

Genuine Metaris Gear Product Technical Catalog

Pumps & Components - MH Series Bearing & Bushing Style



MH31 Series Bearing Pump

Features

Metaris Bearing Pumps & Motors are available in 9 models with a variety of mounting flanges, shaft configurations and porting options. Multi-section units, piggyback designs, dowelled assemblies & flow dividers are all also available. With ductile iron housings, these pumps offer pressure ratings as high as 3000 psi for the most demanding of applications.

- Heavy Duty Roller Bearing Design
- Dowelled and Rugged Cast Iron Construction
- Pressure Balanced Wear Plates
- Working Pressure up to 3000 psi
- Multiple Bearing Carrier Options
- Multiple Porting Options
- High Strength Steel Gear & Shaft Sets



Specifications

MH31		DISPLACEMENT		MAX PRESSURE (DOWELLED)	
GEAR WIDTH		IN ³ /REV	(CM ³ /REV)	PSI	BAR
.05	1/2"	.99	(16.1)	3000	(207)
.07	3/4"	1.48	(24.2)	3000	(207)
1.00	1"	1.97	(32.3)	3000	(207)
1.25	1-1/4"	2.46	(40.4)	3000	(207)
1.50	1-1/2"	2.96	(48.4)	3000	(207)
1.75	1-3/4"	3.45	(56.5)	2500	(172)
2.00	2"	3.94	(64.6)	2500	(172)

MH31 Series Bearing Pump

Pump Performance Data

SPEED RPM	GEAR WIDTH (GPM/LPM)				
	1"	1-1/4"	1-1/2"	1-3/4"	2"
900	6.5 / 24.5	8 / 30	10 / 38	12 / 45.5	13.5 / 51
1200	9 / 34	11.5 / 43.5	14 / 53	16 / 60.5	18.5 / 70
1500	11.5 / 43.5	14.5 / 55	17.5 / 66	20.5 / 77.5	23.5 / 89
1800	14 / 53	18 / 68	21.5 / 81.5	25 / 94.5	29 / 110
2100	16.5 / 62.5	21 / 79.5	25 / 94.5	29.5 / 112	34 / 129
2400	19 / 72	24 / 91	29 / 110	34 / 129	39 / 148

Motor Performance Data

SPEED RPM	GEAR WIDTH					
	1"		1-1/2"		2"	
	INPUT FLOW (GPM/LPM)	OUTPUT TORQUE (IN/LBS / NM)	INPUT FLOW (GPM/LPM)	OUTPUT TORQUE (IN/LBS / NM)	INPUT FLOW (GPM/LPM)	OUTPUT TORQUE (IN/LBS / NM)
800	9 / 34	675 / 8	13 / 49	1035 / 12	17 / 64.5	1385 / 16
1200	13 / 49	685 / 8	18 / 68	1055 / 12	23.5 / 89	1410 / 16
1600	16 / 60.5	680 / 8	23 / 87	1030 / 12	30.5 / 115	1390 / 16
2000	19.5 / 74	660 / 7.5	28 / 106	1010 / 11.5	37 / 140	1370 / 16

Note: Input Flow @ 2500psi | Output Torque @ 175 bar

MH31 PL Chart

SHAFT STYLE	INTEGRAL	TWO PIECE
SAE "BB" Spline	13,000	5,500
SAE "BB" Keyed	8,600	5,500
SAE "B" Spline	8,300	5,500
SAE "B" Keyed	5,700	5,500
SAE "C" Spline	*	*
SAE "C" Keyed	*	*
Connecting Shaft		5,500

Values based on using anti-wear type petroleum oil 150 SUS at 100° F (ISO rating of 32 cSt at 38° C) and 0 psi inlet pressure.

MH31 Series Bearing Pump

Model Code Breakdown

Repeat for Tandem Units

1 2 3 4 5 6 7 8 9 6 7 10

MHP - 31 - A - 1 - 07 - ME - AB - 10 - 12 - DB - * - * - *

Type ¹

MHP = Pump
MHM = Motor

Unit ²

A = Single Unit
B = Tandem Unit
C = Single or Tandem Unit w/ a Continental Shaft

Shaft End Cover ³

- 1 = Pump w/o Shaft Bearing (Clockwise Rotation)
- 2 = Pump w/o Shaft Bearing (Counter-clockwise Rotation)
- 3 = Pump w/o Shaft Bearing (Double Rotation)
- 4 = Pump w/ Shaft Bearing (Clockwise Rotation)
- 5 = Pump w/ Shaft Bearing (Counter-clockwise Rotation)
- 6 = Pump w/ Shaft Bearing (Double Rotation)
- 8 = Motor w/ Shaft Bearing & 1/4" Drain Port
- 9 = Motor w/o Shaft Bearing & 1/4" Drain Port

