



VVARAK

HYDRAULICS

V
A
R
I
A
B
L
E

D
I
S
P
L
A
C
E
M
E
N
T

P
U
M
P



VARIABLE DISPLACEMENT PISTON PUMP, SWASHPLATE TYPE

AI0VSO 10

Variable Displacement Pump
Axial piston swashplate design
Sizes: 10
Series: 52
Nominal pressure up to 280bar



Features

- SAE and ISO mounting flange
- Compact construction
- High power-weight ratio
- Low noise level
- Lower press loss
- Short control times
- Pressure and flow control

Ordering code

Axial piston unit		A10VS											
Variable, swash plate design	= A10VS												
Mode of operation													
Pump, open circuit	= O												
Size													
△ Displacement V _{gmax} (cm³)	= 10												
Pressure control	DR												
Pressure-remote control	DRG												
Pressure- and flow control	DFR1												
Series	= 52												
Direction of rotation													
Looking at driveshaft	clockwise	R											
	counter-clockwise	L											
Seals													
NBR (Nitrile rubber to DIN ISO 1629)	= P												

			Through drive		
NOO =			without through drive		

SAE DIN			Service Ports
64	●	- UNF-thread rear	{ Pressure Port B Inlet port S
14	-	metric thread rear	{ Pressure Port B Inlet port S

SAE DIN			Mounting flange
C	●	-	SAE 2-bolt
A	-	●	ISO 2-bolt

SAE DIN			Shaft End
K	●	-	Cylindrical with feather key 19-1 (SAE A-B)
P	-	●	Cylindrical with feather key DIN 6885
S	●	-	Splined shaft 19-4 (SAE A-B, 3/4")
U	●	-	Splined shaft 16-4 (SAE A, 5/8")

☐ = preferred program (with short delivery times)

● = available
 - = not available

Specifications

Size				10
Displacement		$V_{g \max}$	cm^3	10.5
Max. speed 1)	at $V_{g \max}$	$n_{o \max}$	rpm	3600
Max. perm. speed (speed limit)	at increase in output pressure p_{abs} or $V_g < V_{g \max}$	$n_{o \max \text{ zul}}$	rpm	4300
Max. volumetric flow	at $n_{IE \max}$	$Q_{V \max}$	L/min	37
	at $n_{IE} = 1450 \text{ min}^{-1}$		L/min	15
Max. power ($\Delta p = 250 \text{ bar}$)	at $n_{o \max}$	$P_{o \max}$	kW	16
	at $n_{IE} = 1450 \text{ min}^{-1}$		kW	6.5
Max. torque ($\Delta p = 250 \text{ bar}$)	at $V_{g \max}$	$T_{\max}$	Nm	42
Moment of inertia about drive axis		J	kgm^2	0.0006
Fill Capacity			L	0.2
Approx. weight (without oil fill)		m	kg	8
Permissible loading on drive shaft: max. perm. axial force		$F_{ax \max}$	N	400
Max. perm. radial force		$F_{q \max}$	N	250

