

NOTICE

AS31021

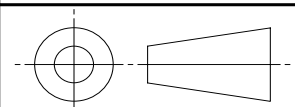
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THIRD ANGLE PROJECTION



ISSUED 2004-06

CUSTODIAN: SAE AE-8/AE-8C1

PROCUREMENT SPECIFICATION: MIL-C-5015

**SAE Aerospace**  
An SAE International Group

**AEROSPACE STANDARD**

CONNECTOR, RECEPTACLE, ELECTRIC,  
BOX MOUNTING, SOLDER CONTACTS,  
AN TYPE

**AS31021**  
SHEET 1 OF 9

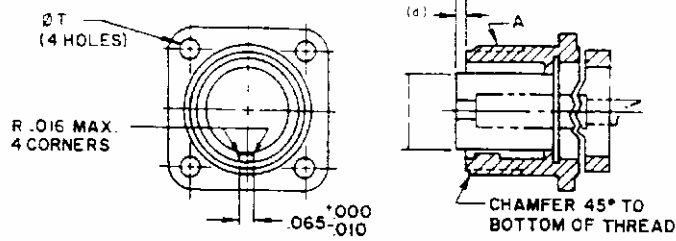
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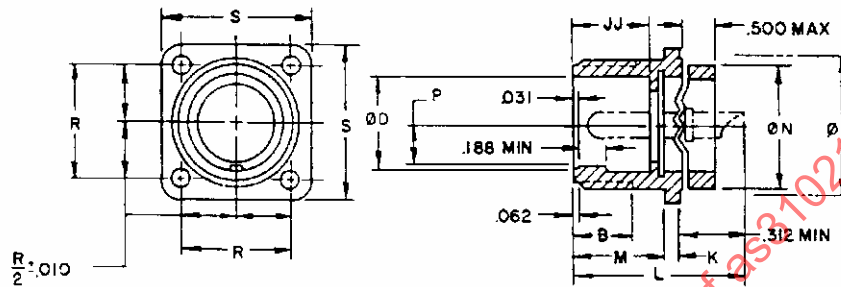
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Fax: 724-776-0790

Tel: 724-776-4970 (outside USA)  
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STYLE S (SOCKET INSERT)

CLASS A-SOLID SHELL  
CLASS C-PRESSURIZED

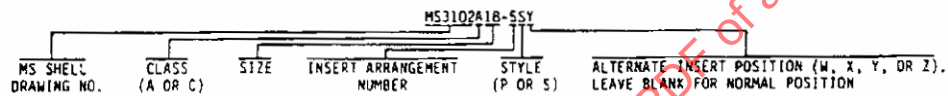
STYLE P (PIN INSERT)

