

## A10VSO Series Variable Displacement Pump

### Product show and brief introduction



Size 18~140 series 31  
Nominal pressure 280Bar  
Peak pressure 350Bar  
Swash plate design axial variable piston pump



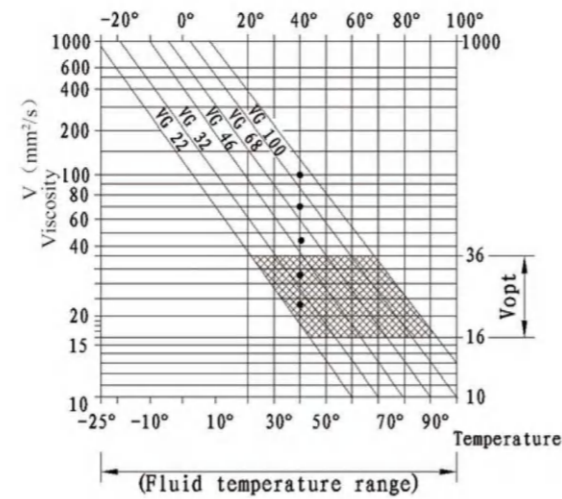
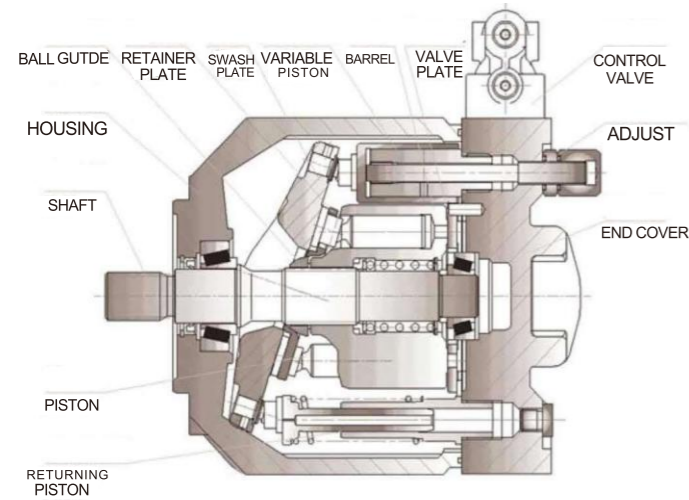
#### Features

- 1、 Swash plate design axial variable piston pump used in Open Circuit.
- 2、 Continuous working pressure can reach 280bar,the highest instantaneous working pressure can reach 350bar.
- 3、 The flow is directly proportional to the drive rotate speed and the displacement,and can make stepless variable come true by adjusting the obliquity of the swash plate.
- 4、 Wide range of controls such as DR,DFR,DFLR etc.Short response times.
- 5、 Low noise level,high efficiency,high reliability and long service life.
- 6、 Small volume,High power density.
- 7、 Excellent oil absorbency.
- 8、 Axial and radial loading of drive shaft possible.
- 9、 SAE and ISO mounting flange.
- 10、 Thru drive option for multi-circuit system.

A10V(S)		O	28	DR	/	31	R	-	P	S	C	62	N00
Model		Variable pump,Swashplate design Rated pressure 280bar Peak pressure 350bar											
Mode of operation		Pump,Circuit											
Displacement		18.28.45.71.100.140(ml/r)											
Controller		18 28 45 71 100 140											
DG		Two point,direct control											
DR		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DRG		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DFR		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DFR1		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DFLR		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Series		31 Series											
Direction of Rotation		R Clockwise L Anti-clockwise											
Seals		P Perbunan V Viton											
Port for service lines		18 28 45 71 100 140											
SAE flange rear, fixing thread metric			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAE flange rear, fixing thread UNC			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAE flange on opposite side,fixing thread metric		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAE flange on opposite side,fixing thread UNC		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAE flange rear, fixing thread metric(UNC)									✓				
SAE flange on opposite side,fixing thread metric(UNC)									✓				
Mounting flange		18 28 45 71 100 140											
A--ISO ISO 2-hole		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
C--SAE SAE 2-hole		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
B--ISO ISO 4-hole													✓
D--SAE SAE 4-hole													✓
Shaft end		18 28 45 71 100 140											
P Metric parallel with key		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
S SAE splined		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
R SAE splined (higher through drive torque)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
K SAE parallel with key		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
U SAE splined, reduced dia. not for through drive		✓			✓				✓				
W Similar to shaft "U", higher input torque, not for through drive					✓				✓				

With through drive to accept an axial piston pump or a gear pump			18	28	45	71	100	140							
Without through drive			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	N00
Mounting flange	Shaft/coupling	For the mounting of													
ISO 80,2 hole	3/4"	19-4(SAE A-B)	A10VSO10-18 (shaft S or R)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	KB2
ISO 100,2 hole	7/8"	22-4 (SAE B)	A10VSO28 (shaft S or R)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	KB3
ISO 100,2 hole	1"	25-4(SAE B-B)	A10VSO45 (shaft S or R)			✓	✓	✓	✓	✓	✓	✓	✓	✓	KB4
ISO 125,2 hole	1 1/4"	32-4(SAE-C)	A10VSO71 (shaft S or R)				✓	✓	✓	✓	✓	✓	✓	✓	KB5
ISO 125,2 hole	1 1/2"	38-4(SAE C-C)	A10VSO100 (shaft S)						✓	✓	✓	✓	✓	✓	KB6
ISO 180,4 hole	1 3/4"	44-4(SAE D)	A10VSO140 (shaft S)										✓	✓	KB7
SAE 82-2,2 hole	5/8"	16-4(SAE A)	A10VSO10-18 (shaft U),1PF2G2,PGF2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	K01
SAE 82-2,2 hole	3/4"	19-4(SAE A-B)	A10VSO10-18 (shaft S or R)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	K52
SAE 101-2,2 hole	7/8"	22-4(SAE B)	1PF2G3			✓	✓	✓	✓	✓	✓	✓	✓	✓	K02
SAE 101-2,2 hole	7/8"	22-4(SAE B)	A10VSO28 (shaft S or R),PGF3			✓	✓	✓	✓	✓	✓	✓	✓	✓	K68
SAE 101-2,2 hole	1"	25-4(SAE B-B)	A10VSO45 (shaft S or R),PGH4				✓	✓	✓	✓	✓	✓	✓	✓	K04
SAE 127-2,2 hole	1 1/4"	32-4(SAE C)	A10VSO71 (shaft S or R)						✓	✓	✓	✓	✓	✓	K07
SAE 127-2,2 hole	1 1/2"	38-4(SAE C-C)	A10VSO100 (shaft S),PGH5										✓	✓	K24
SAE 152-4,4 hole	1 3/4"	44-4(SAE D)	A10VSO140 (shaft S)											✓	K17
ISO 80-2	Φ 18			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	K51
SAE A 82-2	Φ 19.05			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	K40
ISO 100-2	Φ 22				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	K25
SAE B 101-2	Φ 22.225					✓	✓	✓	✓	✓	✓	✓	✓	✓	K03
ISO 100-2	Φ 25						✓	✓	✓	✓	✓	✓	✓	✓	K26
SAE B 101-2	Φ 25.4							✓	✓	✓	✓	✓	✓	✓	K05
ISO 125-2	Φ 32								✓	✓	✓	✓	✓	✓	K27
SAE B 127-2	Φ 31.75									✓	✓	✓	✓	✓	K08
ISO 125-2	Φ 40										✓	✓	✓	✓	K37
SAE C 127-2	Φ 38.1											✓	✓	✓	K38
ISO 180-4	Φ 45													✓	K59
SAE B 152-4	Φ 44.45													✓	K21

## Construction



## Hydraulic fluid

The A10VSO variable displacement pump is suitable for use mineral oil

### Operating viscosity range

In order to obtain optimum efficiency and service life, we recommend that the operating viscosity (at operating temperature) be selected from within the range  $V_{opt}$  = opt. operating viscosity 16...36 mm<sup>2</sup>/s

Referred to the reservoir temperature (open circuit).

Notes on the selection of the hydraulic fluid. In order to select the correct fluid, it is necessary to know the operating temperature in the tank (open loop) in relation to the ambient temperature. The hydraulic fluid should be selected so that within the operating temperature range, the operating viscosity lies within the optimum range ( $V_{opt}$ ) (see shaded section of the selection diagram). We recommend that the higher viscosity range should be chosen in each case.

## Viscosity limits

$V_{min}$  = 10 mm<sup>2</sup>/s

short term at a max. permissible drain of 90°C.

$V_{max}$  = 1000 mm<sup>2</sup>/s short term on cold start

Temperature range (see selection diagram): t = -25~90°C

## Filtration

The finer the filtration the better the cleanliness of the pressure fluid and the longer the life of the axial piston unit. To ensure the functioning of the axial piston unit a minimum cleanliness level of: 9 to NAS 1638 18/15 to ISO/DIS 4406 is necessary

## Technical Data

### Mechanical displacement limiter

Mechanical displacement limiter is possible on the nonthrough-drive model, NOO series but not for the model with through-drive

$V_{gmax}$ : for sizes i 8 to 140

Setting range  $V_{gmax}$  to 50%  $V_{gmax}$  stepless

$V_{gmin}$ : for sizes 100 and 140

Setting range  $V_{gmin}$  to 50%  $V_{gmax}$  stepless

### Parameter

Operating pressure range -inlet

Absolute pressure at port S

$P_{absmin}$  ----- 0.8 bar

$P_{absmax}$  ----- 30 bar

Operating pressure range-outlet

Pressure at port B

Nominal pressure  $P_N$  ----- 280 bar

Peak pressure  $P_{max}$  ----- 350 bar

Applications with intermittent operating pressures up to 315 bar at 10% duty are permitted.

### Case drain pressure

Maximum permissible pressure of leakage fluid (at port L,L<sub>1</sub>): Maximum 0,5 bar higher than the inlet pressure at port S, but no higher than 2 bar absolute pressure.

