



# NSAI

## EC TYPE-APPROVAL CERTIFICATE

Communication concerning:

- ~~EC type approval~~
- extension of EC type-approval
- ~~refusal of EC type approval~~
- ~~withdrawal of EC type approval~~

Of a type of Hydrogen component  
with regard to Regulation (EC) No 79/2009, as implemented by Regulation (EU) No 406/2010

EC Type-approval No: *e24\*79/2009\*406/2010\*0019\*03*

Reason for extension: *- Addition of new fittings to the original scope.  
- Change of manufacturer's representative.*

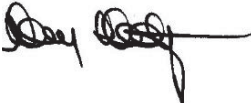
### SECTION I

- 0.1 Make (trade name of manufacturer's): *Swagelok Company*
- 0.2 Type: *35,0 MPa Compression, and  
Male/Female NPT Fittings*
- Varaints: *See test report and information  
Document for full details*
- 0.3 Means of identification of type, if marked on the  
component: *On the fittings,*
- 0.3.1 Location of that marking: *Laser marking.*
- 0.5 Name and address of manufacturer: *Swagelok Company,  
29500 Solon Road,  
Solon, OH 44139  
USA.*
- 0.7 In the case of components and separate technical units,  
location and method of affixing of the EC approval mark: *On the fittings laser marking.*
- 0.8 Address(es) of assembly plant(s): *Swagelok Company,  
29500 Solon Road,  
Solon, OH 44139  
USA.*
- 0.9 Name and address of the manufacturer's  
representative (if any): *Swagelok Denmark  
Glentevej 13  
DK-6705 Esbjerg East Denmark.*

EC Type-approval No:

e24\*79/2009\*406/2010\*0019\*03

## SECTION II

1. Additional information (where applicable): *See Addendum.*
2. Technical service responsible for carrying out the tests: *TÜV SÜD Auto Service GMBH,  
Westendstraße 199,  
D-80686 München,  
Germany.*
3. Date of test report: *As before and 06.03.2020*
4. Number of test report: *13-00017-IS-MUC-up to 03*
5. Remarks (if any): *See Appendix.*
6. Place: *Dublin.*
7. Date: *8<sup>th</sup> June, 2020*
8. Signature: 



Attachments:

- Information package.
- Test report.



# NSAI

## Addendum

to EC Type Approval Certificate No.: e24\*79/2009\*406/2010\*0019\*03  
relating to EC component type-approval of a hydrogen component or system.

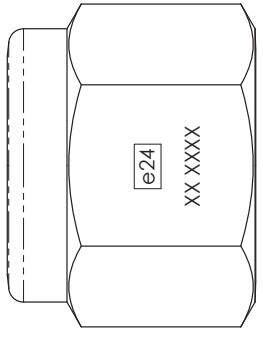
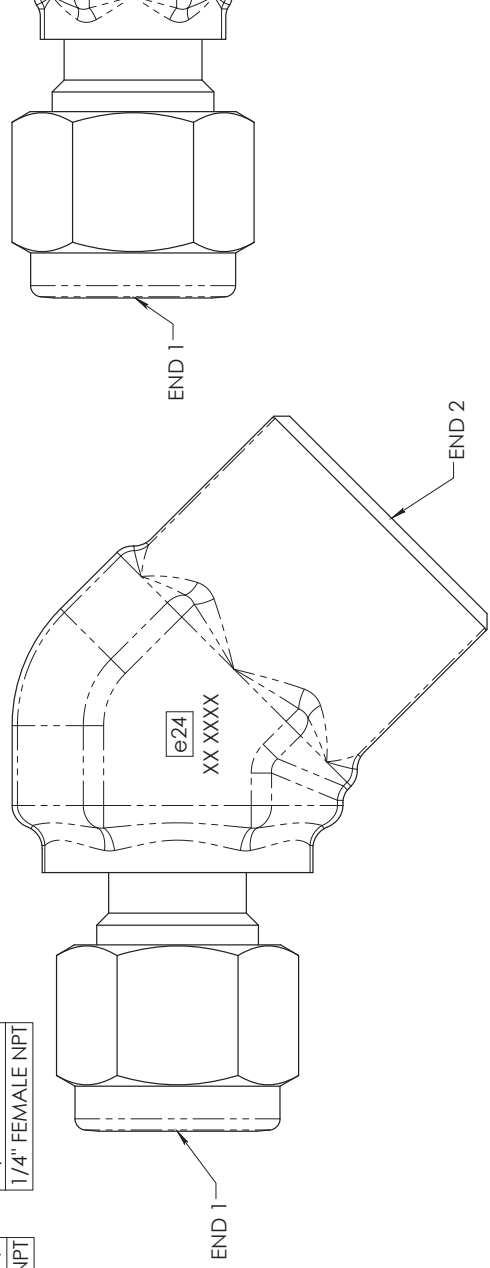
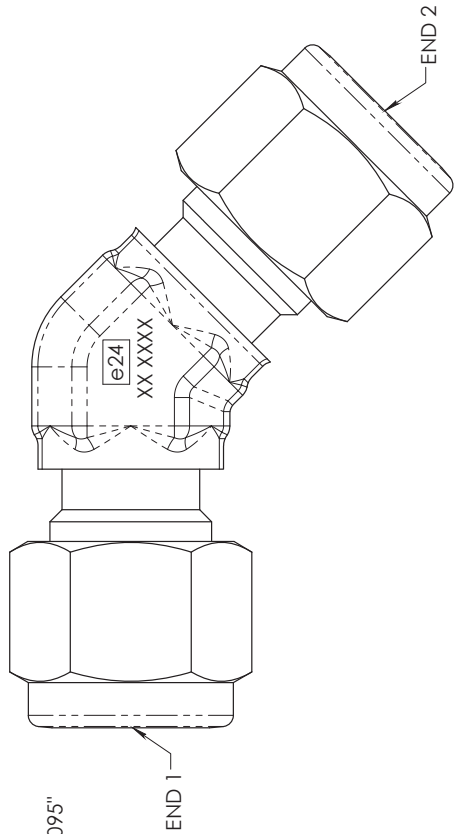
1. Additional information
  - 1.1. ~~Hydrogen system designed to use liquid hydrogen / Hydrogen system designed to use compressed (gaseous) hydrogen / Hydrogen component designed to use liquid hydrogen / Hydrogen component designed to use compressed (gaseous) hydrogen~~
2. Specifications and test results: *See technical report 13-00017-IS-MUC-up to 03 and manufacturer's documentation.*
  - 2.1. Containers designed to use compressed (gaseous) hydrogen: *N/A.*
    - 2.1.1. Container material specifications: *N/A.*
    - 2.1.2. Container material test result: *N/A.*
    - 2.1.3. Container test results: *N/A.*
3. Restriction of use of the device (if any): *See technical report 13-00017-IS-MUC-up to 03 and manufacturer's documentation.*
4. Remarks: *N/A.*

|           |              |          |                         |
|-----------|--------------|----------|-------------------------|
| REVISIONS |              | DWG. NO. | 45° ELBOW-EC79-APPROVAL |
| REV.      | DCN          |          |                         |
| -         | DCN-0098509  |          |                         |
| A         | DCN-00117092 |          |                         |

NOTE(S):  
1.) TWO ENDS ARE AVAILABLE IN ANY COMBINATION.

