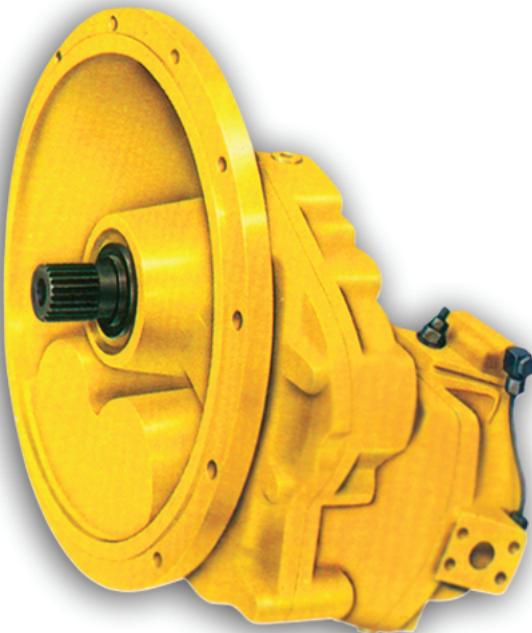




Catálogo de Produtos

Variable Displacement Double Pump A8V

北京华德液压工业 集团有限责任公司 BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	A8V 变量双泵 Variable Displacement Double Pump A8V 用于开式回路 For open circuits	斜轴式轴向柱塞结构 axial tapered piston,bent axis design	RC92300/12.2004
	规格 Size 28-160	高压范围 Peak pressure 至 up to 40MPa	替代: Replace RC92300/09.2003



说明:

- 主要部件有共用一个外壳的两个变量泵，分动箱，直接安装在原动机上的SAE法兰及控制装置—通常是叠加HP控制。
- 流量与转速和排量成正比，并可通过改变倾角来无级变化。

特点:

- 带有辅助驱动的不同结构方案及多回路控制的可能性,使它可与各种驱动应用最佳匹配。
- 结构紧凑,易于安装与保养。
- 压力高、耐冲击, 工作寿命长。

Description

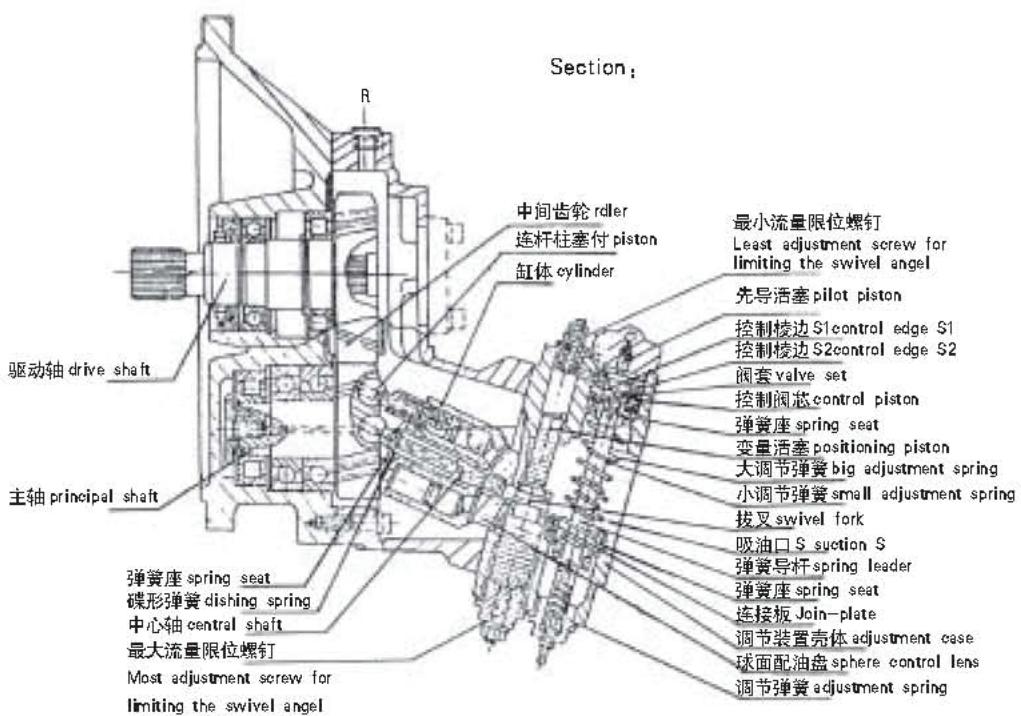
Two variable pumps in a common housing, the splitter box, an SAE flange for direct mounting on to the prime mover and the control device—usually summation HP control.

Flow is proportional to speed by change the swivel angle.

Special Features

The various design options with auxiliary drive and the possibility of multi-circuit control allow optimum matching to individual drive applications.

