键	15 [0.59]	R2.5 [0.10]	23.8 [0.94]	2×M10	22 [0.87]	60 [2.36]
	Module 模数 2						
	Z 24						



LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载

Test conditions 检测条件

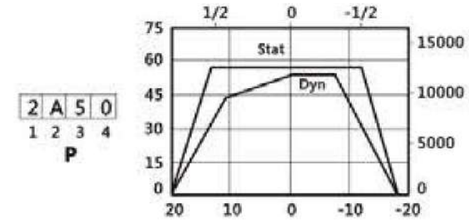
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态 : 0 r/min [0 RPM] 0bar [0 PSI]

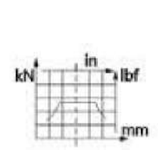
Dynamic : 0 r/min[0 RPM] ,code 0 displacement,
动态 : 0 r/min[0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

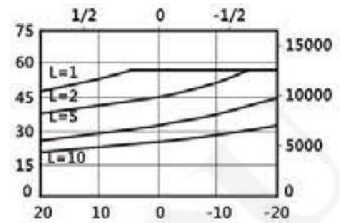
Service life of bearings 使用寿命

Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure), with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，
工作寿命为B10 100万次



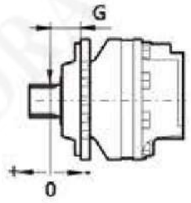




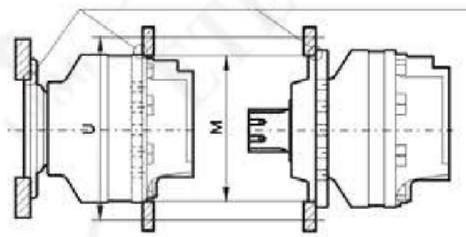
C	G
2 A 5 0	66.45 [2.62]

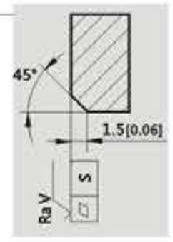
The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



CHASSIS MOUNTING 支架安装





安装时注意清洁 Take care over the immediate environment of the connections

⌀ M(1)	⌀ U	S	Ra V	Studs 螺栓	Class 等级	Torque 扭距 *
180.25	240	0.2	12.5μm	10	10.9	120N.m
[7.10]	[9.45]	[0.008]	[0.49μin]	M12×2		[89 lb.ft]

(1) $^{+0.3[+0.012]}_{+0.2[+0.008]}$

* : Min.Values for torque and load to be transmitted
* : 指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接

B		C	D	F	P	S
1	1 1 displacement 2 2 displacement	H M S 0 2	1	1 2 3	1 2 3 4	1 2 3 4 5 6

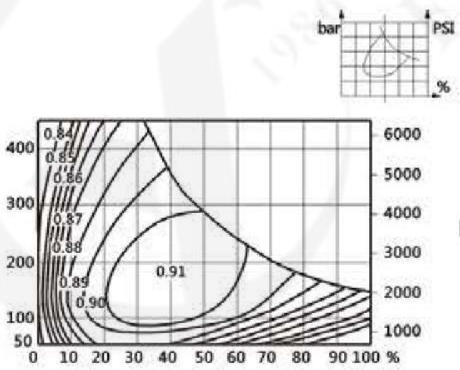
	Old Standards 旧标准	Standards 新标准	进出油口 Power supply R-L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1,2	制动器控制油口 Control of Parking break X
A	SAE J514	ISO 11926-1	7/8"-14UNF	9/16"-18UNF	9/16"-18UNF	9/16"-18UNF
1	BSPP	ISO 1179-1	⌀21 [1/2"dia]	⌀13 [1/4"dia]	⌀13 [1/4"dia]	⌀13 [1/4"dia]
2	NF E48 050	ISO 9974-1	M22×1.5	M10×1	M14×1.5	M14×1.5
Max Pressures	MS bar [PSI]		400 [5800] 350 [5075]	30 [440]	1 [10]	30 [440]

EFFICIENCY 效率

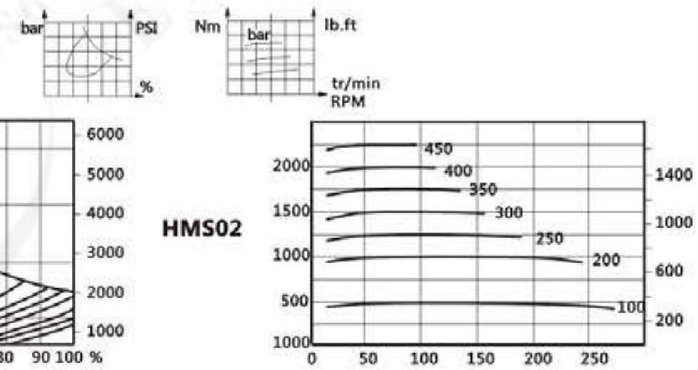
Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50℃ [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值。



Actual output torque 实际输出扭距



The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

BRAKES 制动器

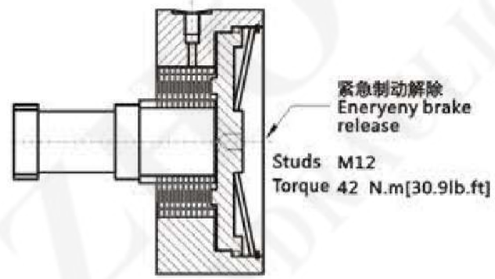
B		C	D	F	P	S
1	1 1 displacement 单排量 2 2 displacement 双排量	H M S 0 2	1	1 2 3 F 0 2 F 0 3	1 2 3 4	1 2 3 4 5 6

REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	F 0 2	F 0 3
Parking brake torque at 0 bar on housing (New brake) 0 bar 静态驻车制动扭距(新制动器)	1400Nm [1030 lb.ft]	2500Nm [1840 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	910 Nm [670 lb.ft]	1625Nm [1200 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	1050Nm [770 lb.ft]	1875Nm [1380 lb.ft]
Min.brake release pressure 最小自动开启压力	12 bar [174 PSI]	12 bar [174 PSI]
Oil capacity 油量	100 cm^3 [6.1 cu.in]	100 cm^3 [6.1 cu.in]
Volume for brake release 制动开启量	16 cm^3 [1.0 cu.in]	16 cm^3 [1.0 cu.in]
Max.energy dissipation 最大能耗数		38179 J

* After emergency brake has been used
* 指经过紧急制动后参数

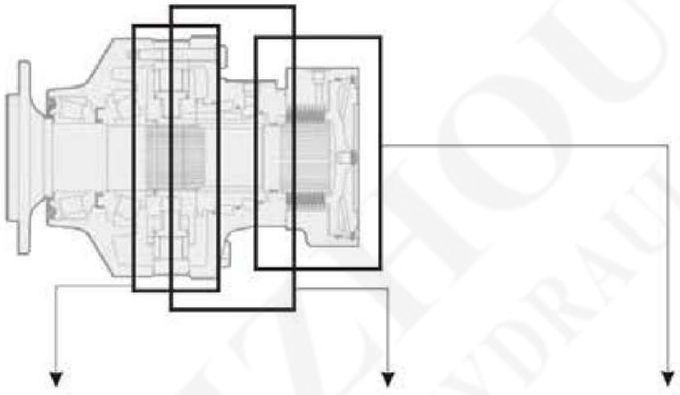
Do not run in multidisc brakes
马达运转前必须先行开启制动器

A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake), For all vehicles capable of speeds over 25 km/hour,please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMS05 系列液压马达
HMS05 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	1
2 displacement 双排量	1 displacement 单排量

C 1

H	M	S	0	5

对称内曲线滚道 **Cams with equal lobes**

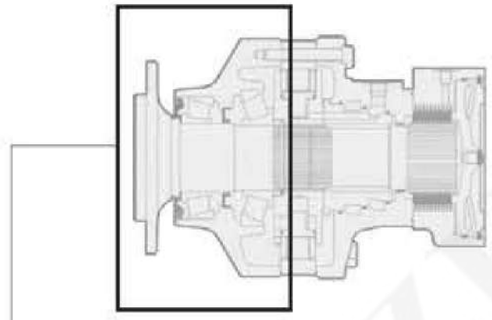
		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMS05	8	376 [22.9]	188 [11.5]
	0	468 [28.5]	234 [14.3]
	1	514 [31.3]	257 [15.7]
	2	560 [34.2]	280 [17.1]

D 1

ISO 9974-1 connection 连接	1
ISO 6419-1 connection 连接	2
ISO 11926-1 connection 连接	A

F 1 2 3

Without brake(simple plate) 无制动器（普通端盖）	A	0	5
Brake 制动器	F	0	4
	F	0	5
Without brake(reinforced plate) 无制动器（加强端盖）	R	0	5



P 1 2 3 4

Without mounting 不带耳环安排	1
Lug mounting 带耳环安排	2

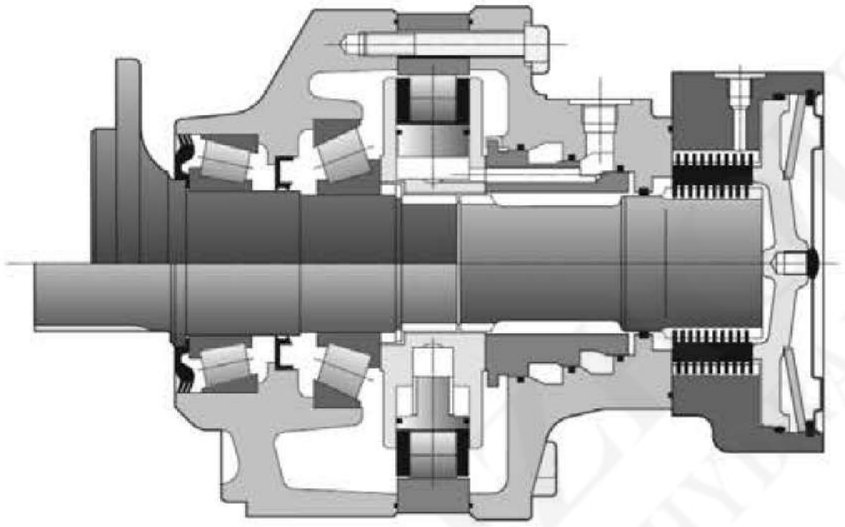
10× ∅ 18 on ∅140	2
For male shaft bearing support 轴输出	A

Without studs 无螺栓	1
With studs+nuts 带螺栓+螺母	2
With studs 带螺栓	3
Male shaft 轴输出	
Cylindrical with key 平键	4
GB/T1096-1979 splines GB3478.1 splines 花键	5

Without drum brake 无鼓式制动器	0

S 1 2 3 4 5 6

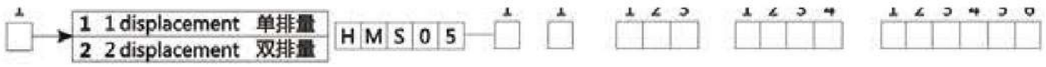
Fluorinated elastomer seals 氟橡胶密封	1
Hollow shaft 空心轴	2
Drain on the bearing support 前盖泄油口	3



马达惯量 =0.03 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMS05 液压马达技术参数

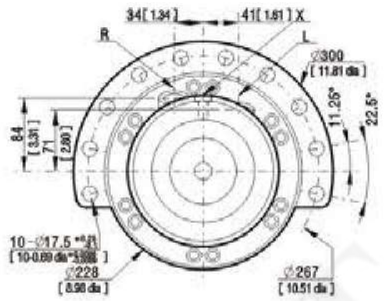
排量分组	8		9		0		1		2	
	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ
排量 Displacement (ml/r)	376	188			468	234	514	257	560	280
最大功率 Max Power (kw)	25	17			25	17	25	17	25	17
压差10MPa扭矩 Theoric torque at 10MPa (N.m)	562	275			699	343	768	376	837	410
额定扭矩 Rated torque (N.m)	1405				1749		1921		2092	
额定压力 Rated pressure (MPa)	25				25		25		25	
最高压力 Max Pressure (MPa)	40				40		35		35	
额定转速 Rated speed (r/min)	90				90		85		80	
转速范围 Speed range (r/min)	0-200				0-200		0-190		0-180	

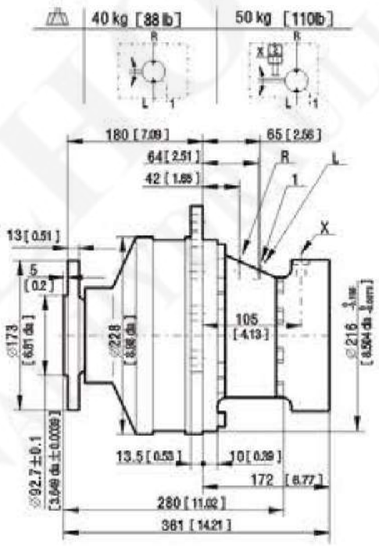


WHEEL MOTOR 轮式马达

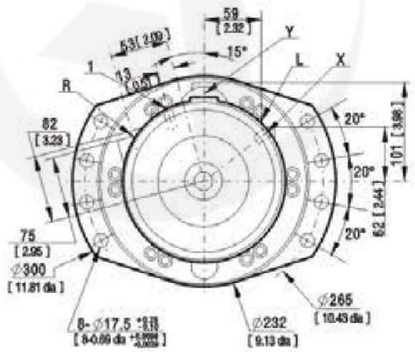
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

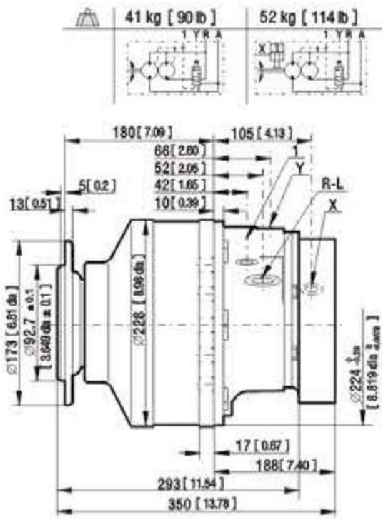
Dimensions for standard(1210) 1-displacement motor
（1210）标准单排量马达尺寸





Dimensions for standard(1210) 2-displacement motor
（1210）标准双排量马达尺寸





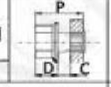
SUPPORT TYPES 前盖类型

B 1
1 1 displacement 单排量
2 2 displacement 双排量
HMS05 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C P 1 2 3 4	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 2 1 0	∅92.7 [3.65dia.]	∅140 [5.51dia.]	∅170 [6.69dia.]	178.6 [7.03]	∅228 [8.98 dia.]	∅18 [0.71dia.]	10×M14*1.5	11 [0.43]

轮辋式安装

STUDS 螺栓

	Screws	P mm [in]	Cmin mm [in]	Cmax mm [in]	D mm [in]		Class 等级	Torque (1) 扭距(1) Nm [lb.ft]	Torque(2) 扭距(2) Nm [lb.ft]
Various Studs 各式螺栓	M14×1.5	45 [1.77]	5 [0.20]	18 [0.71]	16.5 [0.65]		12.9	200 [147.5]	250 [184.4]
	M14×1.5	50 [1.97]		23 [0.91]					
	M14×1.5	62 [2.44]		33 [1.30]					
	M18×1.5	65 [2.56]		28 [1.10]	23 [0.91]			420 [309.8]	550 [405.7]
Screws 螺纹	M12×1.75						10.9	120 [88.5]	120 [88.5]
	1/2"-20 UNF						8.8		

(*)The tightening torques are given for the indicated loads.
(*)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮辋：建议轮辋式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）
(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）
(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载

Test conditions 检测条件

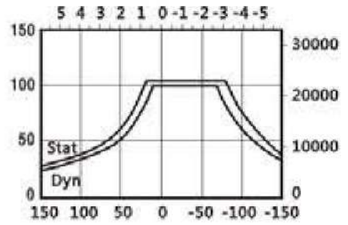
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

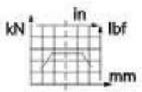
Service life of bearings 使用寿命

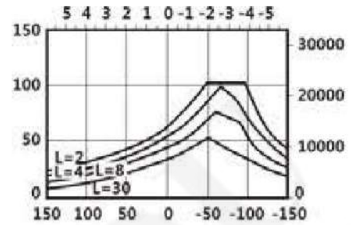
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

1 2 1 0
1 2 3 4
P







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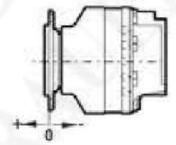
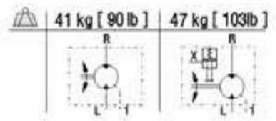
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。

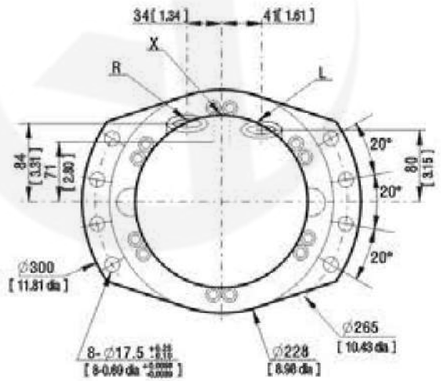


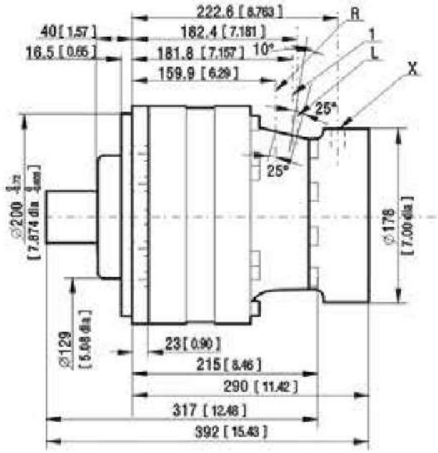
SHAFT MOTOR 轴式马达

The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

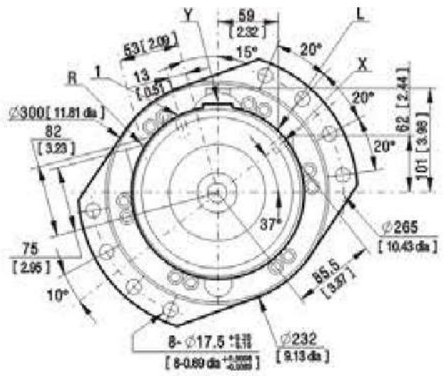
Dimensions for standard(2A50) 1-displacement motor
（2A50）标准单排量马达尺寸

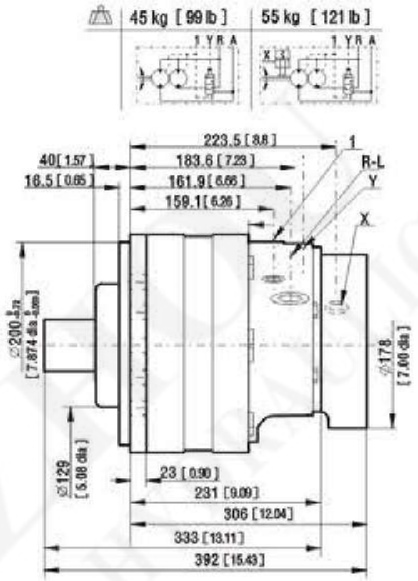






Dimensions for standard(2A50) 2-displacement motor
（2A50）标准双排量马达尺寸

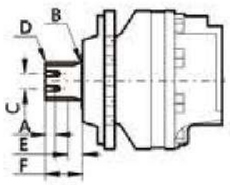




SUPPORT TYPES 前盖类型

B 1 → 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 0 5 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C		A	B	C	D	E	F
2 A 5 0 (P)	GB 3478.1 spline Module 模数 3 Z 17	15 [0.59]	R2.3 [0.09]	23.8 [0.94]	2×M10	23 [0.91]	60 [2.36]



LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载

Test conditions 检测条件

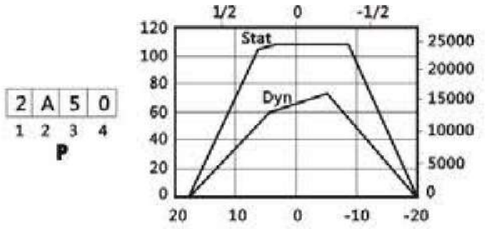
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]

Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

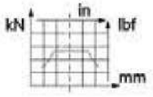
Service life of bearings 使用寿命

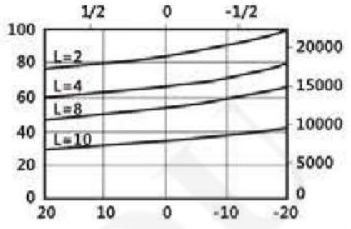
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure), with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次



2 A 5 0
1 2 3 4
P

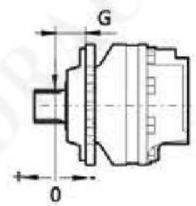




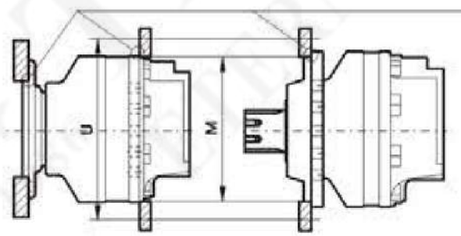
C	G
2 A 5 0	81.75 [3.22]

The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



CHASSIS MOUNTING 支架安装



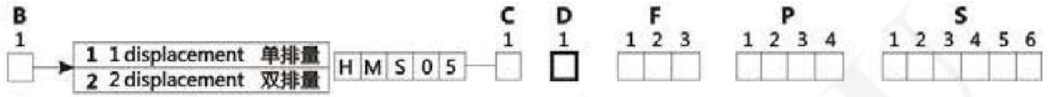
安装时注意清洁 Take care over the immediate environment of the connections

	⌀ M(1)	⌀ U	S	Ra V	Studs 螺栓	Class 等级	Torque 扭距 *
WHEEL MOTOR 轮式马达	216 [8.50]	267 [10.51]	0.2 [0.008]	12.5µm [0.49µin]	10	8.8	
					M16×2		210N.m
	224 [8.82]	265 [10.43]			2×4		[155 lb.ft]
					M16×2		
SHAFT MOTOR 轴式马达	200 [7.87]	265 [10.43]			2×4		
					M16×2		

(1) $^{+0.3[+0.012]}_{+0.2[+0.008]}$

* : Min.Values for torque and load to be transmitted
* : 指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接



Old Standards 旧标准	Standards 新标准	进出油口 Power supply R-L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1,2	制动器控制油口 Control of Parking break X
A SAEJ514	ISO11926-1	1 1/16"-12UNF	3/4"-16UNF	3/4"-16UNF	9/16"-18UNF
1 DIN3852	ISO9974-1	M27×2	M14×1.5	M16×1.5	M14×1.5
2 NFE48050	ISO6149-1	M18×1.5	M14×1.5	M14×1.5	M14×1.5
Max Pressures	MS bar [PSI]	400 [5800] 350 [5075]	30 [440]	1 [10]	30 [440]

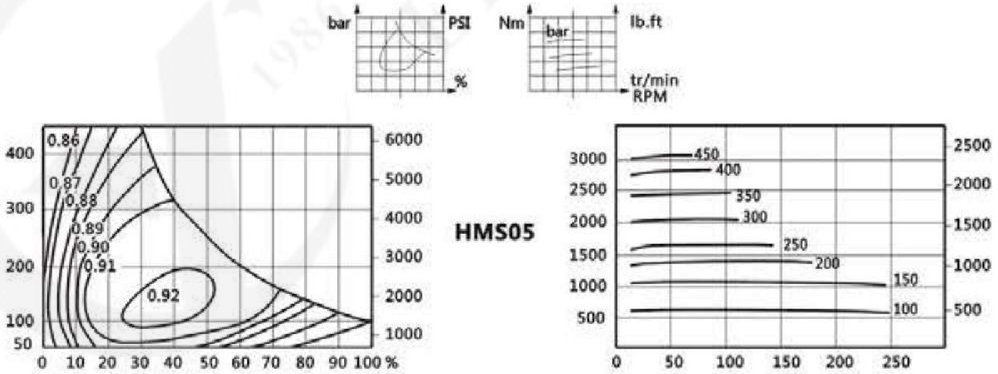
EFFICIENCY 效率

Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50℃ [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值。

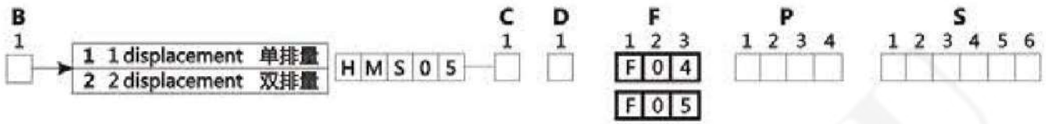
Actual output torque 实际输出扭距



⚠ The starting torque is taken to be approximately 75% of the first value for available pressure. For a precise calculation,consult our Helm Tower Hydraulic application engineer.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

