

# 高壓半密型WPI泵浦用馬達 (空心軸)

**MODEL : AMRKNH**

HIGH THRUST HOLLOWSHAFT PUMP MOTORS  
MEDIUM VOLTAGE SQUIRREL CAGE  
FRAME SIZE (SGV) 5009 ~ 5810



|                    |                        | <b>SPECIFICATION TABLE</b>   | MODEL         |
|--------------------|------------------------|--|---------------|
|                    |                        | <b>HIGH THRUST HOLLOWSHAFT PUMP MOTORS<br/>MEDIUM VOLTAGE SQUIRREL CAGE</b>  | <b>AMRKNH</b> |
| ITEM               |                        | STANDARD SPECIFICATION   |               |
| <b>RATING</b>      | KIND OF MOTOR          | SQUIRREL-CAGE INDUCTION MOTOR (SCIM),VHS, ODP/WPI  |               |
|                    | DESIGN STANDARD        | NEMA MG-1, PREMIUM EFFICIENCY  |               |
|                    | VOLTAGE                | 2300 / 4000V, 4160V  |               |
|                    | FREQUENCY              | 60HZ   |               |
|                    | OUTPUT RANGE           | 150 ~ 1000HP   |               |
|                    | R.P.M. (SYN.)          | 1800 ~ 900R.P.M. (4 ~ 8 POLE)  |               |
|                    | TIME DUTY              | CONTINUOUS S.F. 1.15 OR S.F. 1.0 ( S1, MCR )   |               |
|                    | FRAME SIZE (SGV)       | 5009 ~ 5810  |               |
|                    | PROTECTION ENCLOSURE   | OPEN, DRIP PROOF (IP23), NEMA WEATHER-PROTECTED TYPE I(WPI)  |               |
|                    | COOLING METHOD         | SELF VENTILATED, INTERIOR COOLING (IC 01)  |               |
|                    | MOUNTING               | FLANGE MOUNTING (IM3011)   |               |
| HIGH THRUST LOAD   | AS DWG NO. 3A057H905E  |  |               |
| <b>APPLICATION</b> | POWER CONDITION        | VOLTAGE : $\pm 10\%$ , FREQUENCY $\pm 5\%$ , AND 10% MAX. OF COMBINED<br>VOLTAGE AND FREQUENCY, BUT FREQUENCY VARIATION DOES NOT<br>EXCEED $\pm 5\%$   |               |
|                    | DESIGNED PRIMARILY     | FOR DEEP WELL TURBINE PUMP   |               |
|                    | ENVIRONMENT CONDITIONS | PLACE : SHADOW, NON-HAZARDOUS<br>AMBIENT TEMPERATURE : -15 ~ 40°C<br>RELATIVE HUMIDITY : LESS THAN 80% RH (NON-CONDENSATION)<br>ALTITUDE : LESS THAN 3,300 ft                                |               |
|                    | DRIVE METHOD           | DIRECT COUPLING  |               |
|                    | DIRECTION OF ROTATION  | COUNTER-CLOCK-WISE FACING THE COUPLING END   |               |
|                    | METHOD OF STARTING     | FULL VOLTAGE DIRECT-ON-LINE  |               |
| <b>PERFORMANCE</b> | TEST PROCEDURE         | IEEE-112 METHOD B AND FULL VOLTAGE MEASUREMENT STARTING<br>PERFORMANCE FOR MOTORS 300HP AND UNDER.<br>IEEE-112 METHOD E-F AND REDUCED VOLTAGE MEASUREMENT STARTING<br>PERFORMANCE FOR OTHERS |               |
|                    | TYPICAL PERFORMANCE    | AS DWG NO. 3A057H905E  |               |
|                    | TEMPERATURE RISE       | NOT TO EXCEED 105°C FOR S.F. 1.15 OR 80°C FOR S.F. 1.0 BY RESISTANCE<br>METHOD   |               |
|                    | OVER SPEED             | 200HP AND SMALLER: 125% SYN. R.P.M. FOR TWO MINUTES (4P);<br>150% SYN. R.P.M. FOR TWO MINUTES (6P & 8P),<br>201HP AND LARGER: 125% SYN. R.P.M. FOR TWO MINUTES<br>(4P AND SLOWER)            |               |
|                    | OVER TORQUE            | 160% RATED TORQUE FOR 15 SEC   |               |
| ACCESSORY          |                        | STEADY BUSH AS DWG NO. 4B049R280E  |               |

