



**HEAVY DUTY
MILL TYPE
CYLINDERS** (Metric)
(In mm and bar units)



SPECIFICATIONS

| | |
|-------------------------------------|--|
| Bore sizes: | 40 to 500 mm |
| Working Pressure: | 10 bar, 63 bar, 100 bar, 160 bar and 250 bar. |
| Piston Rod Diameters: | 18 to 360 mm. |
| Standard Construction: | Heads bolted to heavy steel flanges. |
| Mounting Styles: | Trunnion Mounting, Base Mounting, Front Flange Mounting, Rear Flange Mounting, Male Clevis Mounting, Female Clevis Mounting, Side Log Mounting as well as CETOP Mounting. |
| Rod Ends: | Male/Female ISO or CETOP metric fine threads. |
| Standard Fluids: | Hydraulic Mineral Oil with the following Option: <ul style="list-style-type: none">- Phosphate Ester.- Water Glycol.- Water-in-oil Emulsion.- Oil in Water Emulsion.- Water. |
| Normal Working Temperatures: | -30° to 120° C |
| Cushioning: | Optional at both ends. |

DESIGN FEATURES & MATERIALS

Piston Rods: Manufactured from precision ground steel of 7,000 kgf/cm² ultimate tensile strength. All standard piston rods are hard chrome plated.

Cylinder Barrels: The bore of the barrel has a 5° chamfer at both ends. This feature facilitates piston installation, prevents seal damage and gives a zero clearance fit between head and tube. For 40 to 300 mm bore sizes, the cylinder barrels are manufactured from heavy wall cold drawn seamless mechanical tubing. For 300 to 500 mm bore sizes the cylinder barrels are manufactured either from centrifugally cast steel or from hot rolled seamless tubing. All cylinder barrels are honed to a 0.2 to 0.4 µm finish to give maximum life expectancy to piston seals.

Flanges: Manufactured from steel. Each flange is fitted to the cylinder barrel by means of threading and / or welding.

Piston Head: Precision machined from steel, with three different designs:

- (a) a single piece incorporating a two-element U-cup seal made exclusively for air cylinders;
- (b) two pieces clad with bronze incorporating a four-element piston seal.
- (c) two pieces incorporating chevron type seals and heavy bronze bearing.

Piston Rod Seals:

Piston rod seals are of the chevron type. They are situated within the front head and are retained by bolted (or screwed) bronze gland bushings. The gland bushings are attached to the front head by cap screws drilled and wired to prevent loosening.

An A. N. (Army and Navy) rod wiper is placed within the gland bushing.

Cushioning:

Cushioning is optional and may be provided on both ends.

Both the flooding cushion sleeve and the cushion spear are manufactured with progressive tapers to ensure a more uniform deceleration.

The cushion spear is an integral part of the piston rod. A bronze floating cushion together with a reverse check valve are used in conjunction with the cushion spear.

**Front And Rear
Heads:**

Manufactured from Hot Rolled steel plate with standard imperial port sizes.

Testing Pressure:

Each and every cylinder is tested to its double working pressure before leaving the plant.

Drawings:

Certified drawings showing a longitudinal cross section of all parts will be shipped upon request, at no extra cost.

PISTON ROD SELECTOR CHART

THE PISTON ROD in a cylinder acts as a column and, as such, is subjected not only to compressive stresses, but also buckling stresses which are a function of the moment of inertia for a constant modulus of elasticity. The " column strength " of a piston rod cannot be increased by using higher tensile strength or heat treated materials. For this reason, it is sometimes necessary to use an oversize piston rod strictly for the purpose of achieving the necessary " column strength."

The data shown in chart form is based on Culer's equation for a vertical column with both ends rounded (See Case I illustration). The values of "L" shown in the chart are one-half of the theoretical limit of "L" as determined by this equation. Factors such as vertical or horizontal mounting, shock or non-shock loading, frequency of operation, etc., should be taken into consideration in selecting a permissible value of "L". The values shown indicate our recommended maximum " column lengths" for the various piston rods under specified compressive loads and may be considered safe for most normal cylinder applications, both horizontal and vertical. Deviations from these recommendations are, of course, a matter of engineering judgment based on a knowledge of the application. In some vertical application, it may be possible to use values of "L" one-third greater than those on the chart shown. On the other hand, for a long stroke, horizontally mounted cylinder subjected to shock loading, it may be desirable to decrease the value of "L" by one-third.

To determine the proper piston rod diameter for your application, proceed as follows:

1. Determine the maximum thrust required from the force table in your application.
2. Identify your installation with one of those illustrated as Case I, II, III or IV.
3. Determine the recommended stop tube length, if one is required.(See stop tubes.)

4. Determine the value of "L" for your installation with the piston rod in the fully extended position.
5. Now, referring to the chart, select the thrust figure that equals or exceeds your requirements.
6. Scan to the right on the chart until the value of "L" equals or exceeds the "L" dimension on your cylinder installation.
7. In some cases the recommended piston rod diameter may exceed that of the largest piston rod available for the cylinder under consideration. If this happens, it may be necessary to use a larger bore cylinder, operating at a reduced pressure, in order to obtain the required column strength.

STOP TUBES

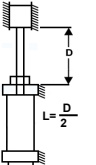
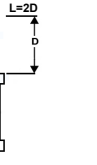
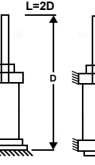
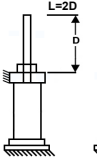
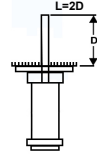
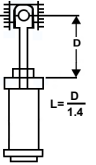
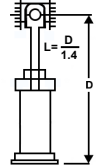
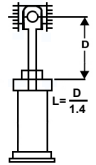
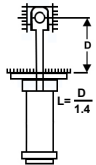
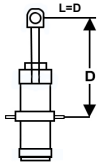
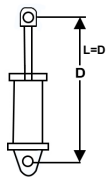
The function of a stop tube is to act as a spacer to increase the distance between the piston and piston rod bearing when the piston rod is in its fully extended position. This increase in spacing serves to reduce bearing loads and, at the same time, increases the structural rigidity of the assembly to prevent bucking and jack-knifing.

A stop tube is recommended for cylinder mounted as shown in Cases I and II! whenever "L" exceeds 1 metre. Use 25 mm of stop tube for every 250 mm over the basic 1 metre value of "L". Cylinders mounted as those shown in Case II and IV do not normally require stop tubes, but the decision should be based on the factors involved in the particular application under consideration.

Air Cylinders which require both a stop tube and a cushion at the rod end of the cylinder are handled as special items at the factory.

CYLINDER FORCES

| CYC. BORE | ROD DIA. | EFFECTIVE WORKING AREA | THEORETICAL FORCES AT VARIOUS PRESSURES | | | | | | | | | | | |
|-----------|----------|------------------------|---|-------|----------------|--------|------------------|--------|------------------|--------|------------------|--------|------------------|---------|
| | | | 10 BAR (1 MPa) | | 50 BAR (5 MPa) | | 100 BAR (10 MPa) | | 150 BAR (15 MPa) | | 200 BAR (20 MPa) | | 250 BAR (25 MPa) | |
| mm | mm | mm ² | kgf | lbf | kgf | lbf | kgf | lbf | kgf | lbf | kgf | lbf | kgf | lbf |
| 40 | - | 1257 | 128 | 282 | 641 | 1413 | 1282 | 2827 | 1923 | 4240 | 2564 | 5653 | 3205 | 7067 |
| | 20 | 943 | 96 | 212 | 481 | 1060 | 962 | 2121 | 1443 | 3181 | 1924 | 4241 | 2405 | 5301 |
| | 28 | 641 | 65 | 143 | 327 | 721 | 654 | 1441 | 981 | 2162 | 1308 | 2883 | 1635 | 3604 |
| 50 | - | 1963 | 200 | 441 | 1001 | 2207 | 2002 | 4414 | 3003 | 6621 | 4005 | 8828 | 5007 | 11035 |
| | 28 | 1347 | 137 | 302 | 687 | 1514 | 1374 | 3029 | 2061 | 4543 | 2748 | 6058 | 3435 | 7572 |
| | 36 | 946 | 96 | 212 | 482 | 1064 | 965 | 2127 | 1447 | 3191 | 1930 | 4255 | 2412 | 5318 |
| 63 | - | 3117 | 318 | 679 | 1590 | 3505 | 3179 | 7009 | 4769 | 10514 | 6359 | 14018 | 7948 | 17523 |
| | 36 | 2099 | 214 | 472 | 1070 | 2360 | 2141 | 4720 | 3211 | 7080 | 4282 | 9440 | 5352 | 11800 |
| | 45 | 1527 | 156 | 344 | 779 | 1717 | 1558 | 3434 | 2336 | 5151 | 3115 | 6868 | 3894 | 8584 |
| 80 | - | 5027 | 513 | 1131 | 2563 | 5651 | 5127 | 11302 | 7690 | 16953 | 10253 | 22604 | 12816 | 28255 |
| | 45 | 3437 | 383 | 844 | 1753 | 3864 | 3506 | 7229 | 5259 | 11593 | 7011 | 15458 | 8764 | 19322 |
| | 56 | 2564 | 261 | 575 | 1308 | 2883 | 2615 | 5766 | 3923 | 8648 | 5231 | 11531 | 6538 | 14414 |
| 100 | - | 7854 | 801 | 1766 | 4006 | 8831 | 8011 | 17661 | 12017 | 26492 | 16022 | 35322 | 20028 | 44153 |
| | 56 | 5391 | 550 | 1213 | 2749 | 6061 | 5499 | 12123 | 8248 | 18184 | 10998 | 24245 | 13747 | 30307 |
| | 70 | 4006 | 409 | 902 | 2043 | 4504 | 4086 | 9008 | 6129 | 13512 | 8172 | 18017 | 10215 | 22521 |
| 125 | - | 12272 | 1252 | 2760 | 6259 | 13798 | 12517 | 27596 | 18776 | 41394 | 25035 | 55192 | 31294 | 68990 |
| | 70 | 8424 | 859 | 1894 | 4296 | 9471 | 8592 | 18943 | 12889 | 28414 | 12185 | 37886 | 21481 | 47357 |
| | 90 | 5910 | 603 | 1329 | 3014 | 6645 | 6028 | 13290 | 9042 | 19935 | 12056 | 26580 | 15070 | 33224 |
| 160 | - | 20106 | 2051 | 4522 | 10254 | 22606 | 20508 | 45212 | 30762 | 67816 | 41016 | 90424 | 51270 | 113030 |
| | 90 | 13744 | 1402 | 3091 | 7009 | 15453 | 14019 | 30906 | 21028 | 46359 | 28038 | 61812 | 35047 | 77265 |
| | 110 | 10603 | 1081 | 2383 | 5407 | 11921 | 10815 | 23843 | 16223 | 35764 | 21603 | 47686 | 27038 | 59607 |
| 200 | - | 31416 | 3204 | 7064 | 16022 | 35322 | 32044 | 70645 | 48066 | 105967 | 64089 | 141290 | 80111 | 176612 |
| | 110 | 21913 | 2235 | 4927 | 11176 | 24638 | 22351 | 49276 | 33527 | 73913 | 44703 | 98551 | 55878 | 123189 |
| | 140 | 16022 | 1634 | 3602 | 8171 | 18014 | 16342 | 36029 | 24514 | 54043 | 32685 | 72057 | 40856 | 90071 |
| 250 | - | 49087 | 5007 | 11038 | 25034 | 55191 | 50069 | 110381 | 75103 | 165572 | 100137 | 220763 | 125172 | 275954 |
| | 140 | 33693 | 3437 | 7577 | 17183 | 37883 | 34367 | 75765 | 51550 | 113648 | 68734 | 157530 | 85917 | 189413 |
| | 180 | 23640 | 2411 | 5315 | 12056 | 26580 | 24113 | 53159 | 36169 | 79739 | 48226 | 106318 | 60282 | 132898 |
| 320 | - | 80425 | 8203 | 18084 | 41017 | 90426 | 82033 | 180851 | 123050 | 271277 | 164067 | 361702 | 205084 | 452128 |
| | 180 | 54978 | 5608 | 12363 | 28039 | 61814 | 56078 | 123629 | 84116 | 185443 | 112155 | 247257 | 140194 | 309071 |
| | 220 | 42412 | 4326 | 9537 | 21630 | 47686 | 43260 | 95372 | 64890 | 143057 | 86520 | 190743 | 180151 | 238429 |
| 400 | - | 125664 | 12818 | 28259 | 64089 | 141290 | 128177 | 282580 | 192266 | 423869 | 256355 | 565159 | 320443 | 706449 |
| | 220 | 87651 | 8940 | 19709 | 44702 | 98550 | 89404 | 197100 | 134106 | 295650 | 178808 | 394200 | 223510 | 492750 |
| | 280 | 64089 | 6537 | 14411 | 32685 | 72058 | 65371 | 144116 | 98056 | 216175 | 130742 | 288233 | 163427 | 360291 |
| 500 | - | 196350 | 20028 | 44154 | 100138 | 220765 | 200277 | 441531 | 300415 | 662296 | 400514 | 883061 | 500692 | 1103827 |
| | 280 | 134775 | 13747 | 30307 | 68735 | 151534 | 137470 | 303067 | 206206 | 454601 | 274941 | 606135 | 343676 | 757669 |
| | 360 | 94562 | 9645 | 21263 | 48227 | 106321 | 96453 | 212440 | 144680 | 318961 | 192906 | 425281 | 241133 | 531602 |



Case I-Both ends pivoted

Case II- one end fixed, one end free but guided

Case III- one end fixed, one end free

Case IV Both ends fixed (Both ends rigidly coupled and guided)

VALUE OF "L" (metres)

PISTON ROD DIAMETERS (m m)

| THRUST (kg) | 18 | 20 | 22 | 25 | 28 | 32 | 36 | 40 | 45 | 50 | 56 | 63 | 70 | 80 | 90 | 100 | 110 | 125 | 140 | 160 | 180 | 200 | 220 | 250 | 280 | 320 | 360 | | | |
|-------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 100 | 1.65 | 2.04 | 2.46 | 3.18 | 3.99 | 5.21 | 6.60 | | | | | | | | | | | | | | | | | | | | | w | | |
| 200 | 1.17 | 1.44 | 1.74 | 2.25 | 2.82 | 3.69 | 4.66 | 5.76 | 7.29 | | | | | | | | | | | | | | | | | | | | | |
| 300 | 0.95 | 1.18 | 1.42 | 1.86 | 2.30 | 3.01 | 3.81 | 4.70 | 5.95 | 7.35 | | | | | | | | | | | | | | | | | | | | |
| 400 | 0.82 | 1.02 | 1.23 | 1.59 | 2.00 | 2.61 | 3.30 | 4.07 | 5.15 | 6.36 | 7.98 | 10.10 | | | | | | | | | | | | | | | | | | |
| 500 | 0.74 | 0.91 | 1.30 | 1.42 | 1.78 | 2.33 | 2.95 | 3.64 | 4.61 | 5.69 | 7.14 | 9.03 | | | | | | | | | | | | | | | | | | |
| 600 | 0.67 | 0.83 | 1.00 | 1.30 | 1.63 | 2.13 | 2.69 | 3.32 | 4.21 | 5.19 | 6.52 | 8.25 | 10.18 | | | | | | | | | | | | | | | | | |
| 800 | 0.58 | 0.72 | 0.87 | 1.17 | 1.61 | 1.84 | 3.33 | 2.88 | 3.64 | 4.50 | 5.64 | 7.14 | 0.02 | | | | | | | | | | | | | | | | | |
| 1,000 | 0.52 | 0.64 | 0.78 | 1.00 | 1.26 | 1.65 | 2.09 | 2.58 | 3.26 | 4.02 | 5.05 | 6.39 | 7.89 | 10.30 | 13.04 | | | | | | | | | | | | | | | |
| 1,200 | 0.48 | 0.59 | 0.71 | 0.92 | 1.15 | 1.50 | 1.90 | 2.35 | 2.98 | 3.67 | 4.61 | 5.83 | 7.20 | 9.40 | 11.90 | | | | | | | | | | | | | | | |
| 1,400 | 0.44 | 0.54 | 0.66 | 0.85 | 1.07 | 1.39 | 1.76 | 2.18 | 2.75 | 3.40 | 4.27 | 5.40 | 6.67 | 8.71 | 11.02 | | | | | | | | | | | | | | | |
| 1,600 | 0.41 | 0.51 | 0.62 | 0.80 | 1.00 | 1.30 | 1.65 | 2.04 | 2.58 | 3.18 | 3.99 | 5.05 | 6.24 | 8.14 | 10.31 | | | | | | | | | | | | | | | |
| 1,800 | 0.39 | 0.48 | 0.58 | 0.75 | 0.94 | 1.23 | 1.55 | 1.92 | 2.43 | 3.00 | 3.76 | 4.76 | 5.88 | 7.68 | 9.72 | 12.00 | | | | | | | | | | | | | | |
| 2,000 | 0.37 | 0.46 | 0.55 | 0.71 | 0.89 | 1.17 | 1.47 | 1.82 | 2.30 | 2.85 | 3.57 | 4.52 | 5.58 | 7.28 | 9.22 | 11.38 | | | | | | | | | | | | | | |
| 2,200 | 0.35 | 0.43 | 0.53 | 0.68 | 0.85 | 1.11 | 1.41 | 1.74 | 2.20 | 2.71 | 3.40 | 4.31 | 5.32 | 6.95 | 8.79 | 10.85 | | | | | | | | | | | | | | |
| 2,500 | 0.33 | 0.41 | 0.49 | 0.64 | 0.80 | 1.04 | 1.32 | 1.63 | 2.06 | 2.55 | 3.19 | 4.04 | 4.99 | 6.52 | 8.25 | 10.18 | | | | | | | | | | | | | | |
| 3,000 | 0.30 | 0.37 | 0.45 | 0.58 | 0.73 | 0.95 | 1.20 | 1.49 | 1.88 | 2.32 | 2.91 | 3.69 | 4.55 | 5.95 | 7.53 | 9.29 | 11.24 | | | | | | | | | | | | | |
| 4,000 | | 0.32 | 0.39 | 0.50 | 0.63 | 0.82 | 1.04 | 1.29 | 1.63 | 2.01 | 2.52 | 3.19 | 3.94 | 5.15 | 6.52 | 8.05 | 9.74 | | | | | | | | | | | | | |
| 5,000 | | 0.29 | 0.35 | 0.45 | 0.56 | 0.74 | 0.93 | 1.15 | 1.46 | 1.80 | 2.26 | 2.86 | 3.53 | 4.61 | 5.83 | 7.20 | 8.71 | 11.25 | | | | | | | | | | | | |
| 6,000 | | | 0.32 | 0.41 | 0.52 | 0.67 | 0.85 | 1.05 | 1.33 | 1.64 | 2.06 | 2.61 | 3.22 | 4.21 | 5.32 | 6.57 | 7.95 | 10.27 | | | | | | | | | | | | |
| 7,000 | | | | 0.38 | 0.48 | 0.62 | 0.79 | 0.97 | 1.23 | 1.52 | 1.91 | 2.41 | 2.98 | 3.89 | 4.93 | 6.08 | 7.36 | 9.51 | 11.92 | | | | | | | | | | | |
| 8,000 | | | | 0.36 | 0.45 | 0.58 | 0.74 | 0.91 | 1.15 | 1.42 | 1.78 | 2.26 | 2.79 | 3.64 | 4.61 | 5.69 | 6.89 | 8.89 | 11.15 | | | | | | | | | | | |
| 9,000 | | | | 0.34 | 0.42 | 0.55 | 0.70 | 0.86 | 1.09 | 1.34 | 1.68 | 2.13 | 2.63 | 3.43 | 4.35 | 5.37 | 6.49 | 8.38 | 10.52 | | | | | | | | | | | |
| 10,000 | | | | 0.32 | 0.40 | 0.52 | 0.66 | 0.81 | 1.03 | 1.27 | 1.60 | 2.02 | 2.49 | 3.26 | 4.12 | 5.09 | 6.16 | 7.95 | 9.98 | | | | | | | | | | | |
| 12,000 | | | | | | | 0.60 | 0.74 | 0.94 | 1.16 | 1.46 | 1.84 | 2.28 | 2.92 | 3.76 | 4.65 | 5.62 | 7.26 | 9.11 | | | | | | | | | | | |
| 14,000 | | | | | | | 0.56 | 0.69 | 0.87 | 1.08 | 1.35 | 1.71 | 2.11 | 2.75 | 3.48 | 4.30 | 5.21 | 6.72 | 8.43 | | | | | | | | | | | |
| 18,000 | | | | | | | | | 0.77 | 0.95 | 1.19 | 1.51 | 1.86 | 2.43 | 3.07 | 3.79 | 4.59 | 5.93 | 7.44 | 9.71 | 12.25 | | | | | | | | | |
| 20,000 | | | | | | | | | 0.73 | 0.90 | 1.13 | 1.43 | 1.76 | 2.30 | 2.92 | 3.60 | 4.35 | 5.62 | 7.05 | 9.21 | 11.66 | | | | | | | | | |
| 25,000 | | | | | | | | | 0.65 | 0.80 | 1.01 | 1.28 | 1.58 | 2.06 | 2.61 | 3.22 | 3.90 | 5.03 | 6.31 | 8.24 | 10.42 | | | | | | | | | |
| 30,000 | | | | | | | | | | 0.70 | 0.92 | 1.17 | 1.44 | 1.88 | 2.38 | 2.94 | 3.56 | 4.59 | 5.76 | 7.52 | 9.52 | | | | | | | | | |
| 35,000 | | | | | | | | | | 0.68 | 0.85 | 1.08 | 1.33 | 1.74 | 2.20 | 2.72 | 3.29 | 4.25 | 5.33 | 6.96 | 8.82 | | | | | | | | | |
| 40,000 | | | | | | | | | | 0.64 | 0.80 | 1.01 | 1.25 | 1.63 | 2.06 | 2.54 | 3.08 | 3.98 | 4.99 | 6.52 | 8.25 | 10.18 | 12.32 | 15.91 | | | | | | |
| 45,000 | | | | | | | | | | 0.60 | 0.75 | 0.95 | 1.18 | 1.54 | 1.94 | 2.40 | 2.90 | 3.75 | 4.70 | 6.14 | 7.77 | 9.60 | 11.61 | 15.00 | | | | | | |
| 50,000 | | | | | | | | | | | 0.90 | 1.12 | 1.46 | 1.84 | 2.28 | 2.75 | 3.56 | 4.46 | 5.83 | 7.38 | 9.11 | 11.02 | 14.23 | | | | | | | |
| 60,000 | | | | | | | | | | | 0.82 | 1.02 | 1.33 | 1.68 | 2.08 | 2.51 | 3.25 | 4.07 | 5.32 | 6.73 | 8.31 | 10.06 | 12.99 | | | | | | | |
| 80,000 | | | | | | | | | | | | 1.15 | 1.46 | 1.80 | 2.18 | 2.81 | 3.53 | 4.61 | 5.83 | 7.20 | 8.71 | 11.25 | 14.11 | | | | | | | |
| 100,000 | | | | | | | | | | | | | | | | 1.61 | 1.95 | 2.51 | 3.15 | 4.12 | 5.22 | 6.44 | 7.29 | 10.06 | 12.62 | | | | | |
| 120,000 | | | | | | | | | | | | | | | | 1.47 | 1.78 | 2.30 | 2.88 | 3.76 | 4.76 | 5.88 | 7.11 | 9.18 | 11.52 | | | | | |
| 140,000 | | | | | | | | | | | | | | | | | 2.13 | 2.67 | 3.48 | 4.41 | 5.44 | 6.58 | 8.50 | 10.67 | | | | | | |
| 160,000 | | | | | | | | | | | | | | | | | | 1.99 | 2.49 | 3.26 | 4.12 | 5.09 | 6.16 | 7.95 | 9.98 | | | | | |
| 200,000 | | | | | | | | | | | | | | | | | | | 2.23 | 2.91 | 3.69 | 4.55 | 5.51 | 7.11 | 8.92 | 11.65 | | | | |
| 250,000 | | | | | | | | | | | | | | | | | | | | | 3.30 | 4.07 | 4.93 | 6.36 | 7.98 | 10.42 | 13.19 | | | |
| 300,000 | | | | | | | | | | | | | | | | | | | | | | 3.01 | 3.72 | 4.50 | 5.81 | 7.29 | 9.52 | 12.04 | | |
| 350,000 | | | | | | | | | | | | | | | | | | | | | | | 3.44 | 4.16 | 5.38 | 6.75 | 8.81 | 11.15 | | |
| 400,000 | | | | | | | | | | | | | | | | | | | | | | | | 3.22 | 3.90 | 5.03 | 6.31 | 8.24 | 10.43 | |
| 450,000 | | | | | | | | | | | | | | | | | | | | | | | | | 3.67 | 4.74 | 5.95 | 7.77 | 9.83 | |
| 500,000 | | | | | | | | | | | | | | | | | | | | | | | | | | 3.48 | 4.50 | 5.64 | 7.37 | 9.33 |

ORDERING INFORMATION

1- **Quality**

2- **Series**

3- **Mounting Style**

4- **Bore Size**

5- **Stroke Length**

6- **Cushions** (i.e. non-cushioned, cushioned head end, cushioned rear end or cushioned both ends.)

7- **Rod Diameter**

a- Standard (as shown in this catalogue) will be furnished unless otherwise specified.

b- For optional rod specs specify desired piston rod diameter.

8- **Rod End Thread**

Male rod ends (as shown in this catalogue) are furnished unless otherwise specified. Female rod ends are available at no extra cost.

9- **Trunnion Location**

10- **Stop Tube** (When required)

11- **Special Operating Conditions** (Such as very high or very low temperatures, corrosive atmosphere, etc.)

12- **Accessories**

a- Rod Eyes

b- Clevises

c- Brackets

d- Pins

The styles of these accessories must be specified by code letters.

13- **Replacement Parts**

To insure correct identification and prompt service, please specify cylinder serial number.

SPECIAL CYLINDERS

Pneumatic & Hydraulic Co. has over the past years gained a reputation of being able to produce special designs to meet specific requirements. Below is a list of the alternative features included in P & H cylinder designs:

- (a) Special mounting styles;
 - (b) Higher pressure rating;
 - (c) Larger cylinder bore sizes; (up to 1300 mm bore size already treated by P & H);
 - (d) Alternative rod sizes;
 - (e) Special protection on piston rods;
 - (f) Porting arrangements;
 - (g) Cushion extension;
 - (h) Alternative sealing arrangements.
-

GENERAL

A- All cylinders manufactured according to the specifications given in this catalogue are of the heavy-duty mill type.

B- The inside of all cylinders is coated with oil and ports are plugged prior to shipment to protect the bore from rust and foreign materials.

C- Name plates are furnished for all cylinders showing bore, stroke working pressure, model and serial numbers.

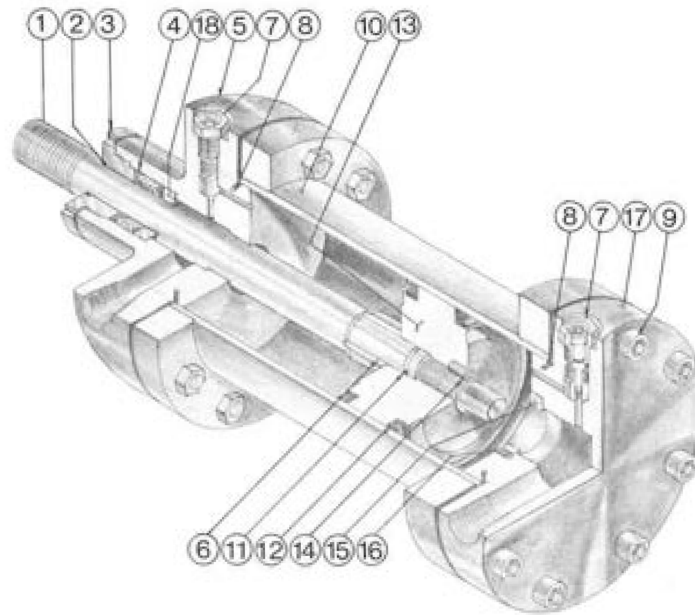
D- When extreme strokes are required, hollow rods may be used. (Consult P & H for additional information).

WARRANTY

Pneumatic & Hydraulic Company Ltd. warrants its product to be free of defects in workmanship and material for a period of one year from the date of shipment. During the guarantee period our obligation under this warranty shall be limited to the repair or replacement of any defective part or parts f.o.b. factory, St. Eustache, Quebec, Canada, subject to our inspection. Any purchaser shall give written notice of such defect. Thus warranty shall not apply to damage in transit, accident, alteration, contingent liability, labour or costs for removal and installation of the part or parts.

MILL TYPE METRIC AIR CYLINDERS SERIES MA 30

10 Bar Pressure



PART LIST

| ITEM | QTY. | DESCRIPTION |
|------|----------|-----------------------------------|
| 1 | 1 only | Cylinder Rod (chrome plated) |
| 2 | *1 only | Rod Wiper |
| 3 | **1 only | Gland Bushing |
| 4 | *1 set | Gland Seal - Chevron "V" Ring |
| 5 | 1 only | Front Head |
| 6 | 1 only | Front Cushion |
| 7 | 2 only | Adjustable Cushion Assembly |
| 8 | *2 only | Head Static Seal - "O" Ring |
| 9 | 2 sets | Head Securing Cap Screws and Nuts |

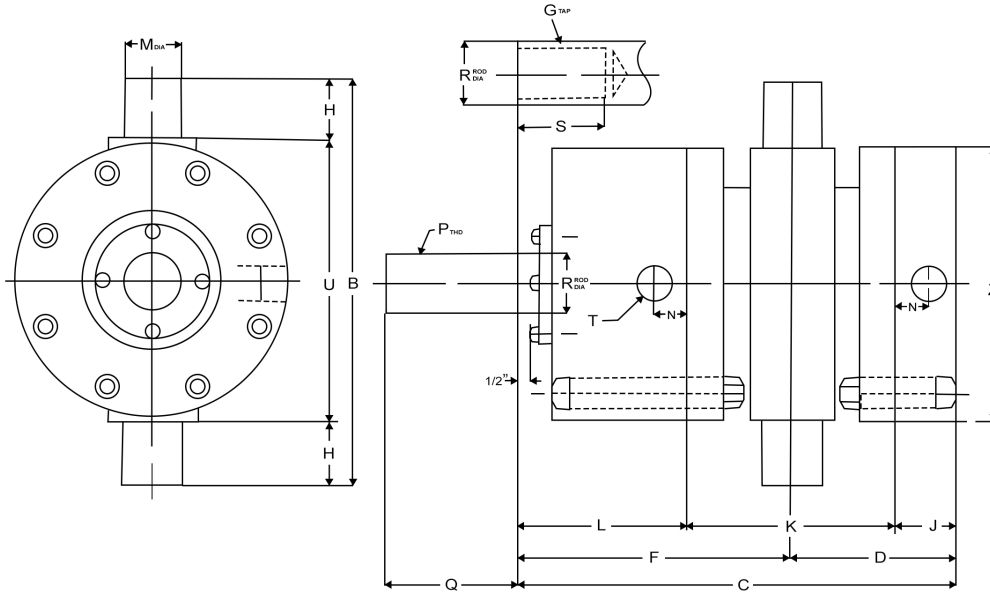
| ITEM | QTY. | DESCRIPTION |
|------|---------|---------------------------------|
| 10 | 1 only | Cylinder Barrel Assembly |
| 11 | *1 only | Piston Rod Seal - "O" Ring |
| 12 | *2 only | Piston Dynamic Seal - "U" Rings |
| 13 | 1 only | Piston |
| 14 | 1 only | Piston Securing Screw |
| 15 | 1 only | Rear Cushion |
| 16 | 2 only | Rear Cushion Securing Screw |
| 17 | 1 only | Rear Head |
| 18 | 1 only | Lower Gland Bearing |

* Spare Parts
** Optional Spare Parts

AIR CYLINDERS SERIES MA 30

10 Bar Pressure

Trunnion Mtg.

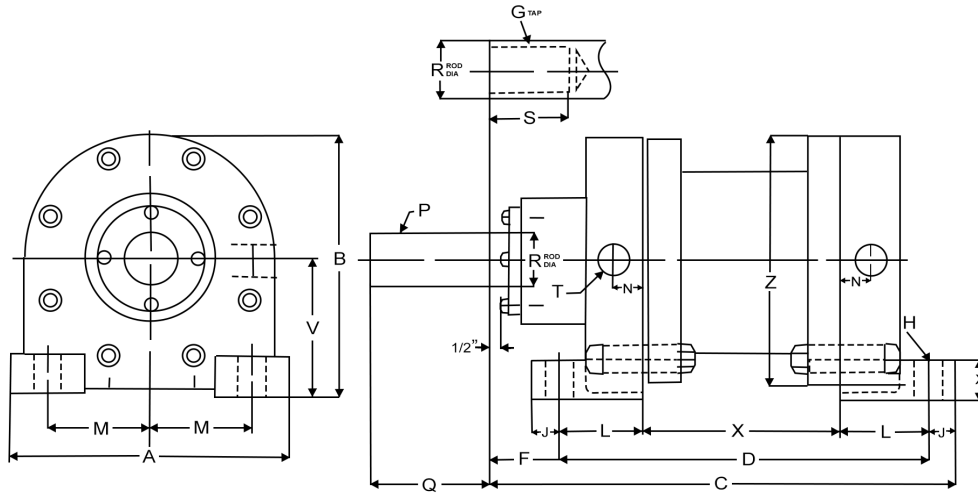


| MODEL NO. | BORE (mm) | B | C | D | F | G=P | H | J | K | L | M | N | Q _{st} =S _{st} | Q _g =S _g | R | T | U | Z _{max.} |
|-------------------|-----------|-----|-----|-----|-----|-------------|----|----|-----|-----|----|----|----------------------------------|--------------------------------|----|------|-----|-------------------|
| MA - 01004030 - T | 40 | 122 | 145 | 50 | 112 | M 12 x 1.25 | 16 | 25 | 45 | 75 | 20 | 12 | 16 | 24 | 18 | ¼" | 90 | 90 |
| MA - 01005030 - T | 50 | 145 | 155 | 53 | 117 | M 16 x 1.5 | 20 | 25 | 50 | 80 | 20 | 12 | 22 | 32 | 22 | ¼" | 105 | 110 |
| MA - 01006330 - T | 63 | 170 | 170 | 66 | 130 | M 16 x 1.5 | 25 | 38 | 50 | 82 | 25 | 19 | 22 | 32 | 22 | ⅜" | 120 | 125 |
| MA - 01008030 - T | 80 | 197 | 190 | 66 | 141 | M 20 x 1.5 | 32 | 38 | 55 | 97 | 40 | 19 | 28 | 40 | 28 | ⅜" | 135 | 150 |
| MA - 01010030 - T | 100 | 222 | 205 | 73 | 165 | M 20 x 1.5 | 32 | 38 | 60 | 107 | 40 | 19 | 28 | 40 | 28 | ½" | 160 | 165 |
| MA - 01012530 - T | 125 | 257 | 245 | 85 | 173 | M 24 x 2 | 32 | 50 | 70 | 125 | 40 | 25 | 32 | 48 | 32 | ½" | 195 | 203 |
| MA - 01016030 - T | 160 | 302 | 280 | 90 | 190 | M 36 x 2 | 32 | 50 | 80 | 150 | 40 | 25 | 50 | 75 | 50 | ¾" | 240 | 240 |
| MA - 01020030 - T | 200 | 395 | 300 | 105 | 196 | M 36 x 2 | 50 | 63 | 85 | 152 | 63 | 30 | 50 | 75 | 50 | ¾" | 295 | 300 |
| MA - 01025030 - T | 250 | 435 | 330 | 118 | 212 | M 42 x 2 | 50 | 63 | 110 | 157 | 63 | 30 | 56 | 84 | 56 | 1" | 335 | 330 |
| MA - 01032030 - T | 320 | 510 | 370 | 134 | 236 | M 48 x 2 | 50 | 63 | 142 | 165 | 63 | 30 | 63 | 96 | 63 | 1" | 410 | 400 |
| MA - 01040030 - T | 400 | 571 | 393 | 146 | 247 | M 56 x 2 | 63 | 63 | 165 | 165 | 80 | 30 | 75 | 112 | 80 | 1" | 545 | 535 |
| MA - 01050030 - T | 500 | 661 | 408 | 146 | 262 | M 64 x 3 | 63 | 63 | 165 | 180 | 80 | 30 | 85 | 128 | 90 | 1-¼" | 635 | 625 |

AIR CYLINDERS SERIES MA 30

10 Bar Pressure

Base Mtg.

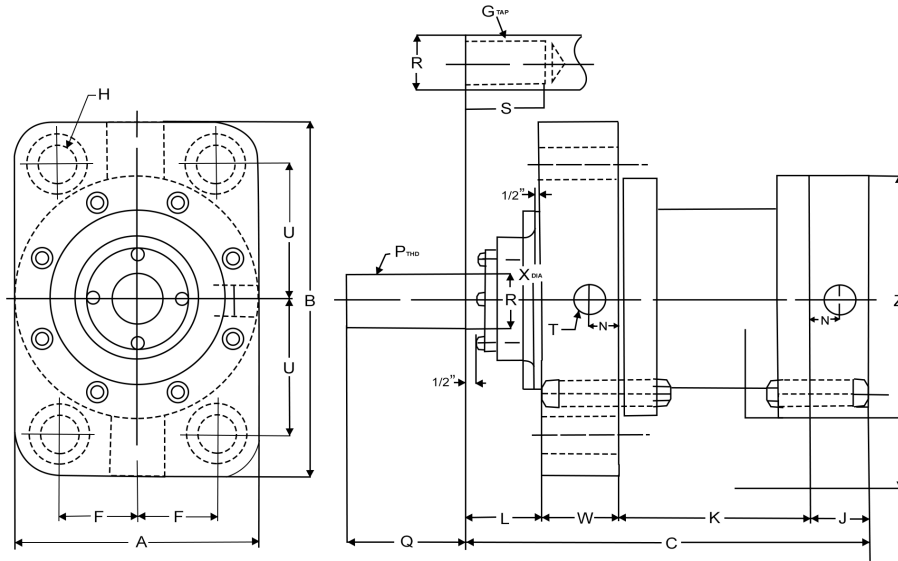


| MODEL NO. | BORE (mm) | A | B | C | D | F | G=P | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | V | X | Z _{max} |
|-------------------|-----------|-----|-----|-----|-----|----|-------------|----|----|-----|-----|-----|----|----------------------------------|----------------------------------|----|------|-----|----|------------------|
| MA - 01004030 - B | 40 | 110 | 102 | 163 | 113 | 41 | M 12 x 1.25 | 9 | 9 | 45 | 34 | 45 | 12 | 16 | 24 | 18 | ¼" | 57 | 14 | 90 |
| MA - 01005030 - B | 50 | 130 | 122 | 175 | 120 | 46 | M 16 x 1.5 | 9 | 9 | 50 | 35 | 51 | 12 | 22 | 32 | 22 | ¼" | 67 | 14 | 110 |
| MA - 01006330 - B | 63 | 145 | 137 | 190 | 146 | 35 | M 16 x 1.5 | 9 | 9 | 50 | 48 | 59 | 19 | 22 | 32 | 22 | ⅜" | 74 | 16 | 125 |
| MA - 01008030 - B | 80 | 170 | 162 | 215 | 156 | 47 | M 20 x 1.5 | 12 | 12 | 55 | 50 | 67 | 19 | 28 | 40 | 28 | ⅜" | 87 | 20 | 150 |
| MA - 01010030 - B | 100 | 185 | 177 | 230 | 162 | 54 | M 20 x 1.5 | 14 | 14 | 60 | 53 | 75 | 19 | 28 | 40 | 28 | ½" | 94 | 20 | 165 |
| MA - 01012530 - B | 125 | 223 | 215 | 270 | 188 | 66 | M 24 x 2 | 16 | 16 | 70 | 59 | 90 | 25 | 32 | 48 | 32 | ½" | 113 | 30 | 203 |
| MA - 01016030 - B | 160 | 260 | 252 | 320 | 224 | 78 | M 36 x 2 | 18 | 18 | 80 | 72 | 105 | 25 | 50 | 75 | 50 | ¾" | 132 | 40 | 240 |
| MA - 01020030 - B | 200 | 320 | 312 | 345 | 255 | 68 | M 36 x 2 | 22 | 22 | 85 | 85 | 130 | 30 | 50 | 75 | 50 | ¾" | 162 | 46 | 300 |
| MA - 01025030 - B | 250 | 350 | 354 | 380 | 284 | 70 | M 42 x 2 | 26 | 26 | 110 | 87 | 145 | 30 | 56 | 84 | 56 | 1" | 189 | 46 | 330 |
| MA - 01032030 - B | 320 | 420 | 424 | 425 | 312 | 80 | M 48 x 2 | 33 | 33 | 142 | 85 | 180 | 30 | 63 | 96 | 63 | 1" | 224 | 46 | 400 |
| MA - 01040030 - B | 400 | 555 | 559 | 459 | 357 | 69 | M 56 x 2 | 33 | 33 | 165 | 96 | 245 | 30 | 75 | 112 | 80 | 1" | 292 | 50 | 535 |
| MA - 01050030 - B | 500 | 645 | 649 | 488 | 371 | 77 | M 64 x 3 | 40 | 40 | 165 | 103 | 283 | 30 | 85 | 128 | 90 | 1-¼" | 337 | 50 | 625 |

AIR CYLINDERS SERIES MA 30

10 Bar Pressure

Front Flange Mtg.

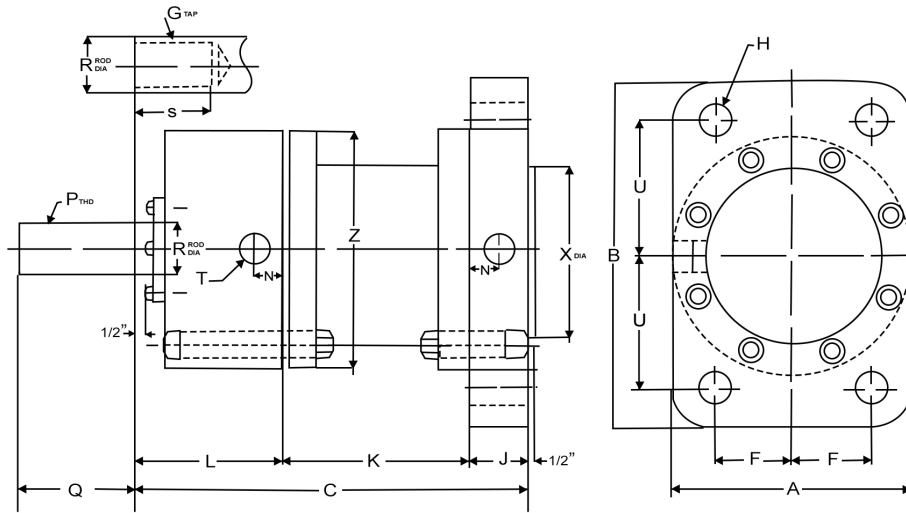


| MODEL NO. | BORE (mm) | A | B | C | F | G=P | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | U | W | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|-------------|----|----|-----|-----|----|----------------------------------|----------------------------------|----|------|-----|----|----|------------------|
| MA - 01004030 - FF | 40 | 90 | 154 | 145 | 26 | M 12 x 1.25 | 14 | 25 | 45 | 37 | 12 | 16 | 24 | 18 | ¼" | 58 | 38 | 14 | 90 |
| MA - 01005030 - FF | 50 | 110 | 168 | 155 | 36 | M 16 x 1.5 | 14 | 25 | 50 | 36 | 12 | 22 | 32 | 22 | ¼" | 65 | 44 | 14 | 110 |
| MA - 01006330 - FF | 63 | 125 | 176 | 170 | 44 | M 16 x 1.5 | 14 | 38 | 50 | 38 | 19 | 22 | 32 | 22 | ⅜" | 69 | 44 | 16 | 125 |
| MA - 01008030 - FF | 80 | 150 | 228 | 190 | 49 | M 20 x 1.5 | 22 | 38 | 55 | 53 | 19 | 28 | 40 | 28 | ⅜" | 88 | 44 | 20 | 150 |
| MA - 01010030 - FF | 100 | 165 | 236 | 205 | 57 | M 20 x 1.5 | 22 | 38 | 60 | 63 | 19 | 28 | 40 | 28 | ½" | 92 | 44 | 20 | 165 |
| MA - 01012530 - FF | 125 | 203 | 320 | 245 | 65 | M 24 x 2 | 26 | 50 | 70 | 75 | 25 | 32 | 48 | 32 | ½" | 123 | 50 | 30 | 203 |
| MA - 01016030 - FF | 160 | 240 | 374 | 280 | 77 | M 36 x 2 | 33 | 50 | 80 | 100 | 25 | 50 | 75 | 50 | ¾" | 144 | 50 | 40 | 240 |
| MA - 01020030 - FF | 200 | 300 | 446 | 300 | 100 | M 36 x 2 | 40 | 63 | 85 | 95 | 30 | 50 | 75 | 50 | ¾" | 173 | 57 | 46 | 300 |
| MA - 01025030 - FF | 250 | 330 | 452 | 330 | 115 | M 42 x 2 | 40 | 63 | 110 | 100 | 30 | 56 | 84 | 56 | 1" | 176 | 57 | 46 | 330 |
| MA - 01032030 - FF | 320 | 400 | 500 | 370 | 150 | M 48 x 2 | 40 | 63 | 142 | 108 | 30 | 63 | 96 | 63 | 1" | 200 | 57 | 46 | 400 |
| MA - 01040030 - FF | 400 | 535 | 602 | 393 | 212 | M 56 x 2 | 46 | 63 | 165 | 108 | 30 | 75 | 112 | 80 | 1" | 245 | 57 | 50 | 535 |
| MA - 01050030 - FF | 500 | 625 | 682 | 408 | 250 | M 64 x 3 | 52 | 63 | 165 | 117 | 30 | 85 | 128 | 90 | 1-¼" | 279 | 63 | 50 | 625 |

AIR CYLINDERS SERIES MA 30

10 Bar Pressure

Rear Flange Mtg.

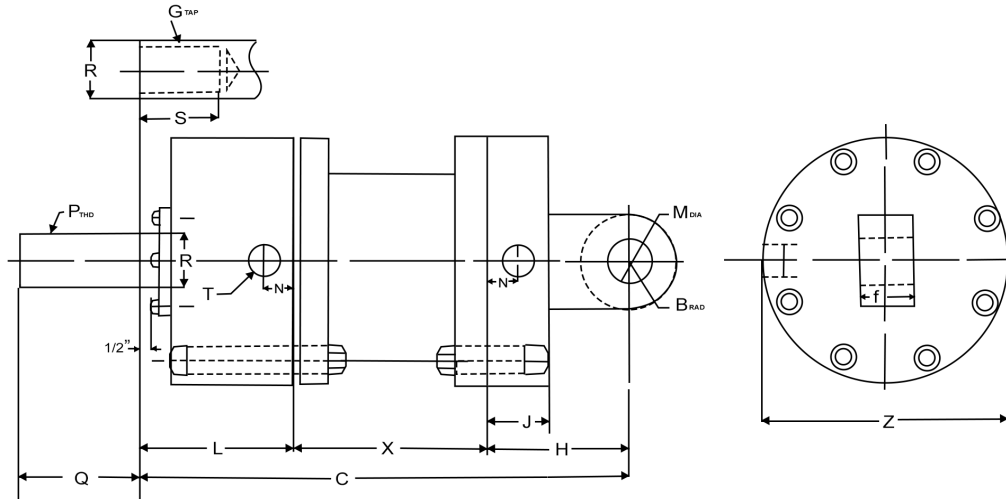


| MODEL NO. | BORE (mm) | A | B | C | F | G=P | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | U | X | Z _{max.} |
|--------------------|-----------|-----|-----|-----|-----|-------------|----|----|-----|-----|----|----------------------------------|----------------------------------|----|------|-----|----|-------------------|
| MA - 01004030 - RF | 40 | 90 | 154 | 145 | 26 | M 12 x 1.25 | 14 | 25 | 45 | 75 | 12 | 16 | 24 | 18 | ¼" | 58 | 14 | 90 |
| MA - 01005030 - RF | 50 | 110 | 168 | 155 | 36 | M 16 x 1.5 | 14 | 25 | 50 | 80 | 12 | 22 | 32 | 22 | ¼" | 65 | 14 | 110 |
| MA - 01006330 - RF | 63 | 125 | 176 | 170 | 44 | M 16 x 1.5 | 14 | 38 | 50 | 82 | 19 | 22 | 32 | 22 | ⅜" | 69 | 16 | 125 |
| MA - 01008030 - RF | 80 | 150 | 228 | 190 | 49 | M 20 x 1.5 | 22 | 38 | 55 | 97 | 19 | 28 | 40 | 28 | ⅜" | 88 | 20 | 150 |
| MA - 01010030 - RF | 100 | 165 | 236 | 205 | 57 | M 20 x 1.5 | 22 | 38 | 60 | 107 | 19 | 28 | 40 | 28 | ½" | 92 | 20 | 165 |
| MA - 01012530 - RF | 125 | 203 | 320 | 245 | 65 | M 24 x 2 | 26 | 50 | 70 | 125 | 25 | 32 | 48 | 32 | ½" | 123 | 30 | 203 |
| MA - 01016030 - RF | 160 | 240 | 374 | 280 | 77 | M 36 x 2 | 33 | 50 | 80 | 150 | 25 | 50 | 75 | 50 | ¾" | 144 | 40 | 240 |
| MA - 01020030 - RF | 200 | 300 | 446 | 300 | 100 | M 36 x 2 | 40 | 63 | 85 | 152 | 30 | 50 | 75 | 50 | ¾" | 173 | 46 | 300 |
| MA - 01025030 - RF | 250 | 330 | 452 | 330 | 115 | M 42 x 2 | 40 | 63 | 110 | 157 | 30 | 56 | 84 | 56 | 1" | 176 | 46 | 330 |
| MA - 01032030 - RF | 320 | 400 | 500 | 370 | 150 | M 48 x 2 | 40 | 63 | 142 | 165 | 30 | 63 | 96 | 63 | 1" | 200 | 46 | 400 |
| MA - 01040030 - RF | 400 | 535 | 602 | 393 | 212 | M 56 x 2 | 46 | 63 | 165 | 165 | 30 | 75 | 112 | 80 | 1" | 245 | 50 | 535 |
| MA - 01050030 - RF | 500 | 625 | 682 | 408 | 250 | M 64 x 3 | 52 | 63 | 165 | 180 | 30 | 85 | 128 | 90 | 1-¼" | 279 | 50 | 625 |

AIR CYLINDERS SERIES MA 30

10 Bar Pressure

Male Clevis Mtg.