Sizes		18	28	45	71	100	140
Displacement	$V_{gmax}$ cm <sup>3</sup>	18	28	45	71	100	140
Max speed	$n_{max}$ rpm	3300	3000	2600	2200	2000	1800
Max. flow	in $n_{max}$	59.4	84	117	156	200	252
	in 1500r/min	27	42	68	107	150	210
( $\Delta p=280$ bar) Max. power	in $n_{max}$	27.7	39	55	73	93	118
	in 1500 r/min	12.6	20	32	50	70	98
( $\Delta p=280$ bar) Max. torque	in $V_{gmax}$	80.1	125	200	316	445	623
Weight		12	15	21	33	45	60

## Parameter relations

$$\text{Flow } q_v = \frac{V_g \cdot n \cdot \eta_v}{1000} \text{ [L/min]}$$

$$\text{Drive Torque } T = \frac{1.59 \cdot V_g \cdot \Delta p}{100 \cdot \eta_{mh}} = \frac{V_g \cdot \Delta p}{20 \cdot \pi \cdot \eta_{mh}} \text{ [Nm]}$$

$$\text{Drive Power } P = \frac{T \cdot n}{9549} = \frac{2\pi \cdot T \cdot n}{60000} = \frac{q_v \cdot \Delta p}{600 \cdot \eta_t} \text{ [kw]}$$

$V_g$  = [cm<sup>3</sup>] Geometry displacement each rotate

$\Delta p$  = [bar] Pressure drop/differential

$n$  = [rpm] Rotary speed

$\eta_v$  = Cubage's efficiency

$\eta_{mh}$  = Mechanical-Hydraulic efficiency

$\eta_t$  = Overall efficiency

Optional installation position. The pump housing must be filled with fluid during commissioning and remain full when operating. In order to attain the lowest noise level, all connections (suction, pressure, case drain ports) must be linked by flexible couplings to tank. Avoid placing a check valve in the case drain line.

## 1. Vertical installation (shaft end upwards)

The following installation conditions must be taken into account:

### 1.1 Arrangement in the reservoir

Before installation fill pump housing, keeping it in a horizontal position.

a) If the minimum fluid level is equal to or above the pump mounting face close port "L" plugged, leave ports "L1" and "S" open; L1 piped and recommendation S piped (see Fig. 1).

b) If the minimum fluid level is below the pump mounting face pipe port "L1" and "S" according to Fig. 2. Close port "L" with respect taking into consideration

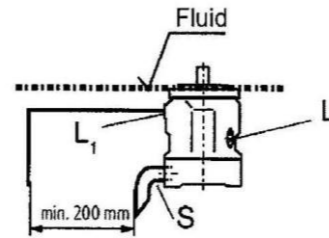


Fig. 1

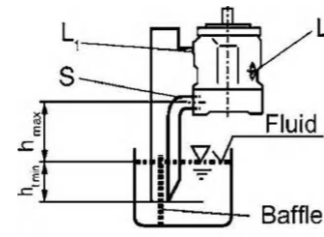


Fig. 2

### 1.2. Arrangement outside the reservoir

Before installation fill the pump housing, keeping it in a horizontal position. For mounting above reservoir see Fig. 2. Limiting condition:

1.2.1. Minimum pump inlet pressure  $P_{abs\ min} = 0.8$  bar under both static and dynamic conditions.

Note: Avoid mounting above reservoir wherever possible in order to achieve a low noise level.

The permissible suction height  $h$  comes from the overall pressure loss, but may not be bigger than  $h_{max} = 500$  mm (immersion depth  $h_{min} = 200$  mm).

## Overall pressure loss

$$\Delta p_{tot} = \Delta p1 + \Delta p2 + \Delta p3 \leq (1 - P_{abs\ min}) = 0.2 \text{ bar}$$

$\Delta p1$ : Pressure loss in pipe due to accelerating column of fluid

$$\Delta p1 = \rho \cdot l \cdot \left(\frac{dv}{dt}\right) \cdot 10^{-5} \text{ (bar)}$$

$\rho$  = density ( $\text{kg/m}^3$ )  $l$  = pipe length (m)

$dv/dt$  = rate of change in fluid velocity ( $\text{m/s}^2$ )

$\Delta p2$  = Pressure loss due to static head  $\Delta p2 = h \cdot \rho \cdot g \cdot 10^{-5} \text{ (bar)}$   $h$  = height (m)  $\rho$  = density ( $\text{kg/m}^3$ )

$g$  = gravity =  $9.81$  m/s

$\Delta p3$ : Line losses (elbows etc.)

## 2. Horizontal installation

The pump must be installed, so that "L" or "L1," is at the top.

### 2.1. Arrangement in the reservoir

a) If the minimum fluid level is above the top of the pump, port "L1," closed, "L" and "S" should remain open, L piped and recommendation S piped (see Fig. 3)

b) If the minimum fluid level is equal to or below the top of the pump, pip ports "L" and possibly "S" as Fig. 4.; close port "L1" The conditions according to item 1.2.1.

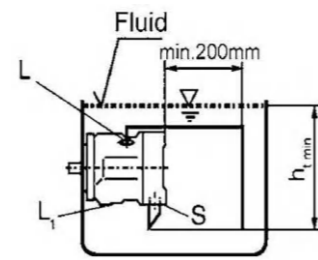


Fig. 3

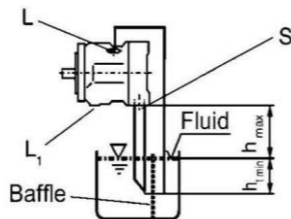


Fig. 4

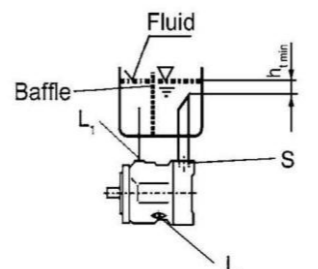


Fig. 5

b) Mounting below the reservoir "Pipe ports L1 and "S" according to Fig. 5, close port "L"

## Controller

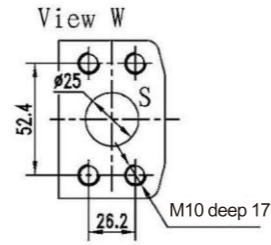
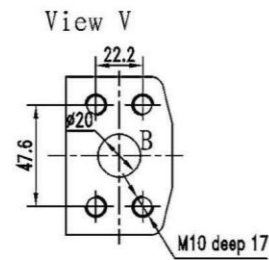
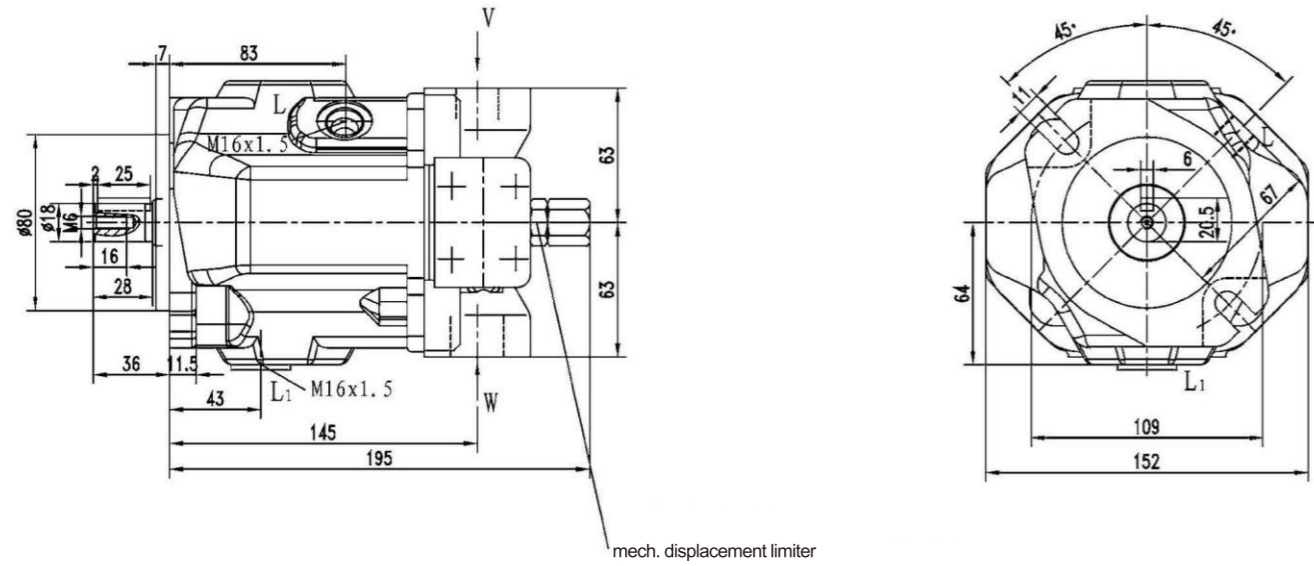
Static characteristic	(Circuit drawing)		
	DR Size 18...100	Size 140	<p>The pressure controller serves to maintain a constant pressure in a hydraulic system within the control range of the pump. The amount of hydraulic fluid required by the system. Pressure may be steplessly set at the control valve.</p>
	DRG Size 18...100	Size 140	
	DPR/DFR1 Size 18...100	Size 140	<p>Function and equipment as for DR. a pressure relief valve can be connected to port X for remote control applications; this is not included in the items supplied with the DRG control.</p>
	DFLR Size 28...100	Size 140	
			<p>Function and equipment as for in addition to the pressure control function, the pump flow may be varied by means of a differential pressure over an orifice or valve spool, installed in the service line. The pump flow is equal to the actual required flow by the actuator. The DFR1-valve has no connection between x and the tank.</p>
			<p>In order to achieve a constant drive torque with a varying operating pressure, the swivel angle and with it the output flow of the axial piston pump is varied so that the product of flow and pressure remains constant. Constant flow control is possible below the power curve.</p>



