



**GHA SERIES**  
**EXTREME DUTY ABRASIVE**  
**G, J, N, R & S HYD SIZE**  
**ROTARY GEAR PUMP**



The GHA series is designed for applications in the operating ranges noted below. These units are available with head and backhead jackets for temperature control, and packing or carbide mechanical seal options described on the following pages.

This abrasive handling, extreme duty series, provides superior wear resistance. The design also provides superior rotor shaft support and an integral, maintenance-free radial/thrust bearing for reduced deflection and wear. Reduced speeds enable service over extended periods. Information such as percentage, size and hardness of solids present in the liquid are useful to estimate pump life.

**FEATURES**

*HARDENED, WEAR RESISTANT GEARS, HOUSING, HEAD, PIN, AND BUSHING*  
*HARD FACE, WEAR RESISTANT MECHANICAL SEAL*  
*OVERSIZED TAPERED SEAL CAVITY*  
*HEAVY DUTY NEEDLE ROLLER BEARING*  
*ROTOR END CLEARANCE EXTERNALLY ADJUSTABLE*  
*FLEXIBLE SEAL DESIGN ALLOWS FOR A VARIETY OF INDUSTRY STANDARD SEALS OR PACKING*  
*BALL BEARING THRUST CONTROL*

**OPERATING RANGE**

CAPACITY (GPM): (8 TO 325)  
 [LPM] : [25 TO 1020]

PRESSURE (PSI) : [0 TO 200]  
 [BAR] : [0 TO 14]

VISCOSITY (SSU) : (28 TO 250,000)  
 [cSt] : [1 TO 55,000]

TEMPERATURE (F) : (-60° TO 500°)  
 [C] : [-51° TO 260°]

**APPLICATIONS**

USE WITH ANY LIQUID  
 COMPATIBLE WITH  
 CAST IRON

- ★ PAINTS
- ★ INKS
- ★ ADHESIVES
- ★ WASTE LIQUIDS
- ★ EMULSIONS
- ★ FILTERING

| EXTER-<br>IOR | ROTOR<br>&<br>IDLER | HSG<br>PORTS             | IDLER<br>BUSHING   | BACKHD<br>BEARING      | IDLER<br>PIN        | SHAFT          | SHAFT SEALING                           |                            | ROTA-<br>TION | INTERNAL<br>RELIEF VALVE |                   |
|---------------|---------------------|--------------------------|--------------------|------------------------|---------------------|----------------|---|----------------------------|---------------|--------------------------|-------------------|
|               |                     |                          |                    |                        |                     |                | MECHANICAL<br>SEAL<br>●                 | PACKING<br>■               |               | MATERIAL                 | SETTING           |
| CAST<br>IRON  | HARD<br>IRON        | 90°<br>TAPPED/<br>FLNG'D | SILICON<br>CARBIDE | ①<br>NEEDLE<br>BEARING | TUNGSTEN<br>CARBIDE | HARD.<br>STEEL | SILICON CARB.<br>SILICON CARB.<br>VITON | ARAMID FIBER<br>W/GRAPHITE | C.W.          | DUCTILE<br>IRON          | 75 PSI<br>[5 BAR] |

## Standard Models

**G H A 2 NK 3 - B**  
 | | | | | | | |  
 GEAR DUTY DESIGN PORT SIZE HYDRAULIC SEAL STYLE  
 SIZE SIZE

| MODEL<br>NUMBER                          | NOM. CAPACITY-SPEED |                         | MAXIMUM                           |                              |                                       |                   | SHIPPING<br>DATA |               |             |
|--|---------------------|-------------------------|-----------------------------------|------------------------------|---------------------------------------|-------------------|------------------|---------------|-------------|
|  | MAXIMUM             |                         | DIFFERENTIAL PRESSURE - PSI [BAR] |                              |                                       | TEMP.             | ② Weight         | Volume        |             |
|  | GPM<br>[LPM]        | RPM<br>60 Hz<br>[50 HZ] | BELOW<br>38 SSU<br>[4 cSt]        | 38 TO<br>100 SSU<br>[21 cSt] | 100 TO<br>250,000 SSU<br>[55,000 cSt] | °F<br>[°C]        |                  |               | LBS<br>[KG] |
| GHA 1-1/2 GC 3-B ●<br>GHA 1-1/2 GC 4-B ■ | 8<br>[25]           | 870<br>[720]            |                                   |                              |                                       |                   |                  | 57<br>[25,9]  | 2.9         |
| GHA 1-1/2 GF 3-B ●<br>GHA 1-1/2 GF 4-B ■ | 11<br>[36]          |                         |                                   |                              |                                       |                   |                  | 57<br>[25,9]  |             |
| GHA 1-1/2 GH 3-B ●<br>GHA 1-1/2 GH 4-B ■ | 15<br>[49]          |                         |                                   |                              |                                       |                   |                  | 57<br>[25,9]  |             |
| GHA 1-1/2 GJ 3-B ●<br>GHA 1-1/2 GJ 4-B ■ | 19<br>[60]          |                         |                                   |                              |                                       |                   |                  | 57<br>[25,9]  |             |
| GHA 2 JJ 3-B ●<br>GHA 2 JJ 4-B ■         | 28<br>[88]          |                         | 100<br>[7]                        | 150<br>[10]                  | 200<br>[14]                           | ●<br>250<br>[119] |                  | 144<br>[65,5] | 5.3         |
| GHA 2 JL 3-B ●<br>GHA 2 JL 4-B ■         | 38<br>[121]         |                         |                                   |                              |                                       |                   |                  | 144<br>[65,5] |             |
| GHA 2 JP 3-B ●<br>GHA 2 JP 4-B ■         | 54<br>[169]         |                         |                                   |                              |                                       |                   |                  | 144<br>[65,5] |             |
| GHA 2 NK 3-B ●<br>GHA 2 NK 4-B ■         | 60<br>[188]         | 580<br>[480]            |                                   |                              |                                       | ■<br>500<br>[260] |                  | 180<br>[81,6] | 5.3         |
| GHA 3 NK 3-B ●<br>GHA 3 NK 4-B ■         |                     |                         |                                   |                              |                                       |                   |                  | 180<br>[81,6] |             |
| GHA 2 NM 3-B ●<br>GHA 2 NM 4-B ■         | 80<br>[251]         |                         |                                   |                              |                                       |                   |                  | 180<br>[81,6] |             |
| GHA 3 NM 3-B ●<br>GHA 3 NM 4-B ■         |                     |                         |                                   |                              |                                       |                   |                  | 180<br>[81,6] |             |
| GHA 2 NP 3-B ●<br>GHA 2 NP 4-B ■         | 99<br>[313]         |                         |                                   |                              |                                       |                   |                  | 180<br>[81,6] |             |
| GHA 3 NP 3-B ●<br>GHA 3 NP 4-B ■         |                     |                         |                                   |                              |                                       |                   |                  | 180<br>[81,6] | 10.7        |

STANDARD MODELS CONT.

