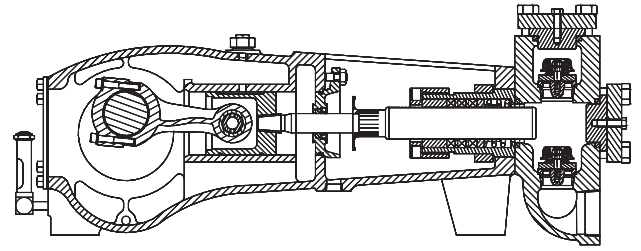


# QUINTUPLEX PLUNGER PUMP

## APLEX SERIES MA-45M(H)



<b>NO. OF PLUNGERS</b>	5
<b>MAXIMUM RATED SPEED</b>	600 RPM
<b>STROKE LENGTH</b>	2.25 in. (57.15 mm)
<b>MAXIMUM RATED POWER</b>	45 hp (33.5 kW)
<b>MAXIMUM ROD LOAD</b>	2,376 lbs. (10.54 kN)
<b>WEIGHT MA-45M</b>	710 lbs.
<b>WEIGHT MA-45H</b>	720 lbs.

### MA-45M ENGLISH UNITS

PLUNGER SIZE IN.	STUFFING BOX BORE IN.	MAX PSI	*GALLON PER/REV.	200 RPM US GPM	300 RPM US GPM	400 RPM US GPM	500 RPM US GPM	600 RPM US GPM
1.875	2.500	860	0.134	26.9	40.3	53.8	67.2	80.7
1.750	2.500	988	0.117	23.4	35.1	46.9	58.6	70.3
1.625	2.500	1146	0.101	20.2	30.3	40.4	50.5	60.6
1.500	2.500	1344	0.086	17.2	25.8	34.4	43.0	51.6
1.375	2.250	1600	0.072	14.5	21.7	28.9	36.2	43.4
1.250	2.250	1936	0.060	12.0	17.9	23.9	29.9	35.9
1.125	1.750	2390	0.048	9.7	14.5	19.4	24.2	29.0
1.000	1.750	3024	0.038	7.7	11.5	15.3	19.1	23.0
hp Required @ rpm				15.0	22.5	30.0	37.5	45.0

### MA-45M METRIC UNITS

PLUNGER SIZE MM	STUFFING BOX BORE MM	MAX PRESS. BAR	*LITER PER/REV.	200 RPM LPM	300 RPM LPM	400 RPM LPM	500 RPM LPM	600 RPM LPM
47.6	63.5	59.3	0.509	101.8	152.7	203.6	254.6	305.5
44.5	63.5	68.1	0.443	88.7	133.0	177.3	221.7	266.0
41.3	63.5	79.0	0.382	76.5	114.7	152.9	191.1	229.4
38.1	63.5	92.7	0.326	65.2	97.8	130.4	163.0	195.5
34.9	57.2	110.3	0.274	54.7	82.1	109.5	136.8	164.2
31.8	57.2	133.5	0.226	45.3	67.9	90.6	113.2	135.8
28.6	44.5	164.8	0.183	36.6	55.0	73.3	91.6	109.9
25.4	44.5	208.5	0.145	29.0	43.5	58.0	72.5	87.0
kW Required @ rpm				11.2	16.8	22.4	28.0	33.6

### MA-45H ENGLISH UNITS

PLUNGER SIZE IN.	STUFFING BOX BORE IN.	MAX PSI	*GALLON PER/REV.	200 RPM US GPM	300 RPM US GPM	400 RPM US GPM	500 RPM US GPM	600 RPM US GPM
1.000	1.750	3024	0.038	7.7	11.5	15.3	19.1	23.0
0.875	1.500	3950	0.029	5.9	8.8	11.7	14.6	17.6
0.750	1.500	5000	0.022	4.3	6.5	8.6	10.8	12.9
hp Required @ rpm				15.0	22.5	30.0	37.5	45.0