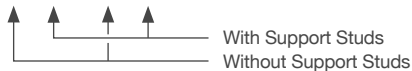
Shaft End Cover ⁴

- 00 = Pad Mount
- 05 = 6-Bolt Fling 3.25" Dia. Bolt Circle
- 42 = SAE 4-Bolt "B" Mount
- 78 = SAE 4-Bolt "C" Mount
- 91 = 31/51 Piggyback Mount
- 92 = 76/31 Piggyback Mount
- 94 = SAE 2-Bolt "A" Mount
- 96 = SAE 2-Bolt "B" Mount
- 97 = SAE 2-Bolt "B" Mount (Type 2)

Port End Cover ⁵

NPT Codes

Single Units	Tandem Units	Port Size		A	B
		Left	Right		
BE BY	BI BJ	None	None	n/a	n/a
KE KY	KI KY	3/4"	None	n/a	1.25
LE LY	LI LY	None	3/4"	1.25	n/a
ME MY	MI MY	3/4"	3/4"	1.25	1.25



Orientation is viewed from the shaft end

O-ring Codes

Single Units	Tandem Units	Port Size		A	B
		Left	Right		
GU	GU	1-1/4"	1"	1.38	1.38
HU	HU	1"	1-1/4"	1.38	1.38
TU	TU	1-1/4"	1"	1.38	1.38
XU	XU	1"	1-1/4"	1.38	1.38

Orientation is viewed from the shaft end

ORB Codes

Single Units	Tandem Units	Port Size		A	B
		Left	Right		
CE CY	CI CY	3/4"	None	n/a	1.25
CA CO	CU CO	3/4"	None	n/a	1.38
DE DY	DI DY	None	3/4"	1.25	n/a
DA DO	DU DO	None	3/4"	1.25	n/a
FE FY	FI FY	3/4"	3/4"	1.25	1.25
JA BO	JU BO	3/4"	3/4"	1.38	1.38
GE GY	GI GY	1"	3/4"	1.25	1.38
KA	KU	1"	3/4"	1.38	1.38
HE HY	HI HY	3/4"	1"	1.38	1.25
LA	LU	3/4"	1"	1.38	1.38
MA YO	MU YO	1"	None	n/a	1.38
RA RO	SU RO	None	1"	1.38	n/a
JE JY	JI JY	1"	1"	1.38	1.38
ZA ZO	ZU ZO	1"	1"	1.38	1.38



Orientation is viewed from the shaft end

Connecting Shaft ¹⁰

For connecting tandem units
1 = Connecting Shaft - Multiple Units

Bearing Carriers ⁹

See page 62 for Bearing Carrier options

Shaft Type ⁸

- 07 = SAE "C" 14 Tooth Spline 1.250" Dia. (Cont. Only)
- 12 = Keyed Shaft .75" Dia. x 1.56 Key (Cont. Only)
- 15 = SAE "B" Keyed .875 Dia. w/ 5/8"-18 Thd (Cont. Only)
- 25 = SAE "B" 13 Tooth Spline .88" Dia.
- 30 = SAE "B" Keyed .88" Dia. 1/4" x 3/8" x 1" Key
- 43 = SAE "BB" Keyed 1" Dia. 1/4" x 3/8" x 1-1/4" Key
- 65 = SAE "B" 13 Tooth Spline .875" Dia. Type 2
- 66 = SAE "B" Keyed .88" Dia. 1/4" x 3/8" x 1" Key Type 2
- 67 = SAE "B" Keyed 1" Dia. 1/4" x 3/8" x 1-1/4" Key Type 2
- 68 = 6 Tooth Spline .1" Dia.
- 95 = SAE "A" 9 Tooth Spline .62" Dia.
- 98 = SAE "BB" 15 Tooth Spline 1" Dia.

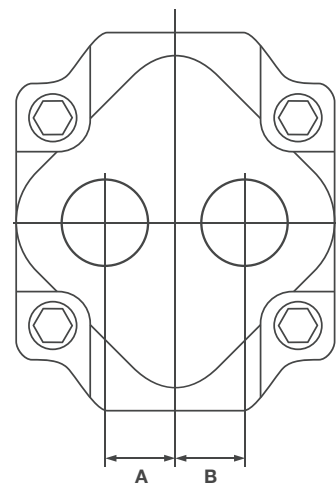
Gear Size ⁷

Code / Displacement (in³/r)

05	07	10	12	15	17	20
(.99)	(1.48)	(1.97)	(2.46)	(2.96)	(3.45)	(3.94)

Gear Housing ⁶

See following pages for Gear Housing options



MH31 Series Bearing Pump

Model Code Breakdown Cont.