① EXCEPT "S" SIZE AND 4-B MODELS (SILICON CARBIDE BUSHING).

② FOR 4-B UNIT WEIGHT, REFER TO GHS SECTION

● MECHANICAL SEAL  
■ PACKING

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GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA

| MODEL NUMBER                             | NOM. CAPACITY-SPEED |                         | MAXIMUM                           |                              |                                       |  | SHIPPING DATA |            |              |
|--|---------------------|-------------------------|-----------------------------------|------------------------------|---------------------------------------|--|---------------|------------|--------------|
|  | MAXIMUM             |                         | DIFFERENTIAL PRESSURE - PSI [BAR] |                              |                                       | TEMP.                                  | Weight        | Volume     |              |
|  | GPM<br>[LPM]        | RPM<br>60 Hz<br>[50 HZ] | BELOW<br>38 SSU<br>[4 cSt]        | 38 TO<br>100 SSU<br>[21 cSt] | 100 TO<br>250,000 SSU<br>[55,000 cSt] | °F<br>[°C]                             | LBS<br>[KG]   | CU.<br>FT. |              |
| GHA 2 RM 3-B ●<br>GHA 2 RM 4-B ■         | 85<br>[271]         | 350<br>[290]            | 100<br>[7]                        | 150<br>[10]                  | 200<br>[14]                           | ●<br>250<br>[119]<br>■<br>500<br>[260] | 357<br>[162]  | 10.7       |              |
| GHA 2-1/2 RM 3-B ●<br>GHA 2-1/2 RM 4-B ■ |                     |                         |                                   |                              |                                       |  | 357<br>[162]  |            |              |
| GHA 3 RM 3-B ●<br>GHA 3 RM 4-B ■         |                     |                         |                                   |                              |                                       |  | 357<br>[162]  |            |              |
| GHA 3 RP 3-B ●<br>GHA 3 RP 4-B ■         |                     |                         |                                   |                              |                                       |  | 105<br>[339]  |            | 357<br>[162] |
| GHA 3 RR 3-B ●<br>GHA 3 RR 4-B ■         |                     |                         |                                   |                              |                                       |  | 125<br>[402]  |            | 357<br>[162] |
| GHA 3 RS 3-B ●<br>GHA 3 RS 4-B ■         |                     |                         |                                   |                              |                                       |  | 146<br>[465]  |            | 357<br>[162] |
| GHA 4 RS 3-B ●<br>GHA 4 RS 4-B ■         |                     |                         |                                   |                              |                                       |  | 146<br>[465]  |            | 357<br>[162] |
| GHA 3 SR 3-B ●<br>GHA 3 SR 4-B ■         | 210<br>[660]        | 350<br>[290]            | 100<br>[7]                        | 150<br>[10]                  | 200<br>[14]                           | ●<br>400<br>[204]<br>■<br>500<br>[260] | 530<br>[240]  | 17.3       |              |
| GHA 4 SR 3-B ●<br>GHA 4 SR 4-B ■         |                     |                         |                                   |                              |                                       |  | 530<br>[240]  |            |              |
| GHA 3 SU 3-B ●<br>GHA 3 SU 4-B ■         |                     |                         |                                   |                              |                                       |  | 325<br>[1020] |            | 530<br>[240] |
| GHA 4 SU 3-B ●<br>GHA 4 SU 4-B ■         |                     |                         |                                   |                              |                                       |  |               |            | 530<br>[240] |

PORTS ARE COMPATIBLE WITH 125# ANSI CAST IRON FLANGES. ALL OTHER PORTS ARE TAPPED NPT FOR ANSI PIPE.

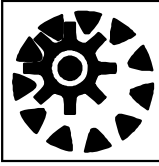
NOTE: PROPER PUMP APPLICATION REQUIRES CONSIDERATION OF ADDITIONAL FACTORS. PLEASE REVIEW APPLICATION GUIDE IN SECTION 500 OR CONSULT THE FACTORY.

# **GHA**

**FOR GHA DRIVE OPTIONS  
AND DIMENSIONS**

**SEE**

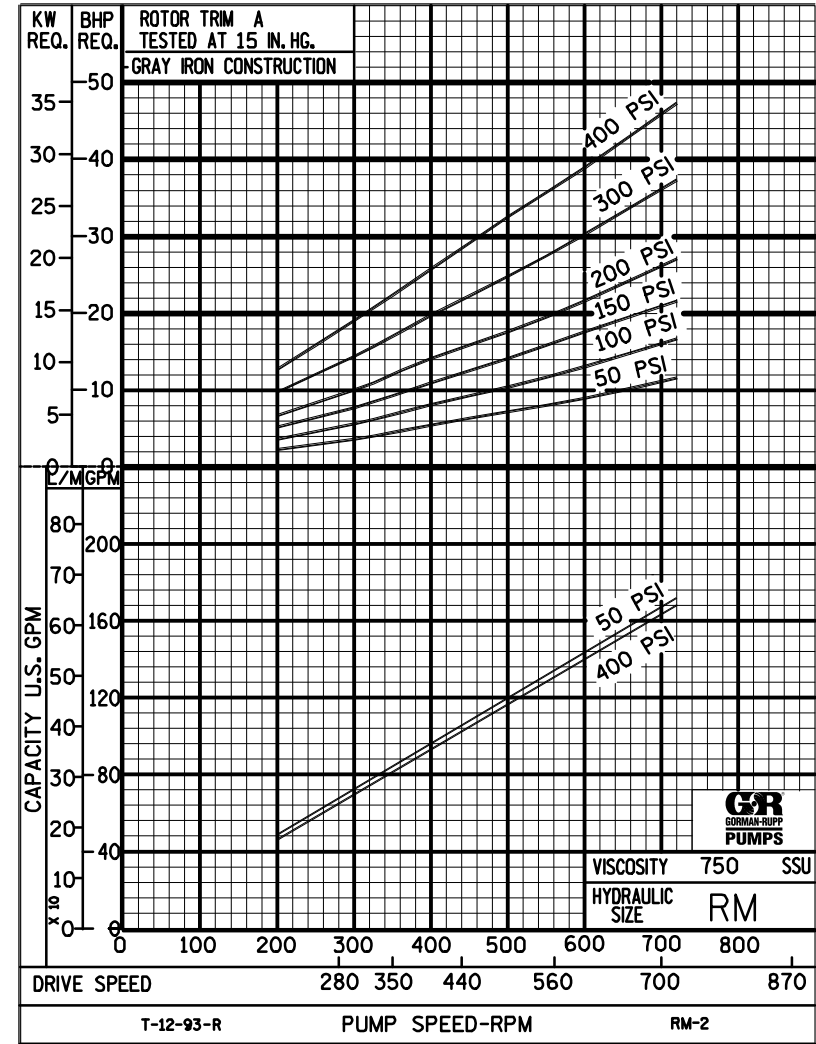
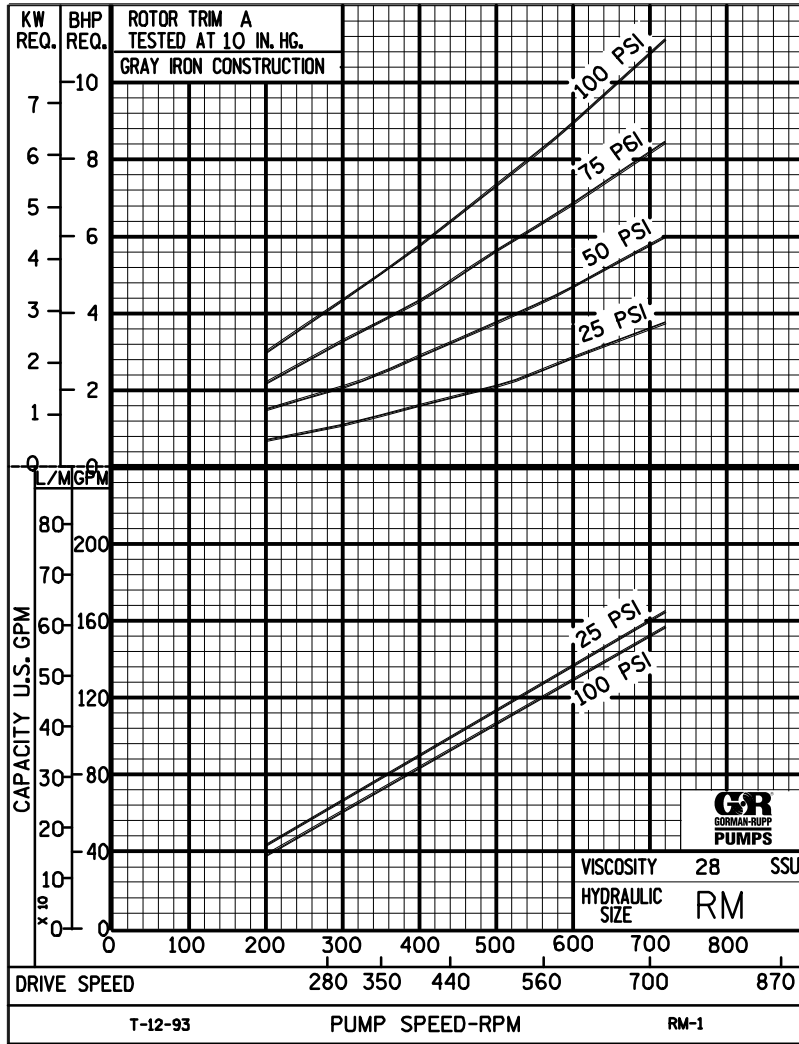
**SECTION 545**



