

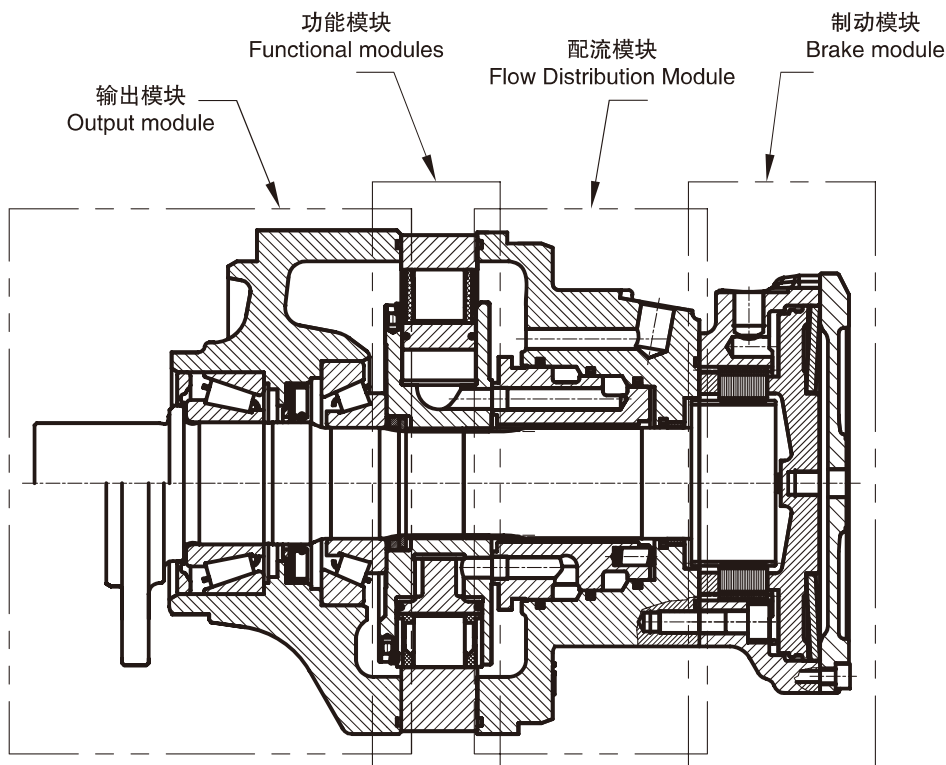
产品特点 / Product Feature

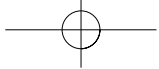
M-PS系列内曲线多作用径向低速大扭矩液压马达适应能力强，可广泛应用于船舶机械、工程机械、钻探设备、矿山机械、水泥设备、重型冶金、军工等多种领域，也可直接配置用于静液压传动装置中。

- 产品整体为模块化设计，分输出模块、功能模块、配流模块、制动模块四部分。可根据主机企业的实际要求进行模块选定。可以减少客户的机械配置，使布局灵活、简单。
- 输出模块采用双锥滚子轴承进行支承，可承受更大的径向力和轴向力。
- 配流模块采用国际先进的端面配油模式，并具有自动磨损补偿功能，可长期保持液压马达较高的容积效率。
- 功能模块采用了高承载、低摩擦、耐高温的高性能滑瓦，降低了机械摩擦损失，同时采用输出转矩，转速无脉动的导轨曲线设计，提高了液压马达整机工作的平稳性及抗冲击性能。
- 新型复合强化处理技术在液压马达中的应用，大幅提高了零部件的抗疲劳性能，耐磨性以及防腐性能，整体提升了液压马达的使用寿命。

CRM-PS series' LSHT radial cam-ring hydraulic motors are widely applied in deck, construction, mining machinery, cement equipments, heavy metallurgy, military industry, and can be directly used in hydrostatic transmission units.

- The modular design of the product, output module, function module, flow-distribution module and brake module, enables customers to select according to their actual requirements, thus to reduce their mechanical configuration to make the whole layout flexible and simple.
- The output module of products applies biconical roller bearing to withstand stronger radial and axial force.
- The disc flow-distribution module features with automatic wear-compensation function, which keeps high volumetric efficiency of motors in long term.
- The Function module applies sliding shoe which features with high load, anti-friction and heat-resistance performance, to reduce mechanical friction loss, optimizes stator curves' design, thus to improve the running stability and impact-resistance of the motor.
- The application of new composite processing technology enhances fatigue, abrasive and correction resistance of the parts, thus to prolong the service life of the motor. Customers select according to their actual requirements, thus to reduce their mechanical configuration to make the whole layout flexible and simple.