Gear Housing ⁶

- Orientation is viewed from the shaft end
- NPT Porting is NOT RECOMMENDED for pressures above 1500 psi
- Ports marked with an 'x' are recommended porting - for all other porting please consult the factory
- Shaded Cells are good for Motor units

NPT Codes

Code	Port Size		5	7	10	12	15	17	20
	Left	Right							
AB	None	None	x	x	x	x	x	x	x
IL	1/2"	None	x	x					
IM	None	1/2"	x	x					
IR	1/2"	1/2"	x	x					
IC	3/4"	None			x	x	x	x	x
ID	None	3/4"			x	x	x	x	x
IF	3/4"	3/4"			x	x	x	x	x
IG	3/4"	1"			x	x	x	x	
IH	3/4"	1-1/4"					x	x	
IJ	1"	3/4"			x	x	x	x	
IK	1-1/4"	3/4"					x	x	
YC	1"	None			x	x	x	x	
YD	None	1"			x	x	x	x	
YF	1"	1"				x	x	x	
YG	1"	1-1/4" *				x	x	x	
YH	1"	1-1/2"				x	x	x	
YJ	1-1/4" *	1"				x	x	x	
YK	1-1/2"	1"				x	x	x	
IA	1-1/4" *	None				x	x	x	
IB	None	1-1/4" *				x	x	x	
YL	1-1/4"	1-1/4"					x	x	
YM	1-1/4"	1-1/2" *							x
YP	1-1/2"	1-1/4"							x
YA	1-1/2" *	None							x
YB	None	1-1/2" *							x

* Low Pressure Inlet Porting

BSPP Codes

Code	Port Size		5	7	10	12	15	17	20
	Left	Right							
AB	None	None	x	x	x	x	x	x	x
YN	3/4"	None		x	x	x	x	x	x
YQ	None	3/4"		x	x	x	x	x	x
YS	3/4"	3/4"			x	x		x	x
YT	3/4"	1"			x	x			
YU	3/4"	1-1/4"						x	x
YV	1"	3/4"			x	x	x	x	
YW	1-1/4"	3/4"						x	x
SL	1"	None				x	x	x	x
RQ	None	1"				x	x	x	x
MP	1"	1"				x	x	x	
VY	1"	1-1/4" *					x	x	x
IX	1-1/4" *	1"					x	x	x
NJ	1-1/4" *	None						x	x
UI	None	1-1/4" *						x	x
PF	1-1/4"	1-1/4"							x

* Low Pressure Inlet Porting

Split Flange Codes

Code	Port Size		5	7	10	12	15	17	20
	Left	Right							
AB	None	None	x	x	x	x	x	x	x
UC	3/4"	None			x	x	x	x	
UD	None	3/4"			x	x	x	x	
UF	3/4"	3/4"		x	x	x	x		
UG	3/4"	1"		x	x	x	x		
UH	3/4"	1-1/4"				x	x	x	x
UJ	1"	3/4"			x	x	x	x	x
UK	1-1/4"	3/4"				x	x	x	x
OC	1"	None					x	x	x
OD	None	1"				x	x	x	x
OF	1"	1"			x	x	x	x	x
OG	1"	1-1/4" *				x	x	x	x
OH	1"	1-1/2" *						x	x
OJ	1-1/4" *	1"				x	x	x	x
OK	1-1/2" *	1"						x	x
OA	1-1/4" *	None				x	x	x	x
OB	None	1-1/4" *				x	x	x	x
OL	1-1/4"	1-1/4"					x	x	x
OM	1-1/4"	1-1/2" *						x	x
OP	1-1/2" *	1-1/4"						x	x
OE	1-1/2" *	None						x	x
OU	None	1-1/2" *						x	x

* Low Pressure Inlet Porting

MH31 Series Bearing Pump

Model Code Breakdown Cont.

Gear Housing Cont. ⁶

- Orientation is viewed from the shaft end
- NPT Porting is NOT RECOMMENDED for pressures above 1500 psi
- Ports marked with an 'x' are recommended porting - for all other porting please consult the factory
- Shaded Cells are good for Motor units

O.D. Tube Codes

Code	Port Size		5	7	10	12	15	17	20
	Left	Right							
AB	None	None	x	x	x	x	x	x	x
EC	3/4"	None			x	x	x	x	
ED	None	3/4"			x	x	x	x	
EF	3/4"	3/4"			x	x	x	x	x
EG	3/4"	1"			x	x	x	x	x
EH	3/4"	1-1/4"					x	x	
IN	3/4"	1-1/2"							x
EJ	1"	3/4"			x	x	x	x	x
EK	1-1/4"	3/4"					x	x	
IP	1-1/2"	3/4"							x
EZ	7/8"	None				x			
EL	7/8"	1"			x	x			
EM	1"	7/8"			x	x			
AC	1"	None			x	x	x	x	x
AD	None	1"			x	x	x	x	x
AF	1"	1"					x	x	x
AG	1"	1-1/4" *					x	x	x
AH	1"	1-1/2" *						x	x
AJ	1-1/4" *	1"					x	x	x
AK	1-1/2" *	1"						x	x
AA	1-1/4" *	None				x	x	x	
AO	None	1-1/4" *				x	x	x	
AL	1-1/4"	1-1/4"						x	x
AM	1-1/4"	1-1/2" *						x	x
AP	1-1/2" *	1-1/4"						x	x
AE	1-1/2" *	None						x	x
AU	None	1-1/2" *						x	x

