

GENUINE **METARIS**

PISTON PRODUCT LISTING
EFFECTIVE: SEPTEMBER 10, 2007



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

PISTON PRODUCT LISTING

TABLE OF CONTENTS

MA10V(S)O	PAGES 2-10
● BUILD CODE	2
● COMPONENTS BREAKDOWN	3
● MA10V(S)O18	4
● MA10V(S)O28	5
● MA10V(S)O45	6
● MA10V(S)O60	7
● MA10V(S)O71	8
● MA10V(S)O100	9
● MA10V(S)O140	10
MA8VO	PAGES 11-12
● MA8VO COMPONENTS BREAKDOWN	11
● MA8VO107/160 COMPONENTS	12
CATERPILLAR® (EXCAVATOR/GRADER)	PAGES 13-15
● COMPONENTS BREAKDOWN	13
● 215/225/235 EXCAVATOR COMPONENTS	14
● 320 EXCAVATOR COMPONENTS (MOTOR)	14
● 245 EXCAVATOR COMPONENTS (LOADER)	15
● 14G/16G/12G/120G/130G/140G GRADER COMPONENTS	15
VICKERS® PVH/PVE	PAGES 16-20
● PVH/PVE COMPONENTS BREAKDOWN	16
● PVH98 BUILD CODE	17
● PVE19/21 COMPONENTS	18
● PVH57/PVE27 COMPONENTS	18
● PVH74/PVE35 COMPONENTS	19
● PVH98/PVE47 PUMPS AND COMPONENTS	20
● PVH131/PVE62 COMPONENTS	20
VICKERS® PVB	PAGES 21-22
● PVB COMPONENTS BREAKDOWN	21
● PVB 5/6/10/15/20/29 COMPONENTS	22
SUNDSTRAND® SPV20 SERIES	PAGES 23-26
● SPV20 COMPONENTS BREAKDOWN	23
● SPV20/SPV21 COMPONENTS	24
● SPV22/SPV23 COMPONENTS	25
● SPV24 COMPONENTS	26
SUNDSTRAND® PV90 SERIES	PAGES 27-28
● PV90 COMPONENTS BREAKDOWN	27
● PV90 - 55/75/100cc COMPONENTS	28
KOMATSU® PC SERIES 3/5/6	PAGES 29-31
● KOMATSU COMPONENTS BREAKDOWN	29
● PC150/200 (SERIES 3/5) COMPONENTS	30
● PC300/400 (SERIES 3/5) COMPONENTS	30
● PC120/200 (SERIES 6) COMPONENTS	31
● PC300/400 (SERIES 6) COMPONENTS	31

All items listed are Metaris manufactured; OEM part numbers are displayed for reference purpose only. Prices subject to change without notice.

PISTON PRODUCT LISTING

MA10V(S)O BUILD CODE

Code	Description	MA10VSO	71	DFR	/31	R	P	S	C	62	N00
MA10V /31	Swashplate design variable, normal pressure 280 bar (4000 psi), peak pressure 350 bar (5100 psi)										
MA10VS /31	Swashplate design variable, c/w max flow adj. industrial applications normal pressure 280 bar (4000 psi), peak pressure 350 bar (5100 psi)										
MA10V /52	Swashplate design variable, normal pressure 250 bar (3600 psi), peak pressure 315 bar (4600 psi)										
MA10VS /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)										
18	Flow Vg max=18 cm ³ (cu. in. 1.10)										
28	Flow Vg max=28 cm ³ (cu. in. 1.71)										
45	Flow Vg max=45 cm ³ (cu.in.2.75)										
71	Flow Vg max=71 cm ³ (cu. in. 4.33)										
100	Flow Vg max=100 cm ³ (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 (available in 45 model only)										
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 (1.250" 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 thru-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 thru-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 thru-drive torques										
P	18 series Metric keyed shaft (DIN 6885) (18mm)										
K	18 series SAE keyed shaft (.750")										
S	18 series SAE spline shaft (11 tooth - .750")										
U	18 series SAE spline shaft (9 tooth - .625")										
P	100 series Metric keyed shaft (DIN 6885) 40mm										
K	100 series SAE keyed shaft (1.5" dia)										
U	100 series SAE spline shaft (14 tooth - 1.250")										
S	100 series SAE spline shaft (17 tooth - 1.5")										
W	100 series SAE spline shaft reinforced for thru-drive (14 tooth 1.250")										
R	100 series SAE spline shaft thru-drive torques										

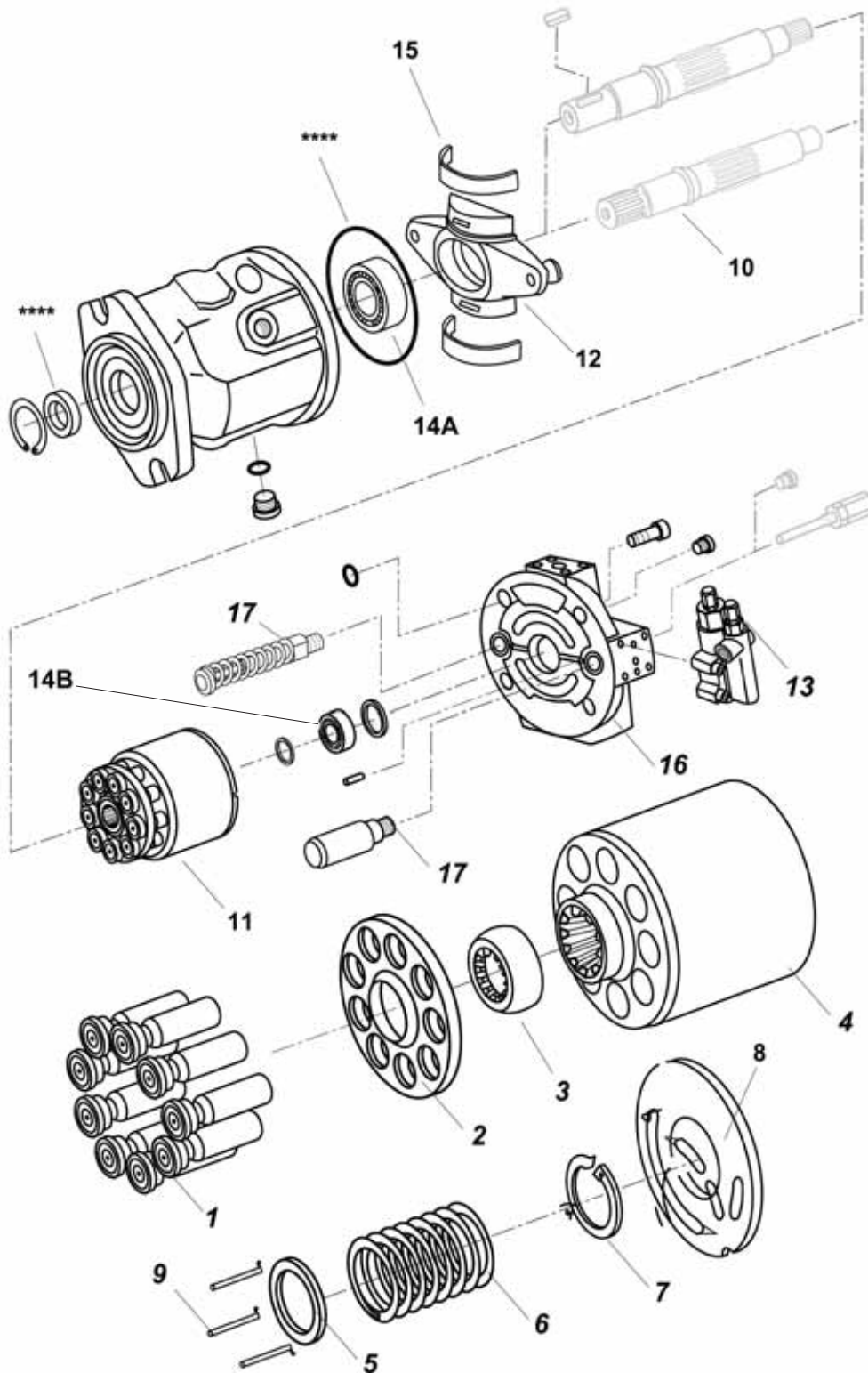
- Connection**
- A ISO - 2-hole mounting - Not available on 52
 - C SAE 2-hole mounting
- 18 series Side port flange metric mounting screws**
- 62 18 series Side port flange U.N.C. mounting screws**
- 11 28 series Rear port flange metric mounting screws
 - 12 28 series Side port flange metric mounting 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
 - 64 45/52 series only Rear ported thread connection
 - 11 71 series Rear port flange (1" & 1 1/4" comb. pressure port) m. mt screws
 - 12 71 series Side port flange (1" & 1 1/4" comb. pressure port) m. mt screws
 - 41 71 series Rear port flange (1" pressure) metric mounting screws
 - 42 71 series Side port flange (1" pressure) metric mounting screws
 - 43 71 series Rear port flange (1 1/4" pressure port) metric mt screws
 - 44 71 series Side port flange (1 1/4" pressure port) metric mt screws
 - 61 71 series Rear port flange (1" & 1 1/4" comb. pressure port) U.N.C. mt. screws
 - 62 71 series Side port flange (1" & 1 1/4" comb. pressure port) U.N.C. mt. 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
 - 93 71 series Rear port flange (1 1/4" pressure port) U.N.C. mounting screws
 - 94 71 series Side port flange (1 1/4" pressure port) U.N.C. mounting screws
 - 12 100 series Side port flange (1" & 1 1/4" comb. pressure port) m. mt. screws
 - 62 100 series Side port flange (1" & 1 1/4" comb. pressure port) U.N.C. mt. 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**
- Thru-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)
 - K04 101-2 SAE B mounting (25-4 SAE "BB" coupling required)
 - K07 127-2 SAE C mounting (32-4 SAE "C" coupling required)
 - K24 SAE C mounting - 1 1/2" spline
 - 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 required)

Pump Size		18	28	45	71	100
Displacement	cm ³ / rev.	18	28	45	71	100
	in ³ / rev.	1.1	1.71	2.75	4.33	6.1
Nominal pressure	bar	280	280	280	280	280
Peak pressure	bar	350	350	350	350	350
Max speed (rpm)	rpm	3300	3000	2600	2200	2000
Max flow	L/min	59.4	81	113	152	194
	gpm	15.7	21.5	30	40	51

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PISTON PRODUCT LISTING

MA10V(S)O COMPONENTS BREAKDOWN



All items listed are Metaris manufactured; OEM part numbers are displayed for reference purpose only. Prices subject to change without notice.

PISTON PRODUCT LISTING

MA10V(S)O18

DESCRIPTION			MA10V(S)O18 - Series 31	
PUMP - MA10V(S)O18**62N00			PORTING	
PUMP - MA10V(S)O18**12N00			SAE - SIDE PORTS	
DFLR CONTROL OPTION			METRIC - SIDE PORTS	
REF #	DESCRIPTION	QTY.	MA10V(S)O18 - Series 31	
			METARIS #	ALTERNATIVE #
1	PISTON (EACH)	9 REQ.	B18-72-110	M925458
2	RETAINER PLATE	1	B18-75-100	M946784
3	BALL GUIDE	1	B18-75-200	M944741
4	BARREL	1	B18-73-000	M940734
5	SPRING - SEAT	1	B18-78-000	M934827
6	SPRING	1	B18-76-100	M933409
7	RETAINER	1	X05-02-25120	M934832
8a	VALVE PLATE - LEFT	1	B18-74-200	M940732
8b	VALVE PLATE - RIGHT	1	B18-74-100	M941477
9	PIN (EACH)	3 REQ.	B18-77-500	M934826
10a	SHAFT METRIC (CODE P)	1		M932605
10b	SHAFT SPLINED (CODE S)	1	B18-50-361	M948588
10d	SHAFT KEYED (CODE K)	1		M932608
11A	ROTARY GROUP L.H.	1	B18-70-200	M944801
11B	ROTARY GROUP R.H.	1	B18-70-100	M940435
12A	YOKE L.H.	1	B18-43-210	M960983
12B	YOKE R.H.	1	B18-43-110	M240-5221
13a	CONTROLLER (DFR/DFR1)***	1	B00-30-100	M907094 / M907096
13b	CONTROLLER (DRG)***	1	B00-30-400	M916069
13c	CONTROLLER (DR)***	1	B00-30-100	M942581 / M907370
14A	SHAFT BEARING - CUP/CONE	1		
14B	REAR BEARING - CUP/CONE	1		
15	SADDLE BEARING (EACH)	2 REQ.		
17	CONTROL PISTON ASSY	1		
**	SEAL KIT	1		
**	SEAL KIT - VITON	1		

*** Controller Included with Pump

All items listed are Metaris manufactured; OEM part numbers are displayed for reference purpose only. Prices subject to change without notice.

