

# ASSEMBLED MAGNUM I PUMP

Page 10

## STANDARD PUMP MATERIALS

| Part Name          | Cast Iron | Hard Iron H-30 | Bronze Fitted | Aluminum Bronze       |  |  |  |
|--------------------|-----------|----------------|---------------|-----------------------|--|--|--|
| Casing             | C.I.      | H-30           | C.I.          | Bronze <sup>(1)</sup> |  |  |  |
| Impeller           | C.I.      | H-30           | Bronze        | Bronze <sup>(1)</sup> |  |  |  |
| Stuffing Box Cover | C.I.      | H-30           | C.I.          | Bronze <sup>(1)</sup> |  |  |  |
| Shaft Sleeve       | 416 SS*   | 416 SS*        | 316 SS        | 316 SS                |  |  |  |
| Casing Gasket      | Fiber     | Fiber          | Fiber         | Fiber                 |  |  |  |
| Packing            | Asbestos  | Asbestos       | Asbestos      | Asbestos              |  |  |  |

## MAGNUM I ASSEMBLED PUMPS, PACKED

| Pump Size   | Max. Imp. Dia. | Wt. Lbs. | Cast Iron Stock Number | Hard Iron Stock Number | Bronze Fitted Stock Number | Aluminum Bronze Stock Number |
|-------------|----------------|----------|------------------------|------------------------|----------------------------|------------------------------|
| 3 x 2 x 13  | 13             | 490      | 640100707              | 640100905              | 640101002                  | 640100954                    |
| 4 x 3 x 13  | 13             | 515      | 640101101              | 640101309              | 640101432                  | 640101408                    |
| 5 x 4 x 14  | 14             | 540      | 640101507              | 640101705              |                            |                              |
| 6 x 5 x 11  | 11             | 590      | 640101903              | 640102109              |                            |                              |
| 6 x 5 x 14  | 14             | 675      | 640102307              | 640102505              |                            |                              |
| 8 x 6 x 11  | 11             | 725      | 640102703              | 640102901              |                            |                              |
| 8 x 6 x 14  | 14             | 750      | 640103107              | 640103305              |                            |                              |
| 10 x 8 x 14 | 14             | 840      | 640120002              | 640120101              |                            |                              |

## MAGNUM I ASSEMBLED PUMPS FOR MECHANICAL SEALS

| Pump Size   | Max. Imp. Dia. | Wt. Lbs. | Cast Iron Stock Number | Hard Iron Stock Number | Bronze Fitted Stock Number | Aluminum Bronze Stock Number |
|-------------|----------------|----------|------------------------|------------------------|----------------------------|------------------------------|
| 3 x 2 x 13  | 13             | 490      | 640120606              | 640120614              | 640120630                  | 640120622                    |
| 4 x 3 x 13  | 13             | 515      | 640120648              | 640120655              |                            | 640120663                    |
| 5 x 4 x 14  | 14             | 540      | 640120689              | 640120697              |                            |                              |
| 6 x 5 x 11  | 11             | 590      | 640120705              | 640120713              |                            |                              |
| 6 x 5 x 14  | 14             | 675      | 640120721              | 640120739              |                            |                              |
| 8 x 6 x 11  | 11             | 725      | 640120747              | 640120754              |                            |                              |
| 8 x 6 x 14  | 14             | 750      | 640120762              | 640120770              |                            |                              |
| 10 x 8 x 14 | 14             | 840      | 640120788              | 640120796              |                            |                              |

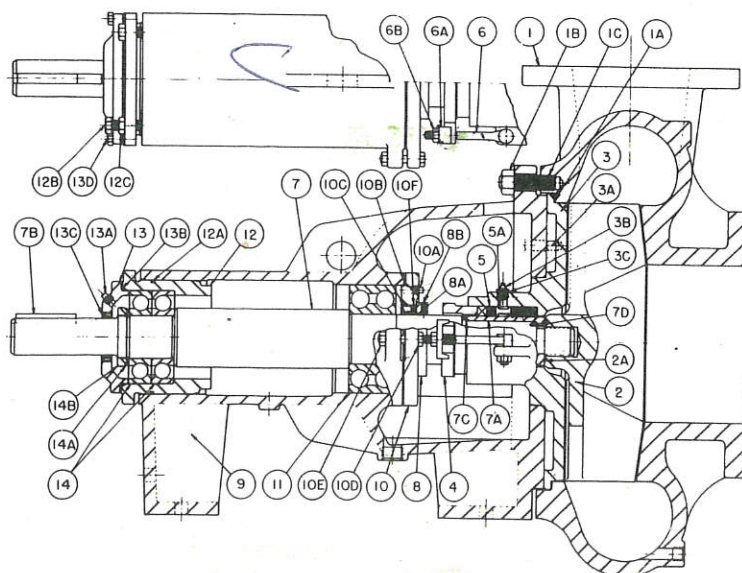
NOTE: Other impeller diameters available.

(1) Zinc Free Aluminum Bronze

\*Ceramic Coated

## MECHANICAL SEAL FOR DRILLING MUD

22451-1 648414308  
22726-1 648414951



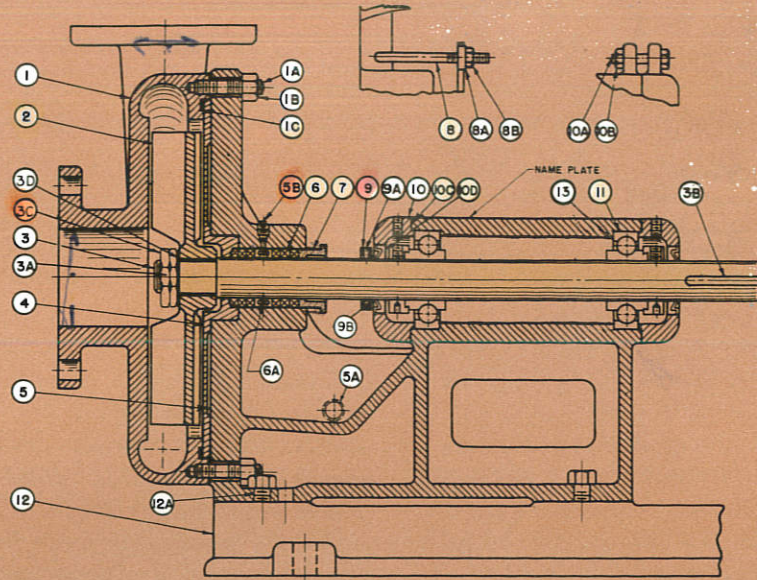
Shop Box: 2222 3-01-30  
20614-01-30  
conventional