M-PS/PSE 系列/ M-PS/PSE Serie

HYDRAULIC TRANSMISSIONS

技术参数表/Technical Parameter

A: 全排量 First displacement B: 半排量 Second displacement

产品型号 Type	排量代号 Displacement Code	A	B	理论扭矩 Theoretical Torque	最大功率 Max.Power			最大扭矩 Max.Speed		最高压力 Max.Pressure
					A	B	B	B		
			优先旋向/Preferred	非优先旋向/Non-Preferred						
		ml/r	ml/r	100bar N.m	KW	KW	KW	r/min	bar	
M-PS02	8	172	86	273	18	12	9	390	450	
	0	213	107	339				310		
	1	235	118	374				285		
	2	255	128	405				260		
M-PSE02	0	332	166	528	22	16.5	11	200	400	
	1	364	182	579				182		
	2	398	199	633				165		
M-PS05	6	260	130	413	29	19	15	265	450	
	8	376	188	598				250		
	0	468	234	744				240		
	1	514	257	817				220		
	2	560	280	890				200		
M-PSE05	8	530	265	843	29	19	15	200	400	
	0	625	312.5	994				190		
	1	688	344	1094				175		
	2	750	375	1193				160		
	3	820	410	1304				145		
M-PS08	6	467	234	743	41	27	21	210	450	
	8	627	314	997				210		
	9	702	351	1116				185		
	0	780	390	1240				170		
	1	857	429	1363				155		
	2	934	467	1485				140		
M-PSE08	0	1043	522	1658	41	27	21	130	400	
	1	1146	573	1822				110		
	2	1248	624	1984				105		
M-PS11	7	730	365	1161	50	33	25	200	450	
	8	837	418.5	1331				195		
	9	943	471.5	1499				190		
	0	1048	524	1666				185		
	1	1147	573.5	1824				180		
	2	1259	629.5	2002				170		175
M-PSE11	9	1263	631.5	2008	50	33	25	170	190	400
	0	1404	702	2232				155	185	
	1	1536	768	2442				140	180	
	2	1687	843.5	2682				130	165	
M-PS18	6	1091	546	1735	70	47	35	170	170	450
	8	1395	698	2218				155	160	
	9	1571	786	2498				140	155	
	0	1747	874	2778				125	150	
	1	1911	956	3038				115	135	
	2	2099	1050	3337				100	125	
M-PSE18	0	2340	1170	3721	70	47	35	90	110	400
	1	2560	1280	4070				85	100	
	2	2812	1406	4471				75	90	
M-PS25	8	2004	1002	3186	90	60	45	145	145	450
	0	2498	1249	3972				137	137	
	1	2752	1376	4376				125	135	
	2	3006	1503	4780				115	130	
M-PS35	7	2439	1220	3878	110	73	55	140	450	
	9	3143	1572	4997				140		
	0	3494	1747	5555				130		
	2	4198	2099	6675				110		

*非对称变排量可咨询

M-PS11/PSE11 系列/ M-PS11/PSE11 Serie

HYDRAULIC TRANSMISSIONS

产品标识说明 / Ordering Code

***** _ * _ **** _ **** _ ***** _ *****

1 2 3 4 5 6 7 8

1、马达型号 Moter type

M-PS11/ M-PSE11

2、排量代号 Displacement Code

A: 全排量 First displacement

B: 半排量 Second displacement

产品型号 Type	排量代号 Displacement Code	A	B
		ml/r	ml/r
CRM-PS11	7	730	365
	8	837	418.5
	9	943	471.5
	0	1048	524
	1	1147	573.5
CRM-PSE11	2	1259	629.5
	9	1263	631.5
	0	1404	702
	1	1536	768
	2	1687	843.5