剖视图:



A8V 变量双泵 Variable Displacement Double Pump A8V

型号说明 Ordering Code

A8V	55	SR	1.1	R	1	0	1	F	1								
泵型号 Pump Type					行程限位 Stroke Limiter												
变量双泵 Variable Displacement					固定的	fixed			1								
Double Pump					液控的	hydraulic			2								
					机械的	mechanical			3								
					(2.3 不用于规格 28)												
					(2.3not for Size 28)												
规格 Size																	
8.1-28.1ml/r	28				压油口连接 Pressure Connection												
15.8-54.8ml/r	55				螺纹(用于规格 28)												
0-58ml/r	58				法兰	SAE			G								
23.1-80ml/r	80				SAE flange connection												
30.8-107ml/r	107				吸油口连接 Suction Connection												
21.8-125ml/r	125				SAE 法兰	SAE flange			F								
46.2-160ml/r	160																
(每个旋转组件的排量 $V_{\text{min}}-V_{\text{max}}$)																	
(Displacement $V_{\text{min}}-V_{\text{max}}$ perrotary group)																	
只有 DM.LL 控制方式																	
Only exist control device DM.LL																	
控制方式 Control Device																	
总功率变量	SR				速比 Gear Ratio												
Summation HP control																	
分功率变量	LL				规格 size	28	55	58	80	107	125	160					
Individual power control																	
分功率交叉变量	LLC				代号 Ratio	0	-	1.00	-	1.00	1.00	1.00					
Cross-sensing control																	
恒压手动变量	DM				代号 Ratio	1	0.73	0.75	0.87	0.87	0.85						
Constant pressure and manual control																	
结构 Design																	
见下	See below	1.1			代号 Ratio	2	0.86	0.93	1.06	1.06	1.08						
		1.2			代号 Ratio	3	-	1.17	-	1.35	1.23						
		2			代号 Ratio	4	-	0.84	0.81	-	-						
		3			代号 Ratio	5	-	1.05	-	1.18	-						
		4			系列 Series												
		5			旋转方向(从轴端看) Direction of Rotation(View ed on shaft end)												
					顺时针	Clock wise											
						R											

A8V 变量双泵 Variable Displacement Double Pump A8V

结构 Design 1.1–5



订货示例:

A8V,55,SR,1.1,R,1,0,1,F,1

变量双泵 A8V，规格 55，总功率变量，结构 1.1，顺时针旋转，1 系列，速比 1.00，吸油口 1，SAE 压力油口，固定行程限位器。用于辅助驱动的泵应在订货时单独列出。

技术参数 Technical Data

工作压力范围: Operating Pressure Range:

A 或 B 口压力: Pressure at port A or B.

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

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

吸油口的绝对压力: Absolute pressure on the suction inlet S

$P_{absmin} = 0.08 \text{ MPa}$

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

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:

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

$V_{max} = 100 \text{ mm}^2/\text{s}$ (短时)(for short periods)

最佳工作粘度: Operating Viscosity:

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

油液选择: Fluid Recommendation

工作温度 推荐粘度等级符合 DIN 51519

Operating Recommended Viscosity grade

temperature to DIN 51519

range ISO(VG)

30–40°C VG22=22mm²/s 在 at 40°C

40–50°C VG32=32mm²/s 在 at 40°C

50–60°C VG46=46mm²/s 在 at 40°C

60–70°C VG68=68mm²/s 在 at 40°C

70–80°C VG100=100mm²/s 在 at 40°C

Ordering Example

A8V,55,SR,1.1,R,1,0,1,F,1

Variable Displacement Double Pump A8V, Size 55, Summation HP Control, Design 1.1, Clockwise rotation, Series 1, gear ratio 1.00, Suction Connection 1, SAE Pressure connection, fixed stroke limiter. Pumps for auxiliary drive should be listed separately when ordering.

液压油的过滤: Filtration of Hydraulic Fluid

推荐过滤精度为 10µm。亦可使用 25–40µm。使用 10µm 的可以延长使用寿命(降低磨损)。

Recommended filtration 10µm. Coarser filtration of 25 to 40µm is possible, however longer service life is achieved with filtration of 10 µm (reduced wear).

转速范围: Speed Range

最低转速没有限制, 最高转速 n_{Amax} 见下表

No limitation on minimum speed n_{min} .

See data table for max. permissible speeds n_{Amax} .

安装位置: Mounting Position

驱动轴水平安装。其它位置也可以, 但事先应询问本厂

Horizontal, as referred to the drive shaft; other positions are possible, but require prior consultation with us.