EFFECTIVE SEPTEMBER 1, 1981

**TRW**MISSION  
TRW Mission Manufacturing Company, a Division of TRW Inc.

PARTS LIST Q200

## Type S 1 1/8" Pump Parts List



### COOLING WATER PUMP ON P/WORKS

| Pump Size   | Item 1 Casing | Item 2 Semi-Open Slip Fit Impeller | Item 2 Semi-Open Tapered Fit Impeller | Item 3 Shaft†      | Item 4 Wear Plate |
|-------------|---------------|------------------------------------|---------------------------------------|--------------------|-------------------|
| 1 x 1 1/2 C | G 3766-X      | 4170-Z-X                           | 6177-Z-X                              |                    | 3762-X            |
| 1 1/2 x 2 R | G 4576-X      | 4571-Z-X                           | 9944-Z-X                              | 3769-X Slip Fit *  | 3762-X            |
| 1 1/2 x 2 C | G 4096-X      | 4170-Z-X                           | 6177-Z-X                              |                    | 3762-X            |
| 2 x 3 R 11  | F 4672-X      | 4574-Z-X                           | 9945-Z-X                              | 5891-X Tapered Fit | 3762-X            |
| 2 x 3 C 11  | F 4061-X      | 4173-Z-X                           | 9946-Z-X                              |                    | 3762-X            |
| 3 x 4 R 11  | F 5162-X      | 5170-Z-X                           | 5892-Z-X                              |                    | 3762-X            |

X Denotes material of construction. See Page 9.

Must be on Purchase Order.

Z Denotes impeller diameter. See Page 9.

Must be on Purchase Order.

† Shaft is supplied with items 3A, 3B, and 3C as standard.

Note: Use "X" preceding shaft part number for chrome plate under gland packing area for abrasive service.

| Part No.    | PART NAME                | Quan. | Item No. | DESCRIPTION                                                                       |
|-------------|--------------------------|-------|----------|-----------------------------------------------------------------------------------|
| 3862-1      | Stud—Casing              | 8     | 1A       | 3/8-11NC-2 Steel Stud 2 3/4" Long                                                 |
| 3932-1      | Nut—Casing Stud          | 8     | 1B       | 3/8-11NC-2 Hvy Semi-Finished Steel Hex Nut                                        |
| 10399-19-1  | Gasket—Casing            | 1     | 1C       | 9-7/16 O.D. x 8-13/16 I.D. x 1/16 Thick Fiber                                     |
| 4372-1X     | Key—Impeller End         | 1     | 3A       | 1/4 Sq. x 1 1/8 Long Mat'l same as Shaft                                          |
| 4372-221    | Key—Coupling End         | 1     | 3B       | 1/4 Sq. x 2 Long—416 Stainless Steel                                              |
| **6209-7X   | Impeller Nuts            | 2     | 3C       | 3/4-10NC-2 Jam Nut—Material Same as Shaft                                         |
| 3936-2-X    | Washer—Impeller          | 1     | 3D       | Washer Material Same as Shaft                                                     |
| E3768       | Pedestal                 | 1     | 5        | Cast Iron                                                                         |
| 8262-6      | Plug—Drip Pan Drain      | 2     | 5A       | Standard 3/4" Pipe Plug, Black Iron                                               |
| 8266-4      | Hydraulic Grease Fitting | 1     | 5B       | Hydraulic Grease Fitting                                                          |
| *8264-11S-1 | Packing Assembly         | 1 Set | 6        | 6 Rings 3/8 Sq. Braided Graphited Asbestos and Item 6A                            |
| 6480        | Lantern Ring Half        | 2     | 6A       | Molded Plastic                                                                    |
| 8204        | Packing Gland Half       | 2     | 7        | Aluminum Bronze                                                                   |
| 3701A       | Gland Bolt Assembly      | 2     | 8        | 316 Stainless Steel Bolt with Std. 1/8 Cotter Pin and Items 8A and 8B             |
| 5067-2      | Clip—Packing Gland       | 2     | 8A       | 316 Stainless Steel                                                               |
| 3932-8      | Nut—Gland Bolt           | 2     | 8B       | 3/8-16NC-2 Reg. Semi-Finished Hex Nut 316 Stainless Steel                         |
| C3770       | Water Slinger Assembly   | 1     | 9        | Steel—With Items 9A and 9B                                                        |
| 3935-2      | Set Screw                | 1     | 9A       | 3/8-16NC-3 Socket Head Set Screw 3/8 Long, Cup Point, 18-8 SS                     |
| 7496-21     | "O" Ring Water Slinger   | 1     | 9B       | 1 1/8 I.D. x 1 3/8 O.D. Buna No. 6227-21                                          |
| 3773        | Bearing Cap              | 2     | 10       | Cast Iron                                                                         |
| 3861-1      | Bolt—Bearing Cap         | 4     | 10A      | 3/8-16NC-2 Hex. Head Cap Screw 2" Long, Steel                                     |
| 3932-2      | Nut—Bearing Cap Bolt     | 4     | 10B      | 3/8-16NC-2 Reg. Semi-Finished Steel Hex Nut                                       |
| 10399-21-1  | Gasket—Bearing Cap       | 2     | 10C      | 4 O.D. x 2-53/64 I.D. x 1/16 Thick Fiber                                          |
| 3943-12     | Grease Seal              | 2     | 10D      | 1 1/8 Shaft x 2.066 O.D. x 7/16 Wide Seal National No. 50241-S or Garlock No. 362 |
| 3944-1      | Bearing                  | 2     | 11       | Fafnir No. SMN 102 KA or MUO-A 1 1/8 or MRC No. T102AZ                            |
| 3861-2      | Mounting Bolt            | 4     | 12A      | 3/8-11NC-2 Reg. Semi-Finished Steel Hex Head Bolt                                 |
| 4325-1      | Name Plate               | 1     |          | Brass                                                                             |

\*Part No. for Chevron Packing Assembly is 8475-11S

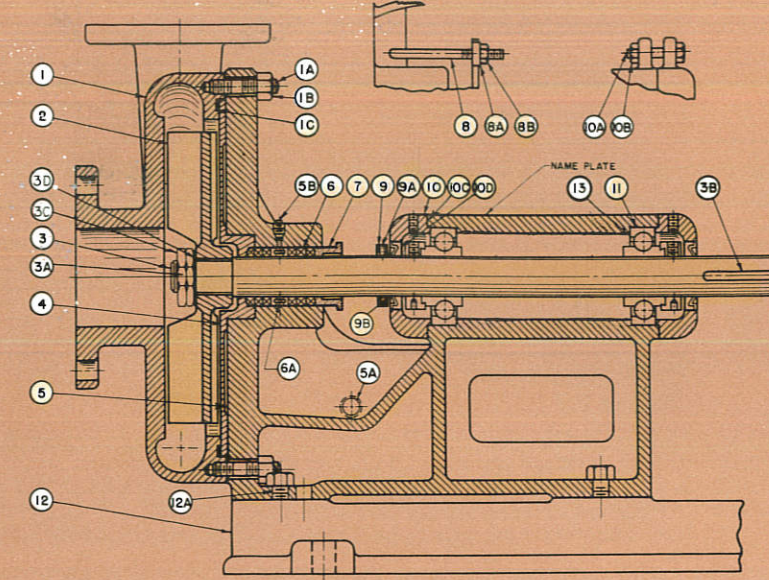
\*Part No. for King Packing Assembly is 8474-11S