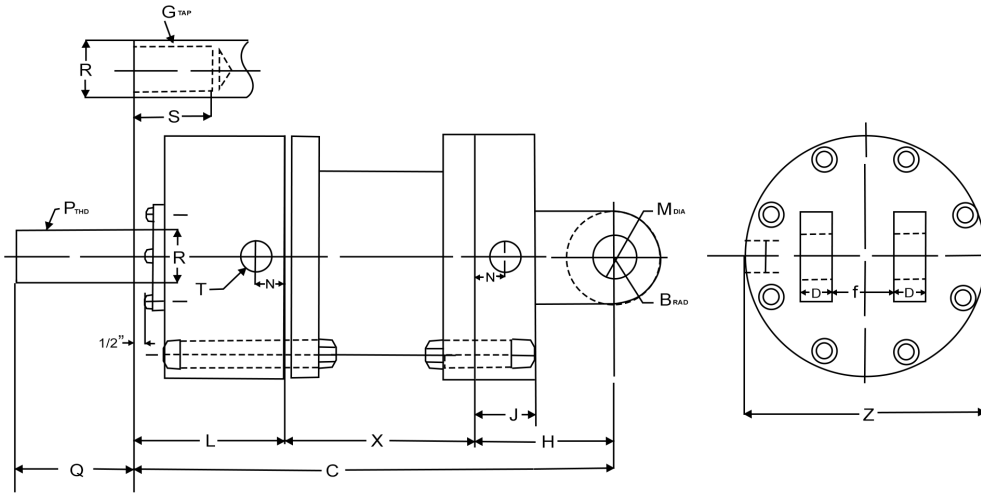


| MODEL NO. | BORE (mm) | B | C | F | G=P | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | Z _{max.} |
|--------------------|-----------|----|-----|----|-------------|-----|----|-----|-----|----|----|----------------------------------|----------------------------------|----|------|-------------------|
| MA - 01004030 - MC | 40 | 20 | 160 | 16 | M 12 x 1.25 | 40 | 25 | 45 | 75 | 12 | 12 | 16 | 24 | 18 | ¼" | 90 |
| MA - 01005030 - MC | 50 | 25 | 170 | 20 | M 16 x 1.5 | 40 | 25 | 50 | 80 | 12 | 12 | 22 | 32 | 22 | ¼" | 110 |
| MA - 01006330 - MC | 63 | 30 | 190 | 25 | M 16 x 1.5 | 58 | 38 | 50 | 82 | 16 | 19 | 22 | 32 | 22 | ⅜" | 125 |
| MA - 01008030 - MC | 80 | 40 | 210 | 32 | M 20 x 1.5 | 58 | 38 | 55 | 97 | 16 | 19 | 28 | 40 | 28 | ⅜" | 150 |
| MA - 01010030 - MC | 100 | 40 | 230 | 32 | M 20 x 1.5 | 63 | 38 | 60 | 107 | 20 | 19 | 28 | 40 | 28 | ½" | 165 |
| MA - 01012530 - MC | 125 | 45 | 275 | 40 | M 24 x 2 | 80 | 50 | 70 | 125 | 25 | 25 | 32 | 48 | 32 | ½" | 203 |
| MA - 01016030 - MC | 160 | 59 | 315 | 50 | M 36 x 2 | 85 | 50 | 80 | 150 | 30 | 25 | 50 | 75 | 50 | ¾" | 240 |
| MA - 01020030 - MC | 200 | 59 | 335 | 50 | M 36 x 2 | 98 | 63 | 85 | 152 | 30 | 30 | 50 | 75 | 50 | ¾" | 300 |
| MA - 01025030 - MC | 250 | 63 | 375 | 50 | M 42 x 2 | 108 | 63 | 110 | 157 | 40 | 30 | 56 | 84 | 56 | 1" | 330 |
| MA - 01032030 - MC | 320 | 63 | 420 | 50 | M 48 x 2 | 113 | 63 | 142 | 165 | 45 | 30 | 63 | 96 | 63 | 1" | 400 |
| MA - 01040030 - MC | 400 | 90 | 453 | 80 | M 56 x 2 | 123 | 63 | 165 | 165 | 50 | 30 | 75 | 112 | 80 | 1" | 535 |
| MA - 01050030 - MC | 500 | 90 | 488 | 80 | M 64 x 3 | 143 | 63 | 165 | 180 | 80 | 30 | 85 | 128 | 90 | 1-¼" | 625 |

AIR CYLINDERS SERIES MA 30

10 Bar Pressure

Female Clevis Mtg.

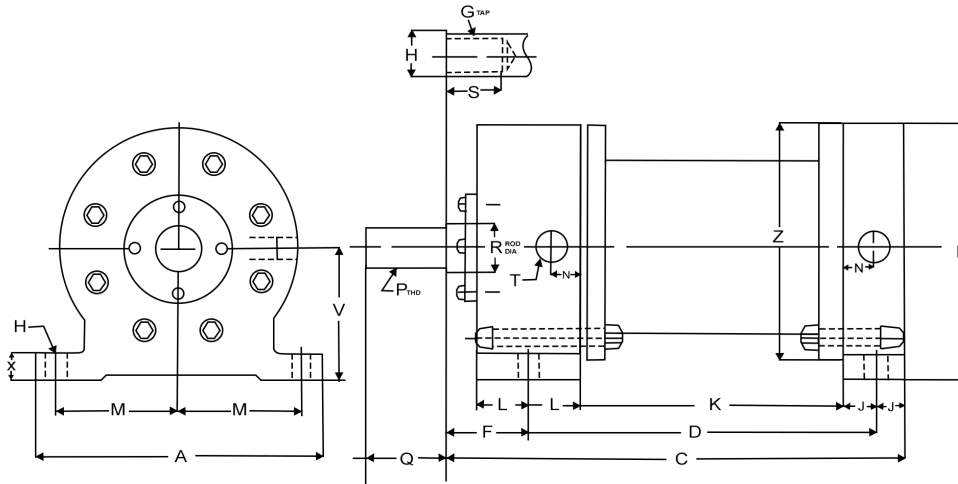


| MODEL NO. | BORE (mm) | B | C | D | F | G=P | H | J | K | L | M | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | Z _{max.} |
|--------------------|-----------|----|-----|----|----|-------------|-----|----|-----|-----|----|----|-----------------|-----------------|----|------|-------------------|
| MA - 01004030 - FC | 40 | 15 | 160 | 20 | 17 | M 12 x 1.25 | 40 | 25 | 45 | 75 | 12 | 12 | 16 | 24 | 18 | ¼" | 90 |
| MA - 01005030 - FC | 50 | 15 | 170 | 20 | 21 | M 16 x 1.5 | 40 | 25 | 50 | 80 | 12 | 12 | 22 | 32 | 22 | ¼" | 110 |
| MA - 01006330 - FC | 63 | 18 | 190 | 20 | 26 | M 16 x 1.5 | 58 | 38 | 50 | 82 | 16 | 19 | 22 | 32 | 22 | ⅜" | 125 |
| MA - 01008030 - FC | 80 | 18 | 210 | 25 | 33 | M 20 x 1.5 | 58 | 38 | 55 | 97 | 16 | 19 | 28 | 40 | 28 | ⅜" | 150 |
| MA - 01010030 - FC | 100 | 20 | 230 | 25 | 33 | M 20 x 1.5 | 63 | 38 | 60 | 107 | 20 | 19 | 28 | 40 | 28 | ½" | 165 |
| MA - 01012530 - FC | 125 | 25 | 275 | 30 | 41 | M 24 x 2 | 80 | 50 | 70 | 125 | 25 | 25 | 32 | 48 | 32 | ½" | 203 |
| MA - 01016030 - FC | 160 | 32 | 315 | 35 | 51 | M 36 x 2 | 85 | 50 | 80 | 150 | 30 | 25 | 50 | 75 | 50 | ¾" | 240 |
| MA - 01020030 - FC | 200 | 32 | 335 | 35 | 51 | M 36 x 2 | 98 | 63 | 85 | 152 | 30 | 30 | 50 | 75 | 50 | ¾" | 300 |
| MA - 01025030 - FC | 250 | 40 | 375 | 35 | 51 | M 42 x 2 | 108 | 63 | 110 | 157 | 40 | 30 | 56 | 84 | 56 | 1" | 330 |
| MA - 01032030 - FC | 320 | 47 | 420 | 35 | 51 | M 48 x 2 | 113 | 63 | 142 | 165 | 45 | 30 | 63 | 96 | 63 | 1" | 400 |
| MA - 01040030 - FC | 400 | 59 | 453 | 45 | 81 | M 56 x 2 | 123 | 63 | 165 | 165 | 50 | 30 | 75 | 112 | 80 | 1" | 535 |
| MA - 01050030 - FC | 500 | 90 | 488 | 45 | 81 | M 64 x 3 | 143 | 63 | 165 | 180 | 80 | 30 | 85 | 128 | 90 | 1-¼" | 625 |

AIR CYLINDERS SERIES MA 30

10 Bar Pressure

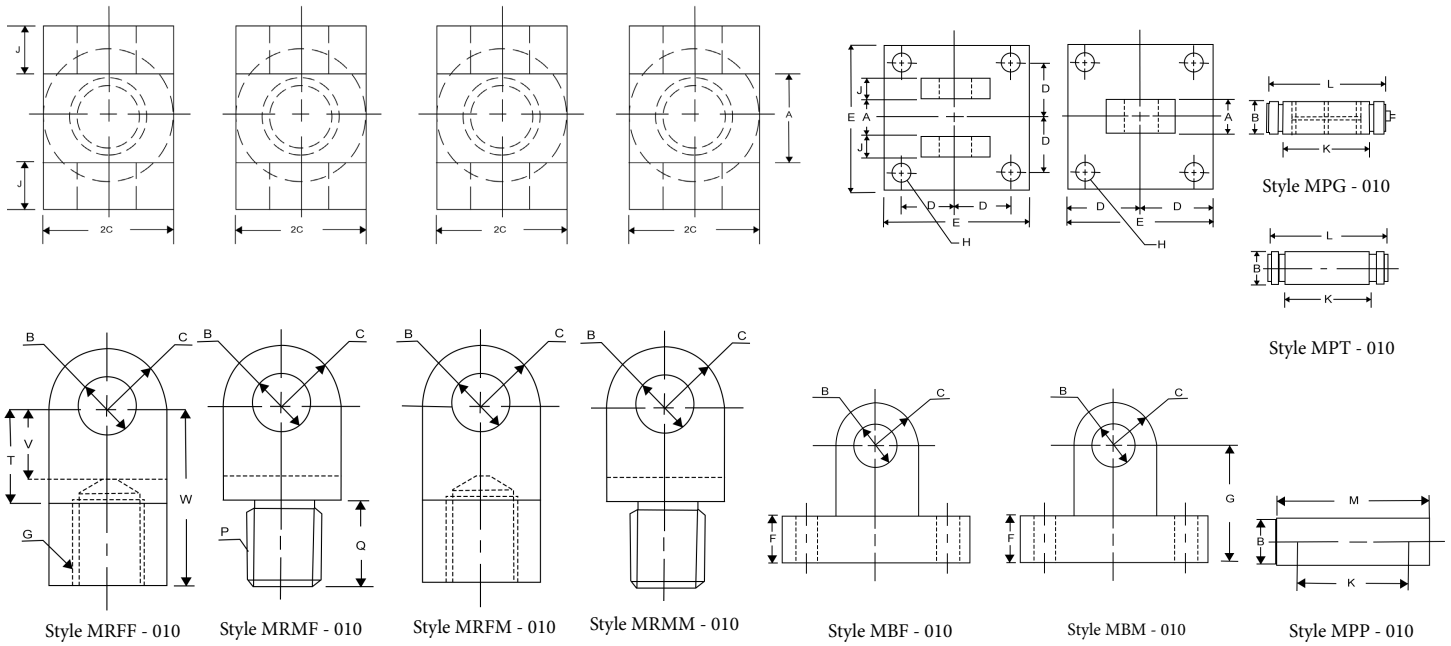
Side Log Mtg.



| MODEL NO. | BORE (mm) | A | B | C | D | F | G=P | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | V | X | Z _{max.} |
|--------------------|-----------|-----|-----|-----|-----|-----|-------------|----|----|-----|----|-----|----|----------------------------------|----------------------------------|----|------|-----|----|-------------------|
| MA - 01004030 - SL | 40 | 120 | 97 | 145 | 82 | 50 | M 12 x 1.25 | 9 | 13 | 45 | 25 | 51 | 12 | 16 | 24 | 18 | ¼" | 57 | 14 | 90 |
| MA - 01005030 - SL | 50 | 130 | 117 | 155 | 89 | 53 | M 16 x 1.5 | 9 | 13 | 50 | 26 | 56 | 12 | 22 | 32 | 22 | ¼" | 67 | 14 | 110 |
| MA - 01006330 - SL | 63 | 150 | 134 | 170 | 95 | 56 | M 16 x 1.5 | 9 | 19 | 50 | 26 | 66 | 19 | 22 | 32 | 22 | ⅜" | 74 | 16 | 125 |
| MA - 01008030 - SL | 80 | 184 | 157 | 190 | 108 | 63 | M 20 x 1.5 | 12 | 19 | 55 | 34 | 80 | 19 | 28 | 40 | 28 | ⅜" | 87 | 20 | 150 |
| MA - 01010030 - SL | 100 | 204 | 172 | 205 | 117 | 69 | M 20 x 1.5 | 14 | 19 | 60 | 38 | 88 | 19 | 28 | 40 | 28 | ½" | 94 | 20 | 165 |
| MA - 01012530 - SL | 125 | 236 | 207 | 245 | 142 | 78 | M 24 x 2 | 16 | 25 | 70 | 47 | 102 | 25 | 32 | 48 | 32 | ½" | 113 | 30 | 203 |
| MA - 01016030 - SL | 160 | 312 | 254 | 280 | 160 | 95 | M 36 x 2 | 18 | 25 | 80 | 55 | 138 | 25 | 50 | 75 | 50 | ¾" | 132 | 40 | 240 |
| MA - 01020030 - SL | 200 | 336 | 314 | 300 | 172 | 96 | M 36 x 2 | 22 | 32 | 85 | 56 | 146 | 30 | 50 | 75 | 50 | ¾" | 162 | 46 | 300 |
| MA - 01025030 - SL | 250 | 384 | 356 | 330 | 198 | 100 | M 42 x 2 | 26 | 32 | 110 | 56 | 166 | 30 | 56 | 84 | 56 | 1" | 189 | 46 | 330 |
| MA - 01032030 - SL | 320 | 478 | 426 | 370 | 132 | 106 | M 48 x 2 | 33 | 32 | 142 | 58 | 206 | 30 | 63 | 96 | 63 | 1" | 224 | 46 | 400 |
| MA - 01040030 - SL | 400 | 592 | 559 | 393 | 255 | 106 | M 56 x 2 | 33 | 32 | 165 | 58 | 263 | 30 | 75 | 112 | 80 | 1" | 292 | 50 | 535 |
| MA - 01050030 - SL | 500 | 722 | 649 | 408 | 262 | 114 | M 64 x 3 | 40 | 32 | 165 | 65 | 321 | 30 | 85 | 128 | 90 | 1-¼" | 337 | 50 | 625 |

AIR CYLINDERS SERIES MA 30

10 Bar Pressure

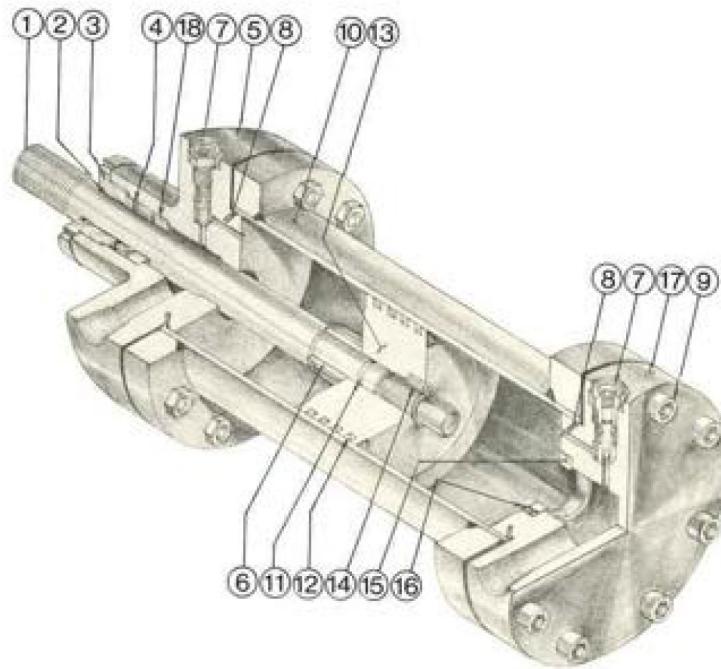


| BORE (mm) | A | B | C | G=P | J | Q=S | T | U | V | W |
|-----------|----|----|----|-------------|----|-----|-----|-----|-----|-----|
| 40 | 16 | 16 | 20 | M 8 x 1.25 | 20 | 12 | 35 | 56 | 25 | 47 |
| 50 | 20 | 20 | 25 | M 8 x 1.25 | 20 | 12 | 45 | 60 | 32 | 57 |
| 63 | 25 | 25 | 30 | M 8 x 1.25 | 20 | 12 | 50 | 65 | 40 | 62 |
| 80 | 32 | 32 | 40 | M 10 x 1.25 | 25 | 14 | 55 | 82 | 45 | 69 |
| 100 | 32 | 32 | 40 | M 12 x 1.25 | 25 | 16 | 60 | 82 | 50 | 76 |
| 125 | 40 | 40 | 45 | M 14 x 1.5 | 30 | 18 | 70 | 100 | 60 | 88 |
| 160 | 50 | 50 | 59 | M 18 x 1.5 | 35 | 25 | 85 | 120 | 75 | 110 |
| 200 | 50 | 50 | 59 | M 20 x 1.5 | 35 | 28 | 100 | 120 | 85 | 128 |
| 250 | 50 | 50 | 63 | M 27 x 2 | 35 | 36 | 115 | 120 | 100 | 156 |
| 320 | 50 | 50 | 63 | M 33 x 2 | 35 | 45 | 130 | 120 | 115 | 175 |

| BORE (mm) | A | B | C | D | E | F | G | H | J | K | L | M |
|-----------|----|----|----|----|-----|----|-----|----|----|-----|-----|-----|
| 40 | 16 | 16 | 20 | 45 | 118 | 19 | 44 | 14 | 20 | 59 | 66 | 80 |
| 50 | 20 | 20 | 25 | 47 | 122 | 19 | 54 | 14 | 20 | 63 | 70 | 84 |
| 63 | 25 | 25 | 30 | 50 | 128 | 19 | 63 | 14 | 20 | 68 | 75 | 89 |
| 80 | 32 | 32 | 40 | 63 | 168 | 25 | 71 | 21 | 25 | 85 | 95 | 110 |
| 100 | 32 | 32 | 40 | 63 | 168 | 25 | 71 | 21 | 25 | 85 | 95 | 110 |
| 125 | 40 | 40 | 45 | 76 | 206 | 38 | 100 | 27 | 30 | 110 | 120 | 134 |
| 160 | 50 | 50 | 59 | 90 | 246 | 38 | 108 | 33 | 35 | 130 | 143 | 171 |
| 200 | 50 | 50 | 59 | 95 | 270 | 44 | 114 | 40 | 35 | 130 | 143 | 171 |
| 250 | 50 | 50 | 63 | 95 | 270 | 44 | 116 | 40 | 35 | 130 | 143 | 171 |
| 320 | 50 | 50 | 63 | 95 | 270 | 44 | 116 | 40 | 35 | 130 | 143 | 171 |

MILL TYPE METRIC HYDRAULIC CYLINDERS SERIES MH 31

63 Bar Pressure



PART LIST

| ITEM | QTY. | DESCRIPTION |
|------|----------|-----------------------------------|
| 1 | 1 only | Cylinder Rod (chrome plated) |
| 2 | *1 only | Rod Wiper |
| 3 | **1 only | Gland Bushing |
| 4 | *1 set | Gland Seal - Chevron "V" Ring |
| 5 | 1 only | Front Head |
| 6 | 1 only | Front Cushion |
| 7 | 2 only | Adjustable Cushion Assembly |
| 8 | *2 only | Head Static Seal - "O" Ring |
| 9 | 2 sets | Head Securing Cap Screws and Nuts |

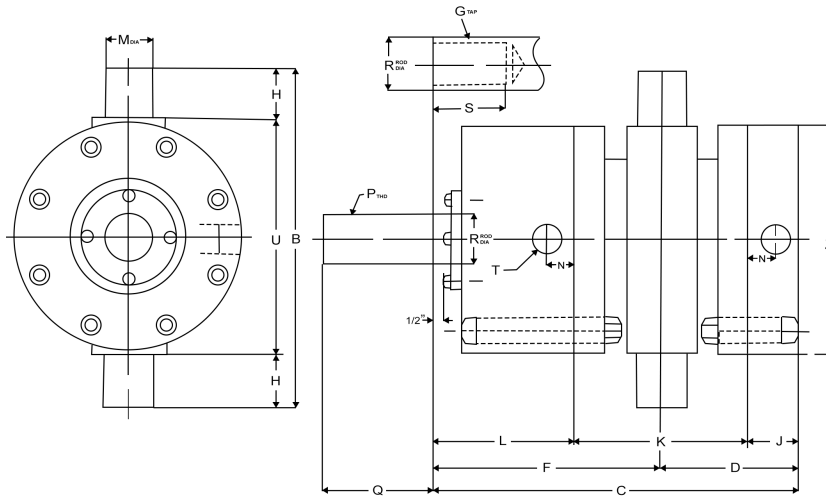
| ITEM | QTY. | DESCRIPTION |
|------|---------|------------------------------------|
| 10 | 1 only | Cylinder Barrel Assembly |
| 11 | *1 only | Piston Rod Seal - "O" Ring |
| 12 | *1 set | Piston Dynamic Seal - Piston Rings |
| 13 | 1 only | Piston |
| 14 | 1 only | Piston Securing Screw |
| 15 | 1 only | Rear Cushion |
| 16 | 2 only | Rear Cushion Securing Screw |
| 17 | 1 only | Rear Head |
| 18 | 1 only | Lower Gland Bearing |

* Spare Parts
** Optional Spare Parts

HYDRAULIC CYLINDERS SERIES MH 31

63 Bar Pressure

Trunnion Mtg.

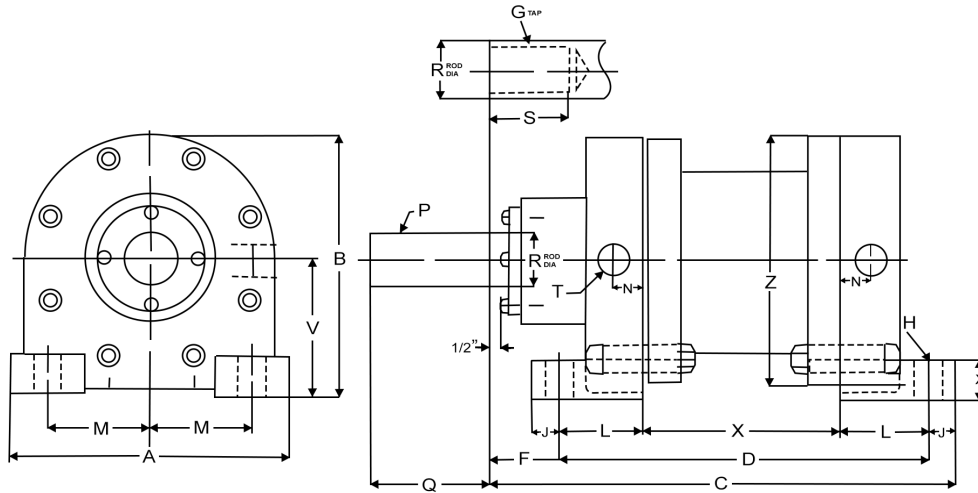


| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | U | R2:1 | Z _{max} |
|-------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|-----|------|------------------|
| MH - 06304031 - T | 40 | 122 | 177 | 65 | 112 | M 12 x 1.25 | M 20 x 1.5 | 16 | 40 | 50 | 87 | 20 | 19 | 16 | 24 | 18 | ½" | 90 | 28 | 90 |
| MH - 06305031 - T | 50 | 145 | 185 | 67 | 118 | M 16 x 1.25 | M 27 x 1.5 | 20 | 40 | 55 | 90 | 25 | 19 | 22 | 32 | 22 | ½" | 105 | 36 | 110 |
| MH - 06306331 - T | 63 | 170 | 198 | 67 | 131 | M 18 x 1.5 | M 33 x 2 | 25 | 40 | 55 | 103 | 32 | 22 | 25 | 36 | 25 | ¾" | 120 | 45 | 125 |
| MH - 06308031 - T | 80 | 199 | 213 | 71 | 142 | M 20 x 1.5 | M 42 x 2 | 32 | 44 | 55 | 114 | 40 | 25 | 30 | 44 | 28 | ¾" | 135 | 56 | 150 |
| MH - 06310031 - T | 100 | 240 | 257 | 92 | 165 | M 27 x 2 | M 48 x 2 | 40 | 57 | 70 | 130 | 40 | 30 | 36 | 54 | 36 | 1" | 160 | 70 | 165 |
| MH - 06312531 - T | 125 | 295 | 265 | 92 | 173 | M 33 x 2 | M 64 x 3 | 50 | 57 | 70 | 138 | 50 | 30 | 45 | 66 | 45 | 1" | 195 | 90 | 203 |
| MH - 06316031 - T | 160 | 366 | 315 | 117 | 198 | M 42 x 2 | M 80 x 3 | 63 | 70 | 95 | 150 | 50 | 35 | 56 | 84 | 56 | 1-¼" | 240 | 110 | 240 |
| MH - 06320031 - T | 200 | 421 | 336 | 123 | 213 | M 48 x 2 | M 100 x 3 | 63 | 76 | 95 | 165 | 63 | 35 | 63 | 96 | 63 | 1-¼" | 295 | 140 | 300 |
| MH - 06325031 - T | 250 | 530 | 443 | 150 | 293 | M 56 x 2 | M 125 x 4 | 80 | 88 | 125 | 230 | 70 | 45 | 75 | 112 | 80 | 1-½" | 370 | 180 | 395 |
| MH - 06332031 - T | 320 | 630 | 465 | 172 | 293 | M 72 x 3 | M 160 x 4 | 80 | 110 | 125 | 230 | 80 | 55 | 85 | 128 | 100 | 2" | 470 | 220 | 455 |
| MH - 06340031 - T | 400 | 770 | 515 | 192 | 323 | M 90 x 3 | M 200 x 4 | 100 | 110 | 165 | 240 | 125 | 55 | 106 | 140 | 125 | 2" | 570 | 280 | 560 |
| MH - 06350031 - T | 500 | 950 | 648 | 214 | 434 | M 110 x 3 | M 250 x 6 | 125 | 125 | 178 | 345 | 160 | 65 | 112 | 160 | 160 | 2-½" | 700 | 350 | 686 |

HYDRAULIC CYLINDERS SERIES MH 31

63 Bar Pressure

Base Mtg.

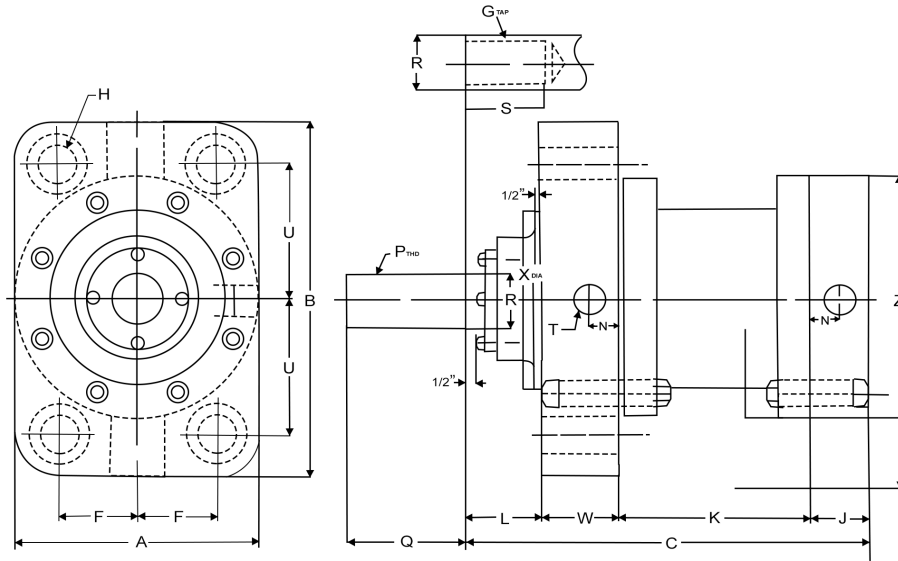


| MODEL NO. | BORE (mm) | A | B | C | D | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | M | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | R2:1 | V | X | Z _{max.} |
|-------------------|-----------|-----|-----|-----|-----|-----|-------------------|-------------------|----|----|-----|-----|-----|----|-----------------|-----------------|-----|------|------|-----|----|-------------------|
| MH = 06304031 - B | 40 | 110 | 102 | 205 | 158 | 33 | M 12 x 1.25 | M 20 x 1.5 | 14 | 14 | 50 | 54 | 41 | 19 | 16 | 24 | 18 | ½" | 28 | 57 | 22 | 90 |
| MH = 06305031 - B | 50 | 130 | 122 | 213 | 163 | 36 | M 16 x 1.25 | M 27 x 1.5 | 14 | 14 | 55 | 54 | 51 | 19 | 22 | 32 | 22 | ½" | 36 | 67 | 22 | 110 |
| MH = 06306331 - B | 63 | 145 | 137 | 230 | 171 | 45 | M 18 x 1.5 | M 33 x 2 | 14 | 14 | 55 | 58 | 59 | 22 | 25 | 36 | 25 | ¾" | 45 | 74 | 22 | 125 |
| MH = 06308031 - B | 80 | 170 | 162 | 249 | 179 | 52 | M 22 x 1.5 | M 42 x 2 | 18 | 18 | 55 | 62 | 67 | 25 | 30 | 44 | 28 | ¾" | 56 | 87 | 25 | 150 |
| MH = 06310031 - B | 100 | 185 | 177 | 301 | 228 | 51 | M 27 x 2 | M 48 x 2 | 22 | 22 | 70 | 79 | 71 | 30 | 36 | 54 | 36 | 1" | 70 | 94 | 25 | 165 |
| MH = 06312531 - B | 125 | 223 | 215 | 319 | 238 | 54 | M 33 x 2 | M 64 x 3 | 27 | 27 | 70 | 84 | 85 | 30 | 45 | 66 | 45 | 1" | 90 | 113 | 38 | 203 |
| MH = 06316031 - B | 160 | 260 | 252 | 369 | 289 | 53 | M 42 x 2 | M 80 x 3 | 27 | 27 | 95 | 97 | 103 | 35 | 56 | 84 | 56 | 1-¼" | 110 | 132 | 38 | 240 |
| MH = 06320031 - B | 200 | 320 | 312 | 396 | 307 | 59 | M 48 x 2 | M 100 x 3 | 30 | 30 | 95 | 106 | 130 | 35 | 63 | 96 | 63 | 1-¼" | 140 | 162 | 44 | 300 |
| MH = 06325031 - B | 250 | 415 | 420 | 504 | 363 | 111 | M 56 x 2 | M 125 x 4 | 30 | 30 | 125 | 119 | 178 | 45 | 75 | 112 | 80 | 1-½" | 180 | 222 | 44 | 395 |
| MH = 06332031 - B | 320 | 475 | 480 | 525 | 405 | 90 | M 72 x 3 | M 160 x 4 | 30 | 30 | 125 | 140 | 208 | 55 | 85 | 128 | 100 | 2" | 220 | 252 | 44 | 455 |
| MH = 06340031 - B | 400 | 580 | 585 | 581 | 451 | 97 | M 90 x 3 | M 200 x 4 | 33 | 33 | 165 | 143 | 257 | 55 | 106 | 140 | 125 | 2" | 280 | 305 | 50 | 560 |
| MH = 06350031 - B | 500 | 706 | 710 | 740 | 520 | 174 | M 110 x 3 | M 250 x 6 | 46 | 46 | 178 | 171 | 312 | 65 | 112 | 160 | 160 | 2-½" | 350 | 367 | 70 | 686 |

HYDRAULIC CYLINDERS SERIES MH 31

63 Bar Pressure

Front Flange Mtg.

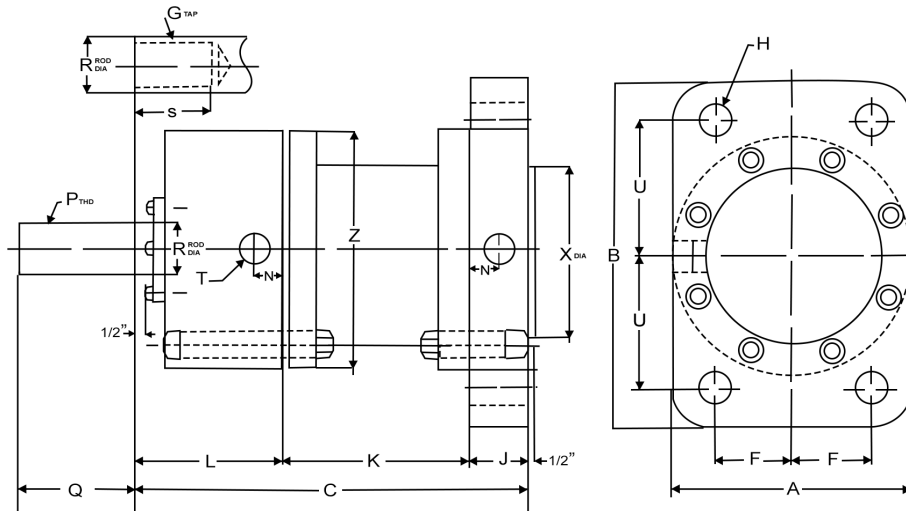


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | W | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|-----|------------------|
| MH = 06304031 - FF | 40 | 90 | 154 | 177 | 26 | M 12 x 1.25 | M 20 x 1.5 | 14 | 40 | 50 | 49 | 19 | 16 | 24 | 18 | ½" | 28 | 58 | 38 | 78 | 90 |
| MH = 06305031 - FF | 50 | 110 | 168 | 185 | 36 | M 16 x 1.25 | M 27 x 1.5 | 14 | 40 | 55 | 46 | 19 | 22 | 32 | 22 | ½" | 36 | 65 | 44 | 84 | 110 |
| MH = 06306331 - FF | 63 | 125 | 198 | 198 | 40 | M 18 x 1.5 | M 33 x 2 | 18 | 40 | 55 | 59 | 22 | 25 | 36 | 25 | ¾" | 45 | 76 | 44 | 90 | 125 |
| MH = 06308031 - FF | 80 | 150 | 228 | 213 | 49 | M 22 x 1.5 | M 42 x 2 | 21 | 44 | 55 | 70 | 25 | 30 | 44 | 28 | ¾" | 56 | 88 | 44 | 113 | 150 |
| MH = 06310031 - FF | 100 | 165 | 238 | 257 | 57 | M 27 x 2 | M 48 x 2 | 21 | 57 | 70 | 86 | 30 | 36 | 54 | 36 | 1" | 70 | 93 | 44 | 128 | 165 |
| MH = 06312531 - FF | 125 | 203 | 320 | 265 | 65 | M 33 x 2 | M 64 x 3 | 27 | 57 | 70 | 88 | 30 | 45 | 66 | 45 | 1" | 90 | 123 | 50 | 178 | 203 |
| MH = 06316031 - FF | 160 | 240 | 374 | 315 | 77 | M 42 x 2 | M 80 x 3 | 33 | 70 | 95 | 93 | 35 | 56 | 84 | 56 | 1-¼" | 110 | 144 | 57 | 178 | 240 |
| MH = 06320031 - FF | 200 | 300 | 446 | 336 | 100 | M 48 x 2 | M 100 x 3 | 40 | 76 | 95 | 89 | 35 | 63 | 96 | 63 | 1-¼" | 140 | 173 | 76 | 229 | 300 |
| MH = 06325031 - FF | 250 | 395 | 486 | 443 | 148 | M 56 x 2 | M 125 x 4 | 40 | 88 | 125 | 141 | 45 | 75 | 112 | 80 | 1-½" | 180 | 193 | 89 | 267 | 395 |
| MH = 06332031 - FF | 320 | 455 | 528 | 465 | 178 | M 72 x 3 | M 160 x 4 | 40 | 110 | 125 | 141 | 55 | 85 | 128 | 100 | 2" | 220 | 214 | 89 | 305 | 455 |
| MH = 06340031 - FF | 400 | 560 | 612 | 515 | 224 | M 90 x 3 | M 200 x 4 | 46 | 110 | 165 | 138 | 55 | 106 | 140 | 125 | 2" | 280 | 250 | 102 | 375 | 560 |
| MH = 06350031 - FF | 500 | * | * | 648 | * | M 110 x 3 | M 250 x 6 | * | 125 | 178 | * | 65 | 112 | 160 | 160 | 2-½" | 350 | * | * | * | 686 |

HYDRAULIC CYLINDERS SERIES MH 31

63 Bar Pressure

Rear Flange Mtg.

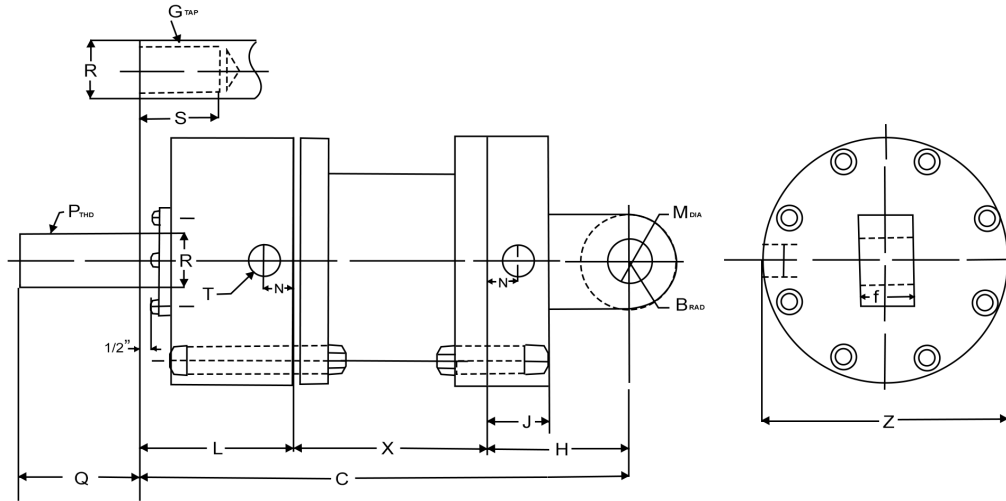


| MODEL NO. | BORE (mm) | A | B | C | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | R2:1 | U | X | Z _{max.} |
|--------------------|-----------|-----|-----|-----|-----|-------------------|-------------------|----|-----|-----|-----|----|-----------------|-----------------|-----|--------|------|-----|-----|-------------------|
| MH = 06304031 - RF | 40 | 90 | 154 | 177 | 26 | M 12 x 1.25 | M 20 x 1.5 | 14 | 40 | 50 | 87 | 19 | 16 | 24 | 18 | 1/2" | 28 | 58 | 78 | 90 |
| MH = 06305031 - RF | 50 | 110 | 168 | 185 | 36 | M 16 x 1.25 | M 27 x 1.5 | 14 | 40 | 55 | 90 | 19 | 22 | 32 | 22 | 1/2" | 36 | 65 | 84 | 110 |
| MH = 06306331 - RF | 63 | 125 | 198 | 198 | 40 | M 18 x 1.5 | M 33 x 2 | 18 | 40 | 55 | 103 | 22 | 25 | 36 | 25 | 3/4" | 45 | 76 | 90 | 125 |
| MH = 06308031 - RF | 80 | 150 | 228 | 213 | 49 | M 22 x 1.5 | M 42 x 2 | 21 | 44 | 55 | 114 | 25 | 30 | 44 | 28 | 3/4" | 56 | 88 | 113 | 150 |
| MH = 06310031 - RF | 100 | 165 | 238 | 257 | 57 | M 27 x 2 | M 48 x 2 | 21 | 57 | 70 | 130 | 30 | 36 | 54 | 36 | 1" | 70 | 93 | 128 | 165 |
| MH = 06312531 - RF | 125 | 203 | 320 | 265 | 65 | M 33 x 2 | M 64 x 3 | 27 | 57 | 70 | 138 | 30 | 45 | 66 | 45 | 1" | 90 | 123 | 178 | 203 |
| MH = 06316031 - RF | 160 | 240 | 374 | 315 | 77 | M 42 x 2 | M 80 x 3 | 33 | 70 | 95 | 150 | 35 | 56 | 84 | 56 | 1-1/4" | 110 | 144 | 178 | 240 |
| MH = 06320031 - RF | 200 | 300 | 446 | 336 | 100 | M 48 x 2 | M 100 x 3 | 40 | 76 | 95 | 165 | 35 | 63 | 96 | 63 | 1-1/4" | 140 | 173 | 229 | 300 |
| MH = 06325031 - RF | 250 | 395 | 486 | 443 | 148 | M 56 x 2 | M 125 x 4 | 40 | 88 | 125 | 230 | 45 | 75 | 112 | 80 | 1-1/2" | 180 | 193 | 267 | 395 |
| MH = 06332031 - RF | 320 | 455 | 528 | 465 | 178 | M 72 x 3 | M 160 x 4 | 40 | 110 | 125 | 230 | 55 | 85 | 128 | 100 | 2" | 220 | 214 | 305 | 455 |
| MH = 06340031 - RF | 400 | 560 | 612 | 515 | 224 | M 90 x 3 | M 200 x 4 | 46 | 110 | 165 | 240 | 55 | 106 | 140 | 125 | 2" | 280 | 250 | 375 | 560 |
| MH = 06350031 - RF | 500 | * | * | 648 | * | M 110 x 3 | M 250 x 6 | * | 125 | 178 | 345 | 65 | 112 | 160 | 160 | 2-1/2" | 350 | * | * | 686 |

HYDRAULIC CYLINDERS SERIES MH 31

63 Bar Pressure

Male Clevis Mtg.

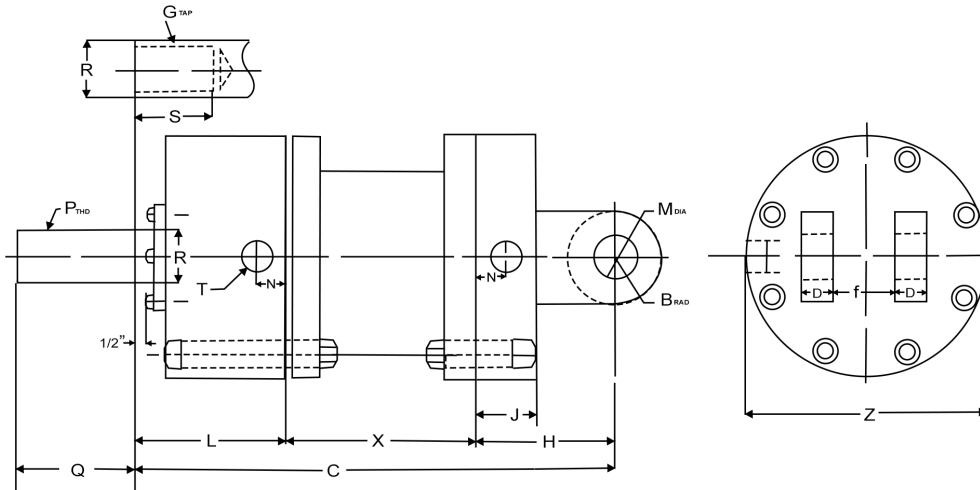


| MODEL NO. | BORE (mm) | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max.} |
|--------------------|-----------|-----|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-------------------|
| MH = 06304031 - MC | 40 | 20 | 202 | 16 | M 12 x 1.25 | M 20 x 1.5 | 65 | 40 | 50 | 87 | 16 | 19 | 16 | 24 | 18 | ½" | 28 | 90 |
| MH = 06305031 - MC | 50 | 25 | 220 | 20 | M 16 x 1.25 | M 27 x 1.5 | 75 | 40 | 55 | 90 | 20 | 19 | 22 | 32 | 22 | ½" | 36 | 110 |
| MH = 06306331 - MC | 63 | 32 | 243 | 25 | M 18 x 1.5 | M 33 x 2 | 85 | 40 | 55 | 103 | 25 | 22 | 25 | 36 | 25 | ¾" | 45 | 125 |
| MH = 06308031 - MC | 80 | 40 | 259 | 32 | M 22 x 1.5 | M 42 x 2 | 90 | 44 | 55 | 114 | 32 | 25 | 30 | 44 | 28 | ¾" | 56 | 150 |
| MH = 06310031 - MC | 100 | 40 | 295 | 32 | M 27 x 2 | M 48 x 2 | 95 | 57 | 70 | 130 | 32 | 30 | 36 | 54 | 36 | 1" | 70 | 165 |
| MH = 06312531 - MC | 125 | 45 | 328 | 40 | M 33 x 2 | M 64 x 3 | 120 | 57 | 70 | 138 | 40 | 30 | 45 | 66 | 45 | 1" | 90 | 203 |
| MH = 06316031 - MC | 160 | 59 | 380 | 50 | M 42 x 2 | M 80 x 3 | 135 | 70 | 95 | 150 | 50 | 35 | 56 | 84 | 56 | 1-¼" | 110 | 240 |
| MH = 06320031 - MC | 200 | 59 | 405 | 50 | M 48 x 2 | M 100 x 3 | 145 | 76 | 95 | 165 | 50 | 35 | 63 | 96 | 63 | 1-¼" | 140 | 300 |
| MH = 06325031 - MC | 250 | 71 | 520 | 63 | M 56 x 2 | M 125 x 4 | 170 | 88 | 125 | 230 | 63 | 45 | 75 | 112 | 80 | 1-½" | 180 | 395 |
| MH = 06332031 - MC | 320 | 90 | 555 | 80 | M 72 x 3 | M 160 x 4 | 200 | 110 | 125 | 230 | 80 | 55 | 85 | 128 | 100 | 2" | 220 | 455 |
| MH = 06340031 - MC | 400 | 112 | 630 | 100 | M 90 x 3 | M 200 x 4 | 225 | 110 | 165 | 240 | 100 | 55 | 106 | 140 | 125 | 2" | 280 | 560 |
| MH = 06350031 - MC | 500 | 178 | 848 | 160 | M 110 x 3 | M 250 x 6 | 325 | 125 | 178 | 345 | 160 | 65 | 112 | 160 | 160 | 2-½" | 350 | 686 |

HYDRAULIC CYLINDERS SERIES MH 31

63 Bar Pressure

Female Clevis Mtg.