MATERIAL: ASTM A276-316  
TUBE MATERIAL: ASTM A269-316L  
TUBE WALL THICKNESS: 1.0mm - 2.5mm & 0.035" - 0.095"  
PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
MARKING METHOD: LASER MARKED  
TEMPERATURE RATING: (-40C TO +120C)

|                 |                 |
|-----------------|-----------------|
| END 1           | END 2           |
| 6M0             | 6M0             |
| 8M0             | 8M0             |
| 10M0            | 10M0            |
| 12M0            | 12M0            |
| 14M0            | 14M0            |
| 15M0            | 15M0            |
| 16M0            | 16M0            |
| 400             | 400             |
| 500             | 500             |
| 600             | 600             |
| 810             | 810             |
| 1010            | 1010            |
| 1/4" MALE NPT   | 1/4" MALE NPT   |
| 1/4" FEMALE NPT | 1/4" FEMALE NPT |



|  |  |  |  |  |  |   |  |
|--|--|--|--|--|--|---|--|
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| <p>1 of 1</p>  |  | <p>SCALE NONE</p>  |  | <p>SHEET 1 of 1</p>  |  | <p>REV. A</p>   |  |

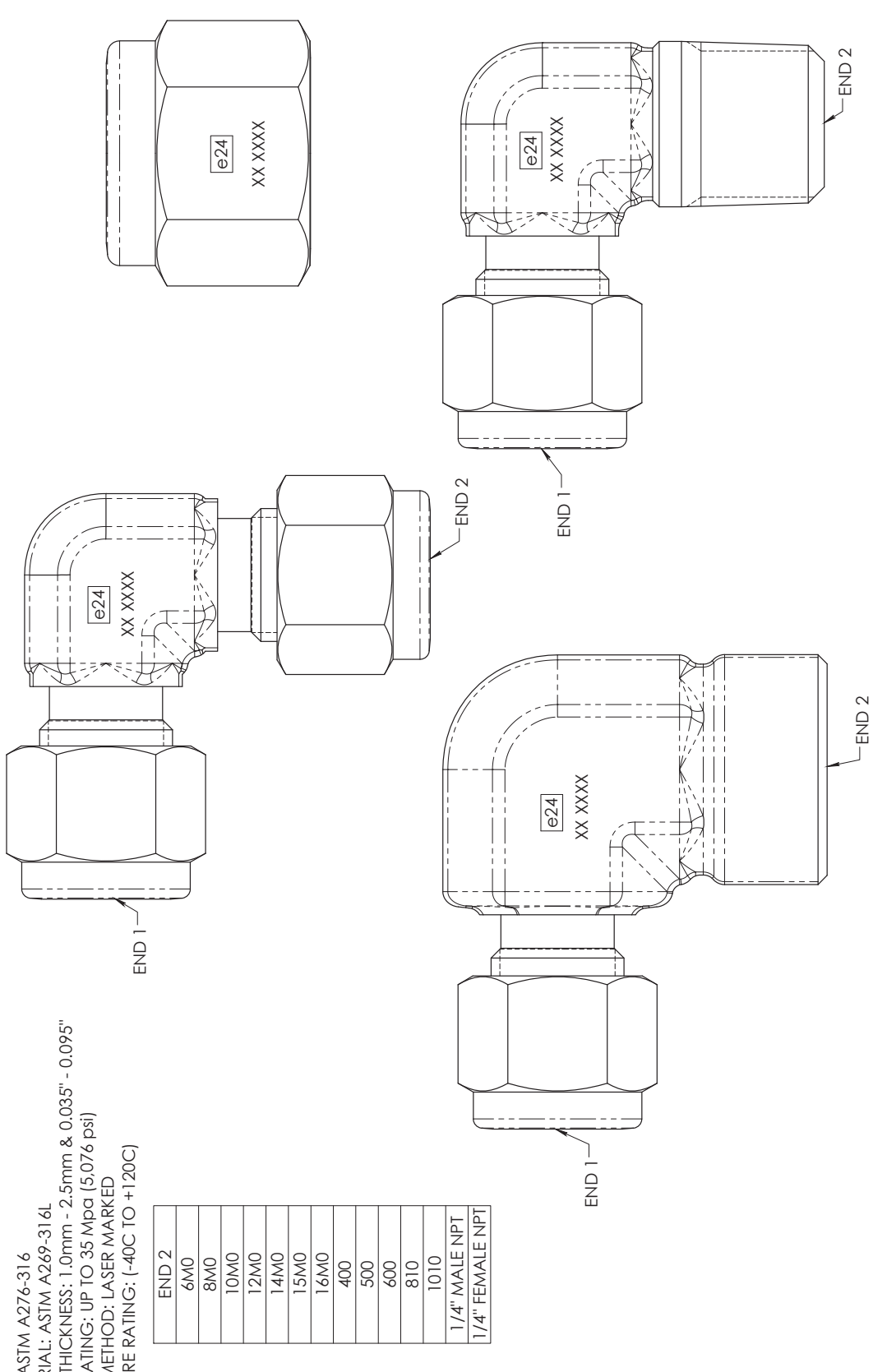
REVISIONS

| REV. | DCN          |
|------|--------------|
| -    | DCN-00098509 |
| A    | DCN-00117092 |

NOTE(S):  
1.) TWO ENDS ARE AVAILABLE IN ANY COMBINATION.