BRAKES 制动器

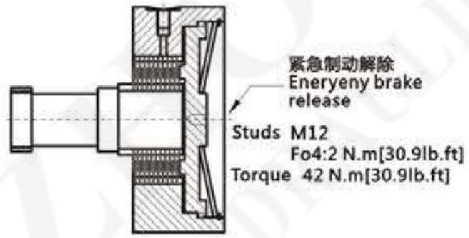


REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	F 0 4	F 0 5
Parking brake torque at 0 bar on housing (New brake) 0 bar 静态驻车制动扭距(新制动器)	1400Nm [1030 lb.ft]	2500Nm [1840 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	910 Nm [670 lb.ft]	1625Nm [1200 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	1050Nm [770 lb.ft]	1875Nm [1380 lb.ft]
Min. Brake release pressure 最小自动开启压力	12 bar [174 PSI]	12 bar [174 PSI]
Oil capacity 油量	100 cm^3 [6.1 cu.in]	100 cm^3 [6.1 cu.in]
Volume for brake release 制动开启量	16 cm^3 [1.0 cu.in]	16 cm^3 [1.0 cu.in]
Max. Energy dissipation 最大能耗数		38179 J

* After emergency brake has been used
* 指经过紧急制动后参数

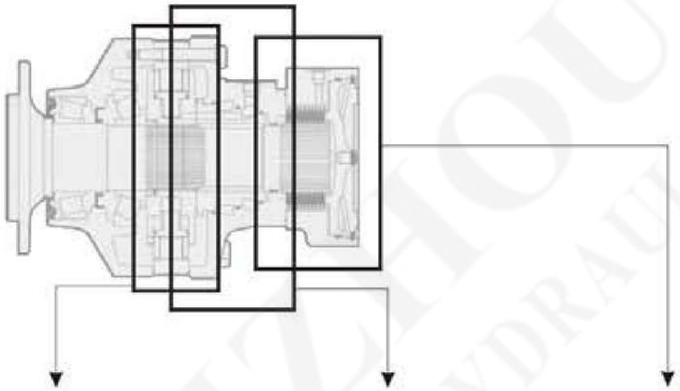
ℹ Do not run in multidisc brakes
马达运转前必须先行开启制动器

⚠ A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake), For all vehicles capable of speeds over 25 km/hour, please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMS08 系列液压马达
HMS08 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	1
2 displacement 双排量	1 displacement 单排量

C 1

H	M	S	0	8

D 1

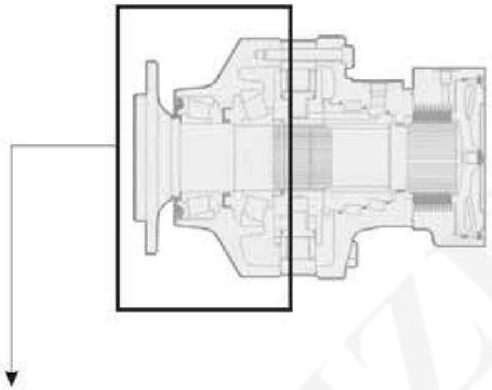
ISO 6162 flanges 法兰 ISO 11926-1 connections 连接	1
ISO 9974-1 connections 连接 (M22*1.5)	2
ISO 11926-1 connections 连接	A

F 1 2 3

Without brake(simple plate) 无制动器（普通端盖）	A	0	8
Brake 制动器	F	0	8
Without brake(reinforced plate) 无制动器（加强端盖）	R	0	8

对称变量马达 Cams with equal lobes

		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMS08	8	627 [38.2]	314 [19.1]
	9	702 [42.8]	351 [21.4]
	0	780 [47.6]	390 [23.8]
	1	857 [52.3]	429 [26.1]
	2	934 [57.0]	467 [28.5]



P 1 2 3 4

Without mounting 不带耳环安排	1
	2

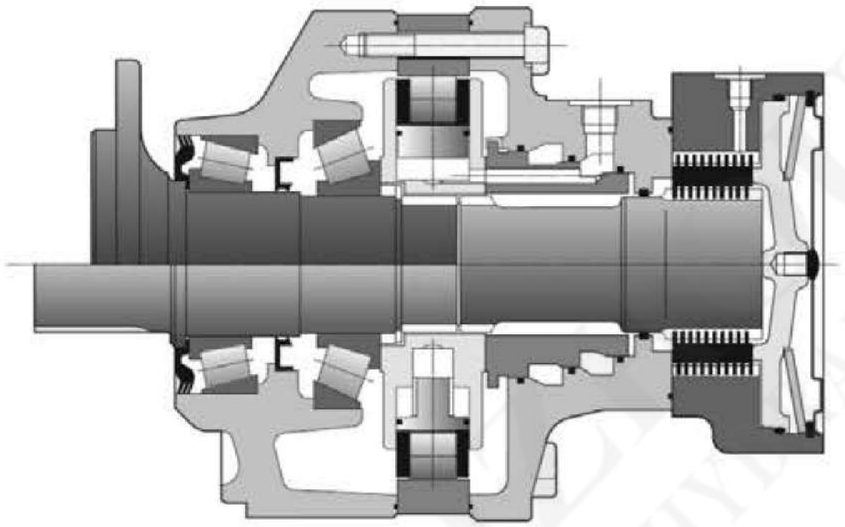
6× ∅ 20 on ∅ 205	1
8× ∅ 22 on ∅ 203.2	2
For male shaft bearing support 轴输出	A

Without studs 无螺栓	1
With studs+nuts 带螺栓+螺母	2
With studs 带螺栓	3
Male shaft 轴输出	
Cylindrical with key 平键	4
GB3478.1 splines 花键	5

Without drum brake 无鼓式制动器	0

S 1 2 3 4 5 6

Fluorinated elastomer seals 氟橡胶密封	1
Hollow shaft 空心轴	2
Drain on the bearing support 前盖泄油口	3



马达惯量 =0.05 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMS08 液压马达技术参数

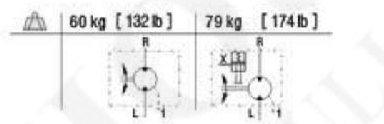
排量分组	8		9		0		1		2	
	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ
排量 Displacement (ml/r)	627	313	702	351	780	390	857	428	934	467
最大功率 Max Power (kw)	36	24	36	24	36	24	36	24	36	24
压差10MPa扭矩 Theoric torque at 10MPa (N.m)	937	459	1049	514	1166	571	1281	628	1396	684
额定扭矩 Rated torque (N.m)	2343		2623		2914		3202		3490	
额定压力 Rated pressure (MPa)	25		25		25		25		25	
最高压力 Max Pressure (MPa)	40		40		40		35		35	
额定转速 Rated speed (r/min)	70		70		70		65		65	
转速范围 Speed range (r/min)	0-170		0-170		0-170		0-155		0-140	

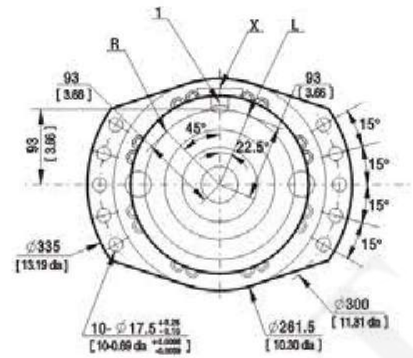
1 2 | 1 1 displacement 单排量 / 2 2 displacement 双排量 | H M S 0 8 | 1 | 1 | 1 2 3 | 1 2 3 4 | 1 2 3 4 5 6

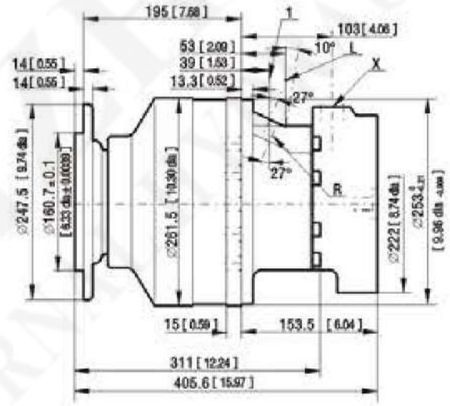
WHEEL MOTOR 轮式马达

The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

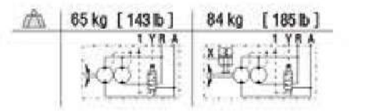
Dimensions for standard(1110) 1-displacement motor
（1110）标准单排量马达尺寸

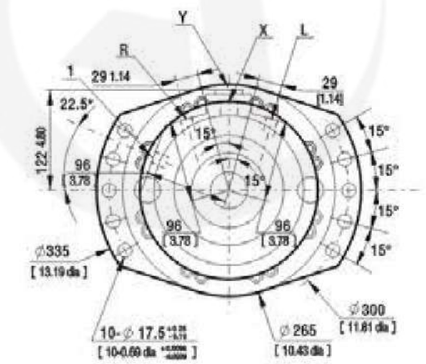


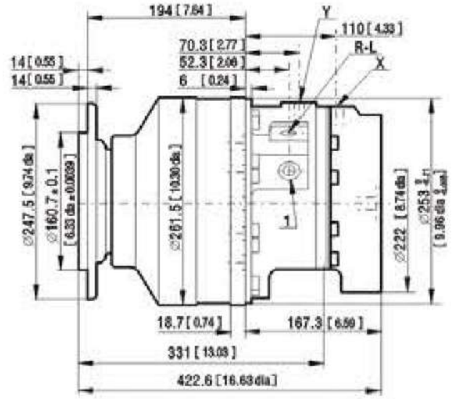




Dimensions for standard(1110) 2-displacement motor
（1110）标准双排量马达尺寸







SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 0 8 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 1 1 0 (P 1 2 3 4)	⌀160.7 [6.33dia.]	⌀205 [8.07dia.]	⌀245 [9.65dia.]	195 [7.68]	⌀261.5 [8.98dia.]	6×⌀20 [6×0.79dia.]	M18×1.5	13.5 [0.53]
1 2 1 0 (P 1 2 3 4)	⌀150.9 [5.94dia.]	⌀203.2 [8.00dia.]	⌀238 [9.37dia.]	194.1 [7.64]	⌀261.5 [10.3dia.]	8×⌀22 [8×0.87dia.]	M20×1.5	13.5 [0.43]

轮辋式安装

STUDS 螺栓

	Screws	P mm[in]	C min mm[in]	C max mm[in]	D mm[in]		Class 等级	Torque (1) 扭距(1) Nm [ib.ft]	Torque(2) 扭距(2) Nm [ib.ft]
Various Studs 各式螺栓	M14×1.5	45 [1.77]	5 [0.20]	15 [0.57]	16.5 [0.65]	P D C	12.9	200 [147.5]	250 [184.4]
	M18×1.5	55 [2.17]		18 [0.71]					
	M18×1.5	55 [2.17]		23 [0.91]					
	M20×1.5	60 [2.36]		21 [0.83]	23 [0.91]			420 [309.8]	550 [405.7]
	M22×1.5	55 [2.17]		15 [0.59]					
	M22×1.5	80 [3.15]		40 [1.57]					
Screws 螺纹	M12×1.75						10.9	120 [88.5]	120 [88.5]
	1/2"-20 UNF						8.8	250 [184.4]	120 [88.5]

(*)The tightening torques are given for the indicated loads.
(*)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮辋：建议轮辋式安装的预紧扭距 (Re steel disc>240N//mm² [>34800 PSI])
(2)Standard:suggested thghtening torque in other cases (Re steel flange>360N/mm² [>52215 PSI])
(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

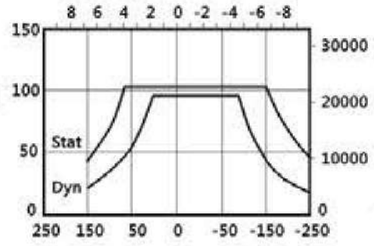
HMS08 系列液压马达
HMS08 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

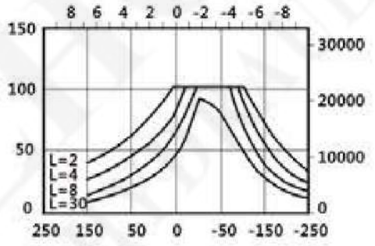
LOAD CURVES 负载曲线

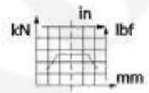
Permissible radial loads 允许径向负载
Test conditions 检测条件
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态 : 0 r/min [0 RPM] 0bar [0 PSI]
Dynamic: 0 r/min[0 RPM] ,code 0 displacement,
动态 : 0 r/min[0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

Service life of bearings 使用寿命
Test conditions 检测条件
L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

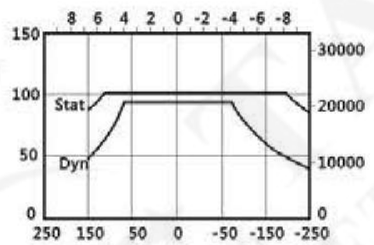
1 1 1 0 (P 1 2 3 4)

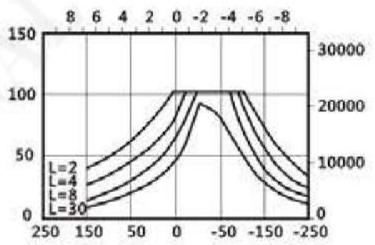






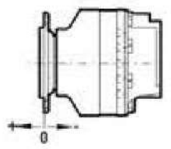
1 2 1 0 (P 1 2 3 4)





The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

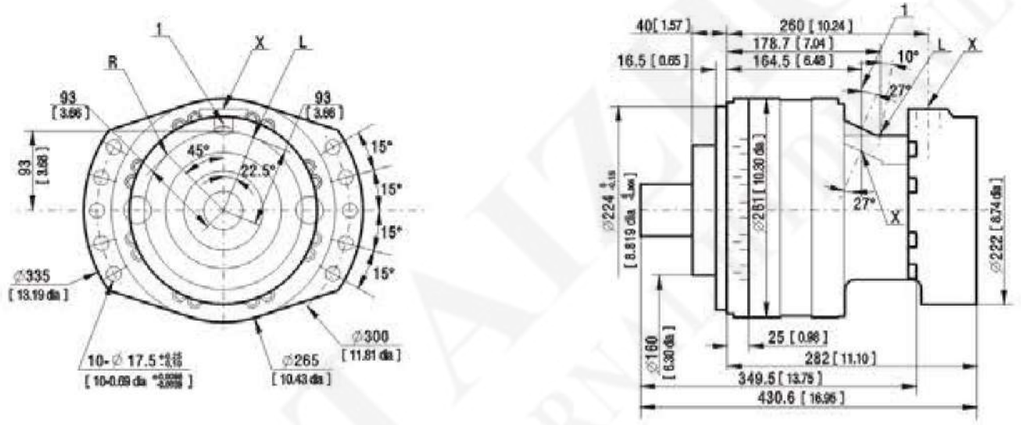
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



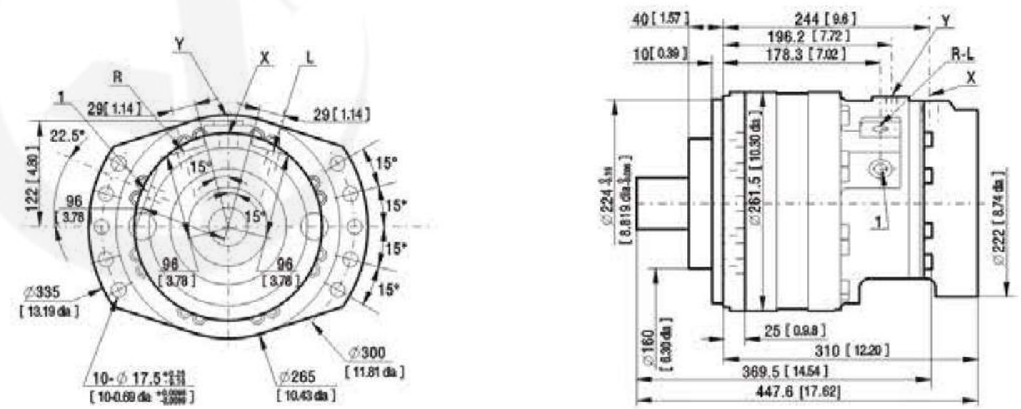
轴式马达 SHAFT MOTOR

The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

Dimensions for standard(2A50) 1-displacement motor
（2A50）标准单排量马达尺寸



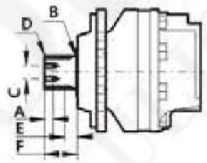
Dimensions for standard(2A50) 2-displacement motor
（2A50）标准双排量马达尺寸



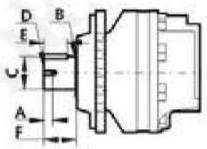
SUPPORT TYPES 前盖类型

B		C	D	F	P	S
1	1 1 displacement 单排量 2 2 displacement 双排量 HMS08	1	1	1 2 3	1 2 3 4	1 2 3 4 5 6

C		A	B	C	D	E	F
2 A 5 0 1 2 3 4 P	GB3478.1 spline 花键 Module 模数 3 Z 22	15 [0.59]	R2.5 [0.10]	35 [1.38]	2×M10	23 [0.91]	60 [2.76]



C		A	B	C	D	E	F
2 A 4 0 1 2 3 4 P	GB/T1095-1979 平键 X 20 [0.79] Xh11 Y 74.5 max [2.91] max	30 [1.18]	R2.5 [0.10]	Ø 69.99 [2.76dia]	M16	90 [3.54]	106 [4.17]



LOAD CURVES 负载曲线

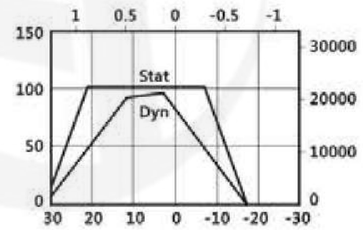
Permissible radial loads 允许径向负载
Test conditions 检测条件

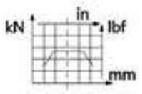
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态: 0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

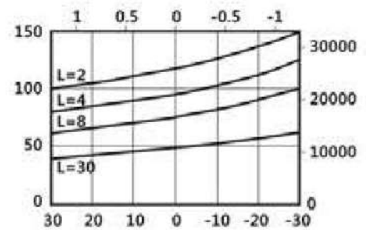
Service life of bearings 使用寿命
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

2 A 5 0
1 2 3 4
P



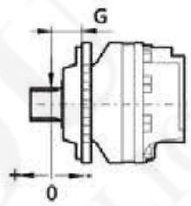




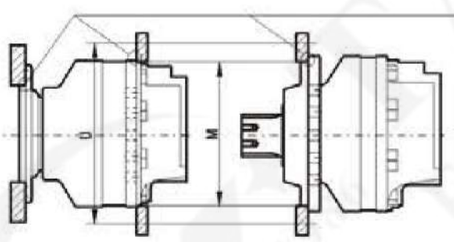
C	G	
2 A 5 0		86.75 [3.42]

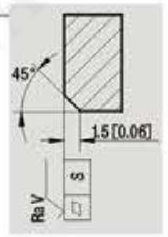
The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



CHASSIS MOUNTING 支架安装





安装时注意清洁 Take care over the immediate environment of the connections

	∅ M(1)	∅ U	S	Ra V	Screws 螺纹	Class 等级	Torque 扭距 *
WHEEL MOTOR 轮式马达	253 [9.96]	300 [11.81]	0.2 [0.008]	12.5μm [0.49μin]	2×5 M16×2	8.8	210N.m [155 lb.ft]
SHAFT MOTOR 轴式马达	224 [8.82]	300 [11.81]					

(1) $^{+0.3[+0.012]}_{+0.2[+0.008]}$

* : Min.Values for torque and load to be transmitted

*：指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接

B		C	D	F	P	S
1	1 1 displacement 单排量 2 2 displacement 双排量	H M S 0 8 — 1	1	1 2 3	1 2 3 4	1 2 3 4 5 6

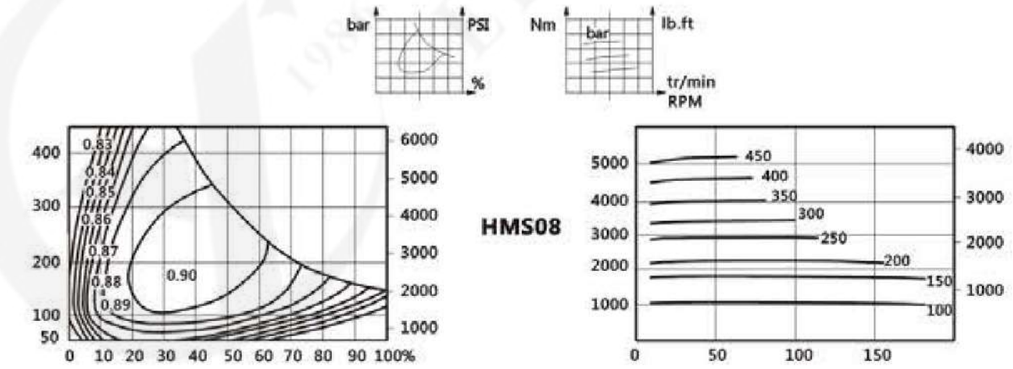
Old Standards 旧标准	Standards 新标准	进出油口 Power supply R-L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1,2	制动器控制油口 Control of Parking break X
A SAEJ514	ISO11926-1	1 1/16"-12UNF	9/16"-18UNF	3/4"-16UNF	9/16"-18UNF
1 ISO6162 DIN3852	ISO6162 ISO9974-1	DN13PN400	M14×1.5	M18×1.5	M16×1.5
2 NF E48 050	ISO9974-1	M22×1.5	M14×1.5	M18×1.5	M16×1.5
Max Pressures	MS Bar [PSI]	400 [5800] 350 [5075]	30[440]	1[10]	30[440]

EFFICIENCY 效率

Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50℃ [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值。



Actual output torque 实际输出扭距

The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

BRAKES 制动器

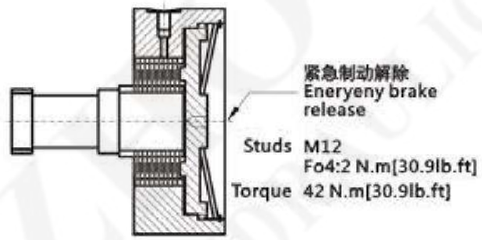
B		C	D	F	P	S
1	1 1 displacement 单排量 2 2 displacement 双排量	H M S 0 8	1	1	1 2 3	1 2 3 4	1 2 3 4 5 6
				F 0 8		

REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	F 0 8
Parking brake torque at 0 bar on housing (New brake) 0 bar 静态驻车制动扭距(新制动器)	5620Nm [4150 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	3653 Nm [2690 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	4215Nm [3110 lb.ft]
Min.brake release pressure 最小自动开启压力	12 bar [174 PSI]
Oil capacity 油量	100cm³ [6.1 cu.in]
Volume for brake release 制动开启量	40cm³ [2.4 cu.in]
Max.energy dissipation 最大能耗数	110336J

* After emergency brake has been used
* 指经过紧急制动后参数

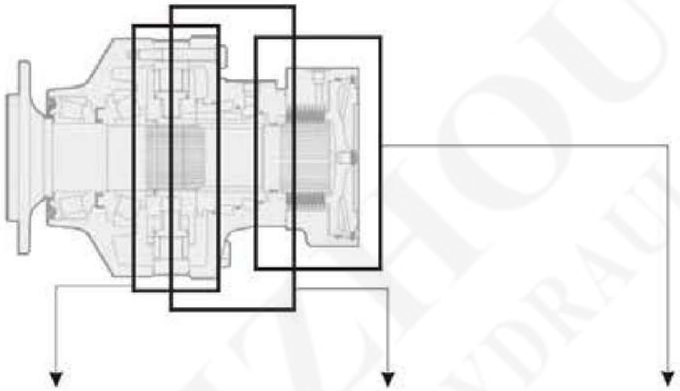
Do not run in multidisc brakes
马达运转前必须先行开启制动器

A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake), For all vehicles capable of speeds over 25 km/hour,please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMS11 系列液压马达
HMS11 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	1
2 displacement 双排量	1 displacement 单排量

C 1

H	M	S	1	1

D 1

ISO 6162 flanges 法兰 ❶ DN19 ❷ DN13

ISO 9974-1 connections 连接	1
ISO 9974-1 connections 连接	2

ISO 6162 flanges 法兰 ❶ DN19 ❷ DN13

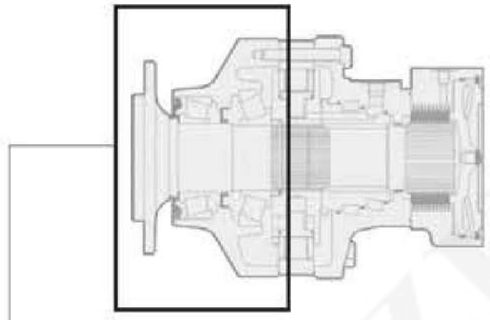
ISO 11926-1 connections 连接	3
ISO 11926-1 connections 连接	A

F 1 2 3

Without brake(simple plate) 无制动器（普通端盖）	A	1	1
Brake 制动器	F	1	1
	F	1	2
Without brake(reinforced plate) 无制动器（加强端盖）	R	1	1