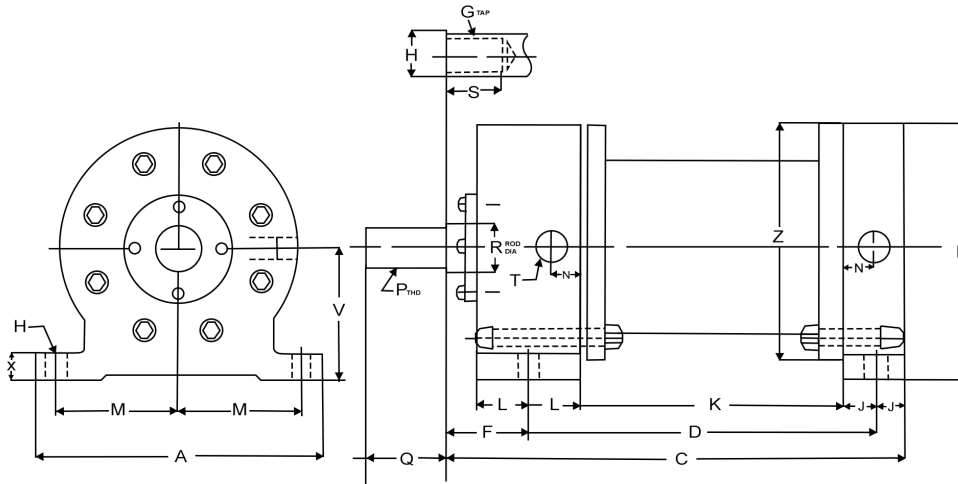


| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max.} |
|--------------------|-----------|-----|-----|----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-------------------|
| MH = 06304031 - FC | 40 | 20 | 202 | 20 | 16 | M 12 x 1.25 | M 20 x 1.5 | 65 | 40 | 50 | 87 | 16 | 19 | 16 | 24 | 18 | ½" | 28 | 90 |
| MH = 06305031 - FC | 50 | 25 | 220 | 20 | 20 | M 16 x 1.25 | M 27 x 1.5 | 75 | 40 | 55 | 90 | 20 | 19 | 22 | 32 | 22 | ½" | 36 | 110 |
| MH = 06306331 - FC | 63 | 32 | 243 | 20 | 25 | M 18 x 1.5 | M 33 x 2 | 85 | 40 | 55 | 103 | 25 | 22 | 25 | 36 | 25 | ¾" | 45 | 125 |
| MH = 06308031 - FC | 80 | 40 | 259 | 25 | 32 | M 22 x 1.5 | M 42 x 2 | 90 | 44 | 55 | 114 | 32 | 25 | 30 | 44 | 28 | ¾" | 56 | 150 |
| MH = 06310031 - FC | 100 | 40 | 295 | 25 | 32 | M 27 x 2 | M 48 x 2 | 95 | 57 | 70 | 130 | 32 | 30 | 36 | 54 | 36 | 1" | 70 | 165 |
| MH = 06312531 - FC | 125 | 45 | 328 | 30 | 40 | M 33 x 2 | M 64 x 3 | 120 | 57 | 70 | 138 | 40 | 30 | 45 | 66 | 45 | 1" | 90 | 203 |
| MH = 06316031 - FC | 160 | 59 | 380 | 35 | 50 | M 42 x 2 | M 80 x 3 | 135 | 70 | 95 | 150 | 50 | 35 | 56 | 84 | 56 | 1-¼" | 110 | 240 |
| MH = 06320031 - FC | 200 | 59 | 405 | 35 | 50 | M 48 x 2 | M 100 x 3 | 145 | 76 | 95 | 165 | 50 | 35 | 63 | 96 | 63 | 1-¼" | 140 | 300 |
| MH = 06325031 - FC | 250 | 71 | 520 | 40 | 63 | M 56 x 2 | M 125 x 4 | 170 | 88 | 125 | 230 | 63 | 45 | 75 | 112 | 80 | 1-½" | 180 | 395 |
| MH = 06332031 - FC | 320 | 90 | 555 | 45 | 80 | M 72 x 3 | M 160 x 4 | 200 | 110 | 125 | 230 | 80 | 55 | 85 | 128 | 100 | 2" | 220 | 455 |
| MH = 06340031 - FC | 400 | 112 | 630 | 55 | 100 | M 90 x 3 | M 200 x 4 | 225 | 110 | 165 | 240 | 100 | 55 | 106 | 140 | 125 | 2" | 280 | 560 |
| MH = 06350031 - FC | 500 | 178 | 848 | 85 | 160 | M 110 x 3 | M 250 x 6 | 325 | 125 | 178 | 345 | 160 | 65 | 112 | 160 | 160 | 2-½" | 350 | 686 |

HYDRAULIC CYLINDERS SERIES MH 31

63 Bar Pressure

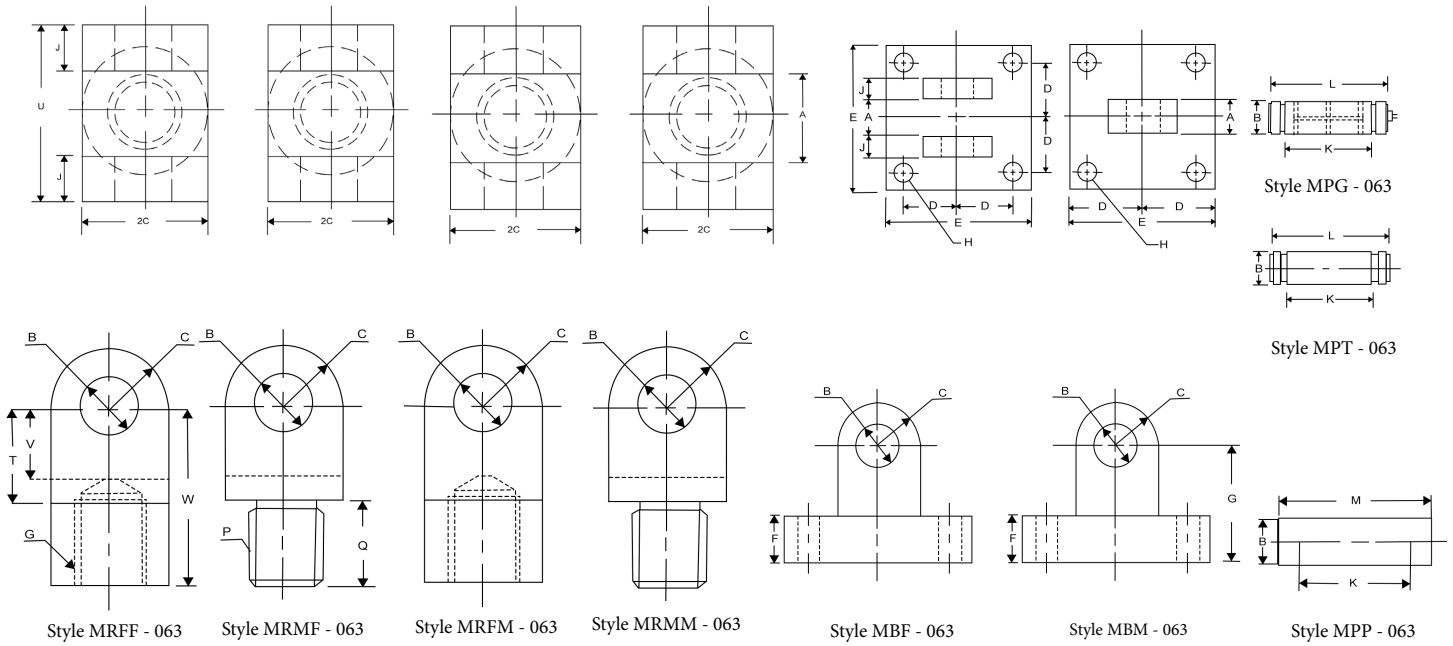
Side Log Mtg.



| MODEL NO. | BORE (mm) | A | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | V | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|-----|------------------------------------|------------------------------------|----|----|-----|----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|----|------------------|
| MH = 06304031 - SL | 40 | 146 | 102 | 212 | 111 | 81 | M 12 x 1.25 | M 20 x 1.5 | 14 | 20 | 50 | 41 | 59 | 19 | 16 | 24 | 18 | ½" | 28 | 57 | 22 | 90 |
| MH = 06305031 - SL | 50 | 171 | 122 | 217 | 116 | 81 | M 16 x 1.25 | M 27 x 1.5 | 14 | 20 | 55 | 41 | 72 | 19 | 22 | 32 | 22 | ½" | 36 | 67 | 22 | 110 |
| MH = 06306331 - SL | 63 | 190 | 137 | 231 | 123 | 88 | M 18 x 1.5 | M 33 x 2 | 14 | 20 | 55 | 48 | 81 | 22 | 25 | 36 | 25 | ¾" | 45 | 74 | 22 | 125 |
| MH = 06308031 - SL | 80 | 216 | 162 | 235 | 125 | 88 | M 22 x 1.5 | M 42 x 2 | 18 | 22 | 55 | 48 | 90 | 25 | 30 | 44 | 28 | ¾" | 56 | 87 | 25 | 150 |
| MH = 06310031 - SL | 100 | 254 | 177 | 274 | 147 | 98 | M 27 x 2 | M 48 x 2 | 22 | 29 | 70 | 48 | 105 | 30 | 36 | 54 | 36 | 1" | 70 | 94 | 25 | 165 |
| MH = 06312531 - SL | 125 | 311 | 215 | 286 | 153 | 104 | M 33 x 2 | M 64 x 3 | 27 | 29 | 70 | 54 | 129 | 30 | 45 | 66 | 45 | 1" | 90 | 113 | 38 | 203 |
| MH = 06316031 - SL | 160 | 337 | 252 | 323 | 184 | 104 | M 42 x 2 | M 80 x 3 | 27 | 35 | 95 | 54 | 142 | 35 | 56 | 84 | 56 | 1-¼" | 110 | 132 | 38 | 240 |
| MH = 06320031 - SL | 200 | 413 | 312 | 355 | 200 | 117 | M 48 x 2 | M 100 x 3 | 30 | 38 | 95 | 67 | 177 | 35 | 63 | 96 | 63 | 1-¼" | 140 | 162 | 44 | 300 |
| MH = 06325031 - SL | 250 | 445 | 420 | 455 | 252 | 158 | M 56 x 2 | M 125 x 4 | 30 | 45 | 125 | 82 | 193 | 45 | 75 | 112 | 80 | 1-½" | 180 | 222 | 44 | 395 |
| MH = 06332031 - SL | 320 | 508 | 480 | 489 | 269 | 165 | M 72 x 3 | M 160 x 4 | 30 | 55 | 125 | 89 | 224 | 55 | 85 | 128 | 100 | 2" | 220 | 252 | 44 | 455 |
| MH = 06340031 - SL | 400 | 675 | 585 | 529 | 309 | 165 | M 90 x 3 | M 200 x 4 | 33 | 55 | 165 | 89 | 305 | 55 | 106 | 140 | 125 | 2" | 280 | 305 | 50 | 560 |
| MH = 06350031 - SL | 500 | 875 | 710 | 584 | 336 | 185 | M 110 x 3 | M 250 x 6 | 46 | 63 | 178 | 95 | 392 | 65 | 112 | 160 | 160 | 2-½" | 350 | 367 | 70 | 686 |

HYDRAULIC CYLINDERS SERIES MH 31

63 Bar Pressure

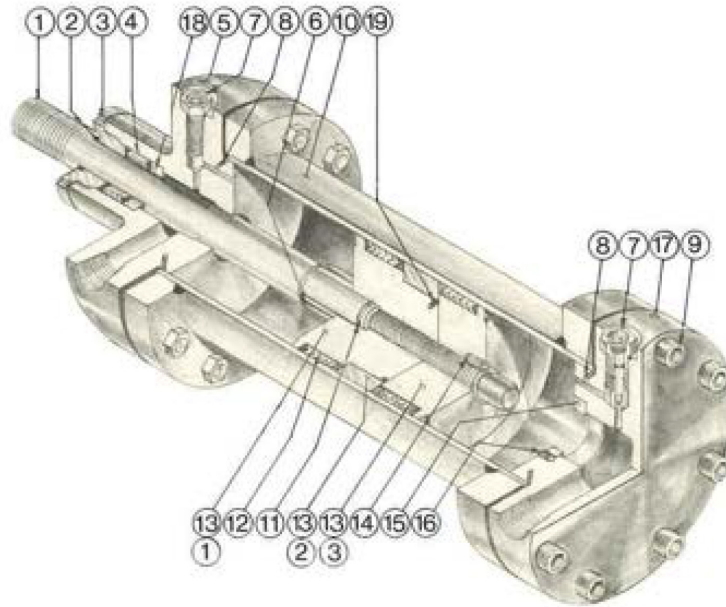


| BORE (mm) | A | B | C | G=P | J | Q=S | T | U | V | W |
|-----------|----|----|----|-------------|----|-----|-----|-----|-----|-----|
| 40 | 16 | 16 | 20 | M 20 x 1.25 | 20 | 16 | 35 | 56 | 25 | 51 |
| 50 | 20 | 20 | 25 | M 14 x 1.25 | 20 | 18 | 45 | 60 | 35 | 63 |
| 63 | 25 | 25 | 30 | M 18 x 1.5 | 20 | 25 | 50 | 65 | 40 | 75 |
| 80 | 32 | 32 | 40 | M 22 x 1.5 | 25 | 30 | 55 | 82 | 45 | 85 |
| 100 | 32 | 32 | 40 | M 27 x 2 | 25 | 36 | 60 | 82 | 50 | 96 |
| 125 | 40 | 40 | 45 | M 33 x 2 | 30 | 45 | 70 | 100 | 60 | 115 |
| 160 | 50 | 50 | 59 | M 42 x 2 | 35 | 56 | 85 | 120 | 75 | 141 |
| 200 | 50 | 50 | 59 | M 48 x 2 | 35 | 63 | 100 | 120 | 85 | 163 |
| 250 | 63 | 63 | 71 | M 56 x 2 | 40 | 75 | 115 | 143 | 100 | 190 |
| 320 | 80 | 80 | 90 | M 72 x 3 | 45 | 85 | 130 | 170 | 115 | 215 |

| BORE (mm) | A | B | C | D | E | F | G | H | J | K | L | M |
|-----------|----|----|----|-----|-----|----|-----|----|----|-----|-----|-----|
| 40 | 16 | 16 | 20 | 45 | 118 | 22 | 47 | 14 | 20 | 59 | 66 | 80 |
| 50 | 20 | 20 | 25 | 47 | 122 | 22 | 57 | 14 | 20 | 63 | 70 | 84 |
| 63 | 25 | 25 | 32 | 52 | 140 | 22 | 67 | 18 | 20 | 68 | 75 | 89 |
| 80 | 32 | 32 | 40 | 63 | 168 | 25 | 71 | 21 | 25 | 85 | 95 | 110 |
| 100 | 32 | 32 | 40 | 63 | 168 | 25 | 71 | 21 | 25 | 85 | 95 | 110 |
| 125 | 40 | 40 | 45 | 76 | 206 | 38 | 100 | 27 | 30 | 110 | 120 | 134 |
| 160 | 50 | 50 | 59 | 90 | 246 | 38 | 108 | 33 | 35 | 130 | 143 | 171 |
| 200 | 50 | 50 | 59 | 95 | 270 | 44 | 114 | 40 | 35 | 130 | 143 | 171 |
| 250 | 63 | 63 | 71 | 107 | 294 | 44 | 127 | 40 | 40 | 153 | 169 | 210 |
| 320 | 80 | 80 | 90 | 120 | 320 | 44 | 144 | 40 | 45 | 180 | 196 | 237 |

MILL TYPE METRIC HYDRAULIC CYLINDERS SERIES MH 32

63 Bar Pressure



PART LIST

| ITEM | QTY. | DESCRIPTION |
|------|----------|-----------------------------------|
| 1 | 1 only | Cylinder Rod (chrome plated) |
| 2 | *1 only | Rod Wiper |
| 3 | **1 only | Gland Bushing |
| 4 | *1 set | Gland Seal - Chevron "V" Ring |
| 5 | 1 only | Front Head |
| 6 | 1 only | Front Cushion |
| 7 | 2 only | Adjustable Cushion Assembly |
| 8 | *2 only | Head Static Seal - "O" Ring |
| 9 | 2 sets | Head Securing Cap Screws and Nuts |
| 10 | 1 only | Cylinder Barrel Assembly |
| 11 | *1 only | Piston Rod Seal - "O" Ring |

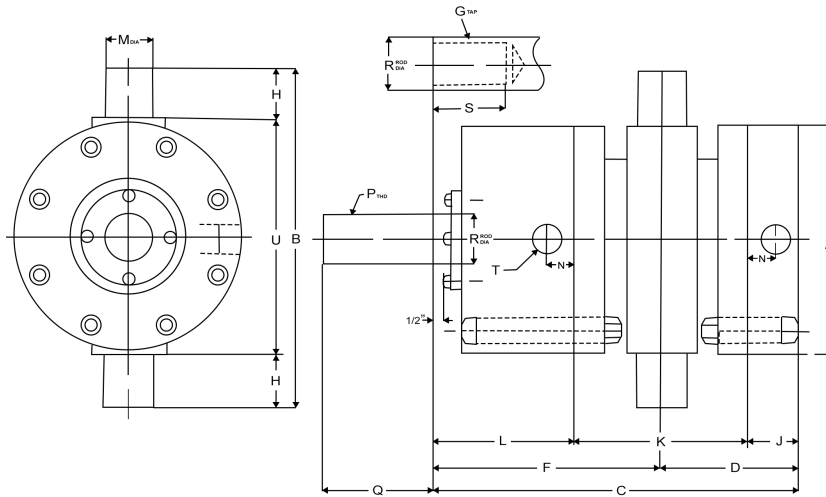
| ITEM | QTY. | DESCRIPTION |
|------|---------|---|
| 12 | *2 sets | Piston Dynamic Seal - Chevron "V" Rings |
| 13/1 | 1 only | Piston - Front Section |
| 13/2 | 1 only | Piston - Bushing |
| 13\3 | 1 only | Piston - Rear Section |
| 14 | 1 only | Piston Securing Screw |
| 15 | 1 only | Rear Cushion |
| 16 | 2 only | Rear Cushion Securing Screw |
| 17 | 1 only | Rear Head |
| 18 | 1 only | Lower Gland Bearing |
| 19 | *1 only | Piston Static Seal - "O" Ring |

* Spare Parts
** Optional Spare Parts

HYDRAULIC CYLINDERS SERIES MH 32

63 Bar Pressure

Trunnion Mtg.

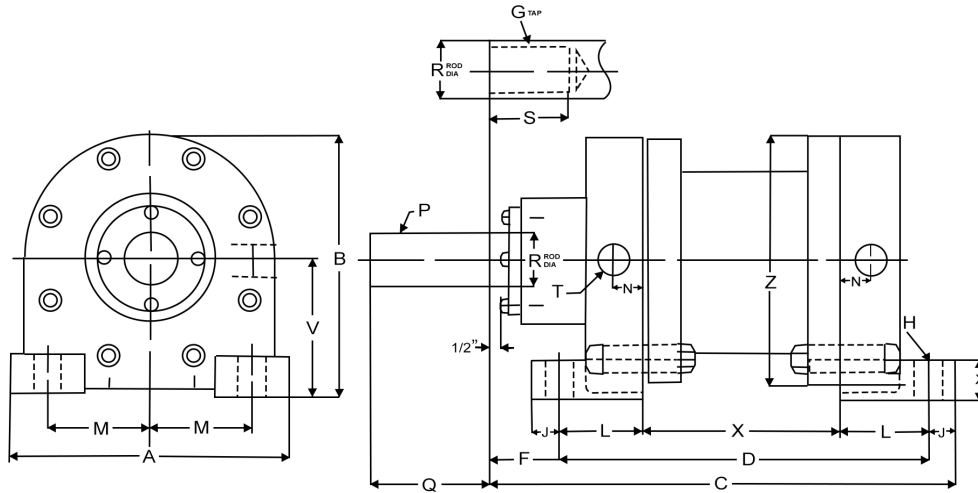


| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | U | R2:1 | Z _{max} |
|-------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|-----|------|------------------|
| MH - 06304032 - T | 40 | 122 | 190 | 72 | 118 | M 12 x 1.25 | M 20 x 1.5 | 16 | 40 | 63 | 87 | 20 | 19 | 16 | 24 | 18 | ½" | 90 | 28 | 90 |
| MH - 06305032 - T | 50 | 145 | 201 | 76 | 125 | M 16 x 1.25 | M 27 x 1.5 | 20 | 40 | 71 | 90 | 25 | 19 | 22 | 32 | 22 | ½" | 105 | 36 | 110 |
| MH - 06306332 - T | 63 | 170 | 220 | 79 | 141 | M 18 x 1.5 | M 33 x 2 | 25 | 40 | 77 | 103 | 32 | 22 | 25 | 36 | 25 | ¾" | 120 | 45 | 125 |
| MH - 06308032 - T | 80 | 199 | 244 | 87 | 157 | M 20 x 1.5 | M 42 x 2 | 32 | 44 | 86 | 114 | 40 | 25 | 30 | 44 | 28 | ¾" | 135 | 56 | 150 |
| MH - 06310032 - T | 100 | 240 | 300 | 114 | 186 | M 27 x 2 | M 48 x 2 | 40 | 57 | 113 | 130 | 40 | 30 | 36 | 54 | 36 | 1" | 160 | 70 | 165 |
| MH - 06312532 - T | 125 | 295 | 325 | 122 | 203 | M 33 x 2 | M 64 x 3 | 50 | 57 | 130 | 138 | 50 | 30 | 45 | 66 | 45 | 1" | 195 | 90 | 203 |
| MH - 06316032 - T | 160 | 366 | 366 | 143 | 223 | M 42 x 2 | M 80 x 3 | 63 | 70 | 146 | 150 | 50 | 35 | 56 | 84 | 56 | 1-¼" | 240 | 110 | 240 |
| MH - 06320032 - T | 200 | 421 | 419 | 165 | 254 | M 48 x 2 | M 100 x 3 | 63 | 76 | 178 | 165 | 63 | 35 | 63 | 96 | 63 | 1-¼" | 295 | 140 | 300 |
| MH - 06325032 - T | 250 | 530 | 508 | 183 | 325 | M 56 x 2 | M 125 x 4 | 80 | 88 | 190 | 230 | 70 | 45 | 75 | 112 | 80 | 1-½" | 370 | 180 | 395 |
| MH - 06332032 - T | 320 | 630 | 556 | 218 | 338 | M 72 x 3 | M 160 x 4 | 80 | 110 | 216 | 230 | 80 | 55 | 85 | 128 | 100 | 2" | 470 | 220 | 455 |
| MH - 06340032 - T | 400 | 770 | 566 | 218 | 348 | M 90 x 3 | M 200 x 4 | 100 | 110 | 216 | 240 | 125 | 55 | 106 | 140 | 125 | 2" | 570 | 280 | 560 |
| MH - 06350032 - T | 500 | 950 | 720 | 250 | 470 | M 110 x 3 | M 250 x 6 | 125 | 125 | 250 | 345 | 160 | 65 | 112 | 160 | 160 | 2-½" | 700 | 350 | 686 |

HYDRAULIC CYLINDERS SERIES MH 32

63 Bar Pressure

Base Mtg.

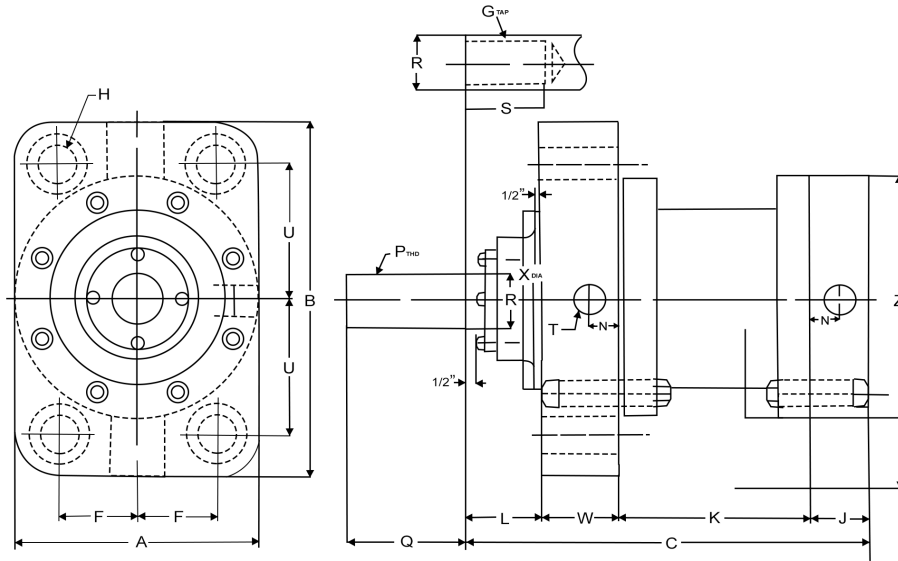


| MODEL NO. | BORE (mm) | A | B | C | D | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | M | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | R2:1 | V | X | Z _{max.} |
|-------------------|-----------|-----|-----|-----|-----|-----|-------------------|-------------------|----|----|-----|-----|-----|----|-----------------|-----------------|-----|------|------|-----|----|-------------------|
| MH = 06304032 - B | 40 | 110 | 102 | 218 | 171 | 33 | M 12 x 1.25 | M 20 x 1.5 | 14 | 14 | 63 | 54 | 41 | 19 | 16 | 24 | 18 | ½" | 28 | 57 | 22 | 90 |
| MH = 06305032 - B | 50 | 130 | 122 | 229 | 179 | 36 | M 16 x 1.25 | M 27 x 1.5 | 14 | 14 | 71 | 54 | 51 | 19 | 22 | 32 | 22 | ½" | 36 | 67 | 22 | 110 |
| MH = 06306332 - B | 63 | 145 | 137 | 252 | 193 | 45 | M 18 x 1.5 | M 33 x 2 | 14 | 14 | 77 | 58 | 59 | 22 | 25 | 36 | 25 | ¾" | 45 | 74 | 22 | 125 |
| MH = 06308032 - B | 80 | 170 | 162 | 280 | 210 | 52 | M 22 x 1.5 | M 42 x 2 | 18 | 18 | 86 | 62 | 67 | 25 | 30 | 44 | 28 | ¾" | 56 | 87 | 25 | 150 |
| MH = 06310032 - B | 100 | 185 | 177 | 344 | 271 | 51 | M 27 x 2 | M 48 x 2 | 22 | 22 | 113 | 79 | 71 | 30 | 36 | 54 | 36 | 1" | 70 | 94 | 25 | 165 |
| MH = 06312532 - B | 125 | 223 | 215 | 379 | 298 | 54 | M 33 x 2 | M 64 x 3 | 27 | 27 | 130 | 84 | 85 | 30 | 45 | 66 | 45 | 1" | 90 | 113 | 38 | 203 |
| MH = 06316032 - B | 160 | 260 | 252 | 420 | 340 | 53 | M 42 x 2 | M 80 x 3 | 27 | 27 | 146 | 97 | 103 | 35 | 56 | 84 | 56 | 1-¼" | 110 | 132 | 38 | 240 |
| MH = 06320032 - B | 200 | 320 | 312 | 479 | 390 | 59 | M 48 x 2 | M 100 x 3 | 30 | 30 | 178 | 106 | 130 | 35 | 63 | 96 | 63 | 1-¼" | 140 | 162 | 44 | 300 |
| MH = 06325032 - B | 250 | 415 | 420 | 569 | 428 | 111 | M 56 x 2 | M 125 x 4 | 30 | 30 | 190 | 119 | 178 | 45 | 75 | 112 | 80 | 1-½" | 180 | 222 | 44 | 395 |
| MH = 06332032 - B | 320 | 475 | 480 | 616 | 496 | 90 | M 72 x 3 | M 160 x 4 | 30 | 30 | 216 | 140 | 208 | 55 | 85 | 128 | 100 | 2" | 220 | 252 | 44 | 455 |
| MH = 06340032 - B | 400 | 580 | 585 | 632 | 502 | 97 | M 90 x 3 | M 200 x 4 | 33 | 33 | 216 | 143 | 257 | 55 | 106 | 140 | 125 | 2" | 280 | 305 | 50 | 560 |
| MH = 06350032 - B | 500 | 706 | 710 | 812 | 592 | 174 | M 110 x 3 | M 250 x 6 | 46 | 46 | 250 | 171 | 312 | 65 | 112 | 160 | 160 | 2-½" | 350 | 367 | 70 | 686 |

HYDRAULIC CYLINDERS SERIES MH 32

63 Bar Pressure

Front Flange Mtg.

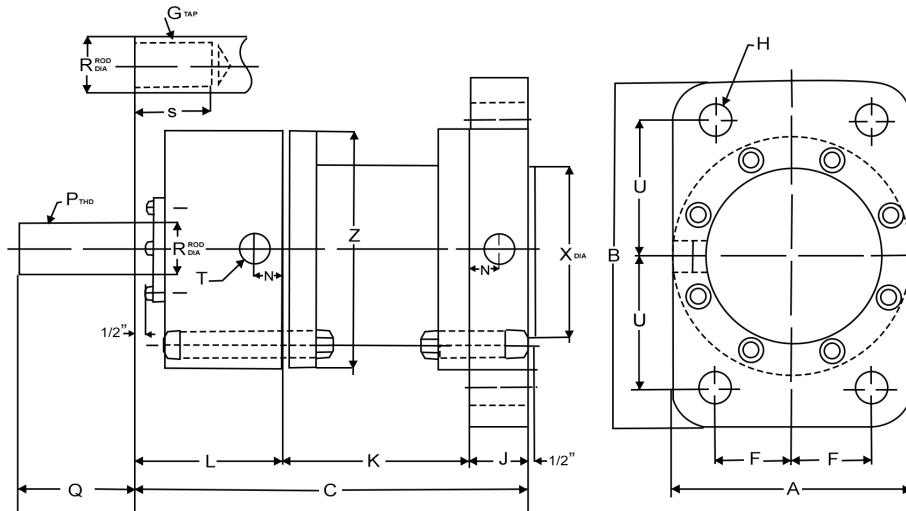


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | W | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|-----|------------------|
| MH = 06304032 - FF | 40 | 90 | 154 | 190 | 26 | M 12 x 1.25 | M 20 x 1.5 | 14 | 40 | 63 | 49 | 19 | 16 | 24 | 18 | ½" | 28 | 58 | 38 | 78 | 90 |
| MH = 06305032 - FF | 50 | 110 | 168 | 201 | 36 | M 16 x 1.25 | M 27 x 1.5 | 14 | 40 | 71 | 46 | 19 | 22 | 32 | 22 | ½" | 36 | 65 | 44 | 84 | 110 |
| MH = 06306332 - FF | 63 | 125 | 198 | 220 | 40 | M 18 x 1.5 | M 33 x 2 | 18 | 40 | 77 | 59 | 22 | 25 | 36 | 25 | ¾" | 45 | 76 | 44 | 90 | 125 |
| MH = 06308032 - FF | 80 | 150 | 228 | 244 | 49 | M 22 x 1.5 | M 42 x 2 | 21 | 44 | 86 | 70 | 25 | 30 | 44 | 28 | ¾" | 56 | 88 | 44 | 113 | 150 |
| MH = 06310032 - FF | 100 | 165 | 238 | 300 | 57 | M 27 x 2 | M 48 x 2 | 21 | 57 | 113 | 86 | 30 | 36 | 54 | 36 | 1" | 70 | 93 | 44 | 128 | 165 |
| MH = 06312532 - FF | 125 | 203 | 320 | 325 | 65 | M 33 x 2 | M 64 x 3 | 27 | 57 | 130 | 88 | 30 | 45 | 66 | 45 | 1" | 90 | 123 | 50 | 178 | 203 |
| MH = 06316032 - FF | 160 | 240 | 374 | 366 | 77 | M 42 x 2 | M 80 x 3 | 33 | 70 | 146 | 93 | 35 | 56 | 84 | 56 | 1-¼" | 110 | 144 | 57 | 178 | 240 |
| MH = 06320032 - FF | 200 | 300 | 446 | 419 | 100 | M 48 x 2 | M 100 x 3 | 40 | 76 | 178 | 89 | 35 | 63 | 96 | 63 | 1-¼" | 140 | 173 | 76 | 229 | 300 |
| MH = 06325032 - FF | 250 | 395 | 486 | 508 | 148 | M 56 x 2 | M 125 x 4 | 40 | 88 | 190 | 141 | 45 | 75 | 112 | 80 | 1-½" | 180 | 193 | 89 | 267 | 395 |
| MH = 06332032 - FF | 320 | 455 | 528 | 556 | 178 | M 72 x 3 | M 160 x 4 | 40 | 110 | 216 | 141 | 55 | 85 | 128 | 100 | 2" | 220 | 214 | 89 | 305 | 455 |
| MH = 06340032 - FF | 400 | 560 | 612 | 566 | 224 | M 90 x 3 | M 200 x 4 | 46 | 110 | 216 | 138 | 55 | 106 | 140 | 125 | 2" | 280 | 250 | 102 | 375 | 560 |
| MH = 06350032 - FF | 500 | * | * | 720 | * | M 110 x 3 | M 250 x 6 | * | 125 | 250 | * | 65 | 112 | 160 | 160 | 2-½" | 350 | * | * | * | 686 |

HYDRAULIC CYLINDERS SERIES MH 32

63 Bar Pressure

Rear Flange Mtg.

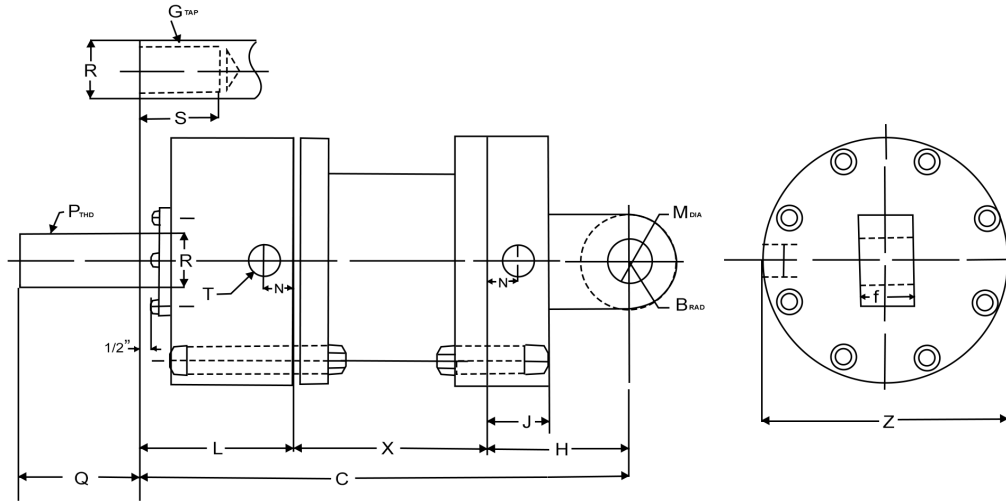


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|--------|------|-----|-----|------------------|
| MH = 06304032 - RF | 40 | 90 | 154 | 190 | 26 | M 12 x 1.25 | M 20 x 1.5 | 14 | 40 | 63 | 87 | 19 | 16 | 24 | 18 | 1/2" | 28 | 58 | 78 | 90 |
| MH = 06305032 - RF | 50 | 110 | 168 | 201 | 36 | M 16 x 1.25 | M 27 x 1.5 | 14 | 40 | 71 | 90 | 19 | 22 | 32 | 22 | 1/2" | 36 | 65 | 84 | 110 |
| MH = 06306332 - RF | 63 | 125 | 198 | 220 | 40 | M 18 x 1.5 | M 33 x 2 | 18 | 40 | 77 | 103 | 22 | 25 | 36 | 25 | 3/4" | 45 | 76 | 90 | 125 |
| MH = 06308032 - RF | 80 | 150 | 228 | 244 | 49 | M 22 x 1.5 | M 42 x 2 | 21 | 44 | 86 | 114 | 25 | 30 | 44 | 28 | 3/4" | 56 | 88 | 113 | 150 |
| MH = 06310032 - RF | 100 | 165 | 238 | 300 | 57 | M 27 x 2 | M 48 x 2 | 21 | 57 | 113 | 130 | 30 | 36 | 54 | 36 | 1" | 70 | 93 | 128 | 165 |
| MH = 06312532 - RF | 125 | 203 | 320 | 325 | 65 | M 33 x 2 | M 64 x 3 | 27 | 57 | 130 | 138 | 30 | 45 | 66 | 45 | 1" | 90 | 123 | 178 | 203 |
| MH = 06316032 - RF | 160 | 240 | 374 | 366 | 77 | M 42 x 2 | M 80 x 3 | 33 | 70 | 146 | 150 | 35 | 56 | 84 | 56 | 1-1/4" | 110 | 144 | 178 | 240 |
| MH = 06320032 - RF | 200 | 300 | 446 | 419 | 100 | M 48 x 2 | M 100 x 3 | 40 | 76 | 178 | 165 | 35 | 63 | 96 | 63 | 1-1/4" | 140 | 173 | 229 | 300 |
| MH = 06325032 - RF | 250 | 395 | 486 | 508 | 148 | M 56 x 2 | M 125 x 4 | 40 | 88 | 190 | 230 | 45 | 75 | 112 | 80 | 1-1/2" | 180 | 193 | 267 | 395 |
| MH = 06332032 - RF | 320 | 455 | 528 | 556 | 178 | M 72 x 3 | M 160 x 4 | 40 | 110 | 216 | 230 | 55 | 85 | 128 | 100 | 2" | 220 | 214 | 305 | 455 |
| MH = 06340032 - RF | 400 | 560 | 612 | 566 | 224 | M 90 x 3 | M 200 x 4 | 46 | 110 | 216 | 240 | 55 | 106 | 140 | 125 | 2" | 280 | 250 | 375 | 560 |
| MH = 06350032 - RF | 500 | * | * | 720 | * | M 110 x 3 | M 250 x 6 | * | 125 | 250 | 345 | 65 | 112 | 160 | 160 | 2-1/2" | 350 | * | * | 686 |

HYDRAULIC CYLINDERS SERIES MH 32

63 Bar Pressure

Male Clevis Mtg.

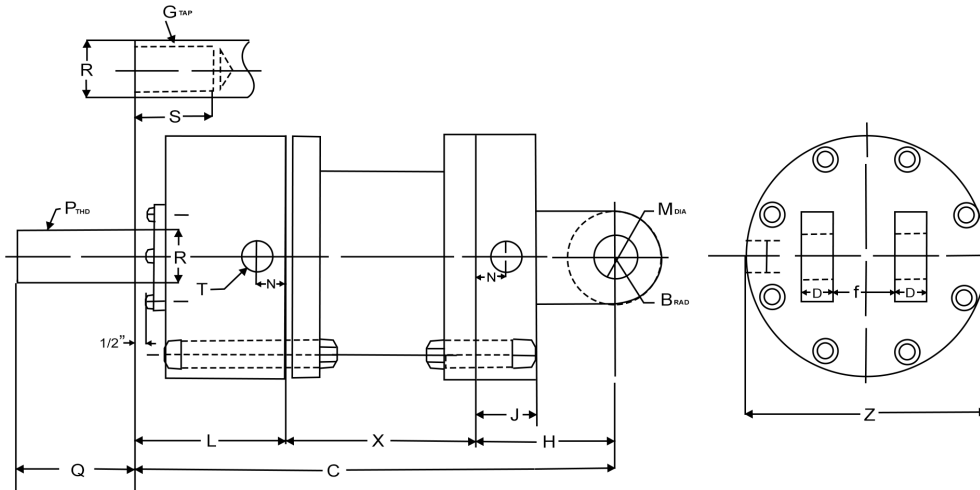


| MODEL NO. | BORE (mm) | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max.} |
|--------------------|-----------|-----|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-------------------|
| MH = 06304032 - MC | 40 | 20 | 215 | 16 | M 12 x 1.25 | M 20 x 1.5 | 65 | 40 | 63 | 87 | 16 | 19 | 16 | 24 | 18 | ½" | 28 | 90 |
| MH = 06305032 - MC | 50 | 25 | 236 | 20 | M 16 x 1.25 | M 27 x 1.5 | 75 | 40 | 71 | 90 | 20 | 19 | 22 | 32 | 22 | ½" | 36 | 110 |
| MH = 06306332 - MC | 63 | 32 | 265 | 25 | M 18 x 1.5 | M 33 x 2 | 85 | 40 | 77 | 103 | 25 | 22 | 25 | 36 | 25 | ¾" | 45 | 125 |
| MH = 06308032 - MC | 80 | 40 | 290 | 32 | M 22 x 1.5 | M 42 x 2 | 90 | 44 | 86 | 114 | 32 | 25 | 30 | 44 | 28 | ¾" | 56 | 150 |
| MH = 06310032 - MC | 100 | 40 | 338 | 32 | M 27 x 2 | M 48 x 2 | 95 | 57 | 113 | 130 | 32 | 30 | 36 | 54 | 36 | 1" | 70 | 165 |
| MH = 06312532 - MC | 125 | 45 | 388 | 40 | M 33 x 2 | M 64 x 3 | 120 | 57 | 130 | 138 | 40 | 30 | 45 | 66 | 45 | 1" | 90 | 203 |
| MH = 06316032 - MC | 160 | 59 | 431 | 50 | M 42 x 2 | M 80 x 3 | 135 | 70 | 146 | 150 | 50 | 35 | 56 | 84 | 56 | 1-¼" | 110 | 240 |
| MH = 06320032 - MC | 200 | 59 | 488 | 50 | M 48 x 2 | M 100 x 3 | 145 | 76 | 178 | 165 | 50 | 35 | 63 | 96 | 63 | 1-¼" | 140 | 300 |
| MH = 06325032 - MC | 250 | 71 | 585 | 63 | M 56 x 2 | M 125 x 4 | 170 | 88 | 190 | 230 | 63 | 45 | 75 | 112 | 80 | 1-½" | 180 | 395 |
| MH = 06332032 - MC | 320 | 90 | 646 | 80 | M 72 x 3 | M 160 x 4 | 200 | 110 | 216 | 230 | 80 | 55 | 85 | 128 | 100 | 2" | 220 | 455 |
| MH = 06340032 - MC | 400 | 112 | 681 | 100 | M 90 x 3 | M 200 x 4 | 225 | 110 | 216 | 240 | 100 | 55 | 106 | 140 | 125 | 2" | 280 | 560 |
| MH = 06350032 - MC | 500 | 178 | 920 | 160 | M 110 x 3 | M 250 x 6 | 325 | 125 | 250 | 345 | 160 | 65 | 112 | 160 | 160 | 2-½" | 350 | 686 |

HYDRAULIC CYLINDERS SERIES MH 32

63 Bar Pressure

Female Clevis Mtg.

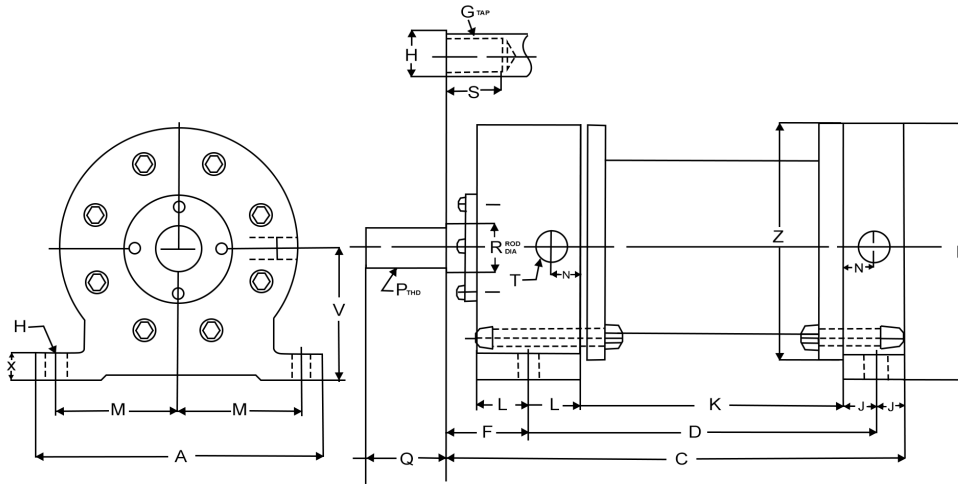


| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max.} |
|--------------------|-----------|-----|-----|----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-------------------|
| MH = 06304032 - FC | 40 | 20 | 215 | 20 | 17 | M 12 x 1.25 | M 20 x 1.5 | 65 | 40 | 63 | 87 | 16 | 19 | 16 | 24 | 18 | ½" | 28 | 90 |
| MH = 06305032 - FC | 50 | 25 | 236 | 20 | 21 | M 16 x 1.25 | M 27 x 1.5 | 75 | 40 | 71 | 90 | 20 | 19 | 22 | 32 | 22 | ½" | 36 | 110 |
| MH = 06306332 - FC | 63 | 32 | 265 | 20 | 26 | M 18 x 1.5 | M 33 x 2 | 85 | 40 | 77 | 103 | 25 | 22 | 25 | 36 | 25 | ¾" | 45 | 125 |
| MH = 06308032 - FC | 80 | 40 | 290 | 25 | 33 | M 22 x 1.5 | M 42 x 2 | 90 | 44 | 86 | 114 | 32 | 25 | 30 | 44 | 28 | ¾" | 56 | 150 |
| MH = 06310032 - FC | 100 | 40 | 338 | 25 | 33 | M 27 x 2 | M 48 x 2 | 95 | 57 | 113 | 130 | 32 | 30 | 36 | 54 | 36 | 1" | 70 | 165 |
| MH = 06312532 - FC | 125 | 45 | 388 | 30 | 41 | M 33 x 2 | M 64 x 3 | 120 | 57 | 130 | 138 | 40 | 30 | 45 | 66 | 45 | 1" | 90 | 203 |
| MH = 06316032 - FC | 160 | 59 | 431 | 35 | 51 | M 42 x 2 | M 80 x 3 | 135 | 70 | 146 | 150 | 50 | 35 | 56 | 84 | 56 | 1-¼" | 110 | 240 |
| MH = 06320032 - FC | 200 | 59 | 488 | 35 | 51 | M 48 x 2 | M 100 x 3 | 145 | 76 | 178 | 165 | 50 | 35 | 63 | 96 | 63 | 1-¼" | 140 | 300 |
| MH = 06325032 - FC | 250 | 71 | 585 | 40 | 64 | M 56 x 2 | M 125 x 4 | 170 | 88 | 190 | 230 | 63 | 45 | 75 | 112 | 80 | 1-½" | 180 | 395 |
| MH = 06332032 - FC | 320 | 90 | 646 | 45 | 81 | M 72 x 3 | M 160 x 4 | 200 | 110 | 216 | 230 | 80 | 55 | 85 | 128 | 100 | 2" | 220 | 455 |
| MH = 06340032 - FC | 400 | 112 | 681 | 55 | 101 | M 90 x 3 | M 200 x 4 | 225 | 110 | 216 | 240 | 100 | 55 | 106 | 140 | 125 | 2" | 280 | 560 |
| MH = 06350032 - FC | 500 | 178 | 920 | 85 | 161 | M 110 x 3 | M 250 x 6 | 325 | 125 | 250 | 345 | 160 | 65 | 112 | 160 | 160 | 2-½" | 350 | 686 |

HYDRAULIC CYLINDERS SERIES MH 32

63 Bar Pressure

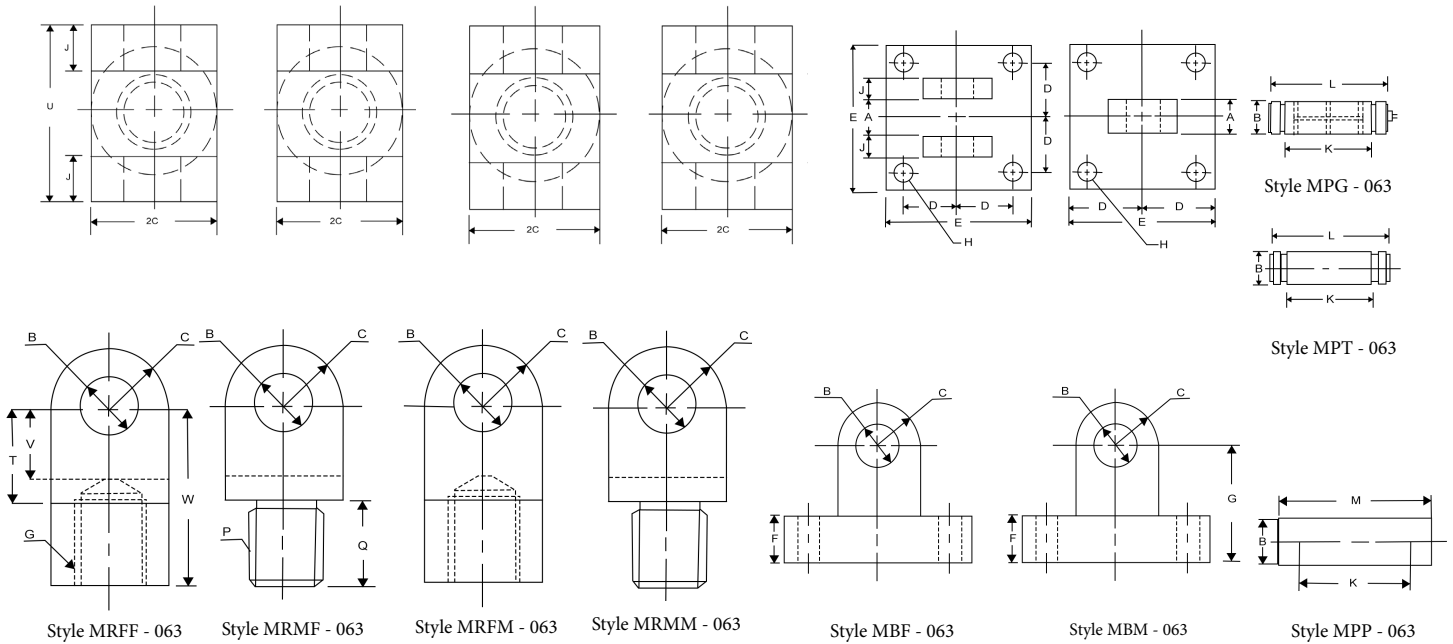
Side Log Mtg.