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TUBE MATERIAL: ASTM A269-316L  
TUBE WALL THICKNESS: 1.0mm - 2.5mm & 0.035" - 0.095"  
PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
MARKING METHOD: LASER MARKED  
TEMPERATURE RATING: (-40C TO +120C)

|                 |                 |
|-----------------|-----------------|
| END 1           | END 2           |
| 6MO             | 6MO             |
| 8MO             | 8MO             |
| 10MO            | 10MO            |
| 12MO            | 12MO            |
| 14MO            | 14MO            |
| 15MO            | 15MO            |
| 16MO            | 16MO            |
| 400             | 400             |
| 500             | 500             |
| 600             | 600             |
| 810             | 810             |
| 1010            | 1010            |
| 1/4" MALE NPT   | 1/4" MALE NPT   |
| 1/4" FEMALE NPT | 1/4" FEMALE NPT |

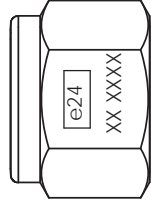


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|  | <p>DWG. NO. 90° ELBOW-EC79-APPROVAL</p>  |  |                 | <p>REV. A</p>                                       |

| REVISIONS |     |
|-----------|-----|
| REV.      | DCN |
|           |     |

NOTE(S):  
 MATERIAL: ASTM A276-316  
 TUBE MATERIAL: ASTM A269-316L  
 TUBE WALL THICKNESS: 1.0 mm - 2.5 mm & 0.035" - 0.095"  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

DWG. NO. CAP-EC79-APPROVAL



TUBING CAP

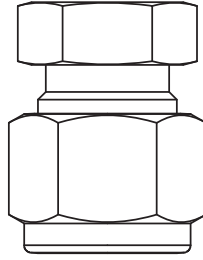
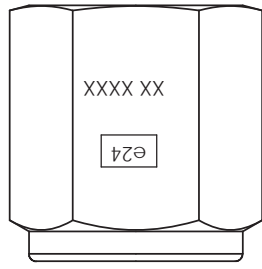
|       |
|-------|
| END 1 |
| 6M0   |
| 8M0   |
| 10M0  |
| 12M0  |
| 14M0  |
| 15M0  |
| 16M0  |
| 400   |
| 500   |
| 600   |
| 810   |
| 1010  |

END 1



PIPE CAP

1/4" FEMALE NPT



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DRAWN BY MEC  
 CHECK/APR BY

DATE Sep-26-13  
 DATE



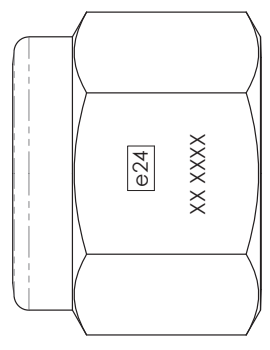
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SHEET 1 of 1  
 SCALE NONE  
 REV. -

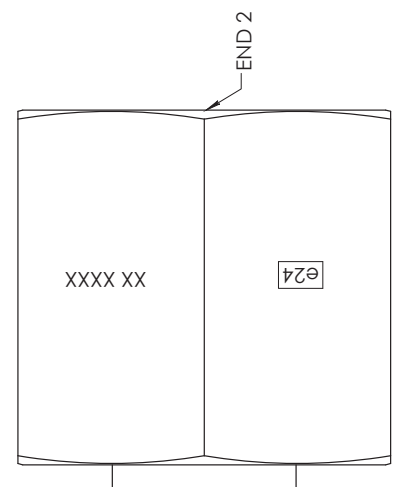
**NOTE(S):**

- 1.) TWO ENDS ARE AVAILABLE IN ANY COMBINATION.
- MATERIAL: ASTM A276-316
- TUBE MATERIAL: ASTM A269-316L
- TUBE WALL THICKNESS: 1.0mm - 2.5mm & 0.035" - 0.095"
- PRESSURE RATING: UP TO 35 Mpa (5,076 psi)
- MARKING METHOD: LASER MARKED
- TEMPERATURE RATING: (-40C TO +120C)

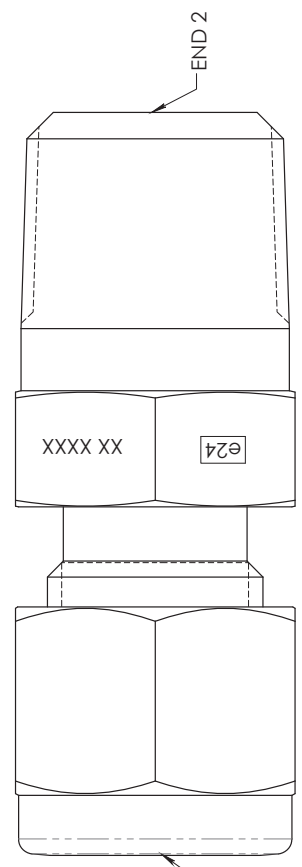
|       |                         |
|-------|-------------------------|
| END 1 | END 2                   |
| 6M0   | 1/4" MALE OR FEMALE NPT |
| 8M0   |                         |
| 10M0  |                         |
| 12M0  |                         |
| 14M0  |                         |
| 15M0  |                         |
| 16M0  |                         |
| 400   |                         |
| 500   |                         |
| 600   |                         |
| 810   |                         |
| 1010  |                         |



FEMALE CONNECTOR



MALE CONNECTOR

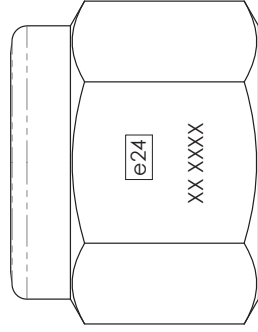


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|   | TITLE<br>MATERIAL  | DWG. NO. CONNECTOR-EC79-APPROVAL                               | Swagelok                                  |

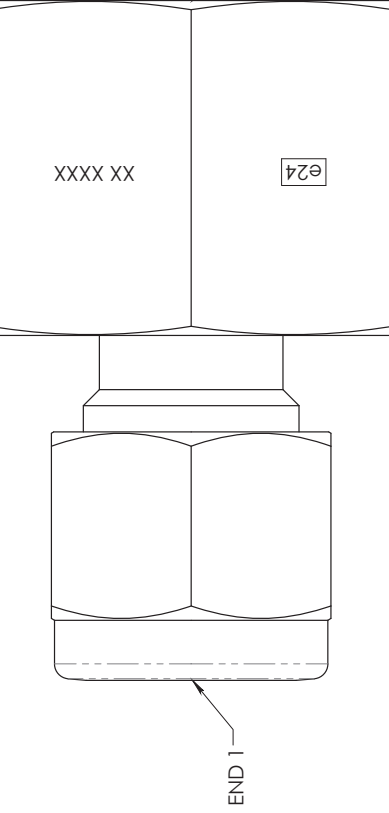
NOTE(S):  
 1.) TWO ENDS ARE AVAILABLE IN ANY COMBINATION

MATERIAL: ASTM A276-316  
 TUBE MATERIAL: ASTM A269-316L  
 O-RING MATERIAL: FKM ELASTOMER F103 OR V75T  
 TUBE WALL THICKNESS: 1.0mm - 2.5mm & 0.035" - 0.095"  
 PRESSURE RATING: UP TO 35 Mpa (5.076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