PISTON PRODUCT LISTING

MA10V(S)O28

DESCRIPTION	MA10VO28 - Series 31
	PORTING
PUMP - MA10V(S)O28**62N00	SAE - SIDE PORTS
PUMP - MA10V(S)O28**12N00	METRIC - SIDE PORTS
PUMP - MA10V(S)O28**61N00	SAE - REAR PORTS
PUMP - MA10V(S)O28**11N00	METRIC - REAR PORTS
DFLR CONTROL OPTION	
THRU DRIVE OPTION - K**	
K01 -- SAE A Mount	<i>THE THRU DRIVE (K** OPTION) INCLUDES COUPLING AND HARDWARE</i>
K02 -- SAE B Mount - MA10VO28	
FOR TANDEM PUMP, ADD PRICE OF TWO PUMPS PLUS THRU DRIVE OPTION.	
FOR EXAMPLE: MA10VO28/31***K02-MA10VO28** (\$1088.87 + \$209.40 + \$1088.87)	

REF #	DESCRIPTION	QTY.	MA10VO28 - Series 31	
			METARIS #	ALTERNATIVE #
1	PISTON (EACH)	9 REQ.	B28-72-110	M925459 / M967658
2	RETAINER PLATE	1	B28-75-100	M942514
3	BALL GUIDE	1	B28-75-200	M944743
4	BARREL	1	B28-73-000	M907125 / M2407325
5	SPRING - SEAT	1	X05-04-33150	M2400717 / M918933
6	SPRING	1	B28-76-100	M924891
7	RETAINER	1	B28-78-000	M939048 / M2400716
8a	VALVE PLATE - LEFT	1	B28-74-200	M936647
8b	VALVE PLATE - RIGHT	1	B28-74-100	M936648
9	PIN (EACH)	3 REQ.	B28-77-500	M785407
10a	SHAFT METRIC (CODE P)	1	B28-50-291	M923797 / M2415569
10b	SHAFT SPLINED (CODE S)	1	B28-50-321	M947780 / M923789
10c	SHAFT SPLINED (THRU DRIVE CODE S)	1	B28-50-322	M926327 / M2417371
10d	SHAFT KEYED (CODE K)	1	B28-50-121	M926330
10e	SHAFT METRIC (THRU DRIVE CODE P)	1	B28-50-292	M925275 / M2415913
10f	SHAFT KEYED (THRU DRIVE CODE K)	1	B28-50-122	M926328
10g	SHAFT SPLINED (THRU DRIVE CODE R)	1	B28-50-822	M962290
11A	ROTARY GROUP L.H.	1	B28-70-200	M947782 / M958654
11B	ROTARY GROUP R.H.	1	B28-70-100	M947781
12A	YOKE L.H.	1	B28-43-220	M960999 / M947785
12B	YOKE R.H.	1	B28-43-120	M960813 / M947783
13a	CONTROLLER (DFR/DFR1)***	1	B00-30-100	M907094 / M907096
13b	CONTROLLER (DRG)***	1	B00-30-400	M916069
13c	CONTROLLER (DR)***	1	B00-30-100	M942581 / M907370
14A	SHAFT BEARING - CUP/CONE	1	X03-33-12556	M70109-001
14B	REAR BEARING - CUP/CONE	1	X03-33-11740	M70109-002
15	SADDLE BEARING (EACH)	2 REQ	B28-03-602	M902778 / M942158
16	THRU DRIVE COVER K01 (RH)*	1	B28-23-124	M5120-542-005
16	THRU DRIVE COVER K02 / K03 (RH)*	1	B28-24-124	M5120-542-006
16	THRU DRIVE COVER K01 (LH)*	1	B28-23-224	M5120-542-002
16	THRU DRIVE COVER K02 / K03 (LH)*	1	B28-24-224	M5120-542-003
17	CONTROL PISTON ASSY	1	B28-40-502	MBH00911164
**	COUPLING K01	1	B28-50-512	MBH00943539
**	COUPLING K02	1	B28-50-522	MBH00943542
**	COUPLING K03	1	B28-50-622	M764981
**	SEAL KIT	1	B28-80-100	M915845 / M5120-635-005
**	SEAL KIT - VITON	1	B28-80-200	M915845V / M5120-635-012

*** Controller Included with Pump

* Does not include Coupling/Hardware

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PISTON PRODUCT LISTING

MA10V(S)O45

DESCRIPTION	MA10VO45 - Series 52 / 31
	PORTING
PUMP - MA10V(S)O45**62N00	SAE - SIDE PORTS
PUMP - MA10V(S)O45**12N00	METRIC - SIDE PORTS
PUMP - MA10V(S)O45**64N00	SAE - THREADED PORTS (O-RING)
PUMP - MA10V(S)O45**61N00	SAE - REAR PORTS
PUMP - MA10V(S)O45**11N00	METRIC - REAR PORTS
DFLR CONTROL OPTION - 31 DESIGN ONLY	
THRU DRIVE OPTION - K** -- AVAILABLE ON 31 DESIGN PUMP ONLY	
K01 -- SAE A Mount	THE THRU DRIVE (K** OPTION) INCLUDES
K02/K04 -- SAE B Mount - MA10VO28 OR MA10VO45	COUPLING AND HARDWARE
PUMPS INCLUDE STANDARD SPLINED OR KEYED SHAFTS -- MULTI-PUMPS AVAILABLE IN SERIES 31 ONLY.	

REF #	DESCRIPTION	QTY.	MA10VO45 - Series 52 / 31	
			METARIS #	ALTERNATIVE #
1	PISTON (EACH)	9 REQ.	B45-72-110	M925460 / M963893
2	RETAINER PLATE	1	B45-75-100	M943627 / M978872
3	BALL GUIDE	1	B45-75-200	M941318
4	BARREL	1	B45-73-000	M907001
5	SPRING - SEAT	1	B45-78-000	M2400727 / M939056
6	SPRING	1	B45-76-100	M2400724 / M071072
7	RETAINER	1	X05-04-38150	M2400726 / M912520
8a	VALVE PLATE - LEFT	1	B45-74-200	M936644
8b	VALVE PLATE - RIGHT	1	B45-74-100	M936645
9	PIN (EACH)	3 REQ.	B45-77-500	M941277
10a	SHAFT SPLINED (CODE U)	1	B45-50-321	M987649 / M926325
10b	SHAFT SPLINED (CODE S)	1	B45-50-331	M923309 / M947729 / M992268
10c	SHAFT KEYED (CODE K)	1	B45-50-131	M923308 / M947788 / M2417380
10d	SHAFT METRIC (CODE P)	1	B45-50-291	M923742 / M947820 / M2417378
10e	SHAFT SPLINED (THRU DRIVE CODE R)	1	B45-50-832	M962291 / M2417400
10f	SHAFT SPLINED (THRU DRIVE CODE U)	1	B45-50-322	M926326 / M2417398
10g	SHAFT KEYED (THRU DRIVE CODE K)	1	B45-50-132	M926335
10h	SHAFT SPLINED (THRU DRIVE CODE S)	1	B45-50-332	M923743
10i	SHAFT KEYED (THRU DRIVE METRIC CODE P)	1	B45-50-292	M923310
11a	ROTARY GROUP L.H.	1	B45-70-200	M947789 / M914154
11b	ROTARY GROUP R.H.	1	B45-70-100	M947730 / M900510
12a	YOKE L.H. (52 Design)	1	B46-43-210	M929316
12b	YOKE R.H. (52 Design)	1	B46-43-110	M928665
12c	YOKE L.H. (31 Design)	1	B45-43-220	M961026 / M947791
12d	YOKE R.H. (31 Design)	1	B45-43-120	M961024 / M947790
13b	CONTROLLER (DFR/DFR1)***	1	B00-30-100	M907094 / M907096
13c	CONTROLLER (DRG)***	1	B00-30-400	M916069
13d	CONTROLLER (DR)***	1	B00-30-100	M942581 / M907370
14A	SHAFT BEARING - CUP/CONE	1	X03-33-12957	M70109-004
14B	REAR BEARING - CUP/CONE	1	X03-33-12245	M70109-005
15	SADDLE BEARING - 52 design (EACH)	2 REQ	B46-03-602	M933793
15	SADDLE BEARING - 31 design (EACH)	2 REQ	B45-03-602	M900198
16	THRU DRIVE COVER K01 (RH)*	1	B45-23-135	M5130-542-006
16	THRU DRIVE COVER K02 / K04 (RH)*	1	B45-24-135	M5130-542-007
16	THRU DRIVE COVER K01 (LH)*	1	B45-23-235	M5130-542-002
16	THRU DRIVE COVER K02 / K04 (LH)*	1	B45-24-235	M5130-542-003
17	CONTROL PISTON ASSY - 31 design	1	B45-40-501	MBH00910852
**	COUPLING K01	1	B45-50-512	MBH00943529
**	COUPLING K02	1	B45-50-522	MBH00943531
**	COUPLING K03	1	B45-50-622	M763764
**	COUPLING K04	1	B45-50-532	MBH00738476
**	COUPLING K05	1	B45-50-632	M766933
**	SEAL KIT - 31 Design	1	B45-80-100	M925885 / M5130-635-011
**	SEAL KIT - VITON - 31 Design	1	B45-80-200	M925885V / M5130-635-013
**	SEAL KIT - 52 Design	1	B46-80-100	M963478
**	SEAL KIT - VITON - 52 Design	1	B46-80-200	M963478V

*** Controller Included with Pump

** Part Available (not shown)

* Does not include Coupling/Hardware

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PISTON PRODUCT LISTING

MA10V(S)O60

DESCRIPTION			MA10V(S)O60 - Series 52 & 53	
			PORTING	
PUMP - MA10V(S)O60**62N00			SAE - SIDE PORTS	
PUMP - MA10V(S)O60**12N00			METRIC - SIDE PORTS	
DFLR CONTROL OPTION				
REF #	DESCRIPTION	QTY.	MA10V(S)O60 - Series 52 & 53	
			METARIS #	ALTERNATIVE #
1	PISTON (EACH)	9 REQ.		M2418043
2	RETAINER PLATE	1		M2413087
3	BALL GUIDE	1		M973533
4	BARREL	1		M973540
5	SPRING - SEAT	1		M2400742
6	SPRING	1		M975251
7	RETAINER	1		M9156218
8a	VALVE PLATE - LEFT	1		
8b	VALVE PLATE - RIGHT	1		M978570
9	PIN (EACH)	3 REQ.		M2400741
10a	SHAFT METRIC (CODE P)	1		
10b	SHAFT SPLINED (CODE S) 15T	1		M2413417
	SHAFT SPLINED (CODE S) 13TR			
10d	SHAFT KEYED (CODE K)	1		
11A	ROTARY GROUP L.H.	1		
11B	ROTARY GROUP R.H.	1		M973744
12A	YOKE (Bi-Rotational)	1		M973545
13a	CONTROLLER (DFR/DFR1)***	1	B00-30-100	M907094 / M907096
13b	CONTROLLER (DRG)***	1	B00-30-400	M916069
13c	CONTROLLER (DR)***	1	B00-30-100	M942581 / M907370
14A	SHAFT BEARING - CUP/CONE	1		
14B	REAR BEARING - CUP/CONE	1		
15A	SADDLE BEARING -R	1		M2413837
15B	SADDLE BEARING - L	1		M2413836
17	CONTROL PISTON ASSY	1		M993694
**	SEAL KIT	1		
**	SEAL KIT - VITON	1		

*** Controller Included with Pump

***PUMPS CURRENTLY AVAILABLE; PARTS AVAILABLE SPRING 2008**

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PISTON PRODUCT LISTING

MA10V(S)O71

DESCRIPTION	MA10VO71 - Series 31
	PORTING
PUMP - MA10V(S)O71**62/92N00	SAE - SIDE PORTS
PUMP - MA10V(S)O71**12/42N00	METRIC - SIDE PORTS
PUMP - MA10V(S)O71**61/91N00	SAE - REAR PORTS
PUMP - MA10V(S)O71**11/41N00	METRIC - REAR PORTS
PUMP - MA10V(S)O74**62/92/12/42/11/41N00	ALL TYPES AVAILABLE
DFLR CONTROL OPTION	
THRU DRIVE OPTION - K**	
K01 -- SAE A Mount	THE THRU DRIVE (K** OPTION) INCLUDES COUPLING AND HARDWARE
K02 -- SAE B Mount - MA10VO28	
K04 -- SAE B Mount - MA10VO45	
K07 -- SAE C Mount - MA10VO71	
FOR TANDEM PUMP, ADD PRICE OF TWO PUMPS PLUS THRU DRIVE OPTION.	
FOR EXAMPLE: MA10VO71/31***K02-MA10VO28** (\$1763.36 + \$242.46.000 + \$1763.36)	