| MODEL NO. | BORE (mm) | A | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | V | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|-----|------------------------------------|------------------------------------|----|----|-----|----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|----|------------------|
| MH = 06304032 - SL | 40 | 146 | 102 | 225 | 124 | 81 | M 12 x 1.25 | M 20 x 1.5 | 14 | 20 | 63 | 41 | 59 | 19 | 16 | 24 | 18 | ½" | 28 | 57 | 22 | 90 |
| MH = 06305032 - SL | 50 | 171 | 122 | 233 | 132 | 81 | M 16 x 1.25 | M 27 x 1.5 | 14 | 20 | 71 | 41 | 72 | 19 | 22 | 32 | 22 | ½" | 36 | 67 | 22 | 110 |
| MH = 06306332 - SL | 63 | 190 | 137 | 252 | 145 | 88 | M 18 x 1.5 | M 33 x 2 | 14 | 20 | 77 | 48 | 81 | 22 | 25 | 36 | 25 | ¾" | 45 | 74 | 22 | 125 |
| MH = 06308032 - SL | 80 | 216 | 162 | 266 | 156 | 88 | M 22 x 1.5 | M 42 x 2 | 18 | 22 | 86 | 48 | 90 | 25 | 30 | 44 | 28 | ¾" | 56 | 87 | 25 | 150 |
| MH = 06310032 - SL | 100 | 254 | 177 | 317 | 190 | 98 | M 27 x 2 | M 48 x 2 | 22 | 29 | 113 | 48 | 105 | 30 | 36 | 54 | 36 | 1" | 70 | 94 | 25 | 165 |
| MH = 06312532 - SL | 125 | 311 | 215 | 346 | 213 | 104 | M 33 x 2 | M 64 x 3 | 27 | 29 | 130 | 54 | 129 | 30 | 45 | 66 | 45 | 1" | 90 | 113 | 38 | 203 |
| MH = 06316032 - SL | 160 | 337 | 252 | 374 | 235 | 104 | M 42 x 2 | M 80 x 3 | 27 | 35 | 146 | 54 | 142 | 35 | 56 | 84 | 56 | 1-¼" | 110 | 132 | 38 | 240 |
| MH = 06320032 - SL | 200 | 413 | 312 | 438 | 283 | 117 | M 48 x 2 | M 100 x 3 | 30 | 38 | 178 | 67 | 177 | 35 | 63 | 96 | 63 | 1-¼" | 140 | 162 | 44 | 300 |
| MH = 06325032 - SL | 250 | 445 | 420 | 520 | 317 | 158 | M 56 x 2 | M 125 x 4 | 30 | 45 | 190 | 82 | 193 | 45 | 75 | 112 | 80 | 1-½" | 180 | 222 | 44 | 395 |
| MH = 06332032 - SL | 320 | 508 | 480 | 580 | 360 | 165 | M 72 x 3 | M 160 x 4 | 30 | 55 | 216 | 89 | 224 | 55 | 85 | 128 | 100 | 2" | 220 | 252 | 44 | 455 |
| MH = 06340032 - SL | 400 | 675 | 585 | 580 | 360 | 165 | M 90 x 3 | M 200 x 4 | 33 | 55 | 216 | 89 | 305 | 55 | 106 | 140 | 125 | 2" | 280 | 305 | 50 | 560 |
| MH = 06350032 - SL | 500 | 875 | 710 | 656 | 408 | 185 | M 110 x 3 | M 250 x 6 | 46 | 63 | 250 | 95 | 392 | 65 | 112 | 160 | 160 | 2-½" | 350 | 367 | 70 | 686 |

HYDRAULIC CYLINDERS SERIES MH 32

63 Bar Pressure

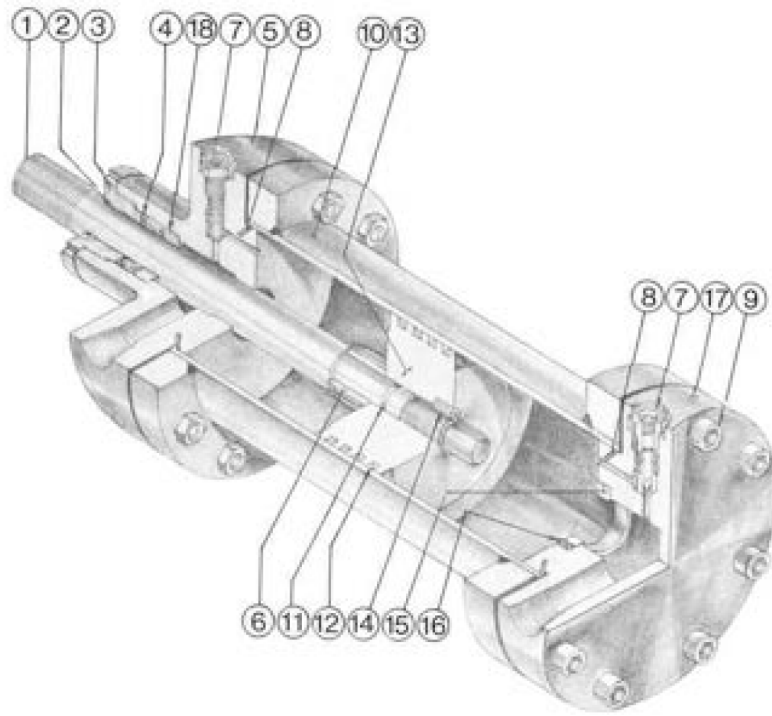


| BORE (mm) | A | B | C | G=P | J | Q=S | T | U | V | W |
|-----------|----|----|----|-------------|----|-----|-----|-----|-----|-----|
| 40 | 16 | 16 | 20 | M 20 x 1.25 | 20 | 16 | 35 | 56 | 25 | 51 |
| 50 | 20 | 20 | 25 | M 14 x 1.25 | 20 | 18 | 45 | 60 | 35 | 63 |
| 63 | 25 | 25 | 30 | M 18 x 1.5 | 20 | 25 | 50 | 65 | 40 | 75 |
| 80 | 32 | 32 | 40 | M 22 x 1.5 | 25 | 30 | 55 | 82 | 45 | 85 |
| 100 | 32 | 32 | 40 | M 27 x 2 | 25 | 36 | 60 | 82 | 50 | 96 |
| 125 | 40 | 40 | 45 | M 33 x 2 | 30 | 45 | 70 | 100 | 60 | 115 |
| 160 | 50 | 50 | 59 | M 42 x 2 | 35 | 56 | 85 | 120 | 75 | 141 |
| 200 | 50 | 50 | 59 | M 48 x 2 | 35 | 63 | 100 | 120 | 85 | 163 |
| 250 | 63 | 63 | 71 | M 56 x 2 | 40 | 75 | 115 | 143 | 100 | 190 |
| 320 | 80 | 80 | 90 | M 72 x 3 | 45 | 85 | 130 | 170 | 115 | 215 |

| BORE (mm) | A | B | C | D | E | F | G | H | J | K | L | M |
|-----------|----|----|----|-----|-----|----|-----|----|----|-----|-----|-----|
| 40 | 16 | 16 | 20 | 45 | 118 | 22 | 47 | 14 | 20 | 59 | 66 | 80 |
| 50 | 20 | 20 | 25 | 47 | 122 | 22 | 57 | 14 | 20 | 63 | 70 | 84 |
| 63 | 25 | 25 | 32 | 52 | 140 | 22 | 67 | 18 | 20 | 68 | 75 | 89 |
| 80 | 32 | 32 | 40 | 63 | 168 | 25 | 71 | 21 | 25 | 85 | 95 | 110 |
| 100 | 32 | 32 | 40 | 63 | 168 | 25 | 71 | 21 | 25 | 85 | 95 | 110 |
| 125 | 40 | 40 | 45 | 76 | 206 | 38 | 100 | 27 | 30 | 110 | 120 | 134 |
| 160 | 50 | 50 | 59 | 90 | 246 | 38 | 108 | 33 | 35 | 130 | 143 | 171 |
| 200 | 50 | 50 | 59 | 95 | 270 | 44 | 114 | 40 | 35 | 130 | 143 | 171 |
| 250 | 63 | 63 | 71 | 107 | 294 | 44 | 127 | 40 | 40 | 153 | 169 | 210 |
| 320 | 80 | 80 | 90 | 120 | 320 | 44 | 144 | 40 | 45 | 180 | 196 | 237 |

MILL TYPE METRIC HYDRAULIC CYLINDERS SERIES MH 33

100 Bar Pressure



PART LIST

| ITEM | QTY. | DESCRIPTION |
|------|----------|-----------------------------------|
| 1 | 1 only | Cylinder Rod (chrome plated) |
| 2 | *1 only | Rod Wiper |
| 3 | **1 only | Gland Bushing |
| 4 | 1 set | Gland Seal - Chevron "V" Ring |
| 5 | 1 only | Front Head |
| 6 | 1 only | Front Cushion |
| 7 | 2 only | Adjustable Cushion Assembly |
| 8 | *2 only | Head Static Seal - "O" Ring |
| 9 | 2 sets | Head Securing Cap Screws and Nuts |

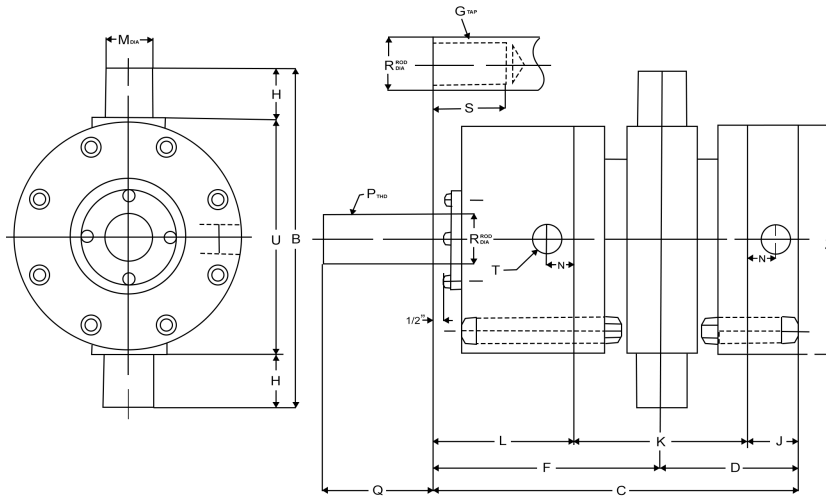
| ITEM | QTY. | DESCRIPTION |
|------|---------|-----------------------------------|
| 10 | 1 only | Cylinder Barrel Assembly |
| 11 | *1 only | Piston Rod Seal - "O" Ring |
| 12 | *1 set | Piston Dynamic Seal - Piston Ring |
| 13 | 1 only | Piston |
| 14 | 1 only | Piston Securing Screw |
| 15 | 1 only | Rear Cushion |
| 16 | 2 only | Rear Cushion Securing Screw |
| 17 | 1 only | Rear Head |
| 18 | 1 only | Lower Gland Bearing |

* Spare Parts
** Optional Spare Parts

HYDRAULIC CYLINDERS SERIES MH 33

100 Bar Pressure

Trunnion Mtg.

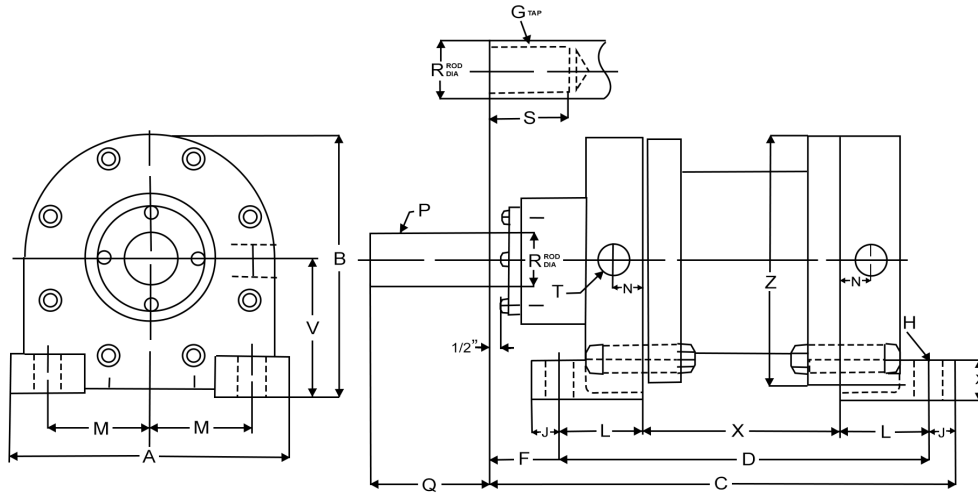


| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | U | R2:1 | Z _{max} |
|-------------------|-----------|------|-----|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|-----|------|------------------|
| MH - 10004033 - T | 40 | 122 | 183 | 68 | 115 | M 14 x 1.25 | M 20 x 1.5 | 16 | 40 | 56 | 87 | 20 | 19 | 18 | 28 | 20 | ½" | 90 | 28 | 90 |
| MH - 10005033 - T | 50 | 145 | 194 | 74 | 120 | M 20 x 1.5 | M 27 x 1.5 | 20 | 44 | 60 | 90 | 25 | 19 | 28 | 40 | 25 | ½" | 105 | 36 | 110 |
| MH - 10006333 - T | 63 | 170 | 213 | 77 | 136 | M 20 x 1.5 | M 33 x 2 | 25 | 44 | 66 | 103 | 32 | 22 | 28 | 40 | 32 | ¾" | 120 | 45 | 125 |
| MH - 10008033 - T | 80 | 199 | 240 | 88 | 152 | M 27 x 2 | M 42 x 2 | 32 | 50 | 76 | 114 | 40 | 25 | 36 | 54 | 36 | ¾" | 135 | 56 | 150 |
| MH - 10010033 - T | 100 | 240 | 277 | 102 | 175 | M 33 x 2 | M 48 x 2 | 40 | 57 | 90 | 130 | 50 | 30 | 45 | 66 | 45 | 1" | 160 | 70 | 165 |
| MH - 10012533 - T | 125 | 295 | 295 | 107 | 188 | M 36 x 2 | M 64 x 3 | 50 | 57 | 100 | 138 | 63 | 30 | 50 | 72 | 50 | 1" | 195 | 90 | 203 |
| MH - 10016033 - T | 160 | 366 | 344 | 130 | 214 | M 48 x 2 | M 80 x 3 | 63 | 70 | 120 | 154 | 80 | 35 | 63 | 96 | 63 | 1-¼" | 240 | 110 | 240 |
| MH - 10020033 - T | 200 | 455 | 392 | 146 | 246 | M 56 x 2 | M 100 x 3 | 80 | 76 | 140 | 176 | 100 | 35 | 75 | 112 | 80 | 1-¼" | 295 | 140 | 300 |
| MH - 10025033 - T | 250 | 570 | 507 | 166 | 341 | M 72 x 3 | M 125 x 4 | 100 | 88 | 156 | 263 | 125 | 45 | 85 | 128 | 100 | 1-½" | 370 | 180 | 395 |
| MH - 10032033 - T | 320 | 720 | 598 | 195 | 403 | M 90 x 3 | M 160 x 4 | 125 | 110 | 170 | 318 | 160 | 55 | 106 | 140 | 125 | 2" | 470 | 220 | 465 |
| MH - 10040033 - T | 400 | 890 | 675 | 214 | 461 | M 110 x 3 | M 200 x 4 | 160 | 114 | 200 | 361 | 200 | 55 | 112 | 160 | 160 | 2" | 570 | 280 | 616 |
| MH - 10050033 - T | 500 | 1150 | 780 | 240 | 520 | M 140 x 4 | M 250 x 6 | 250 | 140 | 200 | 420 | 250 | 65 | 140 | 180 | 200 | 2-½" | 700 | 350 | 756 |

HYDRAULIC CYLINDERS SERIES MH 33

100 Bar Pressure

Base Mtg.

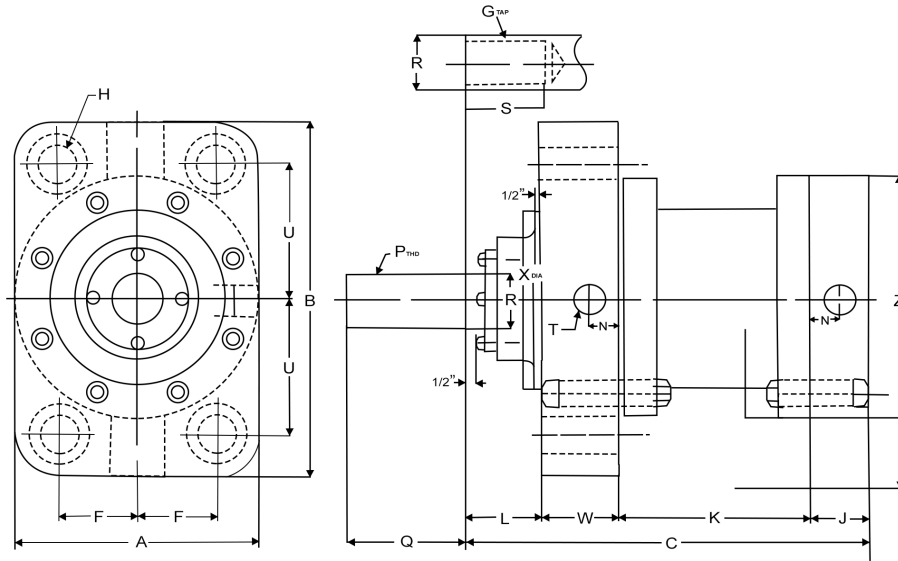


| MODEL NO. | BORE (mm) | A | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | V | X | Z _{max} |
|-------------------|-----------|-----|-----|-----|-----|-----|------------------------------------|------------------------------------|----|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|----|------------------|
| MH - 10004033 - B | 40 | 110 | 102 | 211 | 164 | 33 | M 14 x 1.25 | M 20 x 1.5 | 14 | 14 | 56 | 54 | 41 | 19 | 18 | 28 | 20 | ½" | 28 | 57 | 22 | 90 |
| MH - 10005033 - B | 50 | 130 | 122 | 218 | 168 | 36 | M 20 x 1.5 | M 27 x 1.5 | 14 | 14 | 60 | 54 | 51 | 19 | 28 | 40 | 25 | ½" | 36 | 67 | 22 | 110 |
| MH - 10006333 - B | 63 | 145 | 137 | 241 | 182 | 45 | M 20 x 1.5 | M 33 x 2 | 14 | 14 | 66 | 58 | 59 | 22 | 28 | 40 | 32 | ¾" | 45 | 74 | 22 | 125 |
| MH - 10008033 - B | 80 | 170 | 162 | 270 | 200 | 52 | M 27 x 2 | M 42 x 2 | 18 | 18 | 76 | 62 | 67 | 25 | 36 | 54 | 36 | ¾" | 56 | 87 | 25 | 150 |
| MH - 10010033 - B | 100 | 185 | 177 | 321 | 248 | 51 | M 33 x 2 | M 48 x 2 | 22 | 22 | 90 | 79 | 71 | 30 | 45 | 66 | 45 | 1" | 70 | 94 | 25 | 165 |
| MH - 10012533 - B | 125 | 223 | 215 | 349 | 268 | 54 | M 36 x 2 | M 64 x 3 | 27 | 27 | 100 | 84 | 85 | 30 | 50 | 72 | 50 | 1" | 90 | 113 | 32 | 203 |
| MH - 10016033 - B | 160 | 260 | 252 | 398 | 272 | 57 | M 48 x 2 | M 80 x 3 | 27 | 27 | 120 | 97 | 103 | 35 | 63 | 96 | 63 | 1-¼" | 110 | 132 | 38 | 240 |
| MH - 10020033 - B | 200 | 320 | 312 | 452 | 352 | 70 | M 56 x 2 | M 100 x 3 | 30 | 30 | 140 | 106 | 130 | 35 | 75 | 112 | 80 | 1-¼" | 140 | 162 | 44 | 300 |
| MH - 10025033 - B | 250 | 415 | 420 | 568 | 394 | 144 | M 72 x 3 | M 125 x 4 | 30 | 30 | 156 | 119 | 178 | 45 | 85 | 128 | 100 | 1-½" | 180 | 222 | 44 | 395 |
| MH - 10032033 - B | 320 | 485 | 490 | 658 | 450 | 178 | M 90 x 3 | M 160 x 4 | 30 | 30 | 170 | 140 | 213 | 55 | 106 | 140 | 125 | 2" | 220 | 257 | 44 | 465 |
| MH - 10040033 - B | 400 | 636 | 640 | 757 | 506 | 218 | M 110 x 3 | M 200 x 4 | 33 | 33 | 200 | 143 | 285 | 55 | 112 | 160 | 160 | 2" | 280 | 332 | 51 | 616 |
| MH - 10050033 - B | 500 | 776 | 780 | 837 | 542 | 249 | M 140 x 4 | M 250 x 6 | 46 | 46 | 200 | 171 | 342 | 65 | 140 | 180 | 200 | 2-½" | 350 | 402 | 70 | 756 |

HYDRAULIC CYLINDERS SERIES MH 33

100 Bar Pressure

Front Flange Mtg.

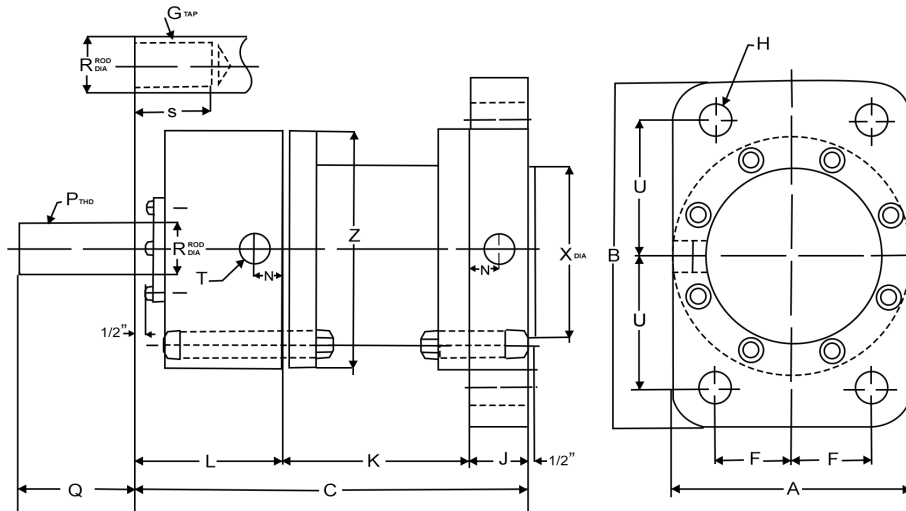


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | W | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|-----|------------------|
| MH - 10004033 - FF | 40 | 90 | 168 | 183 | 21 | M 14 x 1.25 | M 20 x 1.5 | 14 | 40 | 56 | 49 | 19 | 18 | 28 | 20 | ½" | 28 | 60 | 38 | 78 | 90 |
| MH - 10005033 - FF | 50 | 110 | 182 | 194 | 31 | M 20 x 1.5 | M 27 x 1.5 | 14 | 44 | 60 | 46 | 19 | 28 | 40 | 25 | ½" | 36 | 67 | 44 | 84 | 110 |
| MH - 10006333 - FF | 63 | 125 | 214 | 213 | 35 | M 20 x 1.5 | M 33 x 2 | 18 | 44 | 66 | 59 | 22 | 28 | 40 | 32 | ¾" | 45 | 79 | 44 | 90 | 125 |
| MH - 10008033 - FF | 80 | 150 | 260 | 240 | 41 | M 27 x 2 | M 42 x 2 | 24 | 50 | 76 | 70 | 25 | 36 | 54 | 36 | ¾" | 56 | 96 | 44 | 113 | 150 |
| MH - 10010033 - FF | 100 | 165 | 284 | 277 | 46 | M 33 x 2 | M 48 x 2 | 27 | 57 | 90 | 86 | 30 | 45 | 66 | 45 | 1" | 70 | 105 | 44 | 128 | 165 |
| MH - 10012533 - FF | 125 | 203 | 340 | 295 | 59 | M 36 x 2 | M 64 x 3 | 33 | 57 | 100 | 88 | 30 | 50 | 72 | 50 | 1" | 90 | 127 | 50 | 178 | 203 |
| MH - 10016033 - FF | 160 | 240 | 398 | 344 | 70 | M 48 x 2 | M 80 x 3 | 40 | 70 | 120 | 97 | 35 | 63 | 96 | 63 | 1-¼" | 110 | 149 | 57 | 178 | 240 |
| MH - 10020033 - FF | 200 | 300 | 468 | 392 | 94 | M 56 x 2 | M 100 x 3 | 46 | 76 | 140 | 100 | 35 | 75 | 112 | 80 | 1-¼" | 140 | 178 | 76 | 229 | 300 |
| MH - 10025033 - FF | 250 | 395 | 588 | 507 | 130 | M 72 x 3 | M 125 x 4 | 58 | 88 | 156 | 174 | 45 | 85 | 128 | 100 | 1-½" | 180 | 226 | 89 | 267 | 395 |
| MH - 10032033 - FF | 320 | 465 | 666 | 598 | 158 | M 90 x 3 | M 160 x 4 | 65 | 110 | 170 | 229 | 55 | 106 | 140 | 125 | 2" | 220 | 258 | 89 | 305 | 465 |
| MH - 10040033 - FF | 400 | 616 | 819 | 675 | 220 | M 110 x 3 | M 200 x 4 | 78 | 114 | 200 | 259 | 55 | 112 | 160 | 160 | 2" | 280 | 323 | 102 | 375 | 616 |
| MH - 10050033 - FF | 500 | * | * | 741 | * | M 140 x 4 | M 250 x 6 | * | 140 | 200 | * | 65 | 140 | 180 | 200 | 2-½" | 350 | * | * | * | 756 |

HYDRAULIC CYLINDERS SERIES MH 33

100 Bar Pressure

Rear Flange Mtg.

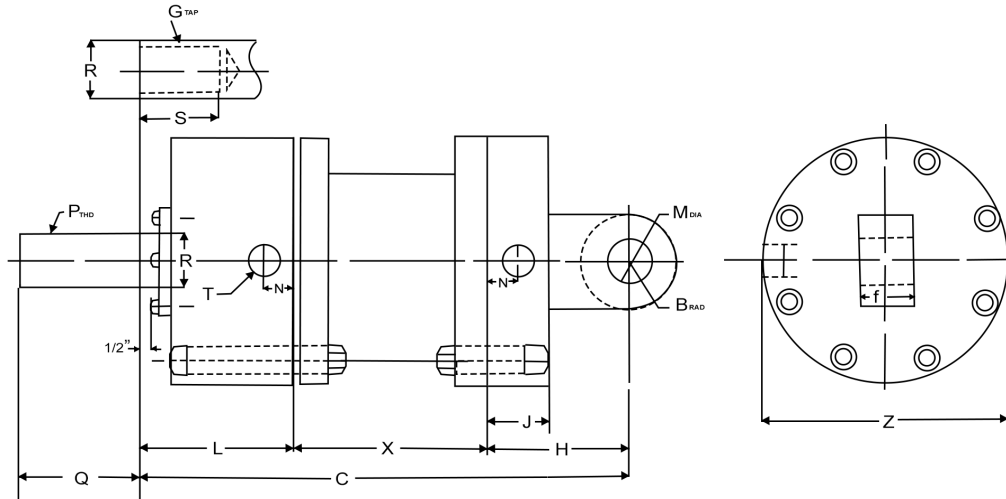


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|------------------|
| MH - 10004033 - RF | 40 | 90 | 168 | 183 | 21 | M 14 x 1.25 | M 20 x 1.5 | 14 | 40 | 56 | 87 | 19 | 18 | 28 | 20 | ½" | 28 | 60 | 78 | 90 |
| MH - 10005033 - RF | 50 | 110 | 182 | 194 | 31 | M 20 x 1.5 | M 27 x 1.5 | 14 | 44 | 60 | 90 | 19 | 28 | 40 | 25 | ½" | 36 | 67 | 84 | 110 |
| MH - 10006333 - RF | 63 | 125 | 214 | 213 | 35 | M 20 x 1.5 | M 33 x 2 | 18 | 44 | 66 | 103 | 22 | 28 | 40 | 32 | ¾" | 45 | 79 | 90 | 125 |
| MH - 10008033 - RF | 80 | 150 | 260 | 240 | 41 | M 27 x 2 | M 42 x 2 | 24 | 50 | 76 | 114 | 25 | 36 | 54 | 36 | ¾" | 56 | 96 | 113 | 150 |
| MH - 10010033 - RF | 100 | 165 | 284 | 277 | 46 | M 33 x 2 | M 48 x 2 | 27 | 57 | 90 | 130 | 30 | 45 | 66 | 45 | 1" | 70 | 105 | 128 | 165 |
| MH - 10012533 - RF | 125 | 203 | 340 | 295 | 59 | M 36 x 2 | M 64 x 3 | 33 | 57 | 100 | 138 | 30 | 50 | 72 | 50 | 1" | 90 | 127 | 178 | 203 |
| MH - 10016033 - RF | 160 | 240 | 398 | 344 | 70 | M 48 x 2 | M 80 x 3 | 40 | 70 | 120 | 154 | 35 | 63 | 96 | 63 | 1-¼" | 110 | 149 | 178 | 240 |
| MH - 10020033 - RF | 200 | 300 | 468 | 392 | 94 | M 56 x 2 | M 100 x 3 | 46 | 76 | 140 | 176 | 35 | 75 | 112 | 80 | 1-¼" | 140 | 178 | 229 | 300 |
| MH - 10025033 - RF | 250 | 395 | 588 | 507 | 130 | M 72 x 3 | M 125 x 4 | 58 | 88 | 156 | 263 | 45 | 85 | 128 | 100 | 1-½" | 180 | 226 | 267 | 395 |
| MH - 10032033 - RF | 320 | 465 | 666 | 598 | 158 | M 90 x 3 | M 160 x 4 | 65 | 110 | 170 | 318 | 55 | 106 | 140 | 125 | 2" | 220 | 258 | 305 | 465 |
| MH - 10040033 - RF | 400 | 616 | 819 | 675 | 220 | M 110 x 3 | M 200 x 4 | 78 | 114 | 200 | 361 | 55 | 112 | 160 | 160 | 2" | 280 | 323 | 375 | 616 |
| MH - 10050033 - RF | 500 | * | * | 741 | * | M 140 x 4 | M 250 x 6 | * | 140 | 200 | 420 | 65 | 140 | 180 | 200 | 2-½" | 350 | * | * | 756 |

HYDRAULIC CYLINDERS SERIES MH 33

100 Bar Pressure

Male Clevis Mtg.

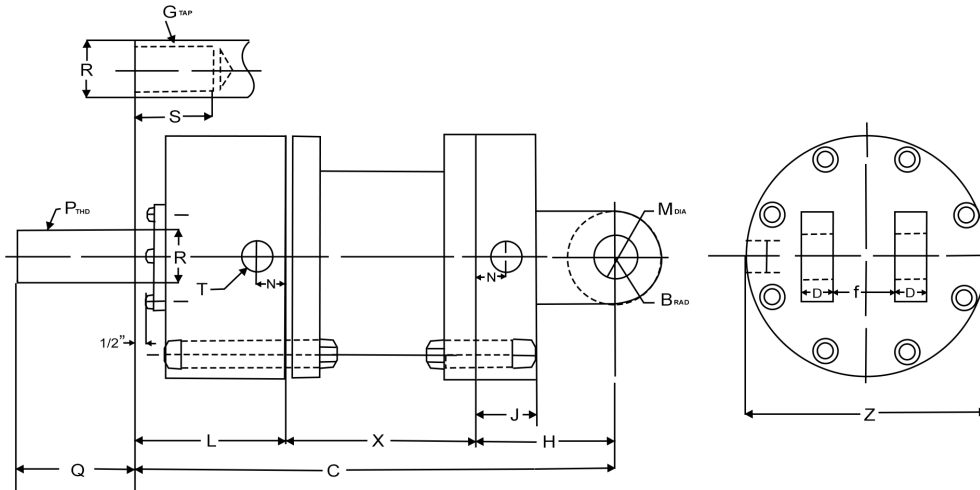


| MODEL NO. | BORE (mm) | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{ig} =S _{ig} | R | T | R2:1 | Z _{max} |
|--------------------|-----------|-----|------|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|------------------|
| MH - 10004033 - MC | 40 | 25 | 224 | 20 | M 14 x 1.25 | M 20 x 1.5 | 81 | 40 | 56 | 87 | 20 | 19 | 18 | 28 | 20 | ½" | 28 | 90 |
| MH - 10005033 - MC | 50 | 32 | 246 | 25 | M 20 x 1.5 | M 27 x 1.5 | 96 | 44 | 60 | 90 | 25 | 19 | 28 | 40 | 25 | ½" | 36 | 110 |
| MH - 10006333 - MC | 63 | 40 | 278 | 32 | M 20 x 1.5 | M 33 x 2 | 109 | 44 | 66 | 103 | 32 | 22 | 28 | 40 | 32 | ¾" | 45 | 125 |
| MH - 10008033 - MC | 80 | 47 | 322 | 40 | M 27 x 2 | M 42 x 2 | 132 | 50 | 76 | 114 | 40 | 25 | 36 | 54 | 36 | ¾" | 56 | 150 |
| MH - 10010033 - MC | 100 | 59 | 372 | 50 | M 33 x 2 | M 48 x 2 | 152 | 57 | 90 | 130 | 50 | 30 | 45 | 66 | 45 | 1" | 70 | 165 |
| MH - 10012533 - MC | 125 | 71 | 398 | 63 | M 36 x 2 | M 64 x 3 | 160 | 57 | 100 | 138 | 63 | 30 | 50 | 72 | 50 | 1" | 90 | 203 |
| MH - 10016033 - MC | 160 | 90 | 479 | 80 | M 48 x 2 | M 80 x 3 | 205 | 70 | 120 | 154 | 80 | 35 | 63 | 96 | 63 | 1-¼" | 110 | 240 |
| MH - 10020033 - MC | 200 | 112 | 557 | 100 | M 56 x 2 | M 100 x 3 | 241 | 76 | 140 | 176 | 100 | 35 | 75 | 112 | 80 | 1-¼" | 140 | 300 |
| MH - 10025033 - MC | 250 | 145 | 738 | 125 | M 72 x 3 | M 125 x 4 | 311 | 88 | 156 | 263 | 125 | 45 | 85 | 128 | 100 | 1-½" | 180 | 395 |
| MH - 10032033 - MC | 320 | 178 | 868 | 160 | M 90 x 3 | M 160 x 4 | 380 | 110 | 170 | 318 | 160 | 55 | 106 | 140 | 125 | 2" | 220 | 465 |
| MH - 10040033 - MC | 400 | 230 | 925 | 200 | M 110 x 3 | M 200 x 4 | 364 | 114 | 200 | 361 | 200 | 55 | 112 | 160 | 160 | 2" | 280 | 616 |
| MH - 10050033 - MC | 500 | 320 | 1050 | 250 | M 140 x 4 | M 250 x 6 | 430 | 140 | 200 | 420 | 250 | 65 | 140 | 180 | 200 | 2-½" | 350 | 756 |

HYDRAULIC CYLINDERS SERIES MH 33

100 Bar Pressure

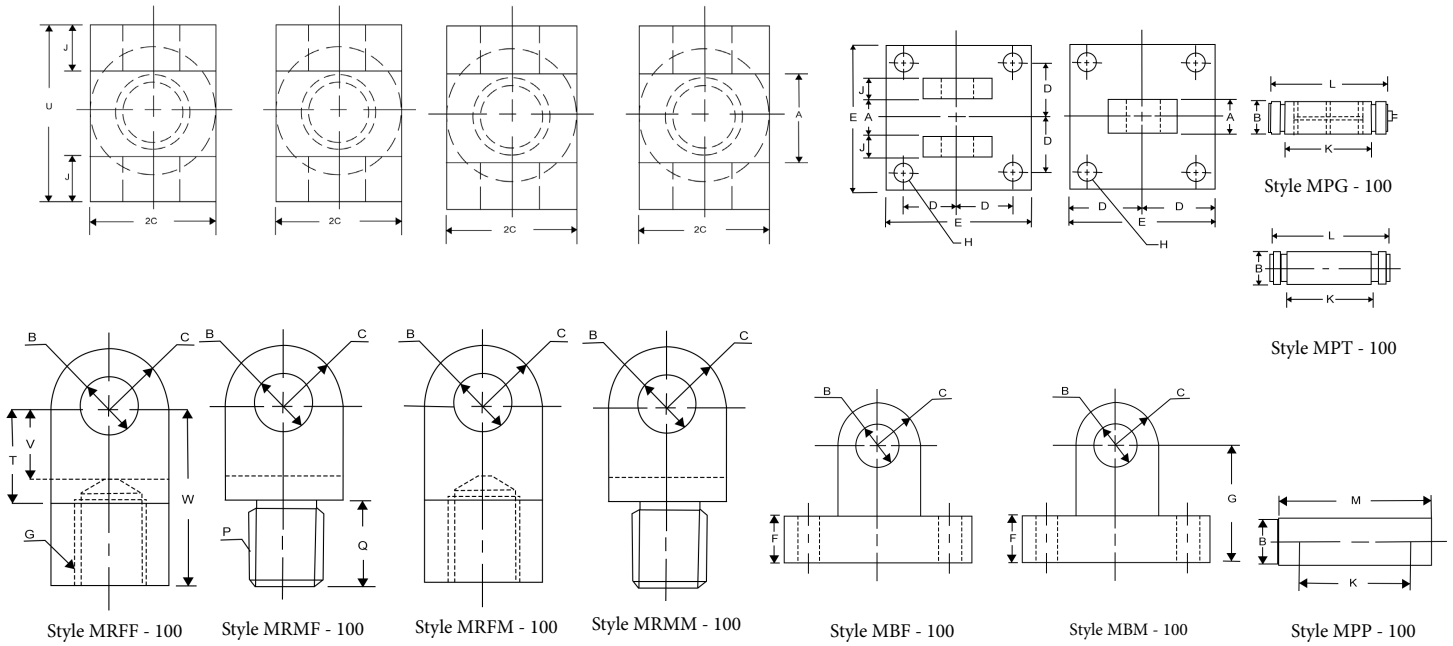
Female Clevis Mtg.



| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max} |
|--------------------|-----------|-----|------|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|--------|------|------------------|
| MH - 10004033 - FC | 40 | 25 | 224 | 20 | 21 | M 14 x 1.25 | M 20 x 1.5 | 81 | 40 | 56 | 87 | 20 | 19 | 18 | 28 | 20 | 1/2" | 28 | 90 |
| MH - 10005033 - FC | 50 | 32 | 246 | 20 | 26 | M 20 x 1.5 | M 27 x 1.5 | 96 | 44 | 60 | 90 | 25 | 19 | 28 | 40 | 25 | 1/2" | 36 | 110 |
| MH - 10006333 - FC | 63 | 40 | 278 | 25 | 33 | M 20 x 1.5 | M 33 x 2 | 109 | 44 | 66 | 103 | 32 | 22 | 28 | 40 | 32 | 3/4" | 45 | 125 |
| MH - 10008033 - FC | 80 | 47 | 322 | 30 | 41 | M 27 x 2 | M 42 x 2 | 132 | 50 | 76 | 114 | 40 | 25 | 36 | 54 | 36 | 3/4" | 56 | 150 |
| MH - 10010033 - FC | 100 | 59 | 372 | 35 | 51 | M 33 x 2 | M 48 x 2 | 152 | 57 | 90 | 130 | 50 | 30 | 45 | 66 | 45 | 1" | 70 | 165 |
| MH - 10012533 - FC | 125 | 71 | 398 | 40 | 64 | M 36 x 2 | M 64 x 3 | 160 | 57 | 100 | 138 | 63 | 30 | 50 | 72 | 50 | 1" | 90 | 203 |
| MH - 10016033 - FC | 160 | 90 | 479 | 45 | 81 | M 48 x 2 | M 80 x 3 | 205 | 70 | 120 | 154 | 80 | 35 | 63 | 96 | 63 | 1-1/4" | 110 | 240 |
| MH - 10020033 - FC | 200 | 112 | 557 | 55 | 101 | M 56 x 2 | M 100 x 3 | 241 | 76 | 140 | 176 | 100 | 35 | 75 | 112 | 80 | 1-1/4" | 140 | 300 |
| MH - 10025033 - FC | 250 | 145 | 738 | 70 | 126 | M 72 x 3 | M 125 x 4 | 311 | 88 | 156 | 263 | 125 | 45 | 85 | 128 | 100 | 1-1/2" | 180 | 395 |
| MH - 10032033 - FC | 320 | 178 | 868 | 85 | 161 | M 90 x 3 | M 160 x 4 | 380 | 110 | 170 | 318 | 160 | 55 | 106 | 140 | 125 | 2" | 220 | 465 |
| MH - 10040033 - FC | 400 | 230 | 925 | 95 | 201 | M 110 x 3 | M 200 x 4 | 364 | 114 | 200 | 361 | 200 | 55 | 112 | 160 | 160 | 2" | 280 | 616 |
| MH - 10050033 - FC | 500 | 320 | 1050 | 115 | 251 | M 140 x 4 | M 250 x 6 | 430 | 140 | 200 | 420 | 250 | 65 | 140 | 180 | 200 | 2-1/2" | 350 | 756 |

HYDRAULIC CYLINDERS SERIES MH 33

100 Bar Pressure

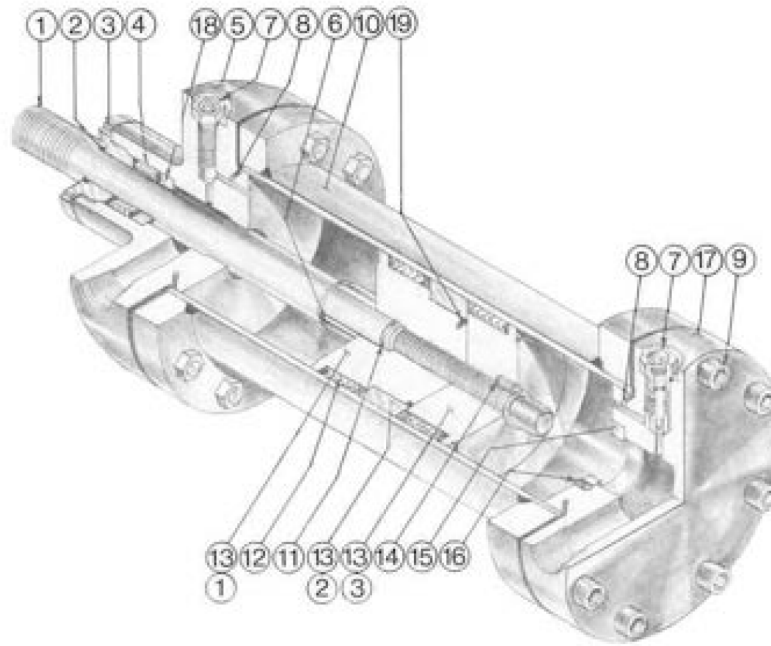


| BORE (mm) | A | B | C | G=P | J | Q=S | T | U | V | W |
|-----------|-----|-----|-----|-------------|----|-----|-----|-----|-----|-----|
| 40 | 20 | 20 | 25 | M 14 x 1.25 | 20 | 18 | 51 | 60 | 41 | 69 |
| 50 | 25 | 25 | 32 | M 20 x 1.5 | 20 | 28 | 62 | 65 | 52 | 90 |
| 63 | 32 | 32 | 40 | M 20 x 1.5 | 25 | 28 | 75 | 82 | 65 | 103 |
| 80 | 40 | 40 | 47 | M 27 x 2 | 30 | 36 | 92 | 100 | 82 | 128 |
| 100 | 50 | 50 | 59 | M 33 x 2 | 35 | 45 | 110 | 120 | 95 | 155 |
| 125 | 63 | 63 | 71 | M 36 x 2 | 40 | 50 | 118 | 143 | 103 | 168 |
| 160 | 80 | 80 | 90 | M 48 x 2 | 45 | 63 | 150 | 170 | 135 | 213 |
| 200 | 100 | 100 | 112 | M 56 x 2 | 55 | 75 | 180 | 210 | 165 | 255 |
| 250 | 125 | 125 | 145 | M 72 x 3 | 70 | 85 | 243 | 265 | 223 | 336 |
| 320 | 160 | 160 | 178 | M 90 x 3 | 85 | 106 | 290 | 330 | 270 | 396 |

| BORE (mm) | A | B | C | D | E | F | G | H | J | K | L | M |
|-----------|-----|-----|-----|-----|-----|----|-----|----|----|-----|-----|-----|
| 40 | 20 | 20 | 25 | 47 | 122 | 22 | 53 | 14 | 20 | 63 | 70 | 84 |
| 50 | 25 | 25 | 32 | 52 | 132 | 22 | 62 | 14 | 20 | 68 | 75 | 89 |
| 63 | 32 | 32 | 40 | 58 | 144 | 22 | 72 | 14 | 25 | 85 | 95 | 110 |
| 80 | 40 | 40 | 47 | 70 | 176 | 25 | 88 | 18 | 30 | 110 | 120 | 134 |
| 100 | 50 | 50 | 59 | 83 | 210 | 25 | 96 | 22 | 35 | 130 | 143 | 171 |
| 125 | 63 | 63 | 71 | 98 | 250 | 32 | 122 | 27 | 40 | 153 | 169 | 210 |
| 160 | 80 | 80 | 90 | 111 | 276 | 38 | 150 | 27 | 45 | 180 | 196 | 237 |
| 200 | 100 | 100 | 112 | 133 | 326 | 44 | 204 | 30 | 55 | 225 | 245 | 288 |
| 250 | 125 | 125 | 145 | 161 | 382 | 44 | 244 | 30 | 70 | 280 | 300 | 343 |
| 320 | 160 | 160 | 178 | 193 | 446 | 51 | 301 | 30 | 85 | 350 | 370 | 413 |

MILL TYPE METRIC HYDRAULIC CYLINDERS SERIES MH 34

100 Bar Pressure



PART LIST

| ITEM | QTY. | DESCRIPTION |
|------|----------|-----------------------------------|
| 1 | 1 only | Cylinder Rod (chrome plated) |
| 2 | *1 only | Rod Wiper |
| 3 | **1 only | Gland Bushing |
| 4 | *1 set | Gland Seal - Chevron "V" Ring |
| 5 | 1 only | Front Head |
| 6 | 1 only | Front Cushion |
| 7 | 2 only | Adjustable Cushion Assembly |
| 8 | *2 only | Head Static Seal - "O" Ring |
| 9 | 2 sets | Head Securing Cap Screws and Nuts |
| 10 | 1 only | Cylinder Barrel Assembly |
| 11 | *1 only | Piston Rod Seal - "O" Ring |

| ITEM | QTY. | DESCRIPTION |
|------|---------|---|
| 12 | *2 sets | Piston Dynamic Seal - Chevron "V" Rings |
| 13/1 | 1 only | Piston - Front Section |
| 13/2 | 1 only | Piston - Bushing |
| 13/3 | 1 only | Piston - Rear Section |
| 14 | 1 only | Piston Securing Screw |
| 15 | 1 only | Rear Cushion |
| 16 | 2 only | Rear Cushion Securing Screw |
| 17 | 1 only | Rear Head |
| 18 | 1 only | Lower Gland Bearing |
| 19 | *1 only | Piston Static Seal - "O" Ring |

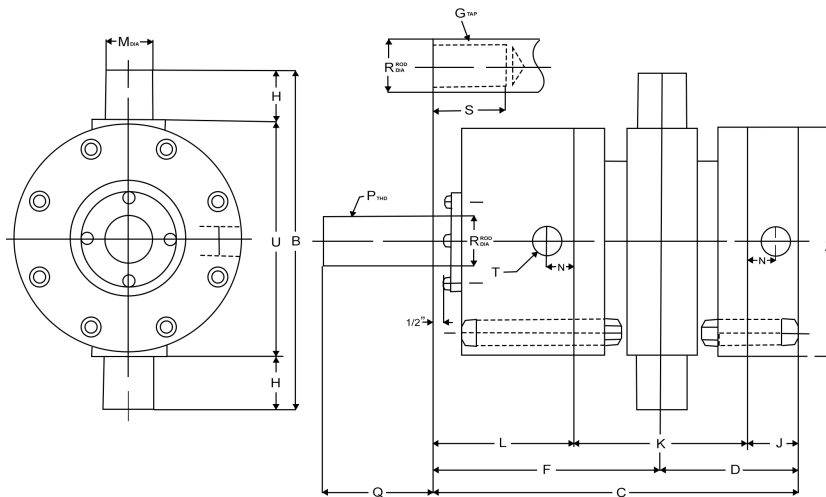
* Spare Parts

** Optional Spare Parts

HYDRAULIC CYLINDERS SERIES MH 34

100 Bar Pressure

Trunnion Mtg.