\*\*This part is for slip fit shaft only

Use part No. 6209-1X for tapered shafts

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ON CARDS

## Type W 1 1/8" Pump Parts List



| Pump Size | Item 1 Casing | Item 2 Semi-Open Slip Fit Impeller | Item 2 Semi-Open Tapered Fit Impeller | Item 3 Shaft†         | Item 4 Wear Plate |
|-----------|---------------|------------------------------------|---------------------------------------|-----------------------|-------------------|
| 2 x 3 R   | G 4676-X      | 4610-Z-X                           | 9950-Z-X                              |                       | 3779-X            |
| 2 x 3 C   | G 3783-X      | 3781-Z-X                           | 9951-Z-X                              |                       | 3779-X            |
| 3 x 4 R   | F 4644-X      | 4605-Z-X                           | 9952-Z-X                              | 1. 3786-X Slip Fit    | 3779-X            |
| 3 x 4 C   | F 3691-X      | 3689-Z-X                           | 6149-Z-X                              | 2. 4932-21 Slip Fit   | 3779-X            |
| 4 x 5 R   | F 4732-X      | 4705-Z-X                           | 5890-Z-X                              | All iron only         | 3779-X            |
| 4 x 5 C   | F 3800-X      | 3798-Z-X                           | 9953-Z-X                              | 3. 5885-X Tapered Fit | 3779-X            |
| 5 x 6 R   | F 4742-X      | 4710-Z-X                           | 5876-Z-X                              | 4. 14928-X Press Fit  | 3779-X            |
| 5 x 6 C   | F 4029-X      | 3903-Z-X                           | 9954-Z-X                              | 6 x 8 only            | 3779-X            |
| 6 x 8 R   | F 5144-X      | 5142-Z-X                           |                                       |                       | 3779-X            |

X Denotes material of construction. See Page 11.

Must be on Purchase Order.

Z Denotes impeller diameter. See Page 11.

Must be on Purchase Order.

† Shaft is supplied with items 3A, 3B, and 3C as standard.

Note: Use "X" preceding shaft part number for Chrome Plate under Gland Packing area for abrasive service.

1. Furnished with alloy pumps; will not fit 6 x 8.

2. Furnished with all cast iron pumps; will not fit 6 x 8, has 1" longer shaft extension for belt drive.

3. Furnished with tapered fit pumps only.

4. Furnished with 6 x 8 pumps only.

| Part No.    | PART NAME                | Quan. | Item No. | DESCRIPTION                                                                   |
|-------------|--------------------------|-------|----------|-------------------------------------------------------------------------------|
| 11907-83    | Stud—Casing              | 12    | 1A       | 3/8-11NC-2 Steel Stud 3" Long                                                 |
| 3932-1      | Nut—Casing Stud          | 12    | 1B       | 3/8-11NC-2 Hvy Semi-Finished Steel Hex Nut                                    |
| 10399-20-1  | Gasket—Casing            | 1     | 1C       | 14-7/16 O.D. x 13-13/16 I.D. x 1/16 Thick Fiber                               |
| **4372-3X   | Key—Impeller End         | 1     | 3A       | 3/8 Sq. x 1 3/8 Long Mat'l Same as Shaft                                      |
| 4372-521    | Key—Coupling End         | 1     | 3B       | 1/2 Sq. x 3 Long 416 Stainless Steel                                          |
| ***6209-8-X | Impeller Nuts            | 2     | 3C       | 1" 8NC2 Jam Nut—Material Same as Shaft                                        |
| 3936-16-X   | Washer—Impeller          | 1     | 3D       | Washer Material Same as Shaft                                                 |
| L3785       | Pedestal                 | 1     | 5        | Cast Iron                                                                     |
| 8262-6      | Plug—Drip Pan Drain      | 2     | 5A       | Standard 3/4" Pipe Plug, Black Iron                                           |
| 8266-4      | Hydraulic Grease Fitting | 1     | 5B       | Hydraulic Grease Fitting                                                      |
| *8264-17W-1 | Packing Assembly         | 1 Set | 6        | 6 Rings 3/8 Sq. Braided Graphited asbestos and Item 6A                        |
| 6480-2      | Lantern Ring Half        | 2     | 6A       | Molded Plastic                                                                |
| 7406        | Packing Gland Half       | 2     | 7        | Aluminum Bronze                                                               |
| 3701A       | Gland Bolt Assembly      | 2     | 8        | 316 Stainless Steel Bolt with Standard 1/8 Cotter Pin and Items 8A and 8B     |
| 5067-2      | Clip—Packing Gland       | 2     | 8A       | 316 Stainless Steel                                                           |
| 3932-8      | Nut—Gland Bolt           | 2     | 8B       | 3/8-16NC-2 Reg. Semi-Finished Hex Nut—316 Stainless Steel                     |
| C3787       | Water Slinger Assembly   | 1     | 9        | Steel—With Items 9A and 9B                                                    |
| 3935-3      | Set Screw                | 1     | 9A       | 1/2-13NC-3 Socket Head Set Screw 7/16 Long, Cup Point, 18-8 SS                |
| 7496-3      | "O" Ring Water Slinger   | 1     | 9B       | 1 7/8 I.D. x 2 1/8 O.D. Buna, No. 6230-3                                      |
| 3790        | Bearing Cap              | 2     | 10       | Cast Iron                                                                     |
| 3861-1      | Bolt—Bearing Cap         | 4     | 10A      | 3/8-16NC-2 Hex. Head Cap Screw 2" Long, Steel                                 |
| 3932-2      | Nut—Bearing Cap Bolt     | 4     | 10B      | 3/8-16NC-2 Reg. Semi-Finished Steel Hex Nut                                   |
| 10399-23-1  | Gasket—Bearing Cap       | 2     | 10C      | 5 1/2 O.D. x 4 3/8 I.D. x 1/16 Thick Fiber                                    |
| 3943-14     | Grease Seal              | 2     | 10D      | 1 7/8 Shaft x 3.005 O.D. x 1/2 Wide Seal National No. 50298-S or Garlock 1065 |
| 3944-3      | Bearing                  | 2     | 11       | Fafnir No. SMN 114-KA or MUO-A 1 7/8 or MRC No. T-114AZ                       |
| 3861-2      | Mounting Bolt            | 4     | 12A      | 3/8-11NC-2 Reg. Semi-Finished Steel Hex Head Bolt                             |
| 4325-1      | Name Plate               | 1     |          | Brass                                                                         |