#### (Unit dimensions, size 18)

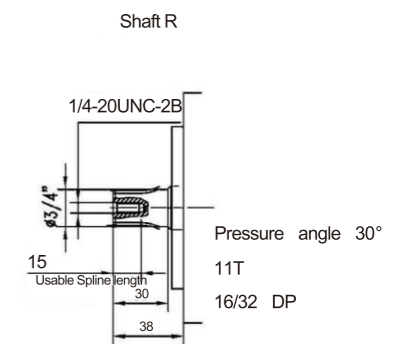
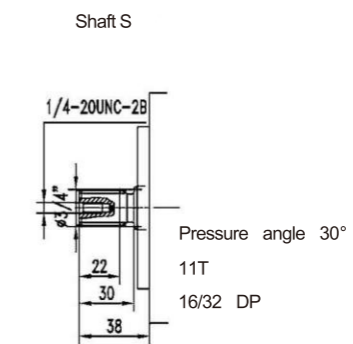
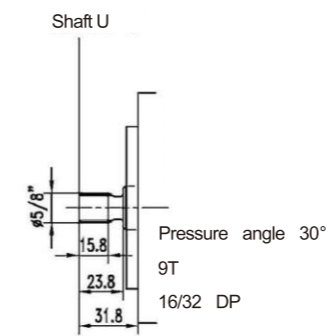
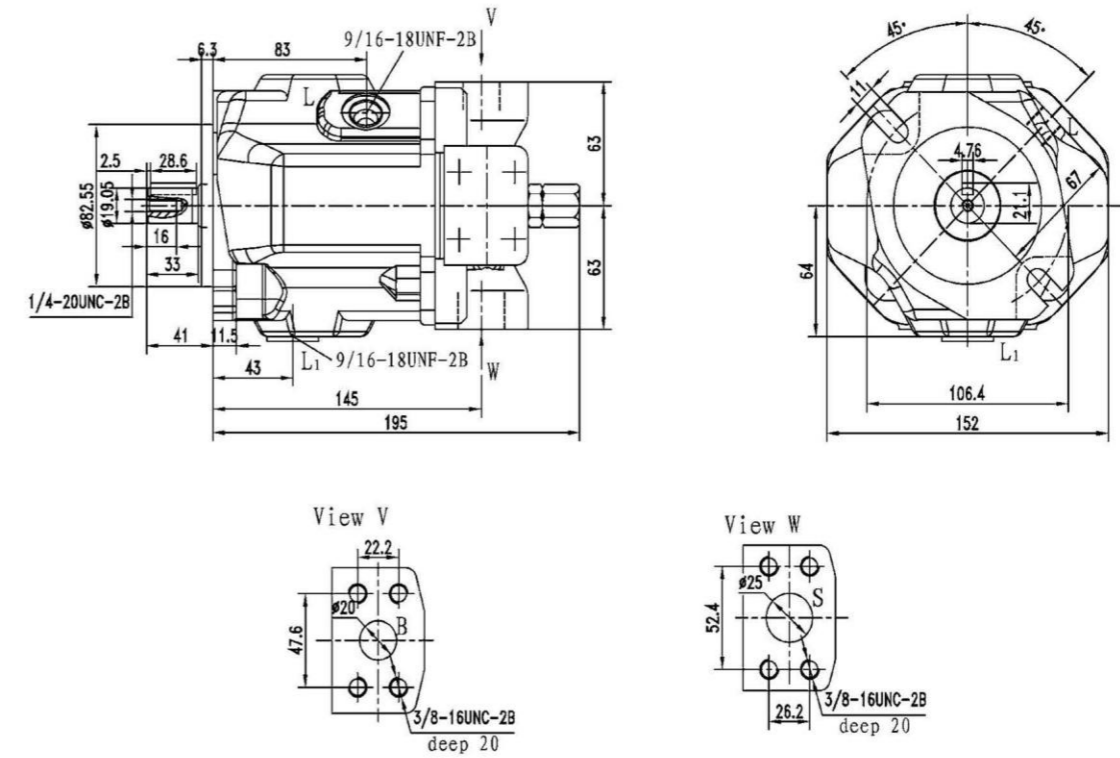
Flange ISO

Shaft P (A10VSO 18 XXX/31X-PPA12N00)



#### Flange SAE

Shaft K (A10VSO 18 XXX/31X-PKC62N00)

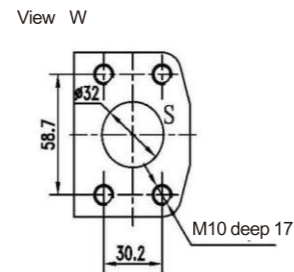
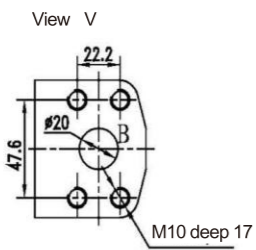
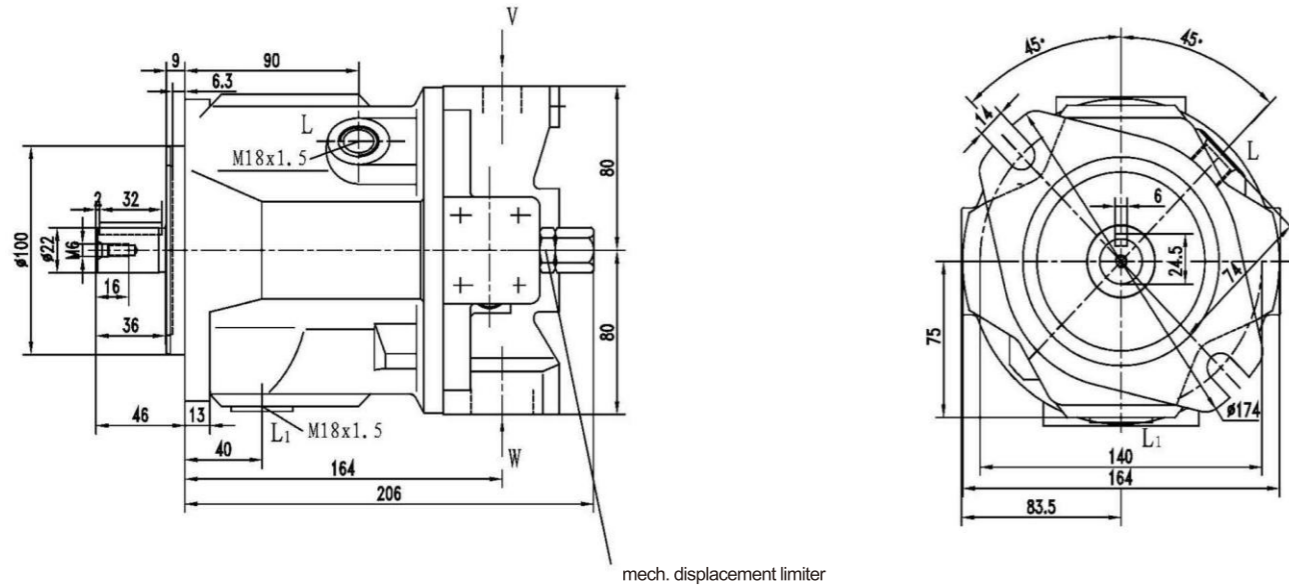


### Installation Dimensions

(Unit dimensions, size 28)

Flange ISO

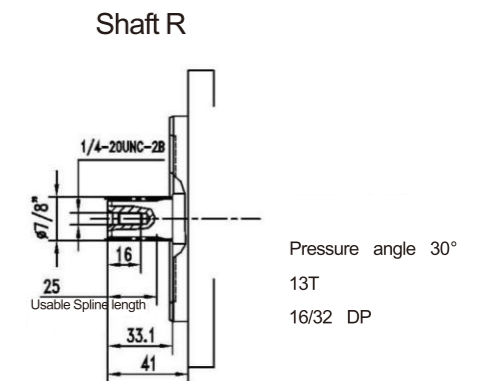
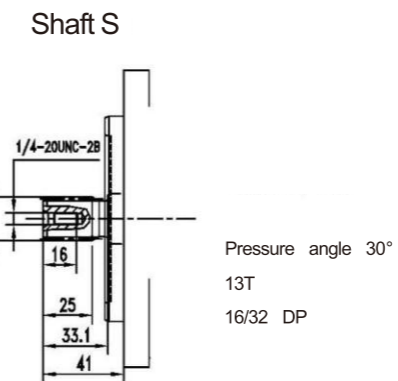
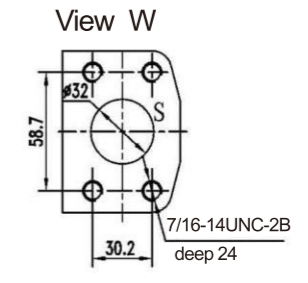
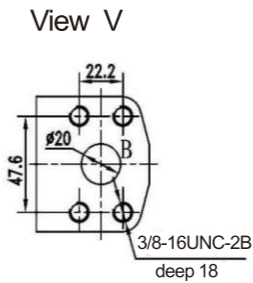
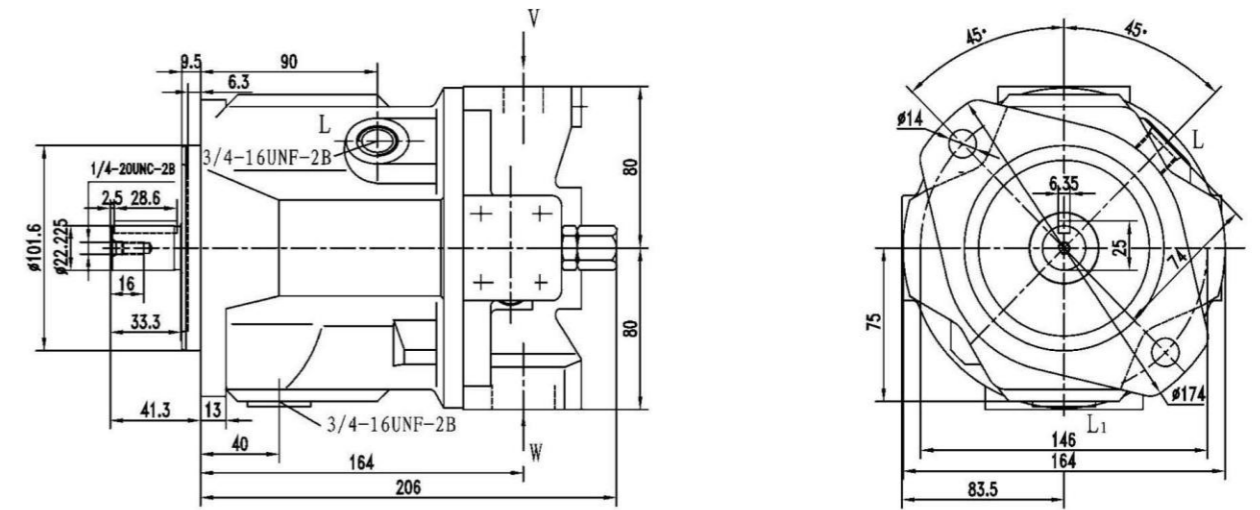
Shaft P(A10VSO 28 XXX/31X-PPA12N00)