3、配流体形式 Valving type

1		单排量配流体 1-displacement valving
D	排量比2 Ration 2	双排量配流体 (顺时针方向) 2-displacement valving(Clockwise)
G	排量比2 Ration 2	双排量配流体 (逆时针方向) 2-displacement valving(Counterclockwise)

4、安装法兰形式 Mounting options

不带安装法兰 Without mounting	1	4
带安装法兰 With mounting	2	5
1-单排量/1-Displacement 2-双排量/2-Displacement		热交换阀 Exchange

5、油口形式 Distributor

0	无配流体端盖/No transmission cover	
1	ISO 6162 法兰/ISO 6162 Flange	DN19
	ISO 9974-1 连接/ISO 9974-1 Connection	DN13
4	ISO 9974-1 连接/ISO 9974-1 Connection	
A	ISO 11926-1 连接/SO 11926-1 Connection	

6、制动器 Brake

A11——无制动器 (普通端盖) /Without brake(simple plate)
F11——带制动器/With brake
R11——无制动器 (加强端盖) /Without brake(reinforced plate)

7、输出轴形式 Shaft options

0-无轴承支撑 /Without bearing support
1-无安装法兰 /Without mounting
2-带安装法兰 /Lug mounting

8、附加项 Additional items

0	无选项 With Options or Adaptations
1	氟化橡胶密封 Fluorinated elastomer seals
3	不带机械解除制动的端盖 Brake environmental cover without plug
5	泄油口 (配流系统附加泄漏油口) Drainage(additional drain on valving systems)
6	工业轴承支撑 Industrial bearing support
8	预留速度传感器位置 Predisposition for speed sensor
A	空心轴 Hollow shaft
B	轴承支撑上带泄油口 Drain on the bearing support
C	恶劣工况 Abrasive environment
D	特殊喷漆或无喷漆 Special paint or no paint
E	加强轴封 Reinforced sealing
G	特殊轮辋安装 Special wheel rim mounting
J	加强轴肩 Reinforced bearing stop
K	加强轴 Reinforced shaft
M	高速 High speed

0-无鼓式制动器 /Without drum brakes

1-无螺栓 /Without studs
2-螺栓螺母 /With studs+nuts
3-螺栓 /With studs
4-M螺纹孔 /M threaded holes

伸出轴/Male shaft

5-伸出轴 DIN5480花键
Male shaft din5480 splines

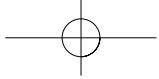
0-无伸出轴 /Without shaft

1-5x Ø24, Ø205

A-伸出轴承支撑

For male shaft bearing support

M-PS



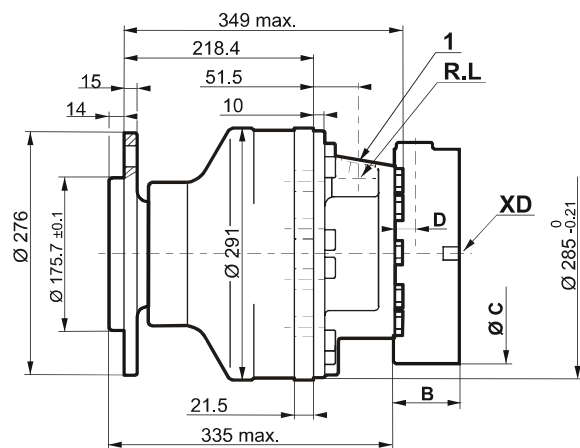
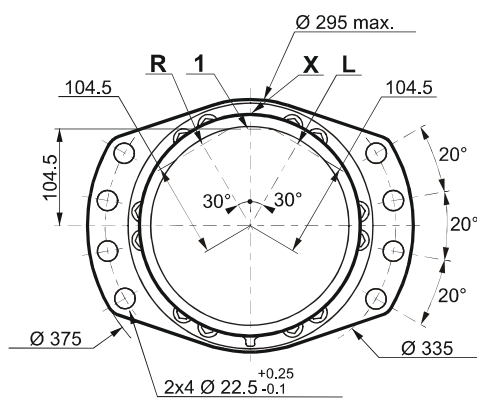
M-PS11/PSE11 系列/ M-PS11/PSE11 Serie

