



Catálogo de Productos



Fixed Displacement Pump / Motor - A2FE

北京华德液压工业 集团有限责任公司 BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	A2FE 内藏式定量马达 Internal Installation Fixed Displacement Motor A2FE		RC90200/12.2004
	用于安装在机械齿轮箱中 For installation in mechanical gearboxes	斜轴式轴向柱塞结构 axial tapered piston, bent axis design	
	规格 Size 55-160	高压范围 Peak pressure 至 up to 40MPa	替代: Replace RC90200/09.2003



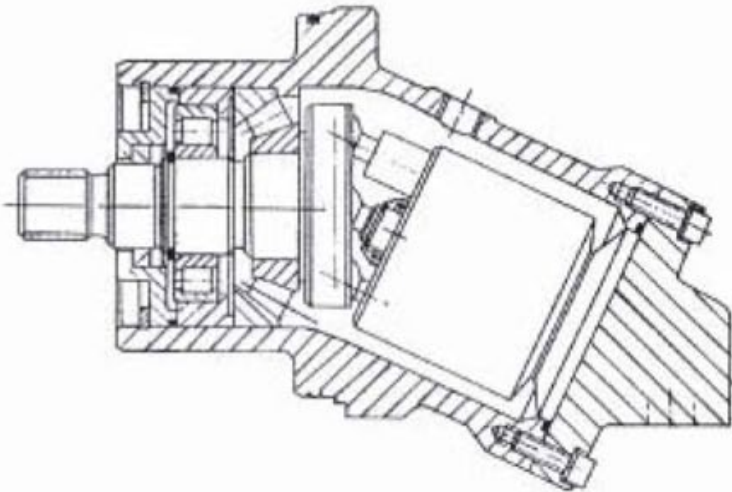
说明:

- 主要用于安装在机械齿轮箱中，例如：履带驱动齿轮箱。

特点:

- 马达的安装法兰设计在壳体的中间,这种结构允许马达几乎完全装进机械齿轮箱，从而提供一个十分紧凑的部件。
- 易于组装，仅需“插入”机械齿轮箱。
- 不需要考虑安装公差。

剖视图:



Description:

Hydrostatic play-in motors are intended primarily for installation in mechanical gearboxes, e.g.track drive gear boxes.

Special Features:

The design of the motor with the mounting flange in center of the housing allows if to be almost fully integrated into a mechanical gear box to give an extremely compact unit.
No installation tolerances to consider.
Easy assembly, simply plug-in to mechanical gearboxes.

A2FE内藏式定量马达Internal Installation Fixed Displacement Motor A2FE

型号说明 Type Code

A2F		E	80	W	70	A	11
马达型号 Motor Type		后盖 Port Plate					
定量马达 A2F		11					
Fixed Displacement Motor		轴伸 shaft End					
安装型式 Mounting Type		花键 DIN5480					
内藏式 E		Splined shaft					
Internal Installation		Z					
规格 Size		A					
排量 ml/r		54.8	55				
displacement		80	80				
		107	107				
		126.3	125				
		160	160				
		结构型式 Series					
		125					
		55, 80, 107, 160					
		旋转方向 Direction of Rotation					
		双向 alternating					

订货示例: A2FE80W70A11, A2FE 内藏式定量马达规格 80, 双向旋转, 70 结构 A 型花键 11 号后盖

Ordering Example: A2FE80W70A11 Fixed displacement motor A2FE. Size 80. alternating rotation W. Series 70 Splined shaft A. port plate 11.

技术数据 Technical Data

A 或 B 口的压力 Pressure at port A or B

额定压力 Nominal pressure $P_n = 35\text{MPa}$

最高压力 Peak pressure $P_{max} = 40\text{MPa}$

A 口或 B 口的压力和不得超过 70MPa
(每侧最高压力 40MPa)

The sum of the pressure at port
A or B must not exceed 70MPa
(Individual pressure on either
side max, 40MPa)

壳体允许最高压力 Maximum permissible
case pressure

$P_{ca} = 0.2\text{MPa}$

油温范围 Fluid Temperature Range

$t_{min} = -25^\circ\text{C}$

$t_{max} = +80^\circ\text{C}$

粘度范围 Viscosity Range

V_{min} (短期 for short periods) $10\text{mm}^2/\text{s}$

V_{max} (短期 for short periods) $1000\text{mm}^2/\text{s}$

最佳工作粘度 Optimum Operating
viscosity

$V_{opt} = 16-36\text{mm}^2/\text{s}$

油液选择 Fluid Recommendations

工作温度范围 Operating temperature range	推荐粘度按 DIN 51519 或 ISO(VG) Recommendations viscosity class to DIN 51519 ISO(VG)
30-40°C	VG22 22mm ² /s at 40°C
40-50°C	VG35 32mm ² /s at 40°C
50-60°C	VG46 46mm ² /s at 40°C
60-70°C	VG68 68mm ² /s at 40°C
70-80°C	VG100 100mm ² /s at 40°C

