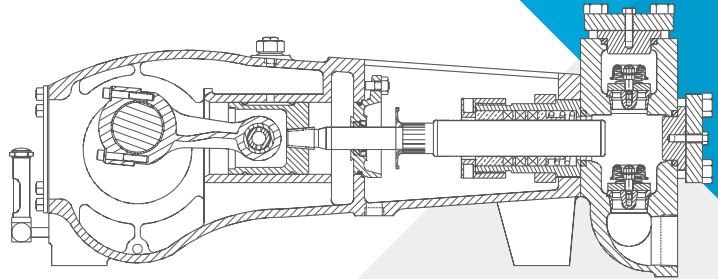


# MA-15H/15M

## TRIPLEX PLUNGER PUMP



|                           |                   |
|---------------------------|-------------------|
| No. of Plungers .....     | 3                 |
| Maximum Rated Speed.....  | 650 rpm           |
| Stroke Length .....       | 1.50 in. 38.1 mm  |
| Maximum Rated Power ..... | 15.0 hp 11.2 kW   |
| Maximum Rod Load .....    | 1828 lbs. 8.04 kN |
| Weight 15M .....          | 235 lbs.          |
| Weight 15H .....          | 255 lbs.          |

### ENGLISH UNITS (MA-15M)

| PLUNGER SIZE IN.  | STUFFING BOX BORE IN. | MAX PSI | *GALLON PER/ REV. | 250 RPM US GPM | 350 RPM US GPM | 450 RPM US GPM | 550 RPM US GPM | 650 RPM US GPM |
|-------------------|-----------------------|---------|-------------------|----------------|----------------|----------------|----------------|----------------|
| 1.625             | 2.125                 | 881     | 0.040             | 10.1           | 14.1           | 18.2           | 22.2           | 26.3           |
| 1.500             | 2.125                 | 1034    | 0.034             | 8.6            | 12.0           | 15.5           | 18.9           | 22.4           |
| 1.375             | 2.125                 | 1231    | 0.029             | 7.2            | 10.1           | 13.0           | 15.9           | 18.8           |
| 1.250             | 2.125                 | 1489    | 0.024             | 6.0            | 8.4            | 10.8           | 13.1           | 15.5           |
| 1.125             | 1.750                 | 1839    | 0.019             | 4.8            | 6.8            | 8.7            | 10.7           | 12.6           |
| 1.000             | 1.750                 | 2327    | 0.015             | 3.8            | 5.4            | 6.9            | 8.4            | 9.9            |
| 0.875             | 1.500                 | 3040    | 0.012             | 2.9            | 4.1            | 5.3            | 6.4            | 7.6            |
| hp Required @ rpm |                       |         |                   | 5.8            | 8.1            | 10.4           | 12.7           | 15.0           |

### METRIC UNITS (MA-15M)

| PLUNGER SIZE MM   | STUFFING BOX BORE MM | MAX PRESS. BAR | *LITER PER/REV. | 250 RPM LPM | 350 RPM LPM | 450 RPM LPM | 550 RPM LPM | 650 RPM LPM |
|-------------------|----------------------|----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| 41.3              | 54.0                 | 61             | 0.153           | 38.2        | 53.5        | 68.8        | 84.1        | 99.4        |
| 38.1              | 54.0                 | 71             | 0.130           | 32.6        | 45.6        | 58.6        | 71.6        | 84.6        |
| 34.9              | 54.0                 | 85             | 0.109           | 27.3        | 38.3        | 49.2        | 60.2        | 71.1        |
| 31.8              | 54.0                 | 103            | 0.091           | 22.6        | 31.7        | 40.7        | 49.8        | 58.8        |
| 28.6              | 44.5                 | 127            | 0.073           | 18.4        | 25.7        | 33.0        | 40.4        | 47.7        |
| 25.4              | 44.5                 | 161            | 0.058           | 14.5        | 20.3        | 26.1        | 31.8        | 37.6        |
| 22.2              | 38.1                 | 210            | 0.044           | 11.1        | 15.5        | 19.9        | 24.4        | 28.8        |
| kW Required @ rpm |                      |                |                 | 4.3         | 6.0         | 7.8         | 9.5         | 11.1        |