对称内曲线滚道 **Cams with equal lobes**

		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMS11	8	837 [51.0]	419 [25.5]
	9	943 [57.5]	472 [28.8]
	0	1048 [63.9]	524 [32.0]
	1	1147 [70.0]	574 [35.0]
	2	1259 [76.8]	630 [38.4]



P 1 2 3 4

Without mounting 不带耳环安排	1
Lug mounting 带耳环安排	2

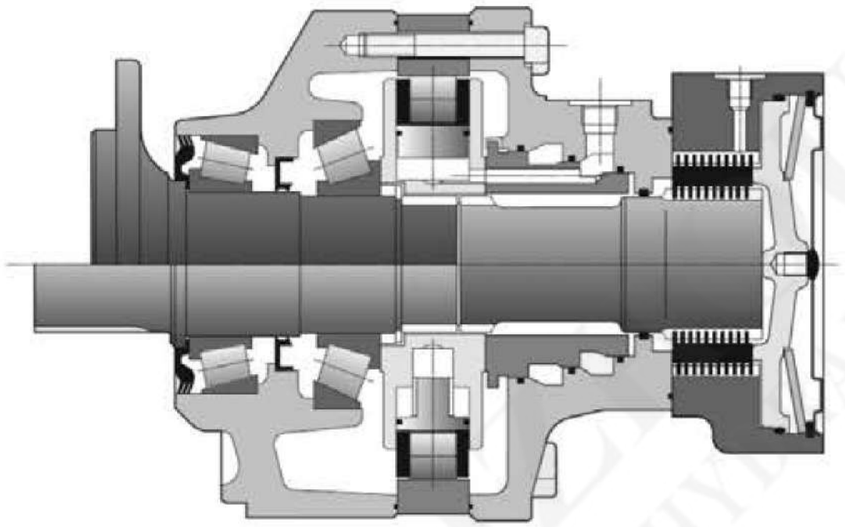
5× ∅ 24 on ∅ 205	1
10× ∅ 22 on ∅ 225	2
For male shaft bearing support 轴输出	A

Without studs 无螺栓	1
With studs+nuts 带螺栓+螺母	2
With studs 带螺栓	3
Male shaft 轴输出	
GB3478.1 splines 花键	5

Without drum brake 无鼓式制动器	0

S 1 2 3 4 5 6

Fluorinated elastomer seals 氟橡胶密封	1
Hollow shaft 空心轴	2
Drain on the bearing support 前盖泄油口	3



马达惯量 =0.05 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMS11 液压马达技术参数

排量分组	8		9		0		1		2	
	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ
排量 Displacement (ml/r)	837	418	943	471	1048	524	1147	573	1259	629
最大功率 Max Power (kw)	44	29	44	29	44	29	44	29	44	29
压差10MPa扭矩 Theoric torque at 10MPa (N.m)	1251	613	1409	391	1566	768	1714	840	1882	922
额定扭矩 Rated torque (N.m)	3127		3524		3916		4286		4704	
额定压力 Rated pressure (MPa)	25		25		25		25		25	
最高压力 Max Pressure (MPa)	40		40		40		35		35	
额定转速 Rated speed (r/min)	65		65		65		60		60	
转速范围 Speed range (r/min)	0-160		0-160		0-160		0-150		0-150	

HMS11 系列液压马达
HMS11 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

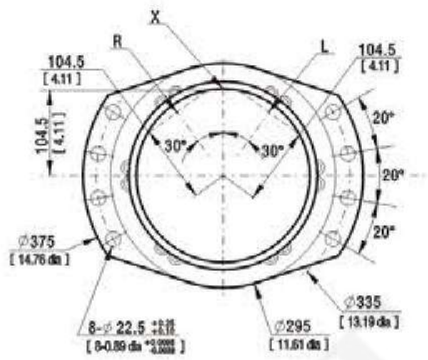
1 1 displacement 单排量
2 2 displacement 双排量

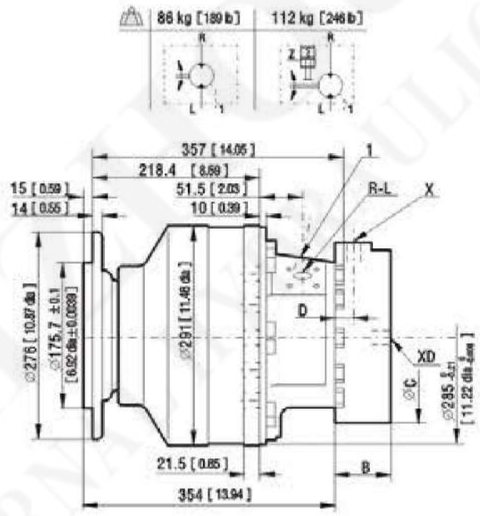
H M S 1 1 — 1 — 1 — 1 2 3 — 1 2 3 4 — 1 2 3 4 5 6

WHEEL MOTOR 轮式马达

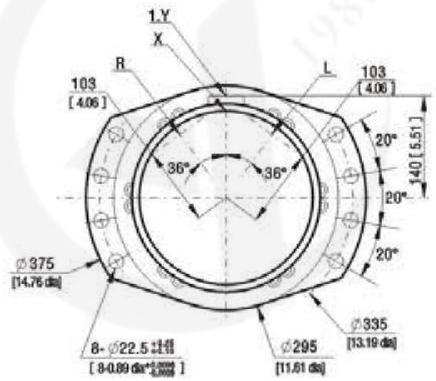
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

Dimensions for standard(1110) 1-displacement motor
（1110）标准单排量马达尺寸

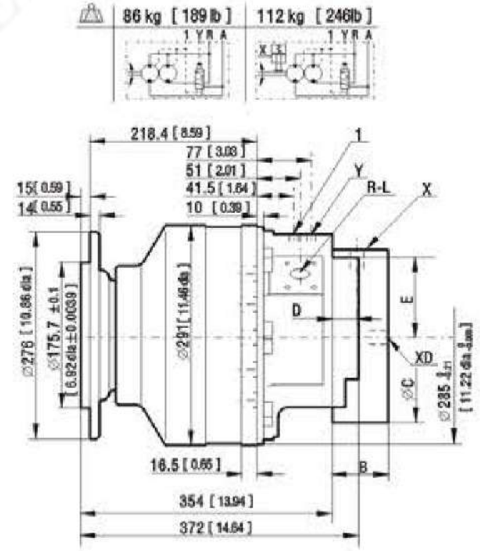




Dimensions for standard(1110) 2-displacement motor
（1110）标准双排量马达尺寸



C	B	C	D
F11-F12	108 [4.25]	∅247 [9.72dia.]	62.5 [2.46]



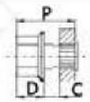
SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 1 1 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 1 1 0 (P: 1 2 3 4)	⌀175.7 [6.92dia.]	⌀225 [8.86dia.]	⌀276 [10.87dia.]	218.6 [8.61]	⌀291 [11.46dia.]	⌀24 [0.94 dia.]	5×M22×1.5	14 [0.55]
1 2 1 0 (P: 1 2 3 4)	⌀175.7 [6.92dia.]	⌀225 [8.86dia.]	⌀276 [10.87dia.]	218.6 [8.61]	⌀291 [11.46 dia.]	⌀22 [0.87 dia.]	5×M20×1.5	14 [0.55]

轮辋式安装

STUDS 螺栓

	Screws	P mm [in]	C min mm [in]	C max mm [in]	D mm [in]		Class 等级	Torque(1) 扭距(1) Nm [ib.ft]	Torque(2) 扭距(2) Nm [ib.ft]
Various Studs 各式螺栓	M18×1.5	55 [2.17]	5 [0.20]	17 [0.67]	23 [0.91]		12.9	420 [309.8]	550 [405.7]
	M20×1.5	60 [2.36]		14 [0.55]	25 [0.98]			600 [442.5]	770 [567.9]
	M22×1.5	65 [2.56]		25 [0.94]	26 [1.02]			695 [512.6]	1050 [774.4]
Screws 螺纹	M12							120 [88.5]	120 [88.5]

(*)The tightening torques are given for the indicated loads.
(*)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮钢：建议轮钢式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）
(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）
(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

LOAD CURVES 负载曲线

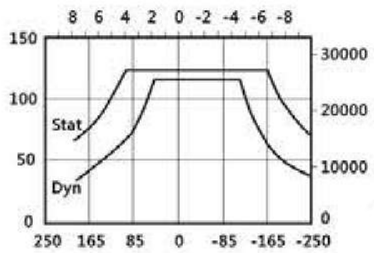
Permissible radial loads 允许径向负载
Test conditions 检测条件

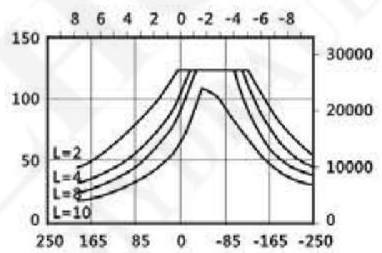
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态 : 0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态 : 0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

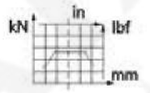
Service life of bearings 使用寿命
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

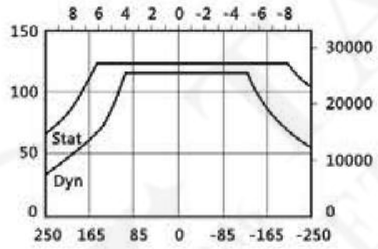
1 1 1 0 (P: 1 2 3 4)

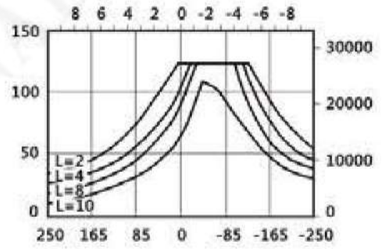






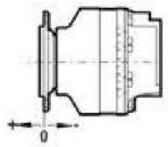
1 2 1 0 (P: 1 2 3 4)





The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

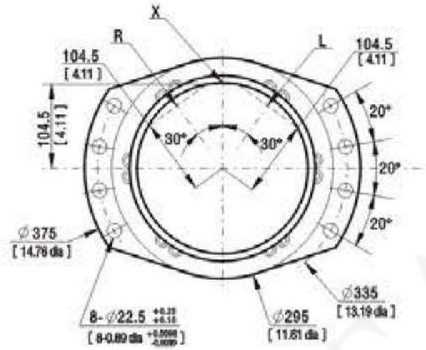
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。

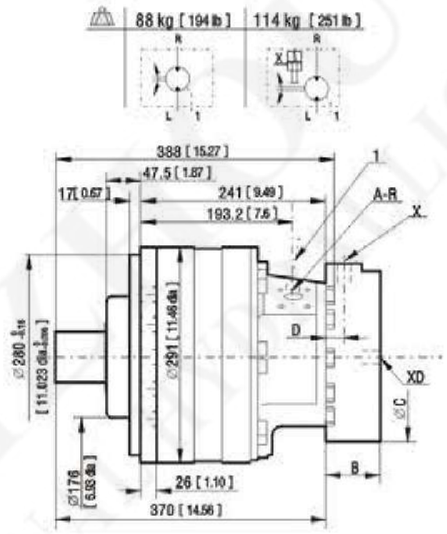


SHAFT MOTOR 轴式马达

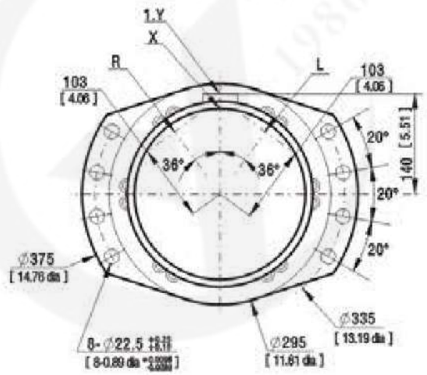
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

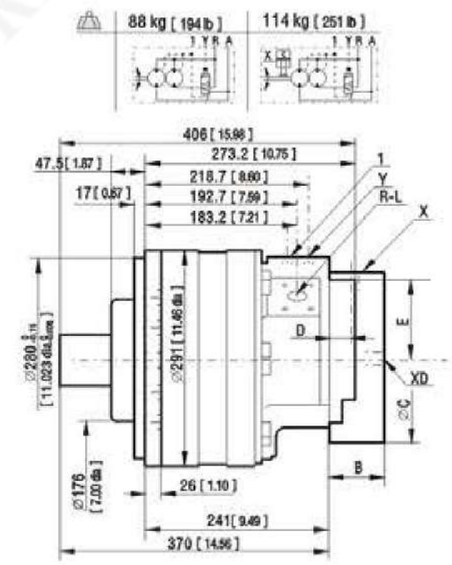
Dimensions for standard(2A50) 1-displacement motor
（2A50）标准单排量马达尺寸





Dimensions for standard(2A50) 2-displacement motor
（2A50）标准双排量马达尺寸



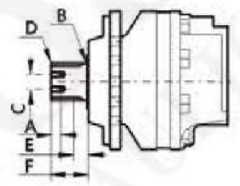


C	B	C	D
F11-F12	108 [4.25]	Ø247 [9.72dia.]	62.5 [2.46]

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 1 1 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C		A	B	C	D	E	F
2 A 5 0 (P)	GB 3478.1 spline 花键	15 [0.59]	R2.75 [0.11]	35 [1.38]	2×M10	23 [0.91]	80 [3.15]
	Module 模数 3						
	Z 25						



LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载

Test conditions 检测条件

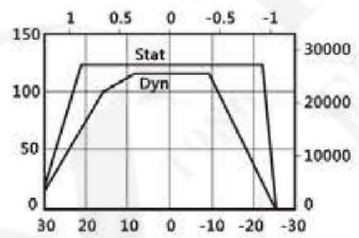
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态 : 0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态 : 0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

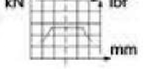
Service life of bearings 使用寿命

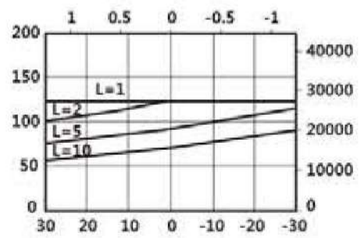
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

2 A 5 0 (P)



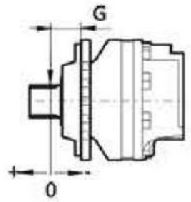




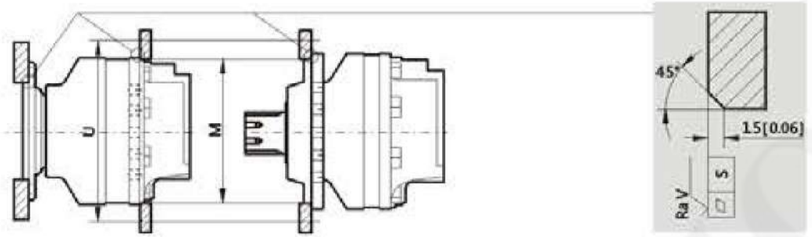
C	G
2 A 5 0	101.25 [3.99]

The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



CHASSIS MOUNTING 支架安装



安装时注意清洁 Take care over the immediate environment of the connections

	∅ M(1)	∅ U	S	Ra V	Screws 螺纹	Class 等级	Torque 扭距 *
WHEEL MOTOR 轮式马达	285 [11.22]	335 [13.19]	0.2 [0.008]	12.5μm [0.49μin]	2×4 4×M20	8.8	410N.m [302 lb.ft]
SHAFT MOTOR 轴式马达	280 [11.02]	335 [13.19]					

(1) $^{+0.3\ [+0.012]}_{+0.2\ [+0.008]}$

*：Min.Values for torque and load to be transmitted

*：指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 1 1 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

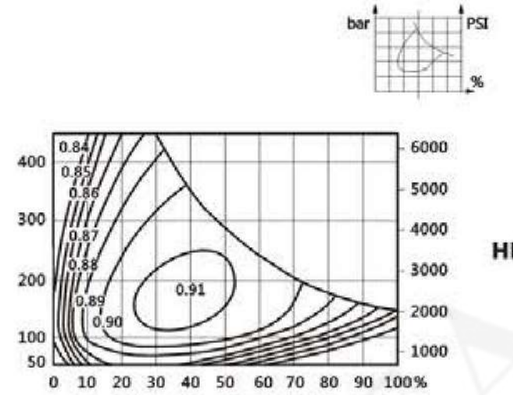
Old Standards 旧标准	Standards 新标准	进出油口 Power supply R-L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1,2	制动器控制油口 Control of Parking break X
A SAEJ514	ISO11926-1	1"1/16-12UNF	9/16"-18UNF	3/4"-16UNF	9/16"-18UNF
1 ISO6162 DIN3852	ISO6162 ❶ ISO9974-1 ❷	DN19 PN400 DN13 PN400	M16×1.5	M18×1.5	M18×1.5
2 NF E48 050	ISO9974-1	M27×2	M16×1.5	M18×1.5	M18×1.5
3 ISO6162 SAEJ514	ISO6162 ❶ ISO11926-1❷	DN19 PN400 DN13 PN400	9/16"-18UNF	3/4"-16UNF	9/16"-18UNF
Max Pressures	MS bar [PSI]	400 [5800] 350 [5075]	30 [440]	1 [10]	30 [440]

EFFICIENCY 效率

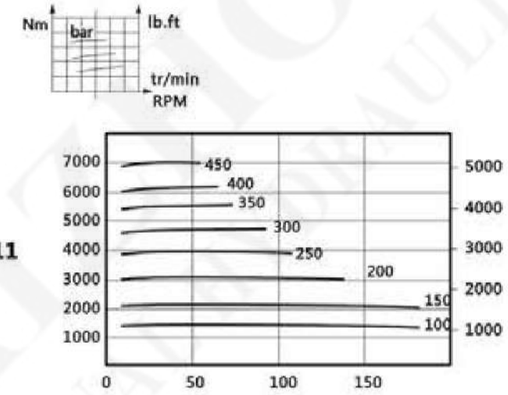
Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50°C [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值。



Actual output torque 实际输出扭距



The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

BRAKES 制动器

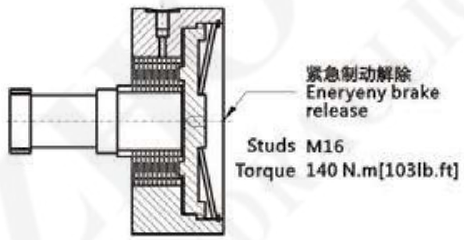
B		C	D	F	P	S
1	1 1 displacement 单排量 2 2 displacement 双排量	1	1	1 2 3	1 2 3 4	1 2 3 4 5 6
	HMS11			F11		

REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	F 1 1	F 1 2
Parking brake torque at 0 bar on housing (New brake) 0 bar 静态驻车制动扭距(新制动器)	7320Nm [5400 lb.ft]	11840Nm [8730 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	4760 Nm [3510 lb.ft]	7695Nm [5680 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	5490Nm [1050 lb.ft]	8880Nm [6550 lb.ft]
Min.brake release pressure 最小自动开启压力	12 bar [174 PSI]	12 bar [174 PSI]
Max.brake release pressure 最大自动开启压力	30 bar [435 PSI]	30 bar [435 PSI]
Oil capacity 油量	170cm³ [10.4 cu.in]	170cm³ [10.4 cu.in]
Volume for brake release 制动开启量	40cm³ [2.4 cu.in]	40cm³ [2.4 cu.in]
Max.energy dissipation 最大能耗数		123699 J

* After emergency brake has been used
* 指经过紧急制动后参数

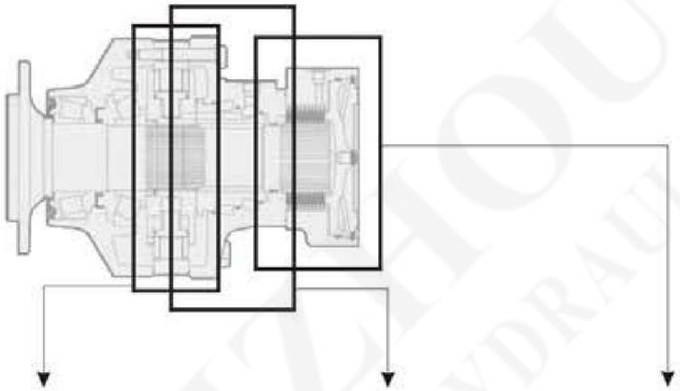
Do not run in multidisc brakes
马达运转前必须先行开启制动器

A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake), For all vehicles capable of speeds over 25 km/hour,please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMS18 系列液压马达
HMS18 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	1
2 displacement 双排量	1 displacement 单排量

C 1

H	M	S	1	8

对称内曲线滚道 Cams with equal lobes

		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMS18	8	1395 [85.1]	698 [42.5]
	9	1571 [95.8]	786 [47.9]
	0	1747 [106.5]	874 [53.3]
	1	1911 [116.6]	956 [58.3]
	2	2099 [128.0]	1050 [64.0]

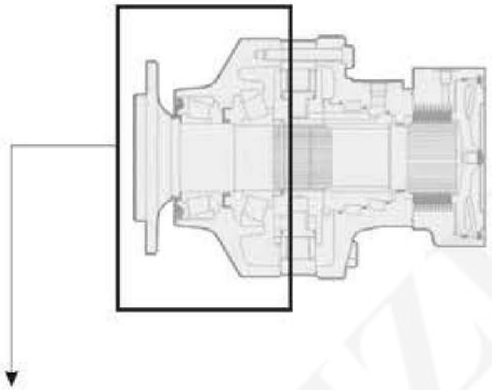
D 1

ISO 6162 flanges 法兰 DN19

ISO 9974-1 connections 连接	1
ISO 9974-1 connections 连接	4
ISO 11926-1 connections 连接	A

F 1 2 3

无变量马达制动器 Without brake				A	1	8
S18	Without brake(simple plate) 无制动器（普通端盖）			B	1	8
	Brake 制动器	Bearing mounting or valving cover mounting 支持式安装或阀盖式安装	Parking brake 制动器	F	1	1
				F	1	9
				F	4	2
	Without brake(simple plate) 无制动器（普通端盖）			R	1	8
S35	无变量马达制动器 Without brake			A	3	5
	Without brake(simple plate) 无制动器（普通端盖）			R	3	5



P 1 2 3 4

Without mounting 不带耳环安排	1
	2

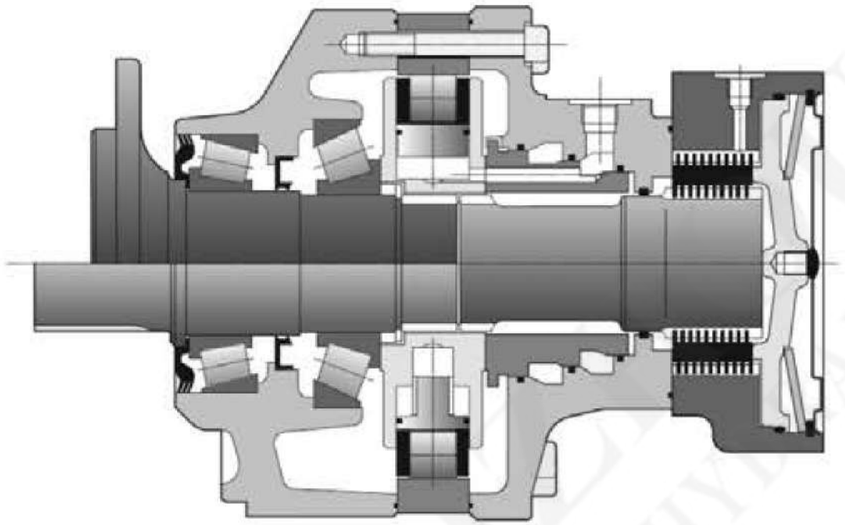
10× ∅ 24 on ∅225	1
8× ∅ 22 on ∅275	2
For male shaft bearing support 轴输出	A

Without studs 无螺栓	1
With studs+nuts 带螺栓+螺母	2
With studs 带螺栓	3
Male shaft 轴输出	
GB3478.1 splines 花键	5

Without drum brake 无鼓式制动器	0

S 1 2 3 4 5 6

Fluorinated elastomer seals 氟橡胶密封	1
Hollow shaft 空心轴	2
Drain on the bearing support 前盖泄油口	3



马达惯量 =0.2 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMS18 液压马达技术参数

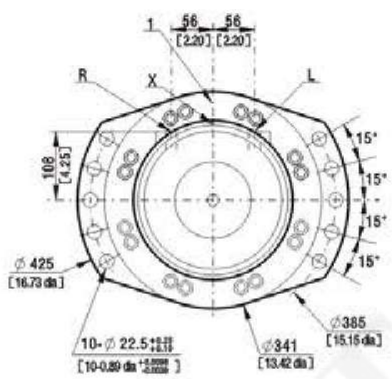
排量分组	8		9		0		1		2	
	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ
排量 Displacement (ml/r)	1395	697	1571	785	1747	873	1911	955	2099	1049
最大功率 Max Power (kw)	62	42	62	42	62	42	62	42	62	42
压差10MPa扭矩 Theoric torque at 10MPa (N.m)	2085	1022	2348	1151	2611	1279	2856	1400	3137	1537
额定扭矩 Rated torque (N.m)	5212		5870		6528		7140		7843	
额定压力 Rated pressure (MPa)	25		25		25		25		25	
最高压力 Max Pressure (MPa)	40		40		40		35		35	
额定转速 Rated speed (r/min)	55		55		55		55		50	
转速范围 Speed range (r/min)	0-150		0-150		0-150		0-135		0-125	