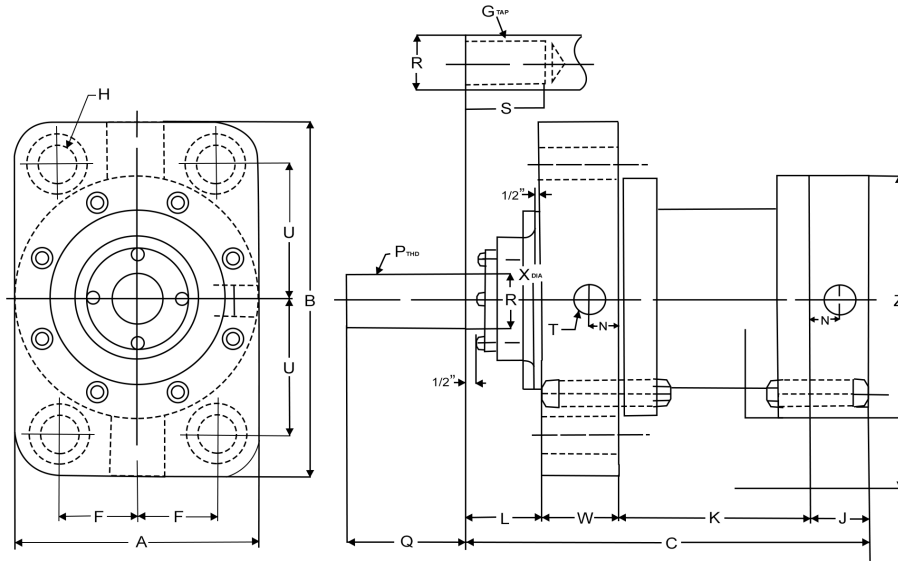


| MODEL NO. | BORE (mm) | B | C | D | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | M | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | U | R2:1 | Z _{max} |
|-------------------|-----------|------|-----|-----|-----|-------------------|-------------------|-----|-----|-----|-----|-----|----|-----------------|-----------------|-----|------|-----|------|------------------|
| MH - 10004034 - T | 40 | 122 | 190 | 71 | 119 | M 14 x 1.25 | M 20 x 1.5 | 16 | 40 | 63 | 87 | 20 | 19 | 18 | 28 | 20 | ½" | 90 | 28 | 90 |
| MH - 10005034 - T | 50 | 145 | 205 | 79 | 126 | M 20 x 1.5 | M 27 x 1.5 | 20 | 44 | 71 | 90 | 25 | 19 | 28 | 40 | 25 | ½" | 105 | 36 | 110 |
| MH - 10006334 - T | 63 | 170 | 224 | 82 | 142 | M 20 x 1.5 | M 33 x 2 | 25 | 44 | 77 | 103 | 32 | 22 | 28 | 40 | 32 | ¾" | 120 | 45 | 125 |
| MH - 10008034 - T | 80 | 199 | 250 | 93 | 157 | M 27 x 2 | M 42 x 2 | 32 | 50 | 86 | 114 | 40 | 25 | 36 | 54 | 36 | ¾" | 135 | 56 | 150 |
| MH - 10010034 - T | 100 | 240 | 300 | 113 | 187 | M 33 x 2 | M 48 x 2 | 40 | 57 | 113 | 130 | 50 | 30 | 45 | 66 | 45 | 1" | 160 | 70 | 165 |
| MH - 10012534 - T | 125 | 295 | 325 | 122 | 203 | M 36 x 2 | M 64 x 3 | 50 | 57 | 130 | 138 | 63 | 30 | 50 | 72 | 50 | 1" | 195 | 90 | 203 |
| MH - 10016034 - T | 160 | 366 | 370 | 143 | 227 | M 48 x 2 | M 80 x 3 | 63 | 70 | 146 | 154 | 80 | 35 | 63 | 96 | 63 | 1-¼" | 240 | 110 | 240 |
| MH - 10020034 - T | 200 | 455 | 450 | 175 | 275 | M 56 x 2 | M 100 x 3 | 80 | 76 | 198 | 176 | 100 | 35 | 75 | 112 | 80 | 1-¼" | 295 | 140 | 300 |
| MH - 10025034 - T | 250 | 570 | 550 | 187 | 363 | M 72 x 3 | M 125 x 4 | 100 | 88 | 199 | 263 | 125 | 45 | 85 | 128 | 100 | 1-½" | 370 | 180 | 395 |
| MH - 10032034 - T | 320 | 720 | 660 | 226 | 434 | M 90 x 3 | M 160 x 4 | 125 | 110 | 232 | 318 | 160 | 55 | 106 | 140 | 125 | 2" | 470 | 220 | 465 |
| MH - 10040034 - T | 400 | 890 | 740 | 246 | 494 | M 110 x 3 | M 200 x 4 | 160 | 114 | 265 | 361 | 200 | 55 | 112 | 160 | 160 | 2" | 570 | 280 | 616 |
| MH - 10050034 - T | 500 | 1150 | 890 | 293 | 573 | M 140 x 4 | M 250 x 6 | 250 | 140 | 349 | 420 | 250 | 65 | 140 | 180 | 200 | 2-½" | 700 | 350 | 756 |

HYDRAULIC CYLINDERS SERIES MH 34

100 Bar Pressure

Front Flange Mtg.

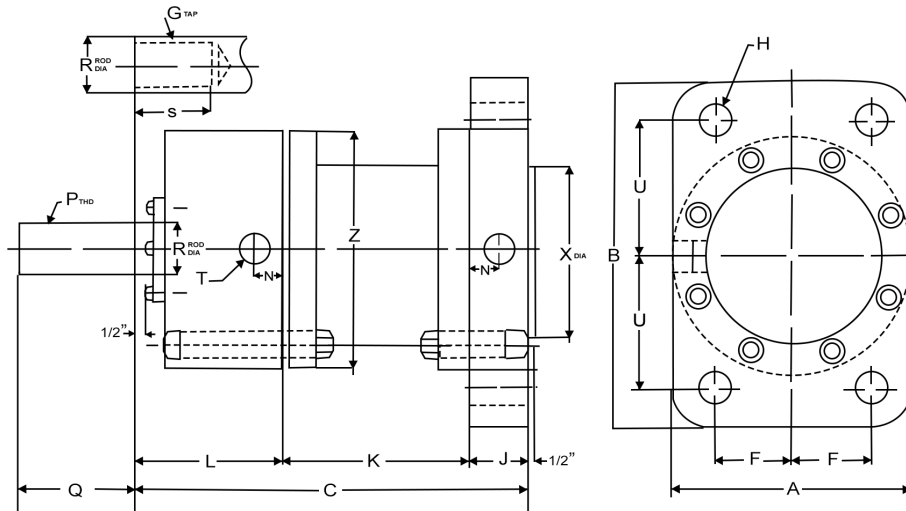


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | W | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|-----|------------------|
| MH - 10004034 - FF | 40 | 90 | 168 | 190 | 21 | M 14 x 1.25 | M 20 x 1.5 | 14 | 40 | 63 | 49 | 19 | 18 | 28 | 20 | ½" | 28 | 60 | 38 | 78 | 90 |
| MH - 10005034 - FF | 50 | 110 | 182 | 205 | 31 | M 20 x 1.5 | M 27 x 1.5 | 14 | 44 | 71 | 46 | 19 | 28 | 40 | 25 | ½" | 36 | 67 | 44 | 84 | 110 |
| MH - 10006334 - FF | 63 | 125 | 214 | 224 | 35 | M 20 x 1.5 | M 33 x 2 | 18 | 44 | 77 | 59 | 22 | 28 | 40 | 32 | ¾" | 45 | 79 | 44 | 90 | 125 |
| MH - 10008034 - FF | 80 | 150 | 260 | 250 | 41 | M 27 x 2 | M 42 x 2 | 24 | 50 | 86 | 70 | 25 | 36 | 54 | 36 | ¾" | 56 | 96 | 44 | 113 | 150 |
| MH - 10010034 - FF | 100 | 165 | 284 | 300 | 46 | M 33 x 2 | M 48 x 2 | 27 | 57 | 113 | 86 | 30 | 45 | 66 | 45 | 1" | 70 | 105 | 44 | 128 | 165 |
| MH - 10012534 - FF | 125 | 203 | 340 | 325 | 59 | M 36 x 2 | M 64 x 3 | 33 | 57 | 130 | 88 | 30 | 50 | 72 | 50 | 1" | 90 | 127 | 50 | 178 | 203 |
| MH - 10016034 - FF | 160 | 240 | 398 | 370 | 70 | M 48 x 2 | M 80 x 3 | 40 | 70 | 146 | 97 | 35 | 63 | 96 | 63 | 1-¼" | 110 | 149 | 57 | 178 | 240 |
| MH - 10020034 - FF | 200 | 300 | 468 | 450 | 94 | M 56 x 2 | M 100 x 3 | 46 | 76 | 198 | 100 | 35 | 75 | 112 | 80 | 1-¼" | 140 | 178 | 76 | 229 | 300 |
| MH - 10025034 - FF | 250 | 395 | 588 | 550 | 130 | M 72 x 3 | M 125 x 4 | 58 | 88 | 199 | 174 | 45 | 85 | 128 | 100 | 1-½" | 180 | 226 | 89 | 267 | 395 |
| MH - 10032034 - FF | 320 | 465 | 666 | 660 | 158 | M 90 x 3 | M 160 x 4 | 65 | 110 | 232 | 229 | 55 | 106 | 140 | 125 | 2" | 220 | 258 | 89 | 305 | 465 |
| MH - 10040034 - FF | 400 | 616 | 819 | 740 | 220 | M 110 x 3 | M 200 x 4 | 78 | 114 | 265 | 259 | 55 | 112 | 160 | 160 | 2" | 280 | 323 | 102 | 375 | 616 |
| MH - 10050034 - FF | 500 | * | * | 890 | * | M 140 x 4 | M 250 x 6 | * | 140 | 305 | * | 65 | 140 | 180 | 200 | 2-½" | 350 | * | * | * | 756 |

HYDRAULIC CYLINDERS SERIES MH 34

100 Bar Pressure

Rear Flange Mtg.

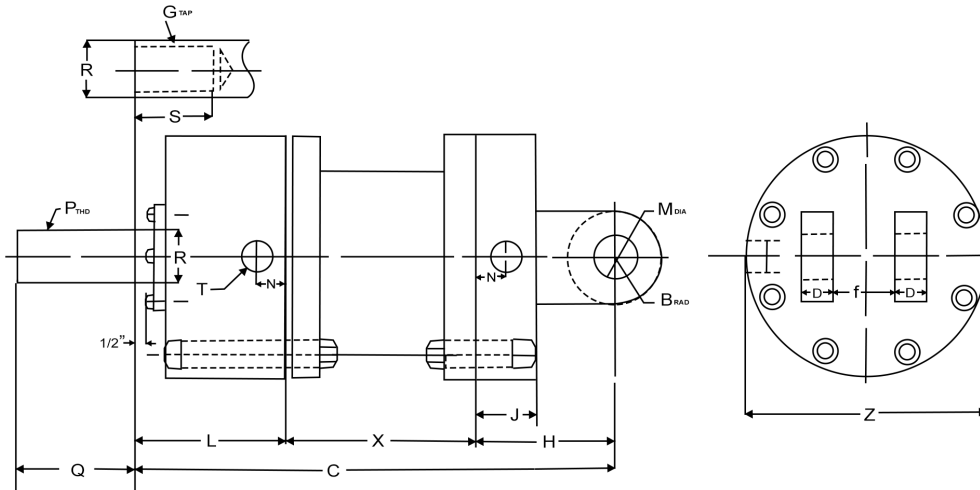


| MODEL NO. | BORE (mm) | A | B | C | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | R2:1 | U | X | Z _{max.} |
|--------------------|-----------|-----|-----|-----|-----|-------------------|-------------------|----|-----|-----|-----|----|-----------------|-----------------|-----|--------|------|-----|-----|-------------------|
| MH - 10004034 - RF | 40 | 90 | 168 | 190 | 21 | M 14 x 1.25 | M 20 x 1.5 | 14 | 40 | 63 | 87 | 19 | 18 | 28 | 20 | 1/2" | 28 | 60 | 78 | 90 |
| MH - 10005034 - RF | 50 | 110 | 182 | 205 | 31 | M 20 x 1.5 | M 27 x 1.5 | 14 | 44 | 71 | 90 | 19 | 28 | 40 | 25 | 1/2" | 36 | 67 | 84 | 110 |
| MH - 10006334 - RF | 63 | 125 | 214 | 224 | 35 | M 20 x 1.5 | M 33 x 2 | 18 | 44 | 77 | 103 | 22 | 28 | 40 | 32 | 3/4" | 45 | 79 | 90 | 125 |
| MH - 10008034 - RF | 80 | 150 | 260 | 250 | 41 | M 27 x 2 | M 42 x 2 | 24 | 50 | 86 | 114 | 25 | 36 | 54 | 36 | 3/4" | 56 | 96 | 113 | 150 |
| MH - 10010034 - RF | 100 | 165 | 284 | 300 | 46 | M 33 x 2 | M 48 x 2 | 27 | 57 | 113 | 130 | 30 | 45 | 66 | 45 | 1" | 70 | 105 | 128 | 165 |
| MH - 10012534 - RF | 125 | 203 | 340 | 325 | 59 | M 36 x 2 | M 64 x 3 | 33 | 57 | 130 | 138 | 30 | 50 | 72 | 50 | 1" | 90 | 127 | 178 | 203 |
| MH - 10016034 - RF | 160 | 240 | 398 | 370 | 70 | M 48 x 2 | M 80 x 3 | 40 | 70 | 146 | 154 | 35 | 63 | 96 | 63 | 1-1/4" | 110 | 149 | 178 | 240 |
| MH - 10020034 - RF | 200 | 300 | 468 | 450 | 94 | M 56 x 2 | M 100 x 3 | 46 | 76 | 198 | 176 | 35 | 75 | 112 | 80 | 1-1/4" | 140 | 178 | 229 | 300 |
| MH - 10025034 - RF | 250 | 395 | 588 | 550 | 130 | M 72 x 3 | M 125 x 4 | 58 | 88 | 199 | 263 | 45 | 85 | 128 | 100 | 1-1/2" | 180 | 226 | 267 | 395 |
| MH - 10032034 - RF | 320 | 465 | 666 | 660 | 158 | M 90 x 3 | M 160 x 4 | 65 | 110 | 232 | 318 | 55 | 106 | 140 | 125 | 2" | 220 | 258 | 305 | 465 |
| MH - 10040034 - RF | 400 | 616 | 819 | 740 | 220 | M 110 x 3 | M 200 x 4 | 78 | 114 | 265 | 361 | 55 | 112 | 160 | 160 | 2" | 280 | 323 | 375 | 616 |
| MH - 10050034 - RF | 500 | * | * | 890 | * | M 140 x 4 | M 250 x 6 | * | 140 | 305 | 420 | 65 | 140 | 180 | 200 | 2-1/2" | 350 | * | * | 756 |

HYDRAULIC CYLINDERS SERIES MH 34

100 Bar Pressure

Female Clevis Mtg.

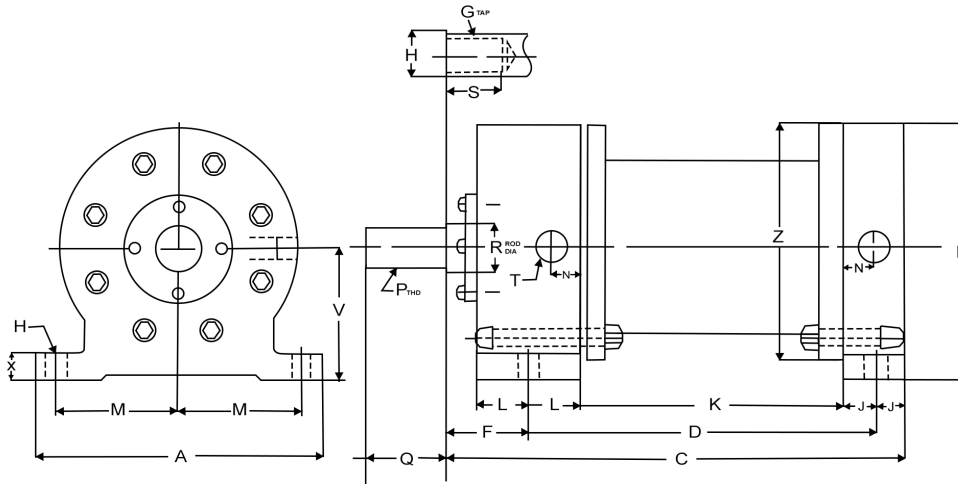


| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max} |
|--------------------|-----------|-----|------|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|------------------|
| MH - 10004034 - FC | 40 | 25 | 245 | 20 | 21 | M 14 x 1.25 | M 20 x 1.5 | 81 | 40 | 63 | 87 | 20 | 19 | 18 | 28 | 20 | ½" | 28 | 90 |
| MH - 10005034 - FC | 50 | 32 | 269 | 20 | 26 | M 20 x 1.5 | M 27 x 1.5 | 96 | 44 | 71 | 90 | 25 | 19 | 28 | 40 | 25 | ½" | 36 | 110 |
| MH - 10006334 - FC | 63 | 40 | 309 | 25 | 33 | M 20 x 1.5 | M 33 x 2 | 109 | 44 | 77 | 103 | 32 | 22 | 28 | 40 | 32 | ¾" | 45 | 125 |
| MH - 10008034 - FC | 80 | 47 | 345 | 30 | 41 | M 27 x 2 | M 42 x 2 | 132 | 50 | 86 | 114 | 40 | 25 | 36 | 54 | 36 | ¾" | 56 | 150 |
| MH - 10010034 - FC | 100 | 59 | 375 | 35 | 51 | M 33 x 2 | M 48 x 2 | 152 | 57 | 113 | 130 | 50 | 30 | 45 | 66 | 45 | 1" | 70 | 165 |
| MH - 10012534 - FC | 125 | 71 | 455 | 40 | 64 | M 36 x 2 | M 64 x 3 | 160 | 57 | 130 | 138 | 63 | 30 | 50 | 72 | 50 | 1" | 90 | 203 |
| MH - 10016034 - FC | 160 | 90 | 515 | 45 | 81 | M 48 x 2 | M 80 x 3 | 205 | 70 | 146 | 154 | 80 | 35 | 63 | 96 | 63 | 1-¼" | 110 | 240 |
| MH - 10020034 - FC | 200 | 112 | 615 | 55 | 101 | M 56 x 2 | M 100 x 3 | 241 | 76 | 198 | 176 | 100 | 35 | 75 | 112 | 80 | 1-¼" | 140 | 300 |
| MH - 10025034 - FC | 250 | 145 | 722 | 70 | 126 | M 72 x 3 | M 125 x 4 | 311 | 88 | 199 | 263 | 125 | 45 | 85 | 128 | 100 | 1-½" | 180 | 395 |
| MH - 10032034 - FC | 320 | 178 | 800 | 85 | 161 | M 90 x 3 | M 160 x 4 | 380 | 110 | 232 | 318 | 160 | 55 | 106 | 140 | 125 | 2" | 220 | 465 |
| MH - 10040034 - FC | 400 | 230 | 880 | 95 | 201 | M 110 x 3 | M 200 x 4 | 364 | 114 | 265 | 361 | 200 | 55 | 112 | 160 | 160 | 2" | 280 | 616 |
| MH - 10050034 - FC | 500 | 320 | 1075 | 115 | 251 | M 140 x 4 | M 250 x 6 | 430 | 140 | 305 | 420 | 250 | 65 | 140 | 180 | 200 | 2-½" | 350 | 756 |

HYDRAULIC CYLINDERS SERIES MH 34

100 Bar Pressure

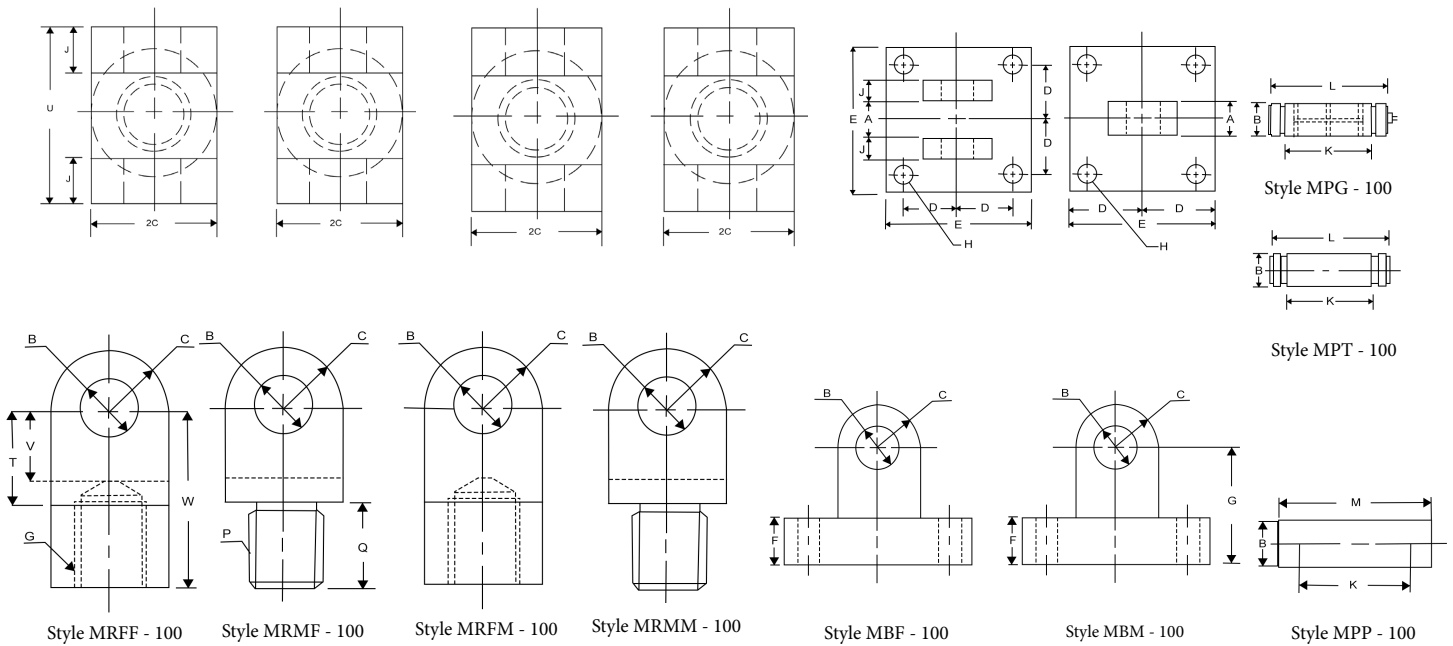
Side Log Mtg.



| MODEL NO. | BORE (mm) | A | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | V | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|-----|------------------------------------|------------------------------------|----|----|-----|----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|----|------------------|
| MH - 10004034 - SL | 40 | 152 | 102 | 242 | 124 | 81 | M 14 x 1.25 | M 20 x 1.5 | 14 | 20 | 63 | 41 | 62 | 19 | 18 | 28 | 20 | ½" | 28 | 57 | 22 | 90 |
| MH - 10005034 - SL | 50 | 178 | 122 | 246 | 132 | 81 | M 20 x 1.5 | M 27 x 1.5 | 14 | 20 | 71 | 41 | 75 | 19 | 28 | 40 | 25 | ½" | 36 | 67 | 22 | 110 |
| MH - 10006334 - SL | 63 | 190 | 137 | 279 | 147 | 88 | M 20 x 1.5 | M 33 x 2 | 14 | 22 | 77 | 48 | 81 | 22 | 28 | 40 | 32 | ¾" | 45 | 74 | 22 | 125 |
| MH - 10008034 - SL | 80 | 240 | 162 | 295 | 156 | 88 | M 27 x 2 | M 42 x 2 | 18 | 22 | 86 | 48 | 102 | 25 | 36 | 54 | 36 | ¾" | 56 | 87 | 25 | 150 |
| MH - 10010034 - SL | 100 | 279 | 177 | 324 | 190 | 98 | M 33 x 2 | M 48 x 2 | 22 | 29 | 113 | 48 | 118 | 30 | 45 | 66 | 45 | 1" | 70 | 94 | 25 | 165 |
| MH - 10012534 - SL | 125 | 337 | 215 | 376 | 104 | 104 | M 36 x 2 | M 64 x 3 | 27 | 29 | 130 | 54 | 142 | 30 | 50 | 72 | 50 | 1" | 90 | 113 | 32 | 203 |
| MH - 10016034 - SL | 160 | 356 | 252 | 408 | 104 | 104 | M 48 x 2 | M 80 x 3 | 27 | 35 | 146 | 54 | 151 | 35 | 63 | 96 | 63 | 1-¼" | 110 | 132 | 38 | 240 |
| MH - 10020034 - SL | 200 | 445 | 312 | 460 | 117 | 117 | M 56 x 2 | M 100 x 3 | 30 | 38 | 198 | 67 | 193 | 35 | 75 | 112 | 80 | 1-¼" | 140 | 162 | 44 | 300 |
| MH - 10025034 - SL | 250 | 508 | 420 | 575 | 158 | 158 | M 72 x 3 | M 125 x 4 | 30 | 45 | 199 | 82 | 224 | 45 | 85 | 128 | 100 | 1-½" | 180 | 222 | 44 | 395 |
| MH - 10032034 - SL | 320 | 590 | 490 | 614 | 165 | 165 | M 90 x 3 | M 160 x 4 | 30 | 55 | 232 | 89 | 265 | 55 | 106 | 140 | 125 | 2" | 220 | 257 | 44 | 465 |
| MH - 10040034 - SL | 400 | 775 | 640 | 614 | 165 | 165 | M 110 x 3 | M 200 x 4 | 33 | 55 | 265 | 89 | 355 | 55 | 112 | 160 | 160 | 2" | 280 | 332 | 51 | 616 |
| MH - 10050034 - SL | 500 | 975 | 780 | 711 | 185 | 185 | M 140 x 4 | M 250 x 6 | 46 | 63 | 305 | 95 | 442 | 65 | 140 | 180 | 200 | 2-½" | 350 | 402 | 70 | 756 |

HYDRAULIC CYLINDERS SERIES MH 34

100 Bar Pressure

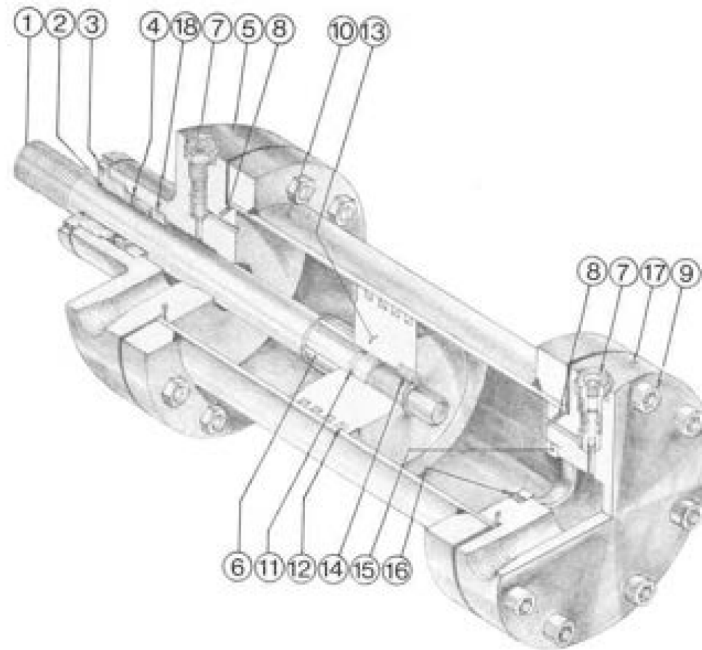


| BORE (mm) | A | B | C | G=P | J | Q=S | T | U | V | W |
|-----------|-----|-----|-----|-------------|----|-----|-----|-----|-----|-----|
| 40 | 20 | 20 | 25 | M 14 x 1.25 | 20 | 18 | 51 | 60 | 41 | 69 |
| 50 | 25 | 25 | 32 | M 20 x 1.5 | 20 | 28 | 62 | 65 | 52 | 90 |
| 63 | 32 | 32 | 40 | M 20 x 1.5 | 25 | 28 | 75 | 82 | 65 | 103 |
| 80 | 40 | 40 | 47 | M 27 x 2 | 30 | 36 | 92 | 100 | 82 | 128 |
| 100 | 50 | 50 | 59 | M 33 x 2 | 35 | 45 | 110 | 120 | 95 | 155 |
| 125 | 63 | 63 | 71 | M 36 x 2 | 40 | 50 | 118 | 143 | 103 | 168 |
| 160 | 80 | 80 | 90 | M 48 x 2 | 45 | 63 | 150 | 170 | 135 | 213 |
| 200 | 100 | 100 | 112 | M 56 x 2 | 55 | 75 | 180 | 210 | 165 | 255 |
| 250 | 125 | 125 | 145 | M 72 x 3 | 70 | 85 | 243 | 265 | 223 | 336 |
| 320 | 160 | 160 | 178 | M 90 x 3 | 85 | 106 | 290 | 330 | 270 | 396 |

| BORE (mm) | A | B | C | D | E | F | G | H | J | K | L | M |
|-----------|-----|-----|-----|-----|-----|----|-----|----|----|-----|-----|-----|
| 40 | 20 | 20 | 25 | 47 | 122 | 22 | 53 | 14 | 20 | 63 | 70 | 84 |
| 50 | 25 | 25 | 32 | 52 | 132 | 22 | 62 | 14 | 20 | 68 | 75 | 89 |
| 63 | 32 | 32 | 40 | 58 | 144 | 22 | 72 | 14 | 25 | 85 | 95 | 110 |
| 80 | 40 | 40 | 47 | 70 | 176 | 25 | 88 | 18 | 30 | 110 | 120 | 134 |
| 100 | 50 | 50 | 59 | 83 | 210 | 25 | 96 | 22 | 35 | 130 | 143 | 171 |
| 125 | 63 | 63 | 71 | 98 | 250 | 32 | 122 | 27 | 40 | 153 | 169 | 210 |
| 160 | 80 | 80 | 90 | 111 | 276 | 38 | 150 | 27 | 45 | 180 | 196 | 237 |
| 200 | 100 | 100 | 112 | 133 | 326 | 44 | 204 | 30 | 55 | 225 | 245 | 288 |
| 250 | 125 | 125 | 145 | 161 | 382 | 44 | 244 | 30 | 70 | 280 | 300 | 343 |
| 320 | 160 | 160 | 178 | 193 | 446 | 51 | 301 | 30 | 85 | 350 | 370 | 413 |

MILL TYPE METRIC HYDRAULIC CYLINDERS SERIES MH 35

160 Bar Pressure



PART LIST

| ITEM | QTY. | DESCRIPTION |
|------|----------|-----------------------------------|
| 1 | 1 only | Cylinder Rod (chrome plated) |
| 2 | *1 only | Rod Wiper |
| 3 | **1 only | Gland Bushing |
| 4 | 1 set | Gland Seal - Chevron "V" Ring |
| 5 | 1 only | Front Head |
| 6 | 1 only | Front Cushion |
| 7 | 2 only | Adjustable Cushion Assembly |
| 8 | *2 only | Head Static Seal - "O" Ring |
| 9 | 2 sets | Head Securing Cap Screws and Nuts |

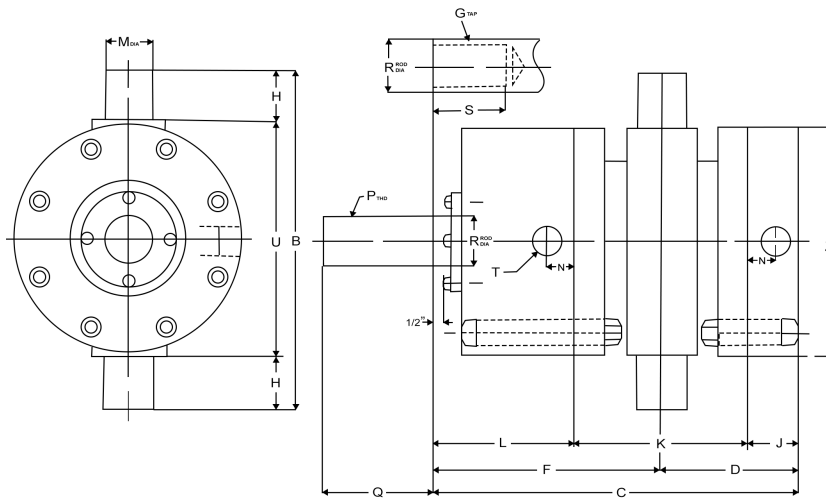
| ITEM | QTY. | DESCRIPTION |
|------|---------|-----------------------------------|
| 10 | 1 only | Cylinder Barrel Assembly |
| 11 | *1 only | Piston Rod Seal - "O" Ring |
| 12 | *1 set | Piston Dynamic Seal - Piston Ring |
| 13 | 1 only | Piston |
| 14 | 1 only | Piston Securing Screw |
| 15 | 1 only | Rear Cushion |
| 16 | 2 only | Rear Cushion Securing Screw |
| 17 | 1 only | Rear Head |
| 18 | 1 only | Lower Gland Bearing |

* Spare Parts
** Optional Spare Parts

HYDRAULIC CYLINDERS SERIES MH 35

160 Bar Pressure

Trunnion Mtg.

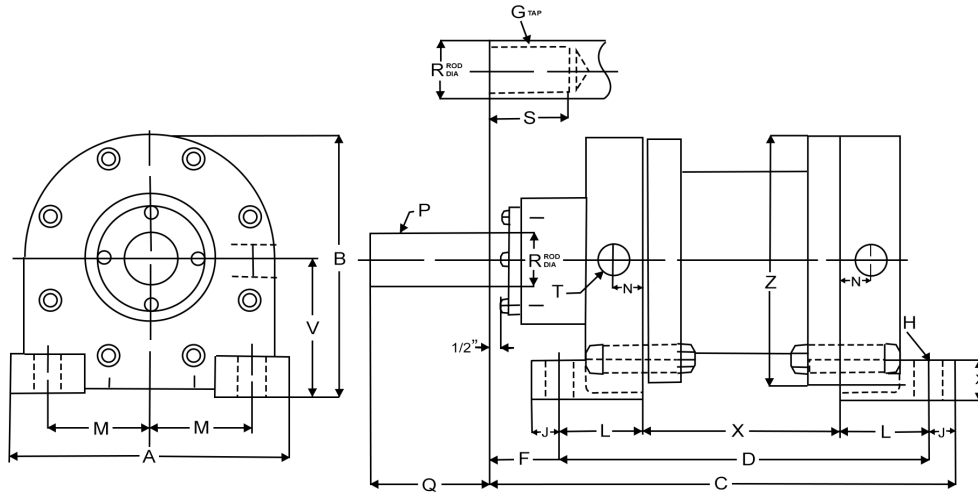


| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | U | R2:1 | Z _{max} |
|-------------------|-----------|------|-----|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|-----|------|------------------|
| MH - 16004035 - T | 40 | 122 | 190 | 71 | 119 | M 16 x 1.5 | M 20 x 1.5 | 16 | 40 | 63 | 87 | 20 | 19 | 22 | 32 | 28 | ½" | 90 | 28 | 98 |
| MH - 16005035 - T | 50 | 145 | 205 | 79 | 126 | M 20 x 1.5 | M 27 x 1.5 | 20 | 44 | 71 | 90 | 25 | 19 | 28 | 40 | 28 | ½" | 105 | 36 | 110 |
| MH - 16006335 - T | 63 | 170 | 224 | 82 | 142 | M 27 x 2 | M 33 x 2 | 25 | 44 | 77 | 103 | 32 | 22 | 36 | 54 | 36 | ¾" | 120 | 45 | 128 |
| MH - 16008035 - T | 80 | 199 | 250 | 93 | 157 | M 33 x 2 | M 42 x 2 | 32 | 50 | 86 | 114 | 40 | 25 | 45 | 66 | 45 | ¾" | 135 | 56 | 152 |
| MH - 16010035 - T | 100 | 240 | 300 | 113 | 187 | M 42 x 2 | M 48 x 2 | 40 | 57 | 113 | 130 | 50 | 30 | 56 | 84 | 56 | 1" | 160 | 70 | 178 |
| MH - 16012535 - T | 125 | 295 | 325 | 122 | 203 | M 48 x 2 | M 64 x 3 | 50 | 57 | 130 | 138 | 63 | 30 | 63 | 96 | 70 | 1" | 195 | 90 | 216 |
| MH - 16016035 - T | 160 | 366 | 370 | 143 | 227 | M 64 x 3 | M 80 x 3 | 63 | 70 | 146 | 154 | 80 | 35 | 85 | 128 | 90 | 1-¼" | 240 | 110 | 250 |
| MH - 16020035 - T | 200 | 455 | 450 | 175 | 275 | M 80 x 3 | M 100 x 3 | 80 | 76 | 198 | 176 | 100 | 35 | 95 | 140 | 110 | 1-¼" | 295 | 140 | 330 |
| MH - 16025035 - T | 250 | 570 | 550 | 187 | 363 | M 100 x 3 | M 125 x 4 | 100 | 88 | 199 | 263 | 125 | 45 | 112 | 160 | 140 | 1-½" | 370 | 180 | 395 |
| MH - 16032035 - T | 320 | 720 | 660 | 226 | 434 | M 125 x 4 | M 160 x 4 | 125 | 110 | 232 | 318 | 160 | 55 | 125 | 180 | 180 | 2" | 470 | 220 | 500 |
| MH - 16040035 - T | 400 | 890 | 740 | 246 | 494 | M 160 x 4 | M 200 x 4 | 160 | 114 | 265 | 361 | 200 | 55 | 160 | 220 | 220 | 2" | 570 | 280 | 640 |
| MH - 16050035 - T | 500 | 1150 | 890 | 293 | 573 | M 180 x 4 | M 250 x 6 | 250 | 140 | 349 | 420 | 250 | 65 | 180 | 250 | 280 | 2-½" | 700 | 350 | 780 |

HYDRAULIC CYLINDERS SERIES MH 35

160 Bar Pressure

Base Mtg.

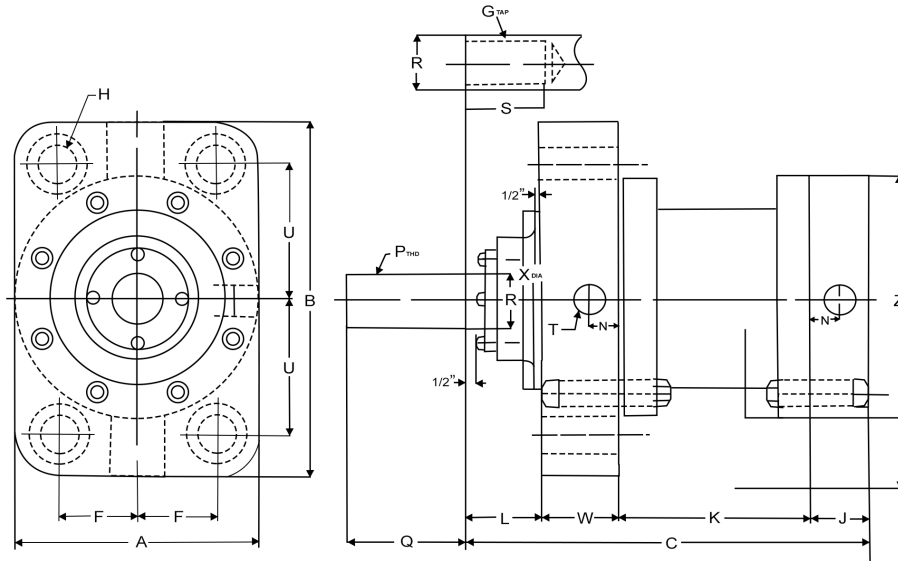


| MODEL NO. | BORE (mm) | A | B | C | D | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | M | N | $Q_{st}=S_{st}$ | $Q_g=S_g$ | R | T | R2:1 | V | X | Z _{max} |
|-------------------|-----------|-----|-----|------|-----|-----|-------------------|-------------------|----|----|-----|-----|-----|----|-----------------|-----------|-----|------|------|-----|----|------------------|
| MH - 16004035 - B | 40 | 118 | 102 | 218 | 171 | 33 | M 16 x 1.5 | M 20 x 1.5 | 14 | 14 | 63 | 54 | 45 | 19 | 22 | 32 | 28 | ½" | 28 | 57 | 22 | 98 |
| MH - 16005035 - B | 50 | 130 | 122 | 233 | 187 | 32 | M 20 x 1.5 | M 27 x 1.5 | 14 | 14 | 71 | 58 | 51 | 19 | 28 | 40 | 28 | ½" | 36 | 67 | 22 | 110 |
| MH - 16006335 - B | 63 | 148 | 138 | 252 | 193 | 45 | M 27 x 2 | M 33 x 2 | 14 | 14 | 77 | 58 | 60 | 22 | 36 | 54 | 36 | ¾" | 45 | 75 | 22 | 128 |
| MH - 16008035 - B | 80 | 172 | 162 | 286 | 222 | 46 | M 33 x 2 | M 42 x 2 | 18 | 18 | 86 | 68 | 68 | 25 | 45 | 66 | 45 | ¾" | 56 | 87 | 25 | 152 |
| MH - 16010035 - B | 100 | 198 | 178 | 344 | 271 | 51 | M 42 x 2 | M 48 x 2 | 22 | 22 | 113 | 79 | 77 | 30 | 56 | 84 | 56 | 1" | 70 | 95 | 25 | 178 |
| MH - 16012535 - B | 125 | 236 | 216 | 379 | 298 | 54 | M 48 x 2 | M 64 x 3 | 27 | 27 | 130 | 84 | 91 | 30 | 63 | 96 | 70 | 1" | 90 | 114 | 32 | 216 |
| MH - 16016035 - B | 160 | 270 | 252 | 424 | 340 | 57 | M 64 x 3 | M 80 x 3 | 27 | 27 | 146 | 97 | 108 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 132 | 38 | 250 |
| MH - 16020035 - B | 200 | 350 | 312 | 510 | 410 | 70 | M 80 x 3 | M 100 x 3 | 30 | 30 | 198 | 106 | 145 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 162 | 44 | 330 |
| MH - 16025035 - B | 250 | 415 | 420 | 616 | 441 | 142 | M 100 x 3 | M 125 x 4 | 33 | 33 | 199 | 121 | 174 | 45 | 112 | 160 | 140 | 1-½" | 180 | 222 | 51 | 395 |
| MH - 16032035 - B | 320 | 520 | 480 | 726 | 518 | 175 | M 125 x 4 | M 160 x 4 | 33 | 33 | 232 | 143 | 227 | 55 | 125 | 180 | 180 | 2" | 220 | 252 | 51 | 500 |
| MH - 16040035 - B | 400 | 660 | 584 | 832 | 585 | 201 | M 160 x 4 | M 200 x 4 | 46 | 46 | 265 | 160 | 284 | 55 | 160 | 220 | 220 | 2" | 280 | 304 | 57 | 640 |
| MH - 16050035 - B | 500 | 810 | 710 | 1013 | 689 | 228 | M 180 x 4 | M 250 x 6 | 52 | 52 | 305 | 192 | 353 | 65 | 180 | 250 | 280 | 2-½" | 350 | 367 | 76 | 780 |

HYDRAULIC CYLINDERS SERIES MH 35

160 Bar Pressure

Front Flange Mtg.

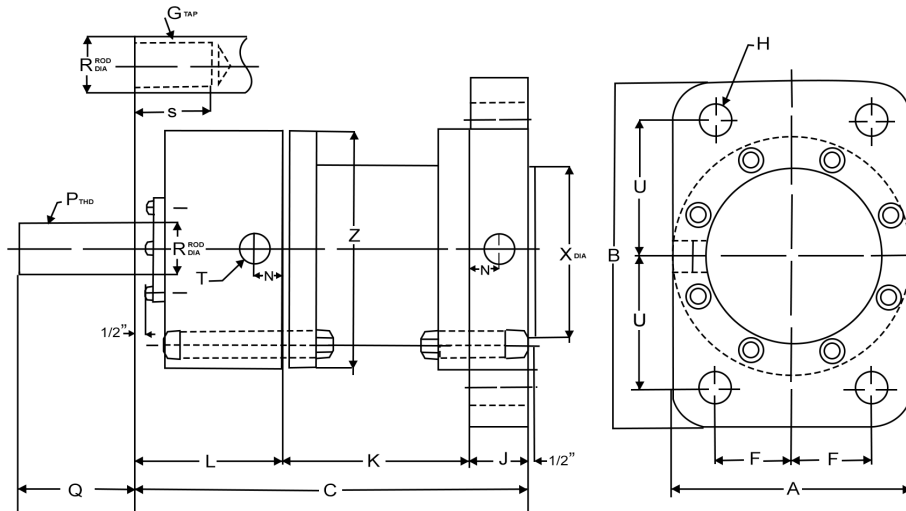


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | W | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|-----|------------------|
| MH - 16004035 - FF | 40 | 98 | 168 | 190 | 30 | M 16 x 1.5 | M 20 x 1.5 | 14 | 40 | 63 | 49 | 19 | 22 | 32 | 28 | ½" | 28 | 65 | 38 | 78 | 98 |
| MH - 16005035 - FF | 50 | 110 | 188 | 205 | 32 | M 20 x 1.5 | M 27 x 1.5 | 18 | 44 | 71 | 46 | 19 | 28 | 40 | 28 | ½" | 36 | 71 | 44 | 84 | 110 |
| MH - 16006335 - FF | 63 | 128 | 216 | 224 | 38 | M 27 x 2 | M 33 x 2 | 21 | 44 | 77 | 59 | 22 | 36 | 54 | 36 | ¾" | 45 | 82 | 44 | 90 | 128 |
| MH - 16008035 - FF | 80 | 152 | 262 | 250 | 44 | M 33 x 2 | M 42 x 2 | 21 | 50 | 86 | 70 | 25 | 45 | 66 | 45 | ¾" | 56 | 99 | 50 | 113 | 152 |
| MH - 16010035 - FF | 100 | 178 | 308 | 300 | 51 | M 42 x 2 | M 48 x 2 | 33 | 57 | 113 | 86 | 30 | 56 | 84 | 56 | 1" | 70 | 116 | 5 | 128 | 178 |
| MH - 16012535 - FF | 125 | 216 | 394 | 325 | 58 | M 48 x 2 | M 64 x 3 | 40 | 57 | 130 | 88 | 30 | 63 | 96 | 70 | 1" | 90 | 147 | 57 | 150 | 216 |
| MH - 16016035 - FF | 160 | 250 | 416 | 370 | 75 | M 64 x 3 | M 80 x 3 | 40 | 70 | 146 | 97 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 158 | 70 | 185 | 250 |
| MH - 16020035 - FF | 200 | 330 | 560 | 450 | 97 | M 80 x 3 | M 100 x 3 | 58 | 76 | 198 | 100 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 212 | 82 | 225 | 330 |
| MH - 16025035 - FF | 250 | 395 | 638 | 550 | 123 | M 100 x 3 | M 125 x 4 | 65 | 88 | 199 | 174 | 45 | 112 | 160 | 140 | 1-½" | 180 | 244 | 95 | 275 | 395 |
| MH - 16032035 - FF | 320 | 500 | 724 | 660 | 178 | M 125 x 4 | M 160 x 4 | 72 | 110 | 232 | 229 | 55 | 125 | 180 | 180 | 2" | 220 | 280 | 102 | 320 | 500 |
| MH - 16040035 - FF | 400 | 640 | 876 | 740 | 227 | M 160 x 4 | M 200 x 4 | 83 | 114 | 265 | 259 | 55 | 160 | 220 | 220 | 2" | 280 | 345 | 125 | 430 | 640 |
| MH - 16050035 - FF | 500 | * | * | 890 | * | M 180 x 4 | M 250 x 6 | * | 140 | 305 | * | 65 | 180 | 250 | 280 | 2-½" | 350 | * | * | * | 780 |

HYDRAULIC CYLINDERS SERIES MH 35

160 Bar Pressure

Rear Flange Mtg.

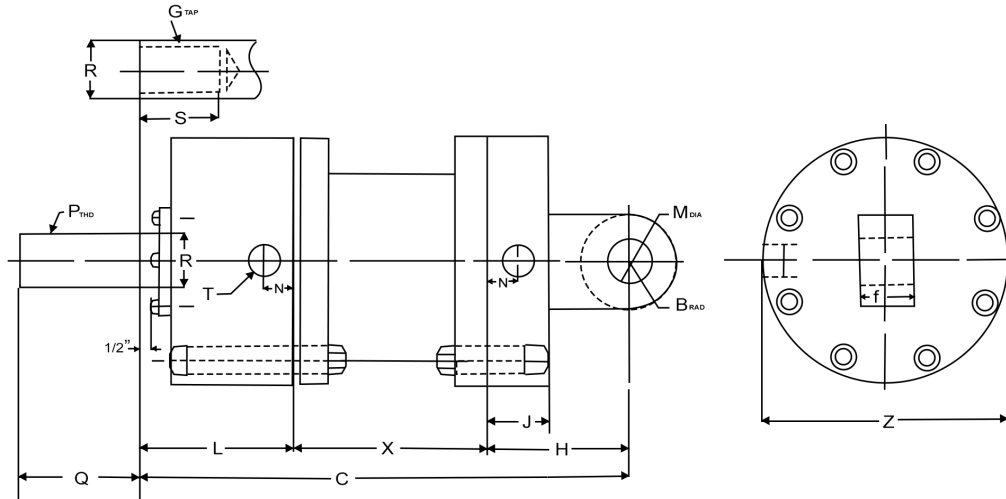


| MODEL NO. | BORE (mm) | A | B | C | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | R2:1 | U | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|-------------------|-------------------|----|-----|-----|-----|----|-----------------|-----------------|-----|------|------|-----|-----|------------------|
| MH - 16004035 - RF | 40 | 98 | 168 | 190 | 30 | M 16 x 1.5 | M 20 x 1.5 | 14 | 40 | 63 | 87 | 19 | 22 | 32 | 28 | ½" | 28 | 65 | 78 | 98 |
| MH - 16005035 - RF | 50 | 110 | 188 | 205 | 32 | M 20 x 1.5 | M 27 x 1.5 | 18 | 44 | 71 | 90 | 19 | 28 | 40 | 28 | ½" | 36 | 71 | 84 | 110 |
| MH - 16006335 - RF | 63 | 128 | 216 | 224 | 38 | M 27 x 2 | M 33 x 2 | 21 | 44 | 77 | 103 | 22 | 36 | 54 | 36 | ¾" | 45 | 82 | 90 | 128 |
| MH - 16008035 - RF | 80 | 152 | 262 | 250 | 44 | M 33 x 2 | M 42 x 2 | 27 | 50 | 86 | 114 | 25 | 45 | 66 | 45 | ¾" | 56 | 99 | 113 | 152 |
| MH - 16010035 - RF | 100 | 178 | 308 | 300 | 51 | M 42 x 2 | M 48 x 2 | 33 | 57 | 113 | 130 | 30 | 56 | 84 | 56 | 1" | 70 | 116 | 128 | 178 |
| MH - 16012535 - RF | 125 | 216 | 394 | 325 | 58 | M 48 x 2 | M 64 x 3 | 40 | 57 | 130 | 138 | 30 | 63 | 96 | 70 | 1" | 90 | 147 | 150 | 216 |
| MH - 16016035 - RF | 160 | 250 | 416 | 370 | 75 | M 64 x 3 | M 80 x 3 | 40 | 70 | 146 | 154 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 158 | 185 | 250 |
| MH - 16020035 - RF | 200 | 330 | 560 | 450 | 97 | M 80 x 3 | M 100 x 3 | 58 | 76 | 198 | 176 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 212 | 225 | 330 |
| MH - 16025035 - RF | 250 | 395 | 638 | 550 | 123 | M 100 x 3 | M 125 x 4 | 65 | 88 | 199 | 263 | 45 | 112 | 160 | 140 | 1-½" | 180 | 244 | 275 | 395 |
| MH - 16032035 - RF | 320 | 500 | 724 | 660 | 178 | M 125 x 4 | M 160 x 4 | 72 | 110 | 232 | 318 | 55 | 125 | 180 | 180 | 2" | 220 | 280 | 320 | 500 |
| MH - 16040035 - RF | 400 | 640 | 876 | 740 | 227 | M 160 x 4 | M 200 x 4 | 83 | 114 | 265 | 361 | 55 | 160 | 220 | 220 | 2" | 280 | 345 | 430 | 640 |
| MH - 16050035 - RF | 500 | * | * | 890 | * | M 180 x 4 | M 250 x 6 | * | 140 | 305 | 420 | 65 | 180 | 250 | 280 | 2-½" | 350 | * | * | 780 |

HYDRAULIC CYLINDERS SERIES MH 35

160 Bar Pressure

Male Clevis Mtg.