M-PS11/PSE11 轮边马达/ M-PS11/PSE11 Wheel Motor

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

	F11
B	76.7
C	Ø247
D	26

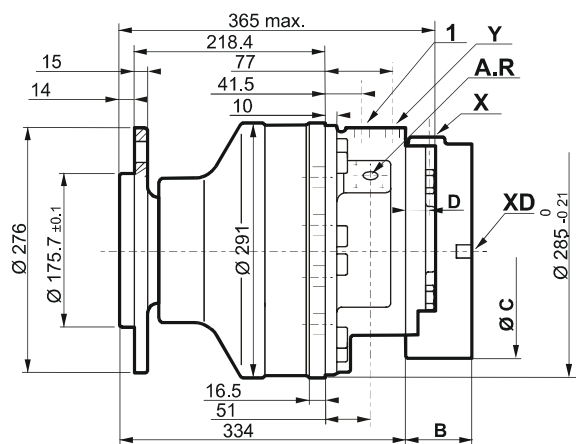
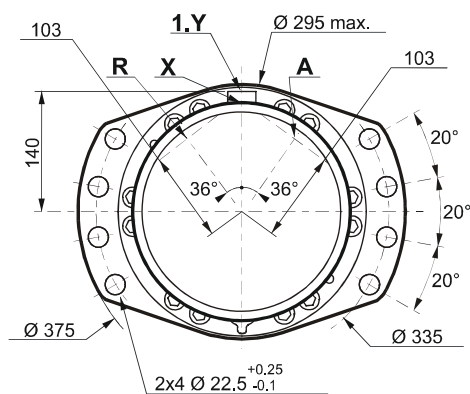
重量 /Weight	86kg	112kg



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

	F11
B	76.7
C	Ø247
D	26

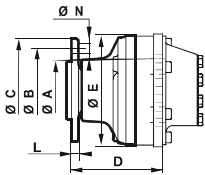
重量 /Weight	90kg	116kg



M-PS11/PSE11 系列/ M-PS11/PSE11 Serie

HYDRAULIC TRANSMISSIONS

输出轴形式/Shaft Options



	A	B	C	D	E	N	轮辋安装 Wheel rim mountings	L
1 1 1 0	Ø175.7	Ø225	Ø276	218.6	Ø291	Ø24	5xM22x1.5	14

螺栓/Studs

各种螺栓 Various studs	螺栓尺寸 Studs size	P	C min.	C max.	D 	等级 CLASS	扭矩（1）* Torque	扭矩（2）* Torque
		mm	mm	mm	mm		N.m	N.m
	M22x1.5	65	5	24	26	12.9	695	1050
								轮胎/Tire

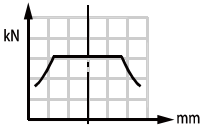
- (*) :紧固扭矩是针对指定载荷给出的。
The tightening torques are given for the indicated loads.
- (1) 轮辋: 轮辋安装紧固扭矩建议值 (>240 N/mm²) 。
Wheel rim:Suggested tightening torque for wheel rim mountings(Re steel disc>240 N/mm²)
- (2) 标准: 其它安装方式紧固扭矩建议值 (>360 N/mm²) 。
Standard:Suggested tightening torque in other cases(Re steel flange >360 N/mm²)

负载曲线/Load Curves

部件的使用寿命受压力的影响, 所以必须核实应用到部件上的合力 (轴向载荷/径向载荷) 应与部件承受载荷的允许值相协调一致, 并且这些部件的最终使用寿命应遵守其应用规范。
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 life of these components complies with the application's specifications.

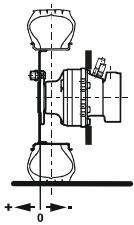
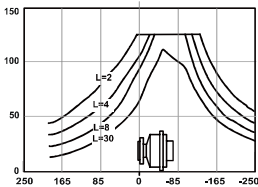
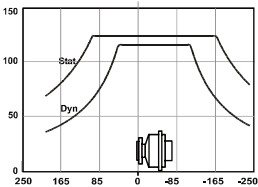
径向载荷允许值 Permissible radial loads

试验条件/Test conditions:
静态/Static: 0 r/min 0bar
动态: 0 r/min, 标准排量, 最大扭矩时无轴向载荷
Dynamic: 0 r/min code 0 displacement,without axial load at max.torque