# PERFORMANCE CURVES

## SPEED VS. CAPACITY/HORSEPOWER

**RM** Hydraulic Size



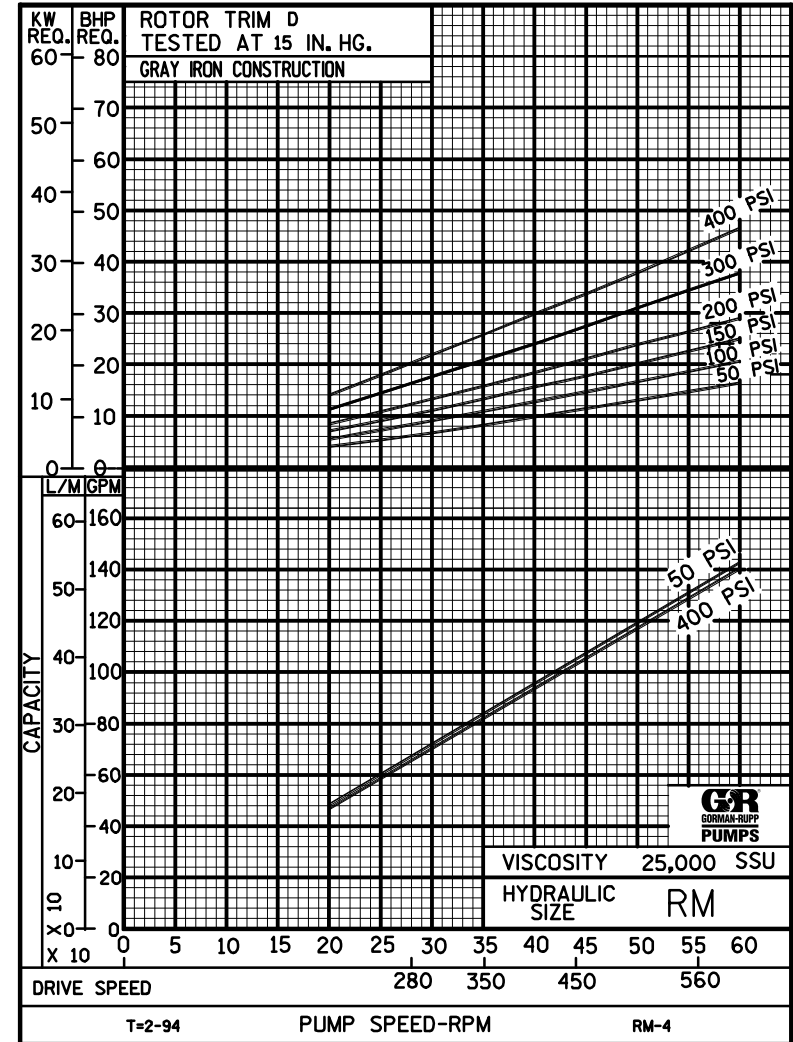
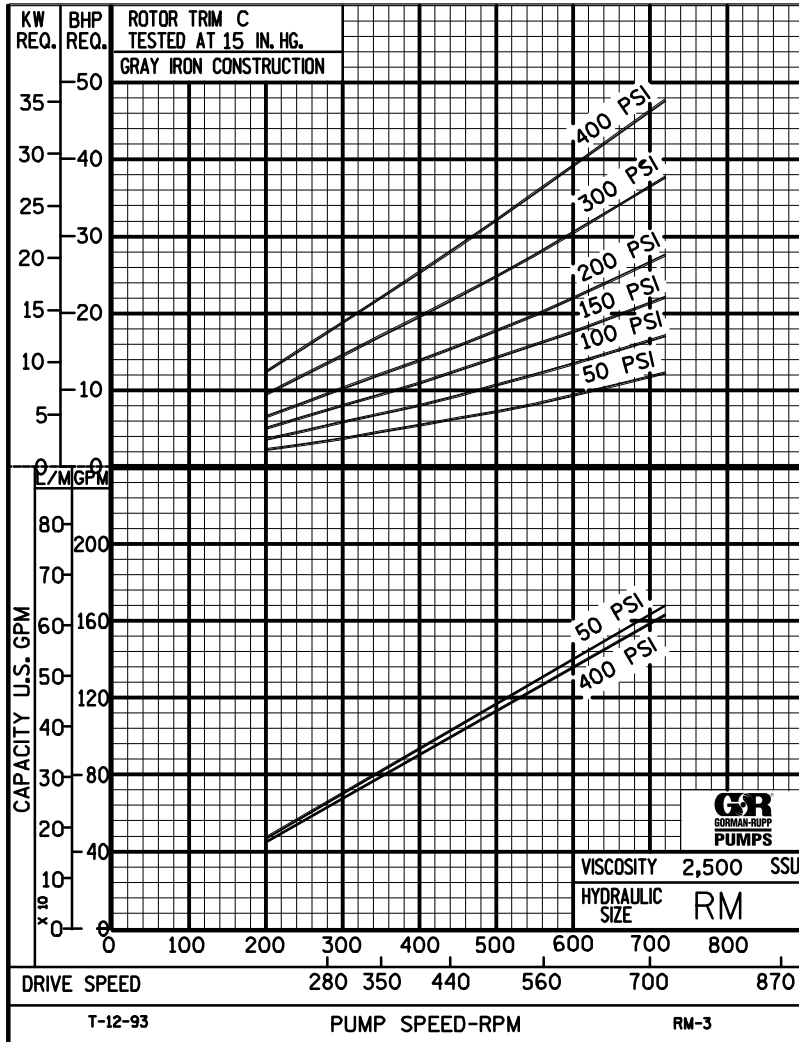
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# PERFORMANCE CURVES