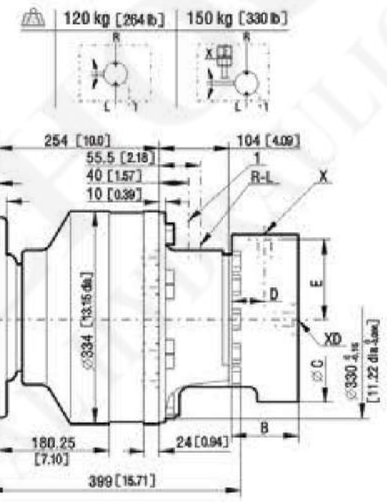
1 2 | 1 displacement 单排量 / 2 displacement 双排量 | H M S 1 8 | 1 | 1 | 1 2 3 | 1 2 3 4 | 1 2 3 4 5 6

WHEEL MOTOR 轮式马达

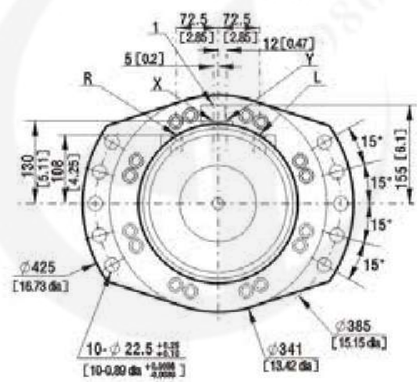
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

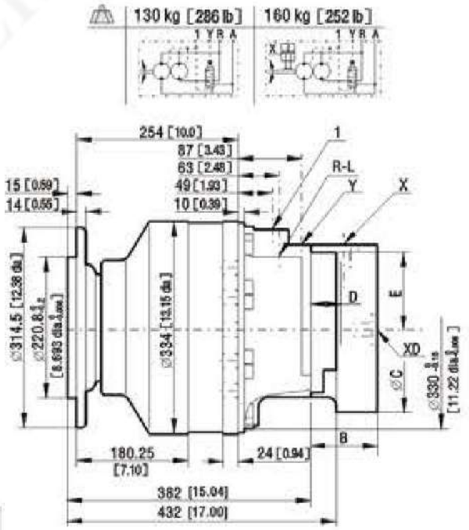
Dimensions for standard(1110) 1-displacement motor
（1110）标准单排量马达尺寸





Dimensions for standard(1110) 2-displacement motor
（1110）标准双排量马达尺寸





C	B	C	D	E
F11	108 [4.25]	Ø247 [9.72dia.]	62.5 [2.46]	128 [5.04]
F19	140 [5.51]	Ø250 [9.84dia.]	82 [3.22]	185 [7.28]
F42	157 [6.18]	Ø375 [14.76dia.]	82 [3.22]	183.5 [7.22]

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 1 8 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 1 1 0 (P: 1 2 3 4)	⌀175.7 [6.92dia.]	⌀225 [8.86dia.]	⌀265 [10.43dia.]	253.45 [9.98]	⌀334 [13.15dia.]	⌀24 [0.94 dia.]	10×M22×1.5	14 [0.55]
1 2 1 0 (P: 1 2 3 4)	⌀220.7 [8.69dia.]	⌀275 [10.83dia.]	⌀314 [12.36dia.]	253.25 [9.97]	⌀291 [11.46 dia.]	⌀22 [0.87 dia.]	8×M20×1.5	14 [0.55]

轮辋式安装

STUDS 螺栓

	Screws	P mm [in]	C min mm [in]	C max mm [in]	D mm [in]		Class 等级	Torque(1) 扭距(1) Nm [ib.ft]	Torque(2) 扭距(2) Nm [ib.ft]
Various Studs 各式螺栓	M16×2	50 [1.97]	5 [0.20]	17.75 [0.70]	21 [0.83]		12.9	300 [221.3]	380 [280.3]
	M20×1.5	60 [2.36]		20 [0.79]	25 [0.98]			600 [442.5]	770 [567.9]
	M20×1.5	70 [2.76]		27 [1.06]	25 [0.98]				
	M22×1.5	65 [2.56]		24 [0.94]	26 [1.02]			695 [512.6]	1050 [774.4]
	M22×1.5	80 [3.15]		29 [1.14]	26 [1.02]				
Screws 螺纹	M16×1.5						10.9	275 [202.8]	275 [202.8]
	M20×1.5							535 [394.6]	535 [394.6]

(*)The tightening torques are given for the indicated loads.
(*)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮辋：建议轮辋式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）
(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）
(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

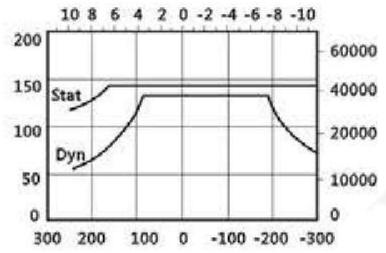
HMS18 系列液压马达
HMS18 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

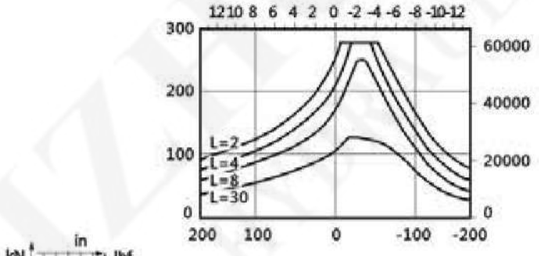
LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载
Test conditions 检测条件
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

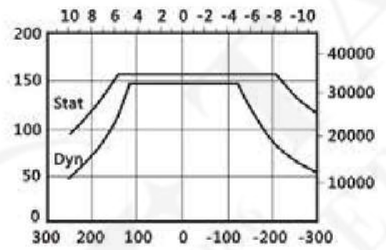
Service life of bearings 使用寿命
Test conditions 检测条件
L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

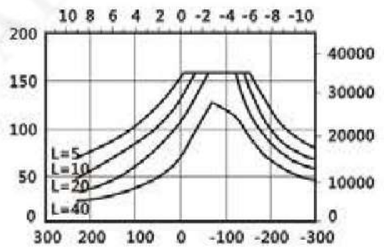
1 1 1 0 (P: 1 2 3 4)





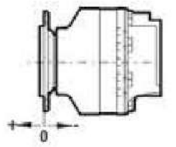
1 2 1 0 (P: 1 2 3 4)





The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

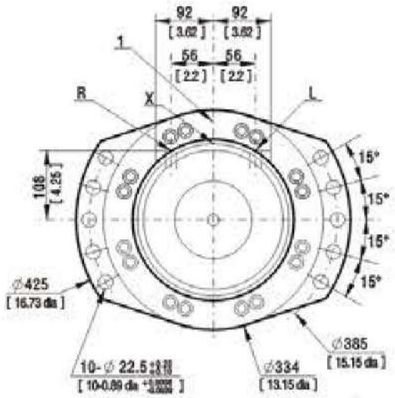
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。

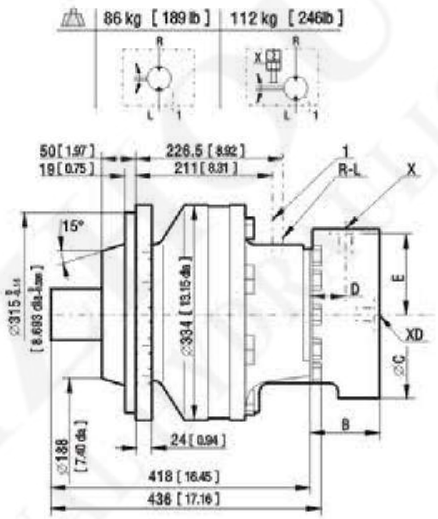


SHAFT MOTOR 轴式马达

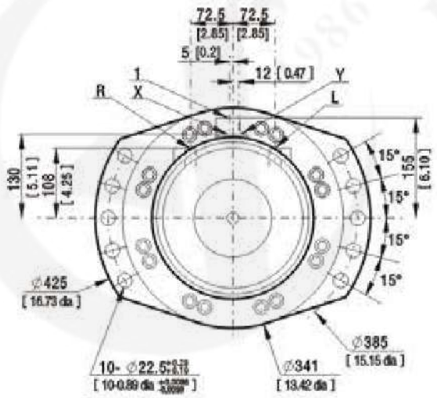
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

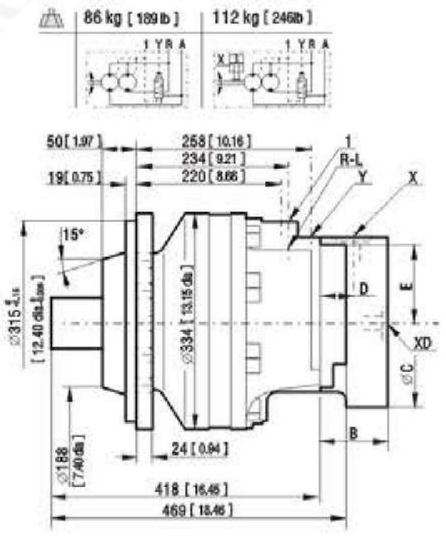
Dimensions for standard(2A50) 1-displacement motor
（2A50）标准单排量马达尺寸





Dimensions for standard(2A50) 2-displacement motor
（2A50）标准双排量马达尺寸

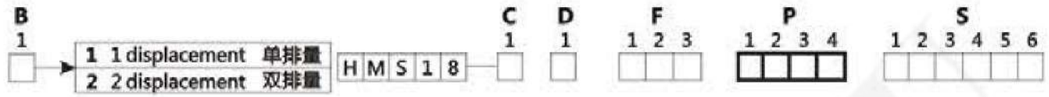




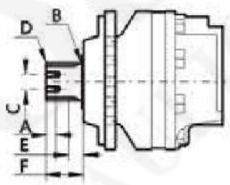
C	B	C	D	E
F11	108 [4.25]	⌀247 [9.72dia.]	62.5 [2.46]	128 [5.04]
F19	140 [5.51]	⌀250 [9.84dia.]	82 [3.22]	185 [7.28]
F42	157 [6.18]	⌀375 [14.76dia.]	82 [3.22]	183.5 [7.22]

HMS18 系列液压马达
HMS18 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

SUPPORT TYPES 前盖类型



C		A	B	C	D	E	F
2 A 5 0 (1 2 3 4) P	GB 3478.1-83 spline 花键	23 [0.91]	R3 [0.12]	35 [1.38]	2×M14	23 [0.91]	90 [3.54]
	Module 模数 3						
	Z 28						

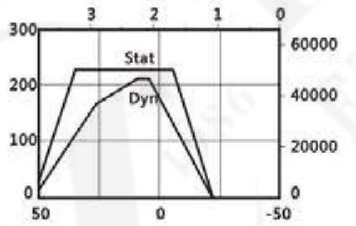


LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载
Test conditions 检测条件

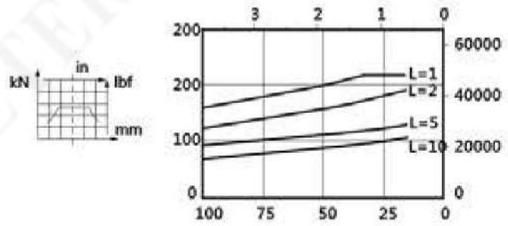
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

2 A 5 0 (1 2 3 4) P



Service life of bearings 使用寿命
Test conditions 检测条件

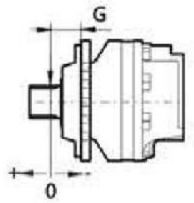
L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次



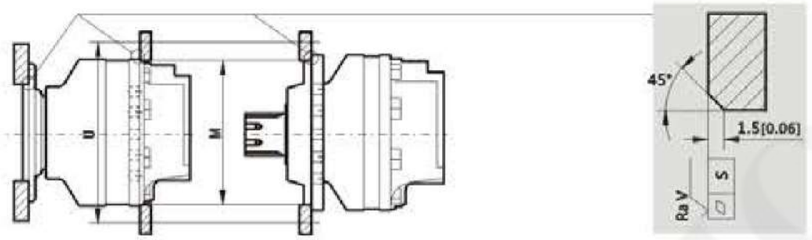
C G
2 A 5 0 106.5 [4.19]

The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



CHASSIS MOUNTING 支架安装



安装时注意清洁 Take care over the immediate environment of the connections

	⌀ M(1)	⌀ U	S	Ra V	Studs 螺栓	Class 等级	Torque 扭距 *
WHEEL MOTOR 轮式马达	330 [12.99]	385 [15.16]	0.2 [0.008]	12.5μm [0.49μin]	2×9 M20×2.5	8.8	410N.m [302 lb.ft]
SHAFT MOTOR 轴式马达	380 [14.96]	440 [17.32]			2×8 M20×2.5		

(1) $^{+0.3\ [+0.012]}_{+0.2\ [+0.008]}$

* : Min.Values for torque and load to be transmitted

* : 指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 1 8 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

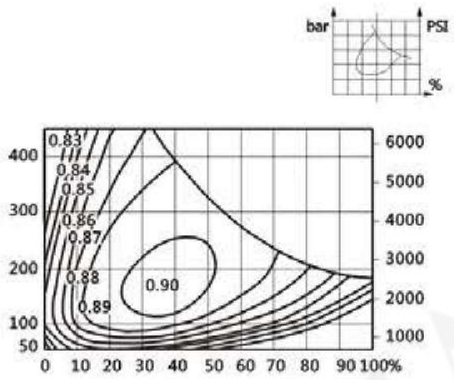
Old Standards 旧标准	Standards 新标准	进出油口 Power supply R-L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1,2	制动器控制油口 Control of Parking break X
A SAEJ514	ISO11926-1 S18	1 1/16"-12UNF	3/4"-16UNF	7/8"-14UNF	9/16"-18UNF 3/4"-16UNF
1 ISO6162 DIN3852	ISO6162 S18 ISO9974-1 S35 2C	DN19 PN400 DN25 PN400	M16×1.5 M18×1.5	M22×1.5	M18×1.5
4 NFE48050	ISO9974-1 S18	M27×2	M16×1.5 M22×1.5	M22×1.5	M18×1.5
Max Pressures	MS bar [PSI]	400 [5800] 350 [5075]	30 [440]	1 [10]	30 [440]

EFFICIENCY 效率

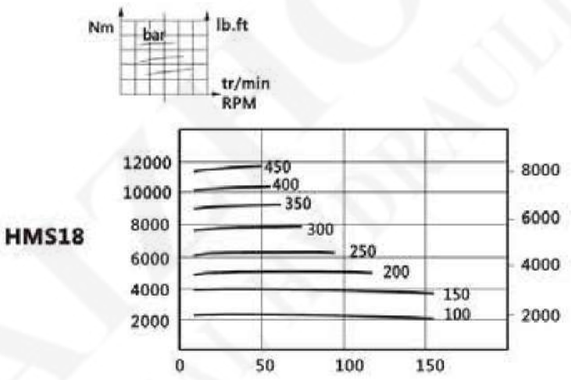
Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50°C [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值.



Actual output torque 实际输出扭距



The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

BRAKES 制动器

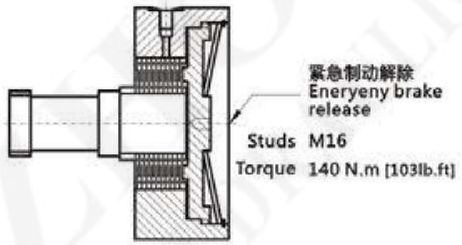
B		C	D	F	P	S
1	1 1 displacement 单排量 2 2 displacement 双排量	H M S 1 8	1	1 2 3 F 1 1 F 1 9 F 4 2	1 2 3 4	1 2 3 4 5 6

REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	F 1 1	F 1 9	F 4 2
Parking brake torque at 0 bar on housing (New brake) 0 bar 静态驻车制动扭距(新制动器)	7320Nm [5400 lb.ft]	18600Nm [13720 lb.ft]	25000Nm [18400 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	4760 Nm [3510 lb.ft]	12800 Nm [9440 lb.ft]	16250Nm [11990 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	5490Nm [4050 lb.ft]	13940Nm [10280 lb.ft]	18750Nm [13830 lb.ft]
Min.brake release pressure 最小自动开启压力	12 bar [174 PSI]	12 bar [174 PSI]	12 bar [174 PSI]
Max.brake release pressure 最大自动开启压力	30 bar [435 PSI]	30 bar [435 PSI]	30 bar [435 PSI]
Oil capacity 油量	170cm³ [10.4 cu.in]	180cm³ [11.0 cu.in]	400cm³ [24.4 cu.in]
Volume for brake release 制动开启量	40cm³ [2.4 cu.in]	70cm³ [4.3 cu.in]	135cm³ [8.2 cu.in]

* After emergency brake has been used
* 指经过紧急制动后参数

Do not run in multidisc brakes
马达运转前必须先行开启制动器

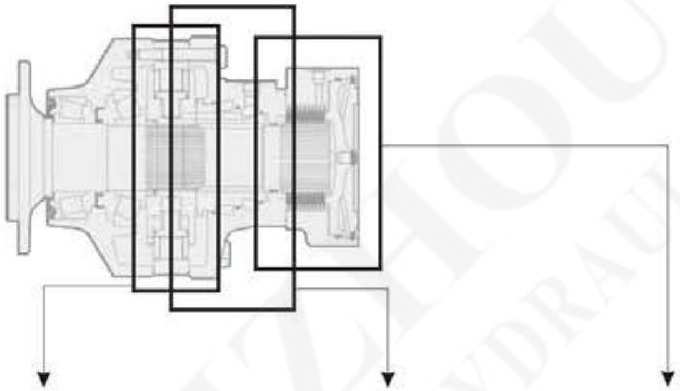
A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake), For all vehicles capable of speeds over 25 km/hour, please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMS18 系列液压马达
HMS18 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

HMS25 系列液压马达
HMS25 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	1
2 displacement 双排量	1 displacement 单排量

C 1

H	M	S	2	5

对称内曲线滚道 **Cams with equal lobes**

		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMS25	8	2004 [122.2]	1002 [61.1]
	0	2498 [152.4]	1249 [76.2]
	1	2752 [167.8]	1376 [83.9]
	2	3006 [183.3]	1503 [91.7]

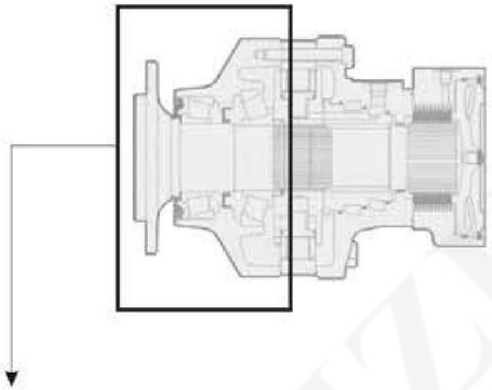
D 1

ISO 6162 flanges 法兰 DN19

ISO 9974-1 connections 连接 1
ISO 9974-1 connections 连接 4
ISO 11926-1 connections 连接 A

F 1 2 3

Without brake(simple plate) 无制动器定量马达（普通端盖）	A	2	5
Brake 制动器	F	2	6
	F	4	2
Without brake(reinforced plate) 无制动器定量马达（加强端盖）	R	2	5



P 1 2 3 4

Without mounting 不带耳环安排 1
Lug mounting 带耳环安排 2

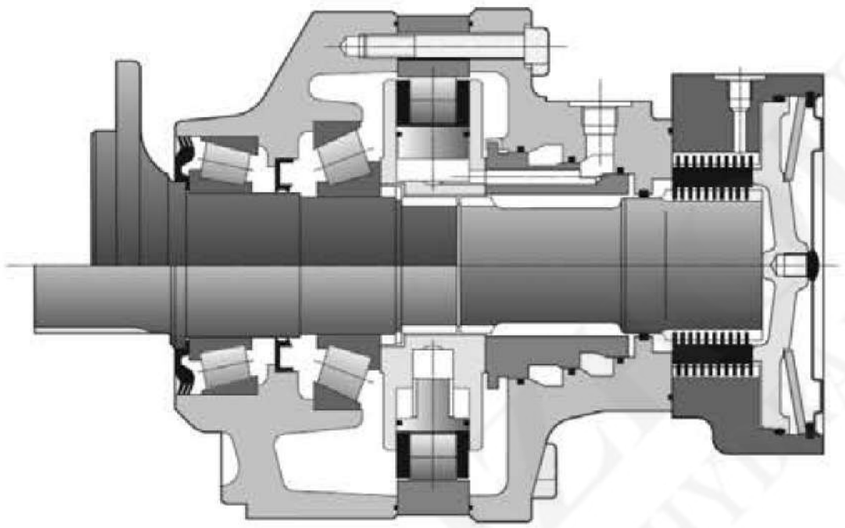
10× ∅ 24 on ∅335 1
12× ∅ 25 on ∅425 2
For male shaft bearing support 轴输出 A

Without studs 无螺栓 1
With studs+nuts 带螺栓+螺母 2
With studs 带螺栓 3
Male shaft 轴输出
GB3478.1 splines 花键 5

Without drum brake 无鼓式制动器 0

S 1 2 3 4 5 6

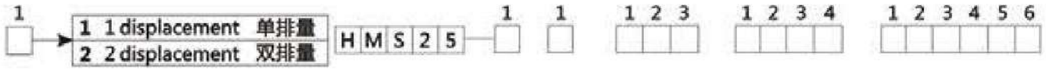
Fluorinated elastomer seals 氟橡胶密封 1
Hollow shaft 空心轴 2
Drain on the bearing support 前盖泄油口 3



马达惯量 =0.4 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMS25 液压马达技术参数

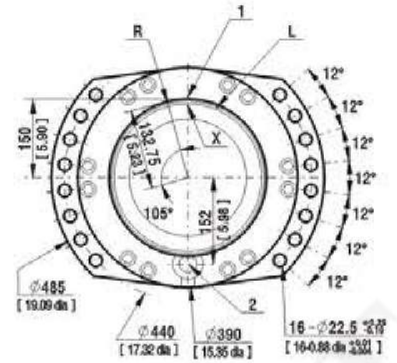
排量分组	8		9		0		1		2	
	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ
排量 Displacement (ml/r)	2004	1002			2498	1249	2752	1376	3006	1503
最大功率 Max Power (kw)	80	53			80	53	80	53	80	53
压差10MPa扭矩 Theoric torque at 10MPa (N.m)	1995	1468			3733	1829	1829	2015	4493	2201
额定扭矩 Rated torque (N.m)	7488				9334		10283		11232	
额定压力 Rated pressure (MPa)	25				25		25		25	
最高压力 Max Pressure (MPa)	40				40		35		35	
额定转速 Rated speed (r/min)	50				50		45		45	
转速范围 Speed range (r/min)	0-130				0-130		0-120		0-110	

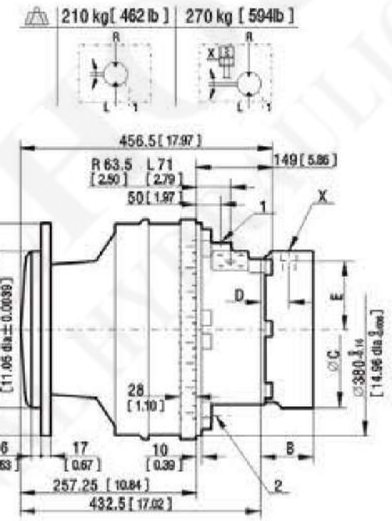


WHEEL MOTOR 轮式马达

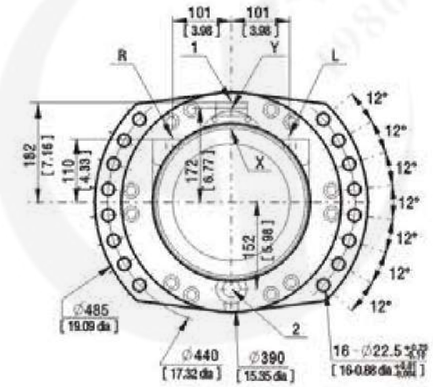
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

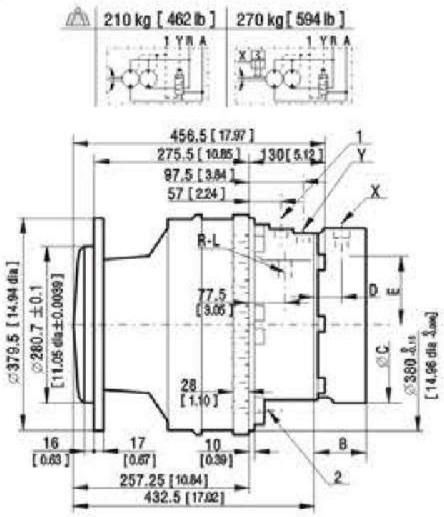
Dimensions for standard(1110) 1-displacement motor
（1110）标准单排量马达尺寸