# PERFORMANCE DATA

MODEL  
**AMRKNH**

## HIGH THRUST HOLLOWSHAFT PUMP MOTORS MEDIUM VOLTAGE SQUIRREL CAGE



DP, NEMA, CLASS F, 40°C AMBIENT,  
CONTINUOUS DUTY, 1.15 S.F. 2300/4000V, 4160V 60HZ

### TYPICAL PERFORMANCE

(2300V)

| HP   | FULL<br>LOAD<br>RPM | FRAME<br>SIZE<br>(SGV) | EFFICIENCY (%) |      |                     |                     |                   |                  | POWER FACTOR     |                   |                      | CURRENT               |                         |                        | TORQUE |       |      | ROTOR<br>WR <sup>2</sup><br>lb-ft <sup>2</sup> | DOWN<br>THRUST<br>LBS | APPROX.<br>ROTOR<br>WEIGHT<br>LBS | APPROX.<br>WEIGHT<br>LBS | REED<br>FREQ.<br>HZ |
|------|---------------------|------------------------|----------------|------|---------------------|---------------------|-------------------|------------------|------------------|-------------------|----------------------|-----------------------|-------------------------|------------------------|--------|-------|------|--|-----------------------|-----------------------------------|--------------------------|---------------------|
|      |                     |                        | FULL<br>LOAD   |      | 3/4<br>LOAD<br>NOM. | 1/2<br>LOAD<br>NOM. | FULL<br>LOAD<br>% | 3/4<br>LOAD<br>% | 1/2<br>LOAD<br>% | FULL<br>LOAD<br>A | LOCKED<br>ROTOR<br>A | FULL<br>LOAD<br>lb-ft | LOCKED<br>ROTOR<br>%FLT | BREAK-<br>DOWN<br>%FLT |        |       |      |  |                       |                                   |                          |                     |
|      |                     |                        | NOM.           | MIN. |                     |                     |                   |                  |                  |                   |                      |                       |                         |                        |        |       |      |  |                       |                                   |                          |                     |
| 200  | 890                 | 5009                   | 93.6           | 92.4 | 93.4                | 92.5                | 73.0              | 65.3             | 52.2             | 55                | 316                  | 1181                  | 110                     | 200                    | 182    | 39500 | 1200 | 4110   | 29                    |                                   |                          |                     |
| 250  | 890                 | 5009                   | 93.6           | 92.4 | 93.4                | 92.5                | 75.3              | 68.9             | 56.7             | 66                | 395                  | 1476                  | 100                     | 190                    | 234    | 39500 | 1390 | 4470   | 28                    |                                   |                          |                     |
| 300  | 1186                | 5009                   | 95.0           | 94.1 | 94.4                | 93.5                | 77.6              | 73.2             | 62.7             | 76                | 474                  | 1330                  | 110                     | 190                    | 143    | 33800 | 1070 | 3910   | 30                    |                                   |                          |                     |
|      | 890                 | 5808                   | 93.6           | 92.4 | 93.4                | 92.5                | 77.0              | 72.4             | 61.8             | 78                | 474                  | 1772                  | 90                      | 190                    | 464    | 39200 | 1830 | 5390   | 35                    |                                   |                          |                     |
| 350  | 1783                | 5009                   | 95.0           | 94.1 | 94.6                | 93.4                | 86.7              | 83.7             | 76.2             | 80                | 554                  | 1031                  | 100                     | 200                    | 107    | 30900 | 920  | 3630   | 36                    |                                   |                          |                     |
|      | 1187                | 5009                   | 95.0           | 94.1 | 94.7                | 94.0                | 75.9              | 73.2             | 62.8             | 91                | 554                  | 1549                  | 110                     | 190                    | 153    | 33800 | 1120 | 4010   | 29                    |                                   |                          |                     |
|      | 892                 | 5808                   | 93.6           | 92.4 | 93.4                | 92.5                | 78.0              | 72.3             | 60.7             | 90                | 554                  | 2062                  | 90                      | 190                    | 505    | 39200 | 1940 | 5640   | 34                    |                                   |                          |                     |
| 400  | 1782                | 5009                   | 95.0           | 94.1 | 94.7                | 93.5                | 86.8              | 84.0             | 76.7             | 91                | 633                  | 1179                  | 100                     | 200                    | 114    | 30900 | 950  | 3710   | 36                    |                                   |                          |                     |
|      | 1187                | 5009                   | 95.0           | 94.1 | 94.7                | 94.0                | 75.6              | 69.4             | 58.0             | 104               | 633                  | 1771                  | 120                     | 190                    | 160    | 33800 | 1150 | 4080   | 29                    |                                   |                          |                     |
|      | 892                 | 5810                   | 93.6           | 92.4 | 93.4                | 92.5                | 78.0              | 74.3             | 63.8             | 103               | 633                  | 2357                  | 80                      | 190                    | 556    | 38600 | 2220 | 6020   | 27                    |                                   |                          |                     |
| 450  | 1782                | 5009                   | 95.0           | 94.1 | 94.7                | 93.5                | 87.1              | 84.4             | 83.4             | 102               | 712                  | 1327                  | 100                     | 200                    | 124    | 30900 | 1000 | 3810   | 35                    |                                   |                          |                     |
