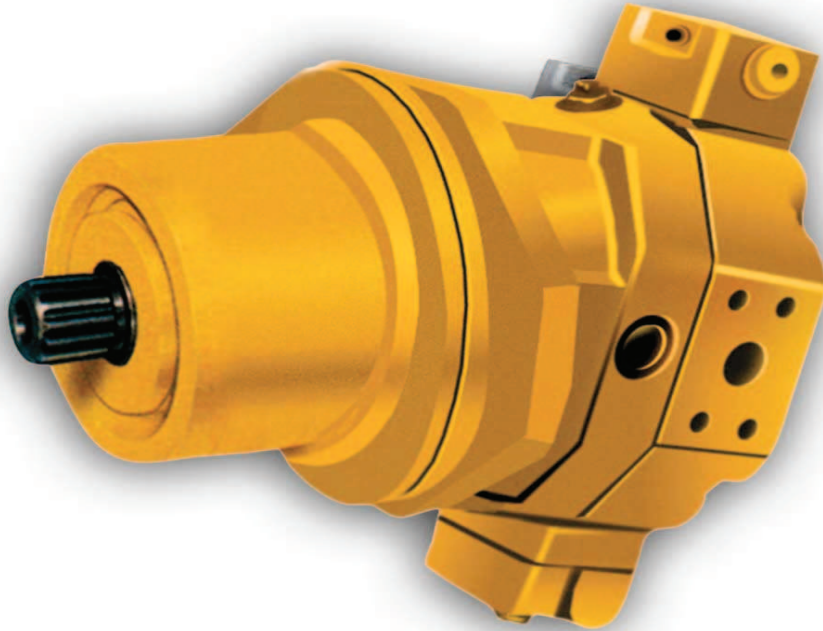


axial tapered piston rotary group of bent axis design
for mounting in mechanical gearboxes

Replace RC91200/09.2003

Size 55-160

31.5MPa 35MPa
Nominal pressure Peak press

The variable displacement plug-in motor A6VE is equipped with a standard axial tapered piston rotary group of bent axis design. Hydrostatic plug-in motors are intended primarily for installation in mechanical gearboxes .e.g. track drive gear boxes.

The design of the motor with the mounting flange in the center of the housing allows it to be almost fully integrated into a mechanical gearbox to give an extremely compact unit.

The particular advantages of the plug-in motor over kit designs are:

- complete unit, ready assembled and tested.
- easy assembly simply plug-in to mechanical gearboxes.
- no installation tolerances to consider.

Type Code

A6V E 80 HA1 2 F Z 1 039

Motor type

Variable displacement motor

A6V

Mounting type

plug - in E

E

Size

ml/r displacement

1.5-54.8ml/r

55

23-80ml/r

80

30.8-107ml/r

107

46-160ml/r

160

Control Device

Hydraulic control, pilot pressure related

$\Delta p=1\text{MPa}$
Pilot pressure increase

HD1

$\Delta p=2.5\text{MPa}$
Pilot pressure increase

HD2

Constant pressure
With out override

HA1

Automatic control, high pressure related

Pressure increase
 $\Delta p=10\text{MPa}$

HA2

With out override

Electrical 2-speed 12v control (with switching solenoid)24

ES1

ES2

Electrical control 12v (with proportional solenoid) 24v

EP1

EP2

Manual control (with handwheel)

MA

Min. Swept Volume Setting

Example

$V_{gmin}=39\text{ml/r}$

039

Example

$V_{gmin}=54\text{ml/r}$

054

Assembly Type

For explanation see de scripting of control device and unit dimensions

1

2

Shaft End

GB 1096 - 79

Keyed parallel shaft

P

DIN 5480

Splined shaft

Z

GB 3478.1 - 83

Splined shaft

S

Pipe Connections

SAE flange, on side

F

Metric threads, on side

G

Series 2 ,sizes

55.80.107.160

2

Ordering Example A6V.E.80.

HD1.2.F.Z.2.039

Axial - piston - variable displacement motor A6V, plug-in E size 80, with hydraulic control, pilot pressure related, $\Delta p=1\text{MPa}$, series 2.