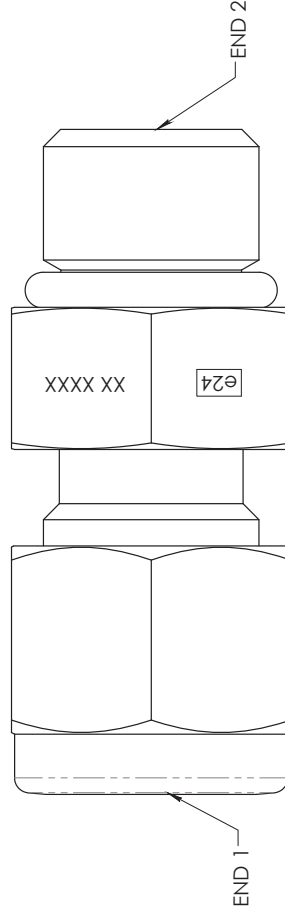
| END 1 | END 2                          | DESIGNATOR | SAE/MS THREAD SIZE |
|-------|--------------------------------|------------|--------------------|
| 6M0   | 3/16" MALE SAE LIGHT DUTY (ST) | 3ST        | 3/8-24             |
| 8M0   | 3/16" FEMALE SAE PORT (ST)     |            |                    |
| 10M0  | 1/4" MALE SAE LIGHT DUTY (ST)  | 4ST        | 7/16-20            |
| 12M0  | 1/4" FEMALE SAE PORT (ST)      |            |                    |
| 14M0  | 3/8" MALE SAE LIGHT DUTY (ST)  | 6ST        | 9/16-18            |
| 15M0  | 3/8" FEMALE SAE PORT (ST)      |            |                    |
| 16M0  | 1/2" MALE SAE HEAVY DUTY (STH) | 8STH       | 3/4-16             |
| 400   | 1/2" FEMALE SAE PORT (ST)      | 8ST        |                    |
| 500   |                                |            |                    |
| 600   |                                |            |                    |
| 810   |                                |            |                    |
| 1010  |                                |            |                    |



FEMALE CONNECTOR



MALE CONNECTOR





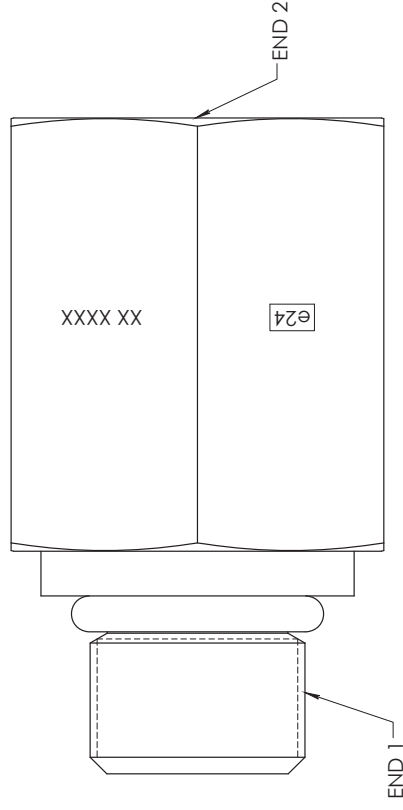
NOTE(S):  
 1.) TWO ENDS ARE AVAILABLE IN ANY COMBINATION

MATERIAL: ASTM A276-316  
 O-RING MATERIAL: FKM ELASTOMER F103 OR V75T  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

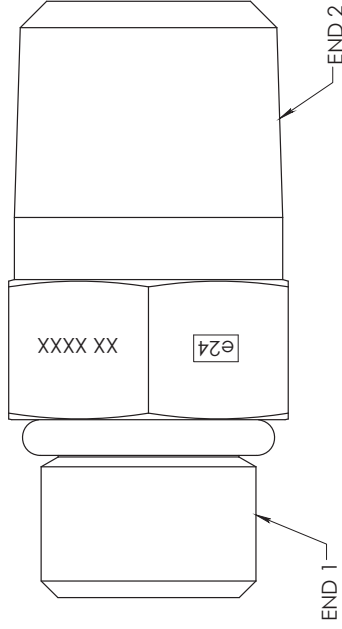
| END 1                          | DESIGNATOR | SAE/MS THREAD SIZE |
|--------------------------------|------------|--------------------|
| 3/16" MALE SAE LIGHT DUTY (ST) | 3ST        | 3/8-24             |
| 1/4" MALE SAE LIGHT DUTY (ST)  | 4ST        | 7/16-20            |
| 3/8" MALE SAE LIGHT DUTY (ST)  | 6ST        | 9/16-18            |
| 1/2" MALE SAE HEAVY DUTY (STH) | 8STH       | 3/4-16             |

| END 2           |
|-----------------|
| 1/4" MALE NPT   |
| 1/4" FEMALE NPT |

FEMALE CONNECTOR



MALE CONNECTOR



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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES  
 .XX ±.01  
 .XXX ±.005  
 .XXXX ±.0015  
 ANGLES ±.30 MINUTES  
 INTERPRET DIM. AND TOL. PER ASME Y14.5M-1994

TITLE APPROVAL/SCHEDULE DRAWING

MATERIAL  
 SAP CHANGE NUMBER  
 DCN-00144731

SHEET 3 of 5  
 SCALE 4:1  
 REV. B

DWG. NO. CONNECTOR-EC79-APPROVAL

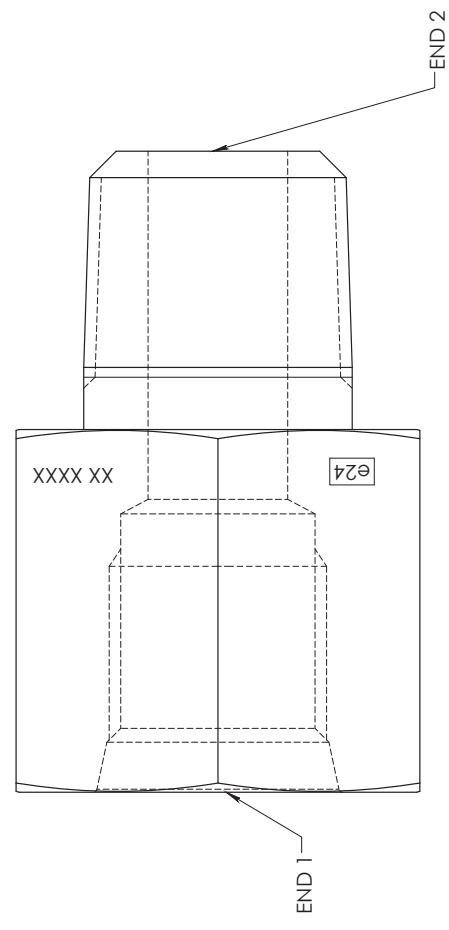
NOTE(S):  
 1.) TWO ENDS ARE AVAILABLE IN ANY COMBINATION