辅助驱动的输出转速与输入转速 n_A 相同。(结构 3,4,5)

Output speed of the auxiliary drive is the same as input speed n_A (Design 3,4,5)

辅助驱动速比: Auxiliary Drive Gear Ratio

结构	规格	Size			
Design	55	80	107	125	160
1.1	1.244	1.333	1.256		
1.2	1.00	1.00	1.00	1.00	1.00
旋转方向(从轴端看): Direction of rotation (Viewed on Shaft)					

结构 1.1(Design 1.1): 逆时针(anti-Clockwise)

结构 1.2(Design 1.2): 顺时针(Clockwise)

A8V 变量双泵 Variable Displacement Double Pump A8V

技术参数表

(理论值、未考虑 η_{mb} 和 η_v , 数值经过圆整)

Technical Data

(theoretical values, without considering mb and v, Values rounded off)

规格	单侧泵排量 V_{gmax}	分动箱 齿轮速 比	最大驱动转速 n_{Amax} (r/min) 当吸油口 S 绝对压力为 P 及排量为 V_{gmax} 时	双泵最大流量 Q_{max} (l/min) (考虑 3% 的容积损失)在对 应转速下	双泵驱动功率 P(kW)	惯性矩 $J(kg\cdot m^2)$	重量 kg						
Size	Displacement of double pump per rotary group V_{gmax} (ml/r)	Splitter box gear ratio	Max. drive speed n_{Amax} (r/min) for (absolute) pressure P at suction inlet S and max. displ. V_{gmax}	Max. flow Q_{max} (l/min) of double pump(displacement losses of 3% included) at speed (start of control) and Q_{max} at speed	Drive power P(kw) of double pump, with $\Delta p_1 + \Delta p_2 = 35$ MPa (start of control) and Q_{max} at speed	Moment of inertia $J(kg\cdot m^2)$	Weight kg						
			$i = \frac{n_A}{n_p}$ $P = 0.09$ MPa $P = 0.1$ MPa $P = 0.15$ MPa										
				$n=0.09$ $n=0.1$ $n=0.15$	$n=0.09$ $n=0.1$ $n=0.15$	$n=0.09$ $n=0.1$ $n=0.15$							
28	28.1	0.729	2040	2185	2350	2 × 76	2 × 82	2 × 88	46	49	53	0.014020	54
		0.860	2410	2580	2770							0.009351	
55	54.8	1.000	2360	2500	2640	2 × 125	2 × 133	2 × 140	75	80	84	0.012475	
		0.745	1760	1860	1965							0.03743	
		0.837	1975	2090	2210							0.02818	
		1.051	2480	2625	2775							0.01639	
		1.1714	2765	2930	3090							0.012977	
58	58.8	0.8125	2315	2435	2720							0.06189	
		0.8667	2470	2600	2900	2 × 165	2 × 174	2 × 194				0.05590	130
		1.054	3000	3160	3530							0.3579	
80	80	1.000	2120	2240	2370	2 × 164	2 × 174	2 × 184	99	105	111	0.02680	
		0.8666	1840	1940	2055							0.05590	
		1.054	2235	2360	2500	2 × 164	2 × 174	2 × 184	99	105	111	0.03579	130
107	107	1.181	2505	2645	2800							0.02797	
		1.3448	2850	3010	3185							0.02137	
		1.000	1900	2000	2135	2 × 197	2 × 208	2 × 222	119	125	133	0.03625	
125	125	0.8431	1600	1685	1800							0.08257	
		1.075	2040	2150	2295	2 × 197	2 × 208	2 × 222	119	125	133	0.047012	165
		1.2285	2335	2455	2625							0.035353	
160	160	1.000	1750	1900	2100	2 × 271	2 × 284	2 × 325	164	178	196	0.064	200

A8V 变量双泵 Variable Displacement Double Pump A8V

总功率变量

SR总功率变量是一种与压力有关的先导控制，可无级同步调节双泵的倾角，从而在 $V_{g\max}$ 至 $V_{g\min}$ 范围内调节泵的排量，流量与系统压力成反比，以保持液压功率恒定。

总功率变量是以两个压力之和(P_1+P_2)来进行控制的，因此，当一个泵要较小功率时，其余功率可作用于另一个泵。在极端情况下，任一个泵都可得到最大功率。

Summation HP Control

Summation HP control SR is a pressure related, pilot operated control which steplessly adjusts the swivel angle, and thus the displacement, of the under-coupled pumps in the range $V_{g\max}$ to $V_{g\min}$. Flow is inversely proportional to system pressures, thereby maintaining hydraulic power constant.

Summation HP control means control using the sum of the two pressure (P_1+P_2). If one pump requires less power, then the remaining power is available to the other pump. In extreme cases, either pump can be supplied with the maximum power.

$$P = \frac{(P_1 + P_2) \cdot Q}{60 \cdot \eta_t} = \text{恒量}$$

constant

P = 驱动功率

drive power

[kw]

P_1, P_2 = 压力

pressure

[MPa]