\*Part No. for Chevron Packing 8475-17W

\*Part No. for King Packing is 8474-17W

\*\*6 x 8 Pump uses Key Part No. 4372-7X

\*\*\*This part is for slip fit shaft only

Use part No. 6209-2X for tapered shafts

# Explanation of Mission Centrifugal Pump Size Designation and Parts Numbers

## (A) PUMP SIZE DESIGNATION

- (1) EXAMPLE: 1½x2 R11 Pump  
1½ = 1½" Discharge  
2 = 2" Suction  
R = Clockwise Rotation  
11 = 1½" Diameter Shaft Size—"S" Pedestal

- (2) EXAMPLE: 2x3 C11 Pump  
2 = 2" Discharge  
3 = 3" Suction  
C = Counter Clockwise Rotation  
11 = 1½" Diameter Shaft Size—"S" Pedestal

- (3) EXAMPLE: 2x3R Pump  
2 = 2" Discharge  
3 = 3" Suction  
R = Clockwise Rotation  
\*\* = 1½" Diameter Shaft Size—"W" Pedestal

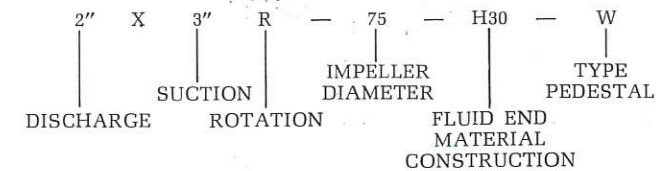
NOTE: Rotation determined when viewed from the coupling end.

\* = All pump sizes from 1S through 3S use 1½" diameter shaft size and are mounted on an "S" Pedestal.

\*\* = All pump sizes from 2W through 6W use 1½" diameter shaft size and are mounted on a "W" Pedestal.

When ordering pumps—specify discharge sizes and suction—rotation—impeller diameter—fluid end material construction—type pedestal. Use Chart on Page 12 or head capacity range charts to select pump sizes.

EXAMPLE:



## (B) PART NUMBERS

- (1) Casing Part No. .... 2345-X  
(2) Impeller Part No. .... 3456-Z-X  
(3) Shaft Part No. .... 4567-X

(a) The four digit numbers are basic part numbers.

(b) The X indicates material. See Pump Parts List, pages 7 and 8.

(c) The Z in Impeller Part No. indicates diameter of Impeller, as follows:

For a two digit number: Add 4 to first digit to get inches; the second digit indicates 1/8" over this figure. Example: -54- is 9½" diameter.

## Standard Materials Furnished for Standard Pumps

| Part          | Cast Iron<br>(X = 1) | Hard Iron<br>(H30)<br>(X = 30) | Bronze<br>Fitted | Alum.<br>Bronze<br>(X = 13) | Carbon<br>Steel<br>(X = 8) | 316<br>Stainless<br>(X = 4) | Misaloy<br>20<br>(X = 20) |
|---------------|----------------------|--------------------------------|------------------|-----------------------------|----------------------------|-----------------------------|---------------------------|
| Casing        | C.I.                 | H-30                           | C.I.             | Bronze                      | Steel                      | 316SS                       | Msly 20                   |
| Impeller      | C.I.                 | H-30                           | Bronze           | Bronze                      | Steel                      | 316SS                       | Msly 20                   |
| Wear Plate    | C.I.                 | H-30                           | Bronze           | Bronze                      | Steel                      | 316SS                       | Msly 20                   |
| Shaft         | 416SS                | 416SS†                         | 316SS            | 316SS                       | 416SS                      | 316SS                       | Msly 20                   |
| Casing Gasket | Fiber                | Fiber                          | Fiber            | Fiber                       | Asbestos                   | Asbestos                    | Asbestos                  |
| Packing       | Asbestos             | King Type                      | Asbestos         | Asbestos                    | Asbestos                   | Asbestos                    | Asbestos                  |

The material analysis for each pump item is shown below:

| Cast Iron     |             | 316 S. S.        |               |
|---------------|-------------|------------------|---------------|
| Silicon       | 1.50 - 1.65 | ASTM CF-8M       | 18.00 - 21.00 |
| Manganese     | 0.70 - 0.80 | Chromium         | 9.00 - 12.00  |
| Sulfur        | 0.15 Max.   | Nickel           | 2.00 - 3.00   |
| Phosphorous   | 0.17 Max.   | Molybdenum       | 1.50 Max.     |
| Carbon, Total | 3.20 - 3.30 | Manganese        | 2.00 Max.     |
| Carbon Steel  |             | Silicon          | 0.05 Max.     |
| AISI-SAE 1030 |             | Phosphorous      | 0.05 Max.     |
| Silicon       | .20 - .70   | Sulfur           | 0.12 Max.     |
| Manganese     | .50 - .90   | Carbon           |               |
| Phosphorous   | .05 Max.    | Hard Iron (H-30) |               |
| Sulfur        | .05 Max.    | Nickel           | —30           |
| Carbon        | .25 - .35   | Molybdenum       | 1.50          |
| Misaloy 20    |             | Chromium         | 0.50          |
| Nickel        | 29.0        | Silicon          | 0.40          |
| Chromium      | 20.0        | Manganese        | 1.35 - 1.50   |
| Molybdenum    | 2.0         | Aluminum Bronze  |               |
| Copper        | 3.0         | 9A               |               |
| Manganese     | .75         | ASTM B148        | —13           |
| Silicon       | 1.0         | Copper           | 86.0 Min.     |
| Carbon        | .07 Min.    | Aluminum         | 8.5 - 9.5     |
|               |             | Iron             | 2.5 - 4.0     |

