

MODEL 631 - 632

ENGINEERING DATA

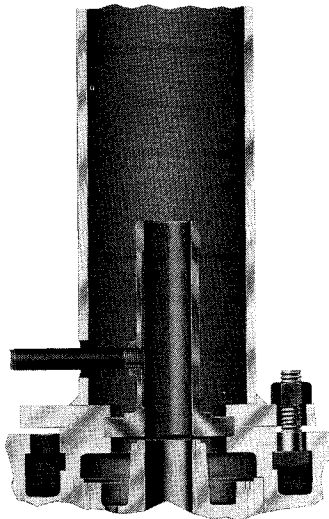
PUMP AND LINE BEARINGS

SECTION 630 PAGE 71
DATED JANUARY 1982

| BEARING TYPE | PUMP CONSTRUCTION | BEARING HOUSING MATERIAL | BUSHING MATERIAL | | |
|---|-------------------|--------------------------|---------------------|-------------------|----------------------------|
| | | | IRON | BRONZE | CUTLESS RUBBER |
| STANDARD BEARING FOR PIT DEPTHS UNDER 10' | BRONZE FITTED | BRONZE | NO | NO | REFER TO OPTIONAL BEARINGS |
| | ALL BRONZE | BRONZE | BUSHINGS REQUIRED | BUSHINGS REQUIRED | |
| | ALL IRON | IRON | | | |
| RELIEF BEARING STANDARD FOR PIT DEPTHS 10' AND DEEPER | BRONZE FITTED | STEEL | | X | |
| | ALL BRONZE | BRONZE | | X | |
| | ALL IRON | STEEL | X | | |
| STANDARD LUBRICATION | | | GREASE | | PUMPED LIQUID |
| OPTIONAL LUBRICATION | | | WATER FLUSH-OIL (1) | | WATER - FLUSH (2) |

(1) OIL - FOR LINESHAFT BEARINGS ONLY.
(2) WATER FLUSH- RELIEF HOUSING ONLY.

STANDARD



STANDARD

All 630 Series pumps (except for 10 foot and deeper settings at 1750 R.P.M.) are furnished with bronze sleeve type bearing unless an optional style is specified and is also the standard lineshaft bearing for all

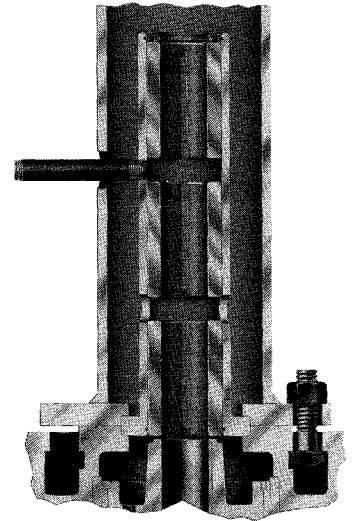
settings. The bearing is mounted directly above the impeller and receives lubrication from individual external grease lines. This bearing is also available in cast iron or ni-resist material. The majority of all vertical wet pit pump applications can be handled by this standard bearing. However, when pumping conditions are severe, abrasives are present in the liquid or the liquid temperature exceeds 140°F., one of the following optional bearings should be selected.

RELIEF

A RELIEF-TYPE PUMP BEARING WILL BE SUPPLIED AS STANDARD FOR 10 FOOT AND DEEPER SETTINGS AT 1750 R.P.M., and is otherwise optionally available. The relief-type bearing housing has three metal bushings inserted into the housing. When in operation, the liquid being pumped goes through the lower portion of the bearing under pressure and is vented to the sump through the annular ring. This venting action permits only a small amount of liquid, with a fraction of the abrasive content, to enter into the top half of the bearing housing; as a result, the upper portion which is not subject to pumping pressure wears at a much slower rate. The life expectancy of this optional design will be two to four times longer than the standard bearing. Since this relief-type

Two important parts in any sump pump construction are the pump and line bearings as they are immersed in the liquid. The line bearings frequently run wet or dry depending on the varying liquid level in the sump. A complete line of bearings for all types of service conditions is available. Line bearings are provided as standard on 6'-2" pump settings and for each additional 5' setting thereafter.