* Low Pressure Inlet Porting

Metric Split Flange Codes

Code	Port Size		5	7	10	12	15	17	20
	Left	Right							
AB	None	None	x	x	x	x	x	x	x
VN	3/4"	None			x	x	x	x	
VQ	None	3/4"			x	x	x	x	
VS	3/4"	3/4"			x	x	x	x	
VT	3/4"	1"			x	x	x	x	
RV	1"	3/4"			x	x	x	x	
RU	3/4"	1-1/4"				x	x	x	
RW	1-1/4"	3/4"				x	x	x	
UL	1"	None			x	x	x	x	x
UR	None	1"			x	x	x	x	x
UM	1"	1"				x	x	x	
VU	1"	1-1/4" *				x	x	x	x
UX	1-1/4" *	1"				x	x	x	x
HO	1"	1-1/2" *						x	x
VO	1-1/2" *	1"						x	x
NO	1-1/4" *	None					x	x	x
UO	None	1-1/4" *					x	x	x
PO	1-1/4"	1-1/4"					x	x	x
QO	1-1/4"	1-1/2" *						x	x
SO	1-1/2" *	1-1/4"						x	x
UY	1-1/2" *	None					x	x	
TO	None	1-1/2" *					x	x	

* Low Pressure Inlet Porting

Metric Str. Thd. Codes

Code	Port Size		5	7	10	12	15	17	20
	Left	Right							
AB	None	None	x	x	x	x	x	x	x
EN	3/4"	None			x	x	x		
TQ	None	3/4"			x	x	x		
ES	3/4"	3/4"			x	x			
ET	3/4"	1"			x	x			
EV	1"	3/4"			x	x	x	x	
NL	1"	None			x	x	x		
ER	None	1"			x	x	x	x	x
CM	1"	1"				x	x		
VE	1"	1-1/4" *					x	x	x
EX	1-1/4" *	1"					x	x	x
PA	1-1/4"	1-1/4"						x	x
QA	1-1/4"	1-1/2" *							x
SA	1-1/2" *	1-1/4"							x

* Low Pressure Inlet Porting

MH31 Series Bearing Pump

Model Code Breakdown Cont.

Bearing Carriers ⁹

NPT Codes

In	Out	CW (Left)	CCW (Right)
None None	None None	C A	D J
1" 1-1/4"	None None	TB VB	BT BV
1" 1-1/4" 1-1/4"	3/4" 3/4" 1"	TX VX VZ	XT XV ZV
1-1/4" 1-1/4" 1-1/2"	3/4" 1" 1"	TJ VJ VK KW	JT JV KV
1"	3/4"	ZX	XZ
1"	3/4"	ZS	SZ

SAE Split Flange Codes

In	Out	CW (Left)	CCW (Right)
1" 1-1/4" 1-1/2"	None None None	LB MB NB	BL BM BN
None 1" 1-1/4" 1-1/2" 1-1/4" 1-1/2"	3/4" 3/4" 3/4" 3/4" 1" 1"	BR LR MR NR MS NS	RB RL RM RN SM SN
1" 1-1/4" 1-1/2" 1-1/4" 1-1/2"	3/4" 3/4" 3/4" 1" 1"	LX MX NX MZ NZ	XL XM XN ZM ZN
1"	3/4"	SR	RS
1"	3/4"	RZ	ZR