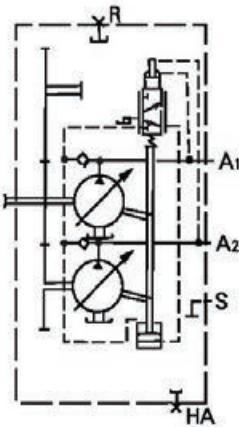
η_t = 总效率

overall efficiency

Q = 流量

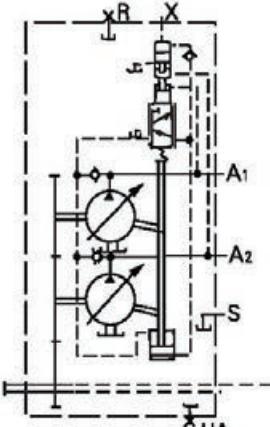
flow

[L/min]



A8V...SR

结构 Design1.2



A8V...SR

结构 Design2-5

带液压行程限位

with hydraulic stroke limiter

接口

connections

A1, A2 工作油口

suction line

S 吸油口

suction line

R 排气口

air bleed

HA 放油口

oil drain

X 先导压力口

pilot pressure

辅助装置 行程限位器 Auxiliary Device Stroke Limiter

The fixed setting of the max. flow

Device Stroke Limiter 固定的—

at the required value $V_{g\max}$ is made

用限位螺钉把最大流量固定于所

by means of a stop screw (please

需的 $V_{g\max}$ 上(订货时注明数值)。

indicate require value in clear text

机械的——通过机械行程限位

when ordering). By means of me-

可无级地改变或限制最大排量，

chanical stroke limiter, the max.

调节范围从 $V_{g\max}$ 到 $V_{g\min}$ 。

displacement can be steplessly var-

液压的——用附加的液压行程

ied of limited. Adjustment range from

限位器，可无级地改变或限制最

$V_{g\max}$ to $V_{g\min}$.

大排量，调节范围从 $V_{g\max}$ (固定

By means of an additional hydrau-

设置) 到 $V_{g\min}$ 。

lic stroke limiter, the max.displace-

液压行程限位器所需先导(x油

ment can be steplessly varied of

口) 不低于工作压力(P_1+P_2)的

limited. Adjustment range is from

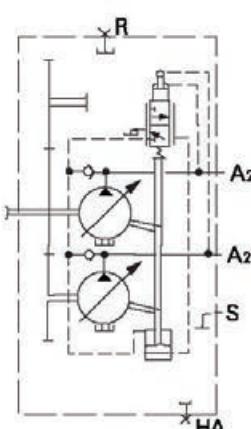
1/14,但 x 口的最低压力不低于

$V_{g\max}$ (fixed setting) to $V_{g\min}$.

0.7MPa, 最高允许压力为 5MPa

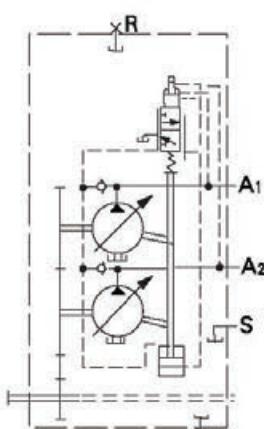
.

(所有规格)。



A8V...SR

结构 Design1.1

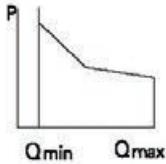


A8V...SR

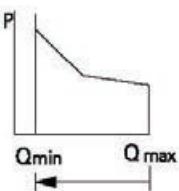
结构 Design2-5

A8V 变量双泵 Variable Displacement Double Pump A8V

A pilot pressure(port X) of at least 1/14 of the operating pressure (P_1+P_2) is required for the hydraulic stroke limiter; however, min. pressure at port X must not 0.7MPa. Max. Permissible pressure is 5MPa (for all Sizes)

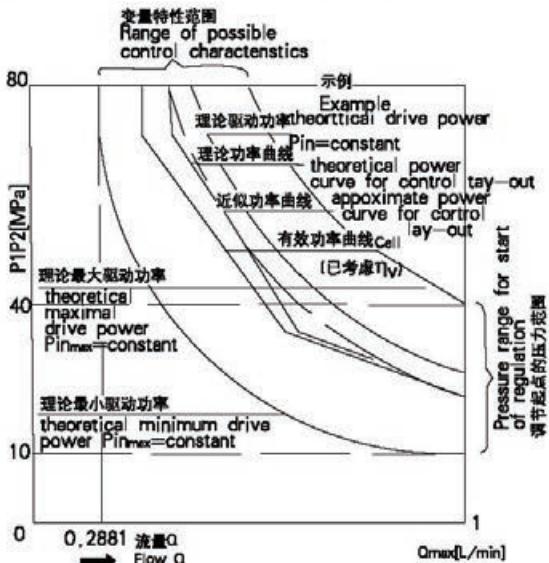


固定的 fixed setting



调节范围
adjustment range
机械的 mechanical
液压的 hydraulic

通用变量特性曲线 Control Curve(general)