REF #	DESCRIPTION	QTY.	MA10VO71 - Series 31	
			METARIS #	ALTERNATIVE #
1	PISTON (EACH)	9 REQ.	B71-72-110	M720011 / M924554
2	RETAINER PLATE	1	B71-75-100	M919813
3	BALL GUIDE	1	B71-75-200	M749745
4	BARREL	1	B71-73-000	M907126
5	SPRING - SEAT	1	B71-78-000	M720186
6	SPRING	1	B71-76-100	M720178
7	RETAINER	1	X05-04-45180	M919038
8a	VALVE PLATE - LEFT	1	B71-74-200	M936640
8b	VALVE PLATE - RIGHT	1	B71-74-100	M936641
9	PIN (EACH)	3 REQ.	B71-77-500	M785423
10a	SHAFT METRIC (CODE P)	1	B71-50-291	M923751 / M947821 / M995064
10b	SHAFT SPLINED (CODE S)	1	B71-50-341	M923553 / M947796 / M987676
10c	SHAFT SPLINED CAT	1	B71-50-343	M6E6163
10d	SHAFT KEYED (CODE K)	1	B71-50-141	M926333 / M2412021
10e	SHAFT SPLINED (THRU DRIVE CODE S)	1	B71-50-342	M923471
10f	SHAFT KEYED (THRU DRIVE CODE K)	1	B71-50-142	M926344 / M2412030
10g	SHAFT METRIC (THRU DRIVE CODE P)	1	B71-50-292	M925556 / M987680
10h	SHAFT SPLINED CAT (SPECIAL X-LONG)	1	B71-50-344	M1970674
11A	ROTARY GROUP L.H.	1	B71-70-200	M947802 / M911929
11B	ROTARY GROUP R.H.	1	B71-70-100	M947801 / M956007
12A	YOKE L.H.	1	B71-43-220	M904689 / M947805
12B	YOKE R.H.	1	B71-43-120	M903881 / M947803
13a	CONTROLLER (DFR/DFR1)***	1	B00-30-100	M907094 / M907096
13b	CONTROLLER (DRG)***	1	B00-30-400	M916069
13c	CONTROLLER (DR)***	1	B00-30-100	M942581 / M907370
14A	SHAFT BEARING - CUP/CONE	1	X03-33-13573	M70109-007
14B	REAR BEARING - CUP/CONE	1	X03-33-12557	M70109-008
15	SADDLE BEARING (EACH)	2 REQ	B71-03-602	M902777
**	BEARING KIT	1	B71-03-800	M5140-635-014
16	THRU DRIVE COVER K01 (RH)*	1	B71-23-196	M5140-542-017
16	THRU DRIVE COVER K02 / K04 (RH)*	1	B71-24-196	M5140-542-019
16	THRU DRIVE COVER K07 / K08 (RH)*	1	B71-25-196	M5140-542-021
16	THRU DRIVE COVER K01 (LH)*	1	B71-23-296	M5140-542-018
16	THRU DRIVE COVER K02 / K04 (LH)*	1	B71-24-296	M5140-542-020
16	THRU DRIVE COVER K07 / K08 (LH)*	1	B71-25-296	M5140-542-022
17	CONTROL PISTON ASSY	1	B71-40-501	M910873 / 910870
**	COUPLING K01	1	B71-50-512	MBH00943545
**	COUPLING K02	1	B71-50-522	MBH00943547
**	COUPLING K03	1	B71-50-622	M795682
**	COUPLING K04	1	B71-50-532	MBH00943548
**	COUPLING K05	1	B71-50-632	M764906
**	COUPLING K07	1	B71-50-542	MBH00943549
**	COUPLING K08	1	B71-50-642	M766895
**	SEAL KIT	1	B71-80-100	M915846 / M5140-635-005
**	SEAL KIT - VITON	1	B71-80-200	M915846V / M5140-635-007

*** Controller Included with Pump

** Part Available (not shown)

* Does not include Coupling/Hardware

All items listed are Metaris manufactured; OEM part numbers are displayed for reference purpose only. Prices subject to change without notice.

PISTON PRODUCT LISTING

MA10V(S)O100

DESCRIPTION	MA10VO100 - Series 31
PORTING	
PUMP - MA10V(S)O100**62N00	SAE - SIDE PORTS
PUMP - MA10V(S)O100**12N00	METRIC - SIDE PORTS
PUMP - MA10V(S)O100**61N00	SAE - REAR PORTS
PUMP - MA10V(S)O100**11N00	METRIC - REAR PORTS
DFLR CONTROL OPTION	
THRU DRIVE OPTION - K**	
<i>K52</i> -- SAE A Mount <i>K02</i> -- SAE B Mount - MA10VO28 <i>K04</i> -- SAE B Mount - MA10VO45 <i>K07 / K08</i> -- SAE C Mount - MA10VO71 <i>K24</i> -- SAE C Mount - MA10VO100	
THE THRU DRIVE (K** OPTION) INCLUDES COUPLING AND HARDWARE	
FOR TANDEM PUMP, ADD PRICE OF TWO PUMPS PLUS THRU DRIVE OPTION. FOR EXAMPLE: MA10VO100/31***K02-MA10VO28** (\$2810.36 + \$308.59 + \$2810.36)	

REF #	DESCRIPTION	QTY.	MA10VO100 - Series 31	
			METARIS #	ALTERNATIVE #
1	PISTON (EACH)	9 REQ.	B10-72-110	M925463 / M2418003
2	RETAINER PLATE	1	B10-75-100	M967136 / M996526
3	BALL GUIDE	1	B10-75-200	M906813 / M944744
4	BARREL	1	B10-73-000	M906882 / M2407207
5	SPRING - SEAT	1	B10-78-000	M906880
6	SPRING	1	MPN400031	M906894
7	RETAINER	1	X05-02-62200	M791555
8a	VALVE PLATE - LEFT	1	B10-74-200	M936639
8b	VALVE PLATE - RIGHT	1	B10-74-100	M936661
9	PIN (EACH)	3 REQ.	B10-77-500	M906879
10a	SHAFT SPLINED (CODE U)	1	B10-50-341	M2410600 / M923312
10b	SHAFT SPLINED (CODE S)	1	B10-50-381	M924553 / M987698
10c	SHAFT KEYED (CODE K)	1	B10-50-181	M923317 / M2410595
10d	SHAFT METRIC (CODE P)	1	B10-50-291	M925162 / M987699
10e	SHAFT SPLINED (THRU DRIVE CODE R)	1	B10-50-882	M993523
10f	SHAFT SPLINED (THRU DRIVE CODE W)	1	B10-50-842	M987686
10g	SHAFT METRIC (THRU DRIVE CODE P)	1	B10-50-292	M923709 / M987697
10h	SHAFT KEYED (THRU DRIVE CODE K)	1	B10-50-182	M924552 / M2410605
10i	SHAFT SPLINED (THRU DRIVE CODE S)	1	B10-50-382	M923316
11A	ROTARY GROUP L.H.	1	B10-70-200	M907681 / M948604
11B	ROTARY GROUP R.H.	1	B10-70-100	M948603 / M906871
12A	YOKE L.H.	1	B10-43-220	M948606 / M906886
12B	YOKE R.H.	1	B10-43-120	M961050 / M948605
13a	CONTROLLER (DFR/DFR1)*	1	B00-30-100	M907094
13b	CONTROLLER (DRG)*	1	B00-30-400	M916069
13c	CONTROLLER (DR)*	1	B00-30-100	M942581 / M907370
14A	SHAFT BEARING - CUP/CONE	1	X03-33-14587	M906908
14B	REAR BEARING - CUP/CONE	1	X03-333-13062	M906909
15	SADDLE BEARING (EACH)	2 REQ	B10-03-602	M906881
17	CONTROL PISTON ASSY	1	B10-40-501	M913784
**	SEAL KIT	1	B10-80-100	M915847
**	SEAL KIT - VITON	1	B10-80-200	M915847V

* Included w/Pump

** Part Available (not shown)

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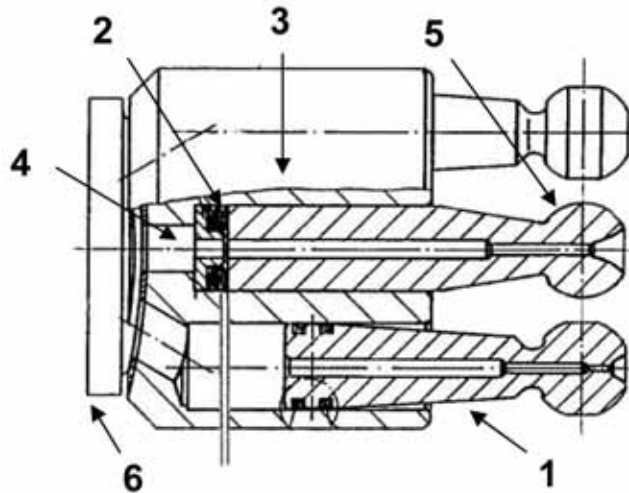


PISTON PRODUCT LISTING

MA10V(S)O140

REF #	DESCRIPTION	QTY.	MA10VO140 - Series 31	
			METARIS #	ALTERNATIVE #
1	PISTON (EACH)	9 REQ.	B14-72-110	M925464
2	RETAINER PLATE	1	B14-75-100	M996527
3	BALL GUIDE	1	B14-75-200	M944745
4	BARREL	1	B14-73-000	M945341
5	SPRING - SEAT	1	B14-78-000	M917727
6	SPRING	1	B14-76-100	M918171
7	RETAINER	1	*****	*****
8a	VALVE PLATE - LEFT	1	B14-74-200	M975126
8b	VALVE PLATE - RIGHT	1	B14-74-100	M973907 / M975125
9	PIN (EACH)	3 REQ.	B14-77-500	M917728
11A	ROTARY GROUP L.H.	1	B14-70-200	M948618
11B	ROTARY GROUP R.H.	1	B14-70-100	M948617
12A	YOKE L.H.	1	B14-43-210	M948620
12B	YOKE R.H.	1	B14-43-110	M948619
14A	SHAFT BEARING - CUP/CONE	1	*****	*****
14B	REAR BEARING - CUP/CONE	1	*****	*****
**	SEAL KIT	1	B14-80-100	M941169

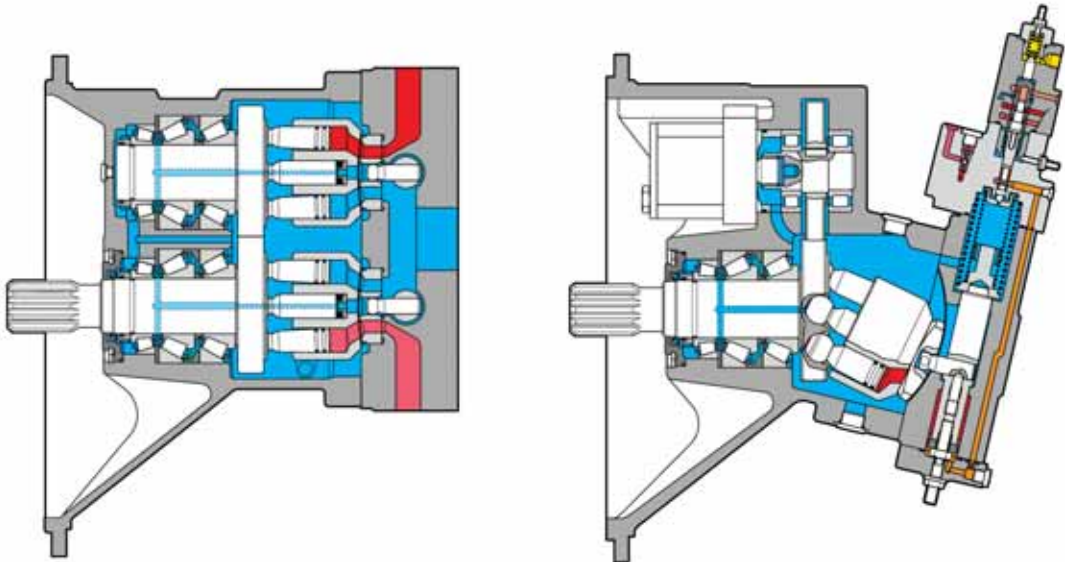
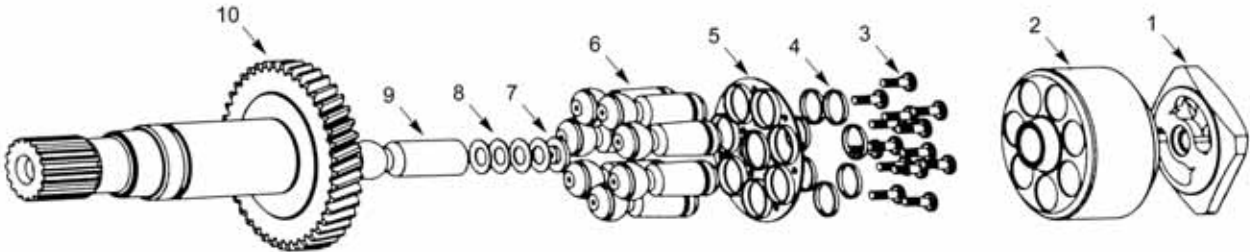
REF #	DESCRIPTION	QTY.	MA2F107	
			METARIS #	ALTERNATIVE #
1	PISTON (EACH)	7 REQ.	B27-72-110	M426823 / M410321
2	RETAINER PLATE	1	B87-75-100	M444764
3	BARREL	1	B27-73-010	M421288 / M421309
4	SPRING	1	B27-76-200	M400105
5	CENTER PIN	1	B27-77-400	M409486
6	VALVE CONTROL PLATE -RH	1	B27-74-100	M650851



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PISTON PRODUCT LISTING

MA8VO COMPONENTS BREAKDOWN



All items listed are Metaris manufactured; OEM part numbers are displayed for reference purpose only. Prices subject to change without notice.