SAE O-ring Codes

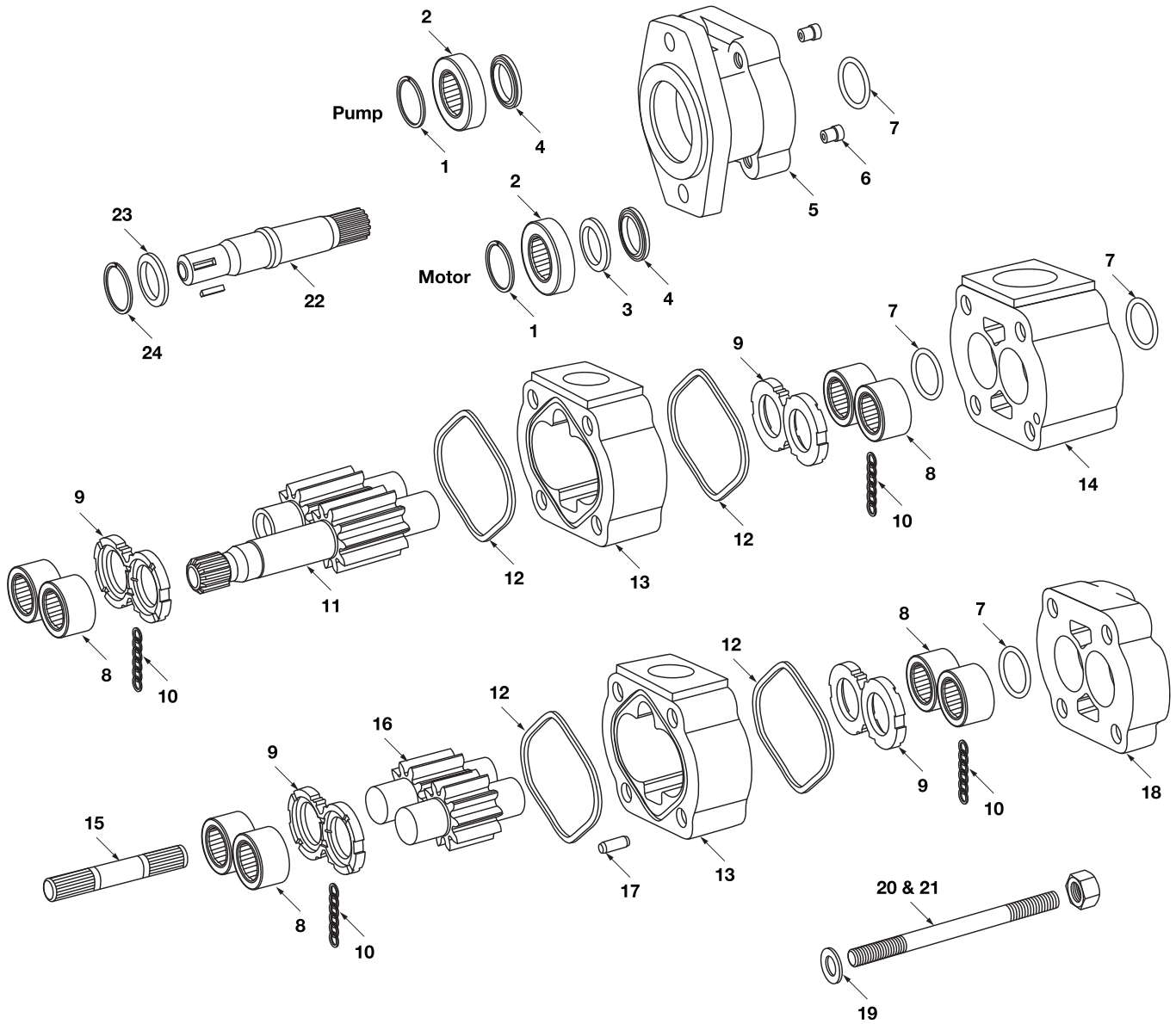
In	Out	CW (Left)	CCW (Right)
1" 1-1/4" 1-1/2"	None None None	CB DB FB	BC BD BF
None 1" 1-1/4" 1-1/2" 1-1/4" 1-1/2"	3/4" 3/4" 3/4" 3/4" 1" 1"	CJ DJ FJ DK FK	JP JC JD JF KD KF
1" 1-1/4" 1-1/2" 1-1/4" 1-1/2"	3/4" 3/4" 3/4" 1" 1"	CR DR FR DS FS	RC RD RF SD SF
1"	3/4"	KJ	JK
1"	3/4"	KX	XK

Motors Only Codes

In	Out	Dual	
None	None	B	
1" 1-1/4" 1" 1-1/4" 1-1/2" 1" 1-1/4" 1-1/2"	1" 1-1/4" 1" 1-1/4" 1-1/2" 1" 1-1/4" 1-1/2"	TT VV CC BB FF LL MM NN	NPT NPT SAE O-Ring SAE O-Ring SAE O-Ring SAE Split Flange SAE Split Flange SAE Split Flange