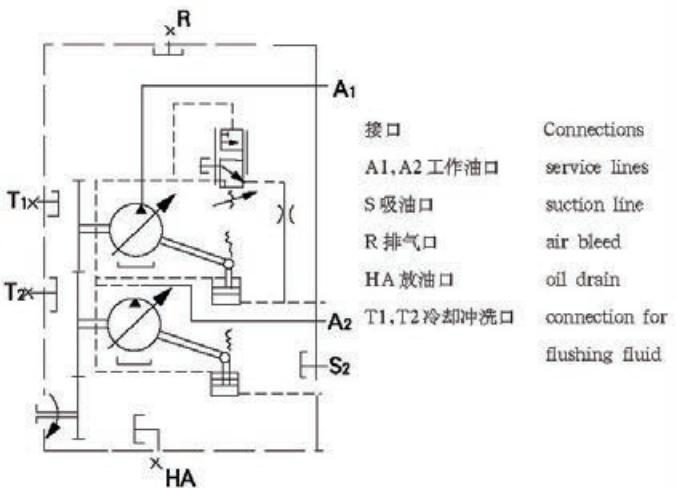
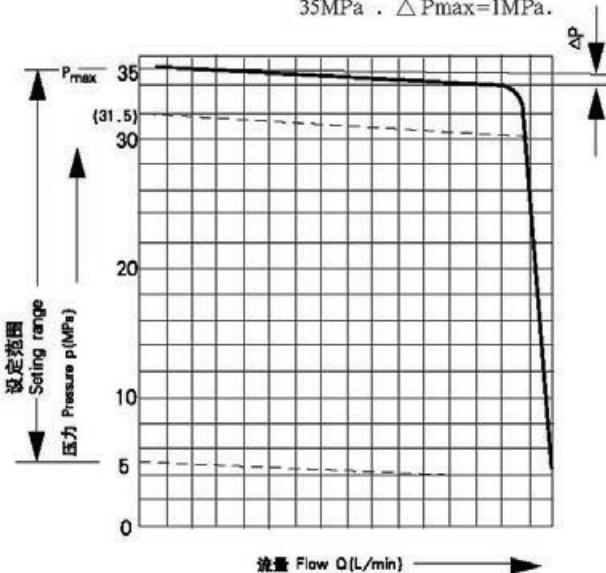
变量起点的压力范围 10–40MPa 为
两泵之压力总和, P_1 =泵 1 的压力,
 P_2 =泵 2 的压力, 每个驱动均有一
个特定的功率曲线。

恒压手动变量

Pressure range at start of control 10–40MPa total summated pressure P_1 =pressure from pump 1, P_2 =pressure from pump 2. Special curves are produced for each individual drive. Constant Pressure and Manual Control DM

恒压物动变量是一种分功率调 Constant pressure and manual control 节控制, 一泵为恒压变量泵, 一泵 One pump is a constant pressure control, 为手动变量泵, 排量在0–58ml范 the other pump is a manual control, 围内可调, 恒压变量在其变量 and the displacement is adjustable is 范围内保持系统压力恒定, 不 the range 0 to 58ml.

受泵流量变化的影响, 变量泵 The constant pressure control maintains the pressure in a hydraulic system constant within its control range in spite of changing pump flow requirements. The variable pump supplies only the volume of fluid required by the services. Should operating pressure exceed the set pressure, the pump is automatically swivelled back to a smaller angle. Setting range from 5 to 35MPa . $\Delta P_{max}=1MPa$.



