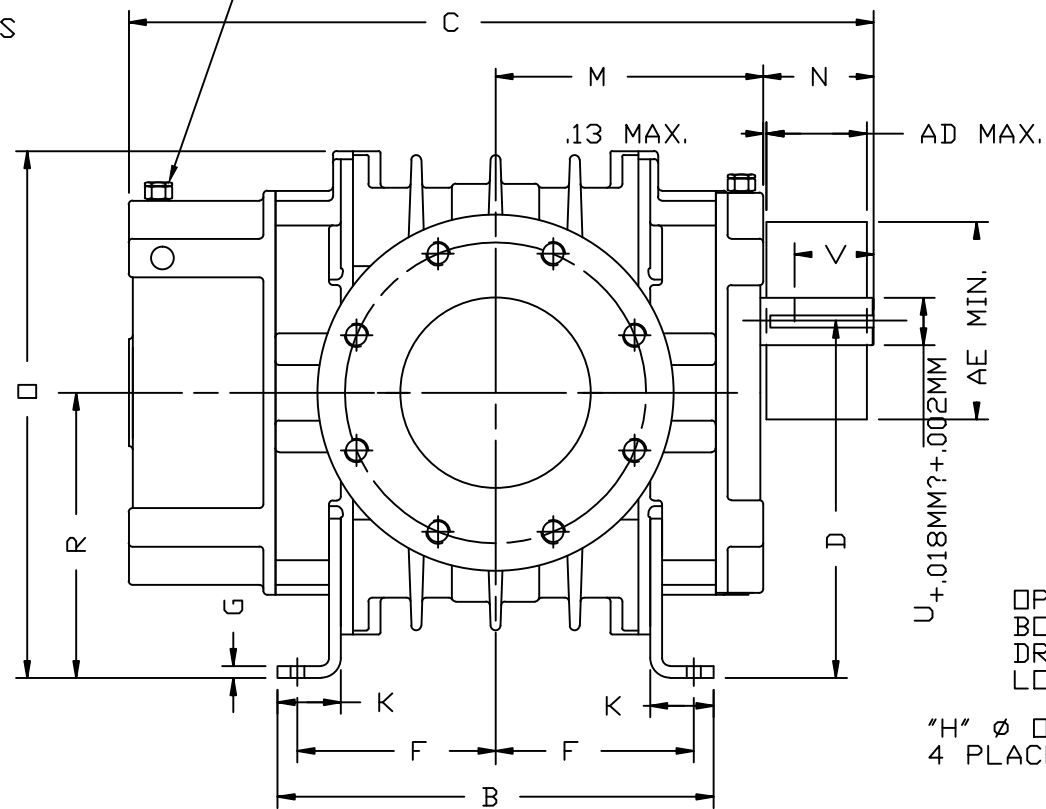


OIL FILL/ BREATHER  
1/2 NPT  
BOTH ENDS



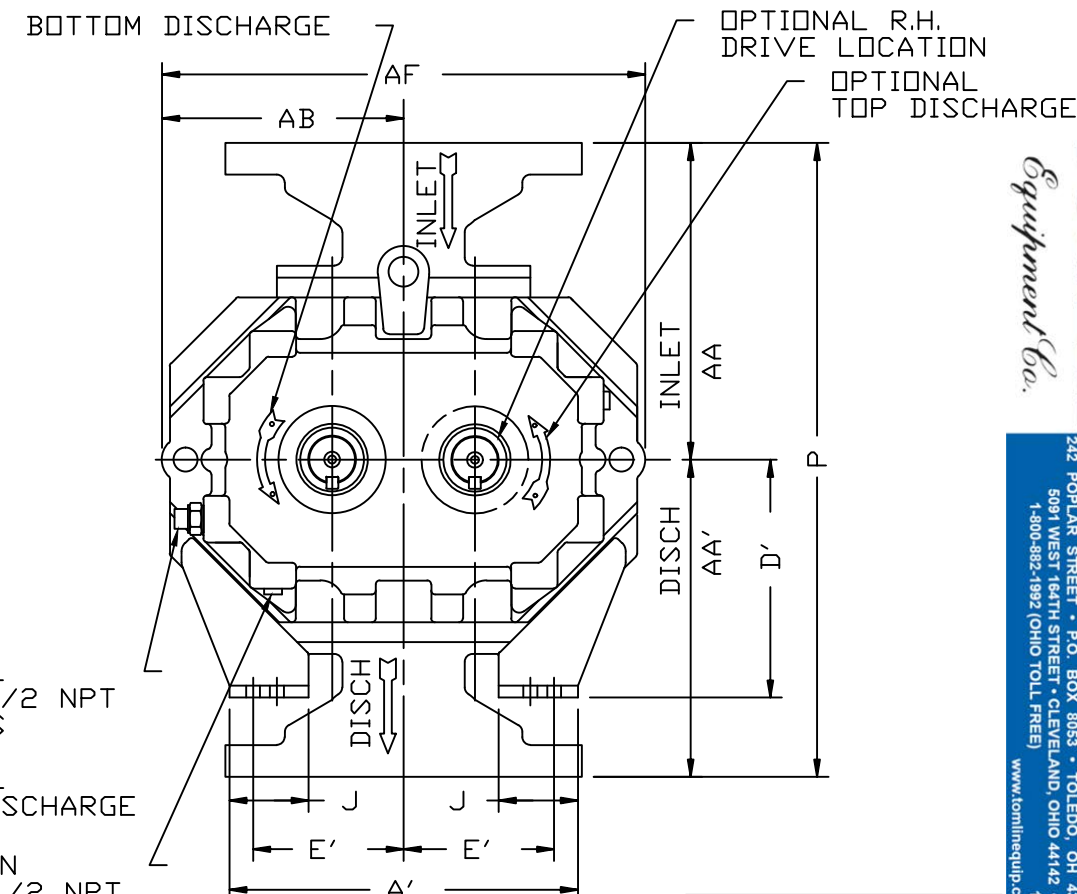
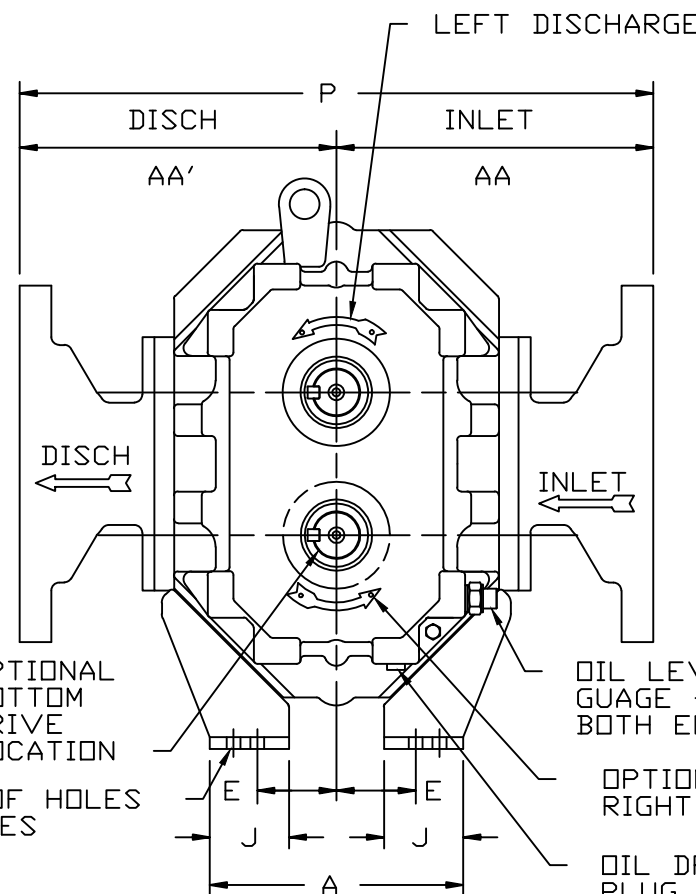
INLET & DISCHARGE FLANGES TO MATE FLUSH & SQUARE WITH FLAT FACE FLANGE ONLY. USE FULL FACE GASKETS.

V-BELT DRIVEN UNITS: MOTOR TO BE LOCATED ON INLET SIDE OF BLOWER.