RELIEF



bearing housing is also used with the other bushing materials (Iron, Bronze, or Cutless Rubber) the same venting principle applies to these bushing materials. All three bushings can be constructed of different materials, therefore opening a wide range of applications. The STANDARD bearing is normally provided with this option on all lineshaft bearings; however, the IRON, BRONZE, or CUTLESS RUBBER options can also be provided for use as relief-type lineshaft bearings. The liquid being pumped provides the required lubrication for the lower bushing. An external grease line lubricates the upper bushings when bronze or iron bushings are provided. When other bushing materials are specified, they are water-flush lubricated from either the pump discharge pipe or a secondary city water supply, depending upon the application.

MODEL 631 - 632

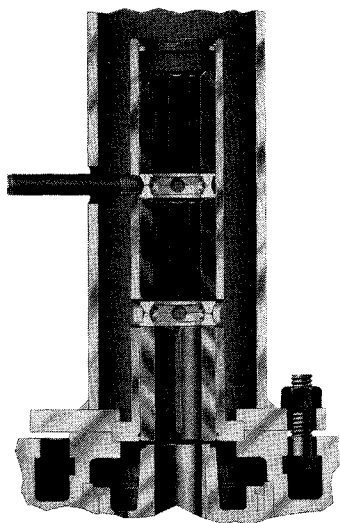
ENGINEERING DATA

PUMP AND LINE BEARINGS

| BEARING TYPE | PUMP CONSTRUCTION | BEARING HOUSING MATERIAL | BUSHING MATERIAL | | |
|-------------------------|-------------------|--------------------------|---------------------|--------|-------------------|
| | | | IRON | BRONZE | CUTLESS RUBBER |
| OPTIONAL RELIEF BEARING | BRONZE FITTED | STEEL | | X | X |
| | ALL BRONZE | BRONZE | | X | X |
| | ALL IRON | STEEL | X | | X |
| OPTIONAL SPOOL BEARING | BRONZE FITTED | STEEL | | X | X |
| | ALL IRON | STEEL | X | | X |
| STANDARD LUBRICATION | | | GREASE | | PUMPED LIQUID |
| OPTIONAL LUBRICATION | | | WATER FLUSH OIL (1) | | WATER - FLUSH (2) |

(1) OIL - FOR LINESHAFT BEARINGS ONLY.
 (2) WATER FLUSH - RELIEF HOUSING ONLY.

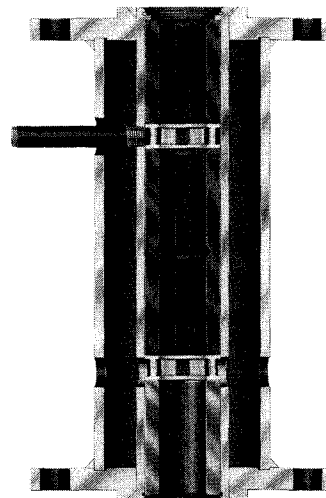
CUTLESS RUBBER



CUTLESS RUBBER (OPTIONAL BEARING)

This bearing consists of a carbon steel relief-type bearing housing and two cutless rubber bushings. A third bushing located at bottom of bearing housing is made of metal. This metal is bronze or iron, depending upon the pump construction material. This metal bushing carries most of the shaft bearing loads. As wear occurs, the bearing loads are gradually distributed among the remaining cutless rubber bushings, thus increasing total bearing life. Lubrication can be supplied by the liquid being pumped when used as a pump bearing. When used as an optional lineshaft bearing, water flush lubrication is provided. The water flush lines may be connected to the pump discharge pipe or a secondary city water supply, depending upon the application. Grease lubrication is not recommended. Cutless rubber bearings may be used in conjunction with STANDARD lineshaft bearings which are also capable of water flush lubrication. This option is recommended for applications where abrasives are held in suspension in the liquid pumped. The excellent abrasive-resistant characteristics of rubber give this bearing several times the wear life of a standard bearing. Stainless steel shafting is recommended. **DO NOT APPLY THIS OPTION WHEN THE LIQUID TEMPERATURE EXCEEDS 140°F.; IN SUCH CASES, SELECT ONE OF THE OTHER BEARING OPTIONS.**

SPOOL



SPOOL (OPTIONAL BEARING)