| SIZE | A<br>COUPLING<br>THREAD | B<br>MIN<br>USABLE<br>THREAD | D<br>-.015<br>MAX<br>INSIDE | ØI<br>MAX<br>INSERT | (c) JJ<br>+.031<br>-.000<br>INSERT<br>LOCATION | K<br>THICKNESS<br>MOUNTING<br>FLANGE<br>MAX MIN | L<br>MAX<br>OVERALL<br>LENGTH | M<br>+.031/.000<br>MOUNTING<br>FLANGE<br>LOCATION | ØP/H<br>+.000<br>MOUNTING<br>HOLE<br>OUTSIDE | ØO<br>(ref)<br>+.015<br>MOUNTING<br>HOLE<br>HEIGHT | P<br>+.005<br>CL - CL<br>MOUNTING<br>HOLE | R<br>+.005<br>CL - CL<br>MOUNTING<br>HOLE | S<br>+.031<br>LENGTH<br>SIDE | ØT<br>+.010/.005<br>MOUNTING<br>BOLT HOLE | FOR INSERT<br>ARRANGEMENT<br>SEE DRAWING |
|------|-------------------------|------------------------------|-----------------------------|---------------------|------------------------------------------------|-------------------------------------------------|-------------------------------|---------------------------------------------------|----------------------------------------------|----------------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------|-------------------------------------------|------------------------------------------|
| 85   | 1/2-28                  |                              | .370                        | .250                |                                                |                                                 |                               |                                                   | .532                                         | .562                                               | .130                                      | .594                                      | .875                         |                                           |                                          |
| 105  | 5/8-24                  | .375                         | .448                        | .320                | .562                                           |                                                 | 1.191                         | .562                                              | .656                                         | .686                                               | .165                                      | .715                                      | 1.000                        |                                           |                                          |
| 105L |                         |                              |                             |                     |                                                |                                                 |                               |                                                   |                                              |                                                    |                                           |                                           |                              |                                           |                                          |
| 125  | 3/4-20                  |                              | .557                        | .448                |                                                | .156                                            | .062                          |                                                   | .782                                         | .812                                               | .224                                      | .812                                      | 1.094                        |                                           |                                          |
| 12   |                         | .625                         |                             |                     | .750                                           |                                                 | 1.275                         | .750                                              |                                              |                                                    |                                           |                                           |                              |                                           |                                          |
| 145  | 7/8-20                  | .375                         | .682                        | .525                | .562                                           |                                                 | .791                          | .562                                              | .906                                         | .938                                               | .263                                      | .906                                      | 1.188                        | .120                                      |                                          |
| 14   |                         | .625                         |                             |                     | .750                                           |                                                 | 1.713                         | .750                                              |                                              |                                                    |                                           |                                           |                              |                                           |                                          |
| 165  | 1-20                    | .375                         | .807                        | .650                | .562                                           |                                                 | 1.191                         | .562                                              | 1.032                                        | 1.062                                              | .325                                      | .969                                      | 1.281                        |                                           |                                          |
| 16   |                         |                              |                             |                     |                                                |                                                 | 1.750                         |                                                   |                                              |                                                    |                                           |                                           |                              |                                           |                                          |
| 18   | 1-1/8-16                |                              | .932                        | .770                |                                                |                                                 |                               |                                                   | 1.156                                        | 1.186                                              | .385                                      | 1.062                                     | 1.375                        |                                           |                                          |
| 20   | 1-1/4-18                |                              | 1.058                       | .925                |                                                |                                                 |                               | .750                                              | 1.282                                        | 1.312                                              | .463                                      | 1.156                                     | 1.500                        |                                           |                                          |
| 22   | 1-3/8-18                |                              | 1.182                       | 1.020               |                                                |                                                 |                               |                                                   | 1.406                                        | 1.438                                              | .510                                      | 1.250                                     | 1.625                        |                                           |                                          |
| 24   | 1-1/2-16                | .625                         | 1.309                       | 1.145               | .750                                           | .203                                            | .094                          | 1.938                                             | 1.532                                        | 1.562                                              | .573                                      | 1.375                                     | 1.750                        | .141                                      |                                          |
| 28   | 1-3/4-18                |                              | 1.526                       | 1.365               |                                                |                                                 |                               |                                                   | 1.782                                        | 1.812                                              | .683                                      | 1.562                                     | 2.000                        |                                           |                                          |
| 32   | 2-18                    |                              | 1.776                       | 1.615               |                                                |                                                 |                               |                                                   | 2.032                                        | 2.062                                              | .808                                      | 1.750                                     | 2.250                        |                                           |                                          |
| 36   | 2-1/4-16                |                              | 1.995                       | 1.830               |                                                |                                                 |                               |                                                   | 2.282                                        | 2.312                                              | .915                                      | 1.938                                     | 2.500                        |                                           |                                          |
| 40   | 2-1/2-16                |                              | 2.245                       | 2.045               |                                                |                                                 |                               |                                                   | 2.532                                        | 2.562                                              | 1.023                                     | 2.188                                     | 2.750                        | .173                                      |                                          |
| 44   | 2-3/4-16                |                              | 2.495                       | 2.300               |                                                | .359                                            | .125                          |                                                   | 2.782                                        | 2.812                                              | 1.150                                     | 2.375                                     | 3.000                        |                                           |                                          |
| 48   | 3-16                    |                              | 2.745                       | 2.550               |                                                |                                                 |                               | 2.188                                             | 3.032                                        | 3.062                                              | 1.275                                     | 2.625                                     | 3.250                        |                                           |                                          |