AD - MAXIMUM SHEAVE WIDTH  
(SEE OVERHUNG LOAD LIMIT K-24102)

AE - MINIMUM SHEAVE DIAMETER  
(SEE OVERHUNG LOAD LIMIT K-24102)

ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED  
METRIC DIMENSIONAL #90780021



| ANSI FLANGE DIMENSIONS |       |       |       |    |        |      |
|------------------------|-------|-------|-------|----|--------|------|
|                        | FA    | FB    | FC    | FD | FE     | FG   |
| 6 FLG                  | 6.00  | 9.50  | 11.25 | 8  | .75-10 | 1.00 |
| 8 FLG                  | 8.00  | 11.75 | 13.50 | 8  | .75-10 | 1.13 |
| 10 FLG                 | 10.00 | 14.25 | 16.00 | 12 | .88-9  | 1.19 |

FA - FLANGE OPENING  
FB - FLANGE BOLT CIRCLE  
FC - FLANGE D.D.  
FD - No. TAPPED HOLES  
FE - SIZE OF TAPPED HOLES  
FG - DEPTH OF TAP

|                 |        | DRIVE LOCATION |     |
|-----------------|--------|----------------|-----|
|                 |        | LH             | RH  |
| DISCH. LOCATION | TOP    | CW             | CCW |
|                 | BOTTOM | CCW            | CW  |

UNIT IS BUILT TO CUSTOMERS SPECIFIED ORIENTATION

| MODEL | A    | A'    | B     | C     | D    | D'   | E    | E'   | F     | G   | H  | J    | K    | M     | N    | O     | P     | R     | U    | V    | KEYWAY   | INLET | DISCH | AB    | AD   | AE   | AF    | FLANGE SIZE | APPROX WEIGHT |
|-------|------|-------|-------|-------|------|------|------|------|-------|-----|----|------|------|-------|------|-------|-------|-------|------|------|----------|-------|-------|-------|------|------|-------|-------------|---------------|
| 409   | 8.00 | 11.00 | 13.77 | 23.50 | 1.25 | 7.50 | 2.50 | 4.75 | 6.26  | .38 | 44 | 2.50 | 2.00 | 8.44  | 3.50 | 16.63 | 20.00 | 9.00  | 35.0 | 63.5 | 10.0X5.0 | 10.00 | 10.00 | 7.63  | 3.06 | 7.10 | 15.25 | 6"          | 356 LBS       |
| 413   | "    | "     | 17.78 | 27.50 | "    | "    | "    | "    | 8.26  | "   | "  | "    | "    | 10.44 | "    | "     | 21.25 | "     | "    | "    | "        | 10.63 | 10.63 | "     | "    | "    | "     | "           | 428 LBS       |
| 416   | "    | "     | 21.03 | 30.75 | "    | "    | "    | "    | 9.88  | "   | "  | "    | "    | 12.06 | "    | "     | 21.50 | "     | "    | "    | "        | 10.75 | 10.75 | "     | "    | "    | "     | 8"          | 520 LBS       |
| 617   | 9.00 | 15.00 | 22.11 | 33.56 | 5.00 | 9.00 | 3.50 | 6.50 | 0.43  | .38 | 56 | 2.50 | 2.00 | 13.08 | 4.33 | 22.00 | 24.75 | 12.00 | 50.0 | 76.2 | 14.0X5.5 | 13.38 | 13.38 | 10.00 | 4.44 | 8.50 | 20.00 | 8"          | 836 LBS       |
| 621   | "    | "     | 27.73 | 37.73 | "    | "    | "    | "    | 12.52 | "   | "  | "    | "    | 15.17 | "    | "     | 25.88 | "     | "    | "    | "        | 13.44 | 13.44 | "     | "    | "    | "     | 10"         | 996 LBS       |

|  |   |                                 |     |               |       |               |   |  |                 |          |        |     |
|--|---|---------------------------------|-----|---------------|-------|---------------|---|--|-----------------|----------|--------|-----|
| CERTIFIED CORRECT FOR<br>CUSTOMER ORDER No. _____<br>ROOTS ORDER No. _____<br>DATE _____ | △ | UPDATE TO HOWDEN, TRI-RAM BRAND | MPM | 16849V        | MNM   | BELTS         | <b>TRI-RAM™</b><br>TRI-LOBE BLOWERS 409, 413, 416, 617, & 621 |  | RDR             | 90779021 | REV. C |     |
|  | △ | REV DIMS AA AND AA'             |     | 11471H        |       | DRIVE SHEAVE  |   |  | DR              |          | CHKD   | APP |
|  | △ | ORACLE CONVERSION               |     |               |       | DRIVEN SHEAVE |   |  |                 |          |        |     |
|  |   | REVISIONS                       | BY  | CHANGE NOTICE | CHKD. | APP.          |   |  | CENTER DISTANCE |          |        |     |

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