\*Displacement based on 100% Volumetric Efficiency

\*\*Power based on 90% Mechanical Efficiency

\*Displacement based on 100% Volumetric Efficiency

Power based on 90% Mechanical Efficiency

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

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

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

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

# MA-15H/15M

## ENGLISH UNITS

| PLUNGER SIZE IN.    | STUFFING BOX BORE IN. | MAX PSI | *GALLON PER/ REV. | 250 RPM US GPM | 350 RPM US GPM | 450 RPM US GPM | 550 RPM US GPM | 650 RPM US GPM |
|---------------------|-----------------------|---------|-------------------|----------------|----------------|----------------|----------------|----------------|
| .750                | 1.500                 | 5000    | .00860            | 2.2            | 3.0            | 3.9            | 4.7            | 5.6            |
| hp Required @ rpm** |                       |         |                   | 5.9            | 8.3            | 10.4           | 12.6           | 15.0           |

## 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 |
|---------------------|----------------------|----------------|------------------|-------------|-------------|-------------|-------------|-------------|
| 19.0                | 38.1                 | 285.3          | 0.0325           | 8.1         | 11.4        | 14.6        | 17.9        | 21.1        |
| kW Required @ rpm** |                      |                |                  | 4.3         | 6.2         | 7.7         | 9.4         | 11.2        |

\*Displacement based on 100% Volumetric Efficiency

\*\*Power based on 90% Mechanical Efficiency

\*Displacement based on 100% Volumetric Efficiency

Power based on 90% Mechanical Efficiency

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

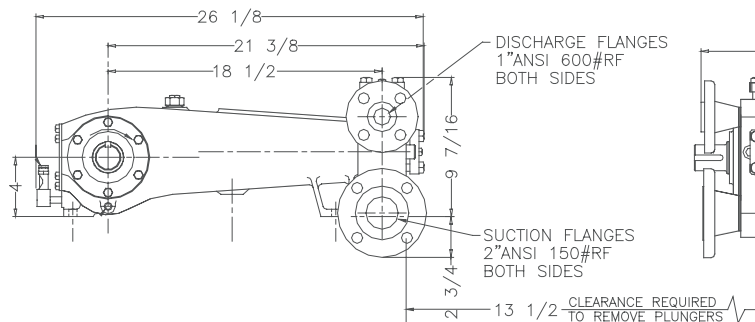
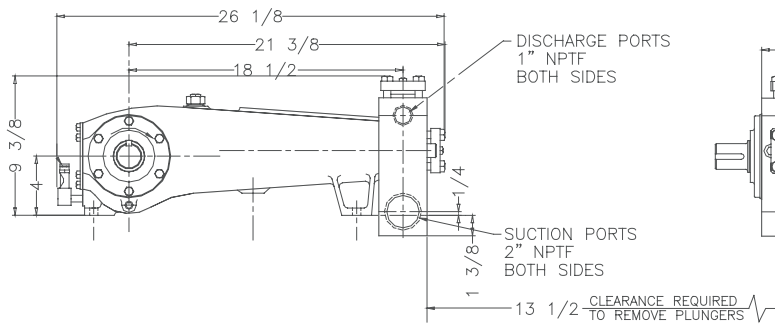
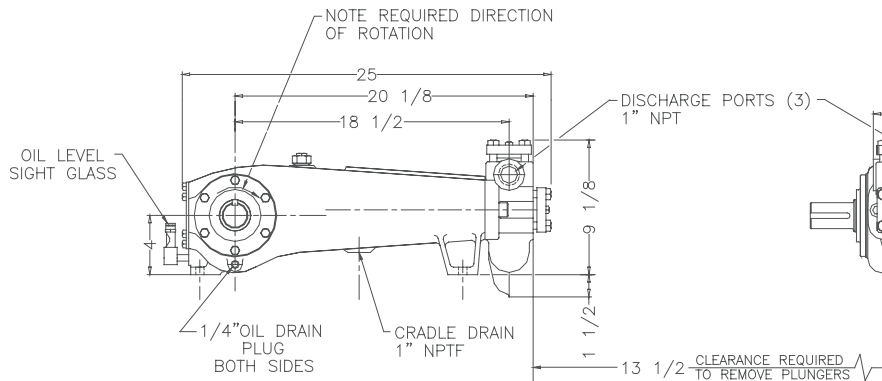
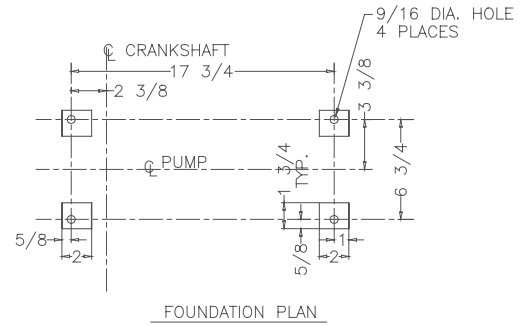
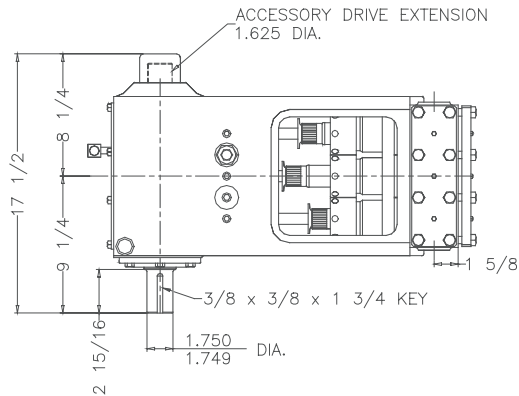
$$lkW = \frac{M^3/HR \times (\text{Discharge Bar} - 1/2 \text{ Suction Bar})}{17.99}$$