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油液的过滤

推荐过滤精度为 10μm, 25–40μm 的较粗过滤是可以使用, 但用 10μm 的过滤可延长使用寿命(降低磨损)

Filtration of Fluid

Recommended filtration: 10μm. Coarser filtration of 25–40μm, is possible, but with filtration of 10μm. longer service life is obtained (reduce wearing).

转速范围

最低转速 n_{min} 没限制, 如果要求高的旋转均匀性, 则 n_{min} 不低于 50rpm. 最高转速见下表

Speed Range

No limitation on minimum Speed n_{min} . if high uniformity of rotation is required, n_{min} should not be lower than 50 rpm. See table for maximum Speed n_{max} .

安装位置

任选。壳体必须始终充满油液

Mounting Position

Optional. The housing must always be filled with oil.

参数计算 Calculation of size

马达 Motor

$$\text{流量 Flow } Q = \frac{V_g \cdot n}{1000 \cdot \eta_v} \quad (\text{L/min})$$

$$\text{扭矩 Torque } M = \frac{1.59 V_g \cdot \Delta P \cdot \eta_{mh}}{10} \quad (\text{Nm})$$

$$\text{功率 Power } P = \frac{Mn}{9549} = \frac{Q \cdot \Delta P \cdot \eta_t}{60} \quad (\text{KW})$$

$$\text{转速 Speed } n = \frac{1000 \cdot Q \cdot \eta_v}{V_g} \quad (\text{r/min})$$

V_g : 排量 geom. displacement (ml/r)

ΔP : 压差 Pressure differential (MPa)

n : 转数 Speed

η_v : 容积效率 volumetric efficiency

η_{mh} : 机械效率 mech. hydr. efficiency

η_t : 总效率 Overall efficiency

$$[\eta_t = \eta_v \cdot \eta_{mh}]$$

技术参数 (理论值、未考虑 η_v 、 η_{mh} 数值经过圆整)

Technical Data (theoretical Values, without considering η_v 、

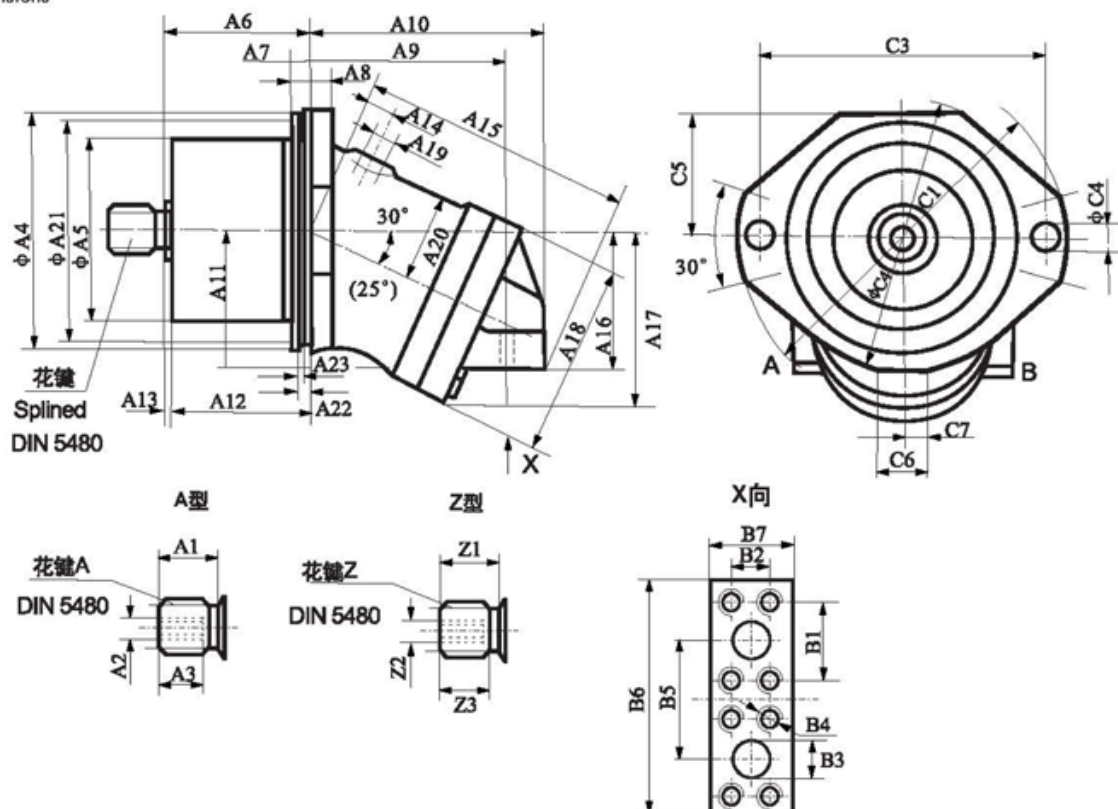
η_{mh} . Values rounded off)