## NOTES:

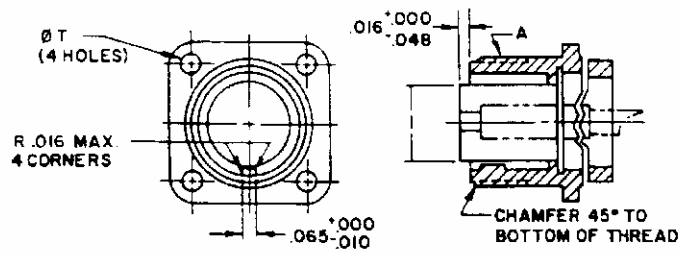
- (a) SIZES 85 THRU 40 OF CLASSES A AND C ARE CANCELLED AFTER 1 JAN 1991. FOR REPLACEMENT PURPOSES USE MS3102R. MANUFACTURERS MAY CONTINUE TO SUPPLY THESE SIZES OF CLASSES A AND C UNTIL 1 JAN 1992 OR EXHAUST THEIR INVENTORIES, WHICHEVER COMES FIRST. FOR NEW DESIGN USE MS3452W. FOR SHIPBOARD JACKETED CABLES USE MS3402.
- (b) SIZES 44 AND 48 OF CLASSES A AND C ARE INACTIVE FOR NEW DESIGN.
- (c) WHERE RESILIENT INSERTS ARE USED, JJ MAY BE .109 LESS THAN THAT INDICATED.
- (d) SOCKET INSERT OF HARD MATERIAL SHALL EXTEND .016 BEYOND OR .032 MAXIMUM BELOW SHELL. SOCKET INSERT OF RESILIENT MATERIAL SHALL EXTEND .047  $\pm$ .000  $\pm$ .047 BEYOND SHELL AS SHOWN.
- (e) FOR SHELL SIZES 36 AND 40, N TOLERANCE  $\pm$ .000,  $\pm$ .250.
- (f) CONNECTORS MS3102A (OR C) REPLACE AND ARE INTERCHANGEABLE WITH CORRESPONDING AN3102A (OR C) CONNECTORS.

## EXAMPLE OF PART NUMBER:

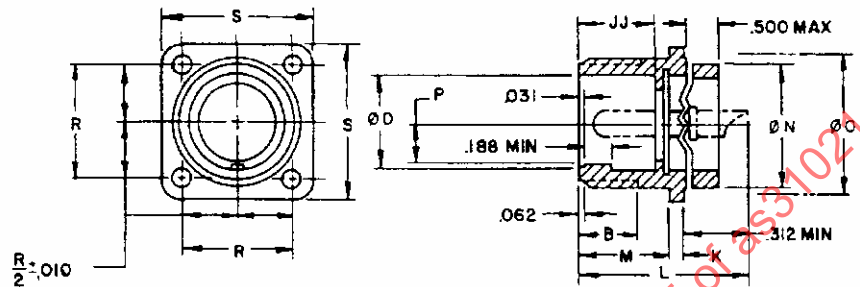


DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: DECIMALS  $\pm$ .016.  
THIS SPECIFICATION SHEET TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN.  
REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BID.

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STYLE S (SOCKET INSERT)



STYLE P (PIN INSERT)