This bearing can be supplied as an optional bearing for any pump setting. It is intended for use as a rigid pump bearing for unusually rugged pump applications. It retains the lubrication characteristics of the relief bearing previously discussed. The housing can be equipped with different bushing materials (Iron, Bronze, or Cutless Rubber) depending upon the application. The bearing housing is of rigid "double-wall" metal construction and is flanged at each end. The outer pipe acts as a rigid support while the inner pipe serves as a bushing carrier. This construction allows the bearing housing to be bolted to the support pipe at the upper flange and to the pump casing at the lower flange, thus making this housing a rigid and integral part of the pump support piping system. Undesirable bearing housing deflections under high shaft loads are eliminated by this rigid construction thus providing positive pump shaft guidance. The additional length of this bearing provides increased bearing area for rugged applications. A lubrication line attached to the bearing housing may be connected to the pump discharge pipe or a secondary city water supply, or grease lubricated, depending upon the application. This bearing may be used in conjunction with STANDARD lineshaft bearings which are also capable of water flush lubrication.

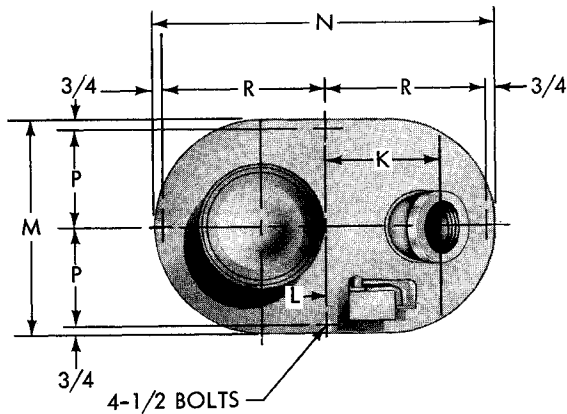
AURORA MODEL 631 PUMP ON OVAL PLATE

SECTION **630** PAGE **251**

DATED **NOVEMBER 1985**

SUPERSEDES PAGE 251

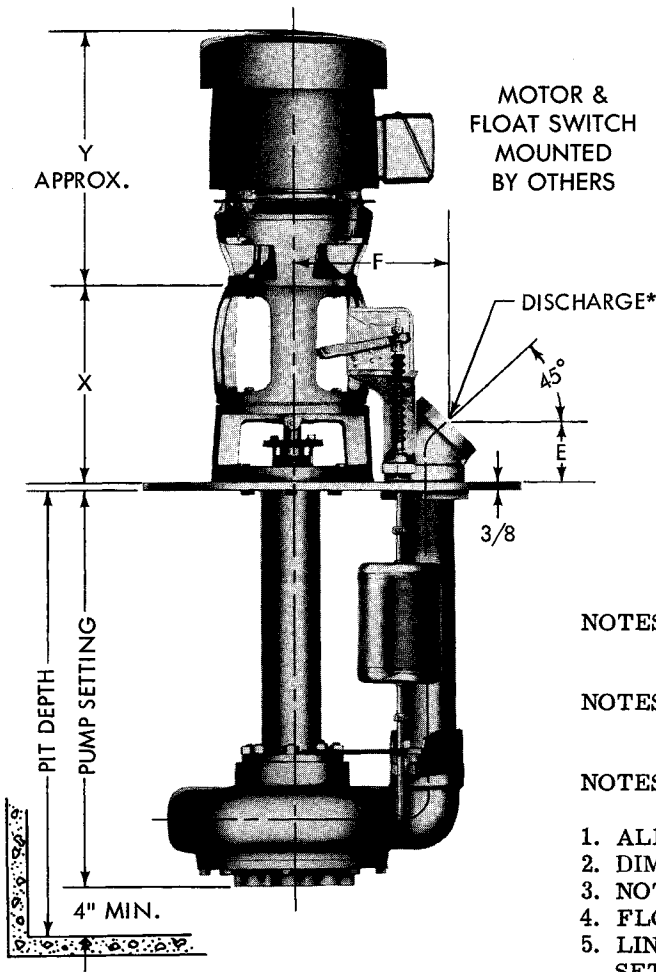
DATED APRIL 1972



| PUMP SIZE | | | E | F | K | OVAL SIZE |
|-----------|---------|-----------|-------|--------|--------|-----------|
| DISCH | SUCTION | CASE BORE | | | | |
| 4 | 4 | 7 | 4-1/2 | 11-7/8 | 9-3/8 | **20 x 24 |
| 4 | 4 | 9 | 4-1/2 | 11-7/8 | 9-3/8 | **20 x 24 |
| 4 | 4 | 12 | 4-1/2 | 11-7/8 | 8-7/8 | 22 x 28 |
| 6 | 6 | 12 | 6 | 13-1/2 | 10-1/2 | 22 x 28 |