SAE flange connections on side, splined shaft, assembly type 2, min. swept volume setting $V_{gmin}=39\text{ml/r}$

Technical Data

Operating pressure Range

Pressure at port A or B

Nominal pressure $p_n=31.5\text{MPa}$

Peak pressure $p_{\max}=35\text{MPa}$

The sum of the pressure at ports A and B should not exceed 63MPa.(Individual pressure at either port max.35MPa)

Leakage oil Pressure:

Maximum permissible leakage oil pressure (at port T)

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

Fluid Temperature Range

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

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

Viscosity Range:

$u_{\min}=10\text{mm}^2/\text{s}$

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

Optimum Operating Viscosity:

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

Fluid Recommendation

Operating Recommended Viscosity Grade

Temperature to DIN51519

Range ISO(VG)

30 - 40°C VG22=22mm²/s at40°C

40 - 50°C VG32=32mm²/s at40°C

50 - 60°C VG46=46mm²/s at40°C

60 - 70°C VG68=68mm²/s at40°C

70 - 80°C VG100=100mm²/s at40°C

Filtration of Hydraulic Fluid

Recommended filtration 10μm.Coarser filtration of 25 to 40μm

is possible, however longer service life is achieved with

filtration of 10μm(reduced wear).

Technical Data

size			55	80	107	160
Displacement	$V_{g\max}$	ml/r	54.8	80	107	160
	$V_{g\max}$	ml/r	15.8	23	30.8	46
Max. permissible. Swept volume	$Q_{g\max}$	l/min	206	268	321	424
Max. speeds (at Q_{\max})	n_{\max} at $V_{g\max}$	r/min	3750	3350	3000	2650
	n_{\max} at $V_g < V_{g\max}$	r/min	5000	4500	4000	3500
Torque constants	M_x at $V_{g\max}$	Nm/MPa	8.701	12.75	16.97	25.41
	M_x at $V_{g\min}$	Nm/MPa	2.511	3.73	4.9	7.35
Max. torque (at $\Delta P=35\text{MPa}$)	M_{\max} at $V_{g\max}$	Nm	304	446	594	889
	M_{\max} at $V_{g\max}$	Nm	88	130	171	257
Max. output power (at 35MPa and Q_{\max})		kW	120	156	187	247
Moment		kgm ²	0.0042	0.008	0.0127	0.0253

Speed Range

No limitation on minimum speed n_{\min} Where very even speeds

are recurred. n_{\min} . The maximum flow from the Pump and the minimum swept volume of the variable motor gather determine the maxi-

mum output speed. The min swept volume is limited mechanically by means of an adjustment screw so that the max. permissible speeds (of the variable motor and the driven unit) cannot be exceeded. See data table for max. permissible speeds.

$$\text{Swept Volume } Q = \frac{V_g \cdot n}{1000 \cdot \eta_v} \quad [\text{L/min}]$$

$$\text{Output Speed } n = \frac{Q \cdot 1000 \cdot \eta_v}{V_g} \quad [\text{r/min}]$$

$$\text{Output Torque } M = \frac{V_g \cdot \Delta p \cdot \eta_{mh}}{2 \pi} = \frac{1.59 V_g \cdot \Delta p \cdot \eta_{mh}}{10} \quad [\text{Nm}]$$

$$\text{or } M = \frac{K_M \cdot \Delta p \cdot \eta_{mh}}{10} \quad [\text{Nm}]$$

$$\text{Output Power } P = \frac{M \cdot n}{9549} = \frac{Q \cdot \Delta p \cdot \eta_t}{60} \quad [\text{KW}]$$

V_g max geometry displacement [ml/r]

M torque [Nm]

Δp differential pressure [MPa]

n speed [r/min]