## SPEED VS. CAPACITY/HORSEPOWER

**RM** Hydraulic Size



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# RM

## PUMP HYDRAULIC SIZE CHART

SEC. 500

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172 GPM  
720 RPM

| NOMINAL     |              | ROTOR TRIM | VISCOSITY<br>(SSU) | N.I.P.R.<br>(PSIA) | FRICTION PIPE LOSS<br>(PSI/FT)<br>(Based on Sch 40 Steel Pipe) |      |     |     |     | FULL BYPASS RELIEF<br>VALVE PRESSURE (PSI) |     |             |     |     | CAPACITY (GPM) / H.P. REQUIRED |     |     |     |     |     |     |     |  |  |  |  |  |
|-------------|--------------|------------|--------------------|--------------------|--|------|-----|-----|-----|--|-----|-------------|-----|-----|--------------------------------|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|--|
| CAP.<br>GPM | SPEED<br>RPM |            |                    |                    | PIPE DIAMETER  |      |     |     |     | CRACKING PRESS. (PSI)                      |     |             |     |     | DIFFERENTIAL PRESSURE (PSI)    |     |     |     |     |     |     |     |  |  |  |  |  |
|             |              |            |                    |                    | 2"   | 2½"  | 3"  | 4"  | 6"  | LOW PRES R/V                               |     | HI PRES R/V |     |     | HEAVY DUTY                     |     |     |     |     |     |     |     |  |  |  |  |  |
|             |              |            |                    |                    |  |      | 50  | 75  | 100 | 150  | 200 | 25          | 50  | 75  | 100                            | 150 | 200 | 300 | 400 |     |     |     |  |  |  |  |  |
| 172         | 720          | STD        | 28                 | 3.1                | .21  | .08  | .03 | .01 | -   | 58   | 84  | 121         | 178 |     | 165                            | 161 | 159 | 157 |     |     |     |     |  |  |  |  |  |
|             |              |            | 32                 |                    | .22  | .09  | .03 | .01 | -   |  |     |             |     |     | 4.1                            | 6.2 | 9.1 | 11  |     |     |     |     |  |  |  |  |  |
|             |              |            | 38                 | 3.1                | .23  | .10  | .03 | .01 | -   | 61   | 87  | 123         | 181 |     | 166                            | 163 | 160 | 159 | 155 |     |     |     |  |  |  |  |  |
|             |              |            | 50                 |                    | .26  | .11  | .04 | .01 | -   |  |     |             |     |     | 5.2                            | 7.8 | 10  | 13  | 18  |     |     |     |  |  |  |  |  |
|             |              |            | 70                 | 3.1                | .29  | .12  | .04 | .01 | -   | 65   | 90  | 126         | 185 | 245 | 168                            | 166 | 164 | 162 | 160 | 158 |     |     |  |  |  |  |  |
|             |              |            | 100                |                    | .32  | .14  | .05 | .01 | -   |  |     |             |     |     | 6.8                            | 9.2 | 12  | 14  | 20  | 25  |     |     |  |  |  |  |  |
|             |              |            | 150                | 3.1                | .35  | .15  | .05 | .01 | -   | 69   | 94  | 130         | 188 | 250 | 170                            | 168 | 167 | 166 | 164 | 163 | 161 | 158 |  |  |  |  |  |
|             |              |            | 200                |                    | .38  | .16  | .06 | .02 | -   |  |     |             |     |     | 7.8                            | 10  | 13  | 15  | 21  | 26  | 36  | 47  |  |  |  |  |  |
|             |              |            | 300                | 3.1                | .43  | .19  | .07 | .02 | -   | 74   | 100 | 134         | 193 | 256 | 171                            | 170 | 170 | 169 | 168 | 166 | 166 | 165 |  |  |  |  |  |
|             |              |            | 500                |                    | .50  | .22  | .06 | .02 | -   |  |     |             |     |     | 8.9                            | 11  | 14  | 16  | 22  | 27  | 37  | 47  |  |  |  |  |  |
|             |              | 750        | 3.2                | .41                | .20  | .08  | .03 | .01 | 78  | 104  | 137 | 197         | 260 | 172 | 172                            | 172 | 171 | 170 | 169 | 169 | 168 |     |  |  |  |  |  |
|             |              | 1,000      |                    | .55                | .27  | .11  | .04 | .01 |     |  |     |             |     | 9.4 | 12                             | 14  | 17  | 22  | 27  | 37  | 48  |     |  |  |  |  |  |
|             |              | 2,000      | 3.4                | 1.10               | .54  | .23  | .08 | .01 | 85  | 111  | 143 | 203         | 269 | 169 | 168                            | 168 | 168 | 167 | 167 | 165 | 163 |     |  |  |  |  |  |
|             |              | 3,500      |                    | 1.92               | .94  | .40  | .13 | .03 |     |  |     |             |     | 11  | 13                             | 16  | 18  | 23  | 28  | 38  | 49  |     |  |  |  |  |  |
|             |              | 5,000      | 3.6                | 2.74               | 1.35   | .56  | .19 | .04 | 89  | 115  | 147 | 207         | 273 | 169 | 169                            | 168 | 168 | 167 | 167 | 166 | 164 |     |  |  |  |  |  |
|             |              | 7,500      |                    | 4.11               | 2.02   | .85  | .29 | .06 |     |  |     |             |     | 11  | 14                             | 17  | 19  | 24  | 29  | 39  | 50  |     |  |  |  |  |  |
|             |              | 10,000     | 3.9                | 5.48               | 2.69   | 1.13 | .38 | .07 | 93  | 119  | 150 | 211         | 278 | 170 | 169                            | 169 | 168 | 168 | 168 | 167 | 165 |     |  |  |  |  |  |
|             |              | 15,000     |                    | 8.22               | 4.04   | 1.69 | .57 | .11 |     |  |     |             |     | 13  | 15                             | 17  | 21  | 26  | 31  | 41  | 52  |     |  |  |  |  |  |
|             |              | 20,000     |                    |                    |  |      |     |     |     |  |     |             |     |     |                                |     |     |     |     |     |     |     |  |  |  |  |  |
|             |              | 25,000     |                    |                    |  |      |     |     |     |  |     |             |     |     |                                |     |     |     |     |     |     |     |  |  |  |  |  |
| 50,000      |              |            |                    |                    |  |      |     |     |     |  |     |             |     |     |                                |     |     |     |     |     |     |     |  |  |  |  |  |
| 75,000      |              |            |                    |                    |  |      |     |     |     |  |     |             |     |     |                                |     |     |     |     |     |     |     |  |  |  |  |  |
| 100,000     |              |            |                    |                    |  |      |     |     |     |  |     |             |     |     |                                |     |     |     |     |     |     |     |  |  |  |  |  |
| 150,000     |              |            |                    |                    |  |      |     |     |     |  |     |             |     |     |                                |     |     |     |     |     |     |     |  |  |  |  |  |
| 200,000     |              |            |                    |                    |  |      |     |     |     |  |     |             |     |     |                                |     |     |     |     |     |     |     |  |  |  |  |  |
| 250,000     |              |            |                    |                    |  |      |     |     |     |  |     |             |     |     |                                |     |     |     |     |     |     |     |  |  |  |  |  |