| OVAL | L | M | N | P | R |
|-----------|-------|----|----|--------|--------|
| **20 x 24 | 2-1/2 | 20 | 24 | 9-1/4 | 11-1/4 |
| 22 x 28 | 3 | 22 | 28 | 10-1/4 | 13-1/4 |

| FRAME | X | Y |
|--------|--------|----|
| 143HP | 13-7/8 | 11 |
| 145HP | 13-7/8 | 12 |
| 182HP | 13-7/8 | 13 |
| 184HP | 13-7/8 | 14 |
| 213HP | 13-7/8 | 16 |
| 215HP | 13-7/8 | 17 |
| 254HP | 13-7/8 | 19 |
| 256HP | 13-7/8 | 21 |
| 284HPH | 15-5/8 | 21 |
| 286HPH | 15-5/8 | 23 |
| 324HP | 15-5/8 | 24 |
| 326HP | 15-5/8 | 25 |



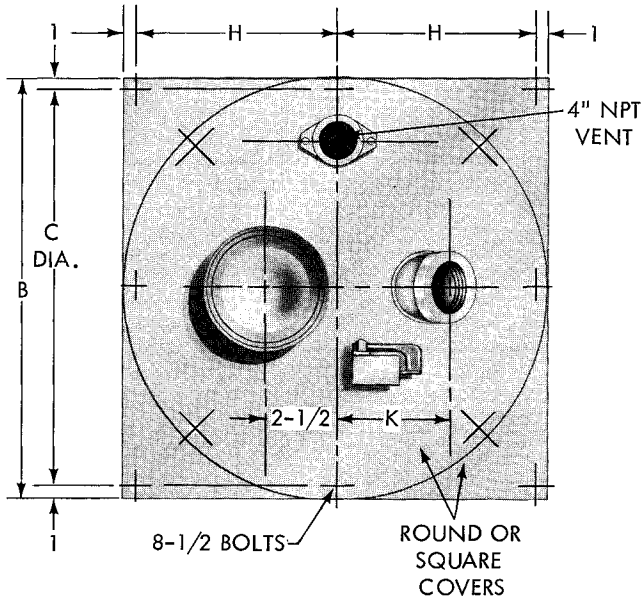
NOTES: * STD DISCHARGE ELBOW IS THREADED (FLANGED ELBOW CONNECTIONS AVAILABLE).

NOTES: ** 20 x 24 OVAL AVAILABLE ONLY WITH 4 x 4 x 7 AND 4 x 4 x 9 PUMPS.

NOTES:

1. ALL DIMENSIONS IN INCHES.
2. DIMENSIONS MAY VARY $\pm 3/8$ ".
3. NOT FOR CONSTRUCTION PURPOSES UNLESS CERTIFIED.
4. FLOAT SWITCH FURNISHED ONLY WHEN SPECIFIED.
5. LINE SHAFT BEARING FURNISHED ON 6' 2" PUMP SETTINGS AND LONGER.
6. 22 x 28 OVAL IS STD FOR ALL PUMPS WHEN USED ON BASIN COVERS OF 52" DIA. AND LARGER.
7. 22 x 28 OVALS ARE ALSO AVAILABLE WHERE 20 x 24 OVALS ARE SHOWN.