### Installation Dimensions

Flange SAE

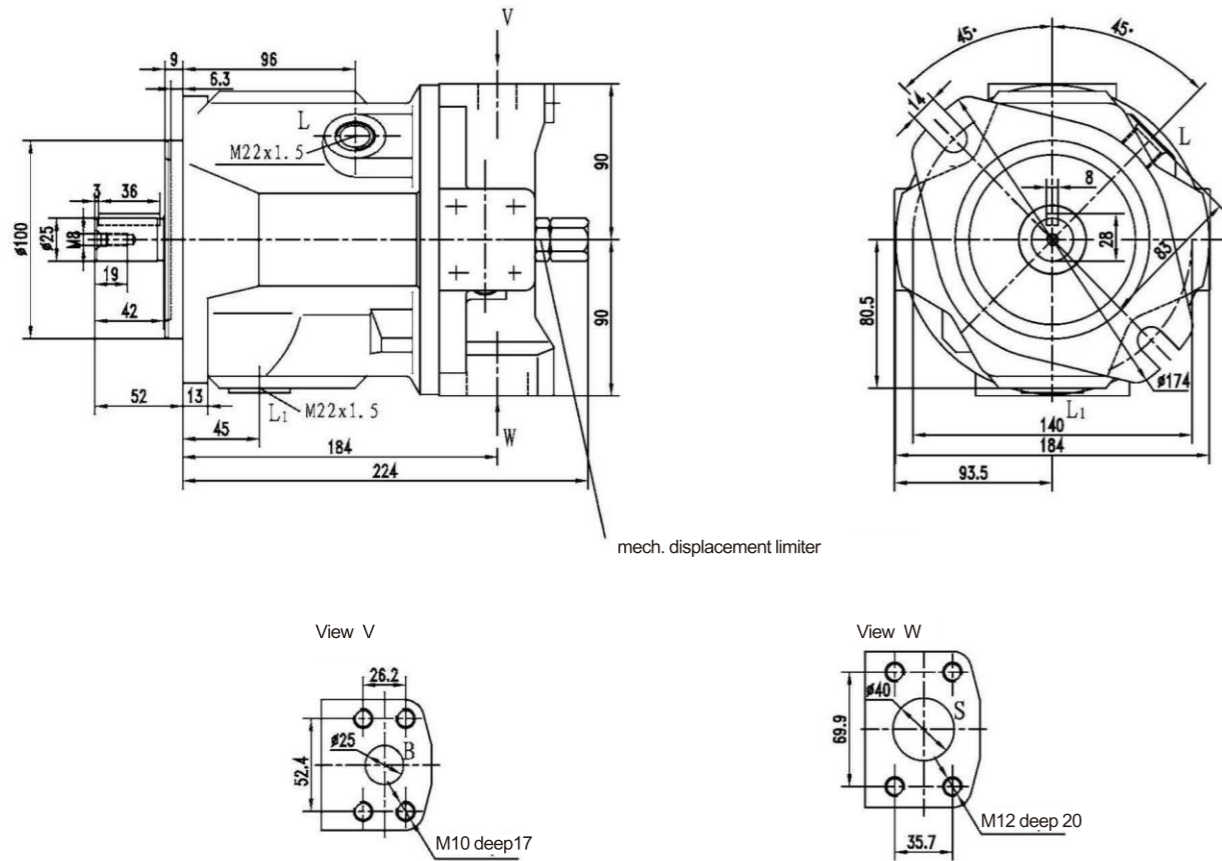
Shaft K (A10VSO 28 XXX/31X-PKC62N00)



## Installation Dimensions

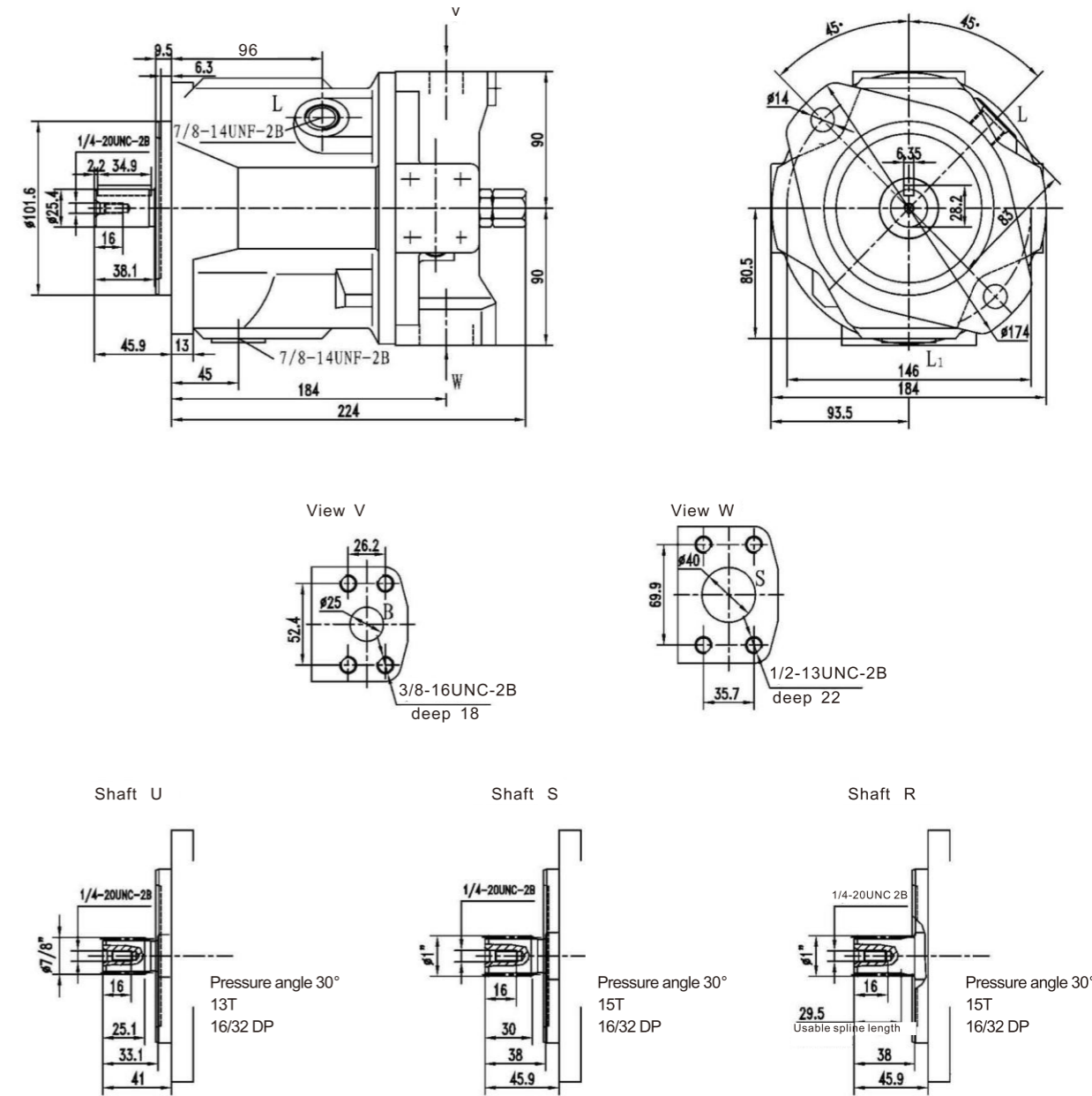
(Unit dimensions, size 45)

Flange ISO  
Shaft P (A10VSO 45 XXX/31X-PPA12N00)



## Installation Dimensions

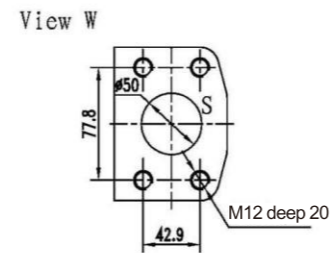
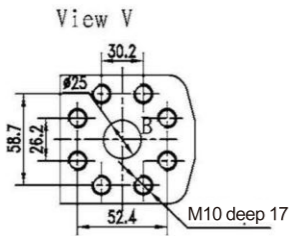
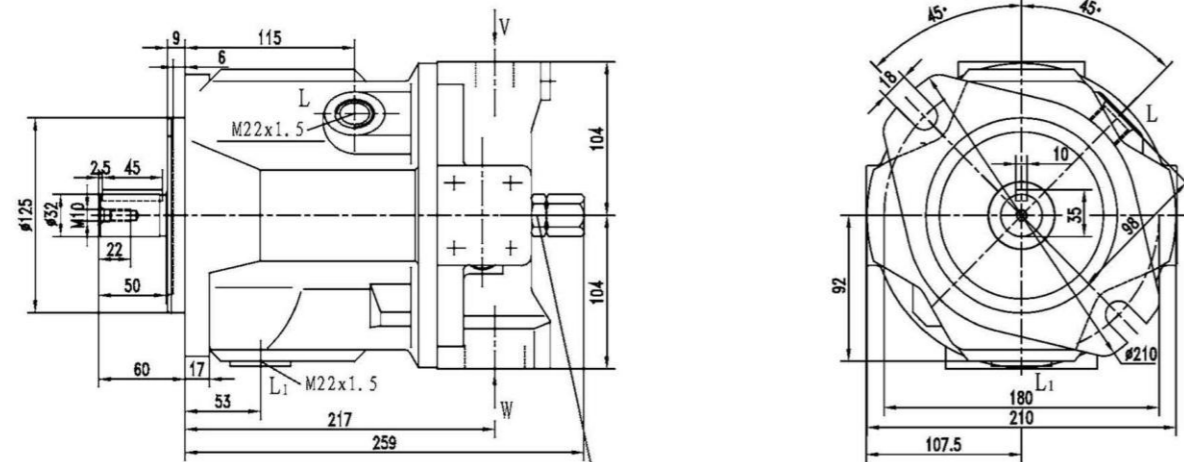
Flange SAE  
Shaft K (A10VSO 45 XXX/31X-PKC62N00)



### Installation Dimensions

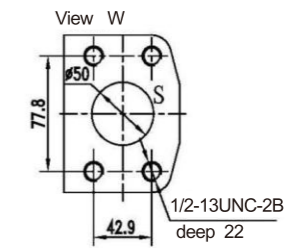
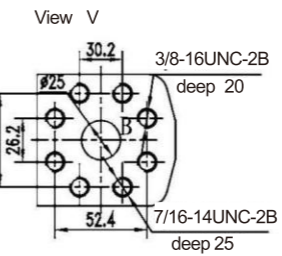
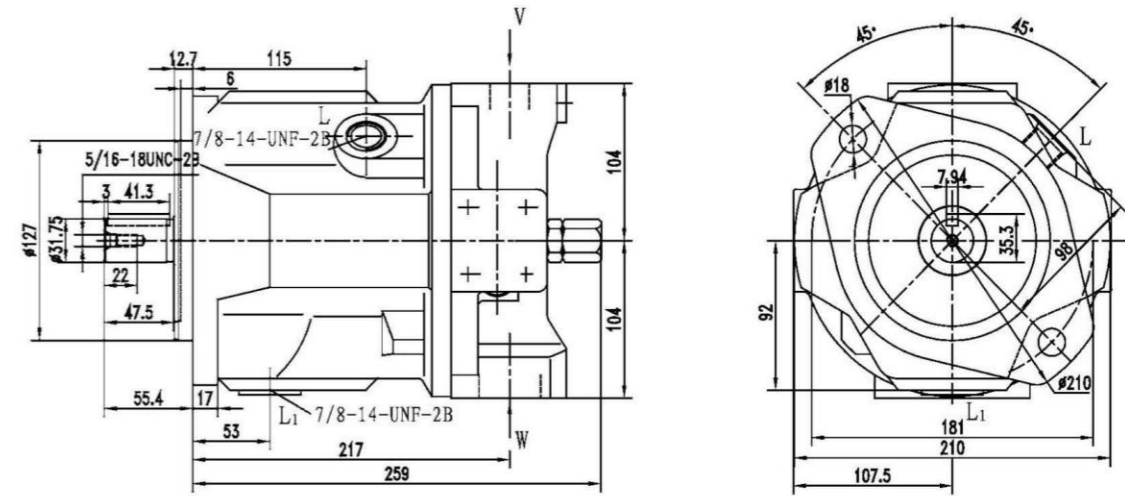
#### Unit dimensions, size 71