Dimensions for standard(1110) 2-displacement motor
（1110）标准双排量马达尺寸





C	B	C	D	E
F26-F42	157 [6.18]	Ø375 [14.76 dia.]	82 [3.22]	183.5 [7.22]

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 2 5 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 1 1 0 (P 1 2 3 4)	⌀280.7 [11.05 dia.]	⌀335 [13.19dia.]	⌀379 [14.92dia.]	275.5 [10.85]	⌀390 [15.35dia.]	⌀24 [0.94 dia.]	10×M22×1.5	17 [0.6]
1 2 1 0 (P 1 2 3 4)	⌀370 [14.57dia.]	⌀425 [16.73dia.]	⌀472 [18.58dia.]	333.45 [13.13]	⌀390 [15.35 dia.]	⌀26 [1.02 dia.]	12×M24×12	24 [0.94]

轮辋式安装

STUDS 螺栓

	Screws	P mm [in]	C min mm [in]	C max mm [in]	D mm [in]		Class 等级	Torque(1) 扭距(1) Nm [ib.ft]	Torque(2) 扭距(2) Nm [ib.ft]
Various Studs 各式螺栓	M22×1.5	80 [3.15]	5 [0.20]	36 [1.42]	26 [1.02]		12.9	695 [512.6]	1050 [774.4]
	M24×2	95 [3.74]		38 [1.50]	30 [1.18]			910 [671.2]	1050 [848.2]
Screws 螺纹	M20						12.9	600 [442.5]	770 [567.9]

(*)The tightening torques are given for the indicated loads.
(*)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮辋：建议轮辋式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）
(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）
(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

LOAD CURVES 负载曲线

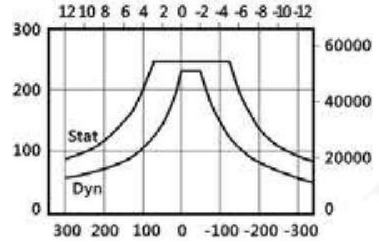
Permissible radial loads 允许径向负载
Test conditions 检测条件

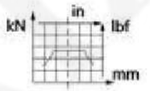
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

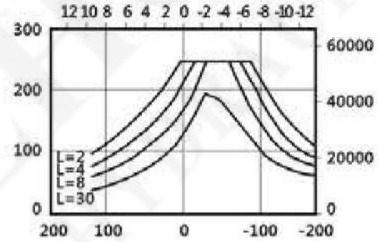
Service life of bearings 使用寿命
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

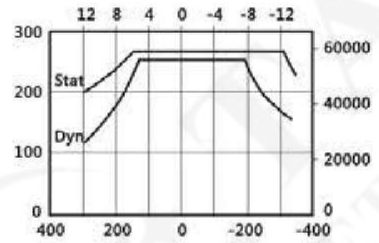
1 1 1 0 (P 1 2 3 4)

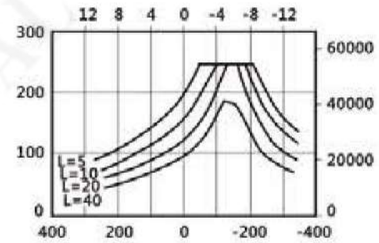






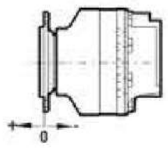
1 2 1 0 (P 1 2 3 4)





The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

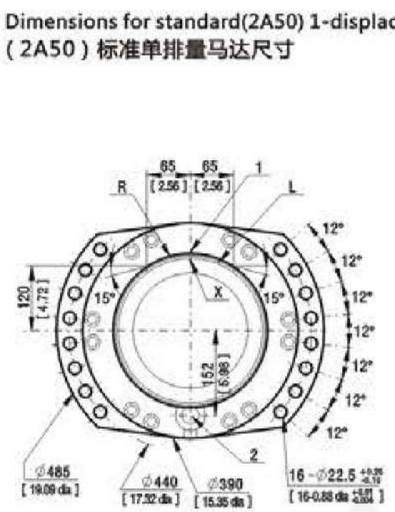
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。

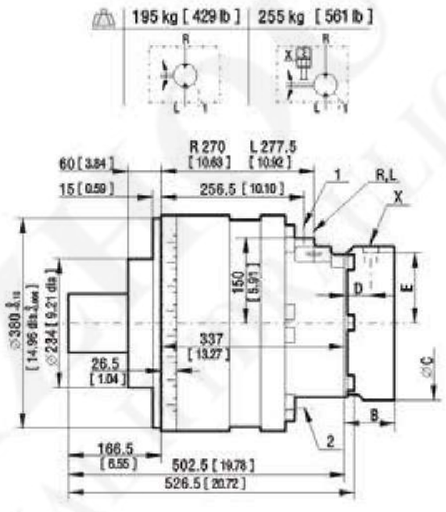


SHAFT MOTOR 轴式马达

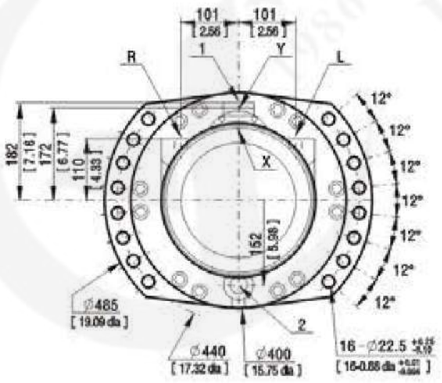
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

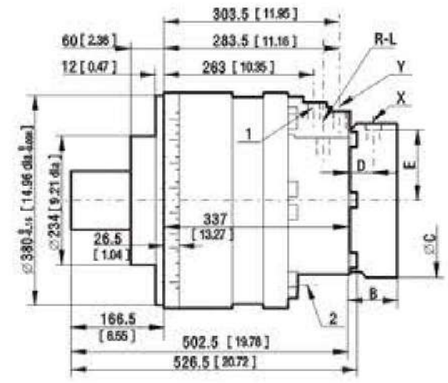
Dimensions for standard(2A50) 1-displacement motor
（2A50）标准单排量马达尺寸





Dimensions for standard(2A50) 2-displacement motor
（2A50）标准双排量马达尺寸





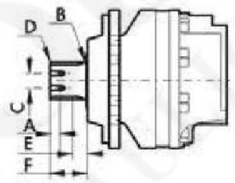
C	B	C	D	E
F26-F42	157 [6.18]	Ø375 [14.76 dia.]	82 [3.22]	183.5 [7.22]

HMS25 系列液压马达
HMS25 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 2 5 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

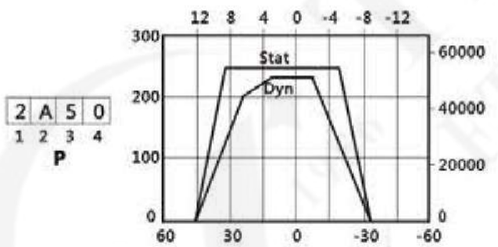
C		A	B	C	D	E	F
2 A 5 0 (1 2 3 4 P)	GB 3478.1 spline 花键	23 [0.91]	R4 [R0.16]	35 [1.38]	2×M14	25 [0.98]	105 [4.13]
	Module 模数 3						
	Z 32						



LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载
Test conditions 检测条件

Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

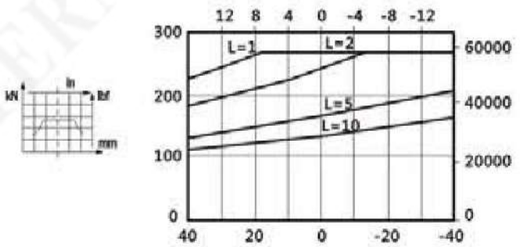


2 A 5 0 (1 2 3 4 P)

C G
2 A 5 0 125 [4.92]

Service life of bearings 使用寿命
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次



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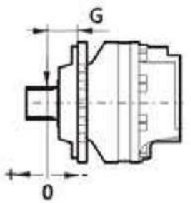
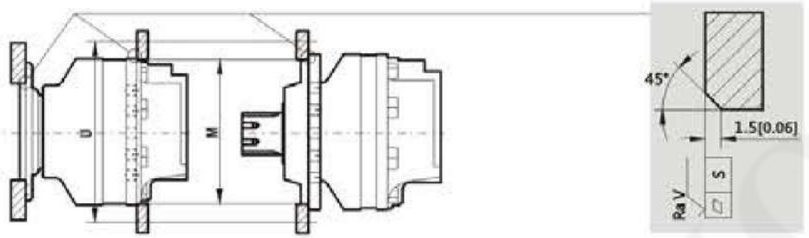
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



CHASSIS MOUNTING 支架安装



安装时注意清洁 Take care over the immediate environment of the connections

	⌀ M(1)	⌀ U	S	Ra V	Screws 螺纹	Class 等级	Torque 扭距 *
WHEEL MOTOR 轮式马达	380 [14.96]	440 [17.32]	0.2 [0.008]	12.5µm [0.49µin]	2×8 ⌀ 22.5 M20×2.5	8.8	410N.m [302 lb.ft]
SHAFT MOTOR 轴式马达							

(1) $^{+0.3\ [+0.012]}_{+0.2\ [+0.008]}$

*：Min.Values for torque and load to be transmitted

*：指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 2 5 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

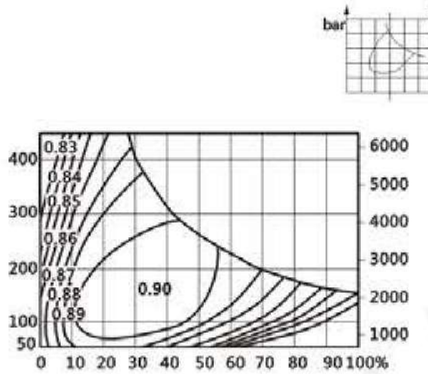
Old Standards 旧标准	Standards 新标准	进出油口 Power supply R-L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1, 2	制动器控制油口 Control of Parking break X
A SAEJ511	ISO11926-2	1 1/16"-12UNF	3/4"-16UNF	7/8"-14UNF	3/4"-16UNF
1 ISO6162 DIN3852	ISO6162 ❶ ISO9974-1 ❶ ❷	DN32 PN400 DN25 PN400	M18×1.5	M22×1.5	M18×1.5
Max Pressures	MS Bar [PSI]	400 [5800]	30 [440]	1 [10]	30 [440]

EFFICIENCY 效率

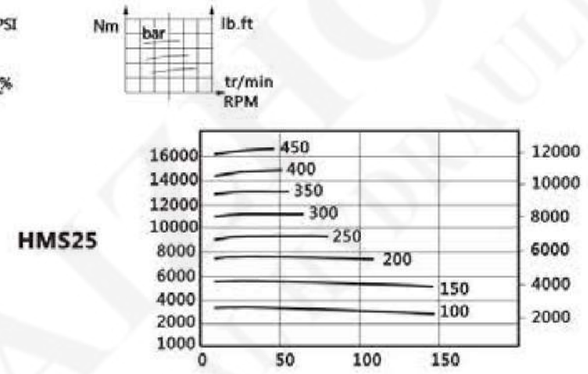
Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50°C [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值。



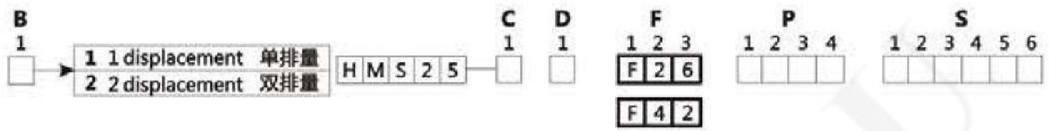
Actual output torque 实际输出扭距



The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

BRAKES 制动器

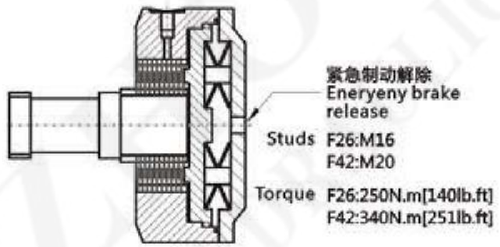


REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	F 2 6	F 4 2
Parking brake torque at 0 bar on housing (New brake) 0 bar 静态驻车制动扭距(新制动器)	26730Nm [19720 lb.ft]	25000Nm [18400 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	17375Nm [12820 lb.ft]	16250Nm [11990 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	20048Nm [14790 lb.ft]	18750Nm [13830 lb.ft]
Min.brake release pressure 最小自动开启压力	10 bar [138 PSI]	12 bar [174 PSI]
Max.brake release pressure 最大自动开启压力	30 bar [435 PSI]	30 bar [435 PSI]
Oil capacity 油量	200cm³ [12.2 cu.in]	400cm³ [24.4 cu.in]
Volume for brake release 制动开启量	120cm³ [7.3 cu.in]	135cm³ [8.2 cu.in]

* After emergency brake has been used
* 指经过紧急制动后参数

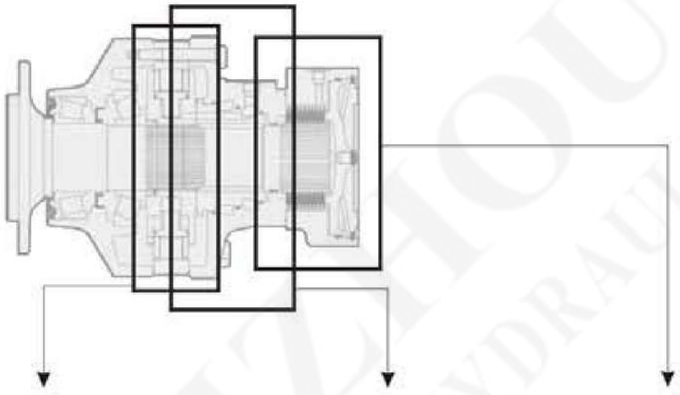
Do not run in multidisc brakes
马达运转前必须先行开启制动器

A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake). For all vehicles capable of speeds over 25 km/hour,please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMS35 系列液压马达
HMS35 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	1
2 displacement 双排量	1 displacement 单排量

C 1

H	M	S	3	5

对称内曲线滚道 **Cams with equal lobes**

		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMS35	7	2439 [148.8]	1220 [74.4]
	9	3143 [191.7]	1572 [95.8]
	0	3494 [213.1]	1747 [106.5]
	2	4198 [256.0]	2099 [128.0]

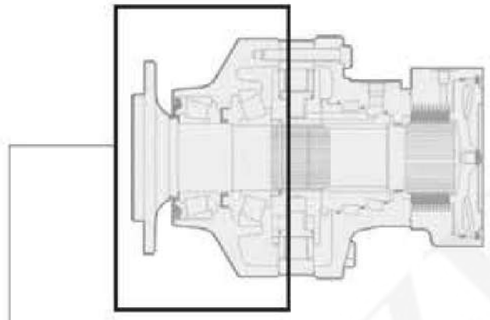
D 1

ISO 6162 flanges 法兰

ISO 9974-1 connections 连接	1
ISO 9974 connections 连接	3
ISO 11926-1 connections 连接	A

F 1 2 3

单排量马达制动器 Without brake				A	1	8
S18	Brake 制动器	Bearing mounting or valving cover mounting 支持式安装或阀盖式安装	Parking brake 制动器	F	1	1
	Without brake(simple plate) 无制动器单排量马达（普通端盖）			R	1	8
S35	Without brake			A	3	5
	Brake 制动器	Bearing mounting or valving cover mounting 支持式安装或阀盖式安装	Parking brake 制动器	F	4	2
	Without brake(simple plate) 无制动器单排量马达（普通端盖）			R	3	5



P 1 2 3 4

Without mounting 不带耳环安排	1
Lug mounting 带耳环安排	2

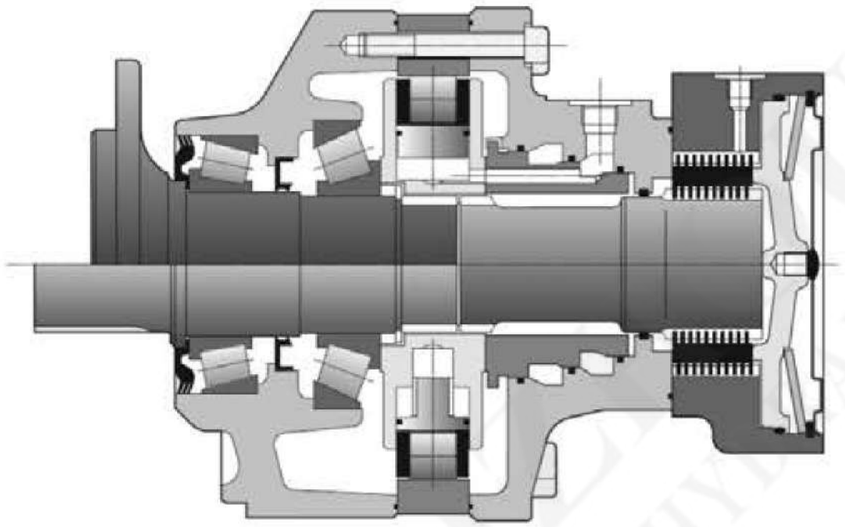
10× ∅ 24 on ∅ 335	1
8× ∅ 22 on ∅ 275	2
For male shaft bearing support 轴输出	A

Without studs 无螺栓	1
With studs+nuts 带螺栓+螺母	2
With studs 带螺栓	3
Male shaft 轴输出	
GB3478.1 splines 花键	5

Without drum brake 无鼓式制动器	0

S 1 2 3 4 5 6

Fluorinated elastomer seals 氟橡胶密封	1
Hollow shaft 空心轴	2
Drain on the bearing support 前盖泄油口	3



马达惯量 =0.5 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMS35 液压马达技术参数

排量分组	7		9		0		1		2	
	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ
排量 Displacement (ml/r)	2439	1220	3143	1572	3494	1747			4198	2099
最大功率 Max Power (kw)	97	65	97	65	97	65			97	65
压差10MPa扭矩 Theoric torque at 10MPa (N.m)	3645	1786	4697	2302	5222	2558			6274	3074
额定扭矩 Rated torque (N.m)	9113		11743		13055				15685	
额定压力 Rated pressure (MPa)	25		25		25				25	
最高压力 Max Pressure (MPa)	40		40		40				35	
额定转速 Rated speed (r/min)	45		45		45				40	
转速范围 Speed range (r/min)	0-100		0-100		0-100				0-95	

1 2 3 4 5 6

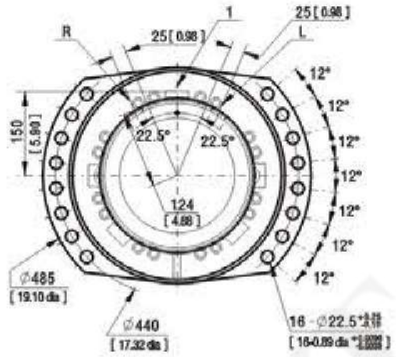
1 1 displacement 单排量
2 2 displacement 双排量

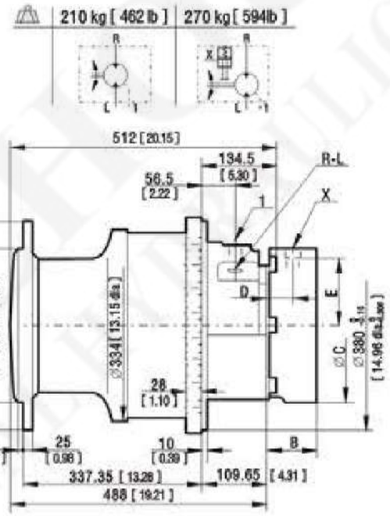
H M S 3 5 — — — — — —

WHEEL MOTOR 轮式马达

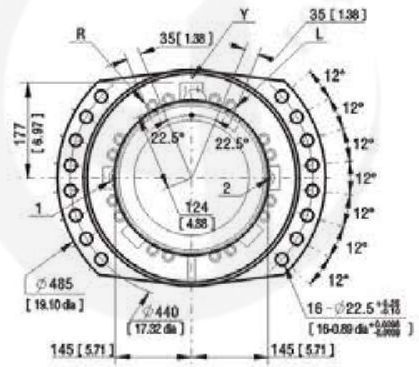
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

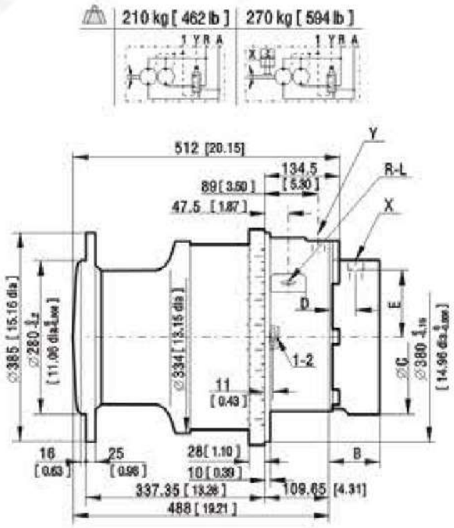
Dimensions for standard(1110) 1-displacement motor
（1110）标准单排量马达尺寸





Dimensions for standard(1110) 2-displacement motor
（1110）标准双排量马达尺寸





C	B	C	D	E
F42	157 [6.18]	Ø375 [14.76 dia.]	82 [3.22]	183.5 [7.22]

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 3 5 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 1 1 0 (P: 1 2 3 4)	⌀280.7 [11.05 dia.]	⌀335 [13.19dia.]	⌀385 [15.16dia.]	338 [13.31]	⌀334 [13.15dia.]	⌀24 [0.94dia.]	10×M20*1.5	24

轮辋式安装

STUDS 螺栓

	Screws	P mm [in]	C min mm [in]	C max mm [in]	D mm [in]		Class 等级	Torque(1) 扭距(1) Nm [ib.ft]	Torque(2) 扭距(2) Nm [ib.ft]
Various Studs 各式螺栓	M16×1.5	50 [1.97]	5 [0.20]		16.5 [0.65]		12.9	300 [221.3]	380 [280.3]
	M20×1.5	60 [2.36]						600 [442.5]	770 [567.9]
	M20×1.5	70 [2.76]							
	M22×1.5	64 [2.52]						695 [512.6]	1050 [774.4]
	M22×1.5	80 [3.15]							
Screws 螺纹	M16×1.5				23 [0.91]		10.9	250 [184.4]	315 [232.3]

(*)The tightening torques are given for the indicated loads.
(*)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮辋：建议轮辋式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）
(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）
(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

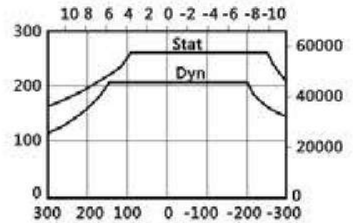
HMS35 系列液压马达
HMS35 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

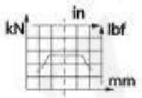
LOAD CURVES 负载曲线

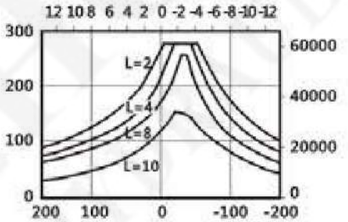
Permissible radial loads 允许径向负载
Test conditions 检测条件
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min[0 RPM] ,code 0 displacement,
动态：0 r/min[0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

Service life of bearings 使用寿命
Test conditions 检测条件
L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

1 1 1 0 (P: 1 2 3 4)

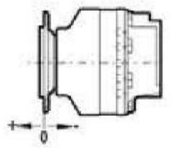






The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

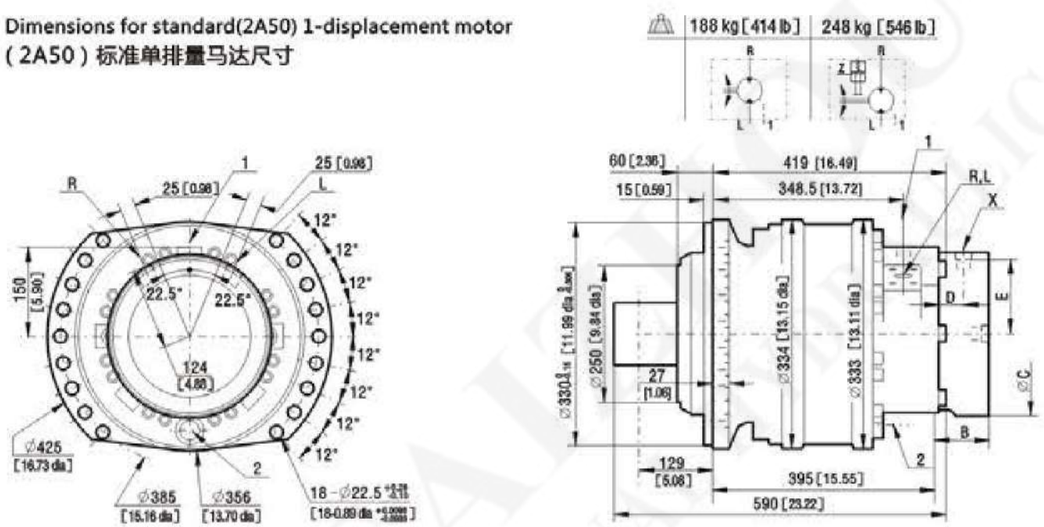
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命与要与规定上参数一致，进一步的精确计算，请联络我司工程师。