|      | 1186                | 5806                   | 95.0           | 94.1 | 94.9                | 94.2                | 80.2              | 75.4             | 64.7             | 111               | 712                  | 1994                  | 90                      | 190                    | 254    | 33600 | 1340 | 4510   | 46                    |                                   |                          |                     |
|      | 892                 | 5810                   | 93.6           | 92.4 | 93.4                | 92.5                | 78.0              | 72.6             | 61.2             | 115               | 712                  | 2652                  | 90                      | 190                    | 608    | 38600 | 2290 | 6270   | 27                    |                                   |                          |                     |
| 500  | 1782                | 5009                   | 95.0           | 94.1 | 94.7                | 93.6                | 87.6              | 85.2             | 78.7             | 113               | 791                  | 1474                  | 100                     | 200                    | 142    | 30900 | 1080 | 3980   | 35                    |                                   |                          |                     |
|      | 1186                | 5806                   | 95.0           | 94.1 | 94.0                | 94.1                | 80.2              | 75.7             | 65.3             | 123               | 791                  | 2215                  | 80                      | 190                    | 262    | 33600 | 1420 | 4610   | 45                    |                                   |                          |                     |
|      | 892                 | 5810                   | 93.6           | 92.4 | 93.4                | 92.5                | 78.4              | 73.2             | 62.0             | 128               | 791                  | 2946                  | 90                      | 190                    | 659    | 38600 | 2420 | 6510   | 26                    |                                   |                          |                     |
| 600  | 1784                | 5808                   | 95.4           | 94.5 | 95.2                | 94.3                | 86.0              | 83.7             | 74.9             | 137               | 949                  | 1767                  | 80                      | 200                    | 237    | 30600 | 1410 | 5240   | 36                    |                                   |                          |                     |
|      | 1186                | 5808                   | 95.0           | 94.1 | 94.8                | 94.0                | 80.3              | 75.6             | 65.2             | 147               | 949                  | 2658                  | 90                      | 190                    | 301    | 33300 | 1540 | 5060   | 36                    |                                   |                          |                     |
|      | 892                 | 5810                   | 94.1           | 93.0 | 93.9                | 93.0                | 78.7              | 73.8             | 63.0             | 152               | 949                  | 3536                  | 90                      | 190                    | 690    | 38600 | 2500 | 6660   | 26                    |                                   |                          |                     |
| 700  | 1786                | 5810                   | 95.4           | 94.5 | 95.2                | 94.3                | 86.0              | 82.6             | 74.3             | 160               | 1107                 | 2059                  | 90                      | 200                    | 274    | 30100 | 1510 | 5650   | 27                    |                                   |                          |                     |
|      | 1186                | 5808                   | 95.0           | 94.1 | 94.8                | 94.0                | 81.2              | 77.3             | 67.9             | 170               | 1107                 | 3101                  | 90                      | 190                    | 349    | 33300 | 1670 | 5340   | 35                    |                                   |                          |                     |
| 800  | 1786                | 5810                   | 95.4           | 94.5 | 95.2                | 94.3                | 86.3              | 83.0             | 75.0             | 182               | 1265                 | 2354                  | 100                     | 200                    | 305    | 30100 | 1690 | 5900   | 27                    |                                   |                          |                     |
|      | 1186                | 5810                   | 95.0           | 94.1 | 94.9                | 94.1                | 80.7              | 76.4             | 66.3             | 195               | 1265                 | 3544                  | 90                      | 190                    | 388    | 33000 | 1790 | 5720   | 28                    |                                   |                          |                     |
| 900  | 1786                | 5810                   | 95.4           | 94.5 | 95.2                | 94.3                | 86.7              | 84.5             | 75.8             | 204               | 1423                 | 2648                  | 100                     | 200                    | 336    | 30100 | 1790 | 6160   | 27                    |                                   |                          |                     |
|      | 1185                | 5810                   | 95.0           | 94.1 | 94.9                | 94.1                | 81.5              | 77.9             | 68.8             | 218               | 1423                 | 3991                  | 90                      | 190                    | 428    | 33000 | 1840 | 5960   | 27                    |                                   |                          |                     |
| 1000 | 1785                | 5810                   | 95.4           | 94.5 | 95.2                | 94.3                | 87.3              | 84.8             | 78.0             | 225               | 1581                 | 2944                  | 90                      | 210                    | 379    | 30100 | 1930 | 6510   | 26                    |                                   |                          |                     |