η_v volumetric efficiency

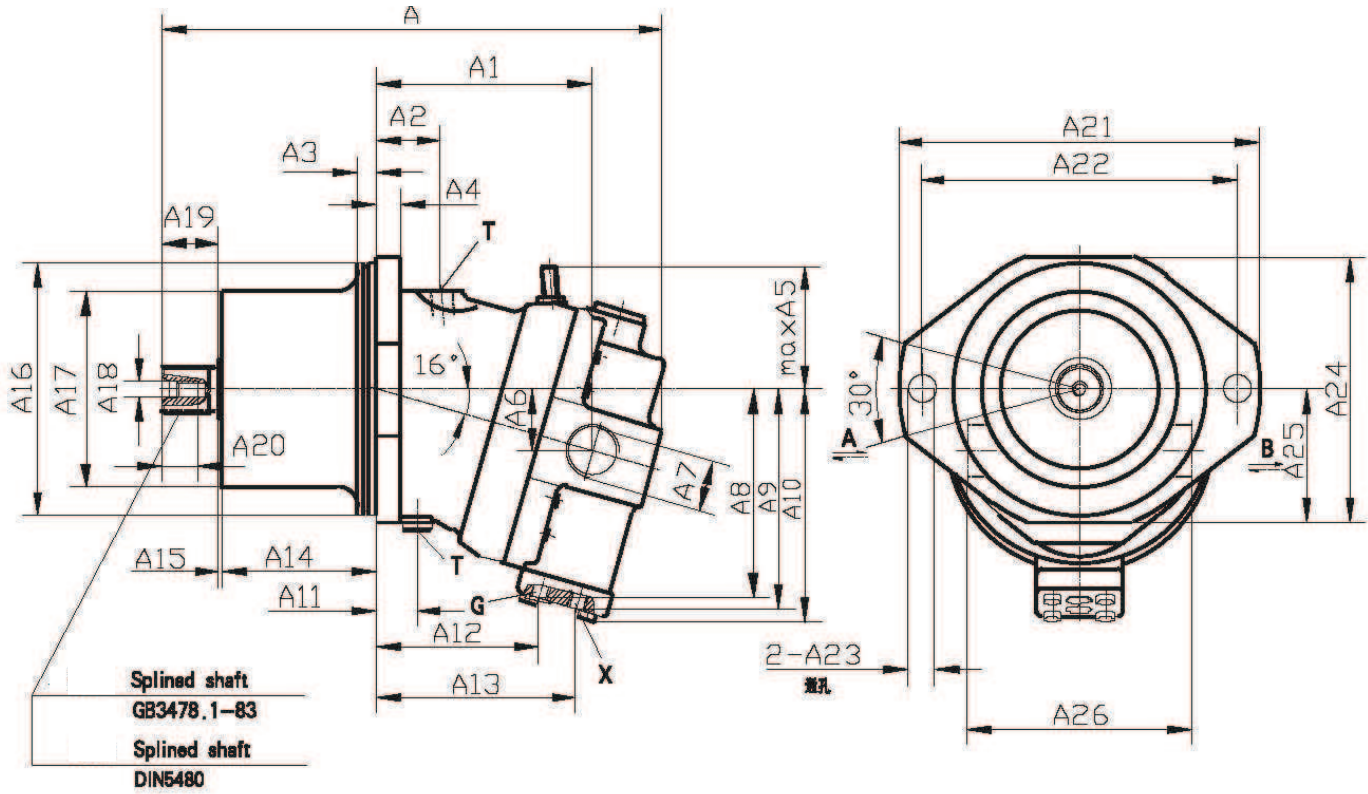
η_{mh} mechanical - hydraulic efficiency

η_t overall efficiency

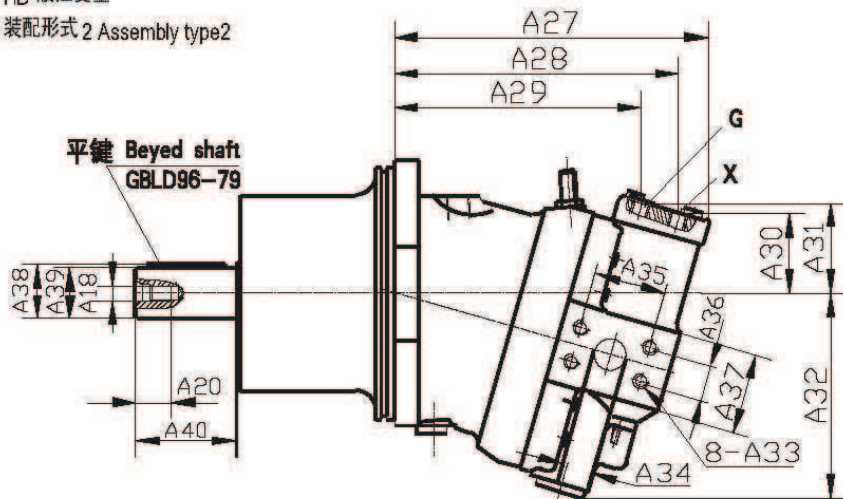
Unit Dimensions

size 160

HA Control
Assembly type1



HD 液控变量
装配形式 2 Assembly type2



e port
synchronous
multiple
r
ontrol pressure
ure

Notice

1. The fluid must be filtered. Minimum filter fineness is 20 μm .
2. The tank must be sealing up and an air filter must be installed on air entrance.
3. Products without subplate when leaving factory, if need them, please ordering specially.
4. Valve fixing screws must be high intensity level (class 10.9). Please select and use them according to the parameter listed in the sample book.
5. Roughness of surface linked with the valve is required to $\frac{0.8}{\nabla}$.
6. Surface finish of mating piece is required to 0.01/100mm.

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