### MA-45M METRIC UNITS

PLUNGER SIZE MM	STUFFING BOX BORE MM	MAX PRESS. BAR	*LITER PER/REV.	200 RPM LPM	300 RPM LPM	400 RPM LPM	500 RPM LPM	600 RPM LPM
25.4	44.5	208.4	0.145	29.0	43.5	58.0	72.5	87.0
22.2	38.1	272.31	0.111	22.2	33.3	44.4	55.5	66.5
19.0	38.1	344.7	0.081	16.3	24.4	32.6	40.7	48.8
kW Required @ rpm				11.1	16.8	22.4	28.0	33.6

\*Displacement based on 100% Volumetric Efficiency

$$lhp = \frac{USGPM \times (\text{Discharge psig} - 1/2 \text{ Suction psig})}{1542}$$

$$\text{Pump rpm} = \frac{USGPM \text{ Desired}}{USG \text{ per Revolution of Selected Plunger}}$$

Power based on 90% Mechanical Efficiency

$$lkW = \frac{M^3/HR \times (\text{Discharge Bar} - 1/2 \text{ Suction Bar})}{32.4}$$

$$\text{Pump rpm} = \frac{M^3/HR \text{ Desired}}{M^3 \text{ per Revolution of Selected Plunger}}$$

**ENGINEERING DATA**

POWER END ENGINEERING DATA

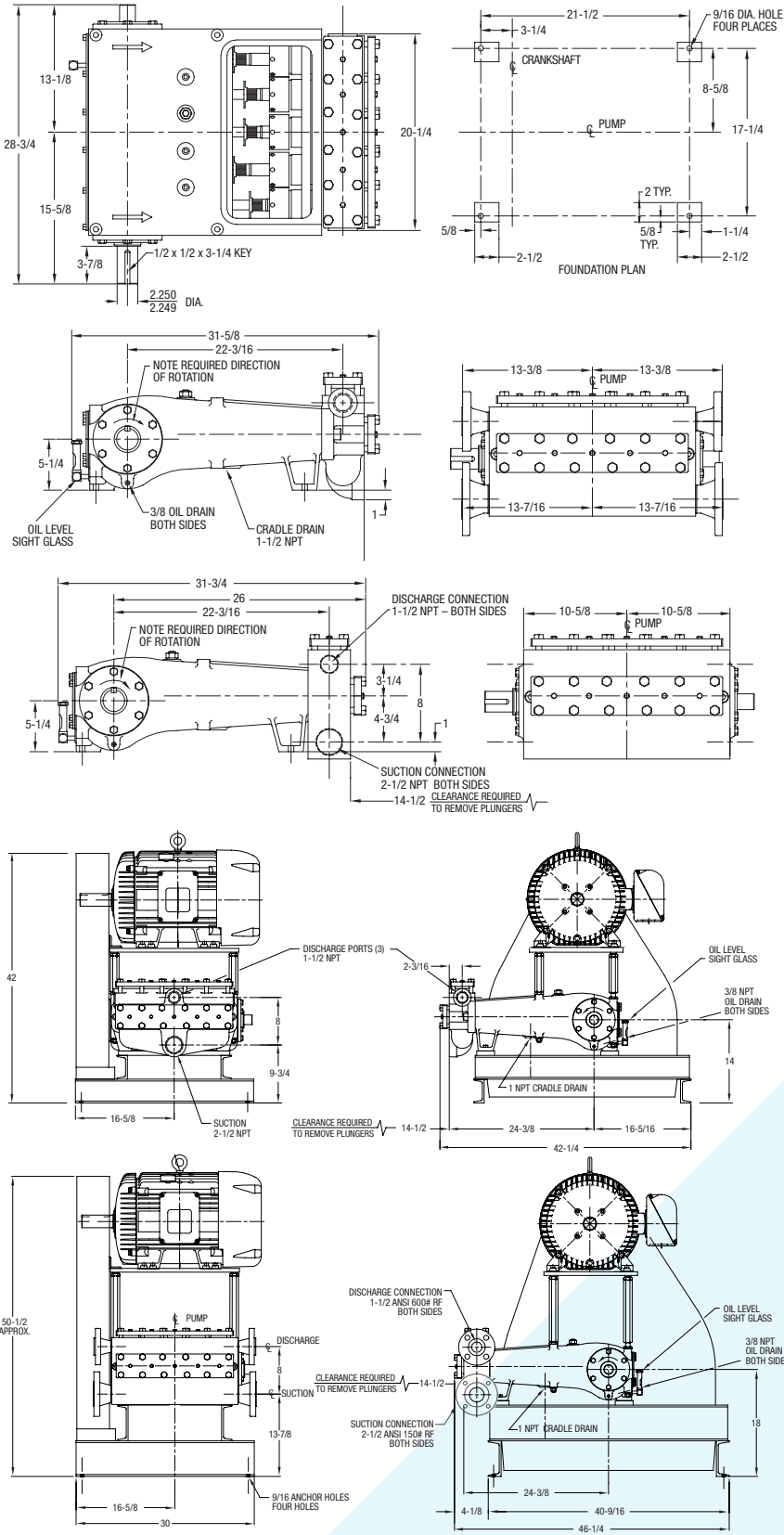
Normal Continuous Speed Range .....	150 to 500 rpm
Minimum Speed .....	100 rpm
Oil Capacity .....	8 U.S. Qts
Power End Oiling System .....	Splash & Scoop
Power Frame, One-Piece .....	Cast Iron
Crosshead, Full Cylindrical .....	Cast Iron
Crosshead, Dia. x Length .....	3-1/4 x 3-5/8 in.
Crankshaft .....	Ductile Iron
Crankshaft Diameters:	
At Tapered Roller Bearings .....	3.06 in.
At Center Bearings .....	4.99 in.
At Crankpin Bearings, Dia. x Length .....	2-1/4 x 1-5/8 in.
Crosshead (Wrist) Pin, Case-Hardened and Ground .....	AlSI 8620
Main Bearings, Tapered Roller .....	Timken®
Center Bearings, Crankpin Bearings, Precision Automotive .....	Steel Backed, Babbitt-Lined
Extension (Pony) Rod, Integral w/ Plungers .....	316 S.ST.
Connecting Rod, Automotive Type .....	Ductile Iron
Average Crosshead Speed @ 600 rpm .....	225 fpm
Minimum Life Expectancy, Main Bearings, L <sub>10</sub> .....	75,000+ hr.