(NOTE) For speeds not shown on the pump hydraulic charts, consult factory.



# RM

## PUMP HYDRAULIC SIZE CHART

SEC. 500

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153 GPM  
640 RPM

| NOMINAL  |           | ROTOR TRIM | VISCOSITY (SSU) | N.I.P.R. (PSIA) | FRICTION PIPE LOSS (PSI/FT)<br><small>(Based on Sch 40 Steel Pipe)</small> |        |     |     |     | FULL BYPASS RELIEF VALVE PRESSURE (PSI) |     |             |     |     | CAPACITY (GPM) / H.P. REQUIRED |     |     |     |                 |     |     |     |     |
|----------|-----------|------------|-----------------|-----------------|--|--------|-----|-----|-----|---|-----|-------------|-----|-----|--------------------------------|-----|-----|-----|-----------------|-----|-----|-----|-----|
| CAP. GPM | SPEED RPM |            |                 |                 | PIPE DIAMETER  |        |     |     |     | CRACKING PRESS. (PSI)                   |     |             |     |     | DIFFERENTIAL PRESSURE (PSI)    |     |     |     |                 |     |     |     |     |
|          |           |            |                 |                 | 2"   | 2 1/2" | 3"  | 4"  | 6"  | LOW PRES R/V                            |     | HI PRES R/V |     |     | MEDIUM DUTY AND HEAVY DUTY     |     |     |     | HEAVY DUTY ONLY |     |     |     |     |
|          |           |            |                 |                 |  |        | 50  | 75  | 100 | 150                                     | 200 | 25          | 50  | 75  | 100                            | 150 | 200 | 300 | 400             |     |     |     |     |
| 153      | 640       | STD        | 28              | 2.5             | .16  | .07    | .02 | .01 | -   | 57                                      | 84  | 120         | 178 |     | 145                            | 142 | 139 | 137 |                 |     |     |     |     |
|          |           |            | 32              |                 | .17  | .07    | .02 | .01 | -   |   |     |             |     |     | 3.3                            | 6.1 | 7.9 | 10  |                 |     |     |     |     |
|          |           |            | 38              | 2.5             | .19  | .08    | .03 | .01 | -   | 60                                      | 86  | 122         | 180 |     | 146                            | 144 | 141 | 140 | 137             |     |     |     |     |
|          |           |            | 50              |                 | .20  | .09    | .03 | .01 | -   |   |     |             |     |     | 4.5                            | 6.8 | 9.1 | 11  | 16              |     |     |     |     |
|          |           |            | 70              | 2.5             | .23  | .10    | .03 | .01 | -   | 63                                      | 89  | 124         | 183 | 242 |                                | 148 | 146 | 144 | 143             | 141 | 139 |     |     |
|          |           |            | 100             |                 | .25  | .11    | .04 | .01 | -   |   |     |             |     |     |                                | 5.9 | 8.1 | 10  | 12              | 17  | 23  |     |     |
|          |           |            | 150             | 2.5             | .28  | .12    | .04 | .01 | -   | 66                                      | 93  | 127         | 186 | 246 |                                | 150 | 149 | 148 | 147             | 145 | 144 | 142 | 139 |
|          |           |            | 200             |                 | .31  | .13    | .05 | .01 | -   |   |     |             |     |     |                                | 6.7 | 9.2 | 11  | 13              | 18  | 23  | 32  | 41  |
|          |           |            | 300             | 2.5             | .35  | .15    | .05 | .01 | -   | 72                                      | 98  | 131         | 190 | 251 |                                | 152 | 151 | 150 | 150             | 149 | 148 | 146 | 145 |
|          |           |            | 500             |                 | .41  | .12    | .05 | .02 | -   |   |     |             |     |     |                                | 7.8 | 10  | 12  | 14              | 19  | 24  | 33  | 42  |
|          |           | 750        | 2.6             | .36             | .18  | .07    | .03 | -   | 75  | 101                                     | 134 | 193         | 254 |     | 153                            | 152 | 152 | 152 | 151             | 150 | 150 | 149 |     |
|          |           | 1,000      |                 | .48             | .24  | .10    | .03 | .01 |     |   |     |             |     |     | 7.9                            | 10  | 12  | 14  | 19              | 24  | 33  | 42  |     |
|          |           | 2,000      | 2.7             | .97             | .47  | .20    | .07 | .01 | 82  | 110                                     | 139 | 199         | 260 |     | 151                            | 150 | 150 | 149 | 149             | 148 | 147 | 146 |     |
|          |           | 3,500      |                 | 1.69            | .83  | .35    | .12 | .02 |     |   |     |             |     |     | 8.8                            | 11  | 13  | 15  | 20              | 24  | 33  | 43  |     |
|          |           | 5,000      | 2.9             | 2.42            | 1.19   | .50    | .17 | .03 | 86  | 112                                     | 142 | 202         | 264 |     | 151                            | 150 | 150 | 150 | 149             | 148 | 147 | 146 |     |
|          |           | 7,500      |                 | 3.63            | 1.78   | .75    | .25 | .05 |     |   |     |             |     |     | 10                             | 13  | 15  | 16  | 21              | 26  | 35  | 45  |     |
|          |           | 10,000     | 3.2             | 4.83            | 2.37   | 1.00   | .34 | .07 | 89  | 115                                     | 145 | 205         | 268 |     | 151                            | 151 | 150 | 150 | 150             | 149 | 148 | 147 |     |
|          |           | 15,000     |                 | 7.25            | 3.56   | 1.49   | .50 | .10 |     |   |     |             |     |     | 12                             | 14  | 16  | 18  | 23              | 28  | 36  | 47  |     |
|          |           | 20,000     | 3.5             | 9.67            | 4.75   | 1.99   | .67 | .13 | 92  | 118                                     | 147 | 207         | 270 |     | 152                            | 151 | 151 | 150 | 150             | 150 | 149 | 148 |     |
|          |           | 25,000     |                 | 12.1            | 5.94   | 2.49   | .84 | .16 |     |   |     |             |     |     | 14                             | 16  | 18  | 20  | 25              | 30  | 39  | 50  |     |
| 50,000   | "D"       |            |                 |                 |  |        |     |     |     |   |     |             |     |     |                                |     |     |     |                 |     |     |     |     |
| 75,000   |           |            |                 |                 |  |        |     |     |     |   |     |             |     |     |                                |     |     |     |                 |     |     |     |     |
| 100,000  | "D"       |            |                 |                 |  |        |     |     |     |   |     |             |     |     |                                |     |     |     |                 |     |     |     |     |
| 150,000  |           |            |                 |                 |  |        |     |     |     |   |     |             |     |     |                                |     |     |     |                 |     |     |     |     |
| 200,000  | "D"       |            |                 |                 |  |        |     |     |     |   |     |             |     |     |                                |     |     |     |                 |     |     |     |     |
| 250,000  |           |            |                 |                 |  |        |     |     |     |   |     |             |     |     |                                |     |     |     |                 |     |     |     |     |