DM 恒压手动变量

Constant pressure and manual control DM

A8V 变量双泵 Variable Displacement Double Pump A8V

元件尺寸, 规格 55、80 和 107 Unit Dimensions, Size 55, 88 and 107

结构 1.1

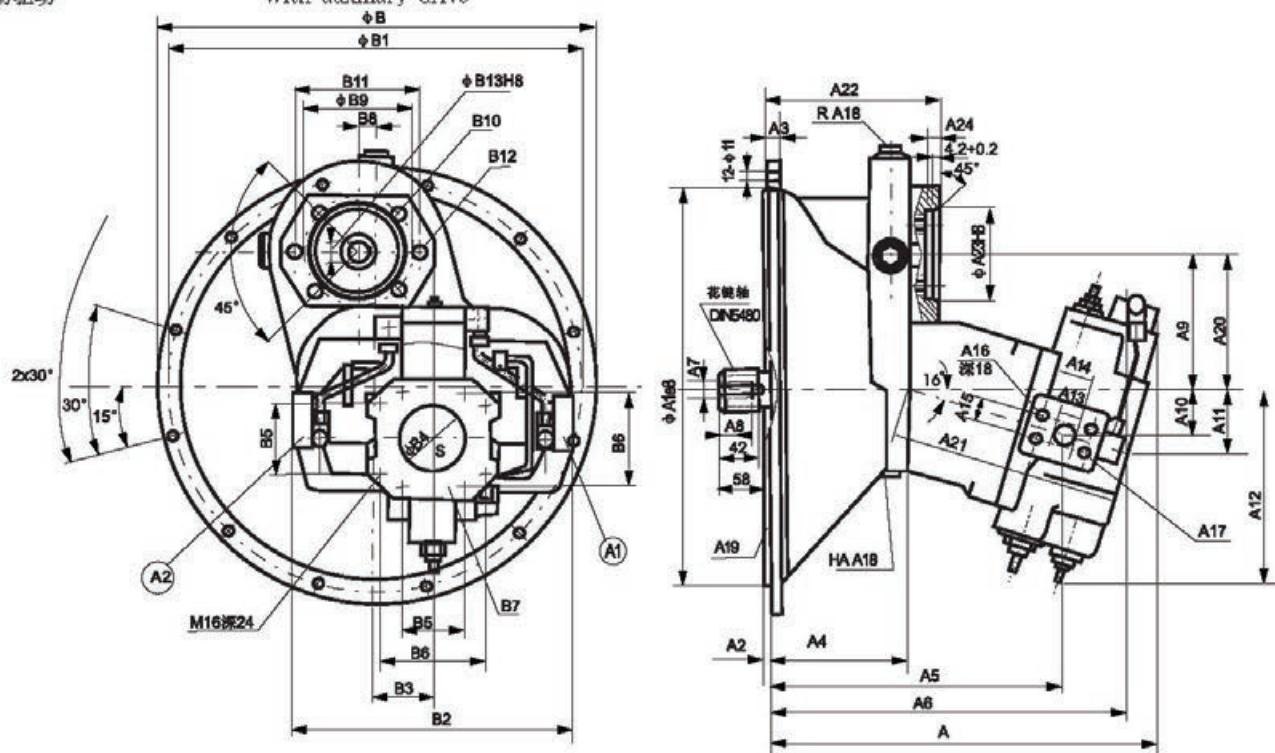
Design 1.1

不带减速齿轮

With out adaptor gear

带辅助驱动

With auxiliary drive



A8V 变量双泵 Variable Displacement Double Pump A8V

元件尺寸，规格 55、80、107、125 和 160

结构 1.2

不带减速齿轮

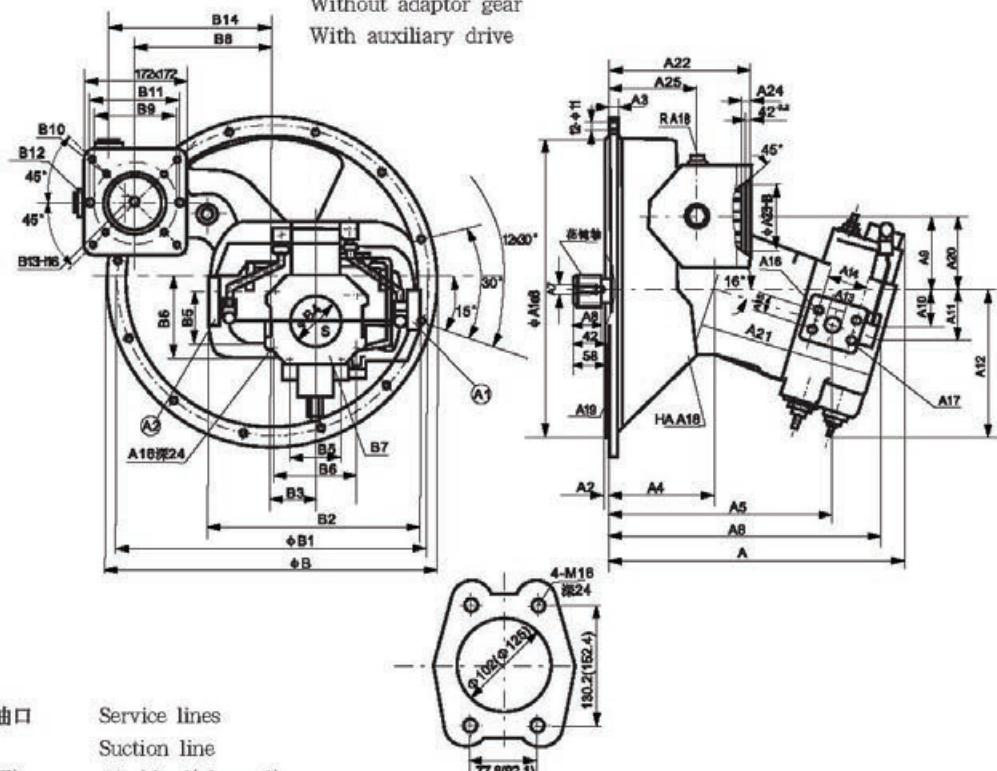
带辅助驱动

Unit Dimensions, Size 55, 80, 107, 125 and 160.