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

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

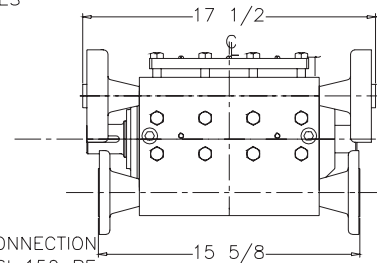
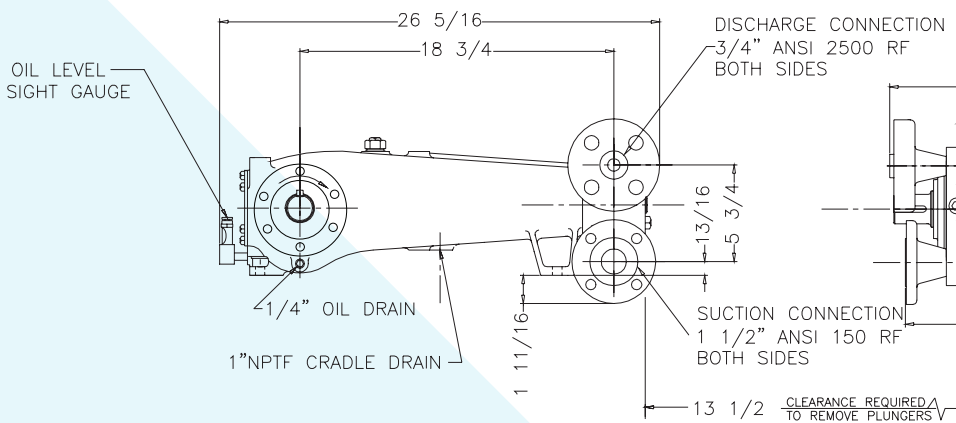
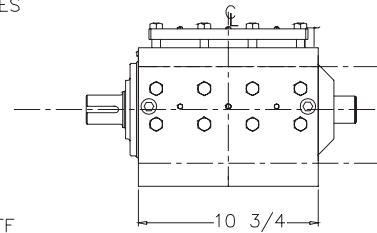
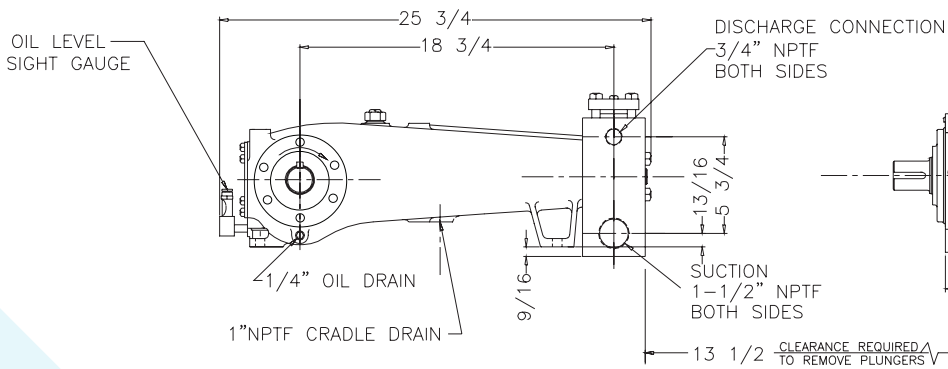
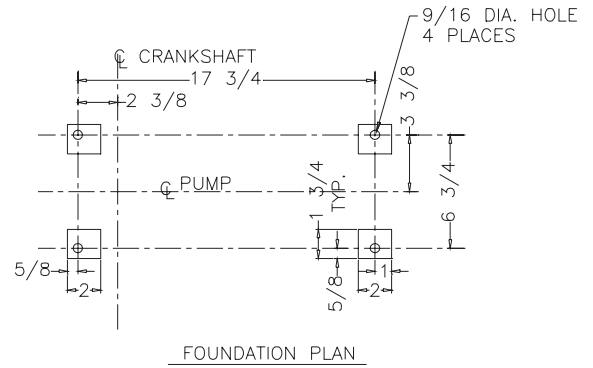
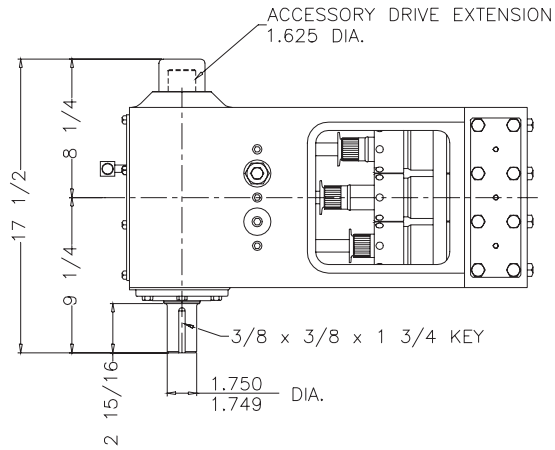
# MA-15M TRIPLEX PUMP

Measurements shown in inches



# MA-15H TRIPLEX PUMP

Measurements shown in inches



# ENGINEERING DATA

## MA-15M AND MA-15H TRIPLEX PUMPS

### POWER END ENGINEERING DATA

|   |                   |
|---|-------------------|
| Max. Input HP @ Speed .....                                   | 15 HP @ 650 rpm   |
| Rated Continuous Plunger Load .....                           | 1,828 lb.         |
| Normal Continuous Speed Range .....                           | 150 to 600 rpm    |
| Minimum Speed .....   | 100 rpm           |
| Oil Capacity .....  | 2 U.S. Qrts       |
| Power End Oiling System .....                                 | Splash & Scoop    |
| Power Frame, One-Piece .....                                  | Cast Iron         |
| Crosshead, Full Cylindrical .....                             | Cast Iron         |
| Crosshead, Dia. x Length .....                                | 2 5/8 x 2 7/8 in. |
| Crankshaft .....  | Ductile Iron      |
| Crankshaft Diameters:   |                   |
| At Tapered Roller Bearings .....                              | 2.167 in.         |
| At Crankpin Bearings .....                                    | 1.750 x 1.063 in. |
| Crosshead (Wrist) Pin, Case-Hardened and Ground .....         | AISI 8620         |
| Main Bearings, Tapered Roller .....                           | Timken®           |
| Crankpin Bearings, Precision Automotive .....                 | Babbitt-Lined     |
| Extension (Pony) Rod, Integral w/ Plungers .....              | 316 S.S           |
| Connecting Rod, Automotive Type .....                         | Ductile Iron      |
| Average Crosshead Speed @ 600 rpm.....                        | 150 fpm           |
| Minimum Life Expectancy, Main Bearings, L <sub>10</sub> ..... | 60,000+ hr.       |

