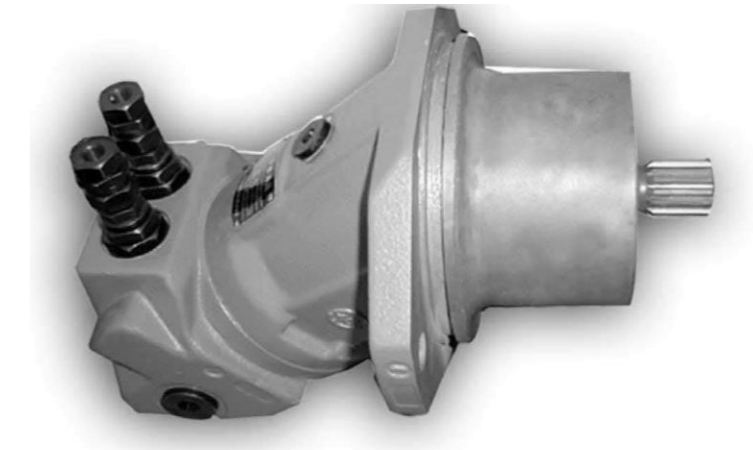


A2FE Series Internal Installation Fixed Displacement Motor

Product show and brief introduction



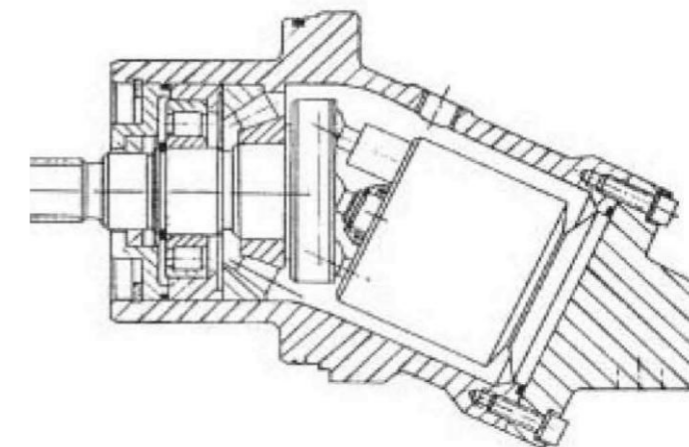
Description:

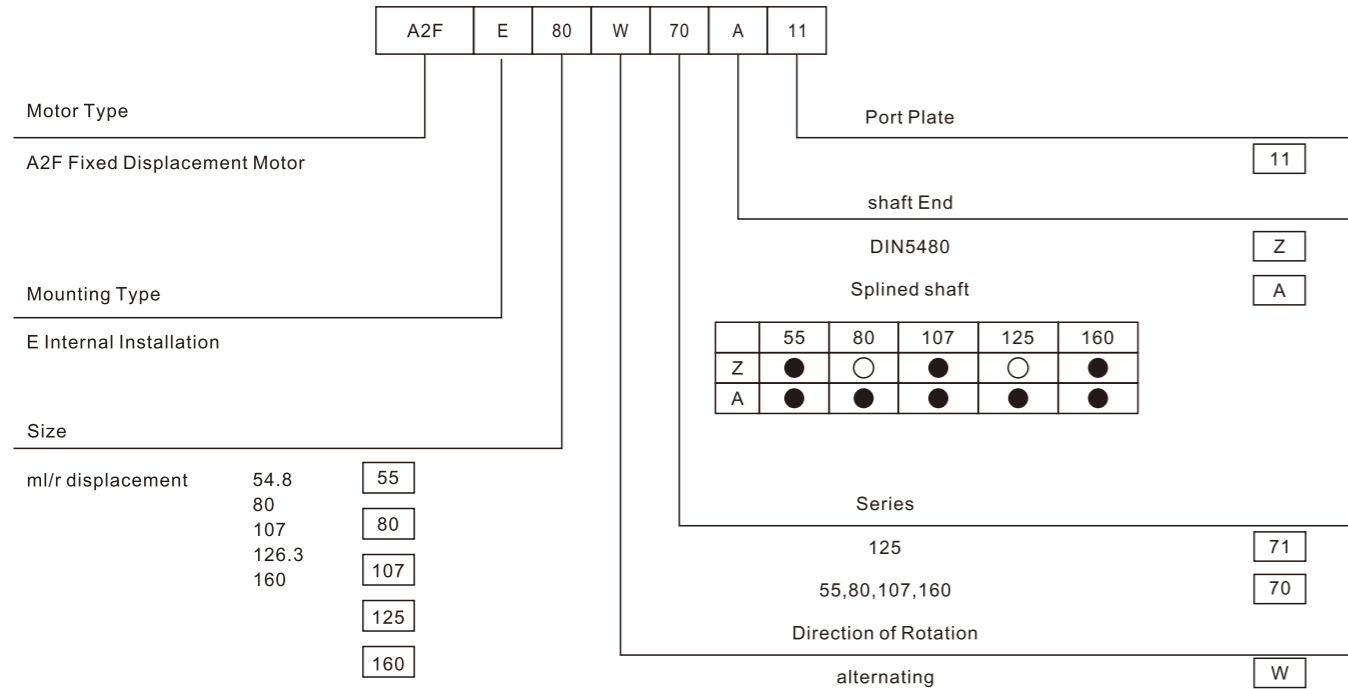
Hydrostatic play-in motors are intended primarily for installation in mechanical gearboxes, e.g. track drive gear boxes.