Flange ISO  
Shaft P (A10VSO 71 XXX/31X-PPA12N00)

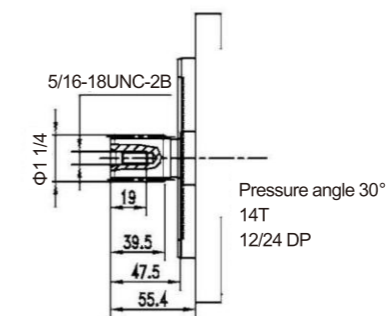


### Installation Dimensions

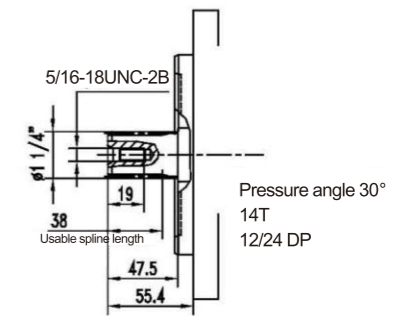
Flange SAE  
Shaft K (A10VSO 71 XXX/31X-PKC62N00)



S轴 Shaft S



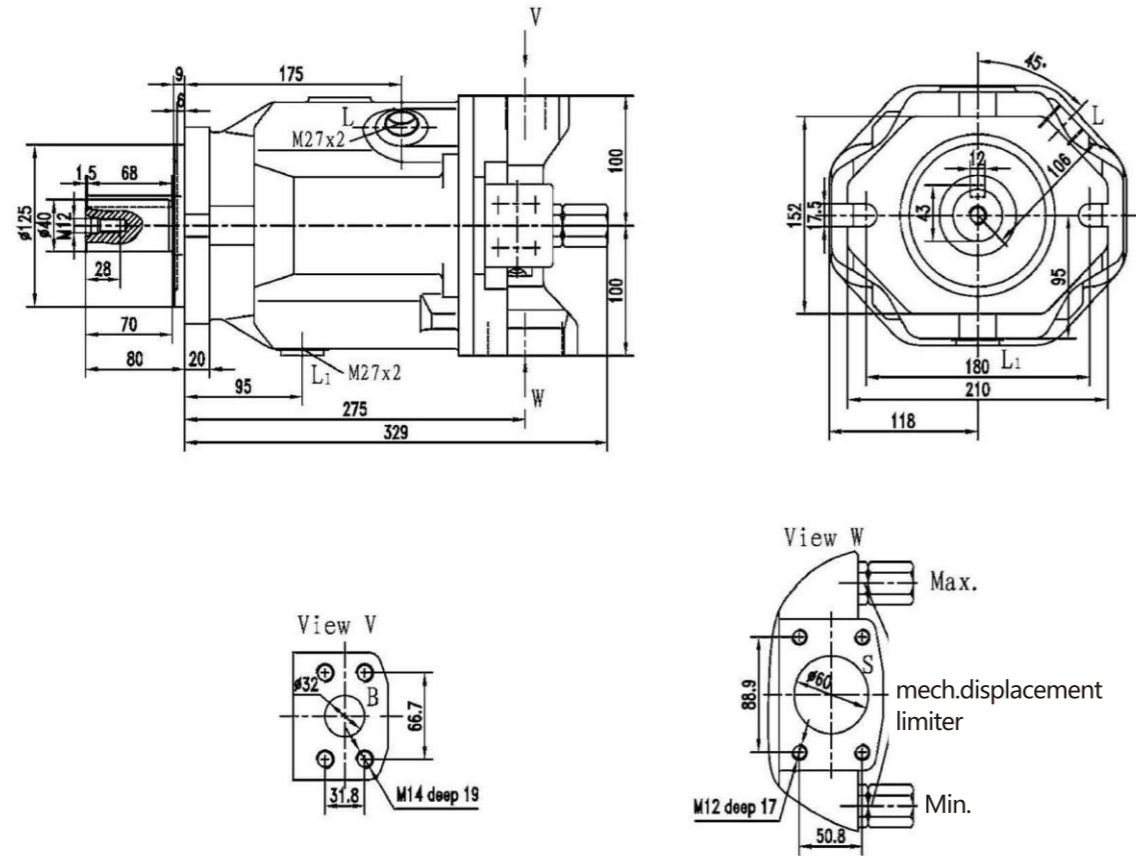
R轴 Shaft R



### Installation Dimensions

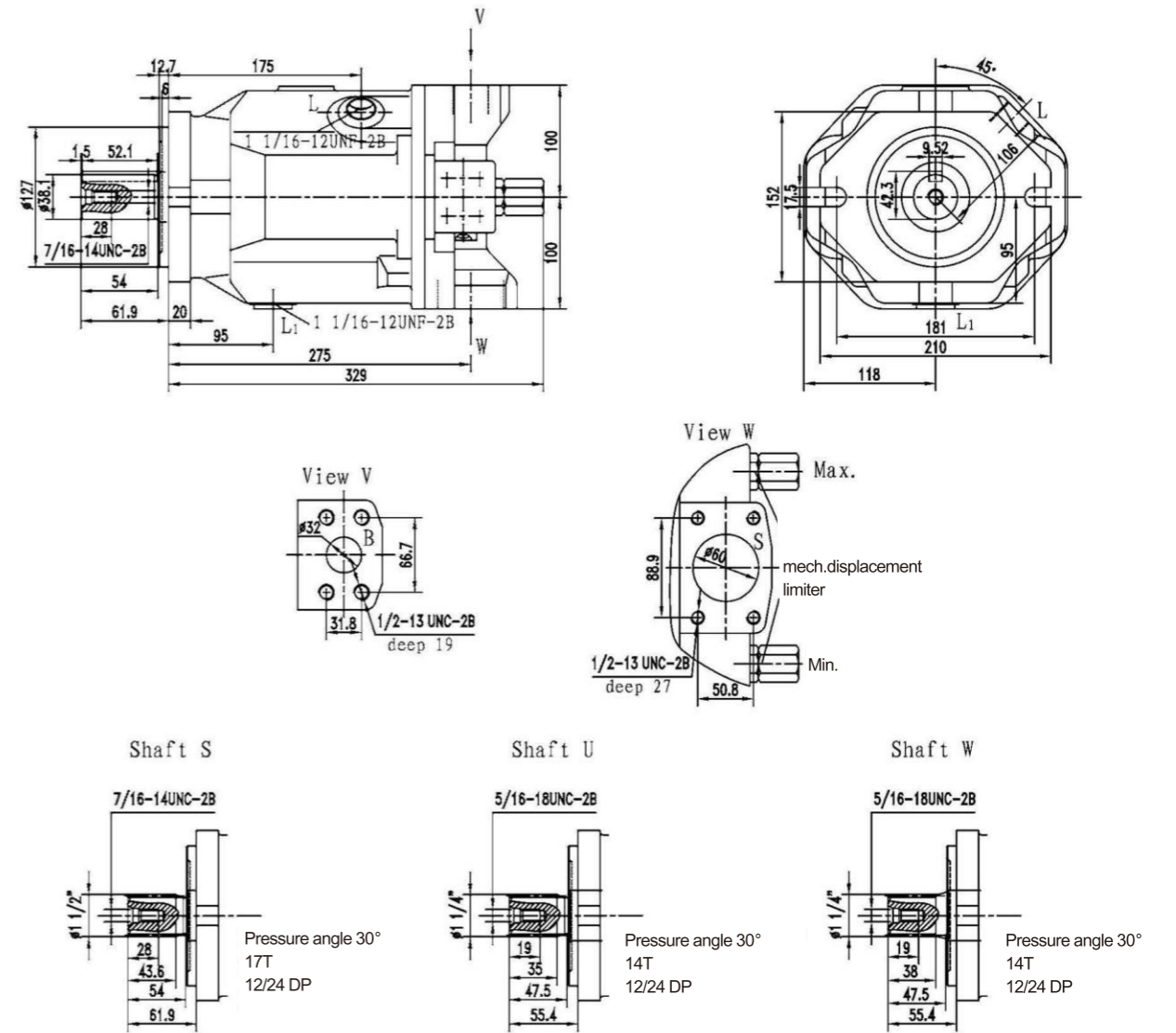
#### Unit dimensions, size 100

Flange ISO  
Shaft P (A10VSO 100 XXX/31X-PPA12N00)



### Installation Dimensions

Flange SAE  
Shaft K (A10VSO 100 XXX/31X-PKC62N00)

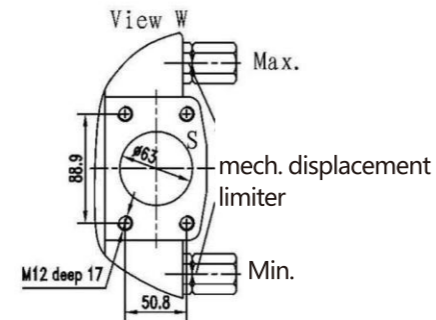
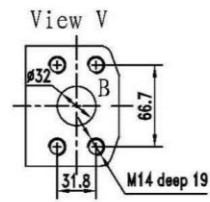
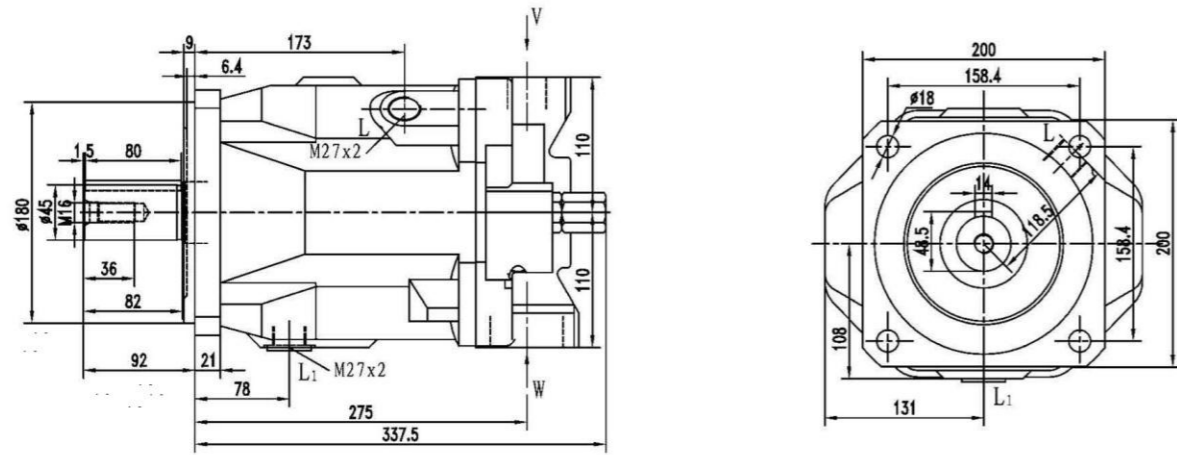


