



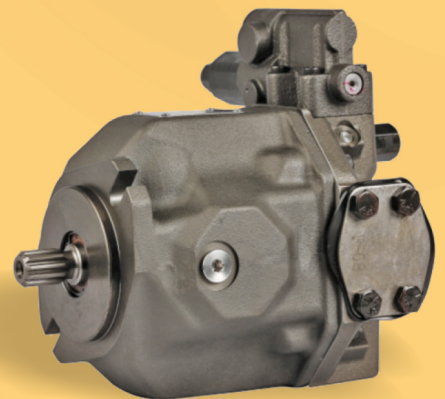
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HI-TECH HYDRAULICS

DETAIL CATALOGUE

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		= O																	
Pump, open circuit																			
Size																			
≙ Displacement V_{gmax} (cm ³)		= 10																	
Pressure control		DR																	
Pressure-remote control		DRG																	
Pressure- and flow control		DFR1																	
Series		= 52																	
Direction of rotation																			
Looking at driveshaft		clockwise																	
		counter-clockwise																	
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)
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● = 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 $n_{o \max}$	$q_{v \max}$	L/min 37
	at $n_E = 1450 \text{ min}^{-1}$		L/min 15
Max. power ($\Delta p = 250 \text{ bar}$)	at $n_{o \max}$	$P_{o \max}$	kW 16
	at $n_E = 1450 \text{ min}^{-1}$		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



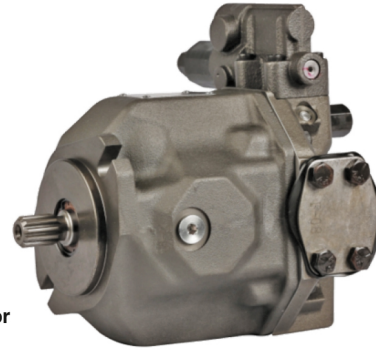
Ordering code

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	
Without 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	2 hole 4 - hole									
ISO 2019-	2 hole	●	●	●	●	●	—	—	A	
	4 - hole	—	—	—	—	—	●	—	B	
Service line connections	Pressure port B SAE ports at opposite sites Suction port S Metric fixing thread									
	Pressure port B SAE ports at opposite sites Suction port S Metric fixing thread									
Through drives	Flange ISO 3019 Diameter Hub for splined shaft ¹⁾ Diameter									
	without through drive	18	28	45	71	100	140			
82-2 (A)	5/8 in 9T 16/32DP	●	●	●	●	●	●	●	N00	
	3/4 in 11T 16/32DP	●	●	●	●	●	●	●	K01	
101-2 (B)	7/8 in 13T 16/32DP	—	●	●	●	●	●	●	K52	
	1 in 15T 16/32DP	—	—	●	●	●	●	●	K68	
127-2 (C)	1 1/4 in 14T 12/24DP	—	—	—	●	●	●	●	K04	
	1 1/2 in 17T 12/24DP	—	—	—	—	●	●	●	K07	
152-4 (D)	1 3/4 in 13T 8/16DP	—	—	—	—	—	●	●	K24	
Ø63, metric 4-hole	Shaft key Ø25	—	●	●	●	●	●	●	K17	
		—	●	●	●	●	●	●	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_{hw}	kgm ²	0.00093	0.0017	0.0033	0.0083	0.0167
Case volume	V	l		0.4	0.7	1.0	1.6	2.2
Weight without through drive (approx.)	m	kg		12.9	18	23.5	35.2	49.5
Weight with through drive (approx.)				14	19.3	25.1	38	55.4



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