MH31 Series

Parts Breakdown



MH31 Series

Parts Breakdown

DRAWING NO.	DESCRIPTION	METARIS #	ALTERNATE #
1	SHAFT BEARING SNAP RING	X05-03-56200	391-2686-063
2a	INPUT SHAFT BEARING	X03-16-12552	391-0381-040
2b	BEARING SPACER (IN PLACE OF SHAFT BEARING)	A30-92-38520	391-3383-069
3	MOTOR SEAL RETAINER USED WITH SHAFT BEARING OR SPACER	A20-60-10000	391-3381-040
4a	PUMP LIP SEAL FOR CONTINENTAL SHAFT ONLY	X89-11-02508	391-2883-107
4b	PUMP LIP SEAL FOR PIGGY BACK 76/31 SHAFT END COVER	X83-11-03308	391-2883-103
4c	MOTOR LIP SEAL	X84-36-02709	391-2883-119
4d	MOTOR LIP SEAL FOR CONTINENTAL SHAFT ONLY	X84-36-02509	391-2883-126
5a	31 PAD PILOT PUMP S.E.C. TYPE 00	A31-10-21100	312-5017-201
5b	31 6 BOLT ROUND WITH 2.625" or 66,67 mm PILOT PUMP S.E.C. TYPE 05	A31-10-21650	312-5047-201
5c	31 4 BOLT B PILOT PUMP S.E.C. TYPE 42 (4" or 101.6 mm pilot)	A31-10-21420	312-5037-201
5d	31 4 BOLT C PILOT PUMP S.E.C. TYPE 78 (5" or 127 mm pilot)	A31-10-21430	312-5037-202
5e	31 2 BOLT A PILOT PUMP S.E.C. TYPE 94 (3 1/4" or 82.55 mm pilot)	A31-10-21210	312-5027-204
5f	31 2 BOLT B PILOT PUMP S.E.C. TYPE 97 (4" or 101.6 mm pilot)	A31-10-21220	312-5027-201
5g	31 2 BOLT B (TYPE 2) PILOT PUMP S.E.C. TYPE 96 (4" or 101.6 mm pilot)	A31-10-22220	312-5027-205
5h	31/51 SHAFT END COVER FOR PIGGYBACK UNITS TYPE 91	A05-10-21500	312-5027-208
5i	76/31 SHAFT END COVER FOR PIGGYBACK UNITS TYPE 92	A06-10-21500	312-5027-209
5j	31 2/4 BOLT B PILOT PUMP S.E.C. TYPE 46 (4" or 101.6 mm pilot)	A30-10-21320	312-5053-202
5k	31 PAD PILOT MOTOR S.E.C. TYPE 00	A31-10-41100	312-5017-401
5l	31 6 BOLT ROUND WITH 2,625" or 66,67 mm PILOT MOTOR S.E.C. TYPE 05	A31-10-41650	312-5047-401
5m	31 4 BOLT B PILOT MOTOR S.E.C. TYPE 42 (4" or 101.6 mm pilot)	A31-10-41420	312-5037-401
5n	31 4 BOLT C PILOT MOTOR S.E.C. TYPE 78 (5" or 127 mm pilot)	A31-10-41430	312-5037-402
5o	31 2 BOLT A PILOT MOTOR S.E.C. TYPE 94 (3 1/4" or 82.55 mm pilot)	A31-10-41210	312-5027-404
5p	31 2 BOLT B PILOT MOTOR S.E.C. TYPE 97 (4" or 101.6 mm pilot)	A31-10-41220	312-5027-401
5q	31 2/4 BOLT B PILOT MOTOR S.E.C. TYPE 46 (4" or 101.6 mm pilot)	A30-10-41320	312-5053-402
6a	CHECK VALVE MOTOR	A00-75-11000	391-3681-001
6b	PRESSURE PLUG PUMP	X02-03-32110	391-2286-004
7	RING SEAL	X81-76-02706	391-2585-006
8	ROLLER BEARING (Ø 1.687" O.D.)	X03-24-12743	391-0381-068
9a	PUMP THRUST PLATE	A31-70-20000	391-2185-031
9b	MOTOR THRUST PLATE	A30-70-10000	391-2185-013
10	POCKET SEAL	X85-11-00002	391-2882-086
11a	SHAFT & GEAR TYPE 30 (0.875" Ø x 1/4" x 3/8" x 1" key)	A30-50-XX125	312-29XX-730
11b	SHAFT & GEAR TYPE 25 (0.875" Ø - 13-Tooth spline)	A30-50-XX225	312-29XX-230
11c	SHAFT & GEAR TYPE 43 (1.00" Ø x 1/4" x 3/8" x 1 1/4" key)	A30-50-XX135	312-29XX-740
11d	SHAFT & GEAR TYPE 66 TYPE 2 (0.875" Ø x 1/4" x 3/8" x 1" key)	A30-50-XX126	312-29XX-930
11e	SHAFT & GEAR TYPE 65 TYPE 2 (0.875" Ø - 13-Tooth spline)	A30-50-XX226	312-29XX-430