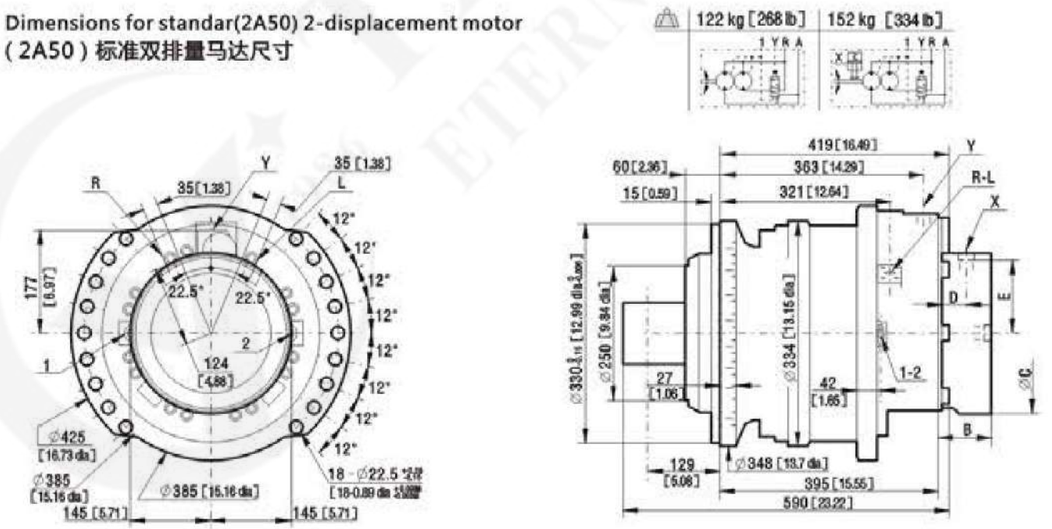
SHAFT MOTOR 轴式马达

The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

Dimensions for standard(2A50) 1-displacement motor
（2A50）标准单排量马达尺寸



Dimensions for standar(2A50) 2-displacement motor
（2A50）标准双排量马达尺寸



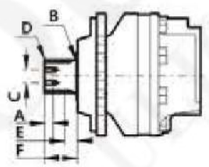
C	B	C	D	E
F42	157 [6.18]	Ø375 [14.76 dia.]	82 [3.22]	183.5 [7.22]

HMS35 系列液压马达
HMS35 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 3 5 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

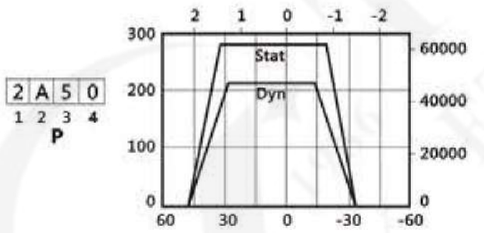
C		A	B	C	D	E	F
2 A 5 0 (1 2 3 4) P	GB3478.1 spline 花键	40 [1.57]	R3 [R0.12]	60 [2.36]	2×M16	28 [1.10]	110 [4.33]
	Module 模数 5						
	Z 22						



LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载
Test conditions 检测条件

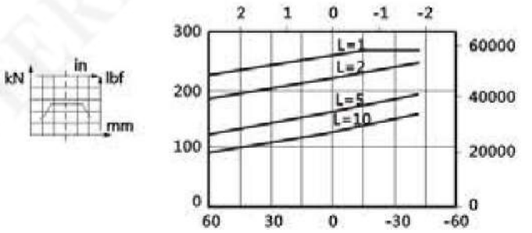
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态 : 0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态 : 0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距



C G
2 A 5 0 129 [5.08]

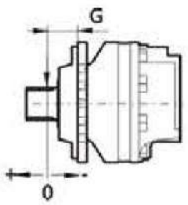
Service life of bearings 使用寿命
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

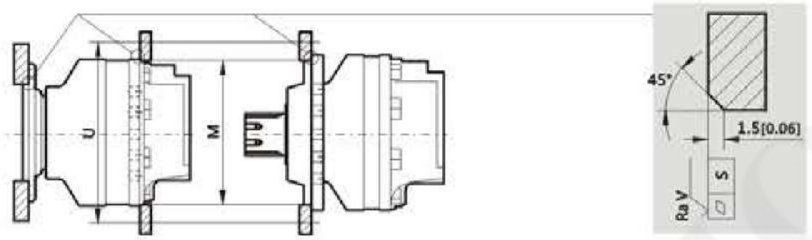


The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



CHASSIS MOUNTING 支架安装



⚠ 安装时注意清洁 Take care over the immediate environment of the connections

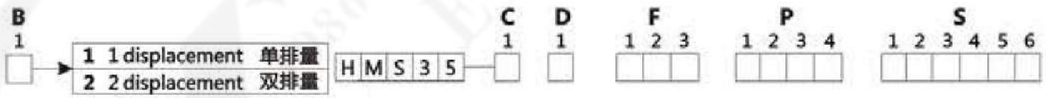
	⌀ M(1)	⌀ U	S	Ra V	Screws 螺纹	Class 等级	Torque 扭距 *
WHEEL MOTOR 轮式马达	380 [14.96]	485 [15.16]	0.2 [0.008]	12.5μm [0.49μin]	2×8 M20×2	8.8	410N.m [302 lb.ft]
SHAFT MOTOR 轴式马达	330 [12.99]	485 [15.16]	0.2 [0.008]	12.5μm [0.49μin]	2×8 M20×2	8.8	410N.m [302 lb.ft]

(1) $^{+0.3\ [+0.012]}_{+0.2\ [+0.008]}$

* : Min.Values for torque and load to be transmitted

* : 指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接



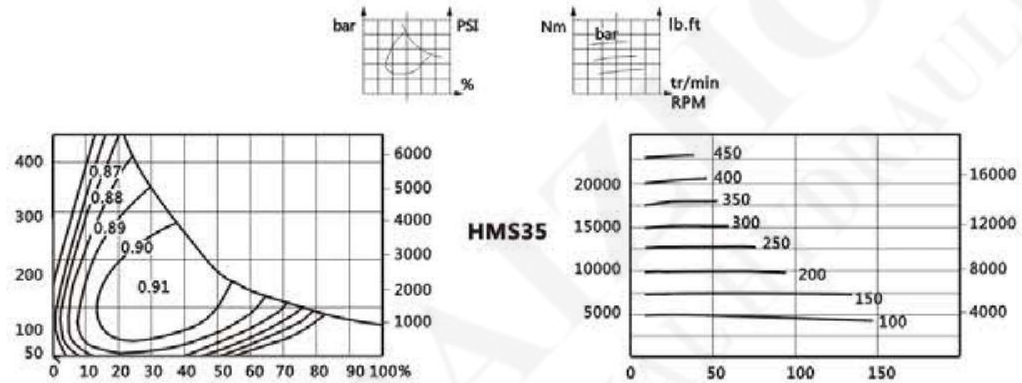
Old Standards 旧标准	Standards 新标准	进出油口 Power supply R-L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1, 2	制动器控制油口 Control of Parking break X
A SAEJ514	ISO11926-1	1 1/16"-12UNF	3/4"-16UNF	7/8"-14UNF	9/16"-18UNF 3/4"-16UNF
1 ISO6162 DIN3852	ISO6162 S18 ISO9974-1 S35 2C	DN19 PN400 DN25 PN400	M16×1.5 M18×1.5	M22×1.5	M16×1.5
2 NFE48050	ISO9974-1	M27×2	M16×1.5 M22×1.5	M22×1.5	M16×1.5
Max Pressures	MS Bar [PSI]	400 [5800] 350 [5070]	30 [440]	1 [10]	30 [440]

EFFICIENCY 效率

Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50°C [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值.



Actual output torque 实际输出扭距

⚠ The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

BRAKES 制动器

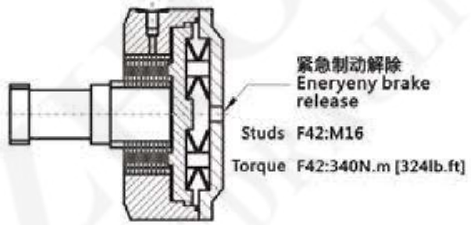
B		C	D	F	P	S
1	1 1 displacement 单排量 2 2 displacement 双排量	1	1	1 2 3	1 2 3 4	1 2 3 4 5 6
	HMS35			F42		

REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	F42
Parking brake torque at 0 bar on housing (New brake) 0 bar 静态驻车制动扭距(新制动器)	25000Nm [18400 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	16250Nm [11990 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	18750Nm [13830 lb.ft]
Min.brake release pressure 最小自动开启压力	12 bar [174 PSI]
Max.brake release pressure 最大自动开启压力	30 bar [435 PSI]
Oil capacity 油量	400cm³ [24.4 cu.in]
Volume for brake release 制动开启量	135cm³ [8.2 cu.in]

* After emergency brake has been used
* 指经过紧急制动后参数

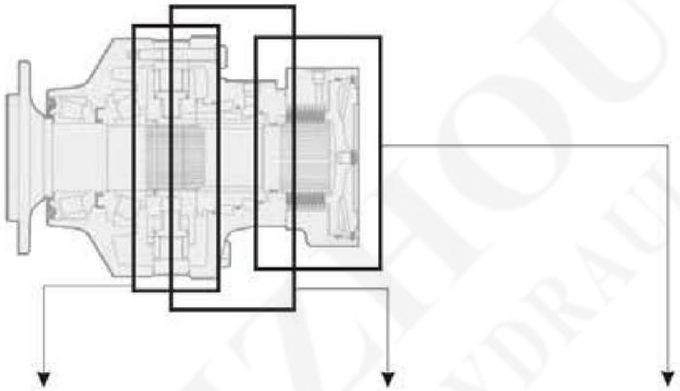
Do not run in multidisc brakes
马达运转前必须先行开启制动器

A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake), For all vehicles capable of speeds over 25 km/hour,please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMS50 系列液压马达
HMS50 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	1
2 displacement 双排量	1 displacement 单排量

C 1

H	M	S	5	0

对称内曲线滚道 **Cams with equal lobes**

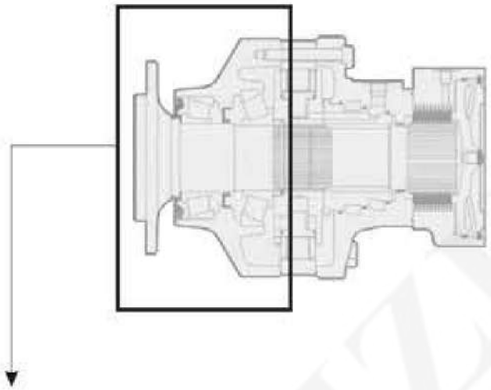
		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMS50	7	3500 [213.5]	1750 [106.7]
	8	4008 [244.4]	2004 [122.2]
	0	4997 [304.8]	2499 [152.4]
	2	6011 [366.6]	3006 [183.3]

D 1

ISO 6162 DN25 SAE flanges 法兰 ISO 9974-1 metric connections 连接	1
ISO 6162 DN32 SAE flanges 连接 ISO 9974-1 metric connections 连接	6

F 1 2 3

Without brake(simple plate) 无制动器（普通端盖）	A	5	1
Brake 制动器	F	4	2
	F	5	0
Without brake(reinforced plate) 无制动器（加强端盖）	R	8	0



P 1 2 3 4

Without mounting 不带耳环安排	1
Lug mounting 带耳环安排	2

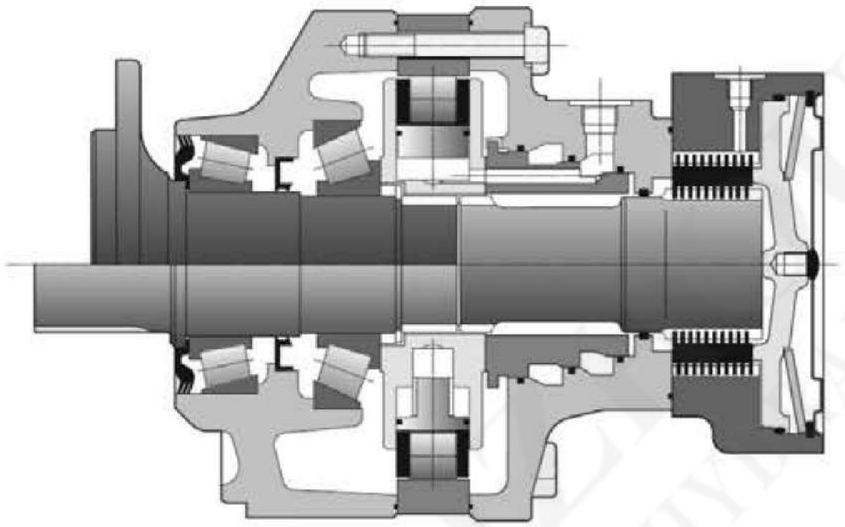
12× ∅ 26 on ∅425	1
10× ∅ 24 on ∅335	2
For male shaft bearing support 轴输出	A

Without studs 无螺栓	1
With studs+nuts 带螺栓+螺母	2
With studs 带螺栓	3
Male shaft 轴输出	
GB3478.1 splines 花键	5

Without drum brake 无鼓式制动器	0

S 1 2 3 4 5 6

Fluorinated elastomer seals 氟橡胶密封	1
Hollow shaft 空心轴	2
Drain on the bearing support 前盖泄油口	3



马达惯量 =1 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMS50 液压马达技术参数

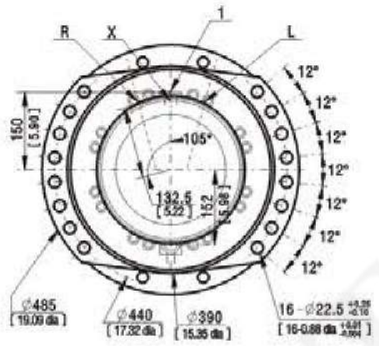
排量分组	7		8		0		1		2	
	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ
排量 Displacement (ml/r)	3500	1750	4008	2004	4996	1747			6012	3006
最大功率 Max Power (kw)	123	82	123	82	123	65			123	82
压差10MPa扭矩 Theoric torque at 10MPa (N.m)	5231	2562	5990	2935	7467	2558			8985	4402
额定扭矩 Rated torque (N.m)	13077		14975		18667				22463	
额定压力 Rated pressure (MPa)	25		25		25				25	
最高压力 Max Pressure (MPa)	40		40		40				35	
额定转速 Rated speed (r/min)	40		40		40				35	
转速范围 Speed range (r/min)	0-100		0-100		0-100				0-90	

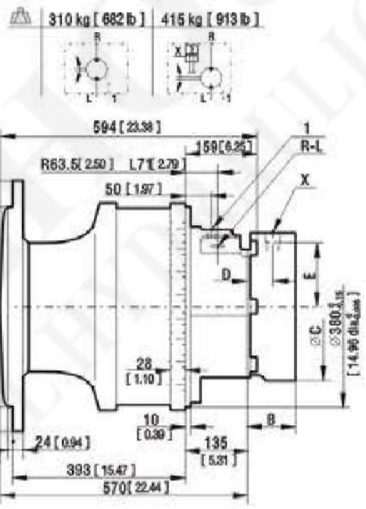
1 | 1 1 displacement 单排量 / 2 2 displacement 双排量 | H M S 5 0 | 1 | 1 | 1 2 3 | 1 2 3 4 | 1 2 3 4 5 6

WHEEL MOTOR 轮式马达

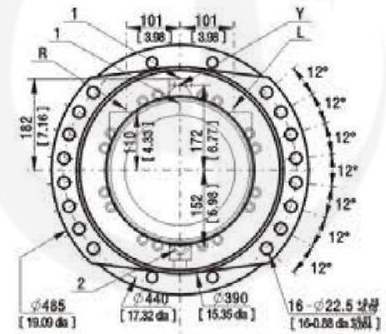
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

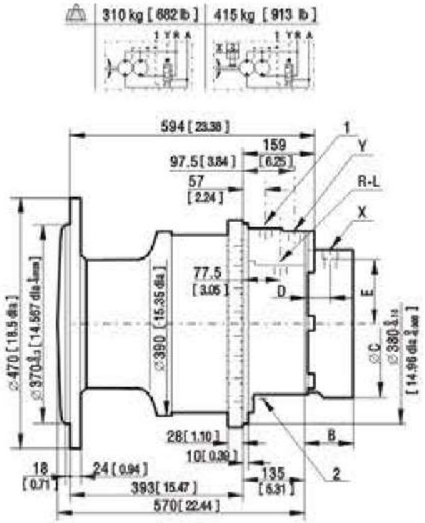
Dimensions for standard(1110) 1-displacement motor
（1110）标准单排量马达尺寸





Dimensions for standard(1110) 2-displacement motor
（1110）标准双排量马达尺寸





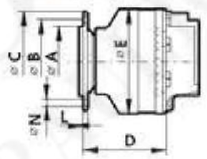
C	B	C	D	E
F42	157 [6.18]	Ø375 [14.76 dia.]	82 [3.22]	183.5 [7.22]
F50	200 [7.87]	Ø375 [14.76 dia.]	63.5 [2.50]	183.5 [7.22]

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 5 0 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 1 1 0 (P 1 2 3 4)	⌀370 [14.57dia]	⌀425 [16.73]	⌀472 [18.58dia.]	393 [15.47]	⌀390 [15.35dia.]	⌀26 [1.02dia]	12×M24×2	24 [0.94]

轮辋式安装



STUDS 螺栓

	Screws	P mm [in]	C min mm [in]	C max mm [in]	D mm [in]		Class 等级	Torque(1) 扭距(1) Nm [ib.ft]	Torque(2) 扭距(2) Nm [ib.ft]
Various Studs 各式螺栓	M22×1.5	80 [3.15]	5 [0.20]	36 [1.42]	26 [1.02]		12.9	695 [512.6]	1050 [774.4]
	M24×2	95 [3.74]		38 [1.50]	30 [1.18]			910 [671.2]	1150 [848.2]
Screws 螺纹	M20						12.9	600 [442.5]	770 [567.9]

(*)The tightening torques are given for the indicated loads.
(*)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮辋：建议轮辋式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）
(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）
(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

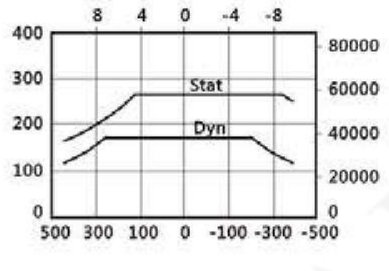
HMS50 系列液压马达
HMS50 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

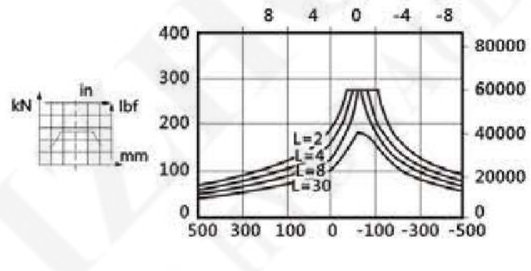
LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载
Test conditions 检测条件
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

Service life of bearings 使用寿命
Test conditions 检测条件
L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

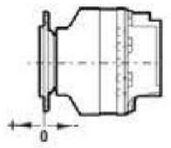
1 1 1 0 (P 1 2 3 4)





The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

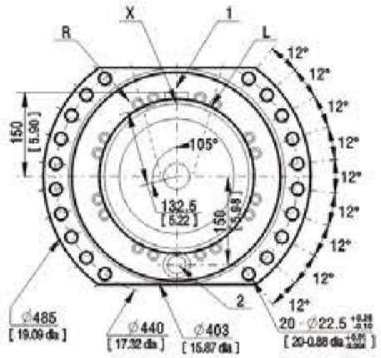
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命与要与规定上参数一致，进一步的精确计算，请联络我司工程师。

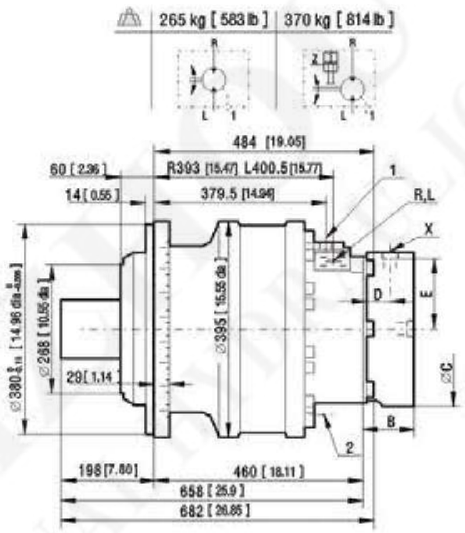


SHAFT MOTOR 轴式马达

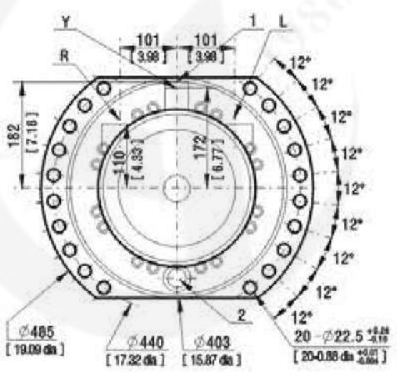
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

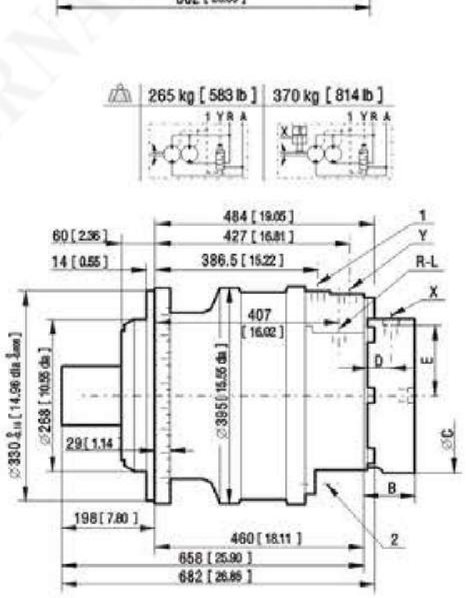
Dimensions for standard(2A50) 1-displacement motor
（2A50）标准单排量马达尺寸





Dimensions for standard(2A50) 2-displacement motor
（2A50）标准双排量马达尺寸





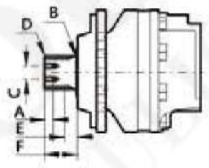
C	B	C	D	E
F42	157 [6.18]	Ø375 [14.76 dia.]	82 [3.22]	183.5 [7.22]
F50	200 [7.87]	Ø375 [14.76 dia.]	63.5 [2.50]	183.5 [7.22]

HMS50 系列液压马达
HMS50 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — HMS50 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C		A	B	C	D	E	F
2A50 (1 2 3 4) P	GB3478.1 spline 花键	40 [1.57]	R4 [R0.16]	60 [2.36]	2×M16	32 [1.26]	136 [5.35]
	Module 模数 5						
	Z 24						



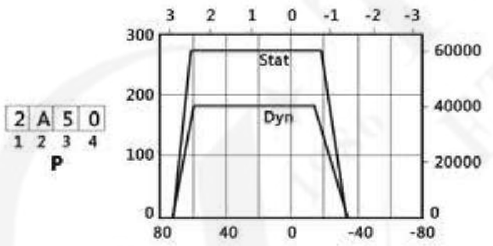
LOAD CURVES 负载曲线

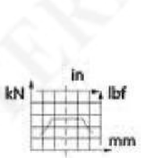
Permissible radial loads 允许径向负载
Test conditions 检测条件

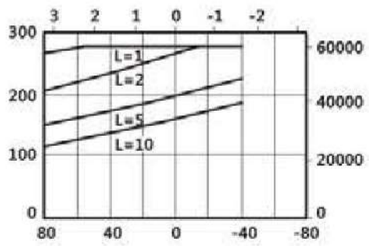
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

Service life of bearings 使用寿命
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure),with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次



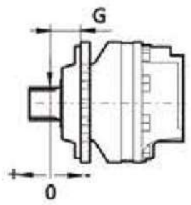




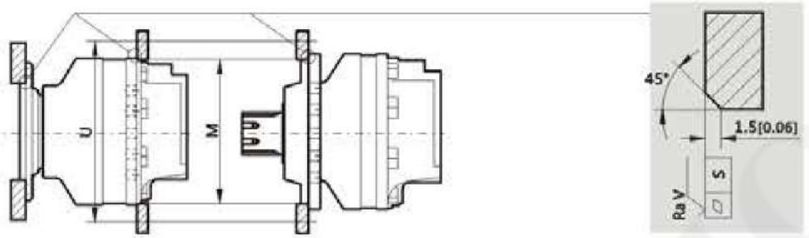
C G
2 A 5 0 144 [5.67]

The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



CHASSIS MOUNTING 支架安装



安装时注意清洁 Take care over the immediate environment of the connections

	⌀ M(1)	⌀ U	S	Ra V	Screws 螺纹	Class 等级	Torque 扭距 *
WHEEL MOTOR 轮式马达	380 [14.96]	440 [17.32]	0.2 [0.008]	12.5μm [0.49μin]	2×8 M20×2	8.8	410N.m [302 lb.ft]
SHAFT MOTOR 轴式马达	380 [14.96]	485 [19.09]	0.2 [0.008]	12.5μm [0.49μin]	12 M20×2	8.8	410N.m [302 lb.ft]

(1) $^{+0.3\ [+0.012]}_{+0.2\ [+0.008]}$

*：Min.Values for torque and load to be transmitted

*：指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 5 0 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

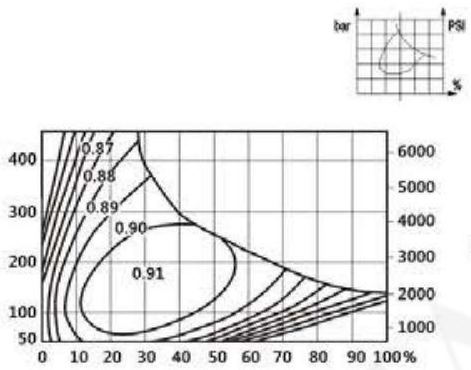
Old Standards 旧标准	Standards 新标准	进出油口 Power supply R-L A1	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1, 2	制动器控制油口 Control of Parking break X
1 ISO6162 DIN3852	ISO6162 ISO9974-1	DN25 PN400	M20×1.5 M18×1.5	M27×2 M22×1.5	M18×1.5
2 ISO6162 NFE45050	ISO6162 ISO9974-1	DN32 PN400	M18×1.5	M22×1.5	M18×1.5
Max Pressures MS	bar [PSI]	400 [5800]	30 [440]	1 [10]	30 [440]

EFFICIENCY 效率

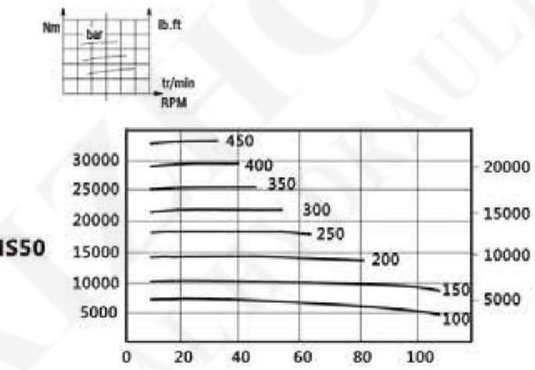
Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50°C [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值.