† Chrome plated in packing area

# Mission Centrifugal Pumps Selection Chart "A"

Based on Water—Specific Gravity = 1.0

| FLOW                   |                          | PRESSURES (TOTAL HEADS)<br>In Feet and Pounds per Square Inch |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
|------------------------|--------------------------|---------------------------------------------------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|
| Barrels<br>Per<br>Hour | Gallons<br>Per<br>Minute |                                                               | 30 Ft.<br>13 Lbs. | 50 Ft.<br>22 Lbs. | 75 Ft.<br>32 Lbs. | 100 Ft.<br>43 Lbs. | 150 Ft.<br>65 Lbs. | 175 Ft.<br>76 Lbs. | 200 Ft.<br>86 Lbs. | 250 Ft.<br>108 Lbs. | 300 Ft.<br>130 Lbs. | 325 Ft.<br>141 Lbs. |       |       |       |       |       |       |       |
| 71                     | 50                       | Pump Size No.....                                             | 1S-13             | 1S-40             | 1S-26             | 2W-60              | 1S-42              | 2W-82              | IS-07              | 2W-54               | 1S-17               | 2W-74               | 1S-22 | 2W-84 | 1S-25 | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1750              | 1150              | 1750              | 1150               | 1750               | 1150               | 3500               | 1750                | 3500                | 1750                | 3500  | 1750  | 3500  | 1750  | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 1                 | 1                 | 1.5               | 3                  | 3                  | 5                  | 5                  | 7.5                 | 7.5                 | 15                  | 15    | 15    | 10    | ..... | ..... |       |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 107                    | 75                       | Pump Size No.....                                             | 1½S15             | 1½S43             | 1½S30             | 2W-61              | 1½S42              | 2W-82              | 1½S07              | 2W-54               | 1½S17               | 2W-74               | 1½S24 | 2W-84 | 1½S26 | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1750              | 1150              | 1750              | 1150               | 1750               | 1150               | 3500               | 1750                | 3500                | 1750                | 3500  | 1750  | 3500  | 1750  | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 1.5               | 1.5               | 2                 | 3                  | 5                  | 5                  | 5                  | 7.5                 | 7.5                 | 15                  | 15    | 10    | 15    | 10    | ..... |       |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 143                    | 100                      | Pump Size No.....                                             | 1½S17             | 2S-41             | 1½S31             | 2W-61              | 1½S44              | 2W-82              | 1½S10              | 2W-55               | 1½S21               | 2W-74               | 1½S24 | 2W-84 | 1½S27 | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1750              | 1150              | 1750              | 1150               | 1750               | 1150               | 3500               | 1750                | 3500                | 1750                | 3500  | 1750  | 3500  | 1750  | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 1.5               | 1.5               | 3                 | 3                  | 5                  | 7.5                | 7.5                | 10                  | 10                  | 15                  | 10    | 15    | 20    | 15    | 20    | ..... |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 214                    | 150                      | Pump Size No.....                                             | 2S-20             | 3S-40             | 2S-31             | 2W-64              | 2S-42              | 2W-84              | 2S-11              | 2W-55               | 2S-17               | 2W-74               | 2S-23 | 2W-84 | 2S-25 | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1750              | 1150              | 1750              | 1150               | 1750               | 1150               | 3500               | 1750                | 3500                | 1750                | 3500  | 1750  | 3500  | 1750  | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 3                 | 2                 | 5                 | 5                  | 5                  | 7.5                | 10                 | 10                  | 15                  | 15                  | 20    | 15    | 20    | 25    | 25    | ..... |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 286                    | 200                      | Pump Size No.....                                             | 2S-25             | 3S-41             | 2S-34             | 3W-60              | 3S-41              | 3W-83              | 2S-12              | 2W-56               | 2S-20               | 2W-75               | 2S-23 | 2W-84 | 2S-27 | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1750              | 1150              | 1750              | 1150               | 1750               | 1150               | 3500               | 1750                | 3500                | 1750                | 3500  | 1750  | 3500  | 1750  | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 3                 | 3                 | 5                 | 5                  | 5                  | 7.5                | 7.5                | 10                  | 10                  | 15                  | 20    | 15    | 20    | 20    | 25    | 25    | ..... |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 357                    | 250                      | Pump Size No.....                                             | 2S-30             | 3S-43             | 3S-32             | 3W-61              | 3S-42              | 3W-83              | 2S-14              | 3W-53               | 2S-22               | 3W-73               | 2S-25 | 3W-82 | 2S-30 | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1750              | 1150              | 1750              | 1150               | 1750               | 1150               | 3500               | 1750                | 3500                | 1750                | 3500  | 1750  | 3500  | 1750  | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 5                 | 3                 | 7.5               | 5                  | 10                 | 10                 | 15                 | 15                  | 20                  | 20                  | 20    | 20    | 25    | 25    | 25    | 30    | ..... |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 429                    | 300                      | Pump Size No.....                                             | 3S-22             | 3W-45             | 3S-33             | 3W-62              | 3S-43              | 3W-84              | 3S-13              | 3W-54               | 3S-21               | 3W-73               | 3S-24 | 3W-82 | 3S-27 | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1750              | 1150              | 1750              | 1150               | 1750               | 1150               | 3500               | 1750                | 3500                | 1750                | 3500  | 1750  | 3500  | 1750  | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 5                 | 5                 | 10                | 7.5                | 10                 | 10                 | 15                 | 15                  | 25                  | 20                  | 25    | 25    | 30    | 30    | 40    | 40    | ..... |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 570                    | 400                      | Pump Size No.....                                             | 3S-25             | 3W-50             | 3S-35             | 4W-60              | 4W-43              | 4W-80              | 3S-14              | 3W-55               | 3S-22               | 3W-74               | 3S-25 | 3W-83 | 3S-30 | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1750              | 1150              | 1750              | 1150               | 1750               | 1150               | 3500               | 1750                | 3500                | 1750                | 3500  | 1750  | 3500  | 1750  | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 5                 | 5                 | 10                | 7.5                | 15                 | 15                 | 20                 | 20                  | 30                  | 30                  | 25    | 30    | 30    | 40    | 40    | ..... |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 714                    | 500                      | Pump Size No.....                                             | 3S-32             | 4W-43             | 3S-40             | 4W-61              | 4W-43              | 4W-81              | 3S-16              | 4W-53               | 3S-23               | 4W-71               | 3S-26 | 4W-80 | 3S-31 | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1750              | 1150              | 1750              | 1150               | 1750               | 1150               | 3500               | 1750                | 3500                | 1750                | 3500  | 1750  | 3500  | 1750  | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 7.5               | 5                 | 10                | 10                 | 15                 | 15                 | 25                 | 20                  | 30                  | 30                  | 30    | 40    | 40    | 40    | ..... |       |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 855                    | 600                      | Pump Size No.....                                             | 4W-45             | 4W-33             | 4W-62             | 4W-44              | 4W-82              | .....              | 4W-54              | .....               | 4W-71               | .....               | 4W-80 | ..... | ..... | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1150              | 1750              | 1150              | 1750               | 1150               | .....              | 1750               | .....               | 1750                | .....               | 1750  | ..... | ..... | ..... | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 7.5               | 15                | 10                | 20                 | 15                 | .....              | 25                 | .....               | 40                  | .....               | 40    | ..... | ..... | ..... | ..... |       |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 1140                   | 800                      | Pump Size No.....                                             | 4W-51             | 4W-35             | 4W-65             | 4W-47              | 5W-86              | .....              | 4W-55              | .....               | 4W-72               | .....               | 4W-81 | ..... | ..... | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1150              | 1750              | 1150              | 1750               | 1150               | .....              | 1750               | .....               | 1750                | .....               | 1750  | ..... | ..... | ..... | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 10                | 15                | 15                | 25                 | 25                 | .....              | 30                 | .....               | 40                  | .....               | 50    | ..... | ..... | ..... | ..... |       |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 1430                   | 1000                     | Pump Size No.....                                             | 5W-53             | 5W-37             | 5W-70             | 5W-47              | 6W-85              | .....              | 5W-57              | .....               | 5W-72               | .....               | 6W-81 | ..... | ..... | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1150              | 1750              | 1150              | 1750               | 1150               | .....              | 1750               | .....               | 1750                | .....               | 1750  | ..... | ..... | ..... | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 15                | 20                | 20                | 30                 | 30                 | .....              | 40                 | .....               | 50                  | .....               | 75    | ..... | ..... | ..... | ..... |       |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 1710                   | 1200                     | Pump Size No.....                                             | 5W-60             | 5W-42             | 5W-74             | 5W-52              | 6W-90              | .....              | 5W-60              | .....               | 5W-74               | .....               | 6W-85 | ..... | ..... | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1150              | 1750              | 1150              | 1750               | 1150               | .....              | 1750               | .....               | 1750                | .....               | 1750  | ..... | ..... | ..... | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 15                | 30                | 35                | 40                 | 40                 | .....              | 40                 | .....               | 60                  | .....               | 100   | ..... | ..... | ..... | ..... |       |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 2000                   | 1400                     | Pump Size No.....                                             | 6W-63             | .....             | 6W-75             | 6W-56              | 6W-92              | .....              | 6W-65              | .....               | 6W-82               | .....               | 6W-86 | ..... | ..... | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | 1150              | .....             | 1150              | 1750               | 1150               | .....              | 1750               | .....               | 1750                | .....               | 1750  | ..... | ..... | ..... | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | 20                | .....             | 25                | 50                 | 40                 | .....              | 60                 | .....               | 100                 | .....               | 100   | ..... | ..... | ..... | ..... |       |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |
| 2570                   | 1800                     | Pump Size No.....                                             | .....             | .....             | 6W-86             | .....              | 6W-93              | .....              | 6W-70              | .....               | .....               | .....               | ..... | ..... | ..... | ..... |       |       |       |
|                        |                          | R.P.M. ....                                                   | .....             | .....             | 1150              | .....              | 1750               | .....              | 1750               | .....               | .....               | .....               | ..... | ..... | ..... | ..... | ..... |       |       |
|                        |                          | Motor H.P. ....                                               | .....             | .....             | 40                | .....              | 60                 | .....              | 75                 | .....               | .....               | .....               | ..... | ..... | ..... | ..... | ..... |       |       |
|                        |                          |                                                               |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |       |       |       |       |       |       |       |