PISTON PRODUCT LISTING

MA8VO - (107/160)

REF #	DESCRIPTION	QTY.	MA8VO107	
			METARIS #	ALTERNATIVE #
**	ROTATING GROUP (DRIVE)	1	B87-70-112	M428522 / M441183
**	ROTATING GROUP (IDLER)	1	B87-70-211	M428185 / M441184
**	ROTATING GROUP (w/o SHAFT)	1	B87-70-000	M434586
1a	VALVE PLATE - LEFT	1	B87-74-200	M650454
1b	VALVE PLATE - RIGHT	1	B87-74-100	M650453
2	CYLINDER BARREL	1	B87-73-000	M430886
3	SCREW (EACH)	14 REQ.	X41-21-05016	M449235
4	PISTON RING (EACH)	7 REQ.	B87-72-300	M156248
5	RETAINER PLATE	1	B87-75-100	M444764
6	PISTON (EACH)	7 REQ.	B87-72-110	M443469
6a	PISTON WITH RING (EACH)	7 REQ.	B87-72-120	M2021910
7	SPACER	1	AS REQUIRED	AS REQUIRED
8	DISC SPRING (EACH)	4 REQ.	B87-76-200	M409134
9	CENTER PIN	1	B87-77-400	M410289
10	DRIVE SHAFT (Main)	1	B87-50-399	M430673
*	DRIVE SHAFT (Hub)	1	B87-50-999	M411723 / M425724
*	SHAFT BEARING (ASSEMBLY)	1	MPN098921	M154486
*	SEAL KIT	1	B87-80-200	M270941
*	CUP COLLAR	1	B87-92-051	M412570

* Parts Available (not shown)

** Rotating Group Includes: Drive Shaft, Barrel, Pistons, Bearings

REF #	DESCRIPTION	QTY.	MA8VO160	
			METARIS #	ALTERNATIVE #
1a	VALVE PLATE - LEFT	1	B86-74-200	M650456
1b	VALVE PLATE - RIGHT	1	B86-74-100	M650455
2	CYLINDER BARREL	1	B86-73-000	M430794
3	SCREW (EACH)	14 REQ.	X41-21-06020	M831108
4	PISTON RING (EACH)	7 REQ.	B86-72-300	M9831897
5	RETAINER PLATE	1	B86-75-100	M6269
6	PISTON (EACH)	7 REQ.	B86-72-110	M440274
6a	PISTON WITH RING (EACH)	7 REQ.	B86-72-120	M2021911
7	SPACER	1	AS REQUIRED	AS REQUIRED
8	DISC SPRING (EACH)	4 REQ.	MPN025016	M410551
9	CENTER PIN	1	B86-77-400	M410552
**	BEARING (Main)*	1	MPN400057	M156512
**	BEARING - SHAFT	1	MPN400058	M23232
**	CUP COLLAR	1	MPN025018	M414031

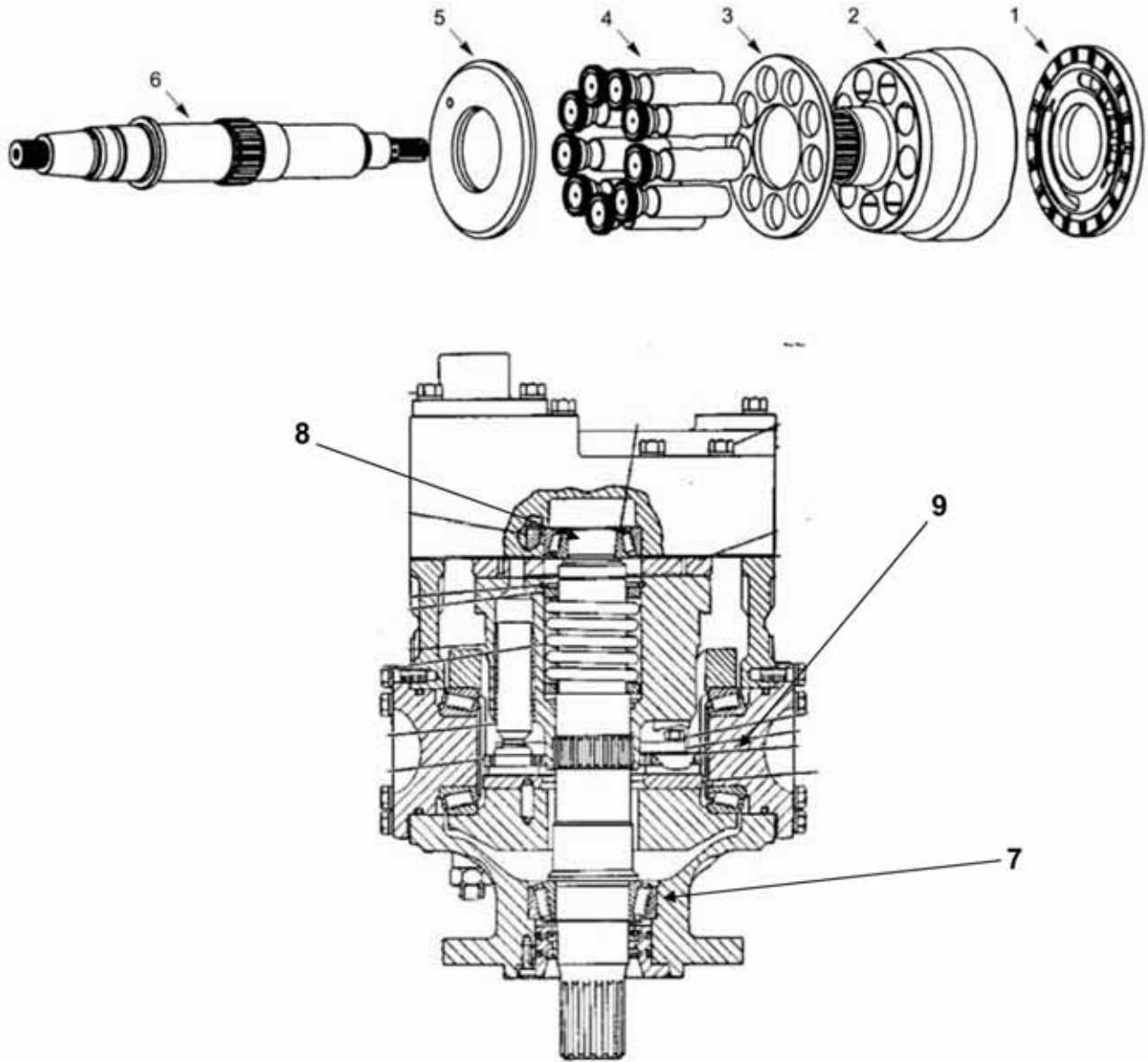
** Parts Available (not shown)

* Includes Spacer Assembly

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PISTON PRODUCT LISTING

CATERPILLAR® COMPONENTS BREAKDOWN



All items listed are Metaris manufactured; OEM part numbers are displayed for reference purpose only. Prices subject to change without notice.

PISTON PRODUCT LISTING

CATERPILLAR®

CATERPILLAR® 215 EXCAVATORS			
Used in Pump #'s : 8J6853, 4T7025, 9T1062, 1U4748			
REF #	CATERPILLAR #	REPLACES #	DESCRIPTION
3	4T7022	9J7858, 8J6328	RETAINER PLATE
5	1U0406	9J7857, 8J6346	THRUST PLATE
6	3G2331		SHAFT
	1U3444		VALVE PLATE
	8J2037		PISTON (EACH)
**	3G1707		SEAL KIT

CATERPILLAR® 225 EXCAVATORS			
Used in Pump #'s : 3G3287, 9J9362, 4T7028, 8J7823, 4T7426, 8J2344, 8J4379			
REF #	CATERPILLAR #	REPLACES #	DESCRIPTION
1	3G2859	9J2484, 8J2024, 9J1283	VALVE PLATE
2	9J2417	9J8266, 8J5038, 9J3969	CYLINDER BARREL
3	4T7024	8J9966	RETAINER PLATE
4	1U2738	9J4936, 9J4935, 8J1913, 8J1912	PISTON (EACH)
5	3G9671	8J0488, 9J0560	THRUST PLATE
7a	7K8877	BEARING PRICES AVAILABLE UPON REQUEST	FRONT - CONE
7b	7K8876		FRONT - CUP
8 & 9	8J0423		REAR - CONE
8 & 9	8J0422		REAR - CUP
6	8J8654		SHAFT
**	3G1688		SEAL KIT

CATERPILLAR® 235 EXCAVATORS			
Used in Pump #'s : 8J1905, 1U4722, 4T2507, 7J8240, 4T4026			
REF #	ALTERNATIVE #	REPLACES #	DESCRIPTION
1	6E1332	9J3526, 8J6900	VALVE PLATE
2	9J8667	8J7332, 3G2736, 9T7356	CYLINDER BARREL
3	4T7023	6C0415, 3G150, 8J0179	RETAINER PLATE
4	4T3122	8J6897, 4T3154	PISTON (EACH)
5	3G4779	8J0171	THRUST PLATE
7a	7J8893	BEARING PRICES AVAILABLE UPON REQUEST	FRONT - CONE
7b	7J8894		FRONT - CUP
8a	3P1210		REAR - CONE
8b	8J0412		REAR - CUP
9a	2D9190		SIDE - CUP
9b	2D9191		SIDE - CONE
6	8J6802		SHAFT -245 only
**	8J8652		SEAL KIT

CATERPILLAR® 320 SWING MOTOR		
Used in Motor #'s : 087-4715, 087-4824, 115-3737, 116-3550, 123-1998, 123-1999, 147-5789		
REF #	CATERPILLAR #	DESCRIPTION
1	5I8628	VALVE PLATE
2	5I8631	BARREL ASSEMBLY
3	5I8636	RETAINER PLATE
4	5I8632	PISTON (EACH)
5	5I8637	THRUST PLATE
**	5I8634	BALL GUIDE
**	5I8420	PIN
**	5I8629	SEPARATION PLATE
**	5I8630	FRICTION PLATE
7a	5I8419	BEARING - FRONT
8	5I8625	BEARING - REAR

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PISTON PRODUCT LISTING

CATERPILLAR®

CATERPILLAR® 245 EXCAVATORS & 992C WHEEL LOADERS			
Used in Pump #'s : 4T2506, 8J4380, 4T7027, 3G7230, 1U3840, 3G2848, 1U477, 9J4834			
REF #	ALTERNATIVE #	REPLACES #	DESCRIPTION
1	6E1332	9J3526, 8J6900	VALVE PLATE - 245 Only
	6E1875	3G1717	VALVE PLATE - 992 Only
2	9J8667	8J7332, 3G2736, 9T7356	BARREL ASSEMBLY
3	4T7023	6C0415, 3G150, 8J0179	RETAINER PLATE
4	4T3122	8J6897, 4T3154	PISTON (EACH)
5	3G4779	8J0171	THRUST PLATE
7a	7J8893	BEARING PRICES AVAILABLE UPON REQUEST	FRONT - CONE
7b	7J8894		FRONT - CUP
8a	3P1210		REAR - CONE
8b	8J0412		REAR - CUP
9a	2D9190		SIDE - CUP
9b	2D9191		SIDE - CONE
6	3G4604		
**	8J8652		SEAL KIT