规格 size			55	80	107	125	160
排量 Displacement	V_g	ml/r	54.8	80	107	126.3	160
最高转速 Max. Speed	n_{max}	r/min	3750	3350	3000	3000	2650
最大流量 Max. flow	Q_{max}	L/min	206	268	321	379	424
扭矩常数 Torque constants	Mk	Nm/MPa	8.71	12.74	16.97	20.1	25.40
最大扭矩 Max. Torque $\Delta p=35\text{MPa}$	M	Nm	305	446	594	703.5	889
最大功率 Max. Power $\Delta p=35\text{MPa}$	P	kw	120	156	187	221	247
Moment of inertia 惯性矩 about drive shaft	J	Kgm ²	0.0052	0.0109	0.0167	0.0322	0.0532
重量 Weight (approx)		Kg					

A2FE 内藏式定量马达 Internal Installation Fixed Displacement Motor A2FE

元件尺寸:

Unit: Dimensions



规格 A 型花键

Z 型花键

size	Splined A DIN 5480	A ₁	A ₂	A ₃	Splined Z DIN 5480	Z ₁	Z ₂	Z ₃	A ₄	A ₅	A ₆	A ₇
55	W35 × 2 × 30 × 16 × 9g	40	M12	28	W30 × 2 × 30 × 14 × 9g	35	M12	28	160h6	120	92.3	15
80	W40 × 2 × 30 × 18 × 9g	45	M12	28	W35 × 2 × 30 × 16 × 9g	40	M12	28	190h6	139	110.8	15
107	W45 × 2 × 30 × 21 × 9g	50	M16	36	W40 × 2 × 30 × 18 × 9g	45	M16	28	200h6	155	122.8	15
125	W45 × 2 × 30 × 21 × 9g	50	M16	36	W40 × 2 × 30 × 18 × 9g	45	M16	28	200h6	155	123	15
160	W50 × 2 × 30 × 24 × 9g	55	M16	36	W45 × 2 × 30 × 21 × 9g	50	M16	36	200h6	170	122.8	15

规格

深

size	A ₈	A ₉	A ₁₀	A ₁₁	A ₁₂	A ₁₃	A ₁₄	A ₁₅	A ₁₆	A ₁₇	A ₁₈	A ₁₉ (J)	deep	A ₂₀	A ₂₁	A ₂₂	A ₂₃
55	18	151	175	109	90	2.3	34.5	193.5	82	112	132	M18 × 1.5	12	63	151.62	10.5	7.1
80	20	160	187	113	106	4.8	18	218	108	136	160	M18 × 1.5	12	80	183.7	10	5.2
107	20	152	206	114	120	2.8	25	230	116	146	165	M18 × 1.5	12	82	193.7	10	5.2
125	20	143	178	114	120	3	25	210	112	148	165	M18 × 1.5	12	82	193.7	10	5.2
160	20	222	255	134	121.7	3.5	45	292	137	175	195	M18 × 1.5	14	93	191.62	10.5	7.1

规格

深

O 型圈 GB3452.1-83

size	R	B ₁	B ₂	B ₃	B ₄	deep	B ₅	B ₆	B ₇	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	O-Ring	
55	10	50.8	23.8	19	M10	17	75	147	48	235	190	200	18	82	40	20	ø150 × 5.3	GB3452.1-83
80	10	57.2	27.8	25	M12	17	84	166	66	260	220	224	22	98	40	0	ø180 × 4	DIN
107	16	66.7	31.8	32	M14	19	99	194	70	286	232	250	22	103	40	0	ø192 × 4	DIN
125	16	66.7	31.8	32	M14	19	99	194	70	286	232	250	22	103	40	0	ø192 × 4	DIN
160	12	66.7	31.8	32	M14	19	99	194	70	286	232	250	22	104	42	0	ø190 × 5.3	GB3452.1-83

ANNOTATIONS :

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