

GENUINE

METARIS



MA10VO/VSO 28
SERIES 31



MA10VO/VSO 71
SERIES 31



MA10VO/VSO 45
SERIES 31 & 52



MA10VO/VSO 100
SERIES 31

**METARIS OPEN LOOP PISTON PUMPS
SERIES MA10VO/VSO**

**YOUR SOURCE FOR HIGH QUALITY
REPLACEMENT PISTON PRODUCTS**

MA10VO/VS0 45 DFR
 MA10VO/VS0 71 DFR

	Description
A10V /31	Swashplate design variable, normal pressure 280 bar (4000 psi), peak pressure 350 bar (5100 psi)
A10VS /31	Swashplate design variable, c/w max flow adj. industrial applications normal pressure 280 bar (4000 psi), peak pressure 350 bar (5100 psi)
A10V /52	Swashplate design variable, normal pressure 250 bar (3600 psi), peak pressure 315 bar (4600 psi)
A10VS /52	Swashplate design variable, c/w max flow adj. normal pressure 250 bar (3600 psi), peak pressure 315 bar (4600 psi)
O	Mode of operation (Pump open circuit)
28	Flow Vg max= 28 cm (cu.in. 1.71)
45	Flow Vg max= 45 cm (cu.in. 2.75)
71	Flow Vg max= 71 cm (cu.in. 4.33)
100	Flow Vg max= 100 cm (cu.in. 6.10)
DFR	Pressure and flow controller
DFR1	Pressure and flow controller X port plugged
DR	Pressure controller
DRG	Remote pressure controller
DFLR	Pressure flow and power control
31	Series 31
52	Series 52
R	Right (clockwise rotation)
L	Left (counter clockwise rotation)
P	Buna-N (FPM shaft seal)
V	FPM (fluorocarbon)
P	71 series Metric keyed shaft (DIN 6885) 32mm
K	71 series SAE keyed shaft (1.125 dia)
C	71 series Spline shaft (14 tooth cat. type)
S	71 series SAE spline shaft (14 tooth - 1.250)
R	71 series SAE spline shaft reinforced for through drive torques
P	45 series Metric keyed shaft (DIN 6885) 25mm
S	45 series SAE spline shaft (15 tooth - 1.)
U	45 series SAE spline shaft (13 tooth - .875)
K	45 series SAE keyed shaft (1" dia)
R	45 series SAE spline shaft reinforced for through drive torques
P	28 series Metric keyed shaft (DIN 6885) 22mm
S	28 series SAE spline shaft (13 tooth - .875)
K	28 series SAE keyed shaft (.875 dia)
R	28 series SAE spline shaft reinforced for through drive torques
P	100 series Metric keyed shaft (DIN 6885) 40mm
K	100 series SAE keyed shaft 1.5
U	100 series SAE spline shaft (14 tooth - 1.250)
S	100 series SAE spline shaft (- 1.5)
W	100 series SAE spline shaft reinforced for through drive (14 Tooth 1.250)

/52 R P S C 62 NOO (OPTION 1)
 /31 R P S C 62 NOO (OPTION 2)

A ISO 2- hole mounting
C SAE 2- hole mounting

Connection

11 28 series Rear port flange metric mounting screws
12 28 series Side port flange metric mounting screws
61 28 series Rear port flange U.N.C. mounting screws
62 28 series Side port flange U.N.C. mounting screws
11 45 series Rear port flange metric mounting screws
12 45 series Side port flange metric mounting screws
61 45 series Rear port flange U.N.C. mounting screws
62 45 series Side port flange U.N.C. mounting screws
12 71 series Side port flange (1" & 1 1/4" combination pressure port) metric mounting screws
62 71 series Side port flange (1" & 1 1/4" combination pressure port) U.N.C. mounting screws
41 71 series Rear port flange (1" pressure) metric mounting screws
42 71 series Side port flange (1" pressure) metric mounting screws
91 71 series Rear port flange (1" pressure) U.N.C. mounting screws
92 71 series Side port flange (1" pressure) U.N.C. mounting screws
12 100 series Side port flange (1" & 1 1/4" combination pressure port) metric mounting screws
62 100 series Side port flange (1" & 1 1/4" combination pressure port) U.N.C. mounting screws
41 100 series Rear port flange (1" pressure) metric mounting screws
42 100 series Side port flange (1" pressure) metric mounting screws
91 100 series Rear port flange (1" pressure) U.N.C. mounting screws
92 100 series Side port flange (1" pressure) U.N.C. mounting screws