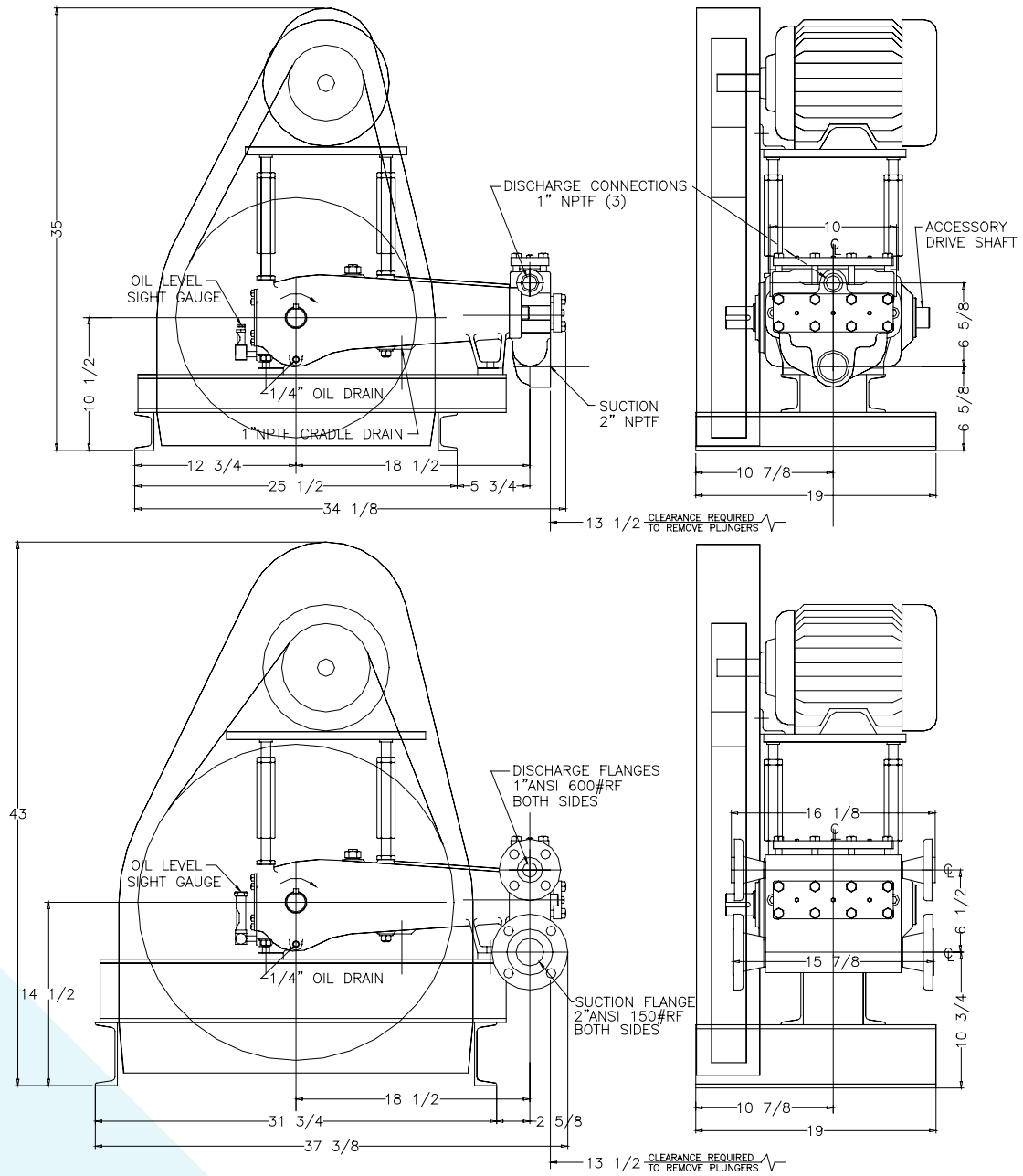
### LIQUID END ENGINEERING DATA

|   |  |
|---|--|
| Max. Continuous Working Pressure 15M .....                    | 3,040 psi  |
| 15H .....   | 5,000 psi  |
| Hydrostatic Test 15M .....                                    | 4,560 psi  |
| 15H .....   | 7,500 psi  |
| Liquid End Materials, A.S.T.M.                                |  |
| Nickel Aluminum Bronze 15M .....                              | B148-C955  |
| Carbon Steel Block 15H/15M.....                               | A516 Gr. 70 or A105  |
| Stainless Steel Block 15H/15M.....                            | Various Grades   |
| Ductile Iron 15M.....   | A536 80-55-06  |
| Plunger Type Rokide (Chromium Oxide-Coated) .....             | 316 Stainless Steel  |
|   | Tungsten Carbide, Ceramic and other types of plungers also available |
| Stuffing Boxes, Field-Removable and Replaceable .....         | Carbon Steel or Stainless Steel                                      |
| Packing Types Available                                       |  |
| Gland-loaded, Non-Adjustable.....                             | Style 838  |
| Spring-loaded, Braided PTFE Coating & Aramid Fiber.....       | Style 140, 141, 8921K  |