Actual output torque 实际输出扭距



The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

BRAKES 制动器

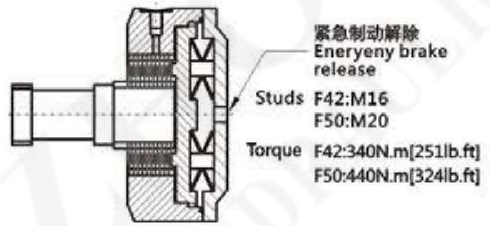
B		C	D	F	P	S
1	1 1 displacement 单排量 2 2 displacement 双排量	1	1	1 2 3	1 2 3 4	1 2 3 4 5 6
	H M S 5 0			F 4 2		

REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	F 4 2	F 5 0
Parking brake torque at 0 bar on housing (New brake) 0 bar 静态驻车制动扭距(新制动器)	25000Nm [18400 lb.ft]	30000Nm [22130 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	16250Nm [11990 lb.ft]	19500Nm [14380 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	18750Nm [13830 lb.ft]	22500Nm [16600 lb.ft]
Min.brake release pressure 最小自动开启压力	12 bar [174 PSI]	12 bar [174 PSI]
Max.brake release pressure 最大自动开启压力	30 bar [435 PSI]	30 bar [435 PSI]
Oil capacity 油量	400cm³ [24.4 cu.in]	450cm³ [27.5 cu.in]
Volume for brake release 制动开启量	135cm³ [8.2 cu.in]	135cm³ [8.2 cu.in]

*. After emergency brake has been used
*. 指经过紧急制动后参数

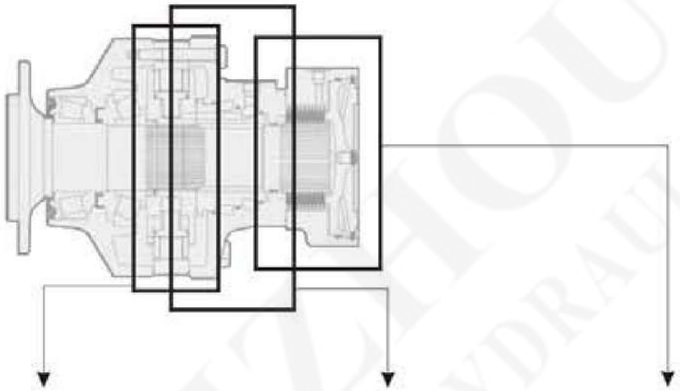
Do not run in multidisc brakes
马达运转前必须先行开启制动器

A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake), For all vehicles capable of speeds over 25 km/hour,please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMS83 系列液压马达
HMS83 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	2 displacement 双排量
1	1 displacement 单排量

C 1

H	M	S	8	3

对称内曲线滚道 **Cams with equal lobes**

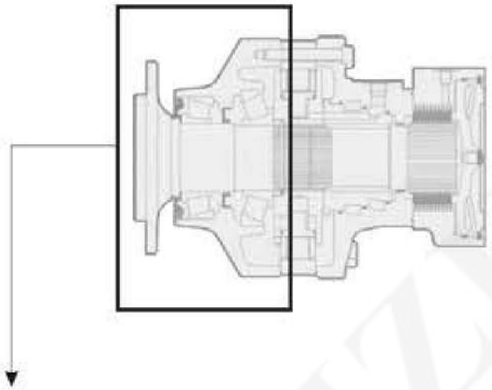
		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMS83	8	6679 [407.4]	3340 [203.7]
	0	8328 [507.9]	4164 [254.0]
	2	10019 [611.1]	5010 [305.5]

D 1

ISO 6162 Flanges DN32 法兰 ISO 6149-1 connections 连接	1
ISO 6162 Flanges DN25 法兰 ISO 6149-1 connections 连接	6

F 1 2 3

Without brake(simple plate) 无制动器（普通端盖）	A	8	3
Brake 制动器	F	4	2
	F	5	0
	F	8	3
	R	8	3
Without brake(reinforced plate) 无制动器（加强端盖）			



P 1 2 3 4

Without mounting 不带耳环安排	1
Flange close to shaft 轴端侧法兰	3
Flange close to cam 后盖侧法兰	4

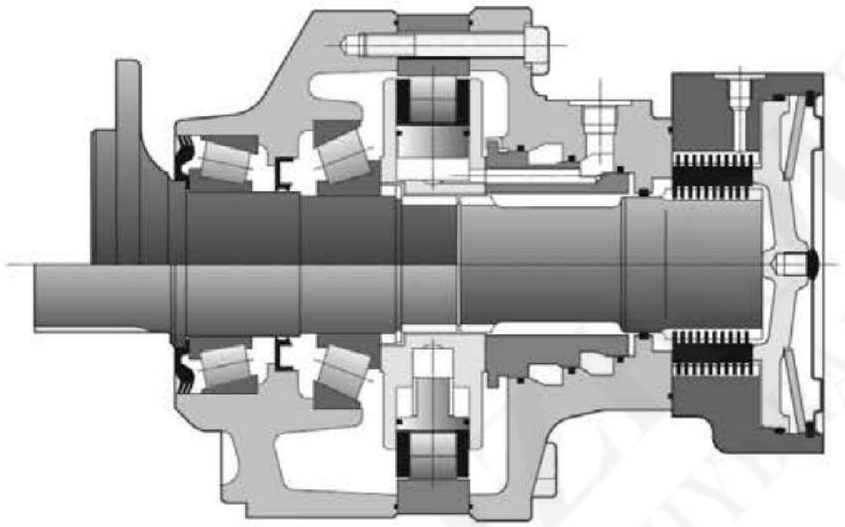
24× ∅ 26 on ∅425	2
24× ∅ 26 on ∅425	3
For male shaft bearing support 轴输出	A

Without studs 无螺栓	1
With studs+nuts 带螺栓+螺母	2
With studs 带螺栓	3
Male shaft 轴输出	
GB3478.1 splines 花键	5

Without drum brake 无鼓式制动器	0

S 1 2 3 4 5 6

Fluorinated elastomer seals 氟橡胶密封	1
Hollow shaft 空心轴	2
Drain on the bearing support 前盖泄油口	3



马达惯量 =1.5 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMS83 液压马达技术参数

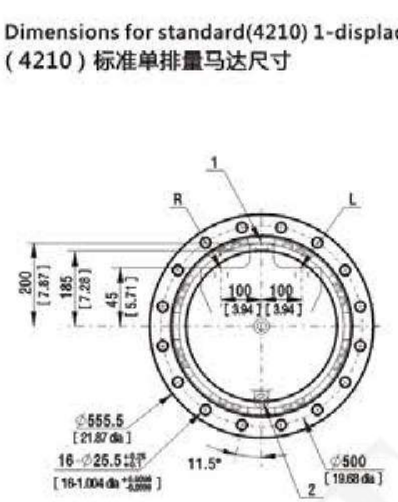
排量分组	8		9		0		1		2	
	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ
排量 Displacement (ml/r)	6679	3339			8328	4164			10019	5009
最大功率 Max Power (kw)	176	120			176	120			176	120
压差10MPa扭矩 Theoric torque at 10MPa (N.m)	9982	4890			12439	6099			14974	7336
额定扭矩 Rated torque (N.m)	24956				31098				37436	
额定压力 Rated pressure (MPa)	25				25				25	
最高压力 Max Pressure (MPa)	40				40				35	
额定转速 Rated speed (r/min)	35				35				32	
转速范围 Speed range (r/min)	0-80				0-80				0-75	

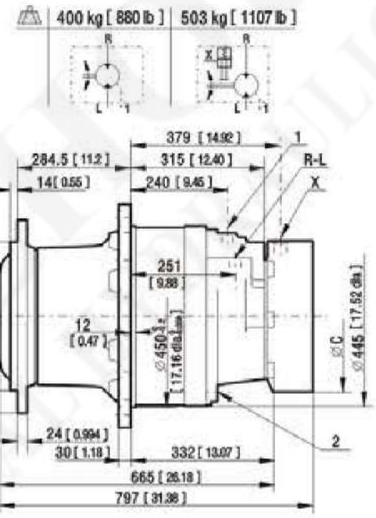
1 | 1 1 displacement 单排量 / 2 2 displacement 双排量 | H M S 3 8 | 1 | 1 | 1 2 3 | 1 2 3 4 | 1 2 3 4 5 6

WHEEL MOTOR 轮式马达

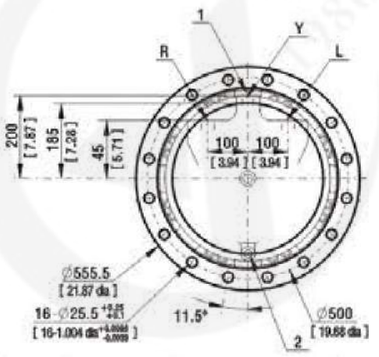
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

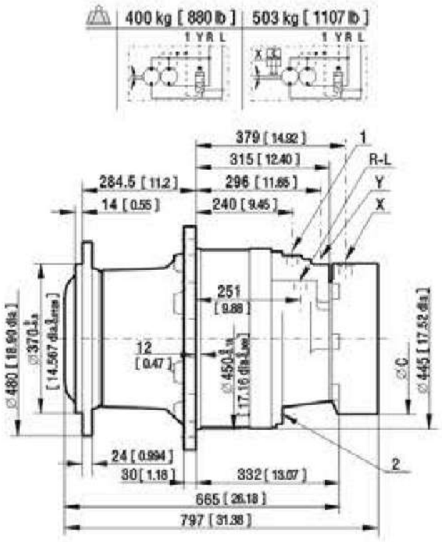
Dimensions for standard(4210) 1-displacement motor
（4210）标准单排量马达尺寸





Dimensions for standard(4210) 2-displacement motor
（4210）标准双排量马达尺寸





C	B	C	D	E
F42	157 [6.18]	∅375 [14.76 dia.]	62 [3.22]	183.5 [7.22]
F50	200 [7.87]	∅375 [14.76 dia.]	63.5 [2.50]	183.5 [7.22]
F83	200 [7.87]	∅375 [14.76 dia.]	63.5 [2.50]	183.5 [7.22]

SUPPORT TYPES 前盖类型

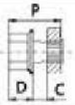
B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量 — HMS38 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

轮辋式安装

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
4 2 1 0 (P 1 2 3 4)	∅370 [14.57dia.]	∅425 [16.73dia.]	∅470 [18.50dia.]	284 [11.18]	∅445 [17.52dia.]	∅26 [1.02 dia.]	24×M24×2	24 [0.94]

C	A mm	B mm	C mm	D mm	E mm	F mm	N mm	轮辋安装 Wheel rim mounting	L mm
1 3 1 0 (P 1 2 3 4)	∅370 [14.57dia.]	∅425 [16.73dia.]	∅470 [18.50dia.]	404 [15.91]	∅445 [17.52 dia.]	∅465 [18.31 dia.]	∅26 [1.02 dia.]	24×M24×2	24 [0.94]

STUDS 螺栓

	Screws	P mm [in]	C min mm [in]	C max mm [in]	D mm [in]		Class 等级	Torque(1) 扭距(1) Nm [ib.ft]	Torque(2) 扭距(2) Nm [ib.ft]
Various Studs 各式螺栓	M24×2	95 [3.74]	5 [0.20]	39 [1.54]	30 [1.18]		12.9	910 [671.2]	1150 [848.2]
Screws 螺纹	M24×2						12.9	910 [671.2]	1150 [848.2]

(*)The tightening torques are given for the indicated loads.
(*)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮辋：建议轮辋式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）
(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）
(2)标准：建议在其它情况安装时预紧扭距(Re steel flange>360N//mm² [>52215 PSI])

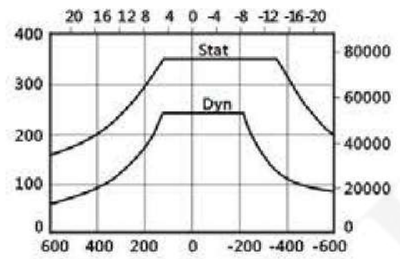
HMS83 系列液压马达
HMS83 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

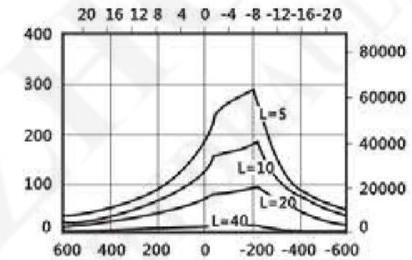
LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载
Test conditions 检测条件
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

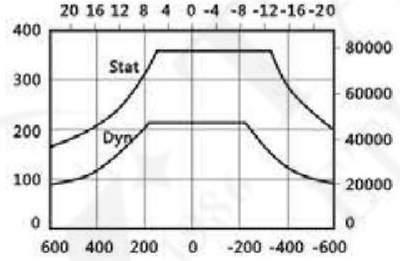
Service life of bearings 使用寿命
Test conditions 检测条件
L : Millions B10 revolutions at 150bar (average Pressure), with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

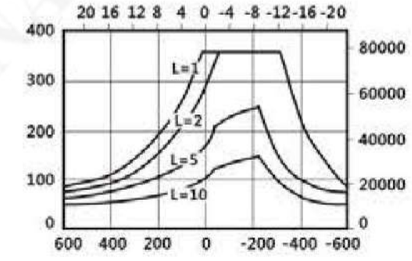
1 3 1 0 (P 1 2 3 4)





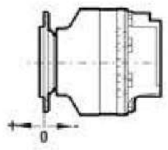
4 2 1 0 (P 1 2 3 4)





The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

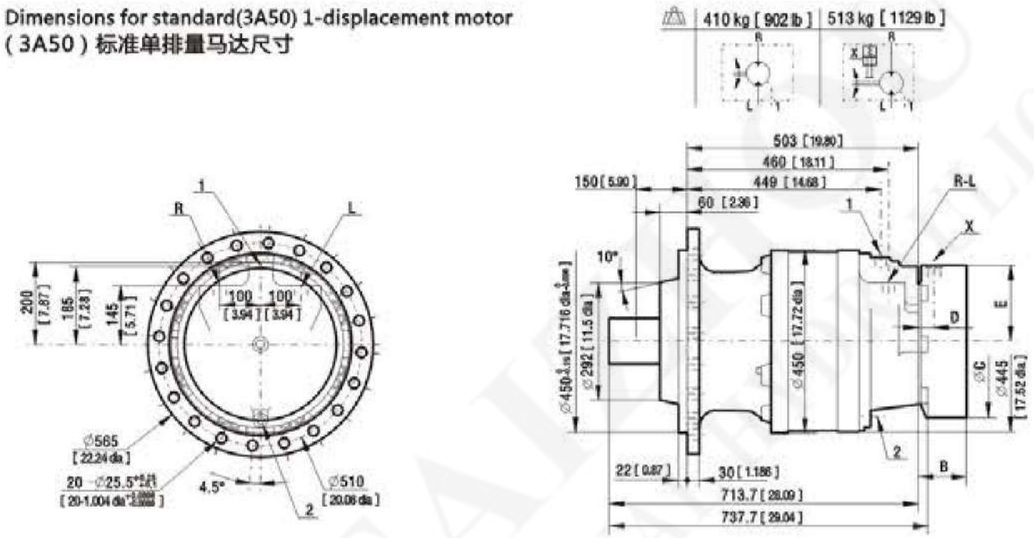
零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命与要与规定上参数一致，进一步的精确计算，请联络我司工程师。



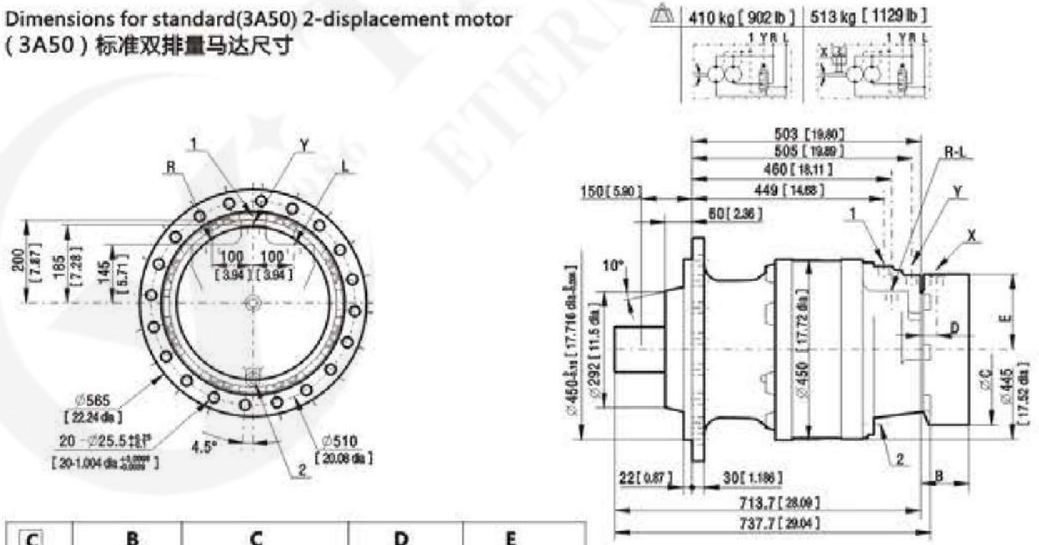
SHAFT MOTOR 轴式马达

The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

Dimensions for standard(3A50) 1-displacement motor
（3A50）标准单排量马达尺寸



Dimensions for standard(3A50) 2-displacement motor
（3A50）标准双排量马达尺寸



C	B	C	D	E
F42	157 [6.18]	⌀375 [14.76 dia.]	62 [3.22]	183.5 [7.22]
F50	200 [7.87]	⌀375 [14.76 dia.]	63.5 [2.50]	183.5 [7.22]
F83	200 [7.87]	⌀375 [14.76 dia.]	63.5 [2.50]	183.5 [7.22]

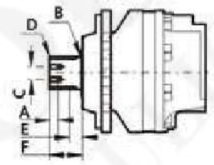
HMS83 系列液压马达
HMS83 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量

M S 8 3 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C		A	B	C	D	E	F
3 A 5 0 (1 2 3 4 P)	GB3478.1 spline	40 [1.57]	R4 [R0.16]	60 [2.36]	2×M16	32 [1.26]	150 [5.91]
	Module 模数 5						
	Z 28						



LOAD CURVES 负载曲线

Permissible radial loads 允许径向负载
Test conditions 检测条件

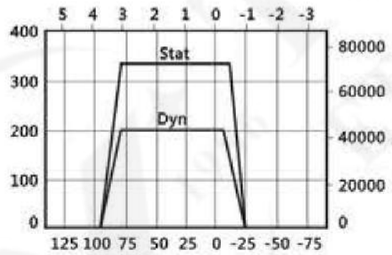
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]

Dynamic : 0 r/min [0 RPM] ,code 0 displacement, without axial load at max.torque
动态：0 r/min [0 RPM] 0组排量，无轴向力最大扭距

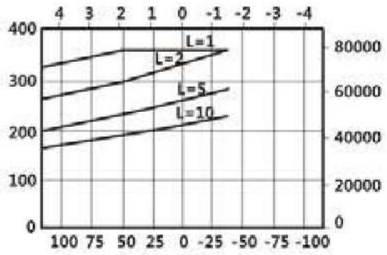
Service life of bearings 使用寿命
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure), with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

3 A 5 0 (1 2 3 4 P)



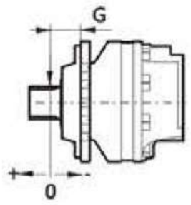
kN in lbf mm



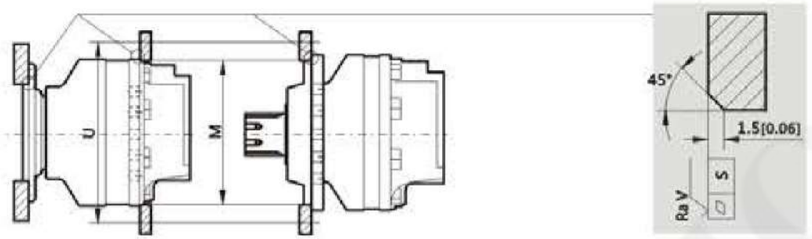
C G
3 A 5 0 144.7 [5.67]

The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load/Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.

零部件的使用寿命受压力影响，必须确认所受合力（轴向负载/径向负载）是否在零部件负载力范围内，并且这些零部件的实际使用寿命要与规定参数一致，进一步的精确计算，请联络我公司研发部。



CHASSIS MOUNTING 支架安装



安装时注意清洁 Take care over the immediate environment of the connections

	∅ M(1)	∅ U	S	Ra V	Screws 螺纹	Class 等级	Torque 扭距 *
WHEEL MOTOR 轮式马达	450 [17.72]	565 [22.24]	0.2 [0.008]	12.5μm [0.49μin]	16×M24	12.9	1200N.m [885.1 lb.ft]
SHAFT MOTOR 轴式马达					20×M24		

(1) $^{+0.3\ [+0.012]}_{+0.2\ [+0.008]}$

*：Min.Values for torque and load to be transmitted

*：指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接

B 1
- 1 1 displacement 单排量
- 2 2 displacement 双排量

H M S 3 8 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

Old Standards 旧标准	Standards 新标准	进出油口 Power supply R-L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1, 2	制动器控制油口 Control of Parking break X
1 ISO6162 DIN3852	ISO6162 ISO9974-1	DN25 PN400	M20×1.5 M18×1.5	M27×2 M22×1.5	M18×1.5
2 ISO6162 NFE45050	ISO6162 ISO9974-1	DN32 PN400	M18×1.5	M22×1.5	M18×1.5
Max Pressures MS	bar [PSI]	400 [5800]	30 [440]	1 [10]	30 [440]

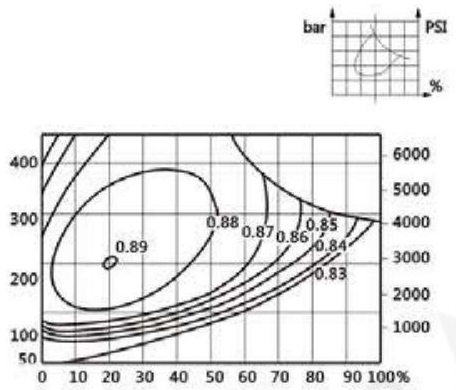
HMS83 系列液压马达
HMS83 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

EFFICIENCY 效率

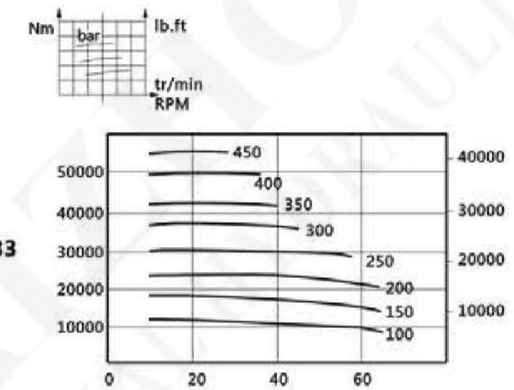
Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50°C [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值.