NOTE : 1. THE ABOVE ARE TYPICAL VALUES BASED ON TEST ACCORDING TO ANSI/IEEE STANDARD 112 METHOD F.

2. BREAKDOWN & LOCKED ROTOR TORQUES ARE SHOWN AS AVERAGE EXPECTED VALUES.
3. EFFICIENCY, POWER FACTOR, SPEED AND TORQUE ARE THE SAME FOR OTHER VOLTAGE. CURRENT VALUES VARY INVERSELY WITH VOLTAGE.
4. DECLARED EFFICIENCY HAVEN'T TAKEN INTO ACCOUNT OF THRUST LOAD LOSSES
5. TOLERANCE ACCORDING TO NEMA MG1-12.
6. REDUCING THE THRUST LOAD WILL INCREASE BEARING LIFE AS FOLLOWS :

|                |      |       |       |       |       |
|----------------|------|-------|-------|-------|-------|
| THURST(%)      | 100  | 84    | 77    | 67    | 61    |
| MIN. LIFE(Hrs) | 8800 | 15000 | 20000 | 30000 | 40000 |

7. THE MAXIMUM MOMENTARY UP THRUST IS 30% OF STANDARD DOWN THRUST.
8. EFFICIENCY AT NO THRUST RUNNING
9. THE VOLTAGE AND FREQUENCY COMBINATIONS NOT INCLUDED IN PERFORMANCE DATA ARE QUOTED CASE BY CASE.