### Installation Dimensions

(Unit dimensions, size 140)

Flange ISO

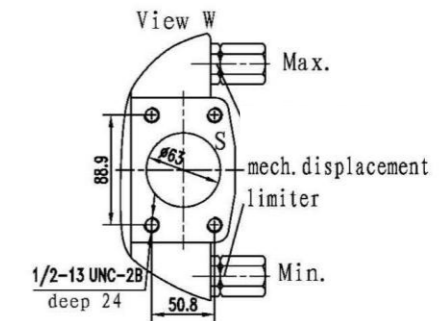
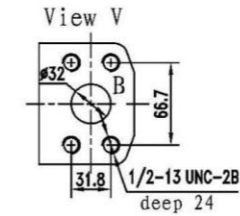
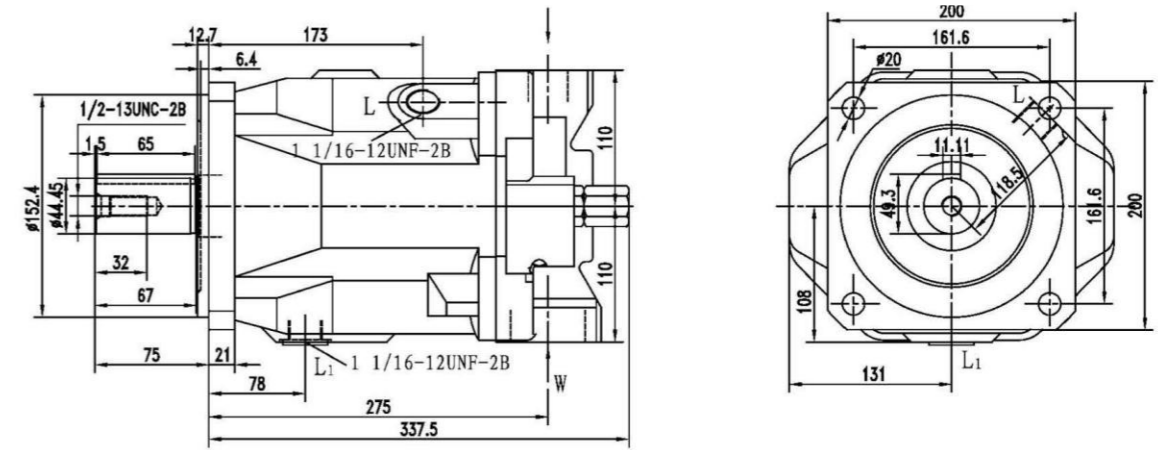
Shaft P (A10VSO 140 XXX/31X-PPB12N00)



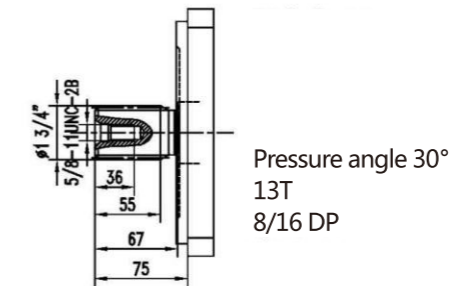
### Installation Dimensions

Flange SAE

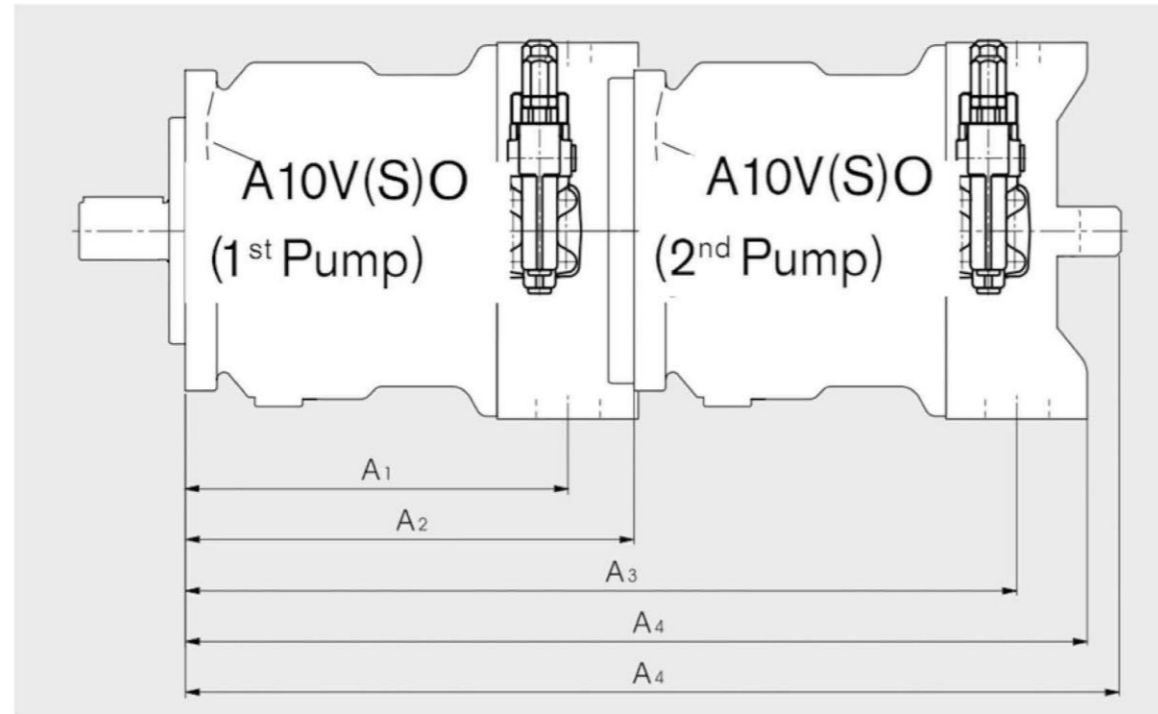
Shaft K (A10VSO 140 XXX/31X-PKD62N00)



S轴 Shaft S



#### Through drive



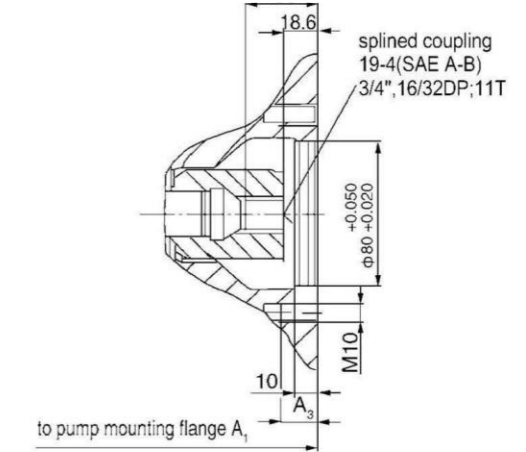
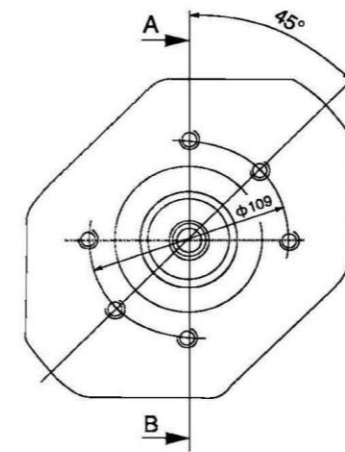
	A10VSO18 A1 A2 A3 A4	A10VSO28 A1 A2 A3 A4	A10VSO45 A1 A2 A3 A4	A10VSO71 A1 A2 A3 A4	A10VSO100 A1 A2 A3 A4	A10VSO140 A1 A2 A3 A4
A10VSO18	5.71 7.17 12.87 14.84 (145)(182)(327)(377)	6.50 8.30 13.74 15.71 (165)(204)(349)(399)	7.24 9.02 14.72 16.69 (184)(229)(374)(424)	8.54 10.51 16.22 18.19 (217)(267)(412)(462)	10.83 13.31 19.02 20.98 (275)(338)(483)(533)	10.83 13.78 19.49 21.46 (275)(350)(495)(545)
A10VSO28	-----	6.50 8.03 14.53 15.67 (165)(204)(369)(398)	7.24 9.02 15.51 16.65 (184)(229)(394)(423)	8.54 10.51 17.01 18.15 (217)(267)(432)(461)	10.83 13.31 19.80 20.94 (275)(338)(503)(532)	10.83 13.78 20.28 21.42 (275)(350)(515)(544)
A10VSO45	-----	-----	7.24 9.02 16.30 17.64 (184)(229)(413)(448)	8.54 10.51 17.76 19.36 (217)(267)(415)(486)	10.83 13.31 20.55 21.93 (275)(338)(522)(557)	10.83 13.78 21.02 22.40 (275)(350)(534)(569)
A10VSO71	-----	-----	-----	8.54 10.51 19.06 20.63 (217)(267)(484)(524)	10.83 13.31 21.85 23.43 (275)(338)(555)(595)	10.83 13.78 22.32 23.90 (275)(350)(567)(607)
A10VSO100	-----	-----	-----	-----	10.83 13.31 24.13 25.79 (275)(338)(613)(655)	10.83 13.78 24.61 26.26 (275)(350)(625)(667)
A10VSO140	-----	-----	-----	-----	-----	10.83 13.78 24.61 26.26 (275)(350)(625)(667)

If a second pump must be factory mounted, the two individual model codes must be combined with "a"+"",  
 Model code pump 1+ model code pump 2.  
 Ordering example:  
 A10V0100DR/31R-PSC12K07+A10V071DR/31R-PSC12N00

#### Unit Dimensions Through Drives KB2

Flange ISO 80, 2-hole for built-on A10VSO 10(splined shaft S, mounting flange A) or A10VSO 18(splined shaft S or R, mounting flange A)

Order code KB2

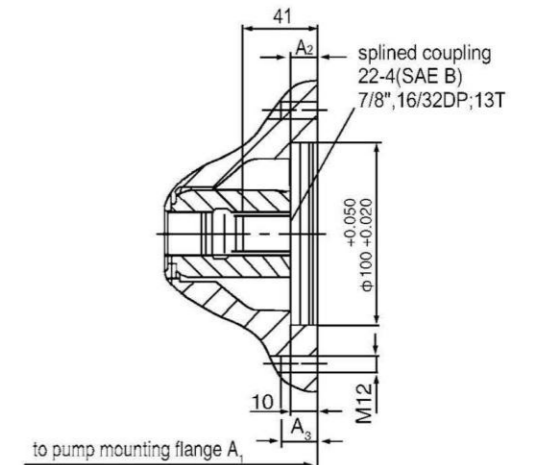
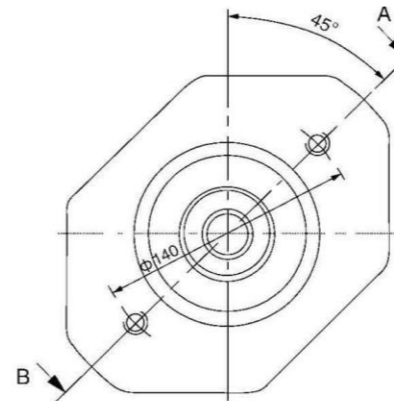