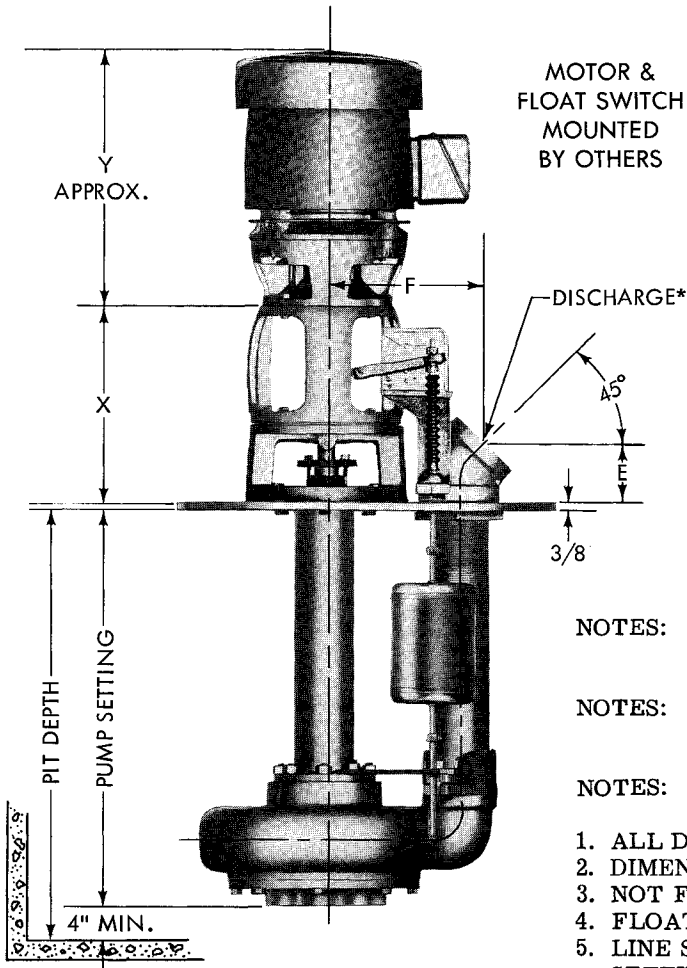
AURORA MODEL 631 PUMP ON SIMPLEX PLATE



| PUMP SIZE | | | E | F | K |
|-----------|---------|-----------|-------|--------|-------|
| DISCH | SUCTION | CASE BORE | | | |
| 4 | 4 | 7 | 4-1/2 | 11-7/8 | 9-3/8 |
| 4 | 4 | 9 | 4-1/2 | 11-7/8 | 9-3/8 |
| 4 | 4 | 12 | 4-1/2 | 11-7/8 | 9-3/8 |
| 6 | 6 | 12 | 6 | 13-1/2 | 11 |

| FRAME | X | Y |
|--------|--------|----|
| 143HP | 13-7/8 | 11 |
| 145HP | 13-7/8 | 12 |
| 182HP | 13-7/8 | 13 |
| 184HP | 13-7/8 | 14 |
| 213HP | 13-7/8 | 16 |
| 215HP | 13-7/8 | 17 |
| 254HP | 13-7/8 | 19 |
| 256HP | 13-7/8 | 21 |
| 284HPH | 15-5/8 | 21 |
| 286HPH | 15-5/8 | 23 |
| 324HP | 15-5/8 | 24 |
| 326HP | 15-5/8 | 25 |

| COVER SIZE B | C | H |
|--------------|----|----|
| 24 | 22 | 11 |
| 28 | 26 | 13 |



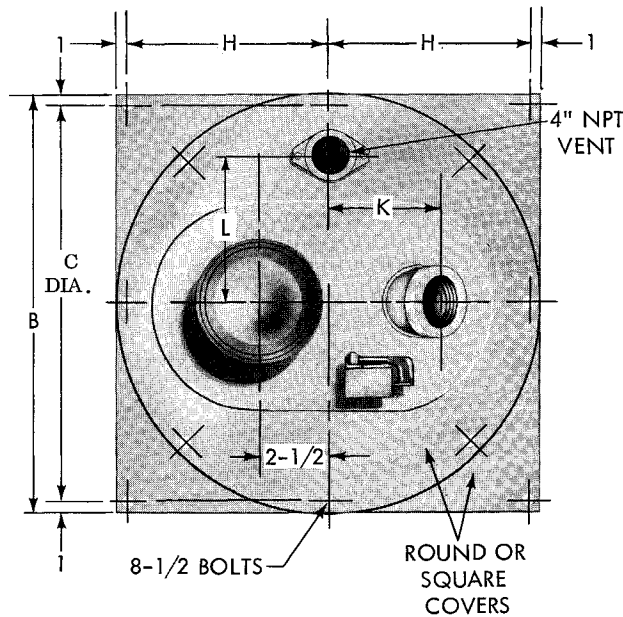
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NOTES: ** 4 x 4 x 12 PUMP NOT AVAILABLE ON 28" BASIN COVERS.