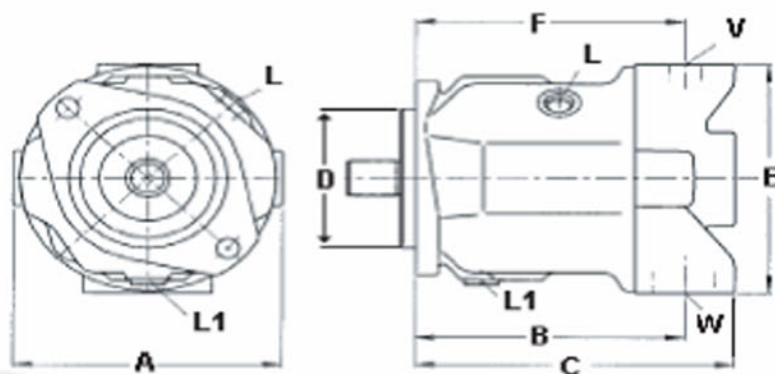
N00 Standard cover Without through-drive

Through-drive

K01 82-2 SAE A mounting (16-4 SAE "A" coupling required)
K02 101-2 SAE B pilot mounting (22-4 SAE "B" coupling required)
K03 SAE B 2 bolt (SAE "B" keyed coupling required)
K04 101-2 SAE B mounting (25-4 SAE "BB" coupling required)
K06 101-2 SAE B mounting (32-4 SAE "A" coupling required)
K07 127-2 SAE C mounting (32-4 SAE "C" coupling required)
K08 SAE C 2 bolt mounting (SAE "C" keyed coupling required)
K40 SAE A 2 bolt mounting (SAE "A" coupling required)
K52 82-2 SAE A mounting (19-4 SAE "A-B" coupling required)
K68 101-2 SAE B mounting (for G4 unit (22-4 SAE "B" coupling req.)

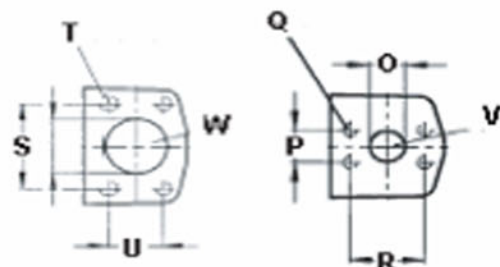
Unit Dimension

Service ports on sides

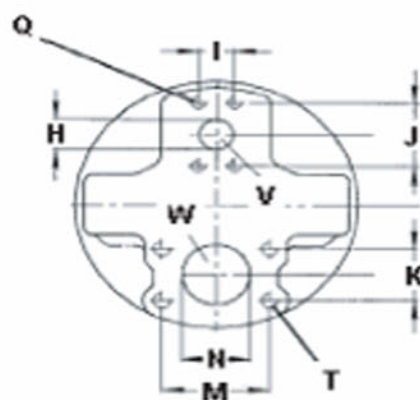
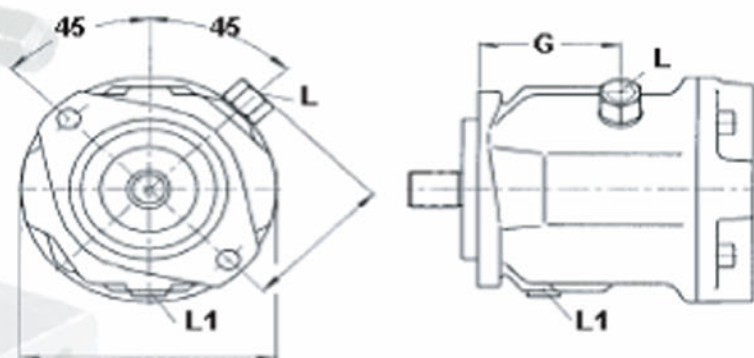