| Spring-loaded, Cup-type .....                                 | Style 120X   |
| Valve Cover and Cyl. Head Plugs .....                         | 316 S.S.   |
| Retainer Plates, Steel, A.S.T.M. ....                         | A36  |
| Seals, Stuffing Boxes, Valve Covers .....                     | Buna-N   |
| Bolting, High Strength, Heat Treated .....                    | Alloy Steel  |
| Valve Types Available   |  |
| Dual Stem Guided .....  | 17-4PH S.S   |
| Stainless Steel Disc .....                                    | 17-4PH S.S   |
| Abrasion Resistant .....                                      | 17-4PH S.S   |
| Valve Spring Material .....                                   | Inconel®   |
| Valve Seat, Liquid Passage Area .....                         | .573 sq.in.  |
| Avg. Liquid Velocity with Largest Diameter Plungers @ 600 rpm |  |
| thru Dual Stem Guided Valves (15M).....                       | 9.04 fps   |
| (15H) .....   | 1.93 fps   |
| thru Suction Manifold (15M).....                              | 2.47 fps   |
| (15H).....  | 0.94 fps   |
| thru Discharge Manifold (15M) .....                           | 9.90 fps   |
| (15H) .....   | 3.75 fps   |

All drawings and specifications subject to change without notice.