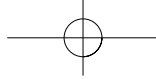


轴承寿命 Service life of bearings

试验条件/Test conditions:
L: 150bars(平均压力)时, 百万转 (B10),采用25cSt 流体, 标准排量, 无轴向载荷
L: Millions B10 revolutions at 150 bars(average prssure),with 25cSt fluid, code 0 displacement,without axial load



M-PS



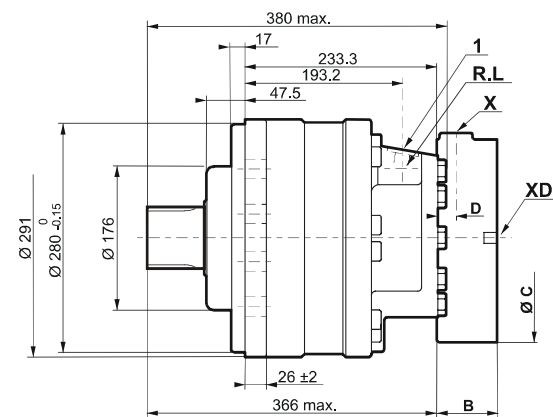
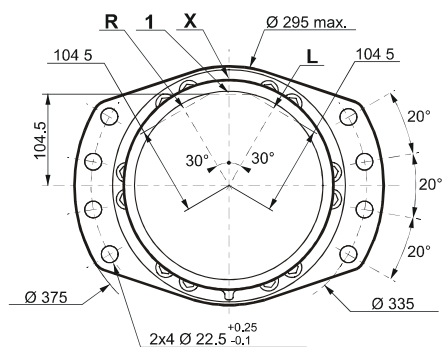
M-PS11/PSE11 系列/ M-PS11/PSE11 Serie

M-PS11/PSE11 轴马达/ M-PS11/PSE11 Shaft Motor

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

	F11
B	76.7
C	Ø247
D	26

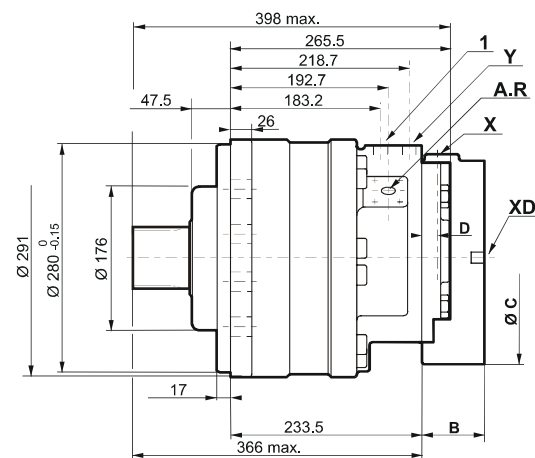
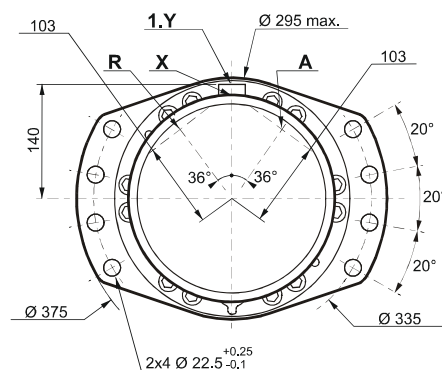
重量 /Weight	88kg	114kg



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

	F11
B	76.7
C	Ø247
D	26

重量 /Weight	88kg	114kg

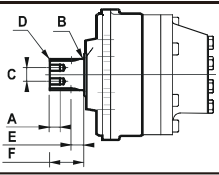


M-PS11/PSE11 系列/ M-PS11/PSE11 Serie

HYDRAULIC TRANSMISSIONS

输出轴形式/Shaft Options

2	A	5	0
DIN 5480 花键 DIN 5480 splines			
公称直径/Nominal Ø		80	
模数/Module		3	
Z		25	
		A	B
		C	D
		E	F



负载曲线/Load Curves

部件的使用寿命受压力的影响，所以必须核实应用到部件上的合力（轴向载荷/径向载荷）应与部件承受载荷的允许值相协调一致，并且这些部件的最终使用寿命应遵守其应用规范。

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 life of these components complies with the application's specifications.