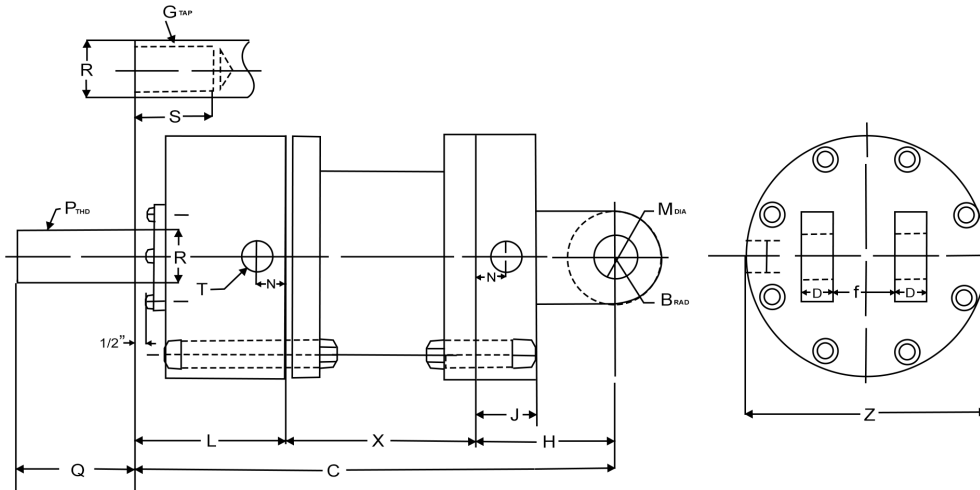


| MODEL NO. | BORE (mm) | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max} |
|--------------------|-----------|-----|------|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|------------------|
| MH - 16004035 - MC | 40 | 25 | 231 | 20 | M 16 x 1.5 | M 20 x 1.5 | 81 | 40 | 63 | 87 | 20 | 19 | 22 | 32 | 28 | ½" | 28 | 98 |
| MH - 16005035 - MC | 50 | 32 | 257 | 25 | M 20 x 1.5 | M 27 x 1.5 | 96 | 44 | 71 | 90 | 25 | 19 | 28 | 40 | 28 | ½" | 36 | 110 |
| MH - 16006335 - MC | 63 | 40 | 289 | 32 | M 27 x 2 | M 33 x 2 | 109 | 44 | 77 | 103 | 32 | 22 | 36 | 54 | 36 | ¾" | 45 | 128 |
| MH - 16008035 - MC | 80 | 47 | 332 | 40 | M 33 x 2 | M 42 x 2 | 132 | 50 | 86 | 114 | 40 | 25 | 45 | 66 | 45 | ¾" | 56 | 152 |
| MH - 16010035 - MC | 100 | 59 | 395 | 50 | M 42 x 2 | M 48 x 2 | 152 | 57 | 113 | 130 | 50 | 30 | 56 | 84 | 56 | 1" | 70 | 178 |
| MH - 16012535 - MC | 125 | 71 | 428 | 63 | M 48 x 2 | M 64 x 3 | 160 | 57 | 130 | 138 | 63 | 30 | 63 | 96 | 70 | 1" | 90 | 216 |
| MH - 16016035 - MC | 160 | 90 | 505 | 80 | M 64 x 3 | M 80 x 3 | 205 | 70 | 146 | 154 | 80 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 250 |
| MH - 16020035 - MC | 200 | 112 | 615 | 100 | M 80 x 3 | M 100 x 3 | 241 | 76 | 198 | 176 | 100 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 330 |
| MH - 16025035 - MC | 250 | 145 | 773 | 125 | M 100 x 3 | M 125 x 4 | 319 | 88 | 199 | 263 | 125 | 45 | 112 | 160 | 140 | 1-½" | 180 | 395 |
| MH - 16032035 - MC | 320 | 178 | 930 | 160 | M 125 x 4 | M 160 x 4 | 380 | 110 | 232 | 318 | 160 | 55 | 125 | 180 | 180 | 2" | 220 | 500 |
| MH - 16040035 - MC | 400 | 230 | 990 | 200 | M 160 x 4 | M 200 x 4 | 364 | 114 | 265 | 361 | 200 | 55 | 160 | 220 | 220 | 2" | 280 | 640 |
| MH - 16050035 - MC | 500 | 320 | 1210 | 250 | M 180 x 4 | M 250 x 6 | 441 | 140 | 305 | 420 | 250 | 65 | 180 | 250 | 280 | 2-½" | 350 | 780 |

HYDRAULIC CYLINDERS SERIES MH 35

160 Bar Pressure

Female Clevis Mtg.

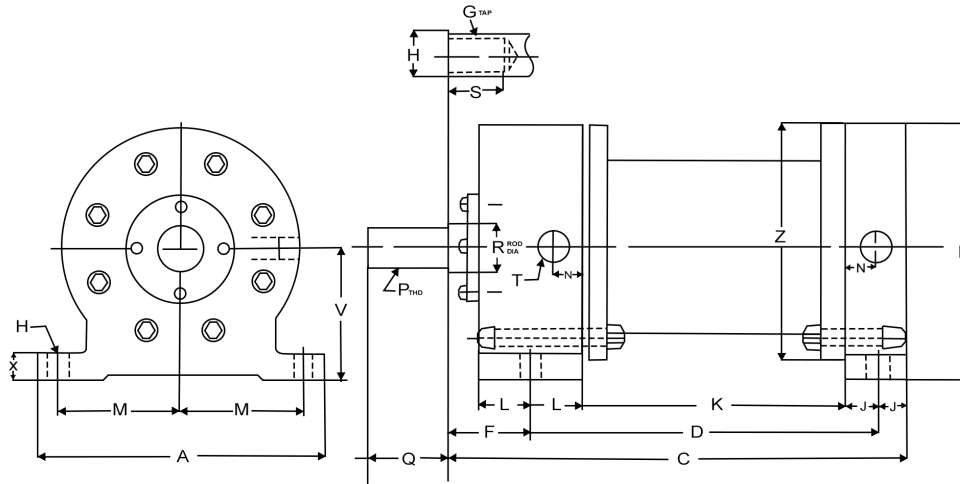


| MODEL NO. | BORE (mm) | B | C | D | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | M | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | R2:1 | Z _{max} |
|--------------------|-----------|-----|------|-----|-----|-------------------|-------------------|-----|-----|-----|-----|-----|----|-----------------|-----------------|-----|------|------|------------------|
| MH - 16004035 - FC | 40 | 25 | 231 | 20 | 21 | M 16 x 1.5 | M 20 x 1.5 | 81 | 40 | 63 | 87 | 20 | 19 | 22 | 32 | 28 | ½" | 28 | 98 |
| MH - 16005035 - FC | 50 | 32 | 257 | 20 | 26 | M 20 x 1.5 | M 27 x 1.5 | 96 | 44 | 71 | 90 | 25 | 19 | 28 | 40 | 28 | ½" | 36 | 110 |
| MH - 16006335 - FC | 63 | 40 | 289 | 25 | 33 | M 27 x 2 | M 33 x 2 | 109 | 44 | 77 | 103 | 32 | 22 | 36 | 54 | 36 | ¾" | 45 | 128 |
| MH - 16008035 - FC | 80 | 47 | 332 | 30 | 41 | M 33 x 2 | M 42 x 2 | 132 | 50 | 86 | 114 | 40 | 25 | 45 | 66 | 45 | ¾" | 56 | 152 |
| MH - 16010035 - FC | 100 | 59 | 395 | 35 | 51 | M 42 x 2 | M 48 x 2 | 152 | 57 | 113 | 130 | 50 | 30 | 56 | 84 | 56 | 1" | 70 | 178 |
| MH - 16012535 - FC | 125 | 71 | 428 | 40 | 64 | M 48 x 2 | M 64 x 3 | 160 | 57 | 130 | 138 | 63 | 30 | 63 | 96 | 70 | 1" | 90 | 216 |
| MH - 16016035 - FC | 160 | 90 | 505 | 45 | 81 | M 64 x 3 | M 80 x 3 | 205 | 70 | 146 | 154 | 80 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 250 |
| MH - 16020035 - FC | 200 | 112 | 615 | 55 | 101 | M 80 x 3 | M 100 x 3 | 241 | 76 | 198 | 176 | 100 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 330 |
| MH - 16025035 - FC | 250 | 145 | 781 | 70 | 126 | M 100 x 3 | M 125 x 4 | 319 | 88 | 199 | 263 | 125 | 45 | 112 | 160 | 140 | 1-½" | 180 | 395 |
| MH - 16032035 - FC | 320 | 178 | 930 | 85 | 161 | M 125 x 4 | M 160 x 4 | 380 | 110 | 232 | 318 | 160 | 55 | 125 | 180 | 180 | 2" | 220 | 500 |
| MH - 16040035 - FC | 400 | 230 | 990 | 95 | 201 | M 160 x 4 | M 200 x 4 | 364 | 114 | 265 | 361 | 200 | 55 | 160 | 220 | 220 | 2" | 280 | 640 |
| MH - 16050035 - FC | 500 | 320 | 1210 | 115 | 251 | M 180 x 4 | M 250 x 6 | 441 | 140 | 305 | 420 | 250 | 65 | 180 | 250 | 280 | 2-½" | 350 | 780 |

HYDRAULIC CYLINDERS SERIES MH 35

160 Bar Pressure

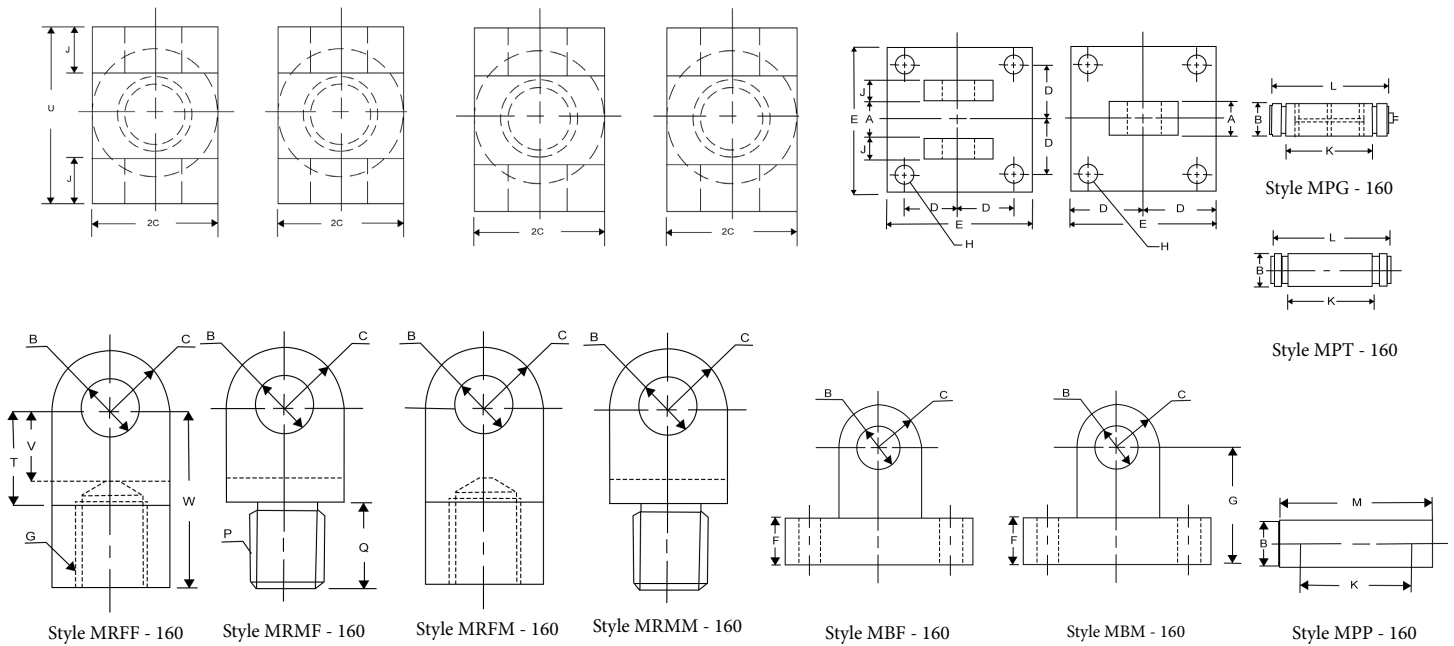
Side Log Mtg.



| MODEL NO. | BORE (mm) | A | B | C | D | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | M | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | R2:1 | v | X | Z _{max.} |
|--------------------|-----------|------|-----|-----|-----|-----|-------------------|-------------------|----|----|-----|-----|-----|----|-----------------|-----------------|-----|------|------|-----|----|-------------------|
| MH - 16004035 - SL | 40 | 160 | 102 | 233 | 128 | 85 | M 16 x 1.5 | M 20 x 1.5 | 14 | 20 | 63 | 45 | 66 | 19 | 22 | 32 | 28 | ½" | 28 | 57 | 22 | 98 |
| MH - 16005035 - SL | 50 | 180 | 122 | 245 | 138 | 85 | M 20 x 1.5 | M 27 x 1.5 | 14 | 22 | 71 | 45 | 76 | 19 | 28 | 40 | 28 | ½" | 36 | 67 | 22 | 110 |
| MH - 16006335 - SL | 63 | 203 | 138 | 275 | 156 | 97 | M 27 x 2 | M 33 x 2 | 14 | 22 | 77 | 57 | 88 | 22 | 36 | 54 | 36 | ¾" | 45 | 75 | 22 | 128 |
| MH - 16008035 - SL | 80 | 254 | 162 | 290 | 168 | 97 | M 33 x 2 | M 42 x 2 | 18 | 25 | 86 | 57 | 109 | 25 | 45 | 66 | 45 | ¾" | 56 | 87 | 25 | 152 |
| MH - 16010035 - SL | 100 | 292 | 178 | 347 | 205 | 113 | M 42 x 2 | M 48 x 2 | 22 | 29 | 113 | 63 | 124 | 30 | 56 | 84 | 56 | 1" | 70 | 95 | 25 | 178 |
| MH - 16012535 - SL | 125 | 343 | 216 | 364 | 222 | 113 | M 48 x 2 | M 64 x 3 | 27 | 29 | 130 | 63 | 145 | 30 | 63 | 96 | 70 | 1" | 90 | 114 | 32 | 216 |
| MH - 16016035 - SL | 160 | 406 | 252 | 404 | 249 | 120 | M 64 x 3 | M 80 x 3 | 27 | 35 | 146 | 70 | 176 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 132 | 38 | 250 |
| MH - 16020035 - SL | 200 | 470 | 312 | 464 | 306 | 120 | M 80 x 3 | M 100 x 3 | 30 | 38 | 198 | 70 | 205 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 162 | 44 | 330 |
| MH - 16025035 - SL | 250 | 559 | 420 | 527 | 325 | 158 | M 100 x 3 | M 125 x 4 | 33 | 44 | 199 | 82 | 247 | 45 | 112 | 160 | 140 | 1-½" | 180 | 222 | 51 | 395 |
| MH - 16032035 - SL | 320 | 686 | 480 | 608 | 382 | 171 | M 125 x 4 | M 160 x 4 | 33 | 55 | 232 | 95 | 310 | 55 | 125 | 180 | 180 | 2" | 220 | 252 | 51 | 500 |
| MH - 16040035 - SL | 400 | 864 | 584 | 645 | 417 | 171 | M 160 x 4 | M 200 x 4 | 46 | 57 | 265 | 95 | 386 | 55 | 160 | 220 | 220 | 2" | 280 | 304 | 57 | 640 |
| MH - 16050035 - SL | 500 | 1064 | 710 | 819 | 495 | 210 | M 180 x 4 | M 250 x 6 | 52 | 70 | 305 | 120 | 480 | 65 | 180 | 250 | 280 | 2-½" | 350 | 367 | 76 | 780 |

HYDRAULIC CYLINDERS SERIES MH 35

160 Bar Pressure

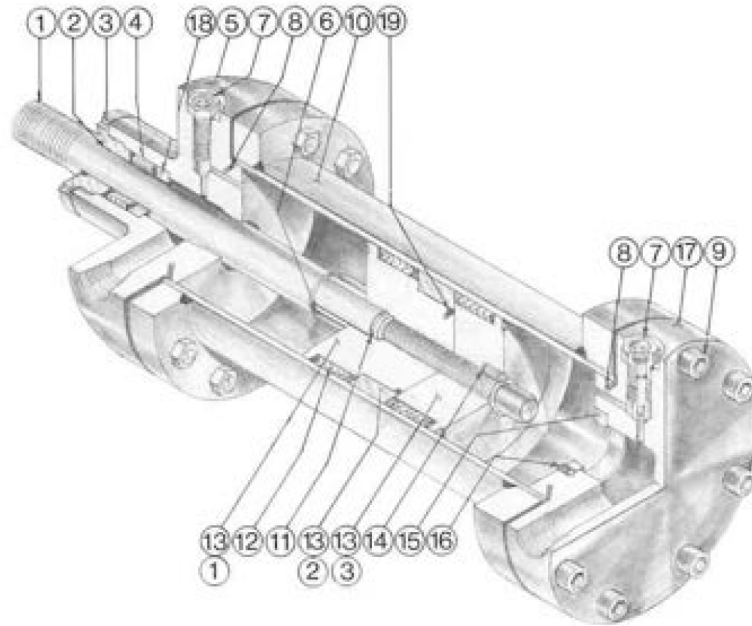


| BORE (mm) | A | B | C | G=P | J | Q=S | T | U | V | W |
|-----------|-----|-----|-----|------------|----|-----|-----|-----|-----|-----|
| 40 | 20 | 20 | 25 | M 16 x 1.5 | 20 | 22 | 51 | 60 | 41 | 73 |
| 50 | 25 | 25 | 32 | M 20 x 1.5 | 20 | 28 | 62 | 65 | 52 | 90 |
| 63 | 32 | 32 | 40 | M 27 x 2 | 25 | 36 | 75 | 82 | 65 | 111 |
| 80 | 40 | 40 | 47 | M 33 x 2 | 30 | 45 | 92 | 100 | 82 | 137 |
| 100 | 50 | 50 | 59 | M 42 x 2 | 35 | 56 | 110 | 120 | 95 | 166 |
| 125 | 63 | 63 | 71 | M 48 x 2 | 40 | 63 | 118 | 143 | 103 | 181 |
| 160 | 80 | 80 | 90 | M 64 x 3 | 45 | 85 | 150 | 170 | 135 | 235 |
| 200 | 100 | 100 | 112 | M 80 x 3 | 55 | 95 | 180 | 210 | 165 | 275 |
| 250 | 125 | 125 | 145 | M 100 x 3 | 70 | 112 | 243 | 265 | 223 | 355 |
| 320 | 160 | 160 | 178 | M 125 x 4 | 85 | 125 | 290 | 330 | 270 | 415 |

| BORE (mm) | A | B | C | D | E | F | G | H | J | K | L | M |
|-----------|-----|-----|-----|-----|-----|----|-----|----|----|-----|-----|-----|
| 40 | 20 | 20 | 25 | 47 | 122 | 22 | 53 | 14 | 20 | 63 | 70 | 84 |
| 50 | 25 | 25 | 32 | 52 | 140 | 22 | 62 | 18 | 20 | 68 | 75 | 89 |
| 63 | 32 | 32 | 40 | 63 | 168 | 22 | 72 | 21 | 25 | 85 | 95 | 110 |
| 80 | 40 | 40 | 47 | 76 | 206 | 25 | 88 | 27 | 30 | 110 | 120 | 134 |
| 100 | 50 | 50 | 59 | 90 | 246 | 25 | 96 | 33 | 35 | 130 | 143 | 171 |
| 125 | 63 | 63 | 71 | 107 | 294 | 32 | 122 | 40 | 40 | 153 | 169 | 210 |
| 160 | 80 | 80 | 90 | 120 | 320 | 38 | 150 | 40 | 45 | 180 | 196 | 237 |
| 200 | 100 | 100 | 112 | 153 | 422 | 44 | 204 | 58 | 55 | 225 | 245 | 288 |
| 250 | 125 | 125 | 145 | 185 | 500 | 51 | 251 | 65 | 70 | 280 | 300 | 343 |
| 320 | 160 | 160 | 178 | 220 | 584 | 51 | 301 | 72 | 85 | 350 | 370 | 413 |

MILL TYPE METRIC HYDRAULIC CYLINDERS SERIES MH 36

160 Bar Pressure



PART LIST

| ITEM | QTY. | DESCRIPTION |
|------|----------|-----------------------------------|
| 1 | 1 only | Cylinder Rod (chrome plated) |
| 2 | *1 only | Rod Wiper |
| 3 | **1 only | Gland Bushing |
| 4 | *1 set | Gland Seal - Chevron "V" Ring |
| 5 | 1 only | Front Head |
| 6 | 1 only | Front Cushion |
| 7 | 2 only | Adjustable Cushion Assembly |
| 8 | *2 only | Head Static Seal - "O" Ring |
| 9 | 2 sets | Head Securing Cap Screws and Nuts |
| 10 | 1 only | Cylinder Barrel Assembly |
| 11 | *1 only | Piston Rod Seal - "O" Ring |

| ITEM | QTY. | DESCRIPTION |
|------|---------|---|
| 12 | *2 sets | Piston Dynamic Seal - Chevron "V" Rings |
| 13/1 | 1 only | Piston - Front Section |
| 13/2 | 1 only | Piston - Bushing |
| 13/3 | 1 only | Piston - Rear Section |
| 14 | 1 only | Piston Securing Screw |
| 15 | 1 only | Rear Cushion |
| 16 | 2 only | Rear Cushion Securing Screw |
| 17 | 1 only | Rear Head |
| 18 | 1 only | Lower Gland Bearing |
| 19 | *1 only | Piston Static Seal - "O" Ring |

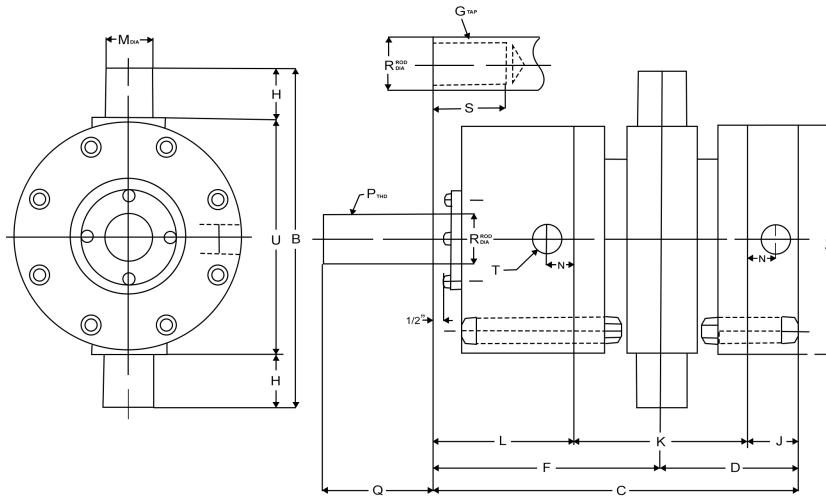
* Spare Parts

** Optional Spare Parts

HYDRAULIC CYLINDERS SERIES MH 36

160 Bar Pressure

Trunnion Mtg.

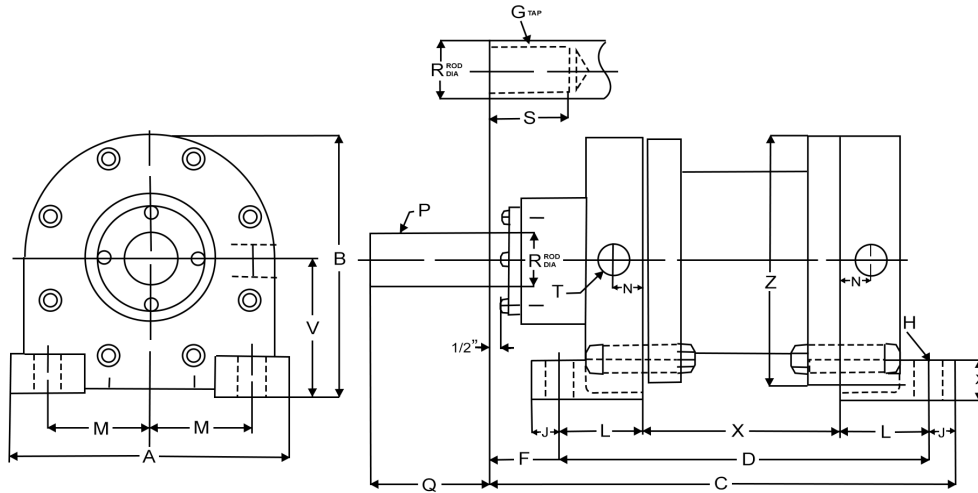


| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | U | R2:1 | Z _{max} |
|-------------------|-----------|------|-----|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|-----|------|------------------|
| MH - 16004036 - T | 40 | 122 | 190 | 71 | 119 | M 16 x 1.5 | M 20 x 1.5 | 16 | 40 | 63 | 87 | 20 | 19 | 22 | 32 | 28 | ½" | 90 | 28 | 98 |
| MH - 16005036 - T | 50 | 145 | 205 | 79 | 126 | M 20 x 1.5 | M 27 x 1.5 | 20 | 44 | 71 | 90 | 25 | 19 | 28 | 40 | 28 | ½" | 105 | 36 | 110 |
| MH - 16006336 - T | 63 | 170 | 224 | 82 | 142 | M 27 x 2 | M 33 x 2 | 25 | 44 | 77 | 103 | 32 | 22 | 36 | 54 | 36 | ¾" | 120 | 45 | 128 |
| MH - 16008036 - T | 80 | 199 | 250 | 93 | 157 | M 33 x 2 | M 42 x 2 | 32 | 50 | 86 | 114 | 40 | 25 | 45 | 66 | 45 | ¾" | 135 | 56 | 152 |
| MH - 16010036 - T | 100 | 240 | 300 | 113 | 187 | M 42 x 2 | M 48 x 2 | 40 | 57 | 113 | 130 | 50 | 30 | 56 | 84 | 56 | 1" | 160 | 70 | 178 |
| MH - 16012536 - T | 125 | 295 | 325 | 122 | 203 | M 48 x 2 | M 64 x 3 | 50 | 57 | 130 | 138 | 63 | 30 | 63 | 96 | 70 | 1" | 195 | 90 | 216 |
| MH - 16016036 - T | 160 | 366 | 370 | 143 | 227 | M 64 x 3 | M 80 x 3 | 63 | 70 | 146 | 154 | 80 | 35 | 85 | 128 | 90 | 1-¼" | 240 | 110 | 250 |
| MH - 16020036 - T | 200 | 455 | 450 | 175 | 275 | M 80 x 3 | M 100 x 3 | 80 | 76 | 198 | 176 | 100 | 35 | 95 | 140 | 110 | 1-¼" | 295 | 140 | 330 |
| MH - 16025036 - T | 250 | 570 | 550 | 187 | 363 | M 100 x 3 | M 125 x 4 | 100 | 88 | 199 | 263 | 125 | 45 | 112 | 160 | 140 | 1-½" | 370 | 180 | 395 |
| MH - 16032036 - T | 320 | 720 | 660 | 226 | 434 | M 125 x 4 | M 160 x 4 | 125 | 110 | 232 | 318 | 160 | 55 | 125 | 180 | 180 | 2" | 470 | 220 | 500 |
| MH - 16040036 - T | 400 | 890 | 740 | 246 | 494 | M 160 x 4 | M 200 x 4 | 160 | 114 | 265 | 361 | 200 | 55 | 160 | 220 | 220 | 2" | 570 | 280 | 640 |
| MH - 16050036 - T | 500 | 1150 | 890 | 293 | 573 | M 180 x 4 | M 250 x 6 | 250 | 140 | 349 | 420 | 250 | 65 | 180 | 250 | 280 | 2-½" | 700 | 350 | 780 |

HYDRAULIC CYLINDERS SERIES MH 36

160 Bar Pressure

Base Mtg.

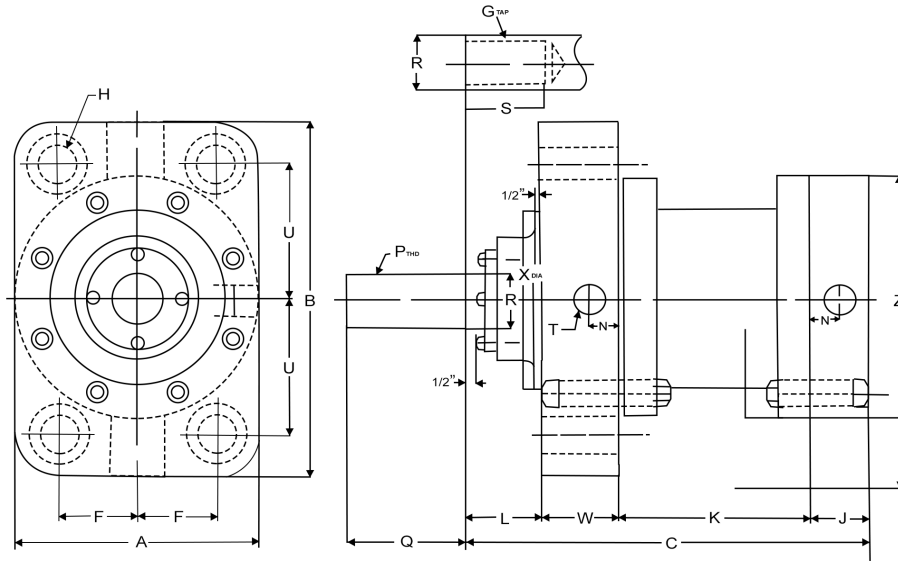


| MODEL NO. | BORE (mm) | A | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _g =S _g | R | T | R2:1 | V | X | Z _{max} |
|-------------------|-----------|-----|-----|------|-----|-----|------------------------------------|------------------------------------|----|----|-----|-----|-----|----|----------------------------------|--------------------------------|-----|------|------|-----|----|------------------|
| MH - 16004036 - B | 40 | 118 | 102 | 218 | 171 | 33 | M 16 x 1.5 | M 20 x 1.5 | 14 | 14 | 63 | 54 | 45 | 19 | 22 | 32 | 28 | ½" | 28 | 57 | 22 | 98 |
| MH - 16005036 - B | 50 | 130 | 122 | 233 | 187 | 32 | M 20 x 1.5 | M 27 x 1.5 | 14 | 14 | 71 | 58 | 51 | 19 | 28 | 40 | 28 | ½" | 36 | 67 | 22 | 110 |
| MH - 16006336 - B | 63 | 148 | 138 | 252 | 193 | 45 | M 27 x 2 | M 33 x 2 | 14 | 14 | 77 | 58 | 60 | 22 | 36 | 54 | 36 | ¾" | 45 | 75 | 22 | 128 |
| MH - 16008036 - B | 80 | 172 | 162 | 286 | 222 | 46 | M 33 x 2 | M 42 x 2 | 18 | 18 | 86 | 68 | 68 | 25 | 45 | 66 | 45 | ¾" | 56 | 87 | 25 | 152 |
| MH - 16010036 - B | 100 | 198 | 178 | 344 | 271 | 51 | M 42 x 2 | M 48 x 2 | 22 | 22 | 113 | 79 | 77 | 30 | 56 | 84 | 56 | 1" | 70 | 95 | 25 | 178 |
| MH - 16012536 - B | 125 | 236 | 216 | 379 | 298 | 54 | M 48 x 2 | M 64 x 3 | 27 | 27 | 130 | 84 | 91 | 30 | 63 | 96 | 70 | 1" | 90 | 114 | 32 | 216 |
| MH - 16016036 - B | 160 | 270 | 252 | 424 | 340 | 57 | M 64 x 3 | M 80 x 3 | 27 | 27 | 146 | 97 | 108 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 132 | 38 | 250 |
| MH - 16020036 - B | 200 | 350 | 312 | 510 | 410 | 70 | M 80 x 3 | M 100 x 3 | 30 | 30 | 198 | 106 | 145 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 162 | 44 | 330 |
| MH - 16025036 - B | 250 | 415 | 420 | 616 | 441 | 142 | M 100 x 3 | M 125 x 4 | 33 | 33 | 199 | 121 | 174 | 45 | 112 | 160 | 140 | 1-½" | 180 | 222 | 51 | 395 |
| MH - 16032036 - B | 320 | 520 | 480 | 726 | 518 | 175 | M 125 x 4 | M 160 x 4 | 33 | 33 | 232 | 143 | 227 | 55 | 125 | 180 | 180 | 2" | 220 | 252 | 51 | 500 |
| MH - 16040036 - B | 400 | 660 | 584 | 832 | 585 | 201 | M 160 x 4 | M 200 x 4 | 46 | 46 | 265 | 160 | 284 | 55 | 160 | 220 | 220 | 2" | 280 | 304 | 57 | 640 |
| MH - 16050036 - B | 500 | 810 | 710 | 1013 | 689 | 228 | M 180 x 4 | M 250 x 6 | 52 | 52 | 305 | 192 | 353 | 65 | 180 | 250 | 280 | 2-½" | 350 | 367 | 76 | 780 |

HYDRAULIC CYLINDERS SERIES MH 36

160 Bar Pressure

Front Flange Mtg.

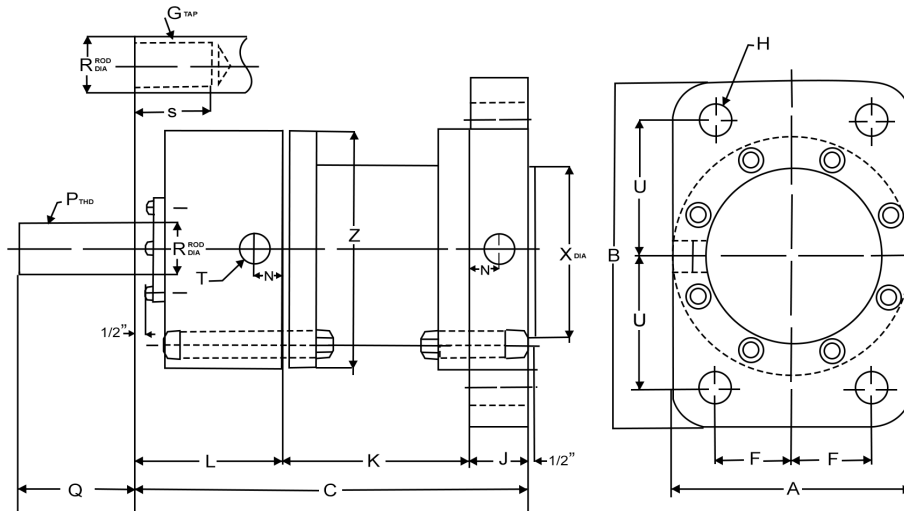


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | W | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|-----|------------------|
| MH - 16004036 - FF | 40 | 98 | 168 | 190 | 30 | M 16 x 1.5 | M 20 x 1.5 | 14 | 40 | 63 | 49 | 19 | 22 | 32 | 28 | ½" | 28 | 65 | 38 | 78 | 98 |
| MH - 16005036 - FF | 50 | 110 | 188 | 205 | 32 | M 20 x 1.5 | M 27 x 1.5 | 18 | 44 | 71 | 46 | 19 | 28 | 40 | 28 | ½" | 36 | 71 | 44 | 84 | 110 |
| MH - 16006336 - FF | 63 | 128 | 216 | 224 | 38 | M 27 x 2 | M 33 x 2 | 21 | 44 | 77 | 59 | 22 | 36 | 54 | 36 | ¾" | 45 | 82 | 44 | 90 | 128 |
| MH - 16008036 - FF | 80 | 152 | 262 | 250 | 44 | M 33 x 2 | M 42 x 2 | 21 | 50 | 86 | 64 | 25 | 45 | 66 | 45 | ¾" | 56 | 99 | 50 | 113 | 152 |
| MH - 16010036 - FF | 100 | 178 | 308 | 300 | 51 | M 42 x 2 | M 48 x 2 | 33 | 57 | 113 | 73 | 30 | 56 | 84 | 56 | 1" | 70 | 116 | 5 | 128 | 178 |
| MH - 16012536 - FF | 125 | 216 | 394 | 325 | 58 | M 48 x 2 | M 64 x 3 | 40 | 57 | 130 | 81 | 30 | 63 | 96 | 70 | 1" | 90 | 147 | 57 | 150 | 216 |
| MH - 16016036 - FF | 160 | 250 | 416 | 370 | 75 | M 64 x 3 | M 80 x 3 | 40 | 70 | 146 | 84 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 158 | 70 | 185 | 250 |
| MH - 16020036 - FF | 200 | 330 | 560 | 450 | 97 | M 80 x 3 | M 100 x 3 | 58 | 76 | 198 | 94 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 212 | 82 | 225 | 330 |
| MH - 16025036 - FF | 250 | 395 | 638 | 550 | 123 | M 100 x 3 | M 125 x 4 | 65 | 88 | 199 | 168 | 45 | 112 | 160 | 140 | 1-½" | 180 | 244 | 95 | 275 | 395 |
| MH - 16032036 - FF | 320 | 500 | 724 | 660 | 178 | M 125 x 4 | M 160 x 4 | 72 | 110 | 232 | 216 | 55 | 125 | 180 | 180 | 2" | 220 | 280 | 102 | 320 | 500 |
| MH - 16040036 - FF | 400 | 640 | 876 | 740 | 227 | M 160 x 4 | M 200 x 4 | 83 | 114 | 265 | 236 | 55 | 160 | 220 | 220 | 2" | 280 | 345 | 125 | 430 | 640 |
| MH - 16050036 - FF | 500 | * | * | 890 | * | M 180 x 4 | M 250 x 6 | * | 140 | 305 | * | 65 | 180 | 250 | 280 | 2-½" | 350 | * | * | * | 780 |

HYDRAULIC CYLINDERS SERIES MH 36

160 Bar Pressure

Rear Flange Mtg.

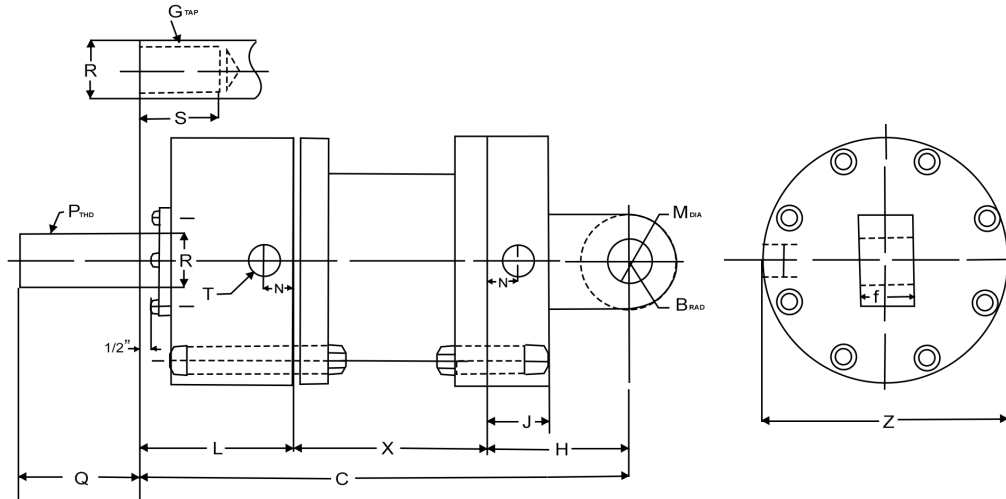


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | X | Z _{max} |
|--------------------|-----------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|--------|------|-----|-----|------------------|
| MH - 16004036 - RF | 40 | 98 | 168 | 190 | 30 | M 16 x 1.5 | M 20 x 1.5 | 14 | 40 | 63 | 87 | 19 | 22 | 32 | 28 | 1/2" | 28 | 65 | 78 | 98 |
| MH - 16005036 - RF | 50 | 110 | 188 | 205 | 32 | M 20 x 1.5 | M 27 x 1.5 | 18 | 44 | 71 | 90 | 19 | 28 | 40 | 28 | 1/2" | 36 | 71 | 84 | 110 |
| MH - 16006336 - RF | 63 | 128 | 216 | 224 | 38 | M 27 x 2 | M 33 x 2 | 21 | 44 | 77 | 103 | 22 | 36 | 54 | 36 | 3/4" | 45 | 82 | 90 | 128 |
| MH - 16008036 - RF | 80 | 152 | 262 | 250 | 44 | M 33 x 2 | M 42 x 2 | 27 | 50 | 86 | 114 | 25 | 45 | 66 | 45 | 3/4" | 56 | 99 | 113 | 152 |
| MH - 16010036 - RF | 100 | 178 | 308 | 300 | 51 | M 42 x 2 | M 48 x 2 | 33 | 57 | 113 | 130 | 30 | 56 | 84 | 56 | 1" | 70 | 116 | 128 | 178 |
| MH - 16012536 - RF | 125 | 216 | 394 | 325 | 58 | M 48 x 2 | M 64 x 3 | 40 | 57 | 130 | 138 | 30 | 63 | 96 | 70 | 1" | 90 | 147 | 150 | 216 |
| MH - 16016036 - RF | 160 | 250 | 416 | 370 | 75 | M 64 x 3 | M 80 x 3 | 40 | 70 | 146 | 154 | 35 | 85 | 128 | 90 | 1-1/4" | 110 | 158 | 185 | 250 |
| MH - 16020036 - RF | 200 | 330 | 560 | 450 | 97 | M 80 x 3 | M 100 x 3 | 58 | 76 | 198 | 176 | 35 | 95 | 140 | 110 | 1-1/4" | 140 | 212 | 225 | 330 |
| MH - 16025036 - RF | 250 | 395 | 638 | 550 | 123 | M 100 x 3 | M 125 x 4 | 65 | 88 | 199 | 263 | 45 | 112 | 160 | 140 | 1-1/2" | 180 | 244 | 275 | 395 |
| MH - 16032036 - RF | 320 | 500 | 724 | 660 | 178 | M 125 x 4 | M 160 x 4 | 72 | 110 | 232 | 318 | 55 | 125 | 180 | 180 | 2" | 220 | 280 | 320 | 500 |
| MH - 16040036 - RF | 400 | 640 | 876 | 740 | 227 | M 160 x 4 | M 200 x 4 | 83 | 114 | 265 | 361 | 55 | 160 | 220 | 220 | 2" | 280 | 345 | 430 | 640 |
| MH - 16050036 - RF | 500 | * | * | 890 | * | M 180 x 4 | M 250 x 6 | * | 140 | 305 | 420 | 65 | 180 | 250 | 280 | 2-1/2" | 350 | * | * | 780 |

HYDRAULIC CYLINDERS SERIES MH 36

160 Bar Pressure

Male Clevis Mtg.

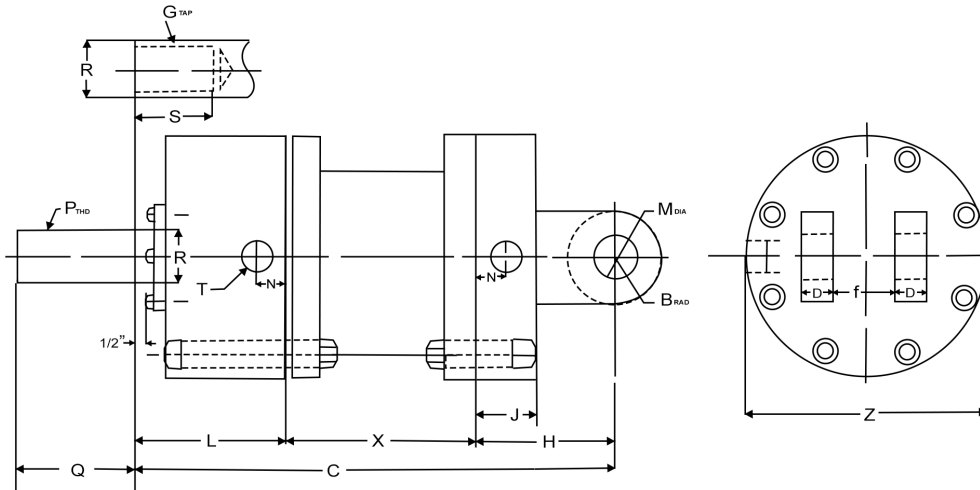


| MODEL NO. | BORE (mm) | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max} |
|--------------------|-----------|-----|------|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|------------------|
| MH - 16004036 - MC | 40 | 25 | 231 | 20 | M 16 x 1.5 | M 20 x 1.5 | 81 | 40 | 63 | 87 | 20 | 19 | 22 | 32 | 28 | ½" | 28 | 98 |
| MH - 16005036 - MC | 50 | 32 | 257 | 25 | M 20 x 1.5 | M 27 x 1.5 | 96 | 44 | 71 | 90 | 25 | 19 | 28 | 40 | 28 | ½" | 36 | 110 |
| MH - 16006336 - MC | 63 | 40 | 289 | 32 | M 27 x 2 | M 33 x 2 | 109 | 44 | 77 | 103 | 32 | 22 | 36 | 54 | 36 | ¾" | 45 | 128 |
| MH - 16008036 - MC | 80 | 47 | 332 | 40 | M 33 x 2 | M 42 x 2 | 132 | 50 | 86 | 114 | 40 | 25 | 45 | 66 | 45 | ¾" | 56 | 152 |
| MH - 16010036 - MC | 100 | 59 | 395 | 50 | M 42 x 2 | M 48 x 2 | 152 | 57 | 113 | 130 | 50 | 30 | 56 | 84 | 56 | 1" | 70 | 178 |
| MH - 16012536 - MC | 125 | 71 | 428 | 63 | M 48 x 2 | M 64 x 3 | 160 | 57 | 130 | 138 | 63 | 30 | 63 | 96 | 70 | 1" | 90 | 216 |
| MH - 16016036 - MC | 160 | 90 | 505 | 80 | M 64 x 3 | M 80 x 3 | 205 | 70 | 146 | 154 | 80 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 250 |
| MH - 16020036 - MC | 200 | 112 | 615 | 100 | M 80 x 3 | M 100 x 3 | 241 | 76 | 198 | 176 | 100 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 330 |
| MH - 16025036 - MC | 250 | 145 | 773 | 125 | M 100 x 3 | M 125 x 4 | 311 | 88 | 199 | 263 | 125 | 45 | 112 | 160 | 140 | 1-½" | 180 | 395 |
| MH - 16032036 - MC | 320 | 178 | 930 | 160 | M 125 x 4 | M 160 x 4 | 380 | 110 | 232 | 318 | 160 | 55 | 125 | 180 | 180 | 2" | 220 | 500 |
| MH - 16040036 - MC | 400 | 230 | 990 | 200 | M 160 x 4 | M 200 x 4 | 364 | 114 | 265 | 361 | 200 | 55 | 160 | 220 | 220 | 2" | 280 | 640 |
| MH - 16050036 - MC | 500 | 320 | 1210 | 250 | M 180 x 4 | M 250 x 6 | 441 | 140 | 305 | 420 | 250 | 65 | 180 | 250 | 280 | 2-½" | 350 | 780 |

HYDRAULIC CYLINDERS SERIES MH 36

160 Bar Pressure

Female Clevis Mtg.