View W

View V



Service ports at rear



L = Case Drain Port

	28		45		71		100	
A	6.22	158	7.13	181	8.07	205	9.29	236
B	6.48	164.5	7.24	184	8.54	217	10.83	275
C	7.64	194	8.62	219	10.12	257	12.48	317
D	3.9979	101	3.9979	101	4.9975	127	4.9975	127
E	6.3	160	7.08	180	8.18	208	7.88	200
F	6.48	164.5	7.24	184	8.54	217	10.83	275
G	3.54	90	3.78	96	4.53	115	6.89	175
H	0.79	20	0.98	25	0.98	25	1.26	32
I	0.87	22.2	1.03	26.2	1.03	26.2	1.25	31.8
J	1.87	47.6	2.06	52.4	2.06	52.4	2.63	66.7
K	1.19	30.2	1.4	35.7	1.69	42.9	2	50.8
L	3/4-16-UNF	M18 x 1.5	7/8-14 UNF		7/8-14 UNF		1 1/6-12 UNF	
M	2.31	58.7	2.75	69.9	3.06	77.8	3.5	88.9
N	1.25	32	1.57	40	1.97	50	2.36	60
O	0.79	20	0.98	25	0.98	25	1.26	32
P	0.87	22.2	1.03	26.2	1.03	26.2	1.25	31.8
Q	3/8-16 UNC-2B		3/8-16 UNC-2B		3/8-16 UNC-2B			
R	0.87	47.6	2.06	52.4	2.06	52.4	2.63	66.7
S	2.31	58.7	2.75	69.9	3.06	77.8	3.5	88.9
T	7/16 UNC-2B		1/2-13 UNC-2B		1/2-13 UNC-2B			
U	1.19	30.2	1.4	35.7	1.69	42.9	2	50.8
V	0.79	20	0.98	25	0.98	25	1.26	32
W	1.25	32	1.57	40	1.97	50	2.36	60

Metaris Replacement Pumps & Components for MA10VO/VSO Size 28, 45 & 71

Performance Data

MA10VO/VSO 28, 45 & 71 Series 31

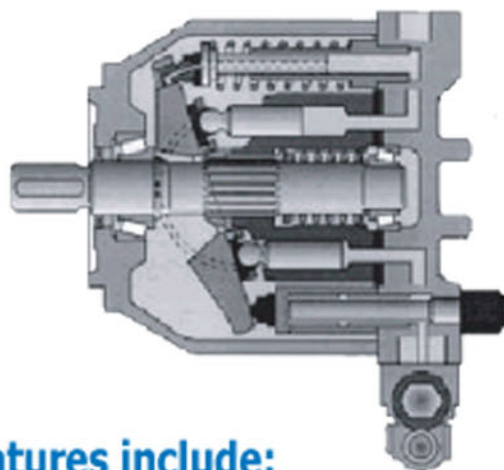
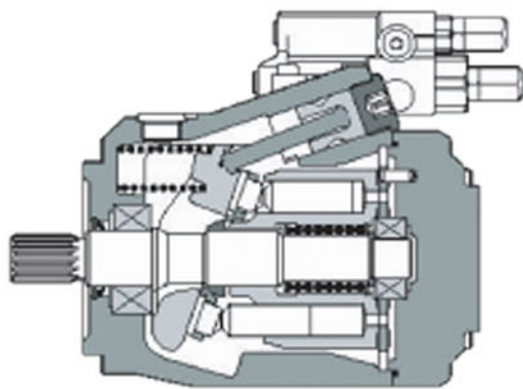
	28	1.71 CU.IN	45	2.75 CU.IN.	71	4.33 CU.IN.	100	6.10 CU.IN
PRESSURE	4000 PSI	280 BAR	3600 PSI	250 BAR	4000 PSI	280 BAR	4000 PSI	280 BAR
PEAK PRESSURE	5100 PSI	350 BAR	4600 PSI	315 BAR	5100 PSI	350 BAR	5100 PSI	350 BAR
MAX. FLOW	21.5 GPM	81 LITERS	30 GPM	131 LITERS	40 GPM	152 LITERS	52 GPM	197 LITERS
MAX SPEED	3000 RPM		2600 RPM		2200 RPM		2000 RPM	

MA10VO/VSO 45 Series 52

	45	2.75 CU.IN.
PRESSURE	3600 PSI	250 BAR
PEAK PRESSURE	4600 PSI	315 BAR
MAX. FLOW	30 GPM	131 LITERS
MAX SPEED	2600 RPM	

Precision built and totally interchangeable

Variable displacement axial piston pumps are designed for open loop hydraulic systems. Flow is proportional to the drive speed. By adjusting the position of the swash plates it is possible to smoothly vary the flow



Features include:

- * Maximum Stop Adjustment
- * Long Service Life
- * Low noise level
- * Wide range of controls
- * SAE mounting flange and shaft
- * Flange connection SAE
- * 2 case drain connections
- * Continuous operation pressure of 4000psi(280 bar)



METARIS BRAND REPLACEMENT PARTS

Our extensive inventory assures you of prompt shipping of pump and parts anywhere in the world.

Our parts are 100% interchangeable with OEM products. We are committed to high quality, zero defects, and processing your orders on time.

Whatever your application, Metaris has a high quality replacement product backed by our 100% commitment to service.

We strive to meet your every hydraulic need.



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