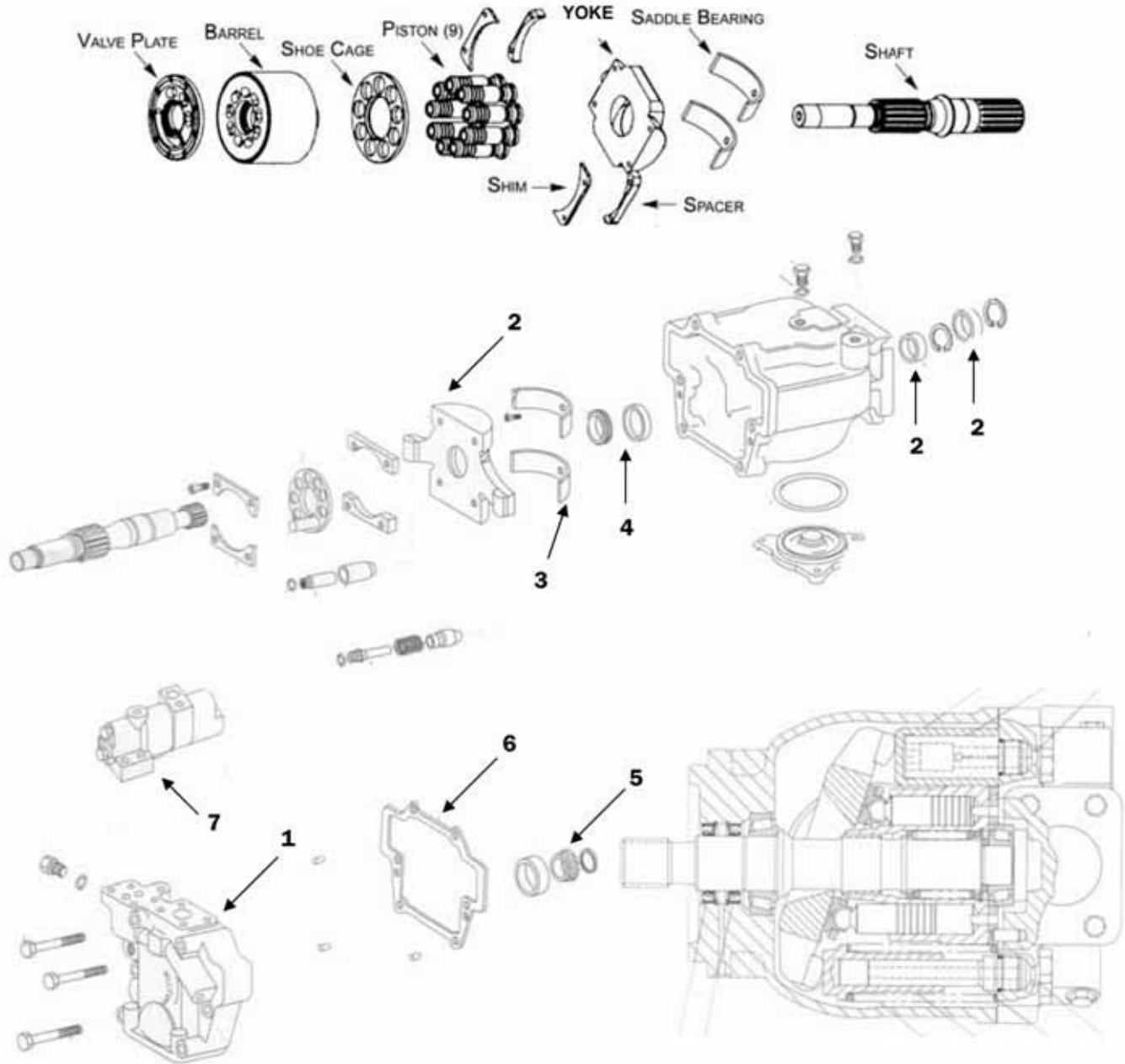
CATERPILLAR® 14G / 16G MOTOR GRADERS			
Used in Pump #'s : 4T2768, 4T2767, 8J6168, 8J6855, 9T3547			
REF #	ALTERNATIVE #	REPLACES #	DESCRIPTION
1	3G2859	9J2484, 8J2024, 9J1283	VALVE PLATE
2	9J2417	9J8266, 8J5038, 9J3969	BARREL ASSEMBLY
3	4T7024	8J9966	RETAINER PLATE
4	1U2738	9J4936, 9J4935, 8J1913, 8J1912	PISTON (EACH)
5	3G9671	8J0488, 9J0560	THRUST PLATE
7a	7K8877	BEARING PRICES AVAILABLE UPON REQUEST	FRONT - CONE
7b	7K8876		FRONT - CUP
8 & 9	8J0423		REAR - CONE
8 & 9	8J0422		REAR - CUP
6	8J5592		
**	3G1689		SEAL KIT

CATERPILLAR® 12G / 120G / 130G / 140G MOTOR GRADERS				
Used in Pump #'s : 8J0498, 8J6730, 8J6155, 8J6188, 8J6731, 8J6855, 4T2768, 9T3547				
REF #	ALTERNATIVE #	REPLACES #	DESCRIPTION	
1	9J5758	9J2516	VALVE PLATE	
2	9J8660	8J6348	BARREL ASSEMBLY	
3	4T7022	9J7858, 8J6328	RETAINER PLATE	
4	8J2022		PISTON (EACH)	
5	1U0406	9J7584, 8J6346	THRUST PLATE	
7a	8J6315	BEARING PRICES AVAILABLE UPON REQUEST	FRONT - CONE	
7b	8J6314		FRONT - CUP	
8	1B3953		REAR - CONE	
8	8J6322		REAR - CUP	
9	3G3156		SIDE	
6	8J6296			SHAFT
**	3G1708			SEAL KIT

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PISTON PRODUCT LISTING

VICKERS® PVH/PVE COMPONENTS BREAKDOWN



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PISTON PRODUCT LISTING

VICKERS® PVH98 BUILD CODE

Ordering Code (example)

PVH98 ** C R F 2S 11 C23 V 31 ***

APPLICATION

QI - QUIET INDUSTRIAL VERSION
BLANK - OMIT FOR MOBILE VERSION

MOUNTING

C - SAE "C" 4-BOLT

ROTATION

R - RIGHT HAND
L - LEFT HAND

MAIN PORTS

F - SAE 4-BOLT FLANGE PORTS

SHAFT

2 - SAE 14-TOOTH SPLINE
1 - SAE C STRAIGHT KEYED
3 - SAE CC 17-TOOTH SPLINE

SEAL TYPE

S - SINGLE SHAFT SEAL
D - DOUBLE SHAFT SEAL

PUMP DESIGN

11 - DESIGN
10 - DESIGN

CONTROL TYPE

C - COMPENSATOR 2000-4000 PSI
CM - COMPENSATOR 500-2000 PSI 23-230 BAR (3335 PSI)

COMPENSATOR PRESSURE SETTING

**--MULTIPLE CONFIGURATIONS

OPTIONAL PRESSURE CONTROL

V - LOAD SENSING 20 BAR (230 PSI)
BLANK - STANDARD MODEL

COMPENSATOR DESIGN

31 - DESIGN

*****SPECIAL SUFFIX CODE - INCLUDE WITH PUMP CODE FOR SPECIAL FEATURES**

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PISTON PRODUCT LISTING

VICKERS® PVH / PVE

REF #	DESCRIPTION	QTY	PVE 19 / PVQ 40	
			METARIS #	ALTERNATIVE #
**	Rotating Group Assembly	1	MPN093160	M923948
**	Barrel	1	MPN093151	M426454
**	Piston (EACH)	9 REQ.	MPN093627	M923939
**	Shoe Cage {Retainer Plate}	1	MPN093628	M402650
**	Ball Guide (Spherical Washer)	1	MPN093629	M402580
**	Valve Plate - LH	1	MPN093152	M425415
**	Valve Plate - RH	1	MPN093153	M425412
**	Pin Retainer	1	MPN093165	M410050
**	Pin (EACH)	3 REQ.	MPN093155	M248810
**	Spring	1	MPN093157	M402579
**	Spring Washer a	1	MPN093156	M404932
**	Spring Washer b	1	MPN093158	M423368
**	Snap Ring	1	MPN093159	M99907
**	Swash Plate	1	MPN105133	M9T2231

REF #	DESCRIPTION	QTY	PVE 21 / PVQ 45	
			METARIS #	ALTERNATIVE #
**	Rotating Group Assembly	1	MPN093171	M923947
**	Barrel	1	MPN093161	M418215
**	Piston (EACH)	9 REQ.	MPN093162	M923946
**	Shoe Cage {Retainer Plate}	1	MPN093628	M402650
**	Ball Guide (Spherical Washer)	1	MPN093629	M402580
**	Valve Plate - LH	1	MPN093164	M425416
**	Valve Plate - RH	1	MPN093630	M425413
**	Pin Retainer	1	MPN093165	M410050
**	Pin (EACH)	3 REQ.	MPN093155	M248810
**	Spring	1	MPN093157	M402579
**	Spring Washer a	1	MPN093156	M404932
**	Spring Washer b	1	MPN093158	M423368
**	Snap Ring	1	MPN093159	M99907

REF #	DESCRIPTION	QTY	PVH 57 / PVE 27	
			METARIS #	ALTERNATIVE #
**	Rotating Group Assembly PVE27	1	MPN098556	M938102
**	Rotating Group Assembly PVH57	1	MPN098418	M877420
**	Barrel	1	MPN093108	M937023 / M680625
**	Piston (EACH)	9 REQ.	MPN093109	M306362
**	Piston Kit (SET)	1	MPN098552	M926257
**	Shoe Cage {Retainer Plate}	1	MPN093110	M584512
**	Valve Plate - LH	1	MPN093115	M680631
**	Valve Plate - RH	1	MPN093116	M680630
**	Yoke	1	MPN093118	M690832
**	Saddle Bearing (W) PVH57 (each)	1	MPN092338	M513885
**	Saddle Bearing (N) PVH57 (each)	1	MPN092339	M513886
**	Spacer Pair (2pc Included)	2 REQ.	MPN093119	M690801
**	Spring Guide	1	MPN093111	M680624
**	Spring	1	MPN093112	M627524
**	Spring Guide	1	MPN093113	M584524
**	Retaining Ring	1	MPN093114	M85560
**	Spacer Pair (2pc Included)	2 REQ.	MPN098072	M632587
**	Swash Plate PVE27	1	MPN098075	M584515
**	Limiter Pair (2pc Included)	2 REQ.	MPN093120	M690218
**	Gasket	2 REQ.	MPN093624	M513846
**	Seal Kit	1	MPN400125	M102244

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PISTON PRODUCT LISTING

VICKERS® PVH / PVE

REF #	DESCRIPTION	QTY	PVH 74 / PVE 35	
			METARIS #	ALTERNATIVE #
**	Rotating Group Assembly PVH74	1	MPN098417	M877421
**	Rotating Group Assembly PVE35	1	MPN098451	M938101
**	Barrel	1	MPN092725	M937025 / M680626
**	Piston (EACH)	9 REQ.	MPN092724	M305857
**	Piston Kit (SET)	1	MPN093626	M941424
**	Shoe Cage {Retainer Plate}	1	MPN093631	M584774
**	Valve Plate - LH	1	MPN093632	M627437
**	Valve Plate - RH	1	MPN400060	M627438
**	Yoke	1	MPN093105	M526651
**	Spacer (2pc Included)	2 REQ.	MPN093106	M526639
**	Spring Guide	1	MPN400061	M631568
**	Spring	1	MPN400062	M584454
**	Spring Guide	1	MPN400063	M584483
**	Retaining Ring	1	MPN400064	M91365
**	Spacer (EACH)	2 REQ.	MPN098074	M584473
**	Swash Plate PVE35	1	MPN098076	M631567
**	Limitter (2pc Included)	2 REQ.	MPN093107	M690796
**	Gasket	1	MPN400065	M526631
**	Seal Kit	1	MPN400066	M102262
**	Saddle Bearing (N) PVH74 (each)	1	MPN098399	M513927
**	Saddle Bearing (W) PVH74 (each)	1	MPN098400	M513926