LIQUID END ENGINEERING DATA

Max. Continuous Working Pressure 45M .....	3,024 psi
Max. Continuous Working Pressure 45H .....	5,000 psi
Hydrostatic Test 45M .....	4,500 psi
Hydrostatic Test 45H .....	7,500 psi
Available Liquid End Materials, A.S.T.M.	
Nickel Aluminum Bronze Casting 45M .....	B148-C955
Carbon Steel Block 45M,45H .....	Various Grades
Ductile Iron Casting 45M .....	A536 80-55-06
Stainless Steel Block 45M,45H .....	Various Grades
Plunger Type Rokide® (Chromium Oxide-Coated) .....	(Other types available include Tungsten Carbide, Ceramic)
Stuffing Boxes, Field-Removable and Replaceable	
Stainless Steel .....	Various Grades
Carbon Steel .....	Various Grades
Packing Types Available	
Gland-Loaded, Non-Adjustable .....	Style 838
Spring-Loaded, Braided PTFE Coating & Kevlar® .....	140,141,8921K
Spring-Loaded, Cup-Type .....	Style 120X
Valve Cover and Cyl. Head Plugs .....	Ductile Iron, 316 SST
Retainer Plates, Carbon Steel .....	1018 CDS
Seals, Stuffing Boxes, Valve Covers, Cyl. Heads .....	Buna-N
Valve Types:	
Standard, Disc Type, Acetal Resin .....	Acetal
Optional, Abrasion Resistant or Dual Stem Guided .....	17-4 PH S.ST.
Optional, Disc Type, Hardened and Lapped .....	17-4 PH S.ST.
Valve Spring Material .....	Inconel®
Valve Seat, Liquid Passage Areas	
Plate (Disc) Valves, (Acetal or S.ST.) .....	1.4 sq.in.
Abrasion Resistant .....	0.70 sq.in.
Avg. Liquid Velocity @ 600 rpm:	
through Disc Valves 45M .....	7.4 fps
through Disc Valves 45H .....	2.1 fps
through Abrasion Resistant Valves 45M .....	14.8 fps
through Suction Manifold 45M .....	5.4 fps
through Suction Manifold 45H .....	2.4 fps
through Discharge Manifold 45M .....	14.65 fps
through Discharge Manifold 45H .....	4.2 fps