Size main pump	A <sub>1</sub>	A <sub>2</sub>
18	182	14.5
28	204	16
45	229	16
71	267	20

#### Unit Dimensions Through Drives KB3

Flange ISO 100, 2-hole for built-on A10VSO28(splined shaft S or R) ;

Order code KB3

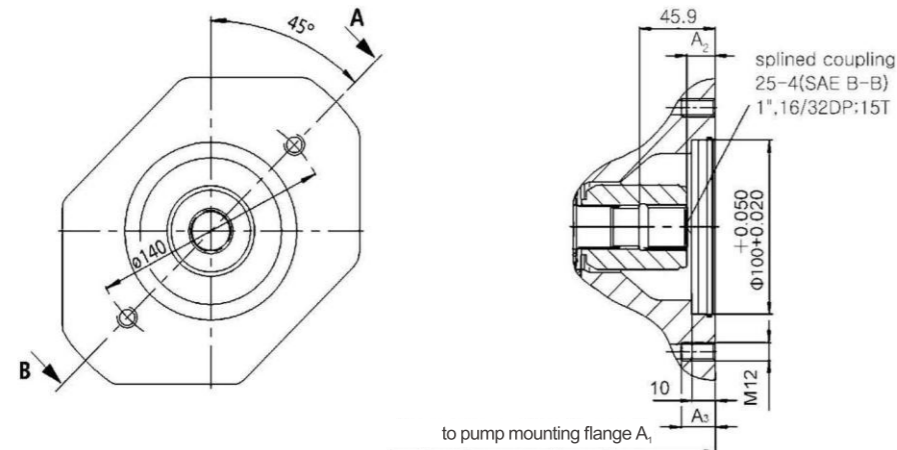


Size main pump	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>
28	204	19.2	14
71	267	16.5	18
100	338	17.6	18
140	350	18.2	24

#### Unit Dimensions Through Drives KB4

Flange ISO 100, 2-hole for built-on A10VSO 45(splined S or R);

Order code KB4

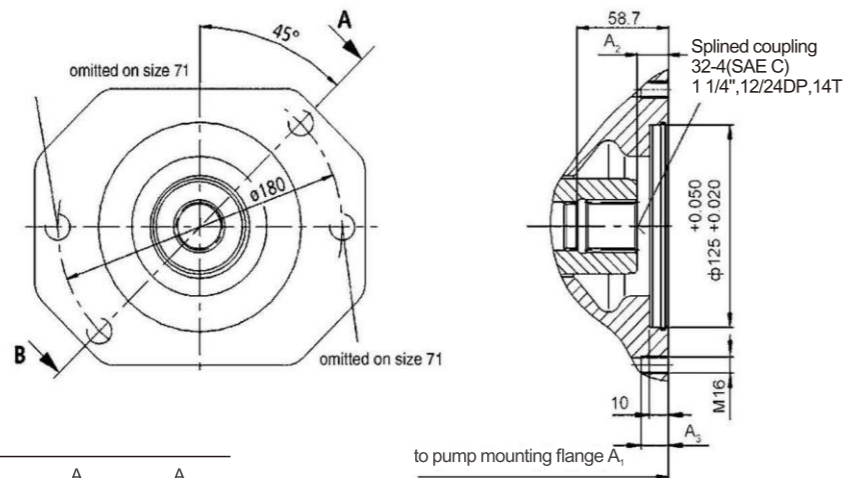


Size main pump	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>
45	229	17.2	14
71	267	17.2	18
100	338	18.2	20
140	350	18.2	24

#### Unit Dimensions Through Drives KB5

Flange ISO 125, 2-hole for built-on A10VSO 71(splined shaft S or R);

Order code KB5

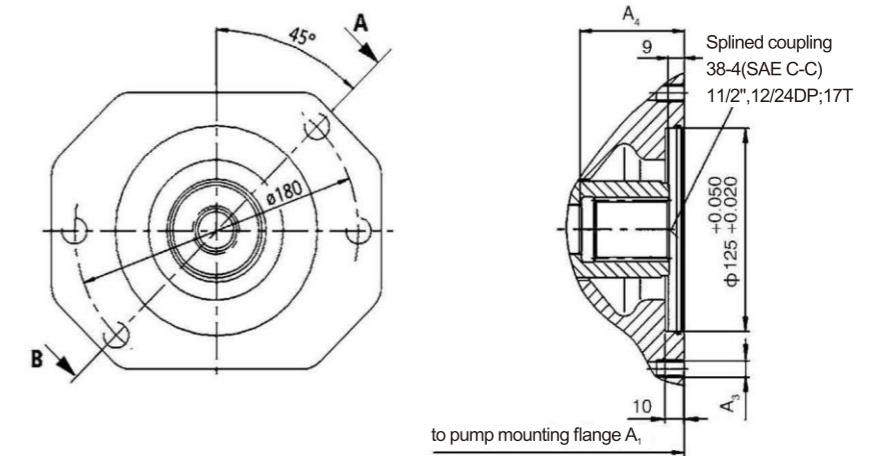


Size main pump	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>
71	267	20	18.5
100	338	20	25
140	350	21	32

#### Unit Dimensions Through Drives KB6

Flange ISO 125, 2-hole for built-on A10VSO 100(splined shaft S);

Order code KB6

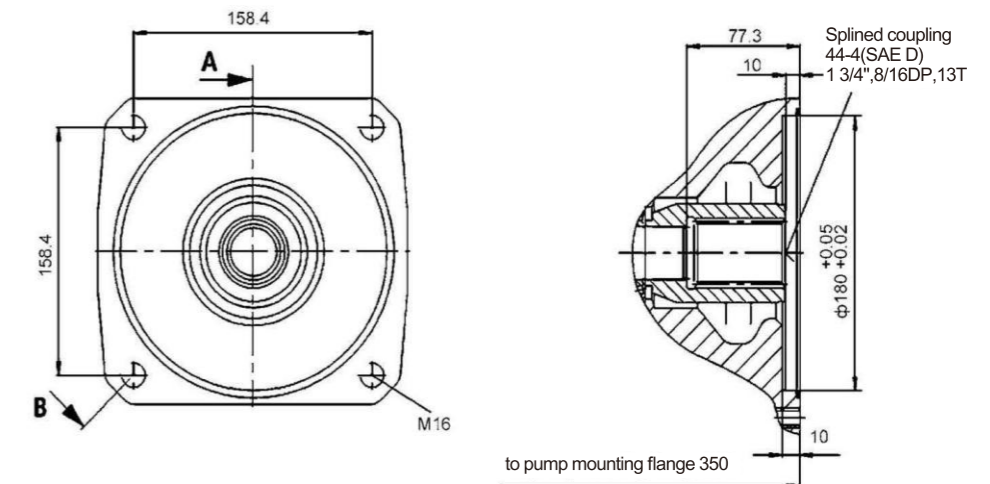


Size main pump	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>
100	338	M16;25 deep	65
140	350	M6;32 deep	77.3

#### Unit Dimensions Through Drives KB7

Flange ISO 180, 4-hole for built-on A10VSO 140(splined shaft S);

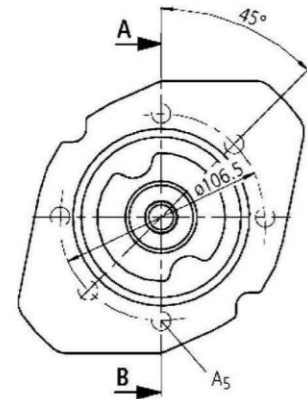
Order code KB7



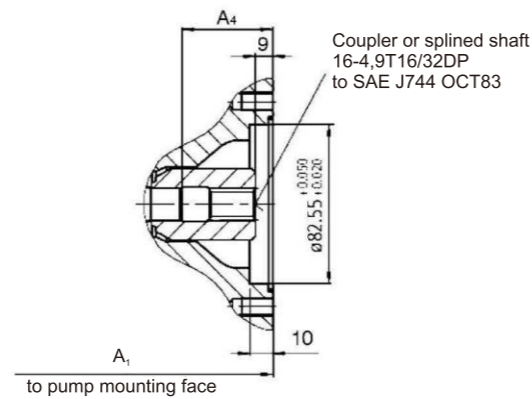
#### Unit Dimensions Through Drives K01

Flange SAE 82-2, SAE A 2-hole for built-on external gear pump IPF2G2 or A10VSO 18 (shaft U, flange C) ;

Order code K01



#### Section A-B

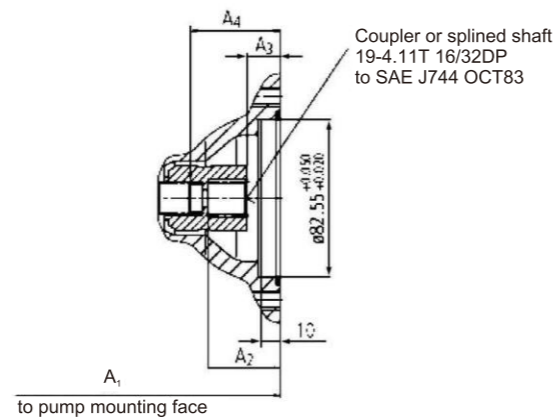
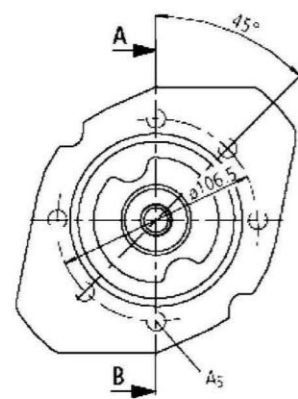


Size main pump	A <sub>1</sub>	A <sub>4</sub>	A <sub>5</sub>
18	182	42	M10; 14 deep
28	204	47	M10; 14.5 deep
45	229	53	M10; 14.5 deep
71	267	61	M10; 17 deep
100	338	65	M10; 17 deep
140	350	77	M10; 17 deep

#### Unit Dimensions Through Drives K52

Flange SAE 82-2, SAE A 2-hole for built-on A10VSO 10 (shaft S, flange C) or A10VSO18 (shaft S or R, flange C);