MH31 Series

Parts Breakdown

DRAWING NO.	DESCRIPTION	METARIS #	ALTERNATE #
12	PUMP & MOTOR HOUSING GASKET	X85-11-10104	391-2884-050
13	PUMP & MOTOR GEAR HOUSING	A31-32-XX000	312-80XX-100
14a	31 MOTOR BEARING CARRIER BLANK	A31-40-00000	312-7740-100
14b	31 PUMP BEARING CARRIER WITH COMMON PASSAGE	A31-40-20000	312-7723-100
15	CONNECTING SHAFT	A30-50-00500	312-1133-001
16	GEAR SET ONLY	A30-50-XX000	312-28XX-000
17	GEAR HOUSING DOWEL PIN	A00-94-11025	391-2082-032
18a	PUMP & MOTOR PORT END COVER	A31-22-00000	312-3120-100
18b	31 PUMP & MOTOR PORT END COVER LARGER PORTING	A31-27-00000	312-3420-100
18c	31/31 PIGGY BACK PORT END COVER	A04-22-03000	312-5027-212
19	FLAT WASHER	X45-10-17005	391-3784-028
20	BOLTS / STUDS	See Fasteners Page	
21	HEX NUT	X42-11-16000	391-1451-076
22a	CONTINENTAL SHAFT TYPE 30 (0.875" Ø x 1/4" x 3/8" x 1" key)	A30-50-00121	312-1500-300
22b	CONTINENTAL SHAFT TYPE 30 Long (0.875" Ø x 1/4" x 3/8" x 1" key)	A30-50-00124	312-1135-192
22c	CONTINENTAL SHAFT TYPE 7 (1.250" Ø - 14-tooth spline, Continental only)	A30-50-00241	312-1135-133
22d	CONTINENTAL SHAFT TYPE 25 (0.875" Ø - 13-Tooth spline)	A30-50-00221	312-1135-138
22e	CONTINENTAL SHAFT TAPERED TYPE 32 (Clutch pump shaft with woodruff key)	Special Order	312-1500-001
22f	CONTINENTAL SHAFT TYPE 43 (1.00" Ø x 1/4" x 3/8" x 1 1/4" key)	A30-50-00131	312-1500-400
22g	CONTINENTAL SHAFT TYPE 43 Long (1.00" Ø x 1/4" x 3/8" x 1 1/4" key)	A30-50-00134	312-1135-193
22h	CONTINENTAL SHAFT TYPE 12 (0.750" Ø x 3/16" x 3/16" 1 9/16" key)	A30-50-00169	312-1135-152
22i	CONTINENTAL SHAFT THREADED & KEYED END TYPE 15 (5/8"-18UNF + 1/4" x 3/8" x 7/8" key)	A30-50-00127	312-1135-171
22j	CONTINENTAL SHAFT TYPE 95 (0.625" Ø x 9-tooth spline)	A30-50-00211	312-1000-200
23	CONTINENTAL SHAFT BRG. RETAINER	A20-60-20000	312-0100-002
24	CONTINENTAL SHAFT BRG. RETAINER SNAP RING	X05-02-28110	391-2685-011
Not Shown	PUMP & PIGGY BACK 31/31 S.E.C. LIP SEAL	X83-11-02708	391-2883-058
Not Shown	SEAL RETAINER FOR 51/51 & 31/51 PIGGY BACK PUMP S.E.C.	A30-60-10001	391-2584-063
Not Shown	SEAL RETAINER O RING FOR PIGGY BACK PUMP S.E.C.	X81-11-04704	391-2881-124
Not Shown	SEAL RETAINER O RING FOR PIGGY BACK PUMP S.E.C.	X81-11-05704	391-2881-120
Not Shown	SEAL RETAINER FOR 76/51 & 76/31 PIGGY BACK PUMP S.E.C.	A50-60-10003	391-2585-013
Not Shown	CASE DRAIN PLUG	X02-03-22060	391-2282-056
Not Shown	SHAFT KEY FOR TYPE 12 SHAFT	X01-02-50540	391-1781-075

Note: The **XX** shown in the part number is in place of the size - the true value must be placed into the part number when ordering parts.

For example: Gear set no. A30-50-XX000 changes to A30-50-15000 for 1.5" gear size
Housing no. A31-32-XX000 changes to A31-32-15000 for a 1.5" housing size
No porting sizes have been indicated all porting must be specified when ordering parts.

MH31 Series

Parts Breakdown

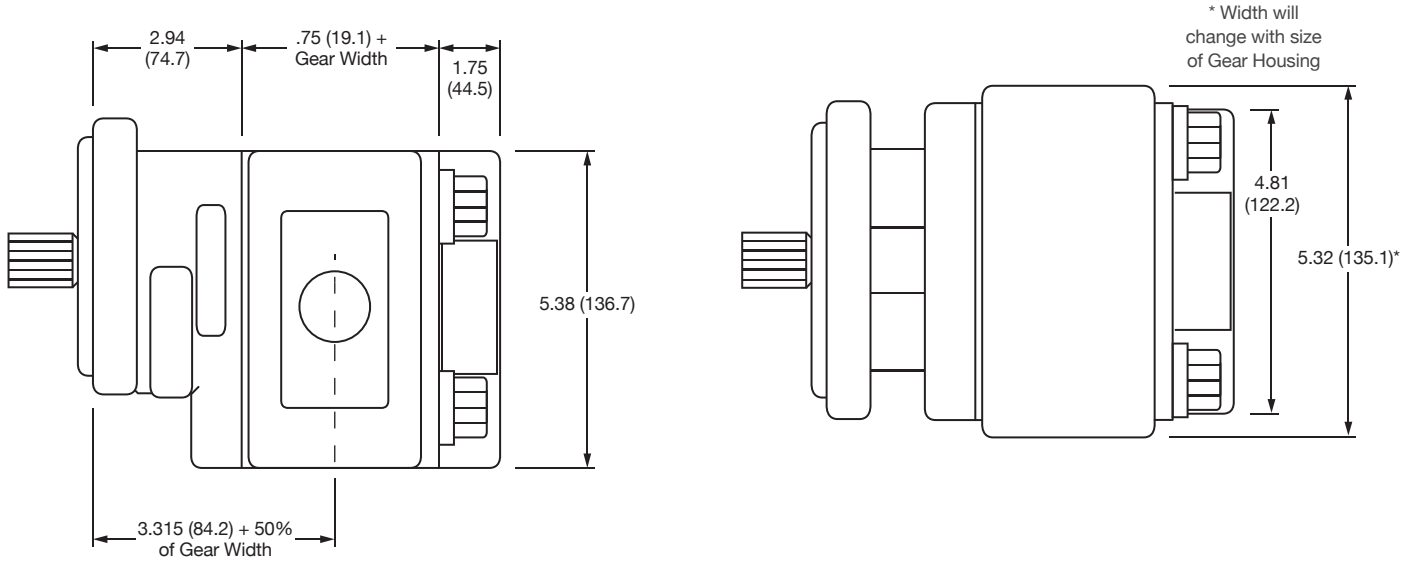
DRAWING NO.	DESCRIPTION	METARIS #	ALTERNATE #
Not Shown	SHAFT KEY FOR TYPE 43 & 67 SHAFT	X01-01-61032	391-1781-021
Not Shown	SHAFT KEY FOR TYPE 30 & 66 SHAFT	X01-01-61025	391-1781-025
Not Shown	SHAFT KEY FOR TYPE Spl. SHAFT	X01-01-61044	391-1781-020
Not Shown	30/30 PIGGY BACK CONNECTING SHAFT	A01-50-00400	312-1133-002
Not Shown	50/30 PIGGY BACK CONNECTING SHAFT	A02-50-00400	312-1133-003
Not Shown	75/30 PIGGY BACK CONNECTING SHAFT	A03-50-00400	316-1133-003