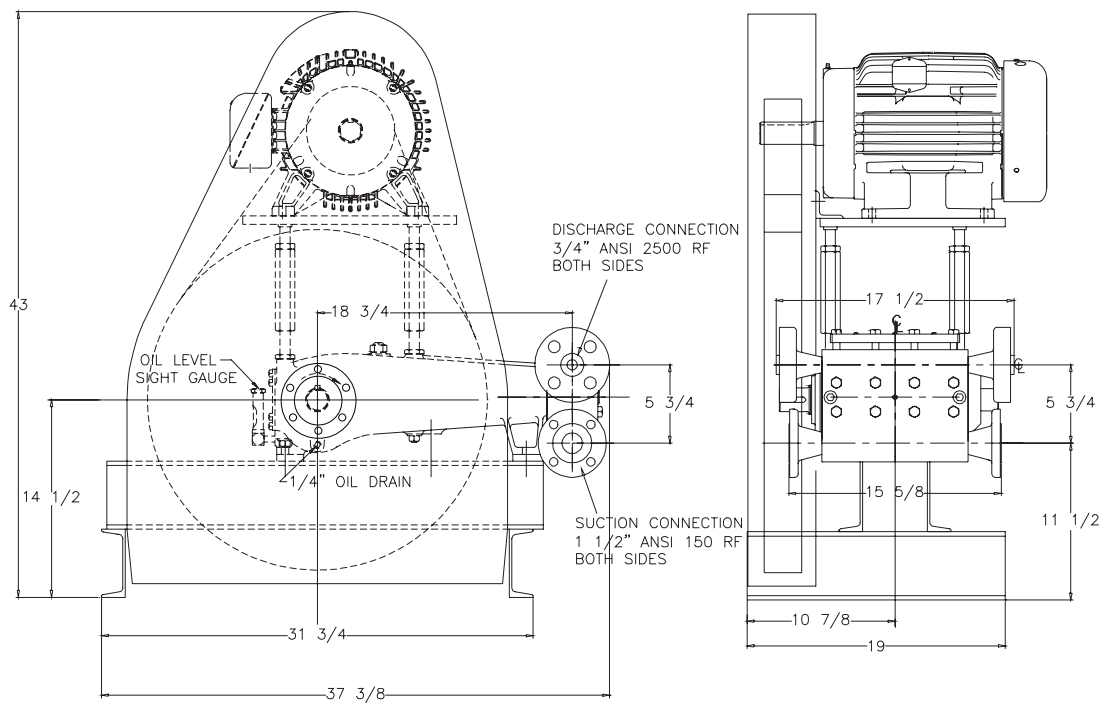
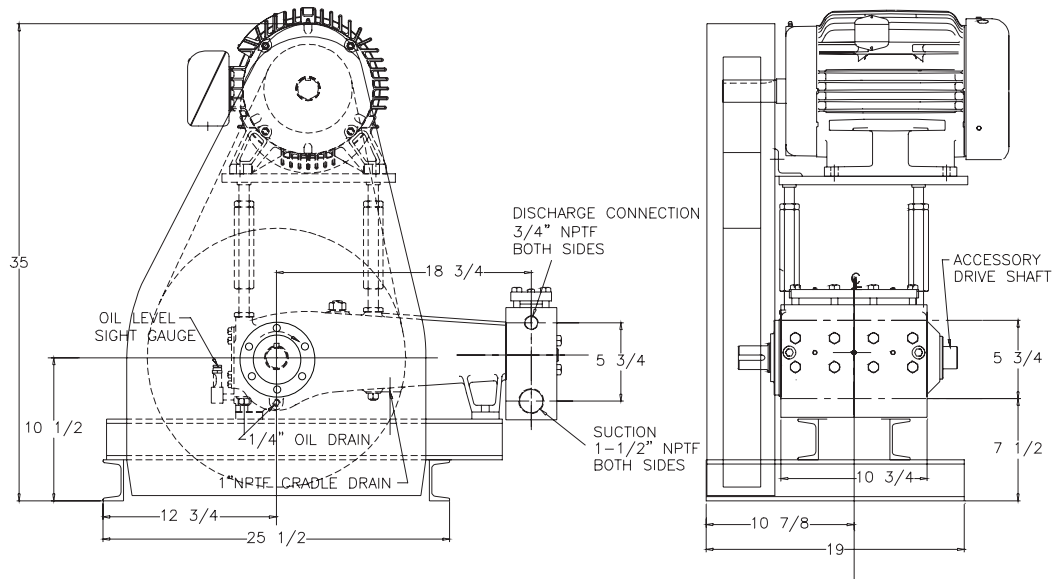
# MA-15M TRIPLEX PUMP

Measurements shown in inches



# MA-15H TRIPLEX PUMP

Measurements shown in inches



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