MATERIAL: ASTM A276-316  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

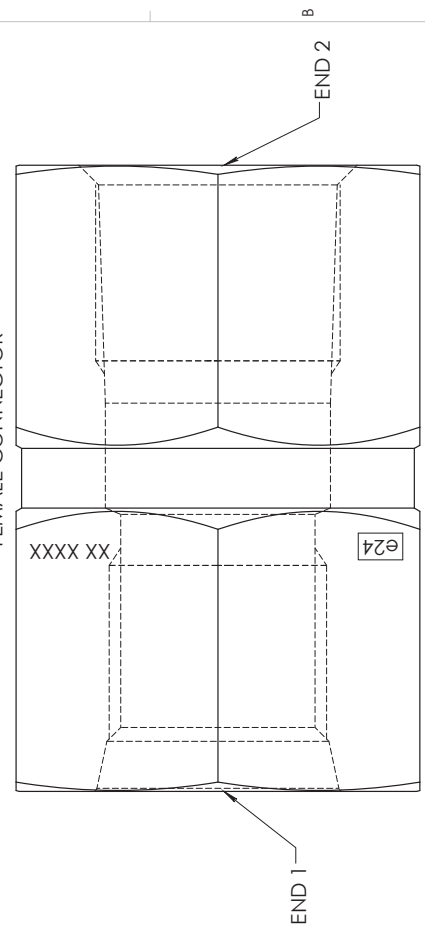
| END 1                      | DESIGNATOR | SAE/MS THREAD SIZE |
|----------------------------|------------|--------------------|
| 3/16" FEMALE SAE PORT (ST) | 3ST        | 3/8-24             |
| 1/4" FEMALE SAE PORT (ST)  | 4ST        | 7/16-20            |
| 3/8" FEMALE SAE PORT (ST)  | 6ST        | 9/16-18            |
| 1/2" FEMALE SAE PORT (ST)  | 8ST        | 3/4-16             |

| END 2           |
|-----------------|
| 1/4" MALE NPT   |
| 1/4" FEMALE NPT |

MALE CONNECTOR



FEMALE CONNECTOR



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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES  
 .XX ±.01  
 .XXX ±.005  
 .XXXX ±.0015  
 ANGLES ±30 MINUTES  
 INTERPRET DIM. AND TOL. PER ASME Y14.5M-1994

TITLE APPROVAL/SCHEDULE DRAWING

MATERIAL

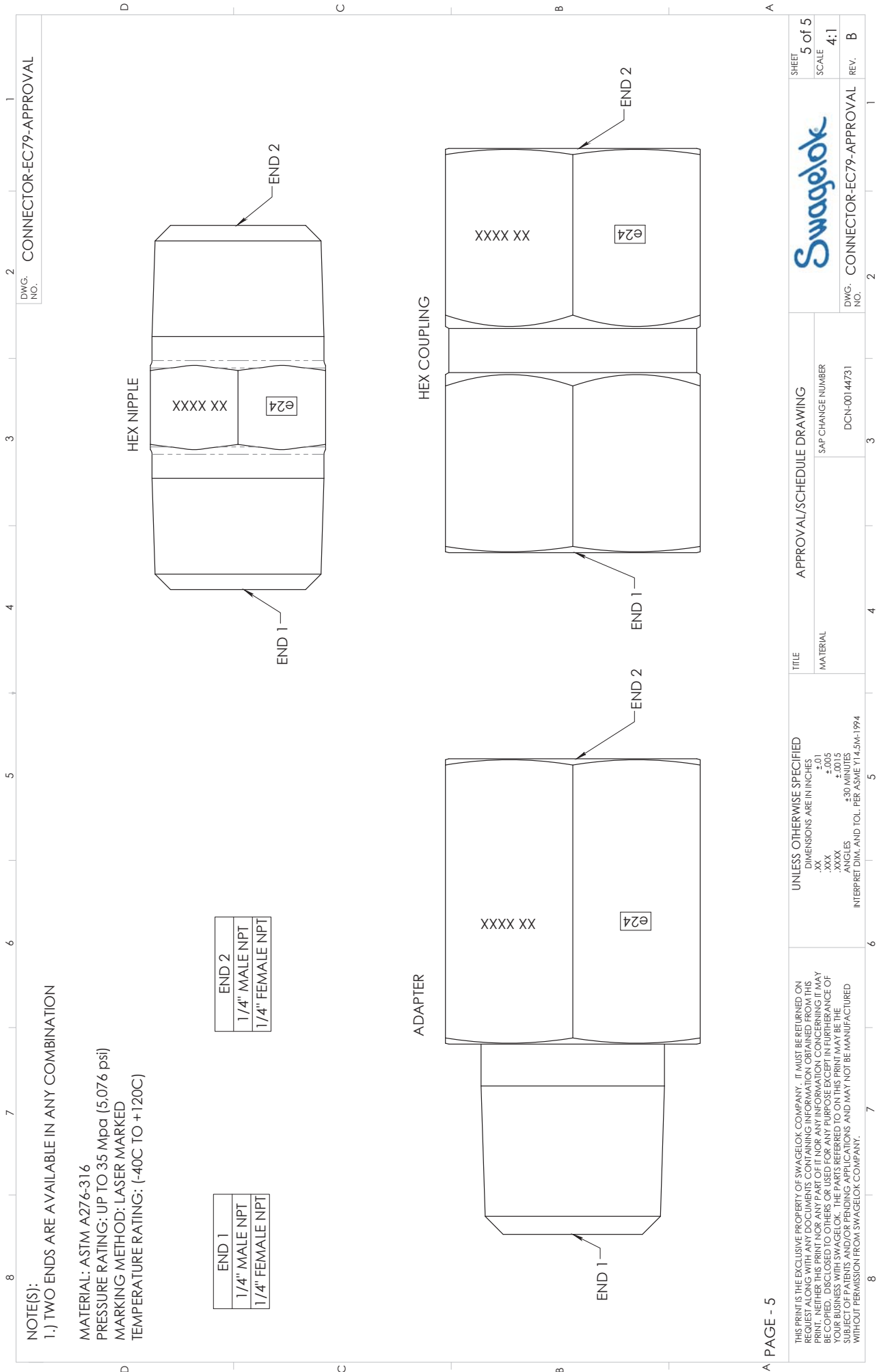
SAP CHANGE NUMBER

DCN-00144731

SHEET 4 of 5  
 SCALE 4:1  
 REV. B



DWG. NO. CONNECTOR-EC79-APPROVAL



DWG. NO. CONNECTOR-EC79-APPROVAL

SHEET 5 of 5  
SCALE 4:1  
REV. B

APPROVAL/SCHEDULE DRAWING  
MATERIAL  
SAP CHANGE NUMBER  
DCN-00144731

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
.XX ±.01  
.XXX ±.005  
.XXXX ±.0015  
ANGLES ±.30 MINUTES  
INTERPRET DIM. AND TOL. PER ASME Y14.5M-1994