MH31 Series

Dimensions

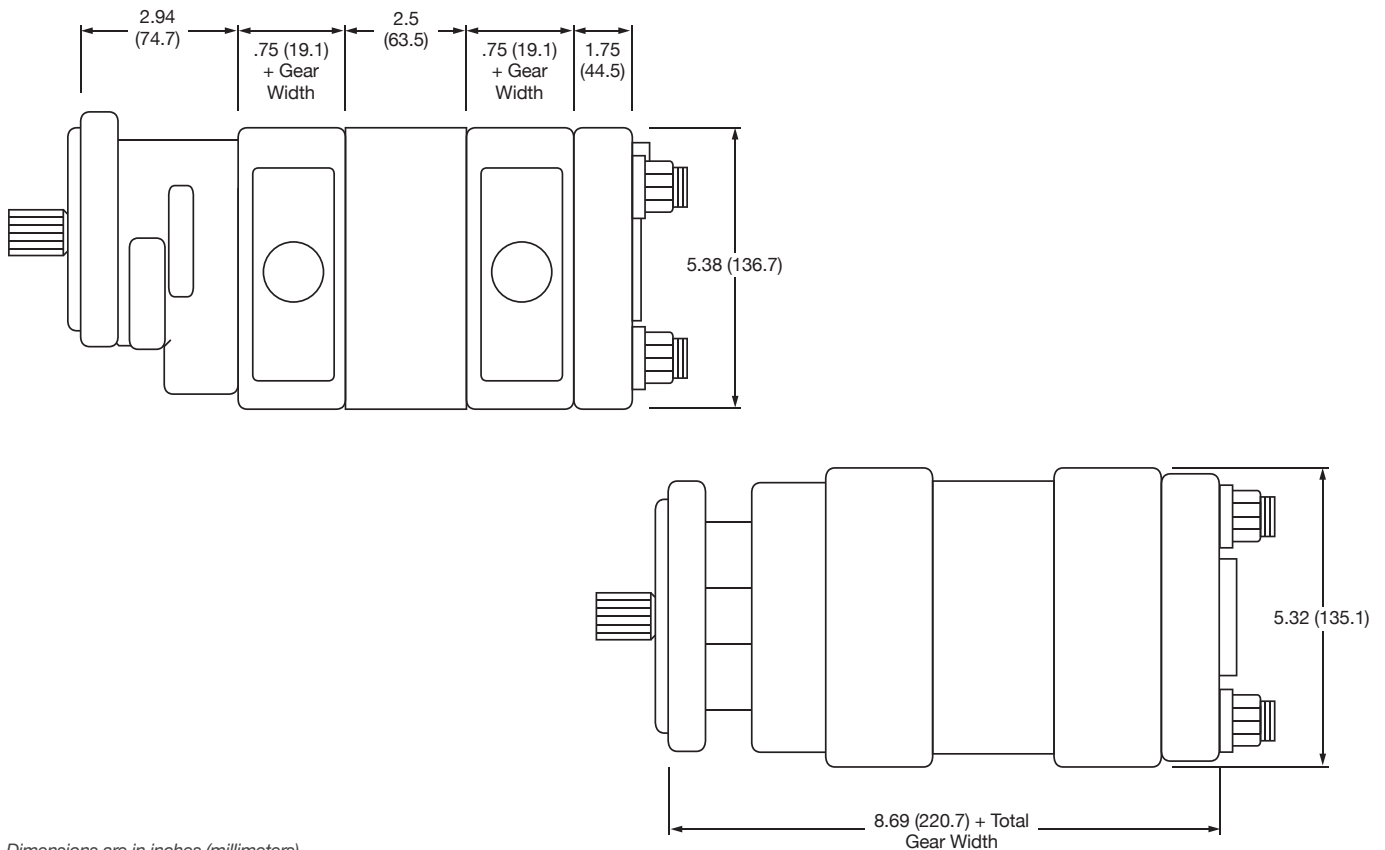
Single Unit

* Shaft dimension will change with the type of shaft used.



Multiple Unit

* Shaft dimension will change with the type of shaft used.



Dimensions are in inches (millimeters).