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PISTON PRODUCT LISTING

VICKERS® PVH / PVE

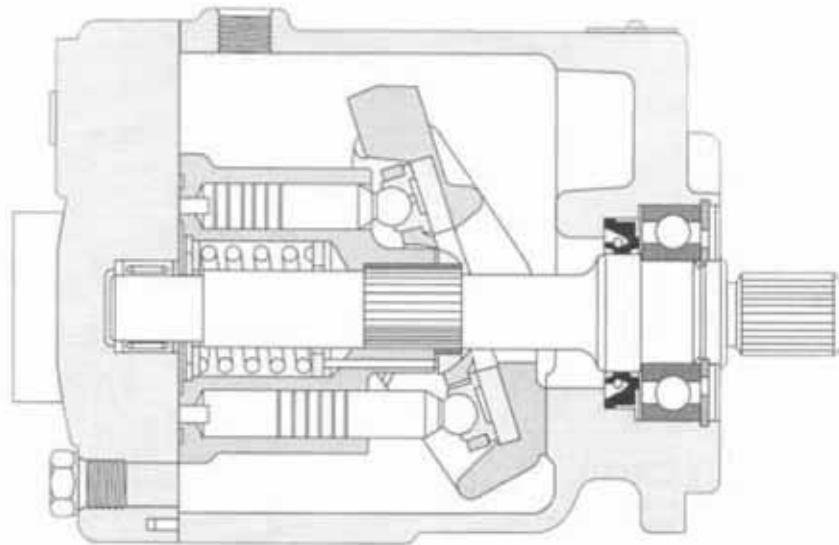
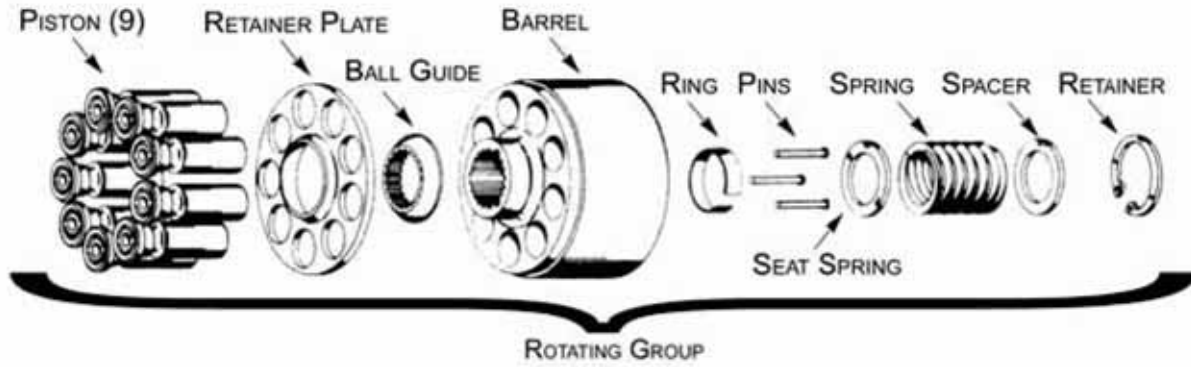
REF #	DESCRIPTION	QTY	PVH 98 / PVE 47	
			METARIS #	ALTERNATIVE #
**	PUMP	1	SEE MODEL CODE	
PUMP AVAILABLE WITH EITHER MOBILE OR INDUSTRIAL COMPENSATORS. CATERPILLAR® CONFIGURATIONS AVAILABLE.				
*	Rotating Group Assembly PVH98	1	MPN098419	M877422
*	Rotating Group Assembly PVE47	1	MPN098554	M938103
*	Barrel	1	MPN091101	M680627
*	Piston (EACH)	9 REQ.	MPN091100	M02-152400
*	Piston Kit (SET)	1	MPN098553	M926246
*	Shoe Cage {Retainer Plate}	1	MPN025013	M584539
1a	Valve Block - RH	1	MPN098098	M928635
1b	Valve Block - LH	1	MPN091104	M928684
	Valve Block Metric -LH	1	MPN091105	M928685
*	Mobile Valve Plate - LH	1	MPN091106	M584540
*	Mobile Valve Plate - RH	1	MPN091107	M627371
*	Industrial Valve Plate - RH	1	MPN090489	M514122
*	Industrial Valve Plate - LH	1	MPN090503	M514120
2	Yoke	1	MPN090508	M513629
3	Saddle Bearing (W)	1	MPN095061	M513911
3a	Saddle Bearing (N)	1	MPN095062	M513912
4	Front Shaft Bearing	1	MPN092123	M388154
5	Rear Shaft Bearing	1	MPN092126	M413603
*	#1 Keyed Shaft	1	MPN091568	M527167
*	#5 Tapered Keyed Shaft	1	MPN093431	M6E1861
*	14T Splined Shaft	1	MPN090488	M513627
**	Spacer PVH98 (2pc Included)	2 REQ.	MPN092271	M513625
**	Spacer PVE47 (EACH)	2 REQ.	MPN098073	M584545
**	Spring Guide	1	MPN091596	M584546
**	Spring	1	MPN091597	M627192
**	Spring Guide	1	MPN091594	M584547
**	Retaining Ring	1	MPN091595	M102038
**	Swash Plate PVE27	1	MPN098077	M584531
**	Limiters (Pair)	2 REQ.	MPN091103	M513626
6	Gasket	1	MPN091593	M513631
7a	Load Sensing Control Valve	1	MPN090694	M02-125161
7b	Standard 'C' Compensator	1	MPN090509	M02-125160
8	Shaft Seal	1	MPN091827	M589332
**	Seal Kit	1	MPN092717	M102264

REF #	DESCRIPTION	QTY	PVH 131 / PVE62	
			METARIS #	ALTERNATIVE #
**	Rotating Group Assembly	1	MPN098425	M877419
**	Barrel	1	MPN093699	M680628
**	Piston (EACH)	9 REQ.	MPN025003	M159749
**	Shoe Cage {Retainer Plate}	1	MPN025011	M683791
**	Valve Plate - LH	1	MPN095223	M527163
**	Valve Plate - RH	1	MPN095224	M527164
**	Yoke	1	MPN095225	M692941
**	Spacer Kit (2 pcs included)	2	MPN095226	M526757
**	Limiters (2 pcs included)	1	MPN095227	M526758
**	Saddle Bearing (W)	1	MPN098401	M692949
**	Saddle Bearing (N)	1	MPN098402	M692948

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PISTON PRODUCT LISTING

VICKERS® PVB COMPONENTS BREAKDOWN



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PISTON PRODUCT LISTING

VICKERS® PVB

DESCRIPTION	QTY.	PVB 5		PVB 6	
		METARIS #	ALTERNATIVE #	METARIS #	ALTERNATIVE #
ROTATING GROUP	1	MPN090157	M875775	MPN091092	M875773
PISTON KIT (SET OF 9)	1	MPN091856	M942229	MPN091857	M942230
VALVE PLATE LH	1	MPN091861	M942224	MPN091861	M942224
VALVE PLATE RH	1	MPN090158	M942223	MPN090158	M942223
SHAFT - KEYED	1	MPN091098	M266162	MPN091098	M266162
SHAFT - SPLINED	1	MPN091846	M286848	MPN091845	M286848
SHAFT BEARING	1	MPN091647	M283233	MPN091647	M283233
PINTLE BEARING *	1	MPN091649	M317572	MPN091649	M317572
SEAL KIT (NITRILE)	1	MPN091653	M919191	MPN091653	M919191

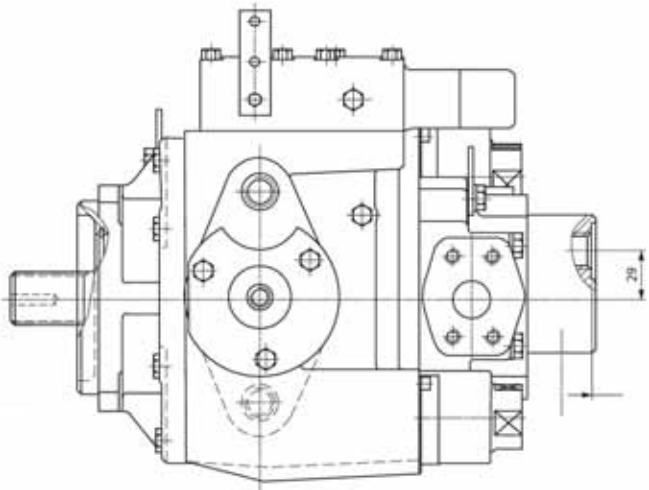
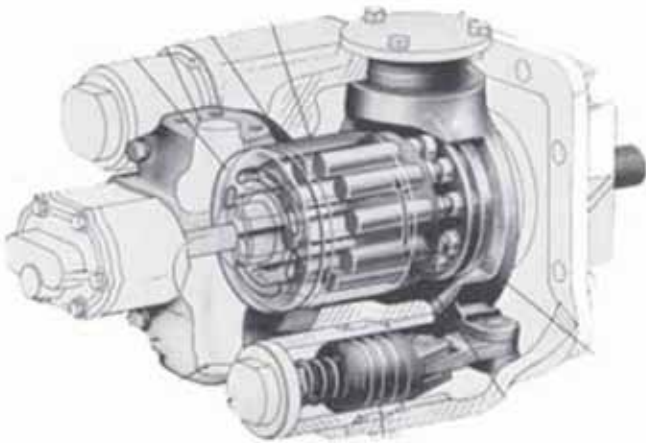
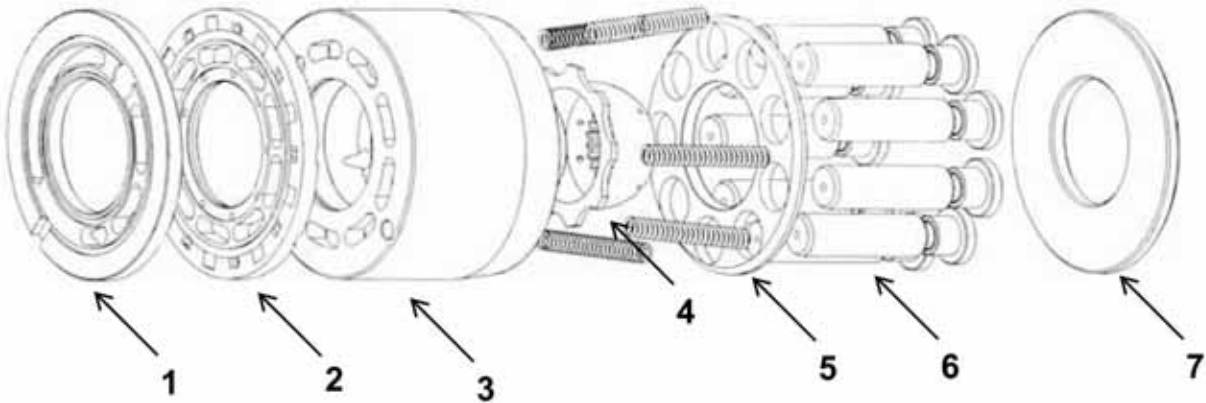
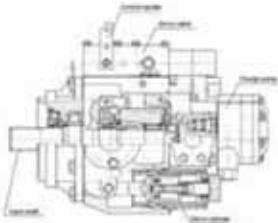
DESCRIPTION	QTY.	PVB 10		PVB 15	
		METARIS #	ALTERNATIVE #	METARIS #	ALTERNATIVE #
ROTATING GROUP	1	MPN090160	M938276	MPN090785	M938273
PISTON KIT (SET OF 9)	1	MPN091858	M942047	MPN091859	M941887
VALVE PLATE LH	1	MPN091864	M942161	MPN091863	M942162
VALVE PLATE RH	1	MPN091865	M942160	MPN091862	M942163
SHAFT - KEYED	1	MPN091099	M261478	MPN091099	M261478
SHAFT - SPLINED	1	MPN091846	M292077	MPN091846	M292077
SHAFT BEARING	1	MPN091648	M284397	MPN091648	M284397
PINTLE BEARING *	1	MPN091641	M012016	MPN091641	M012016
SEAL KIT (NITRILE)	1	MPN091654	M919682	MPN091654	M919682

DESCRIPTION	QTY.	PVB 20		PVB 29	
		METARIS #	ALTERNATIVE #	METARIS #	ALTERNATIVE #
ROTATING GROUP	1	MPN090163	M938274	MPN091094	M938275
PISTON KIT (SET OF 9)	1	MPN090819	M941883	MPN091860	M941888
VALVE PLATE LH	1	MPN090210	M942170	MPN091866	M942172
VALVE PLATE RH	1	MPN090164	M942169	MPN091867	M942171
SHAFT - KEYED	1	MPN091096	M362135	MPN091096	M362135
SHAFT - SPLINED	1	MPN091847	M282880	MPN091847	M282880
SHAFT BEARING	1	MPN091646	M283090	MPN091646	M283090
PINTLE BEARING *	1	MPN091651	M353230	MPN091651	M353230
SEAL KIT (NITRILE)	1	MPN091655	M919683	MPN091655	M919683

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PISTON PRODUCT LISTING

SUNDSTRAND® SPV20 COMPONENTS BREAKDOWN



All items listed are Metaris manufactured; OEM part numbers are displayed for reference purpose only. Prices subject to change without notice.