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NOTE(S):  
1.) TWO ENDS ARE AVAILABLE IN ANY COMBINATION

MATERIAL: ASTM A276-316  
PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
MARKING METHOD: LASER MARKED  
TEMPERATURE RATING: (-40C TO +120C)

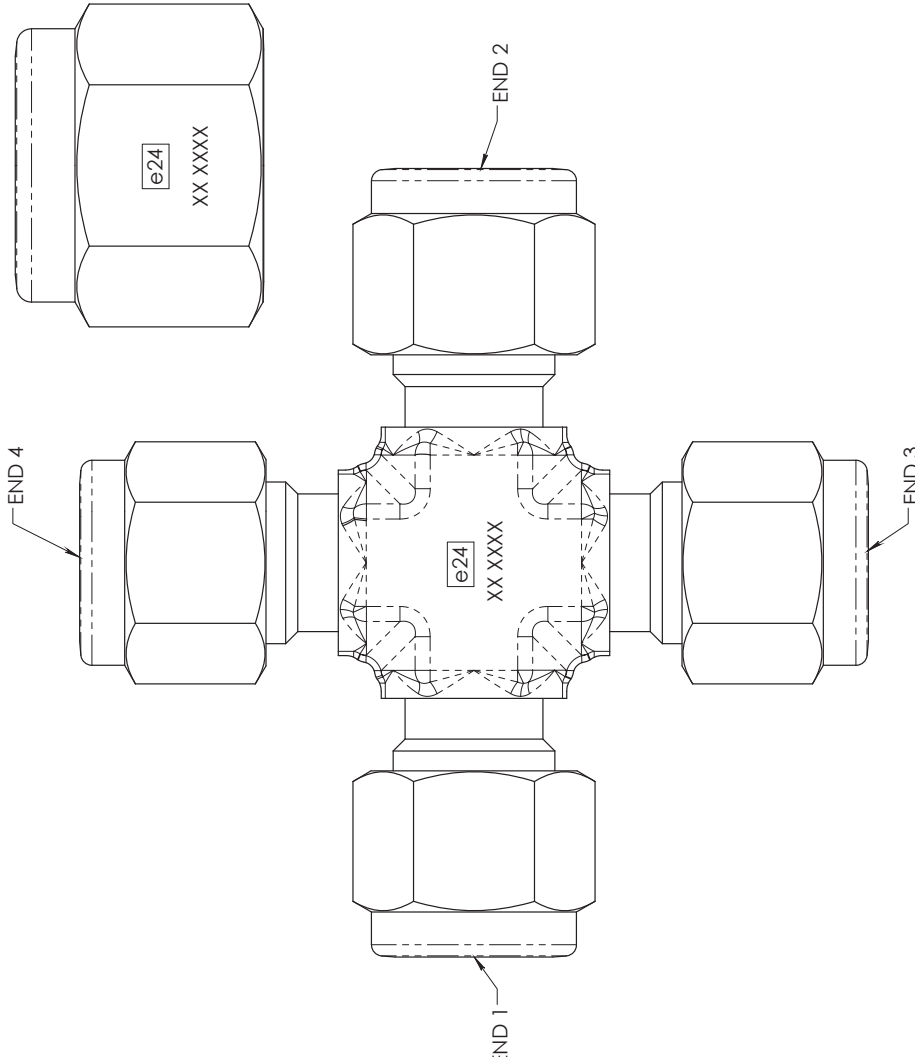
END 1  
1/4" MALE NPT  
1/4" FEMALE NPT

END 2  
1/4" MALE NPT  
1/4" FEMALE NPT

NOTE(S):

- 1.) THE FOUR ENDS ARE AVAILABLE IN ANY COMBINATION.
- MATERIAL: ASTM A276-316
- TUBE MATERIAL: ASTM A269-316L
- TUBE WALL THICKNESS: 1.0mm - 2.5mm & 0.035" - 0.095"
- PRESSURE RATING: UP TO 35 Mpa (5,076 psi)
- MARKING METHOD: LASER MARKED
- TEMPERATURE RATING: (-40C TO +120C)

| END 1           | END 2           | END 3           | END 4           |
|-----------------|-----------------|-----------------|-----------------|
| 6M0             | 6M0             | 6M0             | 6M0             |
| 8M0             | 8M0             | 8M0             | 8M0             |
| 10M0            | 10M0            | 10M0            | 10M0            |
| 12M0            | 12M0            | 12M0            | 12M0            |
| 14M0            | 14M0            | 14M0            | 14M0            |
| 15M0            | 15M0            | 15M0            | 15M0            |
| 16M0            | 16M0            | 16M0            | 16M0            |
| 400             | 400             | 400             | 400             |
| 500             | 500             | 500             | 500             |
| 600             | 600             | 600             | 600             |
| 810             | 810             | 810             | 810             |
| 1010            | 1010            | 1010            | 1010            |
| 1/4" MALE NPT   | 1/4" MALE NPT   | 1/4" MALE NPT   | 1/4" MALE NPT   |
| 1/4" FEMALE NPT | 1/4" FEMALE NPT | 1/4" FEMALE NPT | 1/4" FEMALE NPT |



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TOLERANCE ON ENGLISH DIMENSIONS UNLESS OTHERWISE SPECIFIED  
 XXX ±.031  
 ANGLES ±1 DEGREE  
 --DIMENSIONS ARE INCHES NEXT TO [MILLIMETERS].