## Chart "B"

| SIZE |              | Flanged<br>Dis-<br>Charge<br>Con-<br>nection | Flanged<br>Suction<br>Con-<br>nection | Shaft<br>Diam. | Normal Maximum Head |      |                     |
|------|--------------|----------------------------------------------|---------------------------------------|----------------|---------------------|------|---------------------|
|      |              |                                              |                                       |                | Max.<br>Flow<br>GPM | Feet | Lbs. per<br>Sq. In. |
| 1S—  | 1"x1½" C*    | 1"                                           | 1½"                                   | 1½"            | 60                  | 335  | 145                 |
| 1½S— | 1½"x2" R&C   | 1½"                                          | 2"                                    | 1½"            | 120                 | 325  | 140                 |
| 2S—  | 2"x3" R&C 11 | 2"                                           | 3"                                    | 1½"            | 250                 | 320  | 138                 |
| 3S—  | 3"x4" R 11*  | 3"                                           | 4"                                    | 1½"            | 500                 | 335  | 145                 |
| 2W—  | 2"x3" R&C    | 2"                                           | 3"                                    | 1½"            | 250                 | 355  | 153                 |
| 3W—  | 3"x4" R&C    | 3"                                           | 4"                                    | 1½"            | 500                 | 350  | 151                 |
| 4W—  | 4"x5" R&C    | 4"                                           | 5"                                    | 1½"            | 800                 | 200  | 86                  |
| 5W—  | 5"x6" R&C    | 5"                                           | 6"                                    | 1½"            | 1200                | 190  | 82                  |
| 6W—  | 6"x8" R*     | 6"                                           | 8"                                    | 1½"            | 1800                | 200  | 86                  |

\*Pumps furnished in only one rotation

## How To Use Charts "A" and "B"

1. Determine the flow rate needed in gallons-per-minute (GPM) or barrels-per-hour.

2. Determine the pressure in pounds per square inch or total head feet needed.

3. After you have determined the above needs, locate the correct square on Chart A. Within that square will be indicated the pump size, impeller diameter, RPM, and motor horsepower. Select one of the two pump sizes recommended. Note that the smaller size pump requires higher speed than the larger size pump. When selecting a pump for handling mud or abrasive fluids use the larger size pump with lower speed.

4. Take this designated pump size and in Chart B you will find the suction and discharge sizes and type of pedestal.

5. Use Example B on Page 11 to order fluid end materials—casings, impellers, and wear plates for pumps other than cast iron. Cast iron is furnished on standard oil field pumps.

Use the above information to order standard Mission pump; but, when the Mission invoice is received on this pump it will show a Mission figure number which is an IBM print-out of the exact information as furnished above. If it is necessary to duplicate an order for this same pump, use either the original ordering information or the invoiced figure number.

The above pump selection chart is based on water with a specific gravity of 1 and a weight of 8.34 lb/gal. For drilling fluids with a specific gravity other than plain water, use the information on Page 18

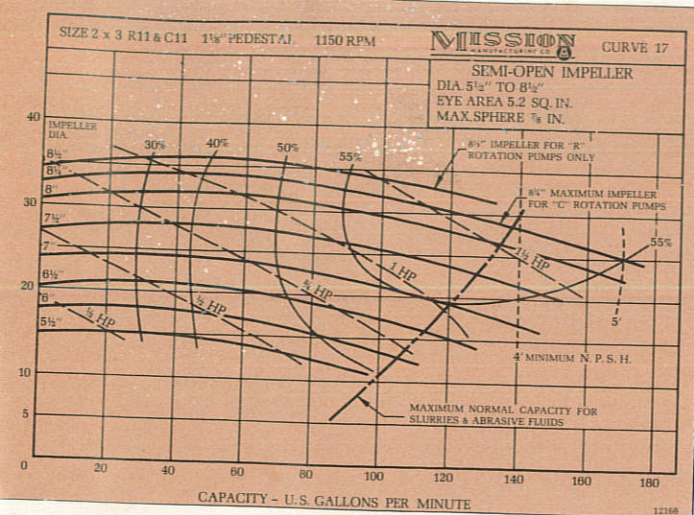
See Page 6 for salt water resistant materials. Other materials see Page 11.