Ordering code

Hydraulic fluid Mineral oil (Without short code) Axial piston unit Swashplate design, variable, industrial range	=A10VS									
Mode of operations Pump, open circuit	= O									
Size ≅ Displacement $V_{gmax}(cm^3)$	18	28	45	71	100	140				
Control device	18 28 45 71 100 140									
Pressure Control	DR		●	●	●	●	●	●	DR	
	DR	G	●	●	●	●	●	●	DRG	
remotely control										
Pressure/flow control	DFR								DFR	
	DFR	1	●	●	●	●	●	●	DFR1	
Withou orifice in X line			—	●	●	●	●	●	DFLR	
	DFLR	1	—	●	●	●	●	●	DFLR1	
Series	= 31									
Direction of rotation Viewed on shaft end Clockwise Viewed on shaft end Anti-Clockwise	= R = L									
Seals NBR nitril-caoutchouc to DIN ISO 1629 (shaft seal in FKM) FKM fluor-caoutchouc to DIN ISO 1629	= P = V									
Drive Shaft	18 28 45 71 100 140									
Splined shaft ANSI B92.1a	standard shaft	●	●	●	●	●	●	●	S	
	similar to shaft "S" however for higher input torque	●	●	●	●	—	—	—	R	
Parallel keyed shaft DIN 6885	permissible through-drive torque	●	●	●	●	●	●	●	P	
Mounting flange										
ISO 2019-	2 hole	●	●	●	●	●	—	—	A	
	4 - hole	—	—	—	—	—	●	●	B	
Service line connections										
Pressure port B Suction port S	SAE ports at opposite sites Metric fixing thread									12
Pressure port B Suction port S	SAE ports at opposite sites Metric fixing thread									62
Through drives										
Flange ISO 3019 Diameter	Hub for splined shaft ¹⁾ Diameter	18	28	45	71	100	140			
without through drive		●	●	●	●	●	●	●	●	N00
82-2 (A)	5/8 in 9T 16/32DP	●	●	●	●	●	●	●	●	K01
	3/4 in 11T 16/32DP	●	●	●	●	●	●	●	●	K52
101-2 (B)	7/8 in 13T 16/32DP	—	●	●	●	●	●	●	●	K68
	1 in 15T 16/32DP	—	—	●	●	●	●	●	●	K04
127-2 (C)	1 1/4 in 14T 12/24DP	—	—	—	●	●	●	●	●	K07
	1 1/2 in 17T 12/24DP	—	—	—	—	●	●	●	●	K24
152-4 (D)	1 3/4 in 13T 8/16DP	—	—	—	—	—	—	●	●	K17
Ø63, metric 4-hole	Shaft key Ø25	—	●	●	●	●	●	●	●	K57

● = available — = not available

AI0VSO

Variable Displacement Pump
Axial piston swashplate design
Sizes: 18... 140
Series: 31
Nominal pressure up to 280bar



Features

- Variable displacement axial piston pump of swashplate design for hydrostatic open circuit systems.
- Flow is proportional to drive speed and displacement.
- It can be infinitely varied by adjustment of the swashplate.
- ISO mounting flange
- Flange connections to SAE metric
- 2 case drain ports
- Good suction characteristics
- Permissible continuous pressure 280bar
- Low noise level
- Long service life
- Axial and radial loading of drive shaft possible
- High power-weight ratio
- Wide range of controls
- Short response times
- Through drive option for multi-circuit system

Specifications

Size			18	28	45	71	100	140
Displacement	$V_{g \max}$	cm ³	18	28	45	71	100	140
Rotational speed	at $V_{g \max}$	n_{nom}	rpm	3300	3000	2600	2200	2000
maximum ¹⁾	at $V_g < V_{g \max}^{2)}$	$n_{\text{max perm}}$	rpm	3900	3600	3100	2600	2400
Flow	at n_{nom} and $V_{g \max}$	$Q_{v \max}$	L/min	59	84	117	156	200
	at $n_E = 1500$ rpm and $V_{g \max}$	$Q_{vE \max}$	L/min	27	42	68	107	150
Power	at n_{nom} and $V_{g \max}$	$P_{\max}$	kW	28	39	55	73	93
at $\Delta p = 280$ bar	at $n_E = 1500$ rpm and $V_{g \max}$	$P_{E \max}$	kW	12.6	20	32	50	70
Torque	$\Delta p = 280$ bar	$T_{\max}$	Nm	80	125	200	316	445
at $V_{g \max}$ and	$\Delta p = 100$ bar	T	Nm	30	45	72	113	159
Rotary stiffness	S	c	Nm/rad	11087	22317	37500	71884	121142
of drive shaft	R	c	Nm/rad	14850	26360	41025	76545	-
	P	c	Nm/rad	13158	25656	41232	80627	132335
Moment of inertia for rotary group	J_{tw}	kgm ²	0.00093	0.0017	0.0033	0.0083	0.0167	0.0242
Case volume	V	l	0.4	0.7	1.0	1.6	2.2	3.0
Weight without through drive (approx.)	m	kg	12.9	18	23.5	35.2	49.5	65.4
Weight with through drive (approx.)			14	19.3	25.1	38	55.4	74.4

TE TANVI ENTERPRISES

Shop No- A-14, Ground Floor, Sagar Complex, Nashik Phata,
 Opp Kasarwadi Railway Station, Pune- 411034
 +91 9011566070 / +91 9011884250