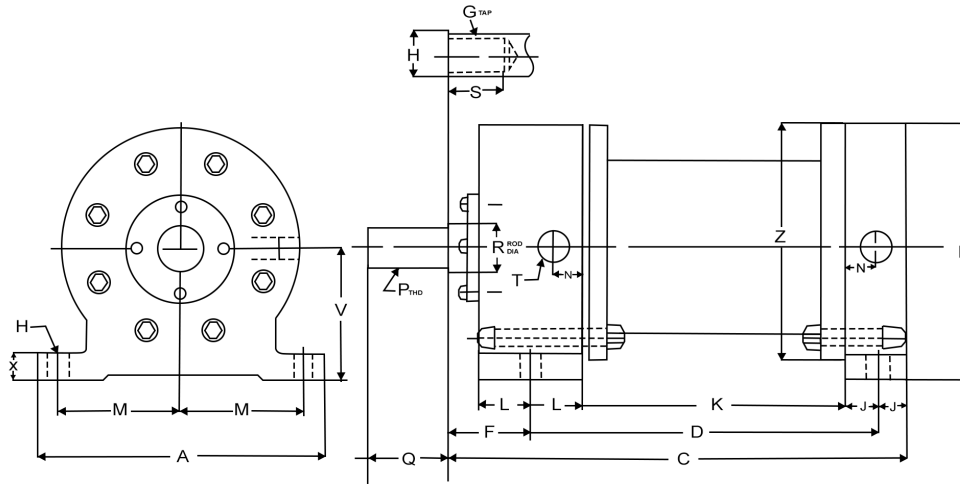


| MODEL NO. | BORE (mm) | B | C | D | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | M | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | R2:1 | Z _{max.} |
|--------------------|-----------|-----|------|-----|-----|-------------------|-------------------|-----|-----|-----|-----|-----|----|-----------------|-----------------|-----|------|------|-------------------|
| MH - 16004036 - FC | 40 | 25 | 231 | 20 | 21 | M 16 x 1.5 | M 20 x 1.5 | 81 | 40 | 63 | 87 | 20 | 19 | 22 | 32 | 28 | ½" | 28 | 98 |
| MH - 16005036 - FC | 50 | 32 | 257 | 20 | 26 | M 20 x 1.5 | M 27 x 1.5 | 96 | 44 | 71 | 90 | 25 | 19 | 28 | 40 | 28 | ½" | 36 | 110 |
| MH - 16006336 - FC | 63 | 40 | 289 | 25 | 33 | M 27 x 2 | M 33 x 2 | 109 | 44 | 77 | 103 | 32 | 22 | 36 | 54 | 36 | ¾" | 45 | 128 |
| MH - 16008036 - FC | 80 | 47 | 332 | 30 | 41 | M 33 x 2 | M 42 x 2 | 132 | 50 | 86 | 114 | 40 | 25 | 45 | 66 | 45 | ¾" | 56 | 152 |
| MH - 16010036 - FC | 100 | 59 | 395 | 35 | 51 | M 42 x 2 | M 48 x 2 | 152 | 57 | 113 | 130 | 50 | 30 | 56 | 84 | 56 | 1" | 70 | 178 |
| MH - 16012536 - FC | 125 | 71 | 428 | 40 | 64 | M 48 x 2 | M 64 x 3 | 160 | 57 | 130 | 138 | 63 | 30 | 63 | 96 | 70 | 1" | 90 | 216 |
| MH - 16016036 - FC | 160 | 90 | 505 | 45 | 81 | M 64 x 3 | M 80 x 3 | 205 | 70 | 146 | 154 | 80 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 250 |
| MH - 16020036 - FC | 200 | 112 | 615 | 55 | 101 | M 80 x 3 | M 100 x 3 | 241 | 76 | 198 | 176 | 100 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 330 |
| MH - 16025036 - FC | 250 | 145 | 773 | 70 | 126 | M 100 x 3 | M 125 x 4 | 311 | 88 | 199 | 263 | 125 | 45 | 112 | 160 | 140 | 1-½" | 180 | 395 |
| MH - 16032036 - FC | 320 | 178 | 930 | 85 | 161 | M 125 x 4 | M 160 x 4 | 380 | 110 | 232 | 318 | 160 | 55 | 125 | 180 | 180 | 2" | 220 | 500 |
| MH - 16040036 - FC | 400 | 230 | 990 | 95 | 201 | M 160 x 4 | M 200 x 4 | 364 | 114 | 265 | 361 | 200 | 55 | 160 | 220 | 220 | 2" | 280 | 640 |
| MH - 16050036 - FC | 500 | 320 | 1210 | 115 | 251 | M 180 x 4 | M 250 x 6 | 441 | 140 | 305 | 420 | 250 | 65 | 180 | 250 | 280 | 2-½" | 350 | 780 |

HYDRAULIC CYLINDERS SERIES MH 36

160 Bar Pressure

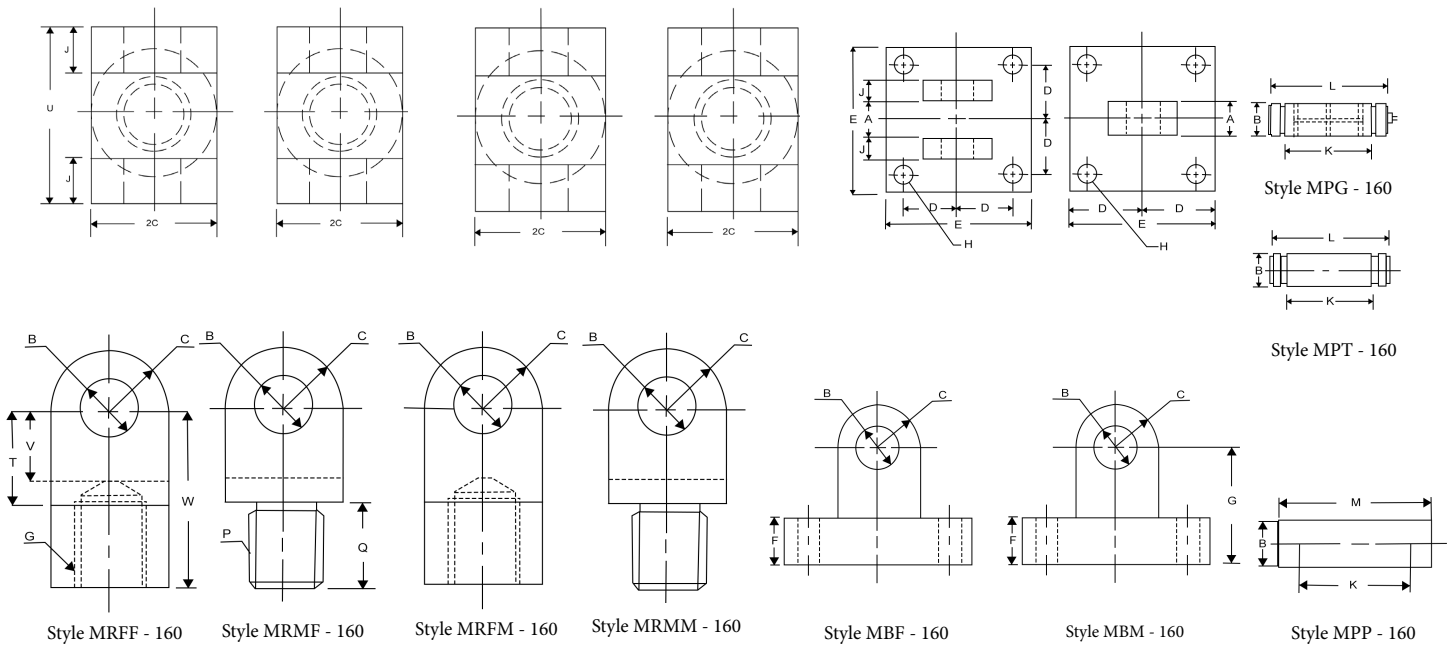
Side Log Mtg.



| MODEL NO. | BORE (mm) | A | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | v | X | Z _{max} . |
|--------------------|-----------|------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|----|--------------------|
| MH - 16004036 - SL | 40 | 160 | 102 | 233 | 128 | 85 | M 16 x 1.5 | M 20 x 1.5 | 14 | 20 | 63 | 45 | 66 | 19 | 22 | 32 | 28 | ½" | 28 | 57 | 22 | 98 |
| MH - 16005036 - SL | 50 | 180 | 122 | 245 | 138 | 85 | M 20 x 1.5 | M 27 x 1.5 | 14 | 22 | 71 | 45 | 76 | 19 | 28 | 40 | 28 | ½" | 36 | 67 | 22 | 110 |
| MH - 16006336 - SL | 63 | 203 | 138 | 275 | 156 | 97 | M 27 x 2 | M 33 x 2 | 14 | 22 | 77 | 57 | 88 | 22 | 36 | 54 | 36 | ¾" | 45 | 75 | 22 | 128 |
| MH - 16008036 - SL | 80 | 254 | 162 | 290 | 168 | 97 | M 33 x 2 | M 42 x 2 | 18 | 25 | 86 | 57 | 109 | 25 | 45 | 66 | 45 | ¾" | 56 | 87 | 25 | 152 |
| MH - 16010036 - SL | 100 | 292 | 178 | 347 | 205 | 113 | M 42 x 2 | M 48 x 2 | 22 | 29 | 113 | 63 | 124 | 30 | 56 | 84 | 56 | 1" | 70 | 95 | 25 | 178 |
| MH - 16012536 - SL | 125 | 343 | 216 | 364 | 222 | 113 | M 48 x 2 | M 64 x 3 | 27 | 29 | 130 | 63 | 145 | 30 | 63 | 96 | 70 | 1" | 90 | 114 | 32 | 216 |
| MH - 16016036 - SL | 160 | 406 | 252 | 404 | 249 | 120 | M 64 x 3 | M 80 x 3 | 27 | 35 | 146 | 70 | 176 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 132 | 38 | 250 |
| MH - 16020036 - SL | 200 | 470 | 312 | 464 | 306 | 120 | M 80 x 3 | M 100 x 3 | 30 | 38 | 198 | 70 | 205 | 35 | 95 | 140 | 110 | 1-¼" | 140 | 162 | 44 | 330 |
| MH - 16025036 - SL | 250 | 559 | 420 | 527 | 325 | 158 | M 100 x 3 | M 125 x 4 | 33 | 44 | 199 | 82 | 247 | 45 | 112 | 160 | 140 | 1-½" | 180 | 222 | 51 | 395 |
| MH - 16032036 - SL | 320 | 686 | 480 | 608 | 382 | 171 | M 125 x 4 | M 160 x 4 | 33 | 55 | 232 | 95 | 310 | 55 | 125 | 180 | 180 | 2" | 220 | 252 | 51 | 500 |
| MH - 16040036 - SL | 400 | 864 | 584 | 645 | 417 | 171 | M 160 x 4 | M 200 x 4 | 46 | 57 | 265 | 95 | 386 | 55 | 160 | 220 | 220 | 2" | 280 | 304 | 57 | 640 |
| MH - 16050036 - SL | 500 | 1064 | 710 | 819 | 495 | 210 | M 180 x 4 | M 250 x 6 | 52 | 70 | 305 | 120 | 480 | 65 | 180 | 250 | 280 | 2-½" | 350 | 367 | 76 | 780 |

HYDRAULIC CYLINDERS SERIES MH 36

160 Bar Pressure

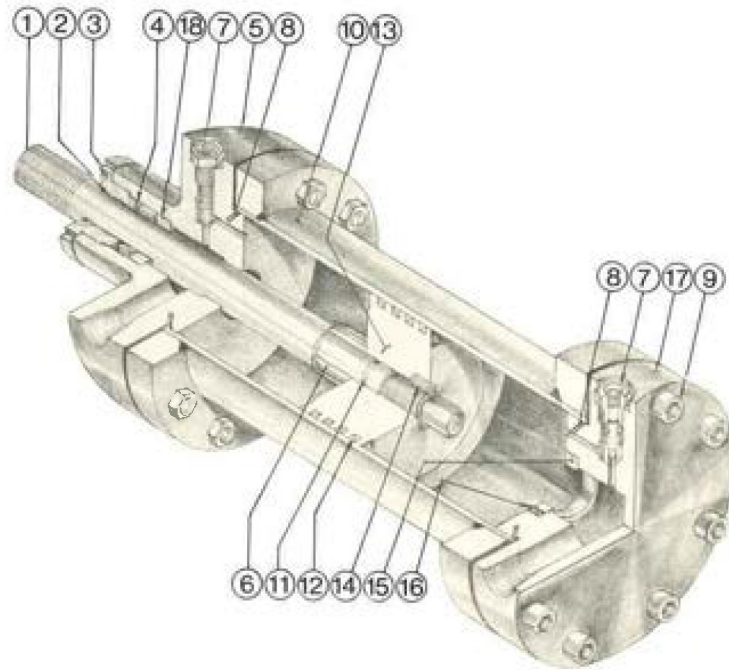


| BORE (mm) | A | B | C | G=P | J | Q=S | T | U | V | W |
|-----------|-----|-----|-----|------------|----|-----|-----|-----|-----|-----|
| 40 | 20 | 20 | 25 | M 16 x 1.5 | 20 | 22 | 51 | 60 | 41 | 73 |
| 50 | 25 | 25 | 32 | M 20 x 1.5 | 20 | 28 | 62 | 65 | 52 | 90 |
| 63 | 32 | 32 | 40 | M 27 x 2 | 25 | 36 | 75 | 82 | 65 | 111 |
| 80 | 40 | 40 | 47 | M 33 x 2 | 30 | 45 | 92 | 100 | 82 | 137 |
| 100 | 50 | 50 | 59 | M 42 x 2 | 35 | 56 | 110 | 120 | 95 | 166 |
| 125 | 63 | 63 | 71 | M 48 x 2 | 40 | 63 | 118 | 143 | 103 | 181 |
| 160 | 80 | 80 | 90 | M 64 x 3 | 45 | 85 | 150 | 170 | 135 | 235 |
| 200 | 100 | 100 | 112 | M 80 x 3 | 55 | 95 | 180 | 210 | 165 | 275 |
| 250 | 125 | 125 | 145 | M 100 x 3 | 70 | 112 | 243 | 265 | 223 | 355 |
| 320 | 160 | 160 | 178 | M 125 x 4 | 85 | 125 | 290 | 330 | 270 | 415 |

| BORE (mm) | A | B | C | D | E | F | G | H | J | K | L | M |
|-----------|-----|-----|-----|-----|-----|----|-----|----|----|-----|-----|-----|
| 40 | 20 | 20 | 25 | 47 | 122 | 22 | 53 | 14 | 20 | 63 | 70 | 84 |
| 50 | 25 | 25 | 32 | 52 | 140 | 22 | 62 | 18 | 20 | 68 | 75 | 89 |
| 63 | 32 | 32 | 40 | 63 | 168 | 22 | 72 | 21 | 25 | 85 | 95 | 110 |
| 80 | 40 | 40 | 47 | 76 | 206 | 25 | 88 | 27 | 30 | 110 | 120 | 134 |
| 100 | 50 | 50 | 59 | 90 | 246 | 25 | 96 | 33 | 35 | 130 | 143 | 171 |
| 125 | 63 | 63 | 71 | 107 | 294 | 32 | 122 | 40 | 40 | 153 | 169 | 210 |
| 160 | 80 | 80 | 90 | 120 | 320 | 38 | 150 | 40 | 45 | 180 | 196 | 237 |
| 200 | 100 | 100 | 112 | 153 | 422 | 44 | 204 | 58 | 55 | 225 | 245 | 288 |
| 250 | 125 | 125 | 145 | 185 | 500 | 51 | 251 | 65 | 70 | 280 | 300 | 343 |
| 320 | 160 | 160 | 178 | 220 | 584 | 51 | 301 | 72 | 85 | 350 | 370 | 413 |

MILL TYPE METRIC HYDRAULIC CYLINDERS SERIES MH 37

250 Bar Pressure



PART LIST

| ITEM | QTY. | DESCRIPTION |
|------|----------|-----------------------------------|
| 1 | 1 only | Cylinder Rod (chrome plated) |
| 2 | *1 only | Rod Wiper |
| 3 | **1 only | Gland Bushing |
| 4 | 1 set | Gland Seal - Chevron "V" Ring |
| 5 | 1 only | Front Head |
| 6 | 1 only | Front Cushion |
| 7 | 2 only | Adjustable Cushion Assembly |
| 8 | *2 only | Head Static Seal - "O" Ring |
| 9 | 2 sets | Head Securing Cap Screws and Nuts |

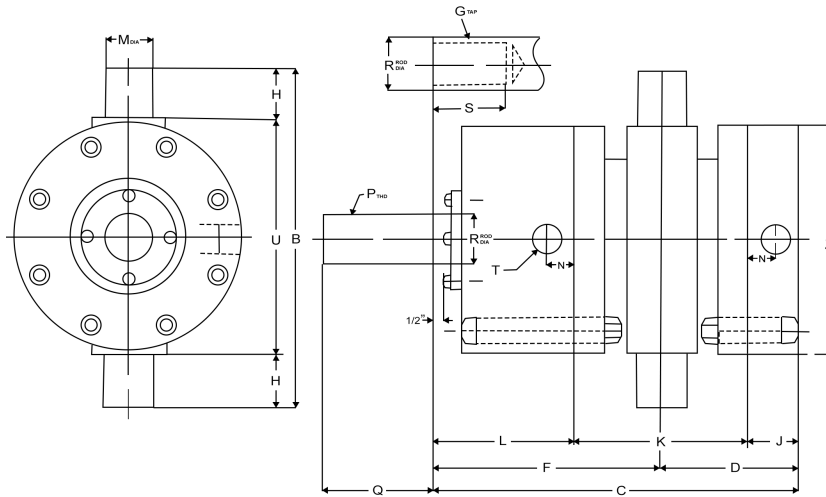
| ITEM | QTY. | DESCRIPTION |
|------|---------|-----------------------------------|
| 10 | 1 only | Cylinder Barrel Assembly |
| 11 | *1 only | Piston Rod Seal - "O" Ring |
| 12 | *1 set | Piston Dynamic Seal - Piston Ring |
| 13 | 1 only | Piston |
| 14 | 1 only | Piston Securing Screw |
| 15 | 1 only | Rear Cushion |
| 16 | 2 only | Rear Cushion Securing Screw |
| 17 | 1 only | Rear Head |
| 18 | 1 only | Lower Gland Bearing |

* Spare Parts
** Optional Spare Parts

HYDRAULIC CYLINDERS SERIES MH 37

250 Bar Pressure

Trunnion Mtg.

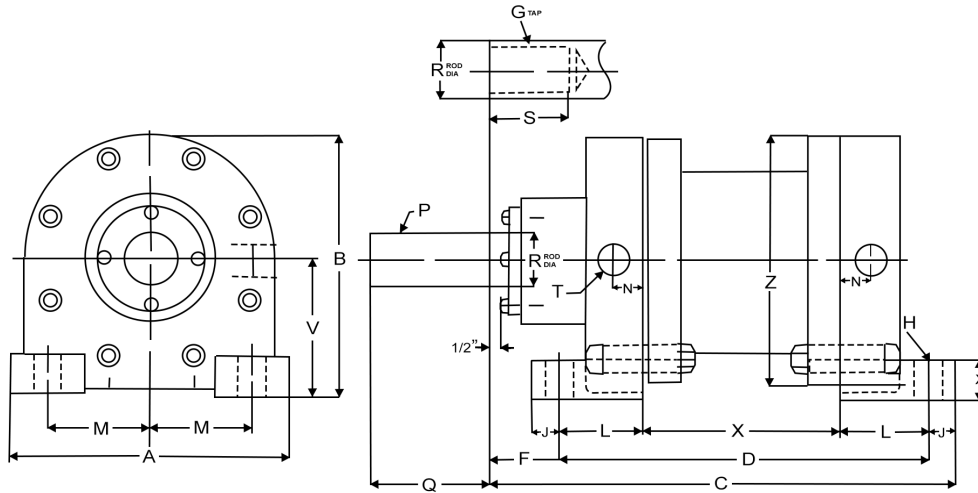


| MODEL NO. | BORE (mm) | B | C | D | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | M | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | U | R2:1 | Z_{max} |
|-------------------|-----------|------|-----|-----|-----|-------------------|-------------------|-----|-----|-----|-----|-----|----|-----------------|-----------------|-----|------|-----|------|-----------|
| MH - 25004037 - T | 40 | 140 | 222 | 82 | 140 | M 20 x 1.5 | M 20 x 1.5 | 20 | 42 | 80 | 100 | 32 | 19 | 28 | 40 | 28 | ½" | 100 | 28 | 98 |
| MH - 25005037 - T | 50 | 162 | 240 | 88 | 152 | M 24 x 2 | M 27 x 1.5 | 25 | 46 | 84 | 110 | 32 | 19 | 32 | 48 | 32 | ½" | 112 | 36 | 110 |
| MH - 25006337 - T | 63 | 189 | 270 | 96 | 174 | M 30 x 2 | M 33 x 2 | 32 | 46 | 99 | 125 | 40 | 22 | 40 | 60 | 40 | ¾" | 125 | 45 | 128 |
| MH - 25008037 - T | 80 | 230 | 300 | 108 | 192 | M 36 x 2 | M 42 x 2 | 40 | 50 | 115 | 135 | 50 | 25 | 50 | 72 | 50 | ¾" | 150 | 56 | 152 |
| MH - 25010037 - T | 100 | 280 | 335 | 120 | 215 | M 48 x 2 | M 48 x 2 | 50 | 60 | 120 | 155 | 63 | 30 | 63 | 96 | 63 | 1" | 180 | 70 | 178 |
| MH - 25012537 - T | 125 | 350 | 364 | 127 | 237 | M 56 x 2 | M 64 x 3 | 63 | 60 | 134 | 170 | 80 | 30 | 75 | 112 | 70 | 1" | 224 | 90 | 216 |
| MH - 25016037 - T | 160 | 440 | 433 | 147 | 286 | M 72 x 3 | M 80 x 3 | 80 | 70 | 153 | 210 | 100 | 35 | 85 | 128 | 90 | 1-¼" | 280 | 110 | 275 |
| MH - 25020037 - T | 200 | 545 | 530 | 185 | 345 | M 90 x 3 | M 100 x 3 | 100 | 90 | 190 | 250 | 125 | 35 | 106 | 140 | 110 | 1-¼" | 345 | 140 | 335 |
| MH - 25025037 - T | 250 | 675 | 598 | 202 | 396 | M 110 x 3 | M 125 x 4 | 125 | 100 | 203 | 295 | 160 | 45 | 112 | 160 | 140 | 1-½" | 425 | 180 | 416 |
| MH - 25032037 - T | 320 | 850 | 694 | 235 | 459 | M 140 x 4 | M 160 x 4 | 160 | 120 | 229 | 345 | 200 | 55 | 140 | 180 | 180 | 2" | 530 | 220 | 540 |
| MH - 25040037 - T | 400 | 1030 | 755 | 265 | 490 | M 160 x 4 | M 200 x 4 | 140 | 140 | 250 | 365 | 250 | 55 | 160 | 220 | 220 | 2" | 630 | 280 | 690 |
| MH - 25050037 - T | 500 | 1230 | 815 | 268 | 547 | M 220 x 4 | M 250 x 6 | 140 | 140 | 255 | 420 | 320 | 65 | 220 | 320 | 280 | 2-½" | 730 | 350 | 800 |

HYDRAULIC CYLINDERS SERIES MH 37

250 Bar Pressure

Base Mtg.

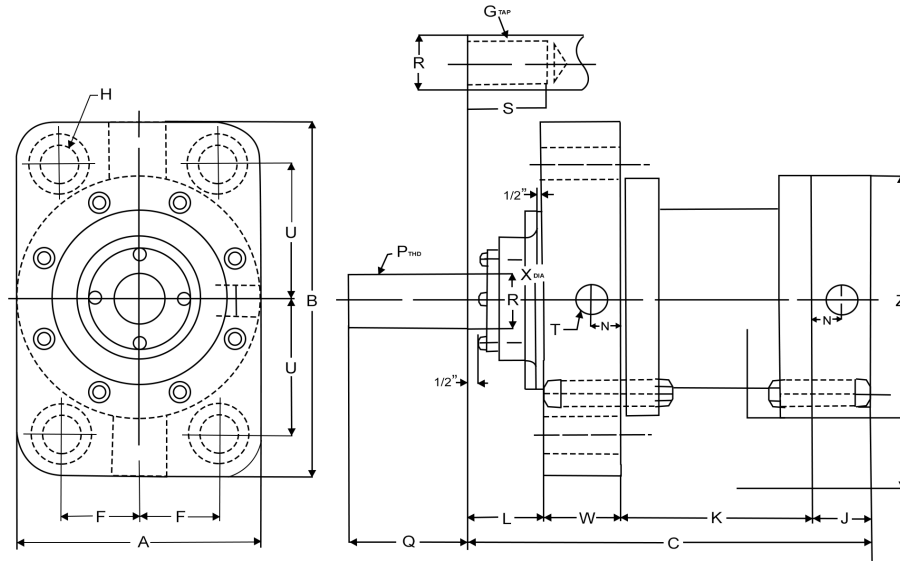


| MODEL NO. | BORE (mm) | A | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | V | X | Z _{max} |
|-------------------|-----------|-----|-----|-----|-----|-----|------------------------------------|------------------------------------|----|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|------------------|
| MH - 25004037 - B | 40 | 118 | 110 | 250 | 192 | 44 | M 20 x 1.5 | M 20 x 1.5 | 14 | 14 | 80 | 56 | 44 | 19 | 28 | 40 | 28 | ½" | 28 | 61 | 22 | 98 |
| MH - 25005037 - B | 50 | 130 | 122 | 268 | 204 | 50 | M 24 x 2 | M 27 x 1.5 | 14 | 14 | 84 | 60 | 50 | 19 | 32 | 48 | 32 | ½" | 36 | 67 | 22 | 110 |
| MH - 25006337 - B | 63 | 148 | 140 | 298 | 219 | 65 | M 30 x 2 | M 33 x 2 | 14 | 14 | 99 | 60 | 57 | 22 | 40 | 60 | 40 | ¾" | 45 | 76 | 22 | 128 |
| MH - 25008037 - B | 80 | 172 | 164 | 336 | 251 | 67 | M 36 x 2 | M 42 x 2 | 18 | 18 | 115 | 68 | 67 | 25 | 50 | 72 | 50 | ¾" | 56 | 88 | 25 | 152 |
| MH - 25010037 - B | 100 | 198 | 190 | 379 | 284 | 73 | M 48 x 2 | M 48 x 2 | 22 | 22 | 120 | 82 | 78 | 30 | 63 | 96 | 63 | 1" | 70 | 101 | 32 | 178 |
| MH - 25012537 - B | 125 | 256 | 228 | 418 | 308 | 83 | M 56 x 2 | M 64 x 3 | 27 | 27 | 134 | 87 | 95 | 30 | 75 | 112 | 70 | 1" | 90 | 120 | 38 | 216 |
| MH - 25016037 - B | 160 | 315 | 288 | 499 | 359 | 107 | M 72 x 3 | M 80 x 3 | 33 | 33 | 153 | 103 | 121 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 150 | 44 | 275 |
| MH - 25020037 - B | 200 | 375 | 348 | 610 | 450 | 120 | M 90 x 3 | M 100 x 3 | 40 | 40 | 190 | 130 | 149 | 35 | 106 | 140 | 110 | 1-¼" | 140 | 180 | 57 | 335 |
| MH - 25025037 - B | 250 | 456 | 440 | 690 | 495 | 149 | M 110 x 3 | M 125 x 4 | 46 | 46 | 203 | 146 | 186 | 45 | 112 | 160 | 140 | 1-½" | 180 | 232 | 70 | 416 |
| MH - 25032037 - B | 320 | 580 | 564 | 798 | 573 | 173 | M 140 x 4 | M 160 x 4 | 52 | 52 | 229 | 172 | 244 | 55 | 140 | 180 | 180 | 2" | 220 | 294 | 76 | 540 |
| MH - 25040037 - B | 400 | 730 | 714 | 899 | 674 | 153 | M 160 x 4 | M 200 x 4 | 72 | 72 | 250 | 212 | 310 | 55 | 160 | 220 | 220 | 2" | 280 | 369 | 102 | 690 |
| MH - 25050037 - B | 500 | 860 | 824 | 975 | 695 | 200 | M 220 x 4 | M 250 x 6 | 80 | 80 | 255 | 220 | 360 | 65 | 220 | 320 | 280 | 2-½" | 350 | 424 | 114 | 800 |

HYDRAULIC CYLINDERS SERIES MH 37

250 Bar Pressure

Front Flange Mtg.

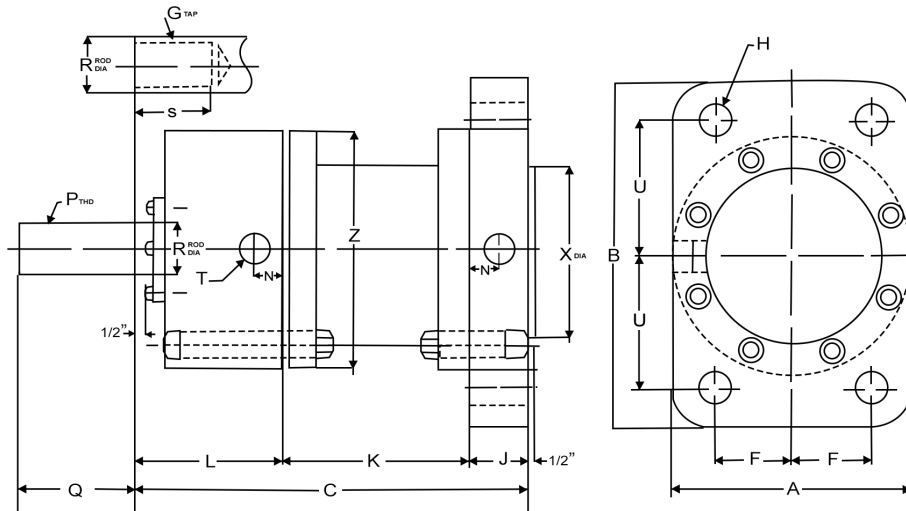


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | W | X | Z _{max} |
|--------------------|-----------|-----|------|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|-----|------------------|
| MH - 25004037 - FF | 40 | 98 | 180 | 222 | 26 | M 20 x 1.5 | M 20 x 1.5 | 18 | 42 | 80 | 55 | 19 | 28 | 40 | 28 | ½" | 28 | 67 | 45 | 84 | 98 |
| MH - 25005037 - FF | 50 | 110 | 204 | 240 | 29 | M 24 x 2 | M 27 x 1.5 | 21 | 46 | 84 | 60 | 19 | 32 | 48 | 32 | ½" | 36 | 76 | 50 | 90 | 110 |
| MH - 25006337 - FF | 63 | 128 | 230 | 270 | 35 | M 30 x 2 | M 33 x 2 | 24 | 46 | 99 | 70 | 22 | 40 | 60 | 40 | ¾" | 45 | 86 | 55 | 104 | 128 |
| MH - 25008037 - FF | 80 | 152 | 290 | 300 | 38 | M 36 x 2 | M 42 x 2 | 33 | 50 | 115 | 72 | 25 | 50 | 72 | 50 | ¾" | 56 | 107 | 63 | 117 | 152 |
| MH - 25010037 - FF | 100 | 178 | 344 | 335 | 44 | M 48 x 2 | M 48 x 2 | 40 | 60 | 120 | 85 | 30 | 63 | 96 | 63 | 1" | 70 | 127 | 70 | 128 | 178 |
| MH - 25012537 - FF | 125 | 216 | 424 | 364 | 52 | M 56 x 2 | M 64 x 3 | 46 | 60 | 134 | 90 | 30 | 75 | 112 | 70 | 1" | 90 | 156 | 80 | 150 | 216 |
| MH - 25016037 - FF | 160 | 275 | 522 | 433 | 70 | M 72 x 3 | M 80 x 3 | 58 | 70 | 153 | 115 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 193 | 95 | 185 | 275 |
| MH - 25020037 - FF | 200 | 335 | 632 | 530 | 86 | M 90 x 3 | M 100 x 3 | 72 | 90 | 190 | 140 | 35 | 106 | 140 | 110 | 1-¼" | 140 | 234 | 110 | 225 | 335 |
| MH - 25025037 - FF | 250 | 416 | 718 | 598 | 120 | M 110 x 3 | M 125 x 4 | 78 | 100 | 203 | 170 | 45 | 112 | 160 | 140 | 1-½" | 180 | 271 | 125 | 275 | 416 |
| MH - 25032037 - FF | 320 | 540 | 830 | 694 | 175 | M 140 x 4 | M 160 x 4 | 85 | 120 | 229 | 195 | 55 | 140 | 180 | 180 | 2" | 220 | 320 | 150 | 320 | 540 |
| MH - 25040037 - FF | 400 | 690 | 1036 | 755 | 229 | M 160 x 4 | M 200 x 4 | 106 | 140 | 250 | 205 | 55 | 160 | 220 | 220 | 2" | 280 | 400 | 160 | 430 | 690 |
| MH - 25050037 - FF | 500 | * | * | * | * | M 220 x 4 | M 250 x 6 | * | 140 | 255 | * | 65 | 220 | 320 | 280 | 2-½" | 350 | * | * | * | 800 |

HYDRAULIC CYLINDERS SERIES MH 37

250 Bar Pressure

Rear Flange Mtg.

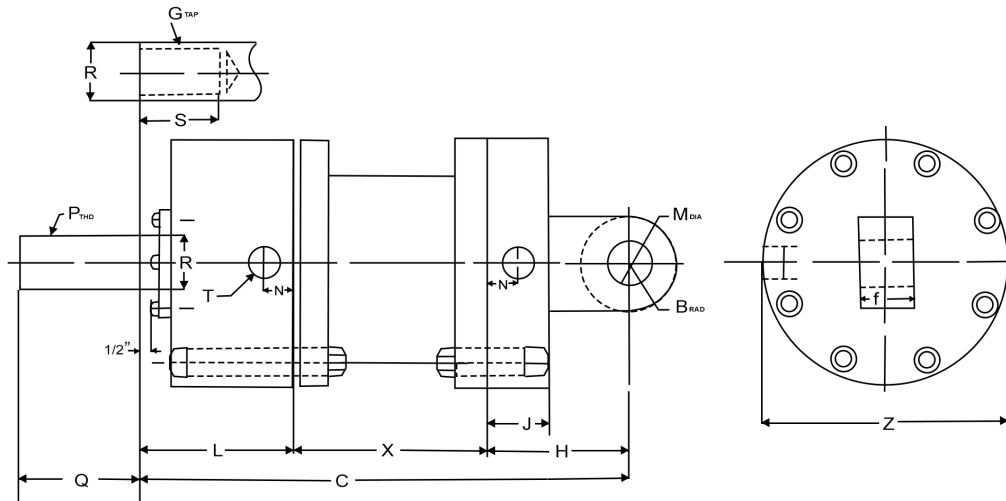


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | X | Z _{max} |
|--------------------|-----------|-----|------|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|--------|------|-----|-----|------------------|
| MH - 25004037 - RF | 40 | 98 | 180 | 222 | 26 | M 20 x 1.5 | M 20 x 1.5 | 18 | 42 | 80 | 100 | 19 | 28 | 40 | 28 | 1/2" | 28 | 67 | 84 | 98 |
| MH - 25005037 - RF | 50 | 110 | 204 | 240 | 29 | M 24 x 2 | M 27 x 1.5 | 21 | 46 | 84 | 110 | 19 | 32 | 48 | 32 | 1/2" | 36 | 76 | 90 | 110 |
| MH - 25006337 - RF | 63 | 128 | 230 | 270 | 35 | M 30 x 2 | M 33 x 2 | 24 | 46 | 99 | 125 | 22 | 40 | 60 | 40 | 3/4" | 45 | 86 | 104 | 128 |
| MH - 25008037 - RF | 80 | 152 | 290 | 300 | 38 | M 36 x 2 | M 42 x 2 | 33 | 50 | 115 | 135 | 25 | 50 | 72 | 50 | 3/4" | 56 | 107 | 117 | 152 |
| MH - 25010037 - RF | 100 | 178 | 344 | 335 | 44 | M 48 x 2 | M 48 x 2 | 40 | 60 | 120 | 155 | 30 | 63 | 96 | 63 | 1" | 70 | 127 | 128 | 178 |
| MH - 25012537 - RF | 125 | 216 | 424 | 364 | 52 | M 56 x 2 | M 64 x 3 | 46 | 60 | 134 | 170 | 30 | 75 | 112 | 70 | 1" | 90 | 156 | 150 | 216 |
| MH - 25016037 - RF | 160 | 275 | 522 | 433 | 70 | M 72 x 3 | M 80 x 3 | 58 | 70 | 153 | 210 | 35 | 85 | 128 | 90 | 1-1/4" | 110 | 193 | 185 | 275 |
| MH - 25020037 - RF | 200 | 335 | 632 | 530 | 86 | M 90 x 3 | M 100 x 3 | 72 | 90 | 190 | 250 | 35 | 106 | 140 | 110 | 1-1/4" | 140 | 234 | 225 | 335 |
| MH - 25025037 - RF | 250 | 416 | 718 | 598 | 120 | M 110 x 3 | M 125 x 4 | 78 | 100 | 203 | 295 | 45 | 112 | 160 | 140 | 1-1/2" | 180 | 271 | 275 | 416 |
| MH - 25032037 - RF | 320 | 540 | 830 | 694 | 175 | M 140 x 4 | M 160 x 4 | 85 | 120 | 229 | 345 | 55 | 140 | 180 | 180 | 2" | 220 | 320 | 320 | 540 |
| MH - 25040037 - RF | 400 | 690 | 1036 | 755 | 229 | M 160 x 4 | M 200 x 4 | 106 | 140 | 250 | 365 | 55 | 160 | 220 | 220 | 2" | 280 | 400 | 430 | 690 |
| MH - 25050037 - RF | 500 | * | * | * | * | M 220 x 4 | M 250 x 6 | * | 140 | 255 | 420 | 65 | 220 | 320 | 280 | 2-1/2" | 350 | * | * | 800 |

HYDRAULIC CYLINDERS SERIES MH 37

250 Bar Pressure

Male Clevis Mtg.

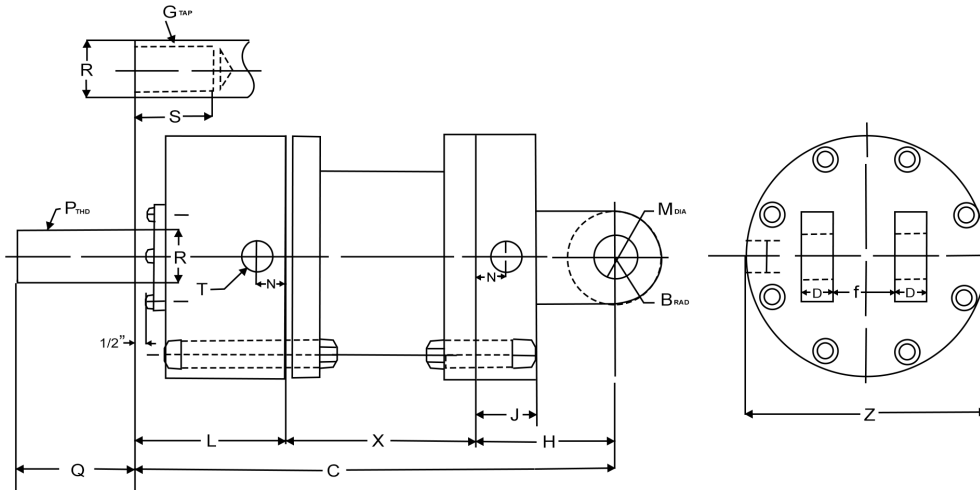


| MODEL NO. | BORE (mm) | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max.} |
|--------------------|-----------|-----|------|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-------------------|
| MH - 25004037 - MC | 40 | 32 | 272 | 25 | M 20 x 1.5 | M 20 x 1.5 | 92 | 42 | 80 | 100 | 25 | 19 | 28 | 40 | 28 | ½" | 28 | 98 |
| MH - 25005037 - MC | 50 | 40 | 305 | 32 | M 24 x 2 | M 27 x 1.5 | 111 | 46 | 84 | 110 | 32 | 19 | 32 | 48 | 28 | ½" | 36 | 110 |
| MH - 25006337 - MC | 63 | 50 | 348 | 40 | M 30 x 2 | M 33 x 2 | 124 | 46 | 99 | 125 | 40 | 22 | 40 | 60 | 40 | ¾" | 45 | 128 |
| MH - 25008037 - MC | 80 | 63 | 395 | 50 | M 36 x 2 | M 42 x 2 | 145 | 50 | 115 | 135 | 50 | 25 | 50 | 72 | 50 | ¾" | 56 | 152 |
| MH - 25010037 - MC | 100 | 71 | 442 | 63 | M 48 x 2 | M 48 x 2 | 167 | 60 | 120 | 155 | 63 | 30 | 63 | 96 | 63 | 1" | 70 | 178 |
| MH - 25012537 - MC | 125 | 90 | 494 | 80 | M 56 x 2 | M 64 x 3 | 190 | 60 | 134 | 170 | 80 | 30 | 75 | 112 | 70 | 1" | 90 | 216 |
| MH - 25016037 - MC | 160 | 112 | 590 | 100 | M 72 x 3 | M 80 x 3 | 227 | 70 | 153 | 210 | 100 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 275 |
| MH - 25020037 - MC | 200 | 160 | 746 | 125 | M 90 x 3 | M 100 x 3 | 306 | 90 | 190 | 250 | 125 | 35 | 106 | 140 | 110 | 1-¼" | 140 | 335 |
| MH - 25025037 - MC | 250 | 200 | 861 | 160 | M 110 x 3 | M 125 x 4 | 363 | 100 | 203 | 295 | 160 | 45 | 112 | 160 | 140 | 1-½" | 180 | 416 |
| MH - 25032037 - MC | 320 | 250 | 1024 | 200 | M 140 x 4 | M 160 x 4 | 450 | 120 | 229 | 345 | 200 | 55 | 140 | 180 | 180 | 2" | 220 | 540 |
| MH - 25040037 - MC | 400 | 320 | 1075 | 250 | M 160 x 4 | M 200 x 4 | 430 | 140 | 250 | 365 | 250 | 55 | 160 | 220 | 220 | 2" | 280 | 690 |
| MH - 25050037 - MC | 500 | 375 | 1225 | 320 | M 220 x 4 | M 250 x 6 | 550 | 140 | 255 | 420 | 320 | 65 | 220 | 320 | 280 | 2-½" | 350 | 800 |

HYDRAULIC CYLINDERS SERIES MH 37

250 Bar Pressure

Female Clevis Mtg.

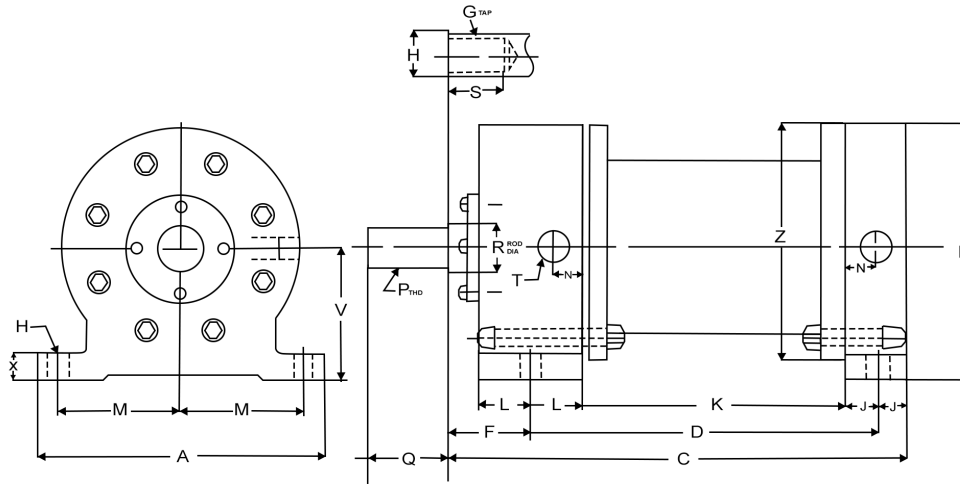


| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max} |
|--------------------|-----------|-----|------|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|------------------|
| MH - 25004037 - FC | 40 | 32 | 272 | 20 | 26 | M 20 x 1.5 | M 20 x 1.5 | 92 | 42 | 80 | 100 | 25 | 19 | 28 | 40 | 28 | ½" | 28 | 98 |
| MH - 25005037 - FC | 50 | 40 | 305 | 20 | 33 | M 24 x 2 | M 27 x 1.5 | 111 | 46 | 84 | 110 | 32 | 19 | 32 | 48 | 28 | ½" | 36 | 110 |
| MH - 25006337 - FC | 63 | 50 | 348 | 25 | 41 | M 30 x 2 | M 33 x 2 | 124 | 46 | 99 | 125 | 40 | 22 | 40 | 60 | 40 | ¾" | 45 | 128 |
| MH - 25008037 - FC | 80 | 63 | 395 | 30 | 51 | M 36 x 2 | M 42 x 2 | 145 | 50 | 115 | 135 | 50 | 25 | 50 | 72 | 50 | ¾" | 56 | 152 |
| MH - 25010037 - FC | 100 | 71 | 442 | 35 | 64 | M 48 x 2 | M 48 x 2 | 167 | 60 | 120 | 155 | 63 | 30 | 63 | 96 | 63 | 1" | 70 | 178 |
| MH - 25012537 - FC | 125 | 90 | 494 | 40 | 81 | M 56 x 2 | M 64 x 3 | 190 | 60 | 134 | 170 | 80 | 30 | 75 | 112 | 70 | 1" | 90 | 216 |
| MH - 25016037 - FC | 160 | 112 | 590 | 50 | 101 | M 72 x 3 | M 80 x 3 | 227 | 70 | 153 | 210 | 100 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 275 |
| MH - 25020037 - FC | 200 | 160 | 746 | 70 | 126 | M 90 x 3 | M 100 x 3 | 306 | 90 | 190 | 250 | 125 | 35 | 106 | 140 | 110 | 1-¼" | 140 | 335 |
| MH - 25025037 - FC | 250 | 200 | 861 | 80 | 161 | M 110 x 3 | M 125 x 4 | 363 | 100 | 203 | 295 | 160 | 45 | 112 | 160 | 140 | 1-½" | 180 | 416 |
| MH - 25032037 - FC | 320 | 250 | 1024 | 95 | 201 | M 140 x 4 | M 160 x 4 | 450 | 120 | 229 | 345 | 200 | 55 | 140 | 180 | 180 | 2" | 220 | 540 |
| MH - 25040037 - FC | 400 | 320 | 1075 | 110 | 251 | M 160 x 4 | M 200 x 4 | 430 | 140 | 250 | 365 | 250 | 55 | 160 | 220 | 220 | 2" | 280 | 690 |
| MH - 25050037 - FC | 500 | 375 | 1225 | 130 | 321 | M 220 x 4 | M 250 x 6 | 550 | 140 | 255 | 420 | 320 | 65 | 220 | 320 | 280 | 2-½" | 350 | 800 |

HYDRAULIC CYLINDERS SERIES MH 37

250 Bar Pressure

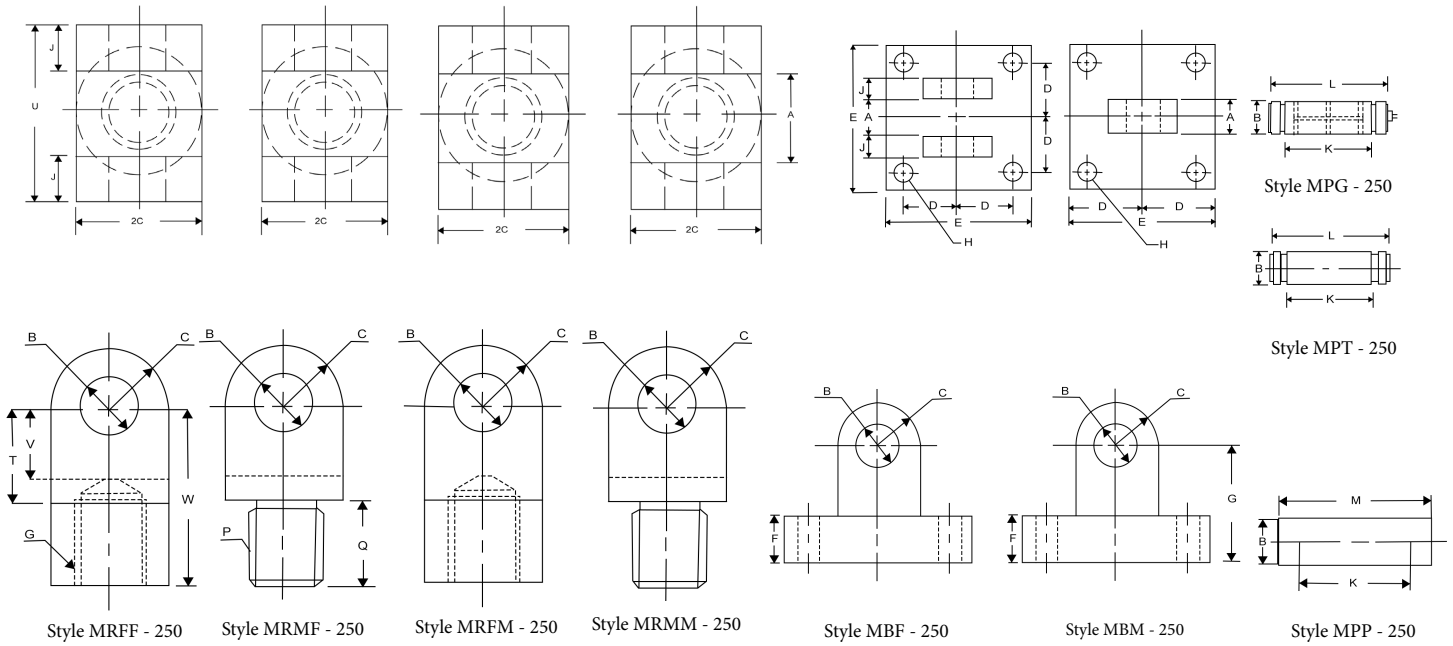
Side Log Mtg.