Actual output torque 实际输出扭距



The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的75%计算，若需进行精确的计算，请与我公司研发部联络。

BRAKES 制动器

B		C	D	F	P	S
1	1 1 displacement 单排量 2 2 displacement 双排量	1	1	1 2 3	1 2 3 4	1 2 3 4 5 6

H M S 8 3

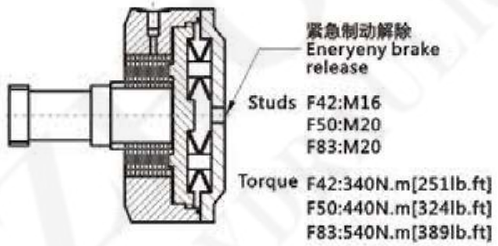
F 4 2
F 5 0
F 8 3

REAR BRAKE 后制式制动器

Brake Principle 制动器工作原理

This is a multidise brake which is activated by a lack of pressure. The spring exerts a force on the piston, which resses on the fixed mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

常闭式油压开启多片式制动器，弹簧作用于活塞，使动摩擦片与静摩擦片产生阻力而制动。



C	F 4 2	F 5 0	F 8 3
Parking brake torque at 0 bars on housing (New brake) 0 bars 静态驻车制动扭距(新制动器)	25000Nm [18400 lb.ft]	30000Nm [22130 lb.ft]	42000Nm [30980 lb.ft]
Dynamic emergency braking torque at 0 bar on housing (Max.10 uses of emergency brakes) 动态紧急制动扭距(最多使用10次紧急制动)	16250Nm [11990 lb.ft]	19500Nm [14380 lb.ft]	27300Nm [20140 lb.ft]
Residual parking braking at 0 bar on housing * 0 bar 下常规制动扭距	18750Nm [13830 lb.ft]	22500Nm [16600 lb.ft]	31500Nm [23230 lb.ft]
Min.brake release pressure 最小自动开启压力	12 bar [174 PSI]	12 bar [174 PSI]	12 bar [174 PSI]
Max.brake release pressure 最大自动开启压力	30 bar [435 PSI]	30 bar [435 PSI]	30 bar [435 PSI]
Oil capacity 油量	400cm³ [24.4 cu.in]	450cm³ [27.5 cu.in]	450cm³ [27.5 cu.in]
Volume for brake release 制动开启量	135cm³ [8.2 cu.in]	135cm³ [8.2 cu.in]	135cm³ [8.2 cu.in]

* After emergency brake has been used
* 指经过紧急制动后参数

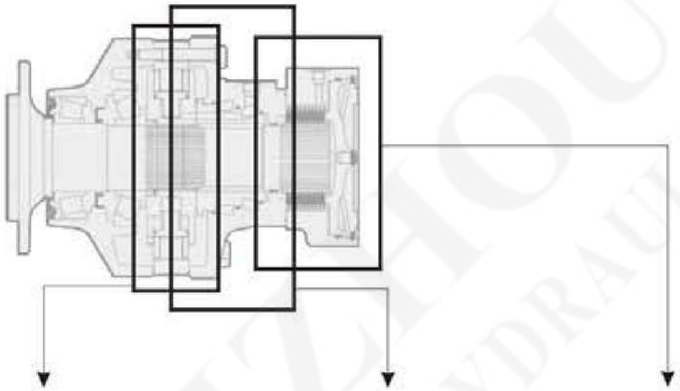
Do not run in multidisc brakes
马达运转前必须先行开启制动器

A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake), For all vehicles capable of speeds over 25 km/hour,please contact

每当驻车制动器作为辅助制动（或者紧急制动）使用时，都要对驻车制动器进行功能的检查，对于速度超出25km/小时车速时所有车辆，请联络我公司工程师。

HMS125 系列液压马达
HMS125 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

MOTOR NUMBER 马达编号



B 1

2	1
2 displacement 双排量	1 displacement 单排量

C 1

H	M	S	1	2	5

对称内曲线滚道 Cams with equal lobes

		ml/r[cu.in/rev.]	ml/r[cu.in/rev.]
HMS125	8	10000 [609.9]	5000 [305.0]
	0	12500 [762.4]	6250 [381.2]
	2	15000 [914.9]	7500 [457.4]

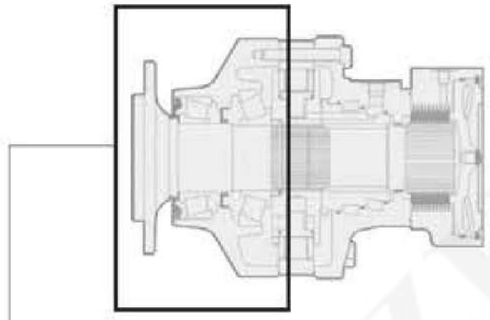
D 1

ISO 6162 Flanges DN32 法兰 ISO 6149-1 connections 连接	1
ISO 6162 Flanges DN25 法兰 ISO 6149-1 connections 连接	6

F 1 2 3

Without brake(simple plate) 无制动器（普通端盖）	A	8	3
	F	5	0
Brake 制动器	F	8	3
	R	8	3

Without brake(reinforced plate)
无制动器（加强端盖）



P 1 2 3 4

Without mounting 不带耳环安排 1
Flange close to shaft 轴端侧法兰 3
Flange close to cam 后盖侧法兰 4

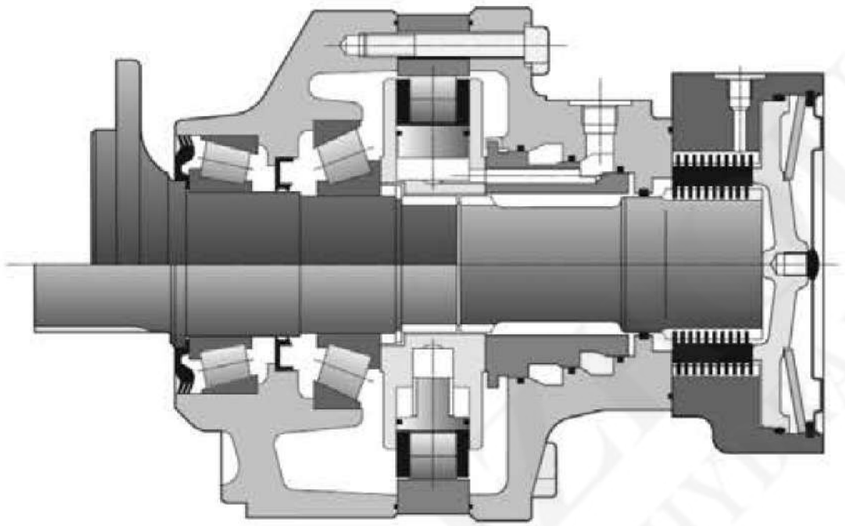
24× ∅ 26 on ∅425 2
24× ∅ 26 on ∅425 3
For male shaft bearing support 轴输出 A

Without studs 无螺栓 1
With studs+nuts 带螺栓+螺母 2
With studs 带螺栓 3
Male shaft 轴输出
GB3478.1 splines 花键 5

Without drum brake 无鼓式制动器 0

S 1 2 3 4 5 6

Fluorinated elastomer seals 氟橡胶密封 1
Hollow shaft 空心轴 2
Drain on the bearing support 前盖泄油口 3



马达惯量 =1.5 kg.m²
噪音辐射 =60 dB(A)

MOTOR PERFORMANCE HMS125 液压马达技术参数

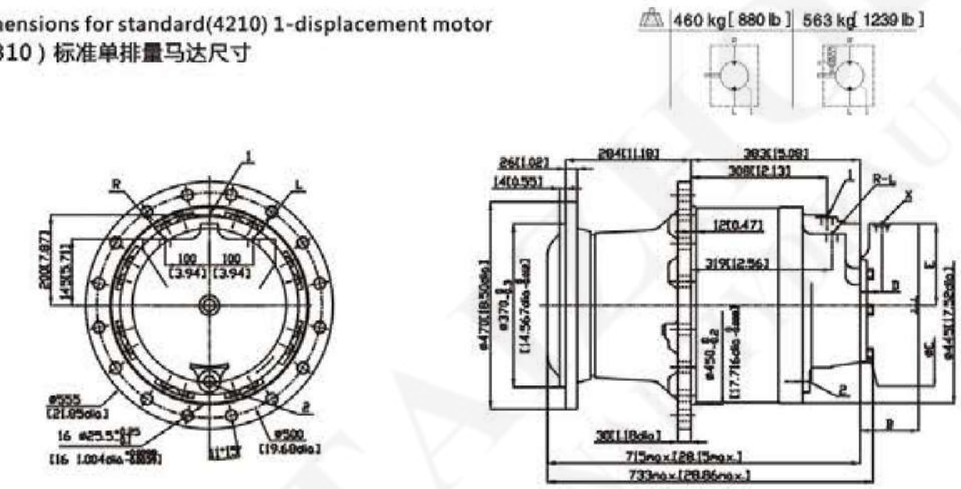
排量分组	8		9		0		1		2	
	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ	全排量 Full displ	半排量 Half displ
排量 Displacement (ml/r)	10000	5000			12500	6250			15000	7500
最大功率 Max Power (kw)	240	160			240	160			240	160
压差10MPa扭矩 Theoric torque at 10MPa (N.m)	15900	7794			19875	9743			23850	11691
额定扭矩 Rated torque (N.m)	37365				46706				56048	
额定压力 Rated pressure (MPa)	25				25				25	
最高压力 Max Pressure (MPa)	40				33				27	
额定转速 Rated speed (r/min)	30				30				28	
转速范围 Speed range (r/min)	0-50				0-40				0-30	

1 → 1 1 displacement 单排量 / 2 2 displacement 双排量 — H M S 1 2 5 — 1 — 1 — 1 2 3 — 1 2 3 4 — 1 2 3 4 5 6

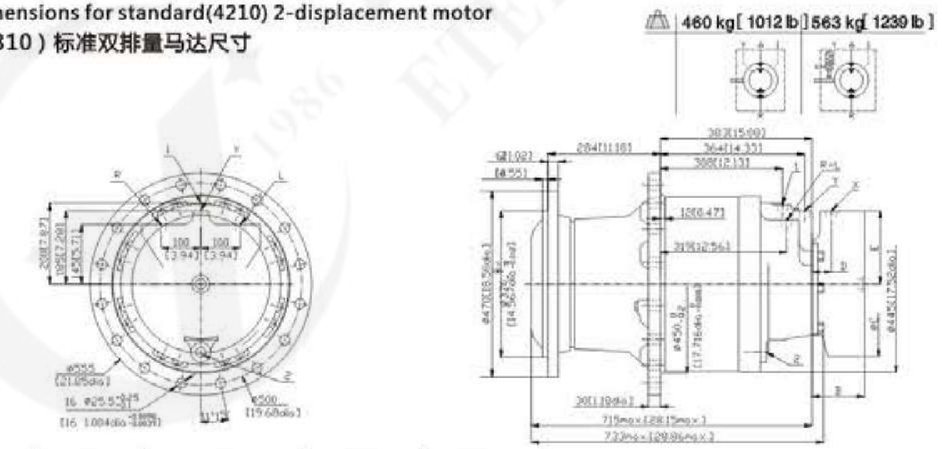
WHEEL MOTOR 轮式马达

The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

Dimensions for standard(4210) 1-displacement motor
（4310）标准单排量马达尺寸



Dimensions for standard(4210) 2-displacement motor
（4310）标准双排量马达尺寸



C	B	C	D	E
F50	152 [5.98]	ø375 [14.76 dia.]	63.5 [2.50]	183.5 [7.22]
F83	152 [5.98]	ø375 [14.76 dia.]	63.5 [2.50]	183.5 [7.22]

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量

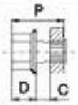
H M S 1 2 5 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

轮辋式安装

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
4 3 1 0 (P: 1 2 3 4)	∅370 [14.57dia.]	∅425 [16.73dia.]	∅470 [18.50dia.]	284 [11.18]	∅445 [17.52dia.]	∅26 [1.02dia.]	24 × M24 × 2	26 [0.98]

C	A mm	B mm	C mm	D mm	E mm	N mm	轮辋安装 Wheel rim mounting	L mm
4 4 1 0 (P: 1 2 3 4)	∅370 [14.57dia.]	∅425 [16.73dia.]	∅470 [18.50dia.]	239 [9.41]	∅445 [17.52dia.]	∅26 [1.02dia.]	24 × M24 × 2	25 [0.98]

STUDS 螺栓

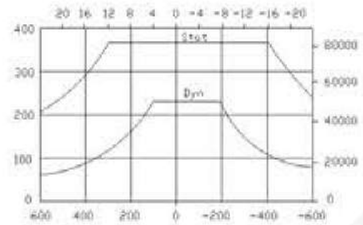
	Screws	P mm [in]	C min mm [in]	C max mm [in]	D mm [in]		Class 等级	Torque(1) 扭距(1) Nm [ib.ft]	Torque(2) 扭距(2) Nm [ib.ft]
Various Studs 各式螺栓	M24×2	95 [3.74]	5 [0.20]	39 [1.54]	30 [1.18]		12.9	910 [671.2]	1150 [848.2]
Screws 螺纹	M24×2						12.9	910 [671.2]	1150 [848.2]

(#)The tightening torques are given for the indicated loads.
(#)指上述负载的预紧扭距
(1)Wheel rim:suggested thghtening torque for wheel rim mountings (Re steel disc>240N/mm² [>34800 PSI])
(1)轮辋：建议轮辋式安装的预紧扭距（Re steel disc>240N//mm² [>34800 PSI] ）
(2)Standard:suggested thghtening torque in other cases（Re steel flange>360N/mm² [>52215 PSI] ）
(2)标准：建议在其它情况安装时预紧扭距（Re steel flange>360N//mm² [>52215 PSI] ）

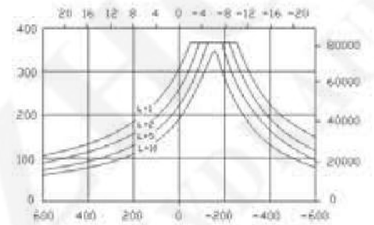
LOAD CURVES 负载曲线

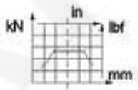
Permissible radial loads 允许径向负载
Test conditions 检测条件
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

4 3 1 0 (P: 1 2 3 4)

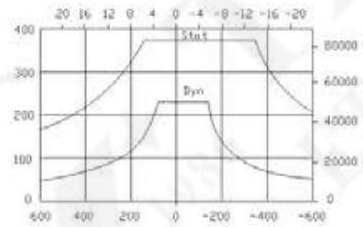


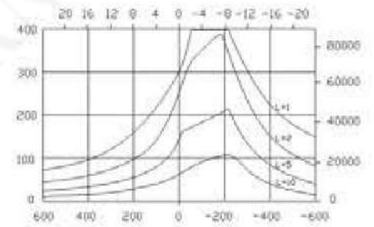
Service life of bearings 使用寿命
Test conditions 检测条件
L : Millions B10 revolutions at 150bar (average Pressure), with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次





4 4 1 0 (P: 1 2 3 4)





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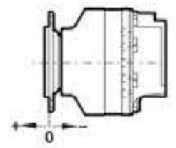
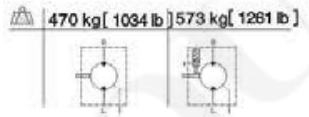
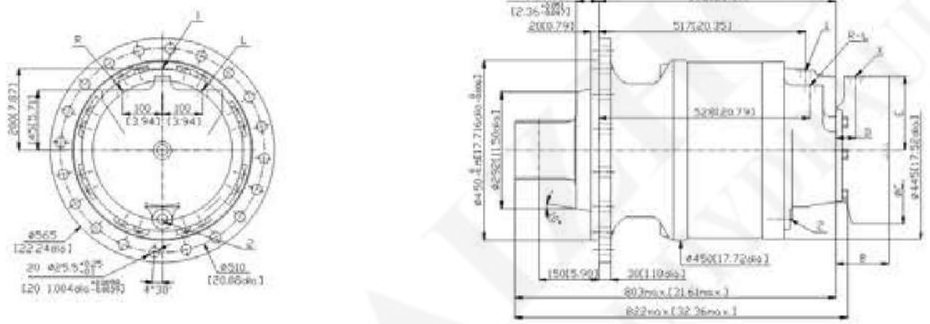


SHAFT MOTOR 轴式马达

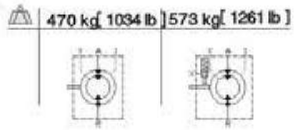
The dimensional data is given in mm and in inches (inches are between brackets)
尺寸米制（括号内英制）

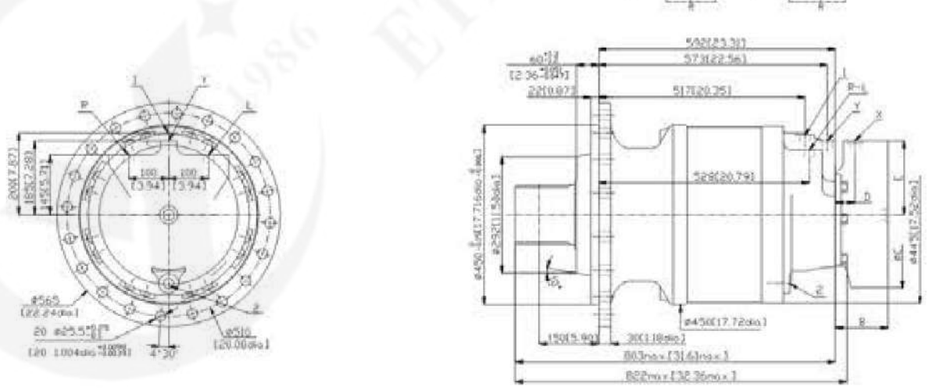
Dimensions for standard(3A50) 1-displacement motor
（3A50）标准单排量马达尺寸





Dimensions for standard(3A50) 2-displacement motor
（3A50）标准双排量马达尺寸





C	B	C	D	E
F50	152 [5.98]	⌀375 [14.76 dia.]	63.5 [2.50]	183.5 [7.22]
F83	152 [5.98]	⌀375 [14.76 dia.]	63.5 [2.50]	183.5 [7.22]

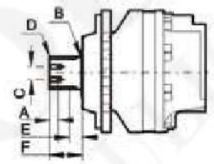
HMS125 系列液压马达
HMS125 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

SUPPORT TYPES 前盖类型

B 1 — 1 1 displacement 单排量 / 2 2 displacement 双排量

H M S 1 2 5 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

C		A	B	C	D	E	F
3 A 5 0 (1 2 3 4 P)	GB3478.1 spline	40 [1.57]	R4 [R0.16]	60 [2.36]	2×M16	32 [1.26]	150 [5.91]
	Module 模数 5						
	Z 28						



LOAD CURVE负载曲线

Permissible radial loads 允许径向负载
Test conditions 检测条件

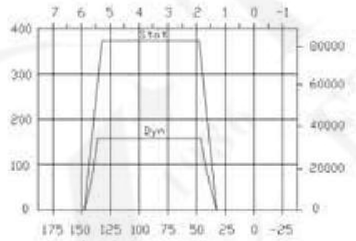
Static : 0 r/min [0 RPM] 0bar [0 PSI]
静态：0 r/min [0 RPM] 0bar [0 PSI]

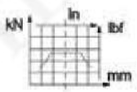
Dynamic : 0 r/min [0 RPM] ,code 0 displacement,
动态：0 r/min [0 RPM]
without axial load at max.torque
0组排量，无轴向力最大扭距

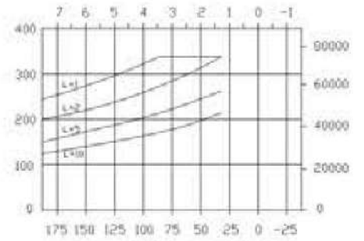
Service life of bearings 使用寿命
Test conditions 检测条件

L : Millions B10 revolutions at 150bar (average Pressure), with 25cst fluid, code 0 displacement, without axial load
0组排量无轴向力，粘度为25cst，平均压力为150bar，工作寿命为B10 100万次

3 A 1 0
3 A 5 0
1 2 3 4 P







C G
3 A 5 0 144.7 [5.67]

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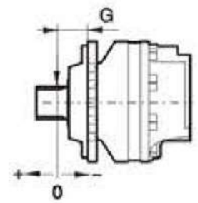
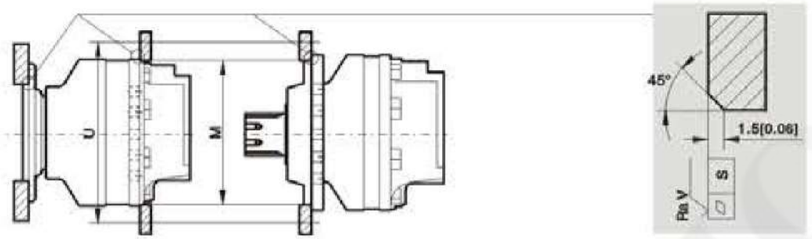


CHASSIS MOUNTING 支架安装



安装时注意清洁 Take care over the immediate environment of the connections

	∅ M(1)	∅ U	S	Ra V	Screws 螺纹	Class 等级	Torque 扭距 *
WHEEL MOTOR 轮式马达	450 [17.72]	565 [22.24]	0.2 [0.008]	12.5 µ m [0.49 µ in]	16 × M24	12.9	1200N.m [885.1 lb.ft]
SHAFT MOTOR 轴式马达					20 × M24		

(1) $^{+0.3\ [+0.012]}_{+0.2\ [+0.008]}$

* : Min.Values for torque and load to be transmitted

* : 指传动时扭距及负载的最小值

HYDRAULIC CONNECTIONS CONNECTIONS 连接

B 1
1 1 displacement 单排量
2 2 displacement 双排量

H M S 8 3 — C 1 — D 1 — F 1 2 3 — P 1 2 3 4 — S 1 2 3 4 5 6

Old Standards 旧标准	Standards 新标准	进出油口 Power supply R-L	双排量马达控制油口 2nd Displacement Contorl Y	壳体泄油口 Case drain 1, 2	制动器控制油口 Control of Parking break X
1 ISO6162 DIN3852	ISO6162 ISO9974-1	Dn32 PN400	M18×1.5	M27×2	M18×1.5
Max Pressures MS bar [PSI]		450 [6530]	30 [440]	1 [10]	30 [440]

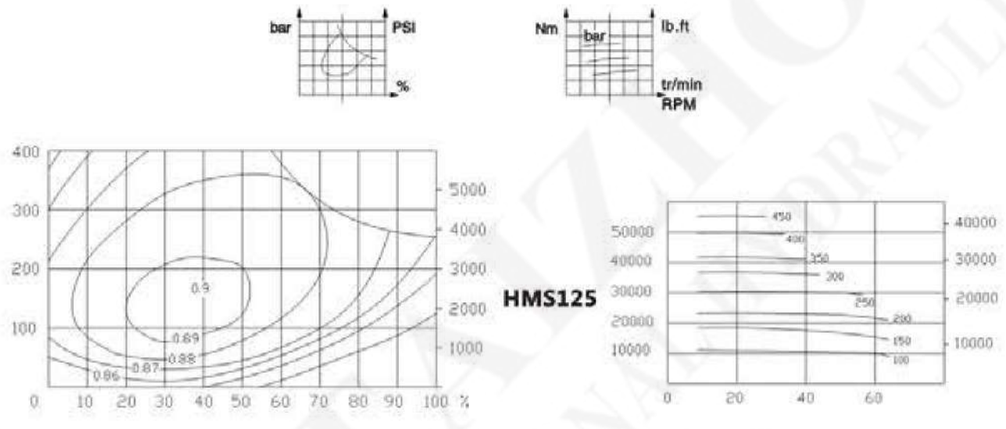
HMS125 系列液压马达
HMS125 Series Hydraulic Motors
TAIZHOU ETERNAL HYDRAULIC

EFFICIENCY 效率

Overall efficiency 效率曲线

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F]

下图为：0组排量在50°C [122F°] 下，液压油为HV46抗磨液压油经过100个小时跑合后的平均值.



Actual output torque 实际输出扭距

The starting torque is taken to be approximately 75% of the first value for available pressure.

启动扭矩按给定压力下初始扭矩的85%计算，若需进行精确的计算，请与我公司研发部联络.

产品应用
Product applications

滑移装载机
skid loaders

盾构机
shield machine

切削钻机
drilling rigs equipment