(NOTE) For speeds not shown on the pump hydraulic charts, consult factory.





# RM

## PUMP HYDRAULIC SIZE CHART

SEC. 500

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125 GPM  
520 RPM

| NOMINAL  |           | ROTOR TRIM | VISCOSITY (SSU) | N.I.P.R. (PSIA) | FRICTION PIPE LOSS (PSI/FT)<br>(Based on Sch 40 Steel Pipe) |        |     |     |     | FULL BYPASS RELIEF VALVE PRESSURE (PSI) |     |             |     |     | CAPACITY (GPM) / H.P. REQUIRED |     |     |     |                 |     |     |     |  |
|----------|-----------|------------|-----------------|-----------------|---|--------|-----|-----|-----|---|-----|-------------|-----|-----|--------------------------------|-----|-----|-----|-----------------|-----|-----|-----|--|
| CAP. GPM | SPEED RPM |            |                 |                 | PIPE DIAMETER   |        |     |     |     | CRACKING PRESS. (PSI)                   |     |             |     |     | DIFFERENTIAL PRESSURE (PSI)    |     |     |     |                 |     |     |     |  |
|          |           |            |                 |                 | 2"  | 2 1/2" | 3"  | 4"  | 6"  | LOW PRES R/V                            |     | HI PRES R/V |     |     | MEDIUM DUTY AND HEAVY DUTY     |     |     |     | HEAVY DUTY ONLY |     |     |     |  |
| 125      | 520       | STD        | 28              | 1.9             | .11   | .05    | .02 | -   | -   | 55                                      | 83  | 119         | 176 | 116 | 113                            | 112 | 109 |     |                 |     |     |     |  |
|          |           |            | 32              |                 | .12   | .05    | .02 | -   | -   |   |     |             |     | 2.3 | 4.1                            | 7.1 | 9.8 |     |                 |     |     |     |  |
|          |           |            | 38              | 1.9             | .13   | .05    | .02 | .01 | -   | 57                                      | 85  | 121         | 177 | 118 | 115                            | 113 | 111 | 108 |                 |     |     |     |  |
|          |           |            | 50              |                 | .15   | .06    | .02 | .01 | -   |   |     |             |     | 3.5 | 5.1                            | 7.9 | 10  | 14  |                 |     |     |     |  |
|          |           |            | 70              | 1.9             | .16   | .07    | .02 | .01 | -   | 60                                      | 88  | 123         | 180 | 236 | 120                            | 118 | 117 | 115 | 113             | 110 |     |     |  |
|          |           |            | 100             |                 | .18   | .08    | .03 | .01 | -   |   |     |             |     | 4.5 | 6.1                            | 8.9 | 11  | 15  | 18              |     |     |     |  |
|          |           |            | 150             | 1.9             | .21   | .09    | .03 | .01 | -   | 64                                      | 91  | 125         | 182 | 239 | 122                            | 121 | 120 | 119 | 117             | 115 | 113 | 111 |  |
|          |           |            | 200             |                 | .22   | .10    | .03 | .01 | -   |   |     |             |     | 5.2 | 6.8                            | 9.3 | 11  | 15  | 18              | 26  | 34  |     |  |
|          |           |            | 300             | 1.9             | .25   | .11    | .02 | .01 | -   | 68                                      | 95  | 128         | 185 | 242 | 124                            | 123 | 122 | 121 | 120             | 119 | 118 | 117 |  |
|          |           |            | 500             |                 | .20   | .10    | .04 | .01 | -   |   |     |             |     | 5.6 | 7.4                            | 9.4 | 11  | 15  | 18              | 26  | 34  |     |  |
|          |           | 750        | 2.0             | .30             | .15   | .06    | .02 | -   | 72  | 98                                      | 130 | 187         | 244 | 125 | 124                            | 124 | 123 | 123 | 122             | 122 | 121 |     |  |
|          |           | 1,000      |                 | .40             | .20   | .08    | .03 | .01 |     |   |     |             | 5.9 | 7.6 | 9.6                            | 11  | 15  | 18  | 26              | 34  |     |     |  |
|          |           | 2,000      | 2.3             | .81             | .40   | .17    | .06 | .01 | 78  | 104                                     | 134 | 191         | 249 | 123 | 122                            | 122 | 121 | 120 | 120             | 118 | 118 |     |  |
|          |           | 3,500      |                 | 1.41            | .69   | .29    | .10 | .02 |     |   |     |             | 6.7 | 8.4 | 11                             | 12  | 16  | 19  | 26              | 34  |     |     |  |
|          |           | 5,000      | 2.6             | 2.01            | .99   | .42    | .14 | .03 | 81  | 107                                     | 136 | 194         | 252 | 123 | 123                            | 122 | 122 | 121 | 121             | 119 | 119 |     |  |
|          |           | 7,500      |                 | 3.02            | 1.48  | .62    | .21 | .04 |     |   |     |             | 8.4 | 10  | 12                             | 14  | 17  | 21  | 28              | 35  |     |     |  |
|          |           | 10,000     | 2.9             | 4.03            | 1.98  | .83    | .28 | .05 | 85  | 110                                     | 139 | 196         | 254 | 124 | 123                            | 123 | 122 | 122 | 122             | 120 | 120 |     |  |
|          |           | 15,000     |                 | 6.04            | 2.97  | 1.25   | .42 | .08 |     |   |     |             | 10  | 12  | 14                             | 16  | 19  | 23  | 30              | 37  |     |     |  |
|          |           | 20,000     | 3.2             | 8.06            | 3.96  | 1.66   | .56 | .11 | 87  | 112                                     | 140 | 197         | 256 | 124 | 124                            | 123 | 123 | 123 | 123             | 122 | 121 |     |  |
|          |           | 25,000     |                 | 10.1            | 4.95  | 2.08   | .70 | .14 |     |   |     |             | 12  | 13  | 16                             | 17  | 21  | 25  | 32              | 39  |     |     |  |
| 50,000   | 4.6       | 20.1       | 9.90            | 4.15            | 1.40  | .27    | 93  | 117 | 143 | 202                                     | 260 | 124         | 124 | 123 | 123                            | 123 | 123 | 122 | 121             |     |     |     |  |
| 75,000   |           | 30.2       | 14.8            | 6.23            | 2.10  | .41    |     |     |     |   | 16  | 18          | 20  | 22  | 26                             | 30  | 38  | 45  |                 |     |     |     |  |
| 100,000  |           |            |                 |                 |   |        |     |     |     |   |     |             |     |     |                                |     |     |     |                 |     |     |     |  |
| 150,000  |           |            |                 |                 |   |        |     |     |     |   |     |             |     |     |                                |     |     |     |                 |     |     |     |  |
| 200,000  |           |            |                 |                 |   |        |     |     |     |   |     |             |     |     |                                |     |     |     |                 |     |     |     |  |
| 250,000  |           |            |                 |                 |   |        |     |     |     |   |     |             |     |     |                                |     |     |     |                 |     |     |     |  |