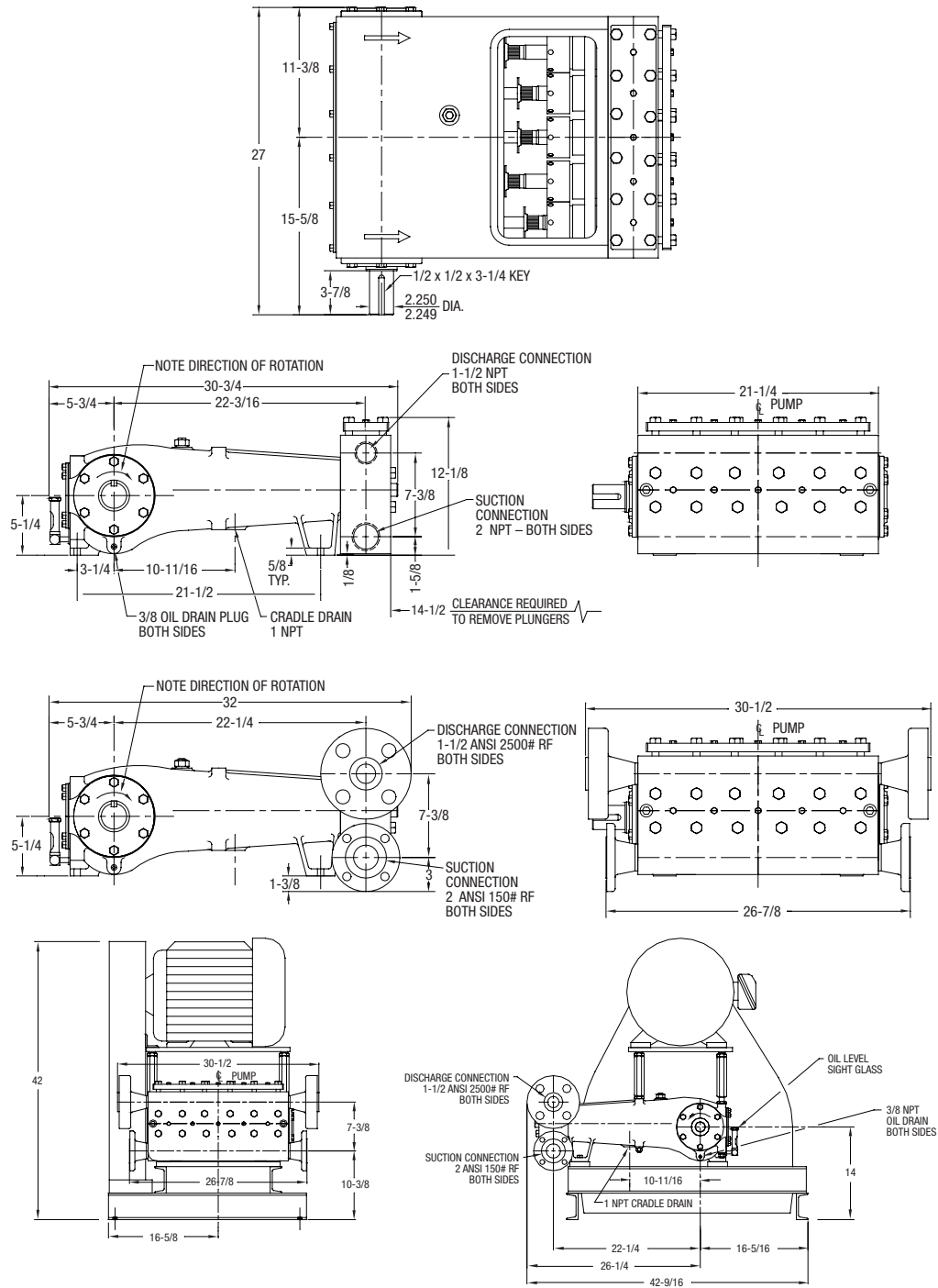
**DIMENSIONAL DATA**

Measurements shown in inches.



# MYERS APLEX QUINTUPLEX PLUNGER PUMPS

Measurements shown in inches.



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