NOTES:

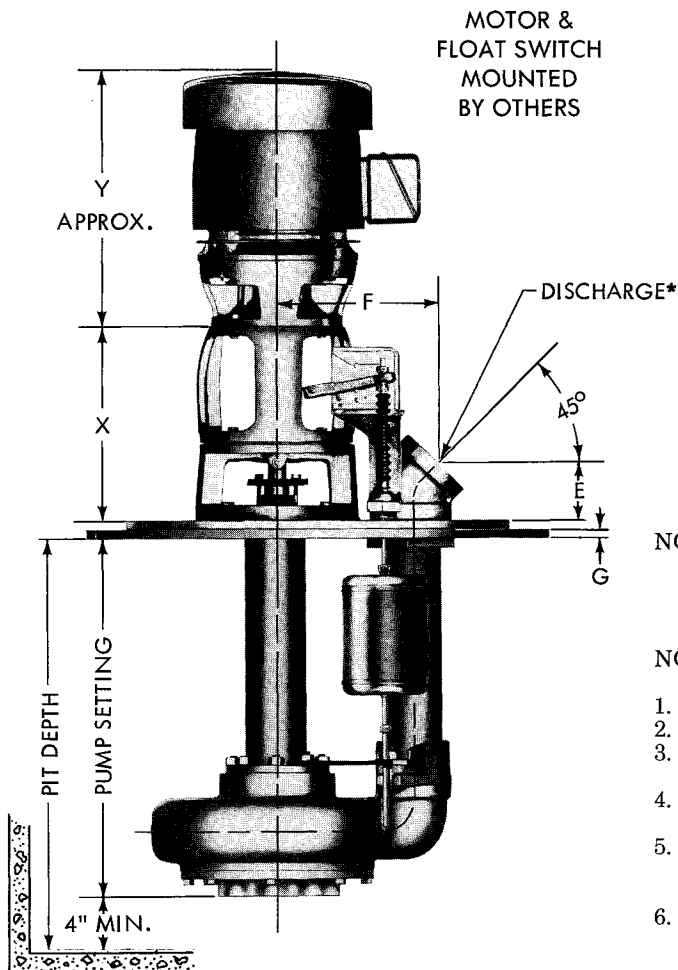
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3. NOT FOR CONSTRUCTION PURPOSES UNLESS CERTIFIED.
4. FLOAT SWITCH FURNISHED ONLY WHEN SPECIFIED.
5. LINE SHAFT BEARING FURNISHED ON 6' 2" PUMP SETTINGS AND LONGER.

AURORA MODEL 631 PUMP ON SIMPLEX PLATE WITH OVAL



| PUMP SIZE | | | E | F | K | OVAL SIZE |
|-----------|---------|-----------|-------|--------|-------|-----------|
| DISCH | SUCTION | CASE BASE | | | | |
| 4 | 4 | 7 | 4-1/2 | 11-7/8 | 9-3/8 | 20 x 24 |
| 4 | 4 | 9 | 4-1/2 | 11-7/8 | 9-3/8 | 20 x 24 |
| 4 | 4 | 12 | 4-1/2 | 11-7/8 | 9-3/8 | 22 x 28 |
| 6 | 6 | 12 | 6 | 13-1/2 | 11 | 22 x 28 |

| COVER SIZE B | C | H | G | L |
|--------------|----|--------|-------|--------|
| | | | STEEL | |
| 34 | 32 | 16 | 3/8 | 12-3/4 |
| 40 | 38 | 19 | 3/8 | 14-1/2 |
| 46 | 44 | 22 | 1/2 | 16 |
| 53 | 51 | 25-1/2 | 1/2 | 17-3/4 |
| 60 | 58 | 29 | 5/8 | 19-1/2 |
| 66 | 64 | 32 | 5/8 | 21 |
| 78 | 76 | 38 | 5/8 | 24 |

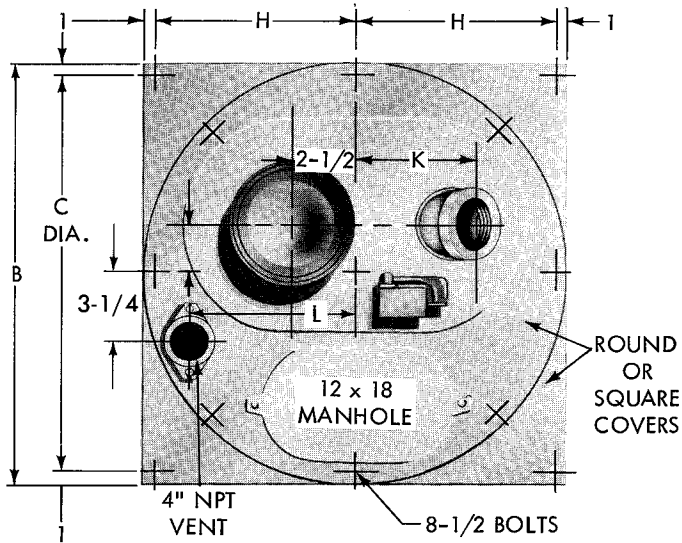


NOTES: * STD DISCHARGE ELBOW IS THREADED (FLANGED ELBOW CONNECTIONS AVAILABLE)