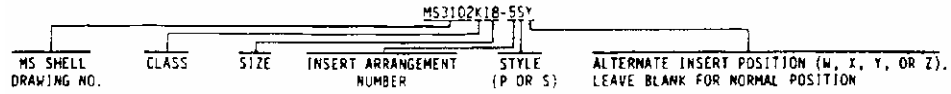
## CLASS K - FIREWALL

| SIZE | A<br>COUPLING<br>THREAD | B<br>M/N<br>JAMBLE<br>THREAD | D<br>Ø<br>INSIDE | Ø T<br>Ø<br>INSERT | JJ<br>Ø<br>INSERT<br>LOCATION | L<br>Ø<br>H/P<br>Ø<br>FLANGE | L<br>Ø<br>OVERALL<br>LENGTH | R<br>Ø<br>FLANGE<br>LOCATION | Ø 31<br>Ø<br>OUTSIDE | Ø D<br>Ø<br>H/P<br>Ø<br>HOLE | P<br>Ø<br>H/P<br>Ø<br>HOLE | R<br>Ø<br>H/P<br>Ø<br>HOLE | S<br>Ø<br>H/P<br>Ø<br>HOLE | Ø T<br>Ø<br>H/P<br>Ø<br>HOLE | FLW INSERT<br>ARRANGEMENT<br>SEE |
|------|-------------------------|------------------------------|------------------|--------------------|-------------------------------|------------------------------|-----------------------------|------------------------------|----------------------|------------------------------|----------------------------|----------------------------|----------------------------|------------------------------|----------------------------------|
| 85   | 1/2-28                  |                              | .370             | .250               |                               |                              | 1.325                       |                              | .532                 | .562                         | .130                       | .594                       | .875                       |                              |                                  |
| 105  | 5/8-14                  | .375                         | .448             | .320               | .562                          |                              | 1.438                       | .562                         | .656                 | .688                         | .165                       | .718                       | 1.000                      |                              |                                  |
| 105A |                         |                              |                  |                    |                               |                              |                             |                              |                      |                              |                            |                            |                            |                              |                                  |
| 125  | 3/4-20                  |                              | .551             | .448               |                               |                              |                             |                              | .782                 | .812                         | .224                       | .812                       | 1.094                      |                              |                                  |
| 127  |                         | .625                         |                  |                    | .750                          | .362                         | 1.812                       | .750                         |                      |                              |                            |                            |                            | .150                         |                                  |
| 145  |                         | .375                         | .682             | .525               | .562                          |                              | 1.438                       | .562                         |                      |                              |                            |                            |                            |                              |                                  |
| 147  | 7/8-20                  | .625                         | .682             | .525               | .562                          |                              | 1.938                       | .750                         | .906                 | .938                         | .263                       | .906                       | 1.188                      |                              |                                  |
| 165  |                         | .375                         | .801             | .650               | .562                          |                              | 1.438                       | .562                         | 1.032                | 1.062                        | .325                       | .969                       | 1.281                      |                              |                                  |
| 167  | 1-20                    |                              |                  |                    |                               |                              | 2.062                       |                              |                      |                              |                            |                            |                            |                              |                                  |
| 18   | 1-1/8-18                |                              | .952             | .770               |                               |                              |                             | .750                         | 1.156                | 1.188                        | .385                       | 1.062                      | 1.375                      |                              |                                  |
| 20   | 1-1/4-18                |                              | 1.056            | .925               |                               |                              |                             |                              | 1.282                | 1.312                        | .463                       | 1.156                      | 1.500                      |                              |                                  |
| 22   | 1-3/8-18                | .625                         | 1.182            | 1.020              | .750                          |                              |                             |                              | 1.406                | 1.438                        | .510                       | 1.250                      | 1.625                      | .177                         |                                  |
| 24   | 1-1/2-18                |                              | 1.307            | 1.145              |                               | .078                         |                             |                              | .532                 | 1.562                        | .573                       | 1.375                      | 1.750                      |                              |                                  |
| 26   | 1-5/8-18                |                              | 1.428            | 1.265              |                               |                              | 1.750                       |                              | 1.782                | 1.812                        | .683                       | 1.582                      | 2.000                      |                              |                                  |
| 28   | 2-1/8-18                |                              | 1.776            | 1.615              |                               |                              |                             | .875                         | 2.032                | 2.062                        | .808                       | 1.750                      | 2.250                      |                              |                                  |
| 30   | 2-1/4-18                |                              | 1.895            | 1.830              |                               | .125                         |                             |                              | 2.282                | 2.312                        | .915                       | 1.938                      | 2.500                      | .109                         |                                  |
| 40   | 2-1/2-16                |                              | 2.245            | 2.065              |                               |                              |                             |                              | 2.532                | 2.562                        | 1.023                      | 2.188                      | 2.750                      |                              |                                  |