| MODEL NO. | BORE (mm) | A | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | v | X | Z _{max} |
|--------------------|-----------|------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|------------------|
| MH - 25004037 - SL | 40 | 160 | 110 | 280 | 159 | 100 | M 20 x 1.5 | M 20 x 1.5 | 14 | 21 | 80 | 58 | 66 | 19 | 28 | 40 | 28 | ½" | 28 | 61 | 22 | 98 |
| MH - 25005037 - SL | 50 | 180 | 122 | 288 | 165 | 100 | M 24 x 2 | M 27 x 1.5 | 14 | 23 | 84 | 58 | 76 | 19 | 32 | 48 | 32 | ½" | 36 | 67 | 22 | 110 |
| MH - 25006337 - SL | 63 | 208 | 140 | 303 | 180 | 100 | M 30 x 2 | M 33 x 2 | 14 | 23 | 99 | 58 | 90 | 22 | 40 | 60 | 40 | ¾" | 45 | 76 | 25 | 128 |
| MH - 25008037 - SL | 80 | 255 | 164 | 340 | 205 | 110 | M 36 x 2 | M 42 x 2 | 18 | 25 | 115 | 65 | 110 | 25 | 50 | 72 | 50 | ¾" | 56 | 88 | 25 | 152 |
| MH - 25010037 - SL | 100 | 305 | 190 | 381 | 221 | 130 | M 48 x 2 | M 48 x 2 | 22 | 30 | 120 | 71 | 131 | 30 | 63 | 96 | 63 | 1" | 70 | 101 | 32 | 178 |
| MH - 25012537 - SL | 125 | 360 | 228 | 395 | 235 | 130 | M 56 x 2 | M 64 x 3 | 27 | 30 | 134 | 71 | 153 | 30 | 75 | 112 | 70 | 1" | 90 | 120 | 38 | 216 |
| MH - 25016037 - SL | 160 | 440 | 288 | 439 | 270 | 134 | M 72 x 3 | M 80 x 3 | 33 | 35 | 153 | 82 | 187 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 150 | 44 | 275 |
| MH - 25020037 - SL | 200 | 515 | 348 | 520 | 317 | 158 | M 90 x 3 | M 100 x 3 | 40 | 45 | 190 | 82 | 218 | 35 | 106 | 140 | 110 | 1-¼" | 140 | 180 | 57 | 335 |
| MH - 25025037 - SL | 250 | 610 | 440 | 569 | 348 | 171 | M 110 x 3 | M 125 x 4 | 46 | 50 | 203 | 95 | 259 | 45 | 112 | 160 | 140 | 1-½" | 180 | 232 | 70 | 416 |
| MH - 25032037 - SL | 320 | 760 | 564 | 641 | 397 | 184 | M 140 x 4 | M 160 x 4 | 52 | 60 | 229 | 108 | 320 | 55 | 140 | 180 | 180 | 2" | 220 | 294 | 76 | 540 |
| MH - 25040037 - SL | 400 | 915 | 714 | 682 | 428 | 184 | M 160 x 4 | M 200 x 4 | 72 | 70 | 250 | 108 | 388 | 55 | 160 | 220 | 220 | 2" | 280 | 369 | 102 | 690 |
| MH - 25050037 - SL | 500 | 1100 | 824 | 735 | 445 | 220 | M 220 x 4 | M 250 x 6 | 80 | 70 | 255 | 120 | 470 | 65 | 220 | 320 | 280 | 2-½" | 350 | 424 | 114 | 800 |

HYDRAULIC CYLINDERS SERIES MH 37

250 Bar Pressure

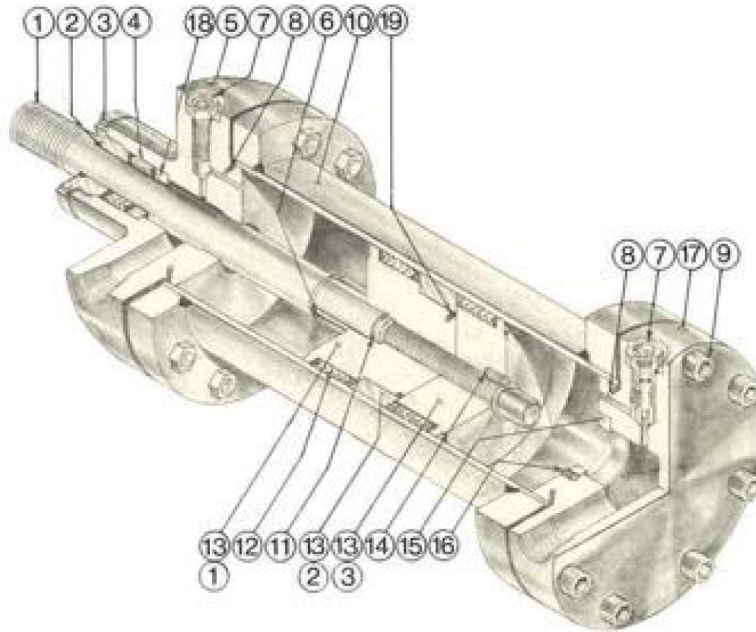


| BORE (mm) | A | B | C | G=P | J | Q=S | T | U | V | W |
|-----------|-----|-----|-----|------------|----|-----|-----|-----|-----|-----|
| 40 | 25 | 25 | 32 | M 20 x 1.5 | 20 | 28 | 60 | 65 | 50 | 88 |
| 50 | 32 | 32 | 40 | M 24 x 2 | 20 | 32 | 75 | 72 | 65 | 107 |
| 63 | 40 | 40 | 50 | M 30 x 2 | 25 | 40 | 88 | 90 | 78 | 128 |
| 80 | 50 | 50 | 63 | M 36 x 2 | 30 | 50 | 110 | 110 | 95 | 160 |
| 100 | 63 | 63 | 71 | M 48 x 2 | 35 | 63 | 122 | 133 | 107 | 185 |
| 125 | 80 | 80 | 90 | M 56 x 2 | 40 | 75 | 145 | 160 | 130 | 220 |
| 160 | 100 | 100 | 112 | M 72 x 3 | 50 | 85 | 177 | 200 | 157 | 262 |
| 200 | 125 | 125 | 160 | M 90 x 3 | 70 | 106 | 236 | 265 | 216 | 342 |
| 250 | 160 | 160 | 200 | M 110 x 3 | 80 | 112 | 288 | 320 | 263 | 400 |
| 320 | 200 | 200 | 250 | M 140 x 4 | 95 | 140 | 355 | 390 | 330 | 495 |

| BORE (mm) | A | B | C | D | E | F | G | H | J | K | L | M |
|-----------|-----|-----|-----|-----|-----|----|-----|----|----|-----|-----|-----|
| 40 | 25 | 20 | 25 | 52 | 140 | 22 | 53 | 18 | 20 | 68 | 76 | 89 |
| 50 | 32 | 32 | 40 | 58 | 158 | 22 | 62 | 21 | 20 | 79 | 87 | 100 |
| 63 | 40 | 40 | 50 | 69 | 186 | 25 | 75 | 24 | 25 | 93 | 105 | 118 |
| 80 | 50 | 50 | 63 | 85 | 236 | 25 | 88 | 33 | 30 | 120 | 132 | 145 |
| 100 | 63 | 63 | 71 | 102 | 284 | 32 | 103 | 40 | 35 | 143 | 159 | 184 |
| 125 | 80 | 80 | 90 | 120 | 332 | 38 | 128 | 46 | 40 | 170 | 186 | 227 |
| 160 | 100 | 100 | 112 | 148 | 412 | 44 | 156 | 58 | 50 | 210 | 230 | 267 |
| 200 | 125 | 125 | 160 | 190 | 524 | 87 | 217 | 72 | 70 | 280 | 300 | 343 |
| 250 | 160 | 160 | 200 | 220 | 596 | 70 | 270 | 78 | 80 | 335 | 355 | 398 |
| 320 | 200 | 200 | 250 | 257 | 684 | 76 | 326 | 85 | 90 | 400 | 420 | 463 |

MILL TYPE METRIC HYDRAULIC CYLINDERS SERIES MH 38

250 Bar Pressure



PART LIST

| ITEM | QTY. | DESCRIPTION |
|------|----------|-----------------------------------|
| 1 | 1 only | Cylinder Rod (chrome plated) |
| 2 | *1 only | Rod Wiper |
| 3 | **1 only | Gland Bushing |
| 4 | *1 set | Gland Seal - Chevron "V" Ring |
| 5 | 1 only | Front Head |
| 6 | 1 only | Front Cushion |
| 7 | 2 only | Adjustable Cushion Assembly |
| 8 | *2 only | Head Static Seal - "O" Ring |
| 9 | 2 sets | Head Securing Cap Screws and Nuts |
| 10 | 1 only | Cylinder Barrel Assembly |
| 11 | *1 only | Piston Rod Seal - "O" Ring |

| ITEM | QTY. | DESCRIPTION |
|------|---------|---|
| 12 | *2 sets | Piston Dynamic Seal - Chevron "V" Rings |
| 13/1 | 1 only | Piston - Front Section |
| 13/2 | 1 only | Piston - Bushing |
| 13/3 | 1 only | Piston - Rear Section |
| 14 | 1 only | Piston Securing Screw |
| 15 | 1 only | Rear Cushion |
| 16 | 2 only | Rear Cushion Securing Screw |
| 17 | 1 only | Rear Head |
| 18 | 1 only | Lower Gland Bearing |
| 19 | *1 only | Piston Static Seal - "O" Ring |

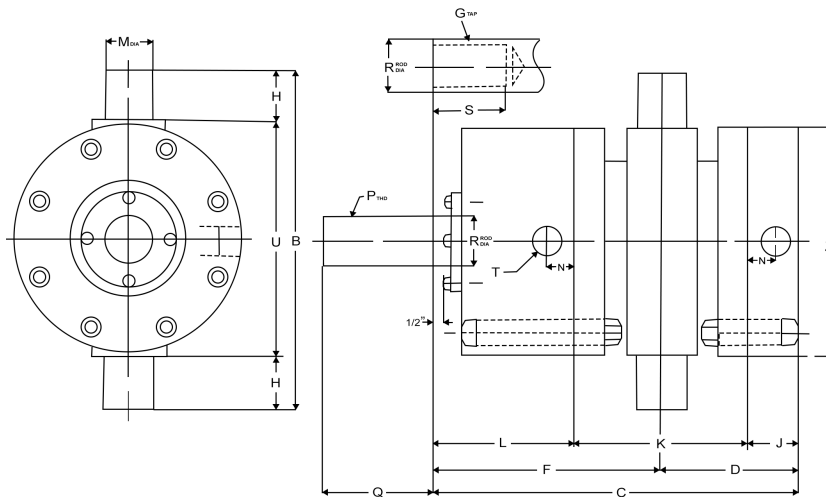
* Spare Parts

** Optional Spare Parts

HYDRAULIC CYLINDERS SERIES MH 38

250 Bar Pressure

Trunnion Mtg.

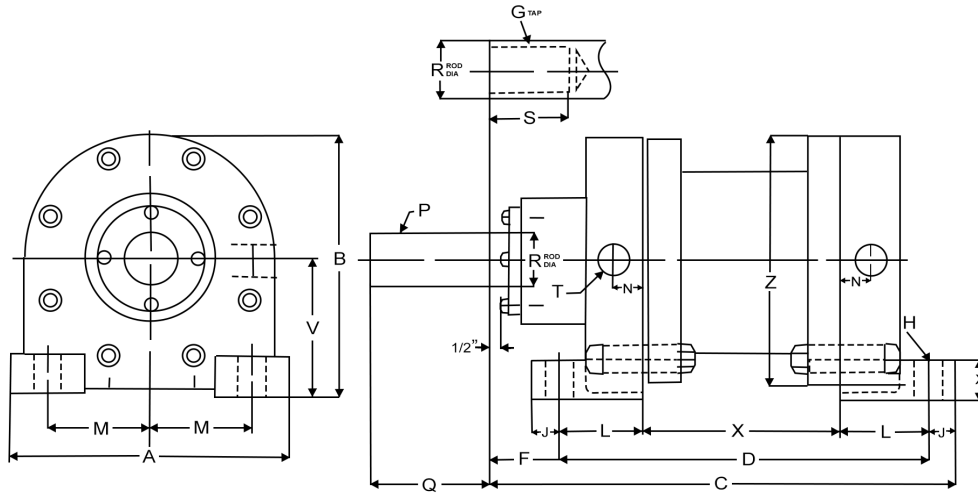


| MODEL NO. | BORE (mm) | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | U | R2:1 | Z _{max} |
|-------------------|-----------|------|-----|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|-----|------|------------------|
| MH - 25004038 - T | 40 | 140 | 222 | 82 | 140 | M 20 x 1.5 | M 20 x 1.5 | 20 | 42 | 80 | 100 | 32 | 19 | 28 | 40 | 28 | ½" | 100 | 28 | 98 |
| MH - 25005038 - T | 50 | 162 | 240 | 88 | 152 | M 24 x 2 | M 27 x 1.5 | 25 | 46 | 84 | 110 | 32 | 19 | 32 | 48 | 32 | ½" | 112 | 36 | 110 |
| MH - 25006338 - T | 63 | 189 | 270 | 96 | 174 | M 30 x 2 | M 33 x 2 | 32 | 46 | 99 | 125 | 40 | 22 | 40 | 60 | 40 | ¾" | 125 | 45 | 128 |
| MH - 25008038 - T | 80 | 230 | 300 | 108 | 192 | M 36 x 2 | M 42 x 2 | 40 | 50 | 115 | 135 | 50 | 25 | 50 | 72 | 50 | ¾" | 150 | 56 | 152 |
| MH - 25010038 - T | 100 | 280 | 335 | 120 | 215 | M 48 x 2 | M 48 x 2 | 50 | 60 | 120 | 155 | 63 | 30 | 63 | 96 | 63 | 1" | 180 | 70 | 178 |
| MH - 25012538 - T | 125 | 350 | 390 | 140 | 250 | M 56 x 2 | M 64 x 3 | 63 | 60 | 160 | 170 | 80 | 30 | 75 | 112 | 70 | 1" | 224 | 90 | 216 |
| MH - 25016038 - T | 160 | 440 | 460 | 160 | 300 | M 72 x 3 | M 80 x 3 | 80 | 70 | 180 | 210 | 100 | 35 | 85 | 128 | 90 | 1-¼" | 280 | 110 | 275 |
| MH - 25020038 - T | 200 | 545 | 540 | 190 | 350 | M 90 x 3 | M 100 x 3 | 100 | 90 | 200 | 250 | 125 | 35 | 106 | 140 | 110 | 1-¼" | 345 | 140 | 335 |
| MH - 25025038 - T | 250 | 675 | 640 | 223 | 417 | M 110 x 3 | M 125 x 4 | 125 | 100 | 245 | 295 | 160 | 45 | 112 | 160 | 140 | 1-½" | 425 | 180 | 416 |
| MH - 25032038 - T | 320 | 850 | 715 | 245 | 470 | M 140 x 4 | M 160 x 4 | 160 | 120 | 250 | 345 | 200 | 55 | 140 | 180 | 180 | 2" | 530 | 220 | 540 |
| MH - 25040038 - T | 400 | 1030 | 755 | 265 | 490 | M 160 x 4 | M 200 x 4 | 200 | 140 | 250 | 365 | 250 | 55 | 160 | 220 | 220 | 2" | 630 | 280 | 690 |
| MH - 25050038 - T | 500 | 1230 | 865 | 293 | 572 | M 220 x 4 | M 250 x 6 | 250 | 140 | 305 | 420 | 320 | 65 | 220 | 320 | 280 | 2-½" | 730 | 350 | 800 |

HYDRAULIC CYLINDERS SERIES MH 38

250 Bar Pressure

Base Mtg.

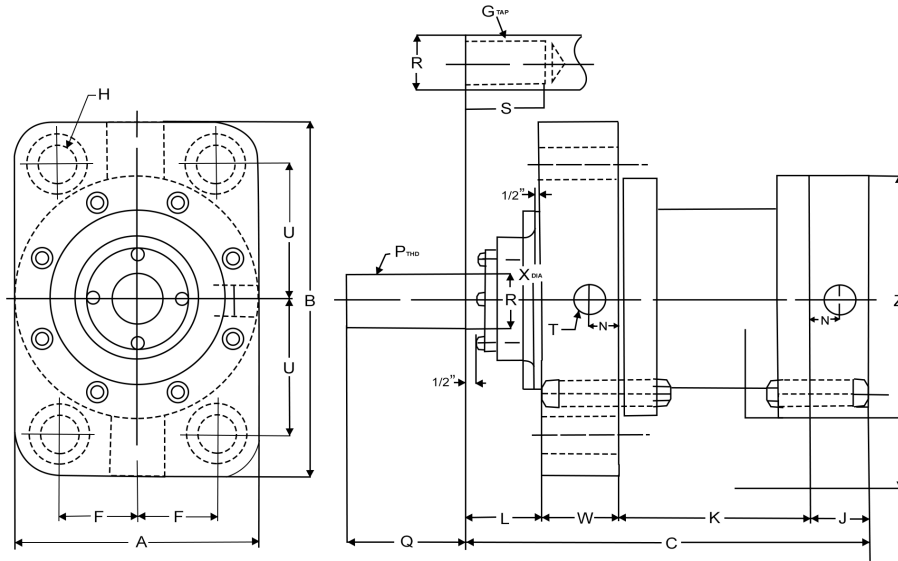


| MODEL NO. | BORE (mm) | A | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | v | X | Z _{max} |
|-------------------|-----------|-----|-----|------|-----|-----|------------------------------------|------------------------------------|----|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|------------------|
| MH - 25004038 - B | 40 | 118 | 110 | 250 | 192 | 44 | M 20 x 1.5 | M 20 x 1.5 | 14 | 14 | 80 | 56 | 44 | 19 | 28 | 40 | 28 | ½" | 28 | 61 | 22 | 98 |
| MH - 25005038 - B | 50 | 130 | 122 | 268 | 204 | 50 | M 24 x 2 | M 27 x 1.5 | 14 | 14 | 84 | 60 | 50 | 19 | 32 | 48 | 32 | ½" | 36 | 67 | 22 | 110 |
| MH - 25006338 - B | 63 | 148 | 140 | 298 | 219 | 65 | M 30 x 2 | M 33 x 2 | 14 | 14 | 99 | 60 | 57 | 22 | 40 | 60 | 40 | ¾" | 45 | 76 | 22 | 128 |
| MH - 25008038 - B | 80 | 172 | 164 | 336 | 251 | 67 | M 36 x 2 | M 42 x 2 | 18 | 18 | 115 | 68 | 67 | 25 | 50 | 72 | 50 | ¾" | 56 | 88 | 25 | 152 |
| MH - 25010038 - B | 100 | 198 | 190 | 379 | 284 | 73 | M 48 x 2 | M 48 x 2 | 22 | 22 | 120 | 82 | 78 | 30 | 63 | 96 | 63 | 1" | 70 | 101 | 32 | 178 |
| MH - 25012538 - B | 125 | 256 | 228 | 444 | 334 | 83 | M 56 x 2 | M 64 x 3 | 27 | 27 | 160 | 87 | 95 | 30 | 75 | 112 | 70 | 1" | 90 | 120 | 38 | 216 |
| MH - 25016038 - B | 160 | 315 | 288 | 526 | 386 | 107 | M 72 x 3 | M 80 x 3 | 33 | 33 | 180 | 103 | 121 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 150 | 44 | 275 |
| MH - 25020038 - B | 200 | 375 | 348 | 620 | 460 | 120 | M 90 x 3 | M 100 x 3 | 40 | 40 | 200 | 130 | 149 | 35 | 106 | 140 | 110 | 1-¼" | 140 | 180 | 57 | 335 |
| MH - 25025038 - B | 250 | 456 | 440 | 732 | 537 | 149 | M 110 x 3 | M 125 x 4 | 46 | 46 | 245 | 146 | 186 | 45 | 112 | 160 | 140 | 1-½" | 180 | 232 | 70 | 416 |
| MH - 25032038 - B | 320 | 580 | 564 | 819 | 594 | 173 | M 140 x 4 | M 160 x 4 | 52 | 52 | 250 | 172 | 244 | 55 | 140 | 180 | 180 | 2" | 220 | 294 | 76 | 540 |
| MH - 25040038 - B | 400 | 730 | 714 | 899 | 674 | 153 | M 160 x 4 | M 200 x 4 | 72 | 72 | 250 | 212 | 310 | 55 | 160 | 220 | 220 | 2" | 280 | 369 | 102 | 690 |
| MH - 25050038 - B | 500 | 860 | 824 | 1025 | 745 | 200 | M 220 x 4 | M 250 x 6 | 80 | 80 | 305 | 220 | 360 | 65 | 220 | 320 | 280 | 2-½" | 350 | 424 | 114 | 800 |

HYDRAULIC CYLINDERS SERIES MH 38

250 Bar Pressure

Front Flange Mtg.

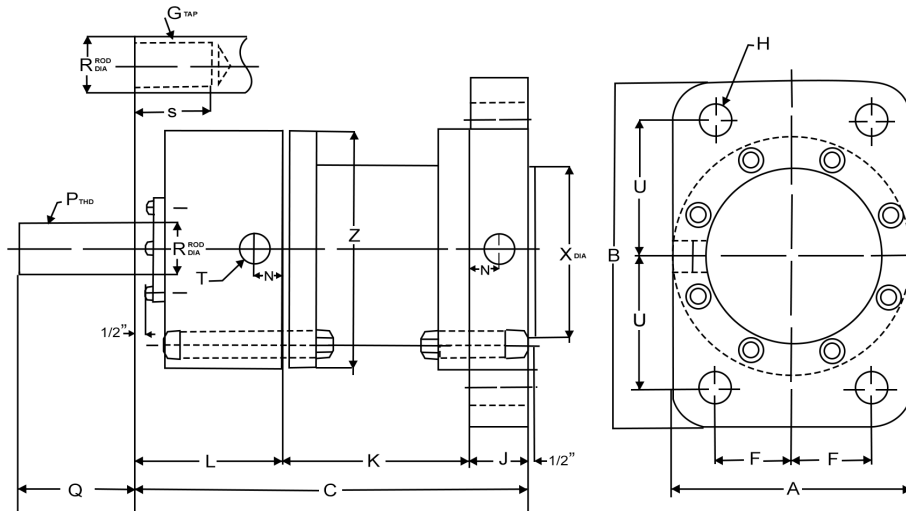


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | W | X | Z _{max} |
|--------------------|-----------|-----|------|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|-----|------------------|
| MH - 25004038 - FF | 40 | 98 | 180 | 222 | 26 | M 20 x 1.5 | M 20 x 1.5 | 18 | 42 | 80 | 55 | 19 | 28 | 40 | 28 | ½" | 28 | 67 | 45 | 84 | 98 |
| MH - 25005038 - FF | 50 | 110 | 204 | 240 | 29 | M 24 x 2 | M 27 x 1.5 | 21 | 46 | 84 | 60 | 19 | 32 | 48 | 32 | ½" | 36 | 76 | 50 | 90 | 110 |
| MH - 25006338 - FF | 63 | 128 | 230 | 270 | 35 | M 30 x 2 | M 33 x 2 | 24 | 46 | 99 | 70 | 22 | 40 | 60 | 40 | ¾" | 45 | 86 | 55 | 104 | 128 |
| MH - 25008038 - FF | 80 | 152 | 290 | 300 | 38 | M 36 x 2 | M 42 x 2 | 33 | 50 | 115 | 72 | 25 | 50 | 72 | 50 | ¾" | 56 | 107 | 63 | 117 | 152 |
| MH - 25010038 - FF | 100 | 178 | 344 | 335 | 44 | M 48 x 2 | M 48 x 2 | 40 | 60 | 120 | 85 | 30 | 63 | 96 | 63 | 1" | 70 | 127 | 70 | 128 | 178 |
| MH - 25012538 - FF | 125 | 216 | 424 | 390 | 52 | M 56 x 2 | M 64 x 3 | 46 | 60 | 160 | 90 | 30 | 75 | 112 | 70 | 1" | 90 | 156 | 80 | 150 | 216 |
| MH - 25016038 - FF | 160 | 275 | 522 | 460 | 70 | M 72 x 3 | M 80 x 3 | 58 | 70 | 180 | 115 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 193 | 95 | 185 | 275 |
| MH - 25020038 - FF | 200 | 335 | 632 | 540 | 86 | M 90 x 3 | M 100 x 3 | 72 | 90 | 200 | 140 | 35 | 106 | 140 | 110 | 1-¼" | 140 | 234 | 110 | 225 | 335 |
| MH - 25025038 - FF | 250 | 416 | 718 | 640 | 120 | M 110 x 3 | M 125 x 4 | 78 | 100 | 245 | 170 | 45 | 112 | 160 | 140 | 1-½" | 180 | 271 | 125 | 275 | 416 |
| MH - 25032038 - FF | 320 | 540 | 830 | 715 | 175 | M 140 x 4 | M 160 x 4 | 85 | 120 | 250 | 195 | 55 | 140 | 180 | 180 | 2" | 220 | 320 | 150 | 320 | 540 |
| MH - 25040038 - FF | 400 | 690 | 1036 | 755 | 229 | M 160 x 4 | M 200 x 4 | 106 | 140 | 250 | 205 | 55 | 160 | 220 | 220 | 2" | 280 | 400 | 160 | 430 | 690 |
| MH - 25050038 - FF | 500 | * | * | 865 | * | M 220 x 4 | M 250 x 6 | * | 140 | 305 | * | 65 | 220 | 320 | 280 | 2-½" | 350 | * | * | * | 800 |

HYDRAULIC CYLINDERS SERIES MH 38

250 Bar Pressure

Rear Flange Mtg.

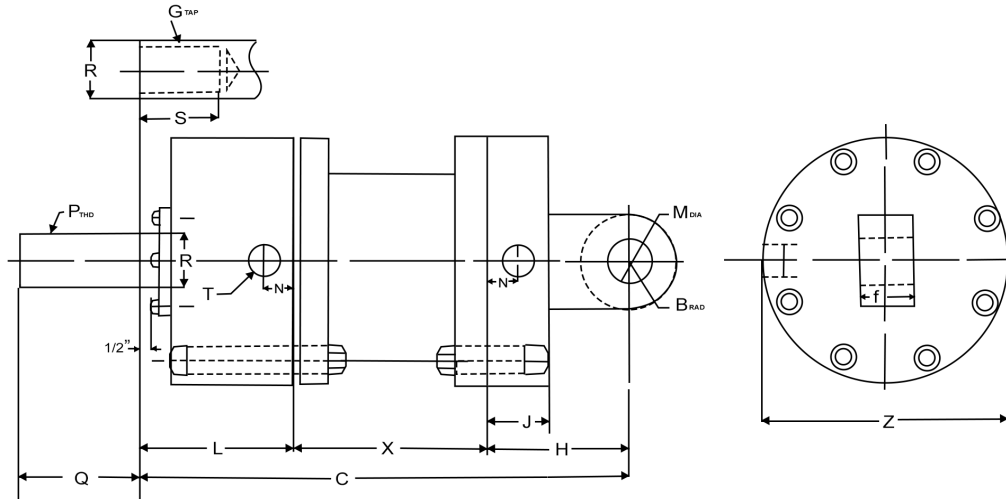


| MODEL NO. | BORE (mm) | A | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | U | X | Z _{max} |
|--------------------|-----------|-----|------|-----|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|--------|------|-----|-----|------------------|
| MH - 25004038 - RF | 40 | 98 | 180 | 222 | 26 | M 20 x 1.5 | M 20 x 1.5 | 18 | 42 | 80 | 100 | 19 | 28 | 40 | 28 | 1/2" | 28 | 67 | 84 | 98 |
| MH - 25005038 - RF | 50 | 110 | 204 | 240 | 29 | M 24 x 2 | M 27 x 1.5 | 21 | 46 | 84 | 110 | 19 | 32 | 48 | 32 | 1/2" | 36 | 76 | 90 | 110 |
| MH - 25006338 - RF | 63 | 128 | 230 | 270 | 35 | M 30 x 2 | M 33 x 2 | 24 | 46 | 99 | 125 | 22 | 40 | 60 | 40 | 3/4" | 45 | 86 | 104 | 128 |
| MH - 25008038 - RF | 80 | 152 | 290 | 300 | 38 | M 36 x 2 | M 42 x 2 | 33 | 50 | 115 | 135 | 25 | 50 | 72 | 50 | 3/4" | 56 | 107 | 117 | 152 |
| MH - 25010038 - RF | 100 | 178 | 344 | 335 | 44 | M 48 x 2 | M 48 x 2 | 40 | 60 | 120 | 155 | 30 | 63 | 96 | 63 | 1" | 70 | 127 | 128 | 178 |
| MH - 25012538 - RF | 125 | 216 | 424 | 390 | 52 | M 56 x 2 | M 64 x 3 | 46 | 60 | 160 | 170 | 30 | 75 | 112 | 70 | 1" | 90 | 156 | 150 | 216 |
| MH - 25016038 - RF | 160 | 275 | 522 | 460 | 70 | M 72 x 3 | M 80 x 3 | 58 | 70 | 180 | 210 | 35 | 85 | 128 | 90 | 1-1/4" | 110 | 193 | 185 | 275 |
| MH - 25020038 - RF | 200 | 335 | 632 | 540 | 86 | M 90 x 3 | M 100 x 3 | 72 | 90 | 200 | 250 | 35 | 106 | 140 | 110 | 1-1/4" | 140 | 234 | 225 | 335 |
| MH - 25025038 - RF | 250 | 416 | 718 | 640 | 120 | M 110 x 3 | M 125 x 4 | 78 | 100 | 245 | 295 | 45 | 112 | 160 | 140 | 1-1/2" | 180 | 271 | 275 | 416 |
| MH - 25032038 - RF | 320 | 540 | 830 | 715 | 175 | M 140 x 4 | M 160 x 4 | 85 | 120 | 250 | 345 | 55 | 140 | 180 | 180 | 2" | 220 | 320 | 320 | 540 |
| MH - 25040038 - RF | 400 | 690 | 1036 | 755 | 229 | M 160 x 4 | M 200 x 4 | 106 | 140 | 250 | 365 | 55 | 160 | 220 | 220 | 2" | 280 | 400 | 430 | 690 |
| MH - 25050038 - RF | 500 | * | * | 865 | * | M 220 x 4 | M 250 x 6 | * | 140 | 305 | 420 | 65 | 220 | 320 | 280 | 2-1/2" | 350 | * | * | 800 |

HYDRAULIC CYLINDERS SERIES MH 38

250 Bar Pressure

Male Clevis Mtg.

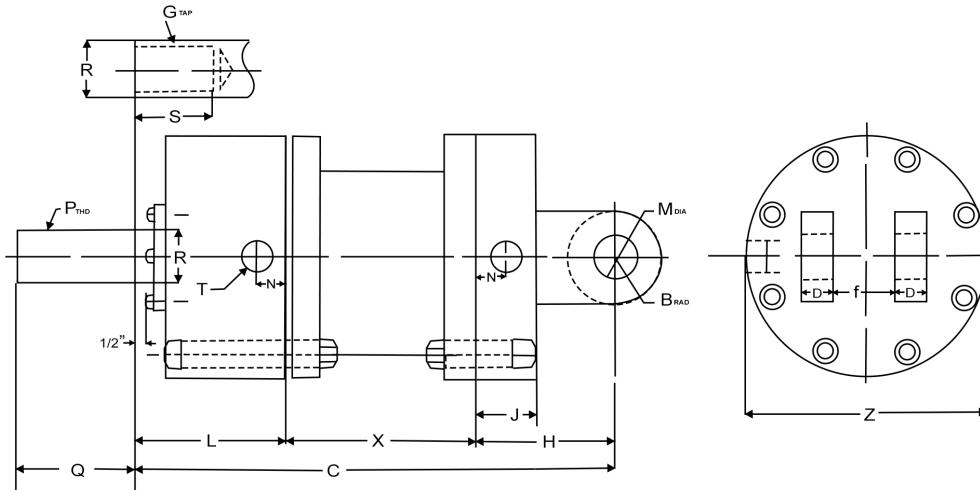


| MODEL NO. | BORE (mm) | B | C | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | Z _{max.} |
|--------------------|-----------|-----|------|-----|------------------------------------|------------------------------------|-----|-----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-------------------|
| MH - 25004038 - MC | 40 | 32 | 272 | 25 | M 20 x 1.5 | M 20 x 1.5 | 92 | 42 | 80 | 100 | 25 | 19 | 28 | 40 | 28 | ½" | 28 | 98 |
| MH - 25005038 - MC | 50 | 40 | 305 | 32 | M 24 x 2 | M 27 x 1.5 | 111 | 46 | 84 | 110 | 32 | 19 | 32 | 48 | 28 | ½" | 36 | 110 |
| MH - 25006338 - MC | 63 | 50 | 348 | 40 | M 30 x 2 | M 33 x 2 | 124 | 46 | 99 | 125 | 40 | 22 | 40 | 60 | 40 | ¾" | 45 | 128 |
| MH - 25008038 - MC | 80 | 63 | 395 | 50 | M 36 x 2 | M 42 x 2 | 145 | 50 | 115 | 135 | 50 | 25 | 50 | 72 | 50 | ¾" | 56 | 152 |
| MH - 25010038 - MC | 100 | 71 | 442 | 63 | M 48 x 2 | M 48 x 2 | 167 | 60 | 120 | 155 | 63 | 30 | 63 | 96 | 63 | 1" | 70 | 178 |
| MH - 25012538 - MC | 125 | 90 | 520 | 80 | M 56 x 2 | M 64 x 3 | 190 | 60 | 160 | 170 | 80 | 30 | 75 | 112 | 70 | 1" | 90 | 216 |
| MH - 25016038 - MC | 160 | 112 | 617 | 100 | M 72 x 3 | M 80 x 3 | 227 | 70 | 180 | 210 | 100 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 275 |
| MH - 25020038 - MC | 200 | 160 | 756 | 125 | M 90 x 3 | M 100 x 3 | 306 | 90 | 200 | 250 | 125 | 35 | 106 | 140 | 110 | 1-¼" | 140 | 335 |
| MH - 25025038 - MC | 250 | 200 | 903 | 160 | M 110 x 3 | M 125 x 4 | 363 | 100 | 245 | 295 | 160 | 45 | 112 | 160 | 140 | 1-½" | 180 | 416 |
| MH - 25032038 - MC | 320 | 250 | 1045 | 200 | M 140 x 4 | M 160 x 4 | 450 | 120 | 250 | 345 | 200 | 55 | 140 | 180 | 180 | 2" | 220 | 540 |
| MH - 25040038 - MC | 400 | 320 | 1075 | 250 | M 160 x 4 | M 200 x 4 | 430 | 140 | 250 | 365 | 250 | 55 | 160 | 220 | 220 | 2" | 280 | 690 |
| MH - 25050038 - MC | 500 | 375 | 1275 | 320 | M 220 x 4 | M 250 x 6 | 550 | 140 | 305 | 420 | 320 | 65 | 220 | 320 | 280 | 2-½" | 350 | 800 |

HYDRAULIC CYLINDERS SERIES MH 38

250 Bar Pressure

Female Clevis Mtg.

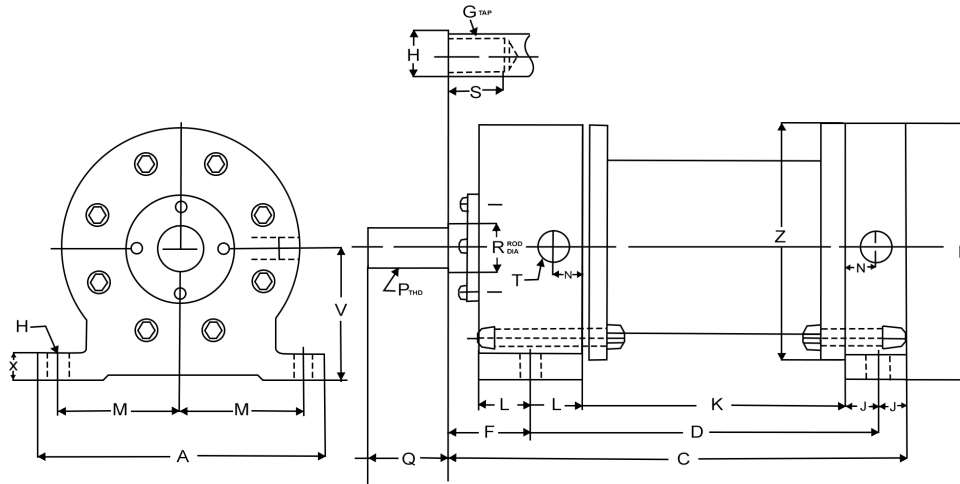


| MODEL NO. | BORE (mm) | B | C | D | F | $G_{1:1}=P_{1:1}$ | $G_{2:1}=P_{2:1}$ | H | J | K | L | M | N | $Q_{st}=S_{st}$ | $Q_{lg}=S_{lg}$ | R | T | R2:1 | Z_{max} |
|--------------------|-----------|-----|------|-----|-----|-------------------|-------------------|-----|-----|-----|-----|-----|----|-----------------|-----------------|-----|------|------|-----------|
| MH - 25004038 - FC | 40 | 32 | 272 | 20 | 26 | M 20 x 1.5 | M 20 x 1.5 | 92 | 42 | 80 | 100 | 25 | 19 | 28 | 40 | 28 | ½" | 28 | 98 |
| MH - 25005038 - FC | 50 | 40 | 305 | 20 | 33 | M 24 x 2 | M 27 x 1.5 | 111 | 46 | 84 | 110 | 32 | 19 | 32 | 48 | 28 | ½" | 36 | 110 |
| MH - 25006338 - FC | 63 | 50 | 348 | 25 | 41 | M 30 x 2 | M 33 x 2 | 124 | 46 | 99 | 125 | 40 | 22 | 40 | 60 | 40 | ¾" | 45 | 128 |
| MH - 25008038 - FC | 80 | 63 | 395 | 30 | 51 | M 36 x 2 | M 42 x 2 | 145 | 50 | 115 | 135 | 50 | 25 | 50 | 72 | 50 | ¾" | 56 | 152 |
| MH - 25010038 - FC | 100 | 71 | 442 | 35 | 64 | M 48 x 2 | M 48 x 2 | 167 | 60 | 120 | 155 | 63 | 30 | 63 | 96 | 63 | 1" | 70 | 178 |
| MH - 25012538 - FC | 125 | 90 | 520 | 40 | 81 | M 56 x 2 | M 64 x 3 | 190 | 60 | 160 | 170 | 80 | 30 | 75 | 112 | 70 | 1" | 90 | 216 |
| MH - 25016038 - FC | 160 | 112 | 617 | 50 | 101 | M 72 x 3 | M 80 x 3 | 227 | 70 | 180 | 210 | 100 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 275 |
| MH - 25020038 - FC | 200 | 160 | 756 | 70 | 126 | M 90 x 3 | M 100 x 3 | 306 | 90 | 200 | 250 | 125 | 35 | 106 | 140 | 110 | 1-¼" | 140 | 335 |
| MH - 25025038 - FC | 250 | 200 | 903 | 80 | 161 | M 110 x 3 | M 125 x 4 | 363 | 100 | 245 | 295 | 160 | 45 | 112 | 160 | 140 | 1-½" | 180 | 416 |
| MH - 25032038 - FC | 320 | 250 | 1045 | 95 | 201 | M 140 x 4 | M 160 x 4 | 450 | 120 | 250 | 345 | 200 | 55 | 140 | 180 | 180 | 2" | 220 | 540 |
| MH - 25040038 - FC | 400 | 320 | 1075 | 110 | 251 | M 160 x 4 | M 200 x 4 | 430 | 140 | 250 | 365 | 250 | 55 | 160 | 220 | 220 | 2" | 280 | 690 |
| MH - 25050038 - FC | 500 | 375 | 1275 | 130 | 321 | M 220 x 4 | M 250 x 6 | 550 | 140 | 305 | 420 | 320 | 65 | 220 | 320 | 280 | 2-½" | 350 | 800 |

HYDRAULIC CYLINDERS SERIES MH 38

250 Bar Pressure

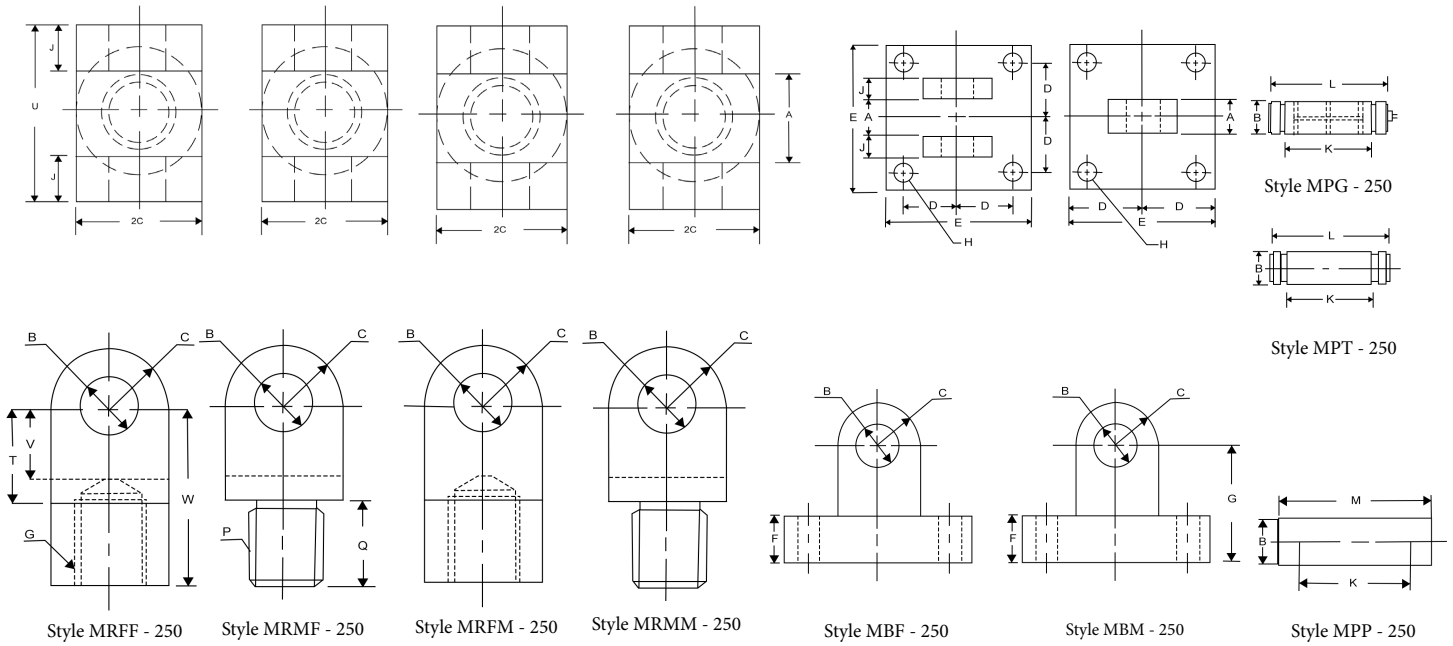
Side Log Mtg.



| MODEL NO. | BORE (mm) | A | B | C | D | F | G _{1:1} =P _{1:1} | G _{2:1} =P _{2:1} | H | J | K | L | M | N | Q _{st} =S _{st} | Q _{lg} =S _{lg} | R | T | R2:1 | v | X | Z _{max} |
|--------------------|-----------|------|-----|-----|-----|-----|------------------------------------|------------------------------------|----|----|-----|-----|-----|----|----------------------------------|----------------------------------|-----|------|------|-----|-----|------------------|
| MH - 25004038 - SL | 40 | 160 | 110 | 280 | 159 | 100 | M 20 x 1.5 | M 20 x 1.5 | 14 | 21 | 80 | 58 | 66 | 19 | 28 | 40 | 28 | ½" | 28 | 61 | 22 | 98 |
| MH - 25005038 - SL | 50 | 180 | 122 | 288 | 165 | 100 | M 24 x 2 | M 27 x 1.5 | 14 | 23 | 84 | 58 | 76 | 19 | 32 | 48 | 32 | ½" | 36 | 67 | 22 | 110 |
| MH - 25006338 - SL | 63 | 208 | 140 | 303 | 180 | 100 | M 30 x 2 | M 33 x 2 | 14 | 23 | 99 | 58 | 90 | 22 | 40 | 60 | 40 | ¾" | 45 | 76 | 25 | 128 |
| MH - 25008038 - SL | 80 | 255 | 164 | 340 | 205 | 110 | M 36 x 2 | M 42 x 2 | 18 | 25 | 115 | 65 | 110 | 25 | 50 | 72 | 50 | ¾" | 56 | 88 | 25 | 152 |
| MH - 25010038 - SL | 100 | 305 | 190 | 381 | 221 | 130 | M 48 x 2 | M 48 x 2 | 22 | 30 | 120 | 71 | 131 | 30 | 63 | 96 | 63 | 1" | 70 | 101 | 32 | 178 |
| MH - 25012538 - SL | 125 | 360 | 228 | 421 | 261 | 130 | M 56 x 2 | M 64 x 3 | 27 | 30 | 160 | 71 | 153 | 30 | 75 | 112 | 70 | 1" | 90 | 120 | 38 | 216 |
| MH - 25016038 - SL | 160 | 440 | 288 | 466 | 297 | 134 | M 72 x 3 | M 80 x 3 | 33 | 35 | 180 | 82 | 187 | 35 | 85 | 128 | 90 | 1-¼" | 110 | 150 | 44 | 275 |
| MH - 25020038 - SL | 200 | 515 | 348 | 530 | 327 | 158 | M 90 x 3 | M 100 x 3 | 40 | 45 | 200 | 82 | 218 | 35 | 106 | 140 | 110 | 1-¼" | 140 | 180 | 57 | 335 |
| MH - 25025038 - SL | 250 | 610 | 440 | 611 | 390 | 171 | M 110 x 3 | M 125 x 4 | 46 | 50 | 245 | 95 | 259 | 45 | 112 | 160 | 140 | 1-½" | 180 | 232 | 70 | 416 |
| MH - 25032038 - SL | 320 | 760 | 564 | 662 | 418 | 184 | M 140 x 4 | M 160 x 4 | 52 | 60 | 250 | 108 | 320 | 55 | 140 | 180 | 180 | 2" | 220 | 294 | 76 | 540 |
| MH - 25040038 - SL | 400 | 915 | 714 | 682 | 428 | 184 | M 160 x 4 | M 200 x 4 | 72 | 70 | 250 | 108 | 388 | 55 | 160 | 220 | 220 | 2" | 280 | 369 | 102 | 690 |
| MH - 25050038 - SL | 500 | 1100 | 824 | 785 | 495 | 220 | M 220 x 4 | M 250 x 6 | 80 | 70 | 305 | 120 | 470 | 65 | 220 | 320 | 280 | 2-½" | 350 | 424 | 114 | 800 |

HYDRAULIC CYLINDERS SERIES MH 38

250 Bar Pressure



| BORE (mm) | A | B | C | G=P | J | Q=S | T | U | V | W |
|-----------|-----|-----|-----|------------|----|-----|-----|-----|-----|-----|
| 40 | 25 | 25 | 32 | M 20 x 1.5 | 20 | 28 | 60 | 65 | 50 | 88 |
| 50 | 32 | 32 | 40 | M 24 x 2 | 20 | 32 | 75 | 72 | 65 | 107 |
| 63 | 40 | 40 | 50 | M 30 x 2 | 25 | 40 | 88 | 90 | 78 | 128 |
| 80 | 50 | 50 | 63 | M 36 x 2 | 30 | 50 | 110 | 110 | 95 | 160 |
| 100 | 63 | 63 | 71 | M 48 x 2 | 35 | 63 | 122 | 133 | 107 | 185 |
| 125 | 80 | 80 | 90 | M 56 x 2 | 40 | 75 | 145 | 160 | 130 | 220 |
| 160 | 100 | 100 | 112 | M 72 x 3 | 50 | 85 | 177 | 200 | 157 | 262 |
| 200 | 125 | 125 | 160 | M 90 x 3 | 70 | 106 | 236 | 265 | 216 | 342 |
| 250 | 160 | 160 | 200 | M 110 x 3 | 80 | 112 | 288 | 320 | 263 | 400 |
| 320 | 200 | 200 | 250 | M 140 x 4 | 95 | 140 | 355 | 390 | 330 | 495 |

| BORE (mm) | A | B | C | D | E | F | G | H | J | K | L | M |
|-----------|-----|-----|-----|-----|-----|----|-----|----|----|-----|-----|-----|
| 40 | 25 | 20 | 25 | 52 | 140 | 22 | 53 | 18 | 20 | 68 | 76 | 89 |
| 50 | 32 | 32 | 40 | 58 | 158 | 22 | 62 | 21 | 20 | 79 | 87 | 100 |
| 63 | 40 | 40 | 50 | 69 | 186 | 25 | 75 | 24 | 25 | 93 | 105 | 118 |
| 80 | 50 | 50 | 63 | 85 | 236 | 25 | 88 | 33 | 30 | 120 | 132 | 145 |
| 100 | 63 | 63 | 71 | 102 | 284 | 32 | 103 | 40 | 35 | 143 | 159 | 184 |
| 125 | 80 | 80 | 90 | 120 | 332 | 38 | 128 | 46 | 40 | 170 | 186 | 227 |
| 160 | 100 | 100 | 112 | 148 | 412 | 44 | 156 | 58 | 50 | 210 | 230 | 267 |
| 200 | 125 | 125 | 160 | 190 | 524 | 57 | 217 | 72 | 70 | 280 | 300 | 343 |
| 250 | 160 | 160 | 200 | 220 | 596 | 70 | 270 | 78 | 80 | 335 | 355 | 398 |
| 320 | 200 | 200 | 250 | 257 | 684 | 76 | 326 | 85 | 90 | 400 | 420 | 463 |

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