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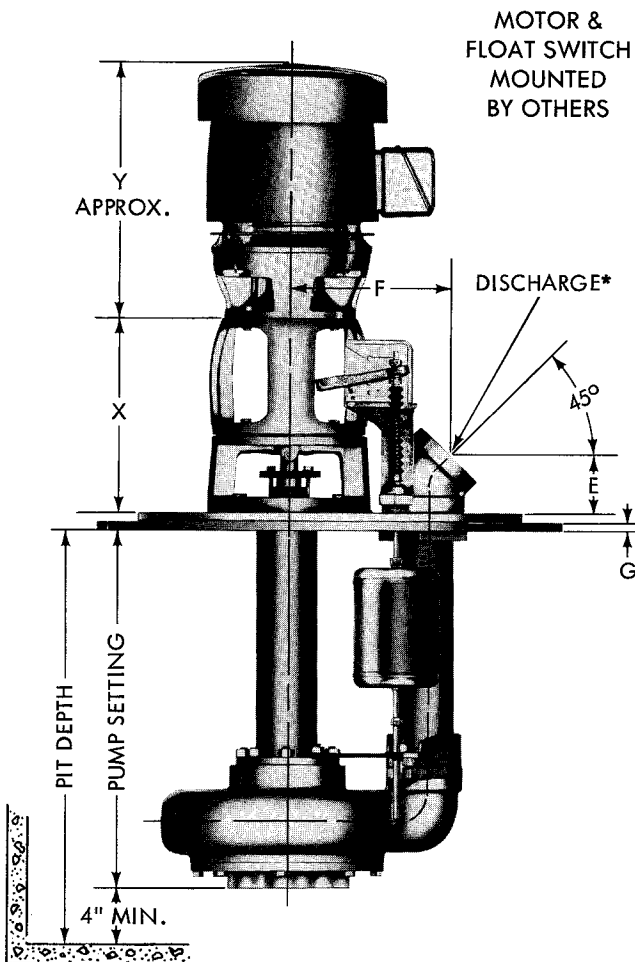
| FRAME | X | Y |
|--------|--------|----|
| 143HP | 13-7/8 | 11 |
| 145HP | 13-7/8 | 12 |
| 182HP | 13-7/8 | 13 |
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| 324HP | 15-5/8 | 24 |
| 326HP | 15-5/8 | 25 |



| PUMP SIZE | | | E | F | K | OVAL SIZE |
|-----------|---------|-----------|-------|--------|-------|-----------|
| DISCH | SUCTION | CASE BORE | | | | |
| 4 | 4 | 7 | 4-1/2 | 11-7/8 | 9-3/8 | 20 x 24 |
| 4 | 4 | 9 | 4-1/2 | 11-7/8 | 9-3/8 | 20 x 24 |
| 4 | 4 | 12 | 4-1/2 | 11-7/8 | 9-3/8 | 22 x 28 |
| 6 | 6 | 12 | 6 | 13-1/2 | 11 | 22 x 28 |

| FRAME | X | Y |
|--------|--------|----|
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| 254HP | 13-7/8 | 19 |
| 256HP | 13-7/8 | 21 |
| 284HPH | 15-5/8 | 21 |
| 286HPH | 15-5/8 | 23 |
| 324HP | 15-5/8 | 24 |
| 326HP | 15-5/8 | 25 |

| COVER SIZE B | C | H | G | L |
|--------------|----|--------|-------|--------|
| | | | STEEL | |
| 40 | 38 | 19 | 3/8 | 14-1/2 |
| 46 | 44 | 22 | 1/2 | 17 |
| 53 | 51 | 25-1/2 | 1/2 | 18-3/4 |
| 60 | 58 | 29 | 5/8 | 20-1/2 |
| 66 | 64 | 32 | 5/8 | 22 |
| 78 | 76 | 38 | 5/8 | 25 |



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