Design 1.2

Without adaptor gear

With auxiliary drive



A1,A2 = 工作油口

Service lines

S = 吸油口

Suction line

R = 排气口(堵死)

Air bleed(plugged)

A8V125(160)吸油口 Suction line

規格

size	A	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	Deep	Flange
55	361	361.95	5	12	130	273	331	M12	28	92	41	57.6	179.5	20	50.8	23.8	M10	17SAE ³ / ₄ "	42MPa(6000Psi)
80	418	409.575	6	12	144	310	383	M16	36	107.3	47.2	68.5	214.3	25	57.2	27.8	M12	17SAE ¹ / ₄ "	42MPa(6000Psi)
107	443	447.7	6	16	157	385	407	M16	36	115.6	51	71.6	216.3	25	57.2	27.8	M12	18SAE ¹ / ₄ "	42MPa(6000Psi)
125	426	447.7	6	16	157	307.7	354.4	M16	36	272	47.5	62.2	222	25	57.2	27.8	M12	18SAE1"	42MPa(6000Psi)
160	542	511.2	6	20	221	421	473	M20	42	224	57	72	257	32	31.8	66.7	M14	19SAE1 ¹ / ₄ "	42MPa(6000Psi)

规格 A19 法兰

size	A18	Flange	A20	A21	A22	A23	A24	A25	B	B1	B2	B3	B4	B5	B6	Flange	
55	M18 × 1.5	SAE4						407	381	270	54.25	76	61.9	106.4	SAE3"	3.5MPa	
80	M22 × 1.5	SAE3	110	240.5	211	100	12	127	456	428.625	290	60.5	102	77.8	103.2	SAE4"	3.5MPa
107	M22 × 1.5	SAE2	108	260	214	100	12	137	495	466.7	320	67	102	77.8	130.2	SAE4"	3.5MPa
125	M22 × 1.5	SAE2	108	157	214	100	12	137	495	466.7	320	67	102			SAE4"	3.5MPa
160	M22 × 1.5	SAE1	162.6	208	280	110	25		555	530.2	384	85.5	125			SAE5"	3.5MPa

规划

Size	B8	B9	B10	deep	B11	B12	deep	B13	Keyed	Splined	Weight
55										W40 × 2 × 18 × 9g	80
80	175	125	M10	16	140	M14	20	25	8 × 36	W45 × 2 × 21 × 9g	110
107	198.5	125	M10	16	140	M14	20	25	8 × 45	W50 × 2 × 24 × 9g	145
125	198.5	125	M10	16	140	M14	20	25	8 × 45	W50 × 2 × 24 × 9g	180
160	202.8	138	M10	16	160	M14	20	25	8 × 45	W60 × 2 × 28 × 9g	200

A8V 变量双泵 Variable Displacement Double Pump A8V

元件尺寸, 规格 55、80 和 107

结构 2-5

结构 2

带减速齿轮

不带辅助驱动

Unit Dimensions Size 55、80 and 107

Designs 2-5

Design 2

with adaptor gear

without auxiliary drive

结构 4

带减速齿轮

带辅助驱动和安装齿轮泵

(带锥轴和螺钉固定)的联轴节

Design 4

with adaptor gear

with auxiliary drive and coupling for mounting

of gear pump

(with tapered shaft and bolt-on fixing)