# Head Capacity Range Charts

2 x 3 R11 & C11

1150 RPM

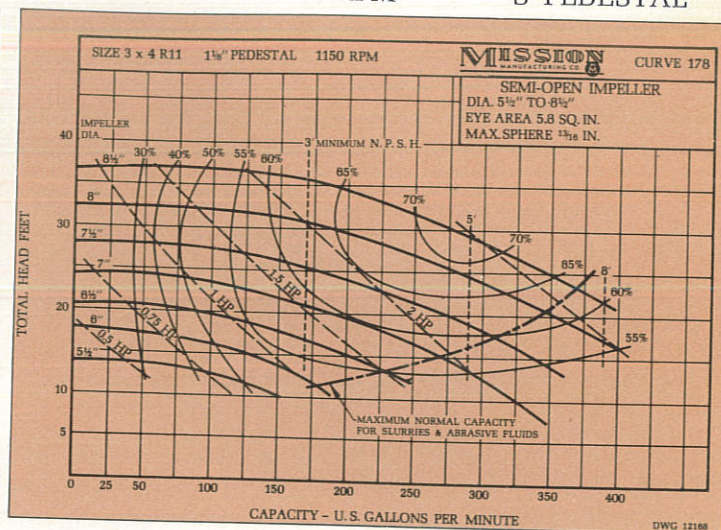
S PEDESTAL



3 x 4 R11

1150 RPM

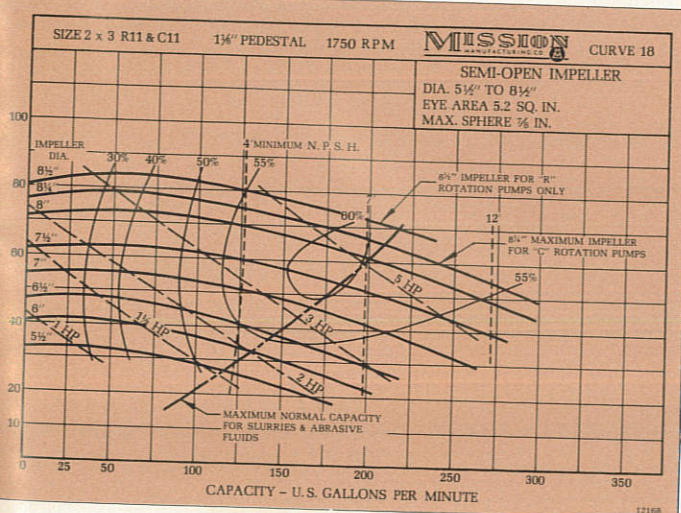
S PEDESTAL



2 x 3 R11 & C11

1750 RPM

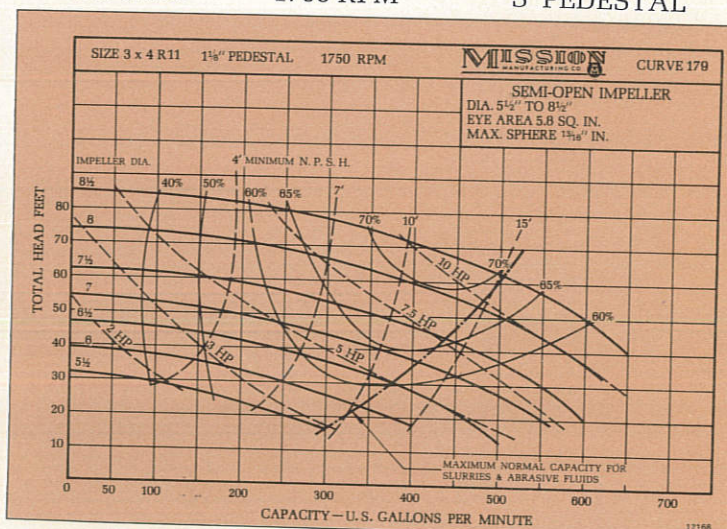
S PEDESTAL



3 x 4 R11

1750 RPM

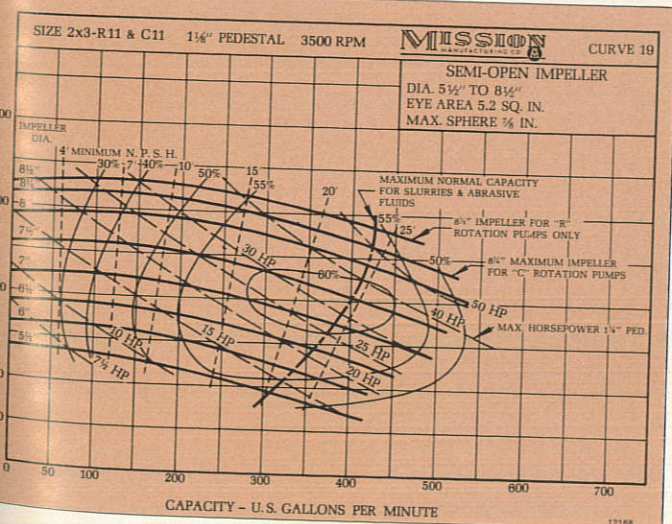
S PEDESTAL



2 x 3 R11 & C11

3500 RPM

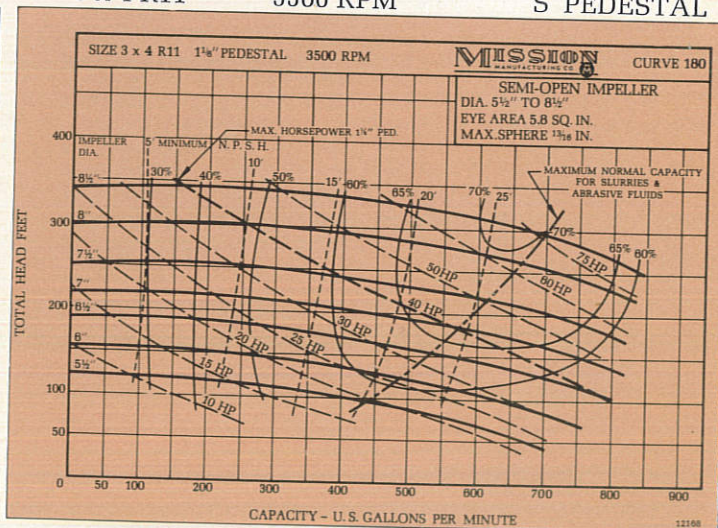
S PEDESTAL



3 x 4 R11

3500 RPM

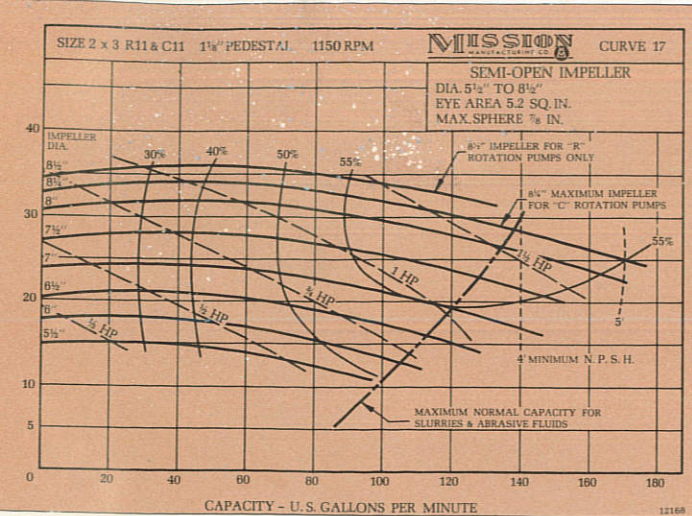
S PEDESTAL



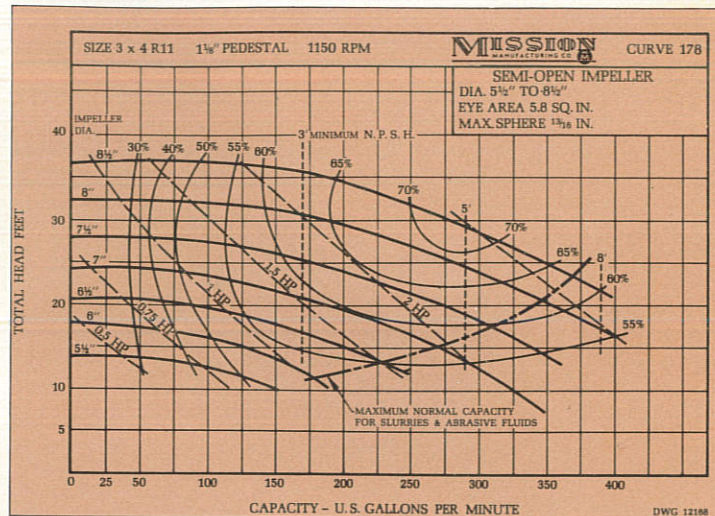
Curves show performance with clear water @ 85° F. If specific gravity is other than 1.0, BHP must be corrected.  