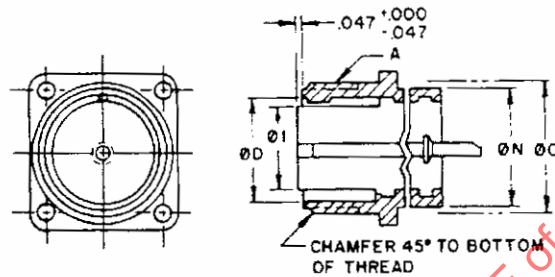
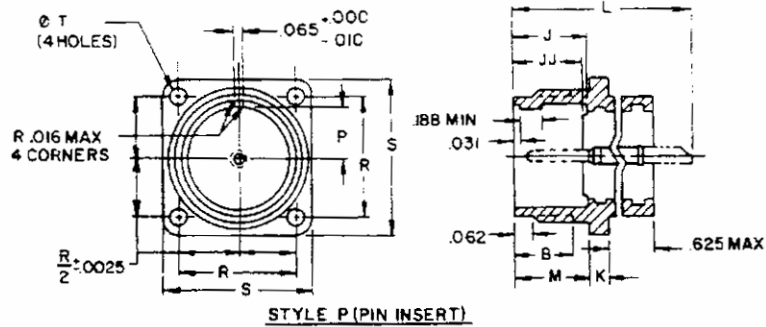
## NOTES:

- (a) CLASS K IS INACTIVE FOR NEW DESIGN AFTER 1 JAN 1991. FOR NEW DESIGN USE MS3452K. FOR SHIPBOARD JACKETED CABLE USE MS3402.
- (b) CONNECTORS MS3102K REPLACE AND ARE INTERCHANGEABLE WITH CORRESPONDING AN3102K CONNECTORS.

EXAMPLE OF PART NUMBER:



DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: DECIMALS  $\pm 0.016$ .  
THIS SPECIFICATION SHEET TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN.  
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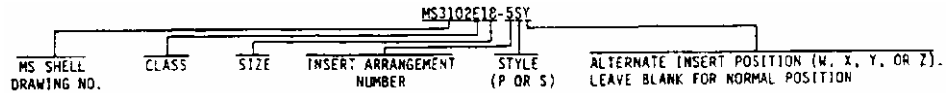
## CLASS E - ENVIRONMENT RESISTANT