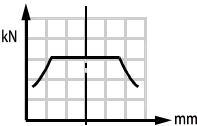
径向载荷允许值 Permissible radial loads

试验条件/Test conditions:

静态/Static: 0 r/min 0bar

动态: 0 r/min, 标准排量, 最大扭矩时无轴向载荷

Dynamic: 0 r/min code 0 displacement, without axial load at max. torque

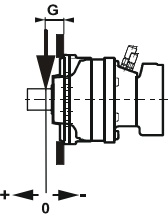
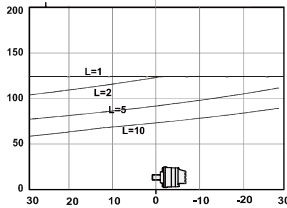
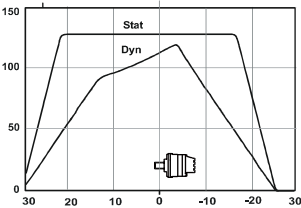
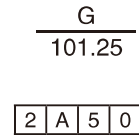


轴承寿命 Service life of bearings

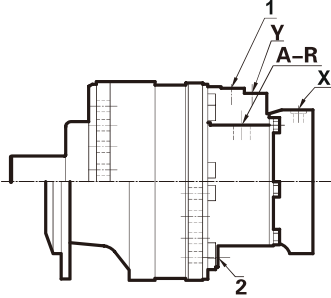
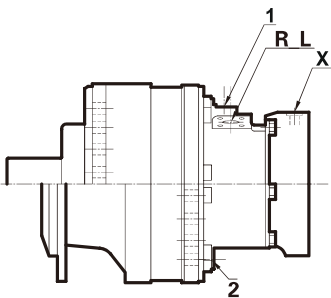
试验条件/Test conditions:

L: 150bars(平均压力)时, 百万转 (B10), 采用25cSt 流体, 标准排量, 无轴向载荷

L: Millions B10 revolutions at 150 bars(average pressure), with 25cSt fluid, code 0 displacement, without axial load



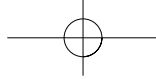
油口形式/Distributor



	旧标准 Old standards	标准 Standards	主油口 Power supply	变量油口 Displacement control	壳体泄油口 Case drain	驻车制动控制油口 Control of parking break
			A, R R, L	Y	1, 2	X
A	SAE J514	ISO 11926-1	1"1/16"-12 UNF	9/16"-18 UNF	3/4"-16 UNF	9/16"-18 UNF
1	ISO 6162	ISO 6162	A DN19 PN400	M16x1.5	M18x1.5	M18x1.5
	DIN3852	ISO 9974-1	B DN13 PN400			
4	NF E48050	ISO9974-1	M27x2	30	1	30
最高压力 Max. pressure	PS PSE	bar	450 400			

A: 全排量 First displacement B: 半排量 Second displacement

M-PS



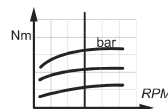
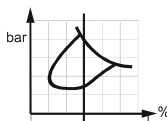
M-PS11/PSE11 系列/ M-PS11/PSE11 Serie

效率/Efficiency

总效率/Overall efficiency

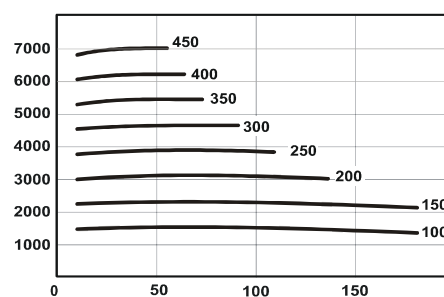
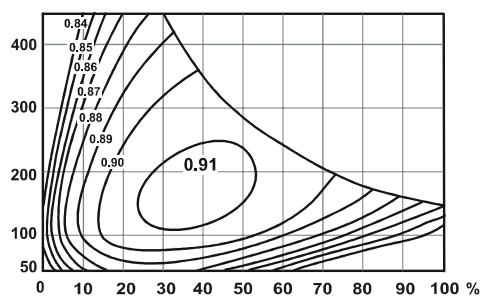
在50°C时, 使用HV46液压油标准排量马达工作100小时后的平均值