Order code K52

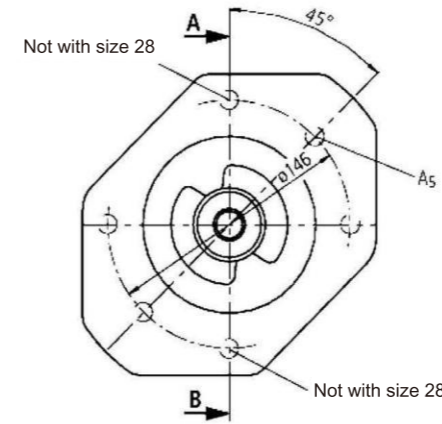


Size main pump	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	A <sub>5</sub>
18	182	40	17.5	43	M10; 16 deep
28	204	39	17.5	47	M10; 16 deep
45	229	40.5	17.5	53	M10; 16 deep
71	267	40	17.5	61	M10; 20 deep
100	338	40	17.5	65	M10; 20 deep
140	350	41	17.5	77	M10; 20 deep

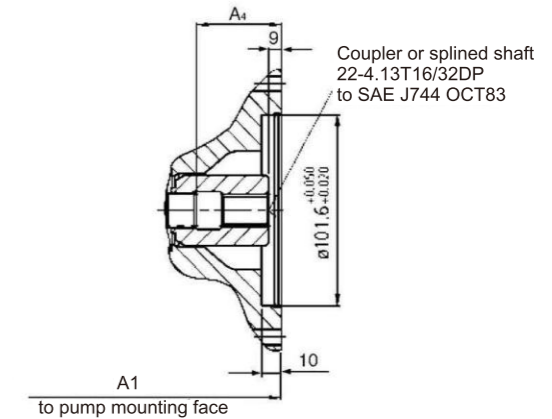
#### Unit Dimensions Through Drives K02

Flange SAE 101-2, SAE B 2-hole for built-on external gear pump 1PF2G3

Order code K02



#### Section A-B

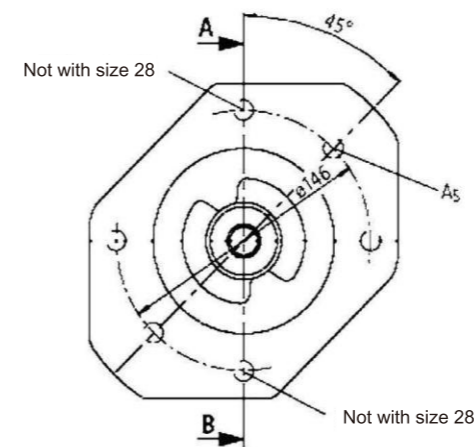


Size main pump	A <sub>1</sub>	A <sub>4</sub>	A <sub>5</sub>
28	204	47	M12; 15 deep
45	229	53	M12; 18 deep
71	267	61	M12; 20 deep
100	338	65	M12; 20 deep
140	350	77	M12; 20 deep

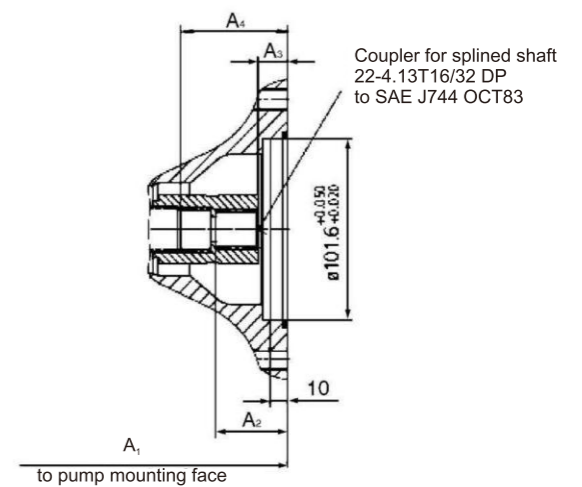
#### Unit Dimensions Through Drives K68

Flange SAE 101-2, SAE B 2-hole for built-on A10VSO28 (shaft S or R - flange C)

Order code K68



#### Section A-B

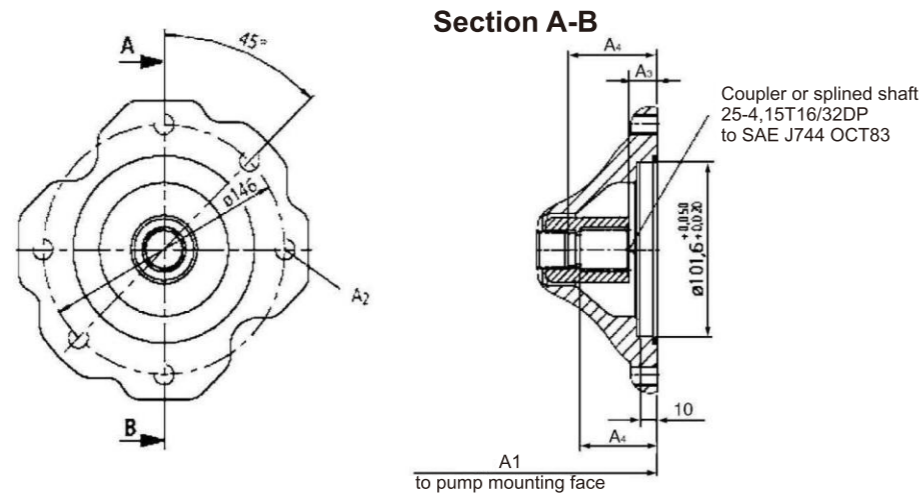


Size main pump	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	A <sub>5</sub>
28	204	43	16.5	47	M12; 15 deep
45	229	42	16.5	53	M12; 18 deep
71	267	43	16.5	61	M12; 20 deep
100	338	41	16.5	65	M12; 20 deep
140	350	44	16.5	77	M12; 20 deep

#### Unit Dimensions Through Drives K04

Flange SAE 101-2, SAE B 2-hole for built-on A10VSO28 (Shaft S or R, flange C)

Order code K04

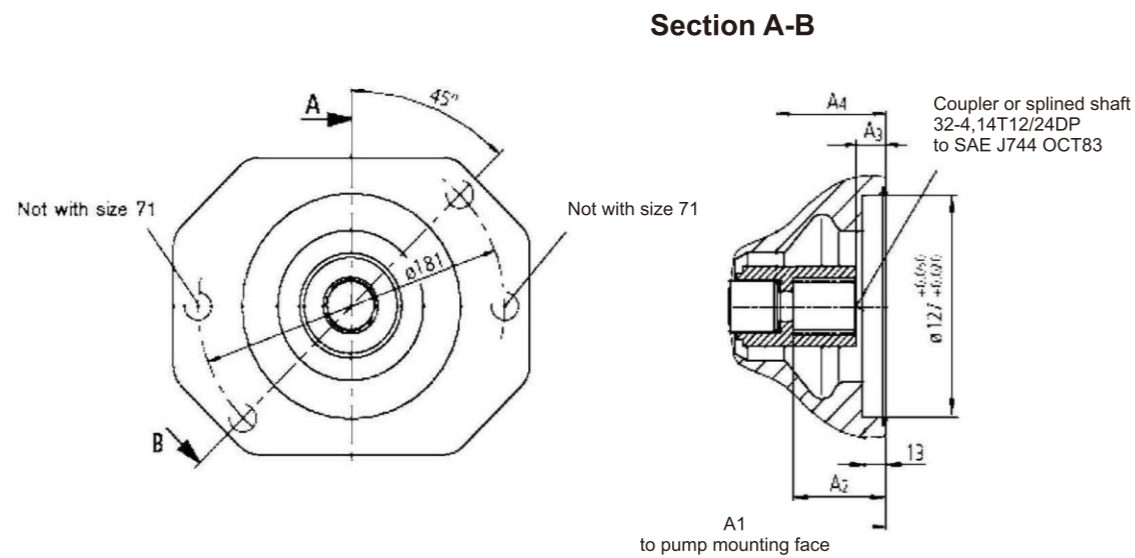


Size main pump	A1	A2	A3	A4	A5
45	229	47.5	16.9	53	M12;18 deep
71	267	47.5	16.9	61	M12;20 deep
100	338	47.5	16.9	65	M12;20 deep

#### Unit Dimensions Through Drives K07

Flange SAE 127-2, SAE C 2-hole for built-on A10VSO (shaft S or R, flange C)

Order code K07

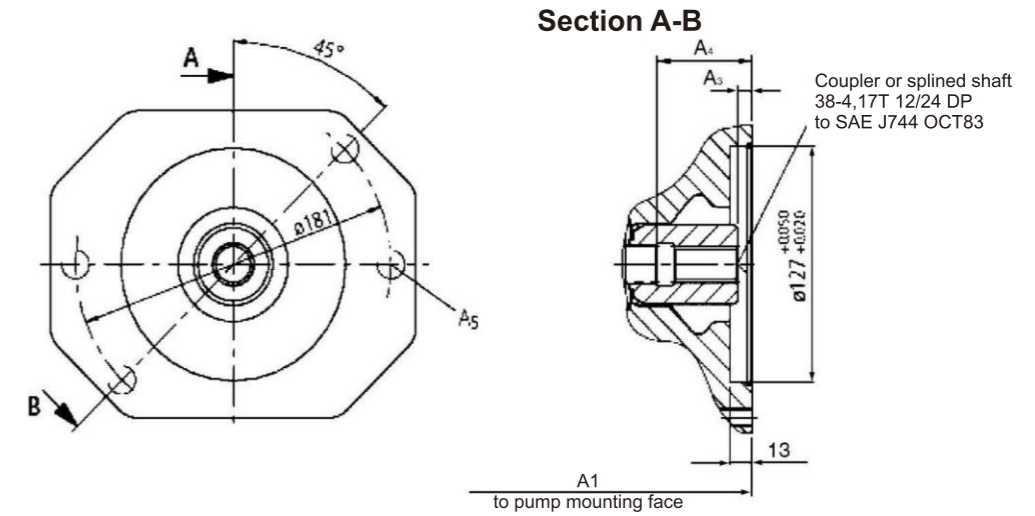


Size main pump	A1	A2	A3	A4	A5
71	267	55.5	17.9	61	M16;18 deep
100	338	57	17.9	65	M16;25 deep
140	350	60	17.9	77	M16;32 deep

#### Unit Dimensions Through Drives K24

Flange SAE 127-2, SAE C 2-hole for built-on A10VSO100 (shaft S, flange C)

Order code K24



Size main pump	A1	A3	A4	A5
100	338	8	65	M16;20 deep
140	350	9	77.3	M16;32 deep

#### Unit Dimensions Through Drives K17

Flange SAE 154-4, SAE D 4-hole for built-on A10VSO140 (shaft S, flange D)

Order code K17