(NOTE) For speeds not shown on the pump hydraulic charts, consult factory.



# RM

## PUMP HYDRAULIC SIZE CHART

SEC. 500

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January 2010

85 GPM  
350 RPM

| NOMINAL  |           | ROTOR TRIM | VISCOSITY (SSU) | N.I.P.R. (PSIA) | FRICTION PIPE LOSS (PSI/FT)<br><small>(Based on Sch 40 Steel Pipe)</small> |      |     |     |     | FULL BYPASS RELIEF VALVE PRESSURE (PSI) |     |     |     |     | CAPACITY (GPM) / H.P. REQUIRED |     |     |     |               |                            |    |    |  |                 |  |  |  |  |  |  |
|----------|-----------|------------|-----------------|-----------------|--|------|-----|-----|-----|---|-----|-----|-----|-----|--------------------------------|-----|-----|-----|---------------|----------------------------|----|----|--|-----------------|--|--|--|--|--|--|
| CAP. GPM | SPEED RPM |            |                 |                 | PIPE DIAMETER  |      |     |     |     | CRACKING PRESS. (PSI)                   |     |     |     |     | DIFFERENTIAL PRESSURE (PSI)    |     |     |     | H.P. REQUIRED |                            |    |    |  |                 |  |  |  |  |  |  |
|          |           | 2"         | 2 1/2"          | 3"              | 4"   | 6"   | 50  | 75  | 100 | 150                                     | 200 | 25  | 50  | 75  | 100                            | 150 | 200 | 300 | 400           | MEDIUM DUTY AND HEAVY DUTY |    |    |  | HEAVY DUTY ONLY |  |  |  |  |  |  |
| 85       | 350       | STD        | 28              | 1.3             | .05  | .02  | .01 | -   | -   | 54                                      | 81  | 117 | 171 | 78  | 74                             | 72  | 70  |     |               |                            |    |    |  |                 |  |  |  |  |  |  |
|          |           |            | 32              |                 | .06  | .02  | .01 | -   | -   |   |     |     |     | 1.3 | 3.1                            | 4.1 | 5.2 |     |               |                            |    |    |  |                 |  |  |  |  |  |  |
|          |           |            | 38              | 1.3             | .06  | .03  | .01 | -   | -   | 55                                      | 82  | 118 | 172 | 79  | 75                             | 74  | 72  | 70  |               |                            |    |    |  |                 |  |  |  |  |  |  |
|          |           |            | 50              |                 | .07  | .03  | .01 | -   | -   |   |     |     |     | 2.1 | 3.1                            | 4.8 | 6.1 | 7.9 |               |                            |    |    |  |                 |  |  |  |  |  |  |
|          |           |            | 70              | 1.3             | .08  | .04  | .01 | -   | -   | 58                                      | 85  | 119 | 173 | 227 | 80                             | 78  | 77  | 76  | 74            | 73                         |    |    |  |                 |  |  |  |  |  |  |
|          |           |            | 100             |                 | .09  | .04  | .01 | -   | -   |   |     |     |     | 2.8 | 3.8                            | 5.3 | 6.6 | 8.6 | 11            |                            |    |    |  |                 |  |  |  |  |  |  |
|          |           |            | 150             | 1.3             | .11  | .05  | .02 | -   | -   | 61                                      | 87  | 121 | 174 | 228 | 82                             | 80  | 79  | 79  | 78            | 78                         | 77 | 76 |  |                 |  |  |  |  |  |  |
|          |           |            | 200             |                 | .12  | .05  | .02 | -   | -   |   |     |     |     | 3.3 | 4.1                            | 5.8 | 6.9 | 9.1 | 12            | 17                         | 22 |    |  |                 |  |  |  |  |  |  |
|          |           |            | 300             | 1.3             | .13  | .04  | .02 | .01 | -   | 65                                      | 90  | 123 | 176 | 230 | 83                             | 82  | 81  | 81  | 80            | 80                         | 80 | 79 |  |                 |  |  |  |  |  |  |
|          |           |            | 500             |                 | .14  | .07  | .03 | .01 | -   |   |     |     |     | 3.4 | 4.2                            | 5.9 | 7.1 | 9.3 | 12            | 17                         | 22 |    |  |                 |  |  |  |  |  |  |
|          |           | 750        | 1.4             | .21             | .10  | .04  | .01 | -   | 67  | 93                                      | 124 | 177 | 231 | 84  | 83                             | 83  | 82  | 82  | 82            | 82                         | 81 |    |  |                 |  |  |  |  |  |  |
|          |           | 1,000      |                 | .27             | .13  | .06  | .02 | -   |     |   |     |     | 3.4 | 4.3 | 6.0                            | 7.2 | 9.4 | 12  | 17            | 22                         |    |    |  |                 |  |  |  |  |  |  |
|          |           | 2,000      | 1.6             | .55             | .27  | .11  | .04 | .01 | 73  | 97                                      | 127 | 179 | 233 | 83  | 82                             | 82  | 81  | 81  | 80            | 80                         | 79 |    |  |                 |  |  |  |  |  |  |
|          |           | 3,500      |                 | .96             | .47  | .20  | .07 | .01 |     |   |     |     | 3.6 | 5.1 | 6.2                            | 7.9 | 9.8 | 12  | 17            | 22                         |    |    |  |                 |  |  |  |  |  |  |
|          |           | 5,000      | 1.8             | 1.37            | .67  | .28  | .10 | .02 | 75  | 100                                     | 128 | 181 | 235 | 83  | 83                             | 83  | 82  | 82  | 81            | 80                         | 80 |    |  |                 |  |  |  |  |  |  |
|          |           | 7,500      |                 | 2.05            | 1.01   | .42  | .14 | .03 |     |   |     |     | 4.6 | 5.8 | 7.1                            | 9.1 | 11  | 13  | 19            | 23                         |    |    |  |                 |  |  |  |  |  |  |
|          |           | 10,000     | 2.2             | 2.74            | 1.35   | .56  | .19 | .04 | 78  | 102                                     | 130 | 182 | 236 | 83  | 83                             | 82  | 82  | 82  | 82            | 81                         | 81 |    |  |                 |  |  |  |  |  |  |
|          |           | 15,000     |                 | 4.11            | 2.02   | .85  | .29 | .06 |     |   |     |     | 5.6 | 7.1 | 8.2                            | 10  | 12  | 14  | 20            | 25                         |    |    |  |                 |  |  |  |  |  |  |
|          |           | 20,000     | 2.6             | 5.48            | 2.69   | 1.13 | .38 | .07 | 80  | 104                                     | 131 | 183 | 237 | 84  | 83                             | 83  | 83  | 83  | 82            | 82                         | 82 |    |  |                 |  |  |  |  |  |  |
|          |           | 25,000     |                 | 6.85            | 3.36   | 1.41 | .48 | .09 |     |   |     |     | 6.8 | 8.1 | 9.5                            | 11  | 13  | 16  | 21            | 26                         |    |    |  |                 |  |  |  |  |  |  |
| 50,000   | 4.1       | 13.7       | 6.73            | 2.82            | .95  | .18  | 85  | 108 | 133 | 185                                     | 239 | 84  | 83  | 83  | 83                             | 83  | 82  | 82  | 82            |                            |    |    |  |                 |  |  |  |  |  |  |
| 75,000   |           | 20.6       | 10.0            | 4.23            | 1.43   | .28  |     |     |     |   | 10  | 12  | 14  | 15  | 17                             | 19  | 25  | 30  |               |                            |    |    |  |                 |  |  |  |  |  |  |
| 100,000  | 5.6       | 27.4       | 13.5            | 5.64            | 1.90   | .37  | 87  | 110 | 134 | 186                                     | 240 | 84  | 83  | 83  | 83                             | 83  | 82  | 82  | 82            |                            |    |    |  |                 |  |  |  |  |  |  |
| 150,000  |           | 41.0       | 20.2            | 8.47            | 2.86   | .55  |     |     |     |   | 13  | 15  | 17  | 18  | 22                             | 24  | 30  | 35  |               |                            |    |    |  |                 |  |  |  |  |  |  |
| 200,000  | 7.5       | 54.8       | 27.0            | 11.3            | 3.81   | .74  | 89  | 112 | 135 | 187                                     | 241 | 84  | 83  | 83  | 83                             | 83  | 82  | 82  | 82            |                            |    |    |  |                 |  |  |  |  |  |  |
| 250,000  |           | 68.5       | 33.7            | 14.1            | 4.76   | .92  |     |     |     |   | 15  | 17  | 19  | 20  | 26                             | 27  | 33  | 39  |               |                            |    |    |  |                 |  |  |  |  |  |  |