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

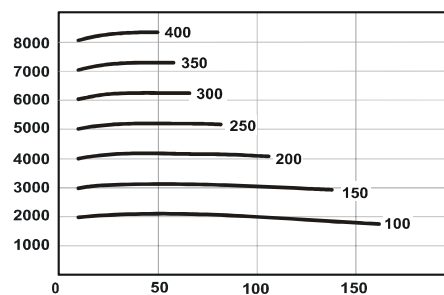
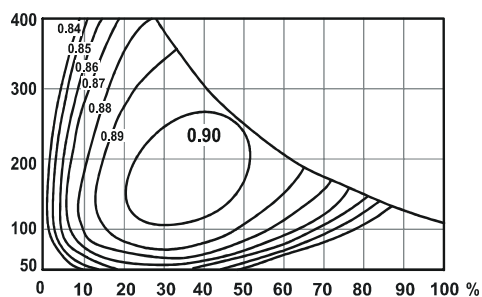


实际输出扭矩/Actual output torque

CRM-PS11



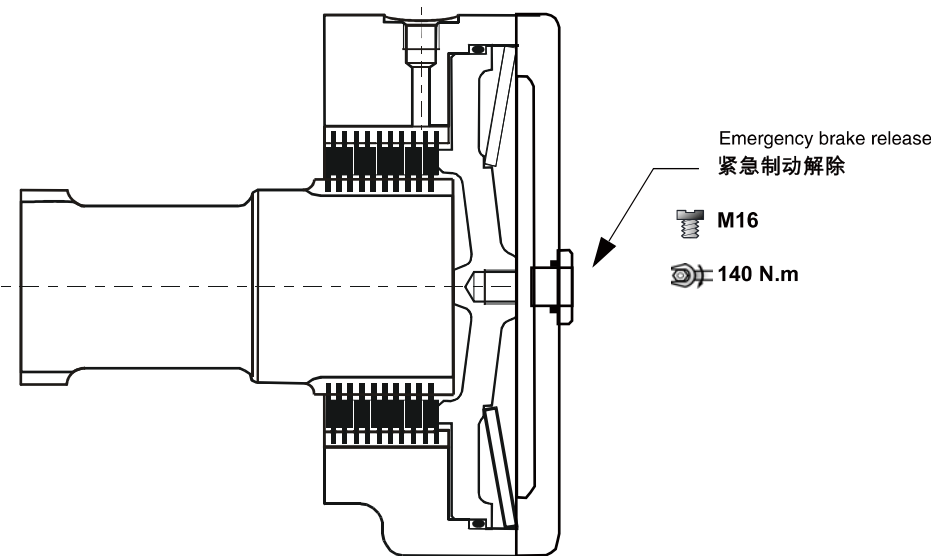
CRM-PSE11



M-PS11/PSE11 系列/ M-PS11/PSE11 Serie

HYDRAULIC TRANSMISSIONS

驻动制动器/Brakes



制动器原理/Brake principle

在失压状态下多片式制动器起作用。弹簧对制动片产生作用力，该力使制动片抱紧转轴，制动扭矩与释放压力成正比。
This is a multidisc brake which is activated by a lack of pressure. The spring exerts a force on the piston ,which presses on the fixed and mobile discs,and immobilizes the shaft.The braking torque decreases in linear proportion to the brake release pressure.

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制动腔内压力为0时制动器的制动扭矩（新制动器） Parking brake torque at 0 bars on housing (new brake)		7320 Nm		
制动腔内压力为0时紧急制动扭矩（最多可作紧急制动使用10次） Dynamic emergency braking torque at 0 bars on housing(max.10 uses of emergency brakes)		4760 Nm		
制动腔内压力为0时剩余的驻车制动扭矩* Residual parking braking at 0 bars on housing*		5490 Nm		
最小的制动器释放压力 Min.brake release pressure		15 bar		
最大的制动器释放压力 Max.brake release pressure		30 bar		
油量 Oil capacity		170 ml		
用于制动器释放液压油量 Volume for brake release		40 ml		

* 作为紧急制动使用后 After emergency brake has been used

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制动时不要运转马达。 Do not run in multidisc brakes.
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每当驻车制动器作为辅助性制动（或紧急制动器）使用时，都要对驻车制动器进行功能上的检查。
A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake).