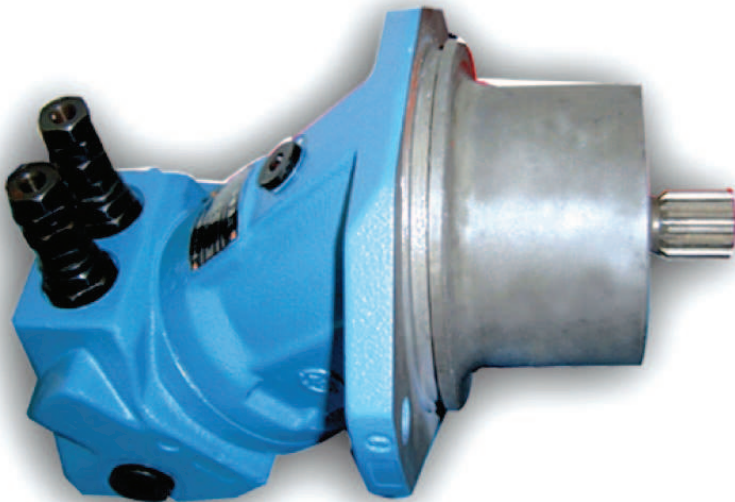


BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO., LTD.	For installation in mechanical gearboxes	axial tapered piston, bent axis design	RC90200/12.2004
	Size 55-160	Peak pressure up to 40MPa	ReplaceRC90200/09.2003



Description :

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

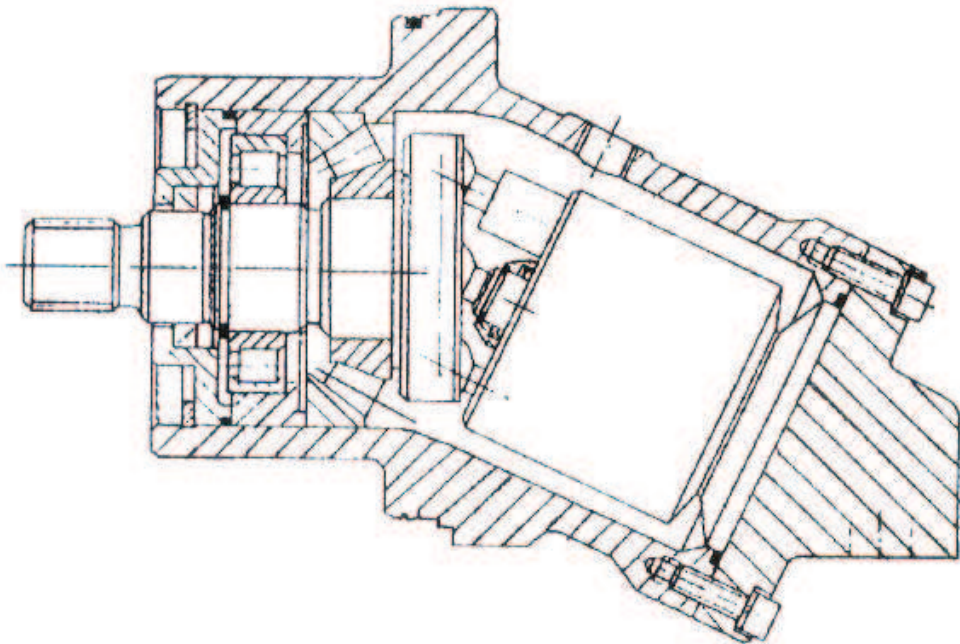
Special Features:

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.

Section



International Installation Fixed Displacement Motor A2FE

Type Code

A2F	E	80	W	70	A	11
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Motor Type

A2F
Fixed Displacement Motor

Mounting Type

E
Internal Installation

Size

ml/r	54.8	55
displacement	80	80
	107	107
	126.3	125
	160	160

Port Plate

Shaft End

DIN5480

Splined Shaft

	55	80	107	125	160
Z	●	○	●	○	●
A	●	●	●	●	●

Series

125

55, 80, 107, 160

Direction of Rotation

alternating

Technical data

Pressure at port A or B

Nominal Pressure _____ $P_n = 35\text{MPa}$

Peak pressure _____ $p_{max} = 40\text{MPa}$

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

Maximum permissible

case pressure

P_{ca} _____ 0.2MPa

Fluid Temperature Range

t_{min} _____ -25°C

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

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

Viscosity Range

V_{min} (for short periods)

_____ 10mm /s

V_{max} (for short periods)

_____ 1000m /s

Optimum Operating

viscosity

V_{opt} _____ 16-36mm /s

Fluid Recommendations

Operating temperature range	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

Calculation of size

Motor

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

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

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

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

V_g geom.displacement (ml/r)

ΔP Pressure differential(MPa)

n Speed

η_v volumetric efficiency

η_{mh} mech.hydr.efficiency

η_t Overall efficiency

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

Technical Data (theoretical Values, without considering η_{mh} . Values rounded off)

size			55	80	107	125	160
Displacement	V_g	ml/r	54.8	80	107	126.3	160
Max.Speed	n_{max}	r/min	3750	3350	3000	3000	2650
Max.Flow	Q_{max}	L/min	206	268	321	379	424
Toruque constants	Mk	Nm/Mpa	8.71	12.74	16.97	20.1	25.40
Max.Torque	M	Nm	305	446	594	703.5	889
$\Delta p=35\text{Mpa}$							
Max.Power	P	kw	120	156	187	221	247
$\Delta p=35\text{Mpa}$							
Moment of inertia	J	Kgm ²	0.0052	0.0109	0.0167	0.0322	0.0532
about drive shaft							
Weight(approx)		Kg					

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).

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

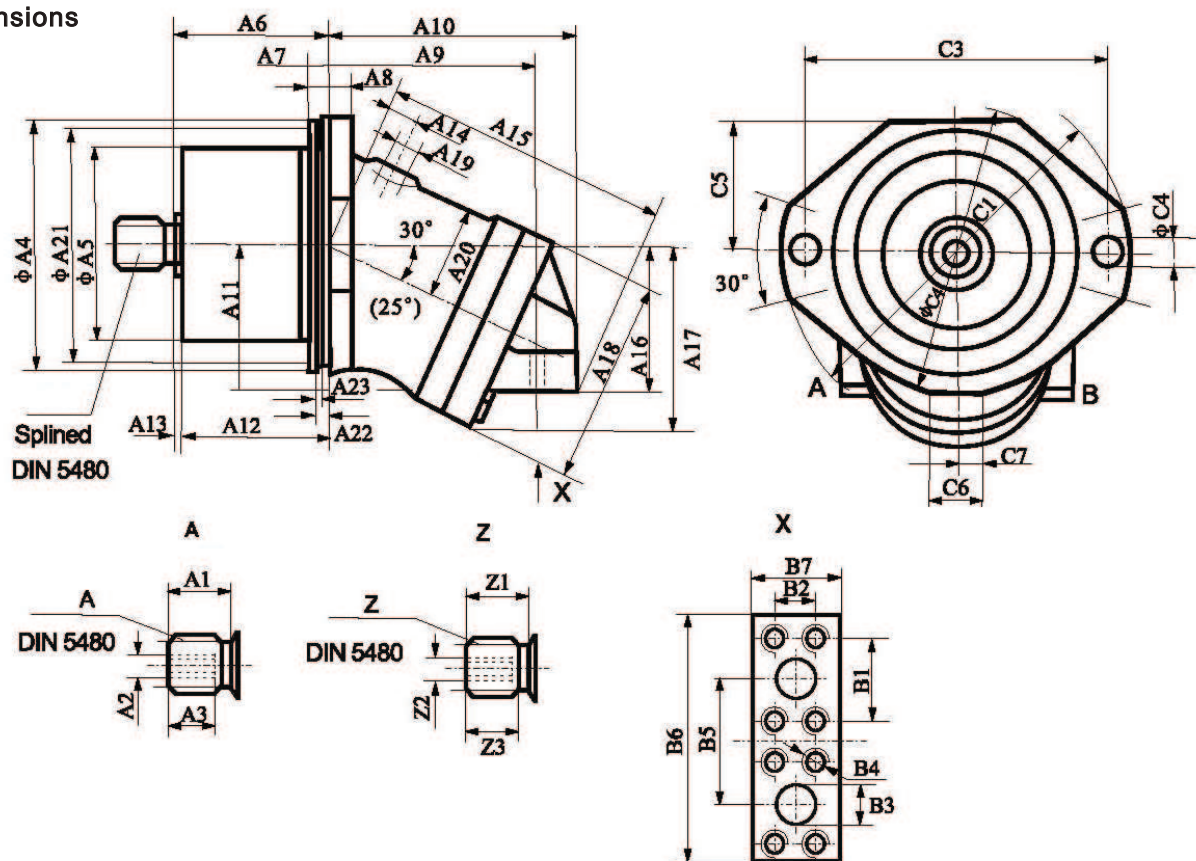
table for maximum Speed n_{max} .

Mounting Position

Optional. The housing must always be filled with oil.

Internal Installation Fixed Displacement Motor A2FE

Unit Dimensions



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 x 2 x 30 x 16 x 9g	40	M12	28	W30 x 2 x 30 x 14 x 9g	35	M12	28	160h6	120	92.3	15
80	W40 x 2 x 30 x 18 x 9g	45	M12	28	W35 x 2 x 30 x 16 x 9g	40	M12	28	190h6	139	110.8	15
107	W45 x 2 x 30 x 21 x 9g	50	M16	36	W40 x 2 x 30 x 18 x 9g	45	M16	28	200h6	155	122.8	15
125	W45 x 2 x 30 x 21 x 9g	50	M16	36	W40 x 2 x 30 x 18 x 9g	45	M16	28	200h6	155	123	15
160	W50 x 2 x 30 x 24 x 9g	55	M16	36	W45 x 2 x 30 x 21 x 9g	50	M16	36	200h6	170	122.8	15

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 x 1.5	12	63	151.62	10.5	7.1
80	20	160	187	113	106	4.8	18	218	108	136	160	M18 x 1.5	12	80	183.7	10	5.2
107	20	152	206	114	120	2.8	25	230	116	146	165	M18 x 1.5	12	82	193.7	10	5.2
125	20	143	178	114	120	3	25	210	112	148	165	M18 x 1.5	12	82	193.7	10	5.2
160	20	222	255	134	121.7	3.5	45	292	137	175	195	M18 x 1.5	14	93	191.62	10.5	7.1

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 x 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 x 4 DIN
107	16	66.7	31.8	32	M14	19	99	194	70	286	232	250	22	103	40	0	ø192 x 4 DIN
125	16	66.7	31.8	32	M14	19	99	194	70	286	232	250	22	103	40	0	ø192 x 4 DIN
160	12	66.7	31.8	32	M14	19	99	194	70	286	232	250	22	104	42	0	ø190 x 5.3 GB3452.1-83

Notice

1. The fluid must be filtered. Minimum filter fineness is 10 μm .
2. The tank must be sealed up and an air breather/filter must be installed on air suction/entrance.
3. Subplate are not supplied, if required, please ordering separately.
4. Valve fixing bolts/screws must be high tensile (class 10.9). Please select and consult manufacturer according to the parameter listed in the datasheet.
5. Roughness of surface mating with the valve is required to $\sqrt{0.8}$.
6. Surface straightness of mating piece is required to 0.01/100mm.

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