

No. of plungers ..... 3  
 Maximum rated speed ..... 500 rpm  
 Stroke length.....3.00 in. 76.2 m  
 Maximum rated power.....60.0 HP 44.7 KW  
 Maximum rod load .....4752 lb. 21.09 kN  
 Weight ..... 945 lbs.

### ENGLISH UNITS

MA-60H

| PLUNGER SIZE<br>IN. | STUFFING BOX<br>BORE IN. | MAX PSI | *GALLON<br>PER/REV. | 100 RPM<br>US GPM | 200 RPM<br>US GPM | 300 RPM<br>US GPM | 400 RPM<br>US GPM | 500 RPM<br>US GPM |
|---------------------|--------------------------|---------|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 1.375               | 2.250                    | 3200    | 0.0579              | 5.8               | 11.6              | 17.4              | 23.1              | 28.9              |
| 1.250               | 2.250                    | 3872    | 0.0478              | 4.8               | 9.6               | 14.3              | 19.1              | 23.9              |
| 1.125               | 1.750                    | 4780    | 0.0387              | 3.9               | 7.7               | 11.6              | 15.5              | 19.4              |
| 1.000               | 1.750                    | 5000    | 0.0306              | 3.1               | 6.1               | 9.2               | 12.2              | 15.3              |

HP REQUIRED @ RPM\*\* 12.0 24.0 36.0 48.0 60.0

### METRIC UNITS

MA-60H

| PLUNGER SIZE<br>MM. | STUFFING BOX<br>BORE MM. | MAX PRESS.<br>BAR | *LITER<br>PER/REV. | 100 RPM<br>LPM | 200 RPM<br>LPM | 300 RPM<br>LPM | 400 RPM<br>LPM | 500 RPM<br>LPM |
|---------------------|--------------------------|-------------------|--------------------|----------------|----------------|----------------|----------------|----------------|
| 34.9                | 57.2                     | 220.6             | 0.2192             | 21.9           | 43.8           | 65.8           | 87.7           | 109.6          |
| 41.3                | 57.2                     | 267.0             | 0.1809             | 18.1           | 36.2           | 54.3           | 72.4           | 90.5           |
| 38.1                | 44.5                     | 329.6             | 0.1465             | 14.7           | 29.3           | 44.0           | 58.6           | 73.3           |
| 34.9                | 44.5                     | 344.8             | 0.1158             | 11.6           | 23.2           | 34.7           | 46.3           | 57.9           |

KW REQUIRED @ RPM\*\* 8.9 17.9 26.8 35.8 44.7

\*Displacement based on 100% Volumetric Efficiency

\*\*Power based on 90% Mechanical Efficiency

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

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

$$\text{PUMP RPM} = \frac{\text{USGPM Desired}}{\text{USGPM per Revolution of Selected Plunger}}$$

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

## **MA-60H Triplex Pump**

# ENGINEERING DATA

## MA-60H Triplex Pump

### POWER END ENGINEERING DATA

|                                                               |                             |
|---------------------------------------------------------------|-----------------------------|
| Max. Input Power @ Speed .....                                | 60 HP @ 500 rpm             |
| Rated Continuous Plunger Load .....                           | 4,752 lb.                   |
| Max. Rated Continuous Speed .....                             | 550 rpm                     |
| Normal Continuous Speed Range .....                           | 150 to 450 rpm              |
| Minimum Speed .....                                           | 100 rpm                     |
| Oil Capacity .....                                            | 9 U.S. Qrts                 |
| Power End Oiling System .....                                 | Splash                      |
| Power Frame, One-Piece .....                                  | Cast Iron                   |
| Crosshead, Full Cylindrical .....                             | Cast Iron                   |
| Crosshead, Dia. x Length .....                                | 4 3/4 x 5 in.               |
| Crankshaft .....                                              | Ductile Iron                |
| Crankshaft Diameters:                                         |                             |
| At Tapered Roller Bearings .....                              | 2 5/8 in.                   |
| At Crankpin Bearings, Dia. x Length .....                     | 3 1/2 x 3 in.               |
| Crosshead (Wrist) Pin, Case-Hardened and Ground .....         | AISI 8620                   |
| Wrist Pin Bushing, SAE 660, dia. x width .....                | 1 5/16 x 2 in.              |
| Main Bearings, Tapered Roller .....                           | Timken                      |
| Center Bearings, Two Precision Steel Backed .....             | Babbitt Lined               |
| Crankpin Bearings, Precision Automotive .....                 | Steel Backed, Babbitt-Lined |
| Extension (Pony) Rod Integral w/ Plungers .....               | 316 S.S.                    |
| Connecting Rod, Automotive Type .....                         | Ductile Iron                |
| Average Crosshead Speed @ 550 rpm .....                       | 250 fpm                     |
| Minimum Life Expectancy, Main Bearings, L <sub>10</sub> ..... | 60,000+ hrs.                |

### LIQUID END ENGINEERING DATA

|                                                       |                             |
|-------------------------------------------------------|-----------------------------|
| Max. Continuous Working Pressure .....                | 5,000 psi                   |
| Hydrostatic Test .....                                | 7,500 psi                   |
| Available Liquid End Materials, A.S.T.M.              |                             |
| Carbon Steel Block .....                              | 4140                        |
| Stainless Steel Block .....                           | 2205 Duplex or 15-5 PH S.S. |
| Plunger Type "Rokide" (Chromium Oxide-Coated) .....   | 316 S.S.                    |
| Packing Types Available:                              |                             |
| Spring-loaded, Chevron .....                          | Style 120X                  |
| Spring-loaded, Kevlar Compression .....               | Style 140                   |
| Valve Cover and Cyl. Head Plugs .....                 | 316 S.S.                    |
| Seals, Stuffing Boxes, Valve Covers, Cyl. Heads ..... | Buna-N                      |
| Available Valve Types:                                |                             |
| Standard, Disc Hardened and Lapped .....              | 17-4 PH S.S.                |
| Optional, Hardened Abrasion Resistant .....           | 17-4PH S.S.                 |
| Valve Spring Material .....                           | Inconel                     |
| Valve Seat, Liquid Passage Area .....                 | 2.3 sq.in.                  |
| Avg. Liquid Velocity with 1 1/4" plungers @ 500 rpm:  |                             |
| thru Valve Seat .....                                 | 2.2 fps                     |
| thru Suction Manifold .....                           | 1.92 fps                    |
| thru Discharge Manifold .....                         | 13.5 fps                    |

## MA-60H Triplex Pump



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