PISTON PRODUCT LISTING

SUNDSTRAND® SPV20

REF #	DESCRIPTION	QTY.	SERIES 20 (SPV20)	
			METARIS #	ALTERNATIVE #
**	ROTATING GROUP	1	MPN091075	M510149
1a	VALVE PLATE - RH	1	MPN090149	M9200428
1b	VALVE PLATE - LH	1	MPN090148	M9200429
1c	MOTOR PLATE	1	MPN090128	M9200430
7	THRUST PLATE	1	MPN090137	M9200159
2	BEARING PLATE	1	MPN090136	M9200216
4	BALL GUIDE	1	MPN090147	M9200124
5	SLIPPER RETAINER	1	MPN090146	M9200158
6	PISTON (EACH)	9 REQ.	MPN090145	M9200499 / M501528
3	CYLINDER BLOCK	1	MPN090144	M49155
**	PUMP GASKET KIT (Includes Shim Kit)	1	MPN090645	M9510224
**	MOTOR GASKET KIT FIXED (Includes Shim Kit)	1	MPN090942	M9510225
**	MOTOR GASKET KIT VARIABLE (Includes Shim Kit)	1	MPN090947	M9510226
**	SHAFT SEAL	1	MPN080160	M9510189

REF #	DESCRIPTION	QTY.	SERIES 21 (SPV21)	
			METARIS #	ALTERNATIVE #
**	ROTATING GROUP	1	MPN091076	M9210696
1a	VALVE PLATE - RH	1	MPN090143	M9210478
1b	VALVE PLATE - LH	1	MPN090142	M9210479
1c	MOTOR PLATE	1	MPN090127	M9210480
7	THRUST PLATE	1	MPN090150	M9210293
2	BEARING PLATE	1	MPN090135	M9210658
4	BALL GUIDE	1	MPN080163	M9210219
5	SLIPPER RETAINER	1	MPN080162	M9210292
6	PISTON - WELDED (EACH)	9 REQ.	MPN093420	M9510408-0010
3	CYLINDER BLOCK	1	MPN090141	M9210576
**	PUMP GASKET KIT (Includes Shim Kit)	1	MPN090646	M9510227
**	MOTOR GASKET KIT FIXED (Includes Shim Kit)	1	MPN090943	M9510228
**	MOTOR GASKET KIT VARIABLE (Includes Shim Kit)	1	MPN090948	M9510229
**	SHAFT SEAL	1	MPN080160	M9510189

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PISTON PRODUCT LISTING

SUNDSTRAND® SPV20

REF #	DESCRIPTION	QTY.	SERIES 22 (SPV22)	
			METARIS #	ALTERNATIVE #
**	ROTATING GROUP	1	MPN091077	M9221448
1a	VALVE PLATE - RH	1	MPN090140	M9220990
1b	VALVE PLATE - LH	1	MPN090139	M9220991
1c	MOTOR PLATE	1	MPN090126	M9220992
7	THRUST PLATE	1	MPN090138	M9220626
2	BEARING PLATE	1	MPN090076	M9221335
4	BALL GUIDE	1	MPN080173	M9220500
5	SLIPPER RETAINER	1	MPN080172	M9220628
6	PISTON - WELDED (EACH)	9 REQ.	MPN093421	M9510408-0001
3	CYLINDER BLOCK	1	MPN090134	M9221102
**	PUMP GASKET KIT (Includes Shim Kit)	1	MPN090647	M9510230
**	MOTOR GASKET KIT FIXED (Includes Shim Kit)	1	MPN090944	M9510231
**	MOTOR GASKET KIT VARIABLE (Includes Shim Kit)	1	MPN090949	M9510232
**	SHAFT SEAL	1	MPN080160	M9510189
**	SHAFT - 21 Tooth	1	MPN090660	M9220417

REF #	DESCRIPTION	QTY.	SERIES 23 (SPV23)	
			METARIS #	ALTERNATIVE #
**	ROTATING GROUP	1	MPN091078	M9230973
1a	VALVE PLATE - RH	1	MPN090133	M9230560
1b	VALVE PLATE - LH	1	MPN090132	M9230561
1c	MOTOR PLATE	1	MPN090125	M9230562
7	THRUST PLATE	1	MPN080404	M9230235
2	BEARING PLATE	1	MPN090077	M9230881
4	BALL GUIDE	1	MPN080405	M9230158
5	SLIPPER RETAINER	1	MPN080403	M9230234
6	PISTON - WELDED (EACH)	9 REQ.	MPN093422	M9510408-0002
3	CYLINDER BLOCK	1	MPN080401	M9230651
**	PUMP GASKET KIT (Includes Shim Kit)	1	MPN090648	M9510233
**	MOTOR GASKET KIT FIXED (Includes Shim Kit)	1	MPN090945	M9510234
**	MOTOR GASKET KIT VARIABLE (Includes Shim Kit)	1	MPN090950	M9510235
**	SHAFT SEAL	1	MPN090075	M9510190
**	SHAFT - 14 Tooth	1	MPN090661	M9230476
**	SHAFT - 21 Tooth	1	MPN090659	M9230325

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PISTON PRODUCT LISTING

SUNDSTRAND® SPV20

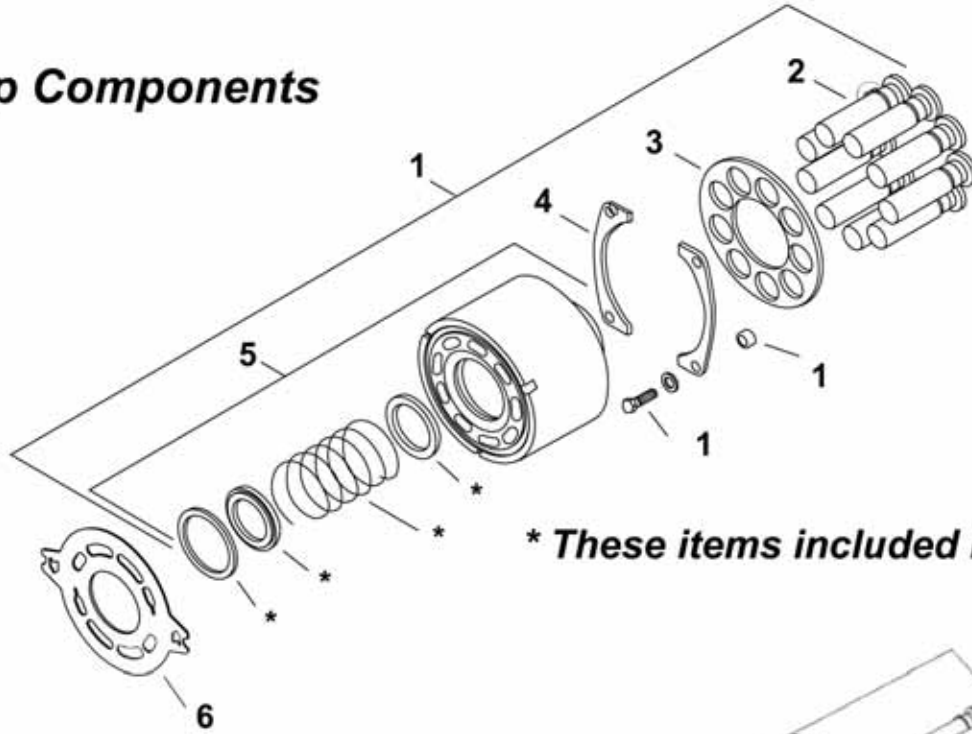
REF #	DESCRIPTION	QTY.	SERIES 24 (SPV24)	
			METARIS #	ALTERNATIVE #
**	ROTATING GROUP	1	MPN091079	M9240641
1a	VALVE PLATE - RH	1	MPN090131	M9240277
1b	VALVE PLATE - LH	1	MPN090130	M9240278
1c	MOTOR PLATE	1	MPN090124	M9240279
7	THRUST PLATE	1	MPN080409	M9240124
2	BEARING PLATE	1	MPN090129	M9240560
4	BALL GUIDE	1	MPN080410	M9240097
5	SLIPPER RETAINER	1	MPN080408	M9240125
6	PISTON (EACH)	9 REQ.	MPN093423	M9510408-0004
3	CYLINDER BLOCK	1	MPN080406	M9240394
**	PUMP GASKET KIT (Includes Shim Kit)	1	MPN090649	M9510236
**	MOTOR GASKET KIT FIXED (Includes Shim Kit)	1	MPN090946	M9510237
**	MOTOR GASKET KIT VARIABLE (Includes Shim Kit)	1	MPN090951	M9510238
**	SHAFT SEAL	1	MPN090075	M9510190

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PISTON PRODUCT LISTING

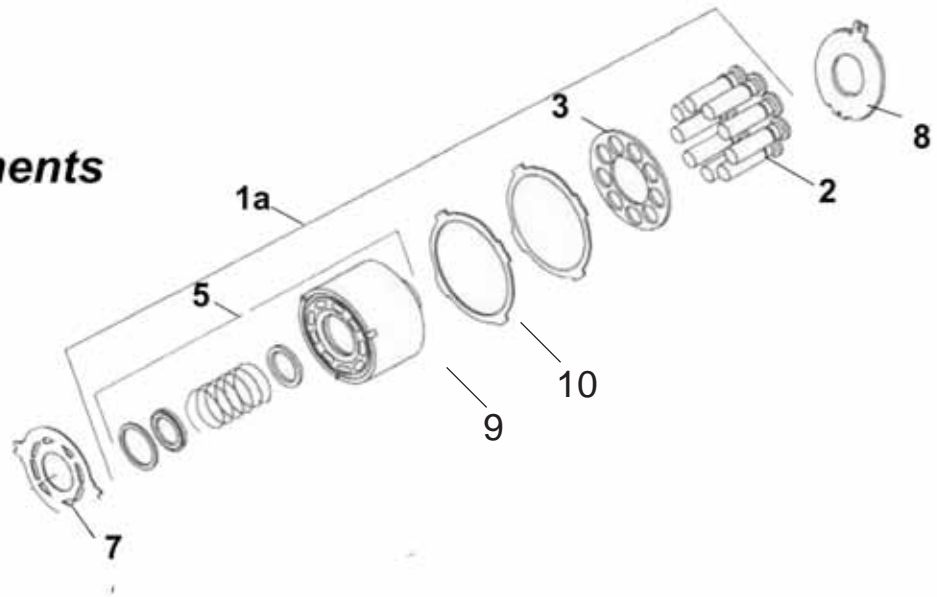
SUNDSTRAND® PV90 COMPONENTS BREAKDOWN

Pump Components



** These items included in Barrel Assy.*

Motor Components



All items listed are Metaris manufactured; OEM part numbers are displayed for reference purpose only. Prices subject to change without notice.

PISTON PRODUCT LISTING

SUNDSTRAND® PV90

REF #	DESCRIPTION	QTY.	SERIES 90 (55cc)	
			METARIS #	ALTERNATIVE #
1	ROTATING GROUP - PUMP	1	MPN093054	M80020S07
1a	ROTATING GROUP - MOTOR	1	MPN093666	M80030S07
5	CYLINDER BLOCK Assy - W/O Speed Ring	1	MPN093667	M8000128
6	CYLINDER BLOCK Assy - W/ Speed Ring	1	MPN093668	M8000336
2	PISTON (EACH)	9 REQ.	MPN093064	M367672
6	VALVE PLATE, -2 DEGREE	1	MPN093056	M8000071
7	MOTOR PLATE	1	MPN093060	M8000132
8	THRUST PLATE (Motor)	1	MPN093669	M8000374
9	RETAINER SLIPPER GUIDE	1	MPN095313	M8000072
10	SHIM-SLIPPER GUIDE RETAINER	1	MPN095316	M8000073