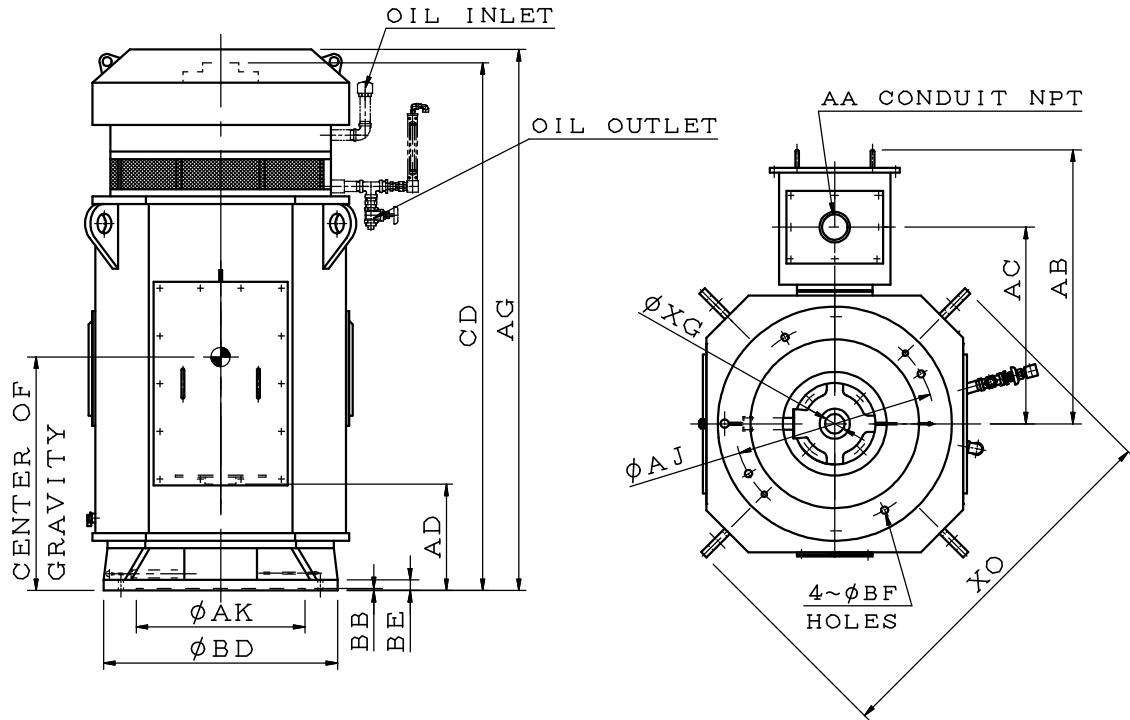
# OUTLINE DIMENSIONS SHEET

MODEL

## AMRKNH

HIGH THRUST HOLLOWSHAFT PUMP MOTORS  
FRAME SIZE (SGV) 5009 ~ 5810

DRIP PROOF SQUIRREL CAGE, NEMA WEATHER PROTECTED I



DIMENSIONS IN INCHES

| FRAME SIZE (SGV) | MOUNTING |      |       |      |      |      | XG    | XO    |
|------------------|----------|------|-------|------|------|------|-------|-------|
|                  | BD       | AK   | AJ    | BF   | BB   | BE   |       |       |
| 5000             | 20.00    | 13.5 | 14.75 | 0.69 | 0.25 | 1.18 | 2.559 | 40.69 |
|                  | *24.50   | 13.5 | 14.75 | 0.69 |      |      |       |       |
|                  |          |      | 22.00 | 0.94 |      |      |       |       |
|                  | 30.50    | 22.0 | 26.00 | 0.81 |      |      |       |       |
| 5800             | 24.50    | 13.5 | 22.00 | 0.94 | 0.25 | 1.38 |       | 48.19 |
|                  | *30.50   | 22.0 | 26.00 | 0.81 |      |      |       |       |
|                  |          |      | 32.00 | 1.00 |      |      |       |       |

| FRAME SIZE (SGV) | CD    | AG    | TERMINAL HOUSING |       |       |       | BEARING             |           | CENTER OF GRAVITY |
|------------------|-------|-------|------------------|-------|-------|-------|---------------------|-----------|-------------------|
|                  |       |       | AA               | AB    | AC    | AD    | UPPER END           | LOWER END |                   |
| 5009             | 57.06 | 63.40 | NPT4"            | 32.88 | 22.80 | 8.35  | 29330E<br>+<br>6028 | 6220C3    | 24.4              |
| 5806             | 55.39 | 62.60 | NPT5"            | 36.58 | 25.63 | 7.00  |                     |           | 6224C3            |
| 5808             | 61.30 | 68.50 |                  |       |       | 9.95  |                     | 26.7      |                   |
| 5810             | 68.78 | 75.98 |                  |       |       | 13.70 |                     | 30.4      |                   |