(NOTE) For speeds not shown on the pump hydraulic charts, consult factory.



# RM

SEC. 500

PAGE 109.1

February 2025

**24 GPM**  
**100 RPM**

| NOMINAL |     | VISCOSITY  |         | N.I.P.R. | FRICTION PIPE LOSS<br>(PSI/FT)<br><small>(Schedule 40 Steel Pipe)</small> |     |      |     |     | CAPACITY<br>(GPM)           |     |     |     | H.P.<br>REQUIRED |     |     |     |     |     |
|---------|-----|------------|---------|----------|---|-----|------|-----|-----|-----------------------------|-----|-----|-----|------------------|-----|-----|-----|-----|-----|
| GPM     | RPM | ROTOR TRIM | (SSU)   | (PSIa)   | PIPE DIAMETER   |     |      |     |     | MEDIUM-DUTY & HEAVY-DUTY    |     |     |     | HEAVY-DUTY ONLY  |     |     |     |     |     |
|         |     |            |         |          | 2½"   | 3"  | 4"   | 5"  | 6"  | DIFFERENTIAL PRESSURE (PSI) |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   | 25  | 50   | 75  | 100 | 150                         | 200 | 300 | 400 |                  |     |     |     |     |     |
| 24      | 100 | STD        |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         | "D"      |   |     |      |     |     |                             |     |     |     |                  |     |     |     |     |     |
|         |     |            |         |          | 200,000   | 2.3 | 7.6  | 3.2 | 1.1 | 0.4                         | 0.2 | 24  | 24  | 24               | 24  | 24  | 24  | 23  | 23  |
|         |     |            |         |          | 399,999   |     | 15.2 | 6.4 | 2.2 | 0.9                         | 0.4 | 3.6 | 4.1 | 4.5              | 4.9 | 5.6 | 6.4 | 7.1 | 7.7 |
|         |     |            |         |          | 400,000   | 2.6 |      |     |     |                             |     | 24  | 24  | 24               | 24  | 24  | 24  | 23  | 23  |
|         |     |            | 599,999 | 23       | 9.6   |     | 3.2  | 1.3 | 0.6 | 4.1                         | 4.5 | 4.9 | 5.3 | 6.0              | 6.8 | 7.6 | 8.2 |     |     |
|         |     |            | 600,000 | 3.2      |   |     |      |     |     | 24                          | 24  | 24  | 24  | 24               | 24  | 23  | 23  |     |     |
|         |     |            | 799,999 |          | NR  | 13  | 4.3  | 1.8 | 0.8 | 4.5                         | 4.9 | 5.3 | 5.7 | 6.4              | 7.2 | 7.9 | 8.6 |     |     |
|         |     |            | 800,000 | 3.5      |   |     |      |     |     | 24                          | 24  | 24  | 24  | 24               | 24  | 23  | 23  |     |     |
|         |     |            | 1M      |          | NR  | 16  | 5.4  | 2.2 | 1   | 5.0                         | 5.3 | 5.7 | 6.1 | 6.8              | 7.6 | 8.4 | 9.1 |     |     |

(NOTE) For speeds not shown on the pump hydraulic charts, consult factory.