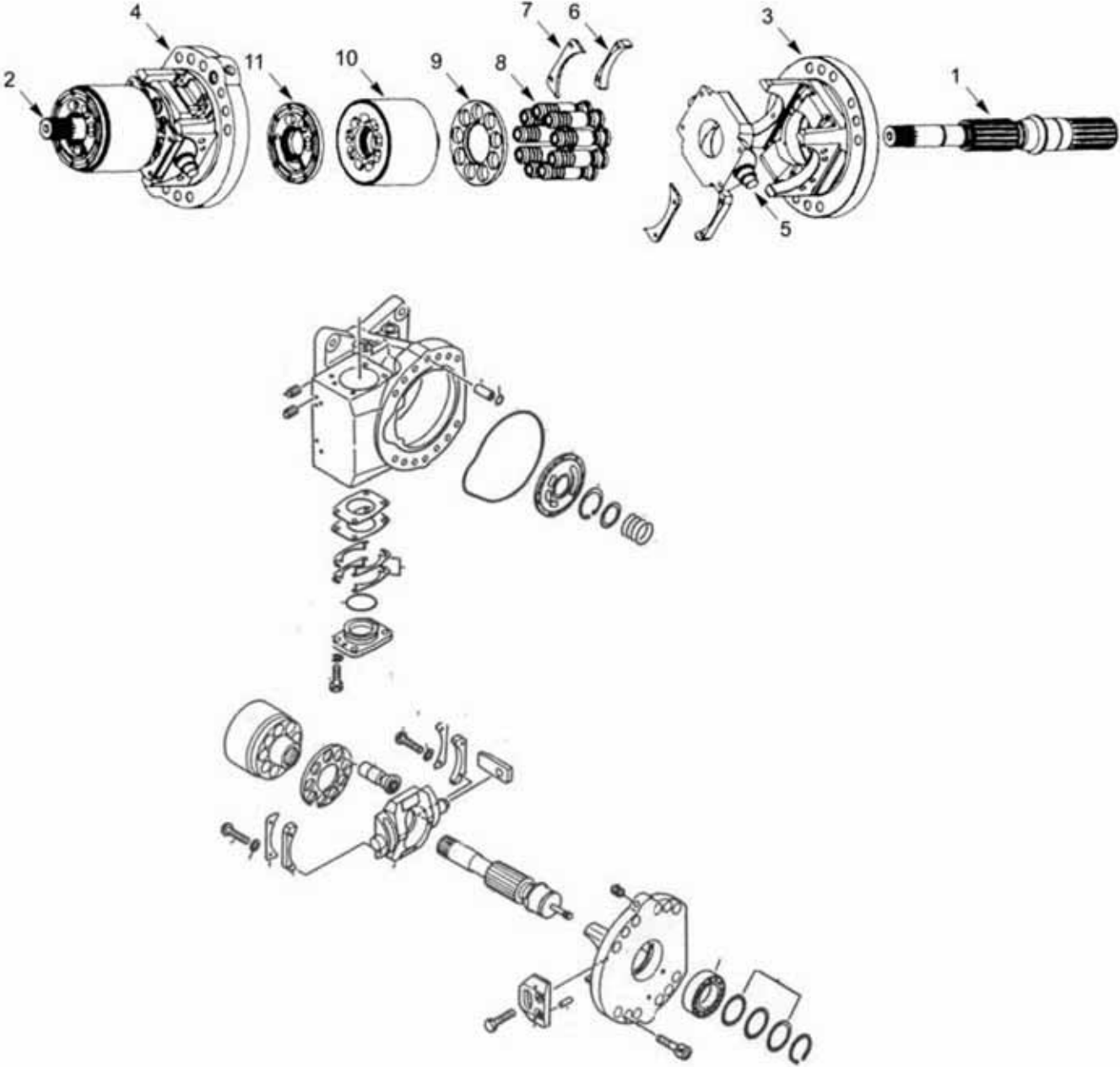
REF #	DESCRIPTION	QTY.	SERIES 90 (75cc)	
			METARIS #	ALTERNATIVE #
1	ROTATING GROUP - PUMP	1	MPN093053	M81020S07
1a	ROTATING GROUP - MOTOR	1	MPN093681	M81030S07
5	CYLINDER BLOCK Assy - W/O Speed Ring	1	MPN093682	M8100267
6	CYLINDER BLOCK Assy - W/ Speed Ring	1	MPN093683	M8100525
2	PISTON (EACH)	9 REQ.	MPN093063	M708230
6	VALVE PLATE, +0 DEGREE	1	MPN093057	M518805
7	MOTOR PLATE	1	MPN093059	M8100278
8	THRUST PLATE (Motor)	1	MPN093685	M8100156
9	RETAINER SLIPPER GUIDE	1	MPN095314	M8100271
10	SHIM-SLIPPER GUIDE RETAINER	1	MPN095317	M8100272

REF #	DESCRIPTION	QTY.	SERIES 90 (100cc)	
			METARIS #	ALTERNATIVE #
1	ROTATING GROUP - PUMP	1	MPN093052	M82020S07
1a	ROTATING GROUP - MOTOR	1	MPN093650	M82030S07
5	CYLINDER BLOCK Assy - W/O Speed Ring	1	MPN093651	M8200124
6	CYLINDER BLOCK Assy - W/ Speed Ring	1	MPN093652	M8200277
2	PISTON (EACH)	9 REQ.	MPN093062	M364000
6	VALVE PLATE, - 2 DEGREE	1	MPN093055	M518994
7	MOTOR PLATE	1	MPN093058	M8200134
8	THRUST PLATE (Motor)	1	MPN093654	M8200167
9	RETAINER SLIPPER GUIDE	1	MPN095315	M8200128
10	SHIM-SLIPPER GUIDE RETAINER	1	MPN095318	M8200129

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PISTON PRODUCT LISTING

KOMATSU® PC (SERIES 3/5/6) COMPONENTS BREAKDOWN



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PISTON PRODUCT LISTING

KOMATSU® PC (SERIES 3/5/6)

REF #	DESCRIPTION	QTY.	150-3 Excavator		150-5 Excavator	
			METARIS #	ALTERNATIVE #	METARIS #	ALTERNATIVE #
3	CRADLE (FRONT)	1	MPN091413	M708-25-00051	MPN091413	M708-25-00051
4	CRADLE (REAR)	1	MPN091414	M708-25-00061	MPN091414	M708-25-00061
8	PISTON (EACH)	9 REQ.	MPN091736	M708-25-13314	MPN091736	M708-25-13314
9	RETAINER PLATE	1	MPN091741	M708-25-13422	MPN091741	M708-25-13422
10	CYLINDER BARREL	1	MPN091738	M708-25-13151	MPN091738	M708-25-13151
11	VALVE PLATE - RIGHT	1	MPN091423	M708-25-13210	MPN091427	M708-25-13611
11a	VALVE PLATE - LEFT	1	MPN091424	M708-25-13220	MPN091426	M708-25-13621
**	SPRING (CYL BLOCK)	1	MPN091743	M708-25-13130	MPN091743	M708-25-13130
**	SNAP RING (CYL BLOCK)	1	MPN091744	M708-25-13140	MPN091744	M708-25-13140
**	WASHER (CYL BLOCK)	1	MPN091742	M708-25-13120	MPN091742	M708-25-13120
**	SERVO PISTON FRONT & REAR	1	MPN091407	M708-25-14112.25 / 50		
**	SERVO PISTON FRONT	1			MPN091407	M708-25-14112.25 / 50
**	SERVO PISTON REAR	1			MPN091429	M708-25-14211.25 / 50
**	RETAINER BRG.	1	MPN091790	M708-25-13441	MPN091790	M708-25-13441
**	SHIM KIT, RETAINER BRG.	1	MPN091789	M708-25-05061	MPN091789	M708-25-05061

REF #	DESCRIPTION	QTY.	PC200-3 / PC220-3		PC200-5 / PC220-5	
			METARIS #	ALTERNATIVE #	METARIS #	ALTERNATIVE #
***	CYLINDER BLOCK ASSY RH	1	MPN091739	M708-25-00230	MPN092515	M708-25-00401
***	CYLINDER BLOCK ASSY LH	1	MPN091740	M708-25-00240	MPN092514	M708-25-00411
2	DRIVE SHAFT (FRONT)	1			MPN092348	M708-25-12711
3	CRADLE (FRONT)	1	MPN091411	M708-25-00031	MPN091411	M708-25-00031
4	CRADLE (REAR)	1	MPN091412	M708-25-00041	MPN091412	M708-25-00041
5	CAM ROCKER	1	MPN091735	M708-25-13411	MPN091735	M708-25-13411
8	PISTON ASSY. (EACH)	9 REQ.	MPN091736	M708-25-13314	MPN091736	M708-25-13314
9	RETAINER PLATE	1	MPN091741	M708-25-13422	MPN091741	M708-25-13422
10	CYLINDER BARREL	1	MPN091738	M708-25-13151	MPN091738	M708-25-13151
11	VALVE PLATE - RIGHT	1	MPN091423	M708-25-13210	MPN091427	M708-25-13611
11a	VALVE PLATE - LEFT	1	MPN091424	M708-25-13220	MPN091426	M708-25-13621
**	SPRING (CYL BLOCK)	1	MPN091743	M708-25-13130	MPN091743	M708-25-13130
**	SNAP RING (CYL BLOCK)	1	MPN091744	M708-25-13140	MPN091744	M708-25-13140
**	WASHER (CYL BLOCK)	1	MPN091742	M708-25-13120	MPN091742	M708-25-13120
**	SERVO PISTON	1	MPN091429	M708-25-14211.25 / 50	MPN091429	M708-25-14211.25 / 50
**	SERVO PISTON	1	MPN091407	M708-25-14112.25 / 50	MPN091407	M708-25-14112.25 / 50
**	RETAINER BRG.	1	MPN091790	M708-25-13441	MPN091790	M708-25-13441
**	SHIM KIT, RETAINER BRG	1	MPN091789	M708-25-05061	MPN091789	M708-25-05061

*** PRICE ON REQUEST

** Items Available (not shown)

REF #	DESCRIPTION	QTY.	PC300-3 / PC400-3		PC300-5/PC400-5	
			METARIS #	ALTERNATIVE #	METARIS #	ALTERNATIVE #
3	CRADLE (FRONT)	1	MPN091415	M708-27-00032	MPN091415	M708-27-00032
4	CRADLE (REAR)	1	MPN091416	M708-27-00042	MPN091416	M708-27-00042
8	PISTON ASSY. (EACH)	9 REQ.	MPN091417	M708-27-13314	MPN091417	M708-27-13314
9	RETAINER PLATE	1	MPN091418	M708-27-13342	MPN091418	M708-27-13342
10	CYLINDER BARREL	1	MPN091425	M708-27-13111	MPN091428	M708-27-13112
11	VALVE PLATE - RIGHT	1	MPN091421	M708-27-13212	MPN091419	M708-27-13611
11a	VALVE PLATE - LEFT	1	MPN091422	M708-27-13222	MPN091420	M708-27-13621
**	SERVO PISTON	1	MPN091730	M708-27-14110.25 / 50	MPN091730	M708-27-14110.25 / 50
**	RETAINER BRG.	1	MPN091791	M708-27-13420	MPN091791	M708-27-13420
**	SHIM KIT, RETAINER BRG	1	MPN091788	M708-27-05051	MPN091788	M708-27-05051

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PISTON PRODUCT LISTING

KOMATSU® PC (SERIES 3/5/6)

REF #	DESCRIPTION	QTY.	PC120-6 / PC200-6	
			METARIS #	ALTERNATIVE #
3	CRADLE (FRONT & REAR) PC120-6	1	MPN093213	M708-2L-04061
4	CRADLE (FRONT & REAR) PC200-6	1	MPN093213	M708-2L-04061
8	PISTON ASSY. (EACH)	9 REQ.	MPN093217	M708-2L-33310
9	RETAINER PLATE	1	MPN093218	M708-2L-33340
10	CYLINDER BARREL	1	MPN093220	M708-2L-33110
11	VALVE PLATE - RIGHT	1	MPN093216	M708-2L-33211
11a	VALVE PLATE - LEFT	1	MPN093221	M708-2L-33221
**	BALL GUIDE	1	MPN093214	M708-2L-23351
**	PIN	1	MPN093215	M708-2L-23360

REF #	DESCRIPTION	QTY.	PC300-6 / PC400-6	
			METARIS #	ALTERNATIVE #
***	CYLINDER BLOCK ASSY (W/VALVE PLATE RH)	1	MPN093206	M708-2H-04140
***	CYLINDER BLOCK ASSY (W/VALVE PLATE LH)	1	MPN093207	M708-2H-04150
3	CRADLE (FRONT & REAR)	1	MPN093208	M708-2H-04160
8	PISTON ASSY. (EACH)	9 REQ.	MPN093209	M708-2H-23311
9	RETAINER PLATE	1	MPN093210	M708-2H-23340
10	PIN	1	MPN193212	M708-2H-23360
11	BALL GUIDE	1	MPN093211	M708-2H-23350

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PISTON PRODUCT LISTING

WARRANTY POLICY AND PROCEDURES

WARRANTY

Metaris Inc. and Metaris Corp. hereinafter “Metaris”, warrants all of its product to be free from defects in material and workmanship under normal operating conditions and proper application in accordance with the specifications for operation as described by the manufacturer for the period of twelve (12) months in service.

LIMITATIONS ON WARRANTY

This warranty is expressly in lieu of any other warranties expressed or implied. Buyers sole and exclusive remedy under this Warranty shall be limited to the repair, replacement or exchange of warranted products at our option, F.O.B. our factory, or designated service center.

No special, incidental, consequential or other damage shall be recoverable. Metaris shall not be liable for consequential damages or contingent liabilities including, but not limited to, loss of life, personal injury, loss of crops, loss due to water or fire damage, loss of business income, down time costs and trade or other commercial loss arising out of failure of the product. Metaris will in no event be liable for any sum in excess of the price received by it for the product for which liability is claimed or asserted.

No products shall be returned without prior authorization from Metaris. Buyers and their Agents shall prepay all transportation charges for the return of such products to Metaris' factory or designated service center. There will be no acceptance of any charges for labor and/or parts incidental to the removal or remounting of products repaired or replaced under Warranty.

The above Warranty does not cover conditions over which Metaris has no control, including, without limitation, contamination, pressure in excess of recommended maximum, products damaged or subject to accident abuse or misuse after shipment from our factory, products altered or repaired by anyone other than Metaris personnel, authorized Metaris factory personnel or persons so designated in writing by Metaris prior to commencement of said work.

A return goods authorization number must be obtained from Metaris or a Metaris authorized service center, or a Metaris authorized agent prior to any products being returned for Warranty.

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