APPROVAL/SCHEDULE DRAWING  
 SAP CHANGE NUMBER: DCN-00117092  
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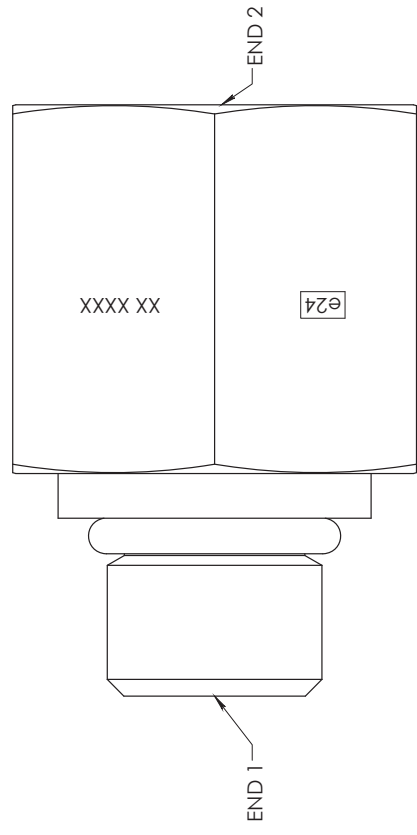
Swagelok  
 DWG. NO. CROSS-EC79-APPROVAL  
 SHEET 1 of 1  
 SCALE NONE  
 REV. A

NOTE(S):  
 1.) TWO ENDS ARE AVAILABLE IN ANY COMBINATION

MATERIAL: ASTM A276-316  
 O-RING MATERIAL: FKM ELASTOMER F103 OR V75T  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

| END 1                          | DESIGNATOR | SAE/MS THREAD SIZE |
|--------------------------------|------------|--------------------|
| 3/16" MALE SAE LIGHT DUTY (ST) | 3ST        | 3/8-24             |
| 1/4" MALE SAE LIGHT DUTY (ST)  | 4ST        | 7/16-20            |
| 3/8" MALE SAE LIGHT DUTY (ST)  | 6ST        | 9/16-18            |
| 1/2" MALE SAE HEAVY DUTY (STH) | 8STH       | 3/4-16             |

| END 2                      | DESIGNATOR | SAE/MS THREAD SIZE |
|----------------------------|------------|--------------------|
| 3/16" FEMALE SAE PORT (ST) | 3ST        | 3/8-24             |
| 1/4" FEMALE SAE PORT (ST)  | 4ST        | 7/16-20            |
| 3/8" FEMALE SAE PORT (ST)  | 6ST        | 9/16-18            |
| 1/2" FEMALE SAE PORT (ST)  | 8STH       | 3/4-16             |



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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES  
 .XX ±.01  
 .XXX ±.005  
 .XXXX ±.0015  
 ANGLES ±30 MINUTES  
 INTERPRET DIM. AND TOL. PER ASME Y14.5M-1994

TITLE APPROVAL/SCHEDULE DRAWING  
 MATERIAL  
 SAP CHANGE NUMBER DCN-00144731

SWAGelok

SHEET 1 of 1  
 SCALE 4:1  
 DWG. NO. FEMALE CONNECTOR-EC79-APPROVAL  
 REV. A

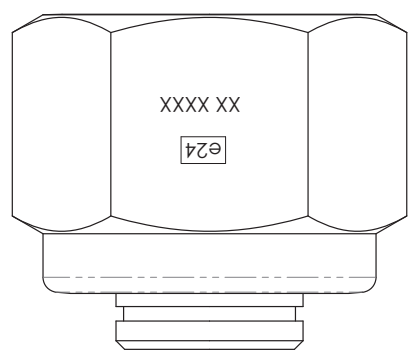
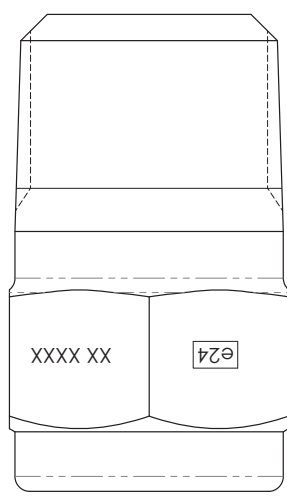
DWG. NO. PLUG-EC79-APPROVAL

NOTE(S):  
 MATERIAL: ASTM A276-316  
 TUBE MATERIAL: ASTM A269-316L  
 TUBE WALL THICKNESS: 1.0 mm - 2.5 mm & 0.035" - 0.095"  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

TUBING PLUG

|       |
|-------|
| END 1 |
| 6MO   |
| 8MO   |
| 10MO  |
| 12MO  |
| 14MO  |
| 15MO  |
| 16MO  |
| 400   |
| 500   |
| 600   |
| 810   |
| 1010  |

PIPE PLUG  
 1/4" MALE NPT



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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES  
 .XX ±.01  
 .XXX ±.005  
 .XXXX ±.0015  
 ANGLES ±30 MINUTES  
 INTERPRET DIM. AND TOL. PER ASME Y14.5M-1994

TITLE APPROVAL/SCHEDULE DRAWING  
 MATERIAL  
 SAP CHANGE NUMBER DCN-00144731

SHEET 1 of 2  
 SCALE 4:1  
 REV. B

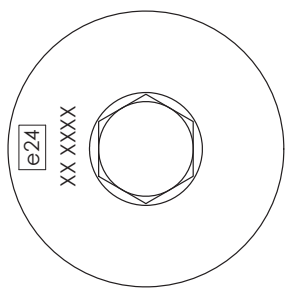
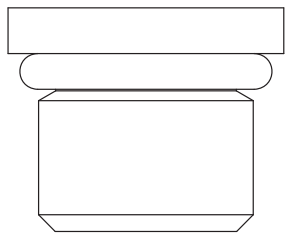


DWG. NO. PLUG-EC79-APPROVAL

NOTE(S):  
 MATERIAL: ASTM A276-316  
 O-RING MATERIAL: FKM ELASTOMER F103 OR V75T  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

| HOLLOW HEX PLUG                | DESIGNATOR | SAE/MS THREAD SIZE |
|--------------------------------|------------|--------------------|
| 3/16" MALE SAE LIGHT DUTY (ST) | 3ST        | 3/8-24             |
| 1/4" MALE SAE LIGHT DUTY (ST)  | 4ST        | 7/16-20            |
| 3/8" MALE SAE LIGHT DUTY (ST)  | 6ST        | 9/16-18            |
| 1/2" MALE SAE HEAVY DUTY (STH) | 8STH       | 3/4-16             |

| HEX HEAD PLUG                  | DESIGNATOR | SAE/MS THREAD SIZE |
|--------------------------------|------------|--------------------|
| 3/16" MALE SAE LIGHT DUTY (ST) | 3ST        | 3/8-24             |
| 1/4" MALE SAE LIGHT DUTY (ST)  | 4ST        | 7/16-20            |
| 3/8" MALE SAE LIGHT DUTY (ST)  | 6ST        | 9/16-18            |
| 1/2" MALE SAE HEAVY DUTY (STH) | 8STH       | 3/4-16             |