| SIZE | A<br>COUPLING<br>THREAD | B<br>MIN<br>USABLE<br>THREAD | D<br>Ø<br>INSIDE | Ø I<br>MAX<br>INSERT | J<br>Ø<br>INT<br>SHELL<br>SHLDR | J J<br>Ø<br>INSERT<br>LOCATION | E<br>THICKNESS<br>MOUNTING<br>FLANGE<br>MAX MIN | L<br>MAX<br>OVERALL<br>LENGTH | M<br>Ø<br>MOUNTING<br>FLANGE<br>LOCATION | Ø N<br>Ø<br>MOUNTING<br>HOLE | P<br>Ø<br>KEY<br>HEIGHT | R<br>Ø<br>CL-CL<br>MOUNTING<br>HOLE | S<br>Ø<br>CL-CL<br>LENGTH<br>SIDE | Ø T<br>Ø<br>MOUNTING<br>BOLT HOLE | FOR INSERT<br>ARRANGEMENT<br>SEE |       |
|------|-------------------------|------------------------------|------------------|----------------------|---------------------------------|--------------------------------|-------------------------------------------------|-------------------------------|------------------------------------------|------------------------------|-------------------------|-------------------------------------|-----------------------------------|-----------------------------------|----------------------------------|-------|
| 85   | 1/2-28                  |                              | .370             | .250                 |                                 |                                |                                                 |                               |                                          | .532                         | .562                    | .130                                | .594                              | .875                              | MIL-STD-185                      |       |
| 105  | 5/8-24                  | .375                         | .448             | .320                 | .562                            | .484                           |                                                 | 1.188                         | .562                                     | .656                         | .688                    | .165                                | .719                              | 1.000                             |                                  |       |
| 105L |                         |                              |                  |                      |                                 |                                |                                                 |                               |                                          |                              |                         |                                     |                                   |                                   |                                  |       |
| 125  | 3/4-20                  |                              | .557             | .448                 |                                 |                                |                                                 |                               |                                          | .782                         | .812                    | .224                                | .812                              | 1.094                             |                                  |       |
| 12   |                         | .625                         |                  |                      | .750                            | .672                           | .156                                            | .078                          | 1.625                                    | .750                         |                         |                                     |                                   |                                   |                                  |       |
| 145  | 7/8-20                  | .375                         | .682             | .525                 | .562                            | .484                           |                                                 |                               | 1.188                                    | .562                         |                         |                                     |                                   |                                   |                                  |       |
| 14   |                         | .625                         |                  |                      | .750                            | .672                           |                                                 |                               | 1.625                                    | .750                         | .906                    | .938                                | .263                              | .906                              |                                  | 1.188 |
| 165  | 1-20                    | .375                         |                  |                      | .562                            | .484                           |                                                 |                               | 1.188                                    | .562                         |                         |                                     |                                   |                                   |                                  |       |
| 16   |                         |                              | .807             | .650                 |                                 |                                |                                                 |                               | 1.625                                    |                              | 1.032                   | 1.062                               | .325                              | .969                              |                                  | 1.281 |
| 18   | 1-1/8-18                |                              | .932             | .770                 |                                 |                                |                                                 |                               | .750                                     |                              | 1.156                   | 1.188                               | .385                              | 1.062                             |                                  | 1.375 |
| 20   | 1-1/4-18                |                              | 1.058            | .925                 |                                 |                                |                                                 |                               |                                          |                              | 1.282                   | 1.312                               | .463                              | 1.156                             |                                  | 1.500 |
| 22   | 1-3/8-18                |                              | 1.182            | 1.070                |                                 |                                | .203                                            | .094                          |                                          |                              | 1.406                   | 1.438                               | .510                              | 1.250                             |                                  | 1.625 |
| 24   | 1-1/2-18                | .625                         | 1.307            | 1.145                | .750                            | .672                           |                                                 |                               | 1.938                                    | .812                         | 1.532                   | 1.562                               | .573                              | 1.375                             |                                  | 1.750 |
| 28   | 1-3/4-18                |                              | 1.526            | 1.365                |                                 |                                |                                                 |                               |                                          |                              | 1.782                   | 1.812                               | .683                              | 1.562                             |                                  | 2.000 |
| 32   | 2-18                    |                              | 1.776            | 1.615                |                                 |                                |                                                 |                               |                                          |                              | 2.032                   | 2.062                               | .808                              | 1.750                             |                                  | 2.250 |
| 36   | 2-1/4-16                |                              | 1.995            | 1.830                |                                 |                                | .359                                            | .125                          |                                          | .875                         | 2.282                   | 2.312                               | .915                              | 1.938                             |                                  | 2.500 |
| 40   | 2-1/2-16                |                              | 2.245            | 2.047                |                                 |                                |                                                 |                               |                                          |                              | 2.532                   | 2.562                               | 1.023                             | 2.188                             | 2.750                            |       |

## NOTES:

- (a) CLASS E IS CANCELLED AFTER 1 JAN 1991. FOR REPLACEMENT PURPOSES USE MS3102R. MANUFACTURERS MAY CONTINUE TO SUPPLY CLASS E UNTIL 1 JAN 1992 OR EXHAUST THEIR INVENTORIES, WHICHEVER COMES FIRST. FOR NEW DESIGN USE MS3452W. FOR SHIPBOARD JACKETED CABLES USE MS3402.
- (b) FOR SHELL SIZE 36 AND 40, N TOLERANCE IS  $+0.000$ ,  $-0.250$ .
- (c) CONNECTORS MS3102E REPLACE AND ARE INTERCHANGEABLE WITH CORRESPONDING AN3102E CONNECTORS.

## EXAMPLE OF PART NUMBER:



DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: DECIMALS  $\pm 0.016$ .  
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