结构 3

带减速齿轮

带辅助驱动和安装定量泵 A2F23.28

(带花键轴)的联轴节

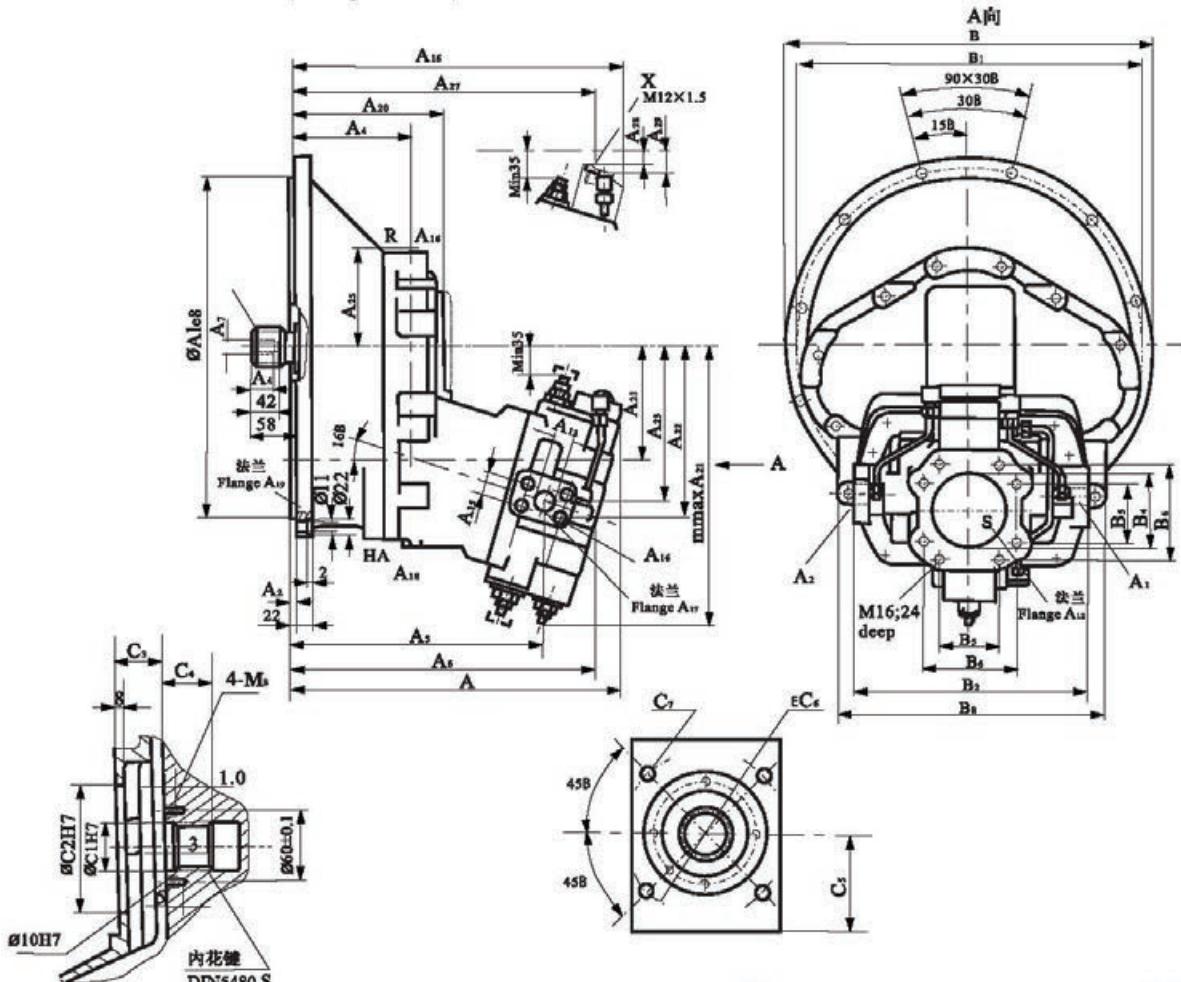
Design 3

with adaptor gear

with auxiliary drive and coupling

for mounting of fixed pump A2F23.28

(with splined shaft) A.



A1, A2 = 工作油口

Service lines

规格

内花键 DIN5480

S = 吸油口

Suction line

Size C1 C2 C3 C4 C5 C6

Splined hub Profile

R = 排气口(堵死)

Air bleed(plugged)

C7

55 34 80 42.5 33 55 100 M8 深 17 N30 × 2 × 14 × 9H

HA = 泄油口(堵死)

Oil drain(plugged)

80 40 105 42.5 41 60 125 M10 深 12.5 N35 × 2 × 16 × 9H

X = 先导口

pilot port

107 40 105 42 41 62 125 M10 深 12.5 N35 × 2 × 16 × 9H

规格	size	A	A1	A2	A4	A5	A6	A7	A8	A13	A14	A15	A16	deep	深	A17 法兰		A19 法兰		
																Flange	A18	Flange	A20	A21
55	361	361.95	5	130	273	331	M12	28	20	50.8	23.8	M10	17	SAE ³ / ₄ " 42MPa(6000Psi)	M18 × 1.5	SAE4	176	312		
80	418	409.575	6	144	310	383	M16	36	25	57.2	27.8	M12	17	SAE" 42MPa(6000Psi)	M22 × 1.5	SAE3	191	344		
107	443	447.7	6	157	335	407	M16	36	25	57.2	27.8	M12	17	SAE1" 42MPa(6000Psi)	M22 × 1.5	SAE2	204	360		
规格	Size	A22	A23	A24	A25	A26	A27	A28	A29	B	B1	B2	B3	B4	B5	B6	B7 法兰	Splined shaft	重量	
																flange	B8	DIN 5480	Kg	
55	181	164.3	123.3	115	370	322	6	8	407	381	270	76	61.9	106.4	SAE3"	3.5MPa(500Psi)	320	W40 × 2 × 18 × 9g	100	
80	198.2177.5	129.7	115	420	382	7	12.5	456	428.625	290	102	77.8	130.2	SAE4"	3.5MPa(500Psi)	340	W45 × 2 × 21 × 9g	130		
107	215.3194.7	143.7	128	453	406	21.5	27	495	466.7	320	102	77.8	130.2	SAE4"	3.5MPa(500Psi)	360	W50 × 2 × 24 × 9g	165		

ANNOTATIONS :

HUADE AMÉRICA

CEP : 03162-020

RUA HIPÓDROMO 1445 – MOOCA, SÃO PAULO, SP, BRASIL

TEL : (11) 3186-5959

huade@huade.com.br

www.huade.com.br