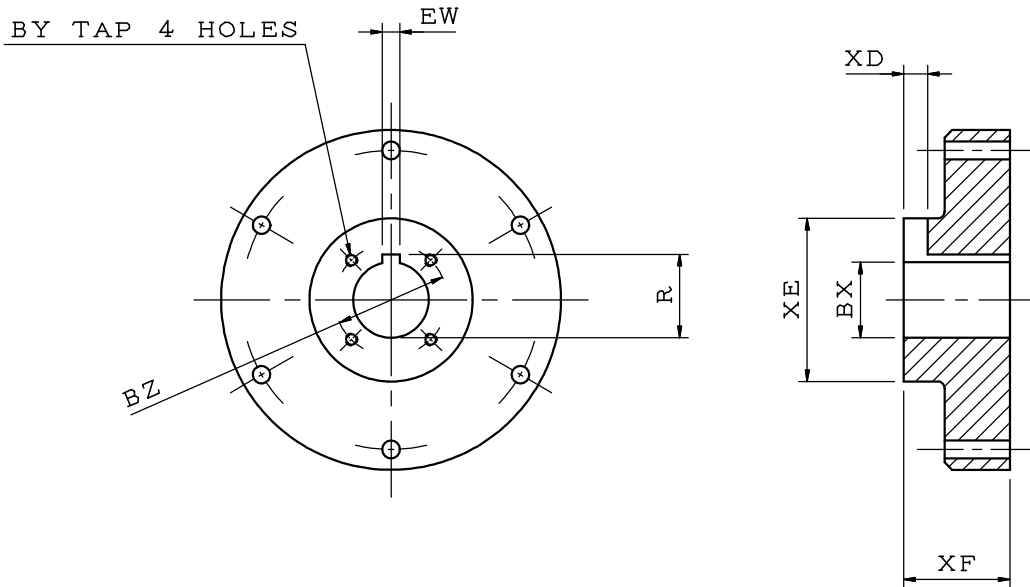
- NOTE: 1. DIMENSION AK TOLERANCE: +0.005 INCH, -0.000 INCH  
 2. FOR COUPLING AS DWG NO. 4B049R278E  
 3. WITH BALL TYPE NON-REVERSE RATCHET MECHANISM  
 4. ROTATING DIRECTION: COUNTER CLOCK-WISE (VIEW FROM COUPLING END)  
 5. \* MARKED TABLE APPLIED TO STANDARD SIZE

# OUTLINE DIMENSIONS SHEET

MODEL

**AMRKNH**

DRIVE COUPLING FOR HOLLOWSHAFT PUMP MOTOR  
 FRAME SIZE (SGV) 5009 ~ 5810



DIMENSIONS IN inches

| FRAME SIZE | BX    | BY     | BZ   | EW    | R     | XD    | XE    | XF    |
|------------|-------|--------|------|-------|-------|-------|-------|-------|
| 5000       | 2.188 | 3/8-16 | 3.25 | 0.5   | 2.414 | 0.688 | 4.724 | 3.071 |
| 5800       | 2.438 | 3/8-16 | 3.25 | 0.625 | 2.714 | 0.813 | 4.724 | 3.071 |

- NOTE: 1. DIMENSION BX TOLERANCE: +0.0015INCH, -0.000INCH  
 2. DIMENSION EW TOLERANCE: +0.002INCH, -0.000INCH  
 3. DIMENSION R TOLERANCE: +0.010INCH, -0.000INCH