See Page 17 for Variable Speed Curves

# Head Capacity Range Charts

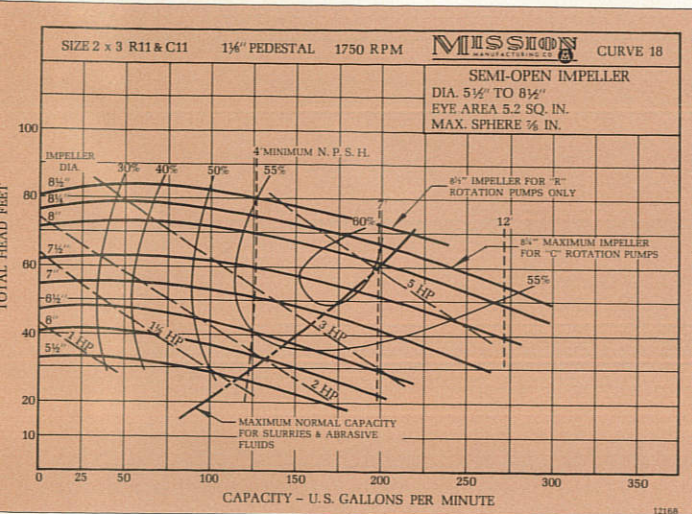
2 x 3 R11 & C11 1150 RPM S PEDESTAL



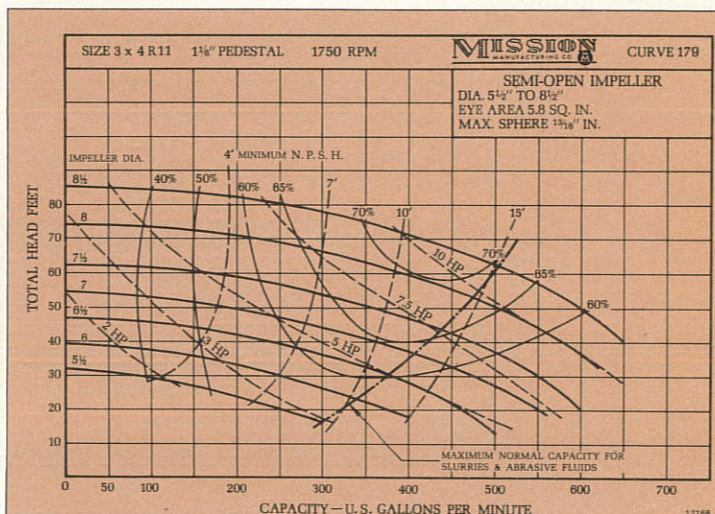
3 x 4 R11 1150 RPM S PEDESTAL



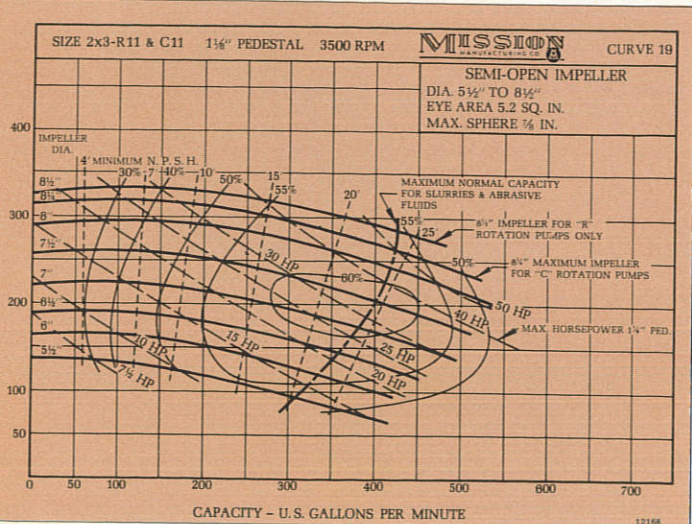
2 x 3 R11 & C11 1750 RPM S PEDESTAL



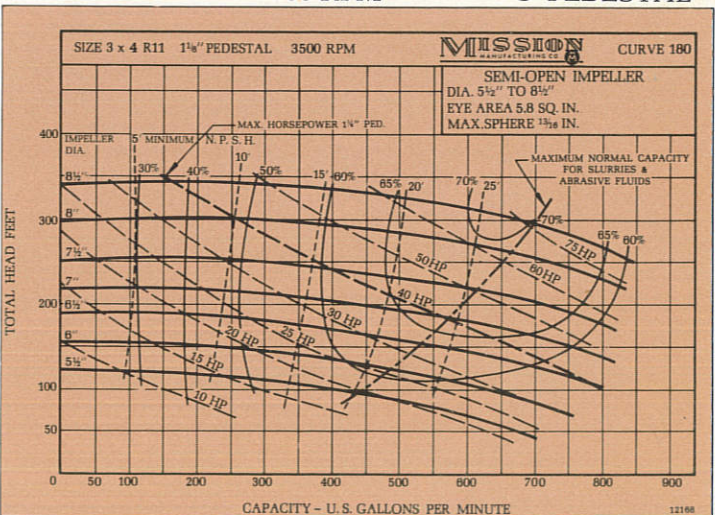
3 x 4 R11 1750 RPM S PEDESTAL



2 x 3 R11 & C11 3500 RPM S PEDESTAL



3 x 4 R11 3500 RPM S PEDESTAL



Curves show performance with clear water @ 85° F. If specific gravity is other than 1.0, BHP must be corrected.  
See Page 17 for Variable Speed Curves