

Variable Displacement Pump for Open Circuits Model A4VSO

Model A4VSO

Axial piston, swashplate design
 Sizes 40 to 250, Series 1 and 3
 Nominal pressure up to 5100 PSI
 Maximum pressure up to 5800 PSI

- Swashplate design
- Infinitely variable displacement
- Good self priming suction characteristics
- Continuous operating pressure of 5100 psi (350 bar)
- Low noise level
- Excellent service life
- Drive shaft able to accept axial and radial loading
- Good power to weight ratio



- Compact modular design
- Short control times
- Over-center design (swallow circuits)
- Swivel angle indicator standard
- Installation positional optional

Ordering Code

A	A4VS	O		/	R	-	P	K	D	63	N00
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Version

SAE = A

Axial piston unit

Swashplate design, variable displ. industrial design = A4VS

Mode of operation

Pump, open circuit = O

Size

	40	71	125	180	250
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Displ. V_g max	in ³ /rev	2.44	4.33	7.63	10.9	15.2
		(40)	(71)	(125)	(180)	(250)

Control devices

Pressure control = DR
 Remote pressure control = DRG
 Pressure and flow control = DFR

Series

	40	71	125	180	250	
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Series 10	•	•	-	-	-	= 10
Series 30	-	-	•	•	-	= 30
Series 31	-	-	-	-	•	= 31

Direction of rotation

As viewed from drive shaft – clockwise = R

Seals

Buna-N (NBR per DIN ISO 1629); shaft seal FPM (Fluorocarabon) = P

Shaft end

SAE parallel keyed shaft = K

Mounting flange

SAE 4-bolt = D

Service ports

Connections B and S; SAE on side 90° offset, UNC mounting bolts = 63
 With dual outlet ports at 180°, one side with coverplate (250) = 75

Through drive

Without through drive, without auxiliary pump = N00
 With universal through drive mount, with coverplate (250) = K99

Note: Limited selection of through-drive kits available to fit K99 pump. - = not available
 Please inquire with the Industrial Axial-Piston Product Group in Bethlehem. • = available

Variable Displacement Pump for Open Circuits Model A10VSO

Model A10VSO

Axial piston, swashplate design
 Sizes 18 to 140, Series 31; Size 10, Series 52

Nominal pressure up to 4000 PSI
 (Sizes 10 & 18 up to 3600 PSI)

Maximum pressure up to 5100 PSI
 (Sizes 10 and 18 up to 4600 PSI)

- SAE mounting flange and shaft
- Flange connections SAE
- 2 case drain connections
- Good suction characteristics
- Permissible continuous operating pressure 4000 psi (280 bar)
- Low noise level
- Long service life
- Axial and radial loading of drive shaft possible



- High power/weight ratio
- Wide range of controls available
- Short response times
- Optional through drive for combination pumps

Technical data

Table of values (theoretical values, without considering h_{mh} and h_v ; values rounded)

Size	10	18	28	45	71	100	140			
Displacement V_g max	in ³ (cm ³)	0.64 (10.5)	1.10 (18)	1.71 (28)	2.75 (45)	4.33 (71)	6.10 (100)	8.54 (140)		
Max. speed ¹⁾ at V_g max	n_o max	rpm	3600	3300	3000	2600	2200	2000	1800	
Max. permissible speed (speed limit) dependent on inlet pressure P_{abs} or reduced displacement $V_g < V_{g\ max}$	n_o max perm.	rpm	4300	3900	3600	3100	2600	2400	2100	
Max. flow at n_o max	Q_o max	gpm (L/min)	9.77 (37)	15.7 (59.4)	22 (84)	31 (117)	41 (156)	53 (200)	67 (252)	
		at $n_E=1800$ rpm Q	gpm (L/min)	4.78 (18)	8.56 (32)	13.3 (50)	21.4 (81)	33.8 (128)	47.6 (180)	67 (252)
Max. power $\Delta p = 4000$ PSI (280 bar)	at $n_E=1800$ rpm P	P_o max	Hp (kW)	21 (7.8)	36.6 (15)	51 (24)	72 (38)	96 (60)	124 (84)	156 (118)
		P	Hp (kW)	10 (7.8)	20 (15)	31 (24)	50 (38)	79 (60)	111 (84)	156 (118)
Max. Torque $\Delta p = 4000$ PSI (280 bar)	at V_g max	T_{max}	lb-ft (Nm)	34 (46)	58.3 (80.1)	91 (125)	146 (200)	230 (316)	324 (445)	453 (623)
		Torque	lb-ft (Nm)	12.3 (16.7)	21.15 (28.7)	33 (45)	53 (72)	83 (113)	117 (159)	164 (223)
$\Delta p = 1500$ PSI (100 bar)	Moment of inertia about drive axis	J	lb-ft ² (kgm ²)	0.014 (0.006)	0.022 (0.0009)	0.0403 (0.0017)	0.0783 (0.0033)	0.1970 (0.0083)	0.3963 (0.0167)	0.5743 (0.0242)
		Filling volume (case)	gal (L)	0.05 (0.2)	0.1 (0.4)	0.2 (0.7)	0.26 (1.0)	0.4 (1.6)	0.6 (2.2)	0.8 (3.0)
Approx. weight (without fluid)		m	lbs. (kg)	17.6 (8)	26.5 (12)	33 (15)	46 (21)	73 (33)	99 (45)	132 (60)
Max. force on drive force	Max. permissible axial force	$F_{ax\ max}$	lbs.f. (N)	90 (400)	157 (700)	225 (1000)	337 (1500)	540 (2400)	900 (4000)	1080 (4800)
		$F_{q\ max}$	lbs.f. (N)	56 (250)	79 (350)	270 (1200)	337 (1500)	427 (1900)	517 (2300)	630 (2800)