Special Features:

The design of the motor with the mounting flange in center of the housing allows it 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





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

Technical Date

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 710MPa

(Individual pressure on either side max, 40MPa)

Maximum permissible case pressure

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

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

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

Viscosity Range

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

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

Optimum Operating

viscosity

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

Fluid Recommendations

Operating temperature range	DIN51519 or 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

Technical Data

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.

Calculation of size

Motor

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

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

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

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

V_g : geom. displacement (ml/r)

ΔP : Pressure differential (MPa)

n : Speed

η_v : volumetric efficiency

η_{mp} : mech. hydr. efficiency

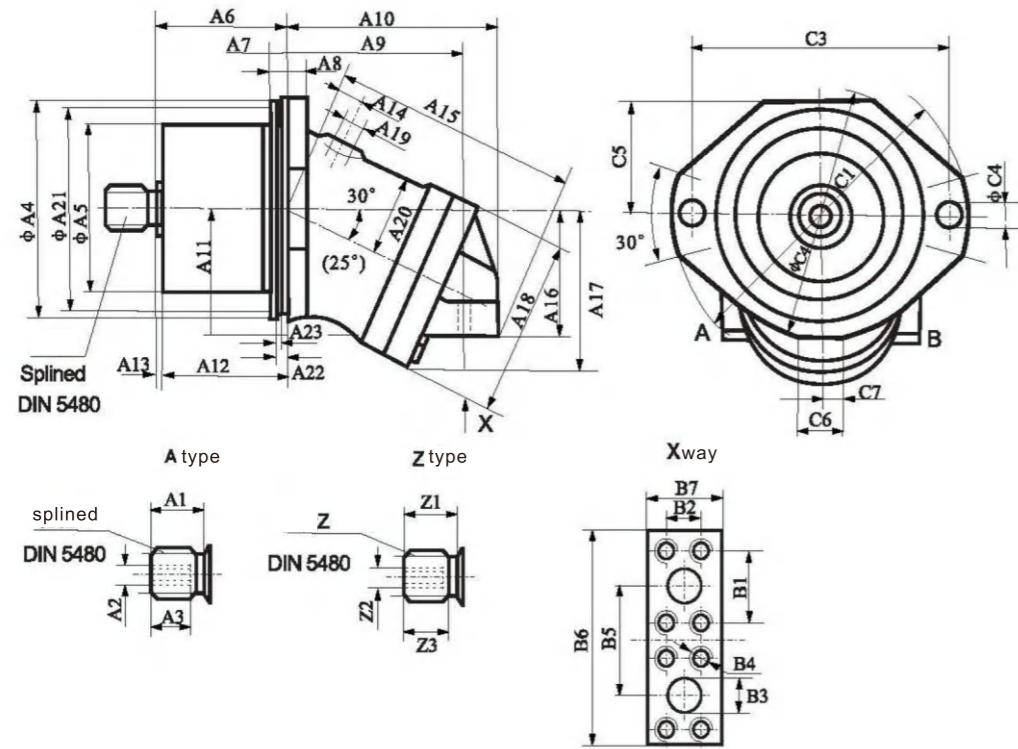
η_t : Overall efficiency

$[\eta_t \cdot \eta_v \cdot \eta_{mb}]$

Technical Data (theoretical Values, without considering η_v , η_{mb} . 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
Torque constants	MK	Nm/MPa	8.71	12.74	16.97	20.1	25.40
Max. Torque	M	Nm	305	446	594	703.5	889
Max. Power	P	KW	120	156	187	221	247
Moment of inertia	J	Kgm ²	0.0052	0.0109	0.0167	0.0322	0.0532
about drive shaft							
Weight (approx)		Kg					

Unit Dimensions



Splined A				Splined Z								
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	W35X2X30X16X9g	40	M12	28	W30X2X30X14X9g	35	M12	28	160h6	120	92.3	15
80	W40X2X30X18X9g	45	M12	28	W35X2X30X16X9g	40	M12	28	190h6	139	110.8	15
107	W45X2X30X21X9g	50	M16	36	W40X2X30X18X9g	45	M16	28	200h6	155	122.8	15
125	W45X2X30X21X9g	50	M16	36	W40X2X30X18X9g	45	M16	28	200h6	155	123	15
160	W50X2X30X24X9g	55	M16	36	W45X2X30X21X9g	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	ø150x5.3	GB3452.1-83
80	10	57.2	27.8	25	M12	17	84	166	66	260	220	224	22	98	40	0	ø180x4	DIN
107	16	66.7	31.8	32	M14	19	99	194	70	286	232	250	22	103	40	0	ø192x4	DIN
125	16	66.7	31.8	32	M14	19	99	194	70	286	232	250	22	103	40	0	ø192x4	DIN
160	12	66.7	31.8	32	M14	19	99	194	70	286	232	250	22	104	42	0	ø190x5.3	GB3452.1-83