# OUTLINE DIMENSIONS SHEET

MODEL

**AMRKNH**

STEADY BUSH FOR HOLLOW SHAFT PUMP MOTOR

FRAME SIZE (SGV) 5009 ~ 5810

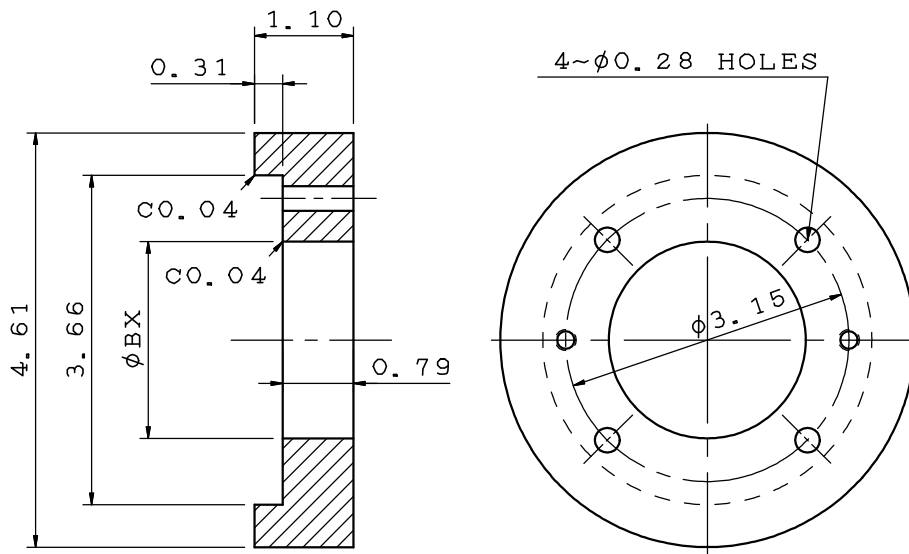


FIG. 1

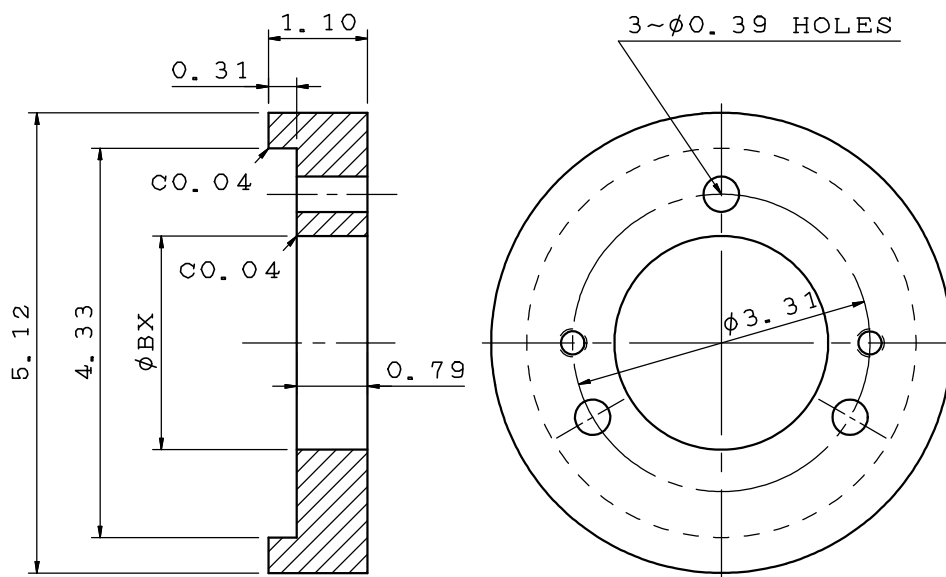


FIG. 2

DIMENSIONS IN inches

|               |       |       |
|---------------|-------|-------|
| FRAME<br>SIZE | 5009  | 5806  |
|               |       | 5808  |
|               |       | 5810  |
| FIG.<br>NO.   | 1     | 2     |
| BX            | 2.188 | 2.438 |

NOTE: 1. DIMENSION BX TOLERANCE: +0.0015INCH, -0.000INCH