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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES  
 .XX ±.01  
 .XXX ±.005  
 .XXXX ±.0015  
 ANGLES ±30 MINUTES  
 INTERPRET DIM. AND TOL. PER ASME Y14.5M-1994

TITLE APPROVAL/SCHEDULE DRAWING

MATERIAL SAP CHANGE NUMBER DCN-00144731

SHEET 2 of 2  
 SCALE 4:1  
 REV. B



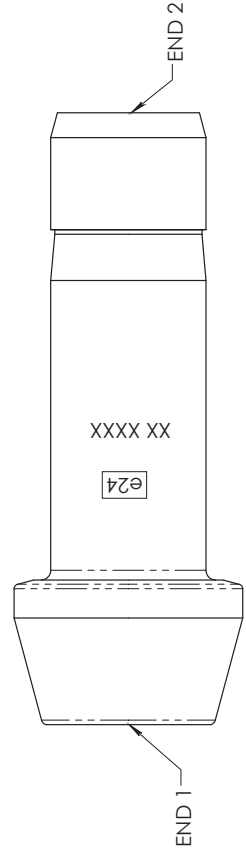
DWG. NO. PLUG-EC79-APPROVAL

|           |              |          |   |   |   |   |   |   |   |   |
|-----------|--------------|----------|---|---|---|---|---|---|---|---|
| REVISIONS |              | DWG. NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| REV.      | DCN          |          |   |   |   |   |   |   |   |   |
| -         | DCN-00098509 |          |   |   |   |   |   |   |   |   |
| A         | DCN-00117092 |          |   |   |   |   |   |   |   |   |

NOTE(S):  
 1.) TWO ENDS ARE AVAILABLE IN ANY COMBINATION (LARGER END MUST BE END 1).

MATERIAL: ASTM A276-316  
 TUBE MATERIAL: ASTM A269-316L  
 TUBE WALL THICKNESS: 1.0mm - 2.5mm & 0.035" - 0.095"  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

| END 1 | END 2 |
|-------|-------|
| 6M0   | 6M0   |
| 8M0   | 8M0   |
| 10M0  | 10M0  |
| 12M0  | 12M0  |
| 14M0  | 14M0  |
| 15M0  | 15M0  |
| 16M0  | 16M0  |
| 400   | 400   |
| 500   | 500   |
| 600   | 600   |
| 810   | 810   |
| 1010  | 1010  |



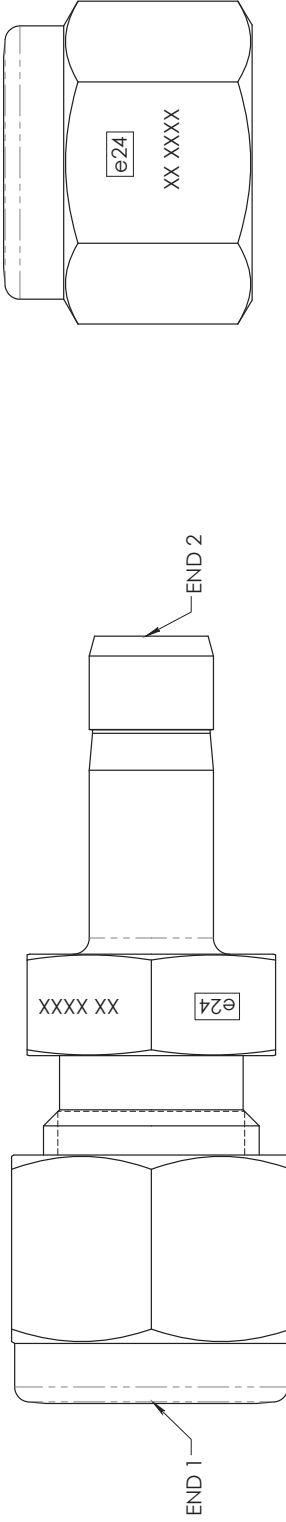
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| DWG. NO. PORT CONNECTOR-EC79-APPROVAL   |  |  |  | DWG. NO. PORT CONNECTOR-EC79-APPROVAL   |  |                                      |  |



NOTE(S):  
 1.) THE TWO ENDS ARE AVAILABLE IN ANY COMBINATION.

MATERIAL: ASTM A276-316  
 TUBE MATERIAL: ASTM A269-316L  
 TUBE WALL THICKNESS: 1.0 mm - 2.5 mm & 0.035" - 0.095"  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

| END 1 | END 2 |
|-------|-------|
| 6M0   | 6M0   |
| 8M0   | 8M0   |
| 10M0  | 10M0  |
| 12M0  | 12M0  |
| 14M0  | 14M0  |
| 15M0  | 15M0  |
| 16M0  | 16M0  |
| 400   | 400   |
| 500   | 500   |
| 600   | 600   |
| 810   | 810   |
| 1010  | 1010  |



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 .XX ±.01  
 .XXX ±.005  
 .XXXX ±.0015  
 ANGLES ±30 MINUTES  
 INTERPRET DIM. AND TOL. PER ASME Y14.5M-1994

TITLE APPROVAL/SCHEDULE DRAWING

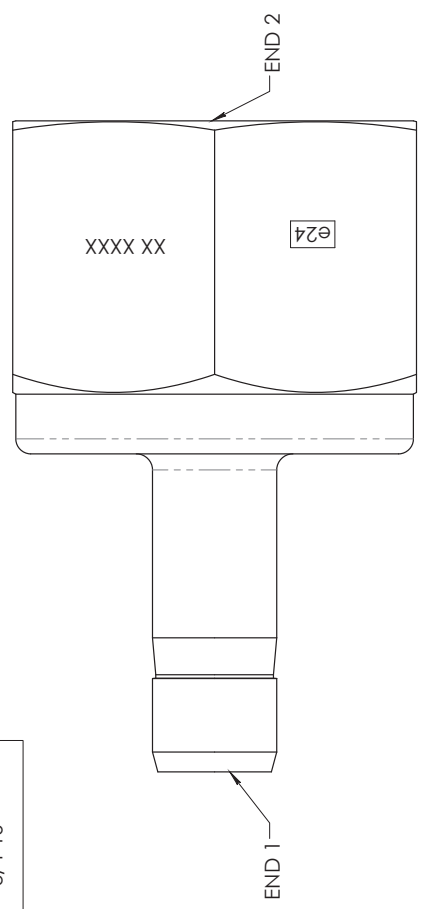
MATERIAL  
 SAP CHANGE NUMBER  
 DCN-00144731

SHEET 1 of 3  
 SCALE 4:1  
 REV. B

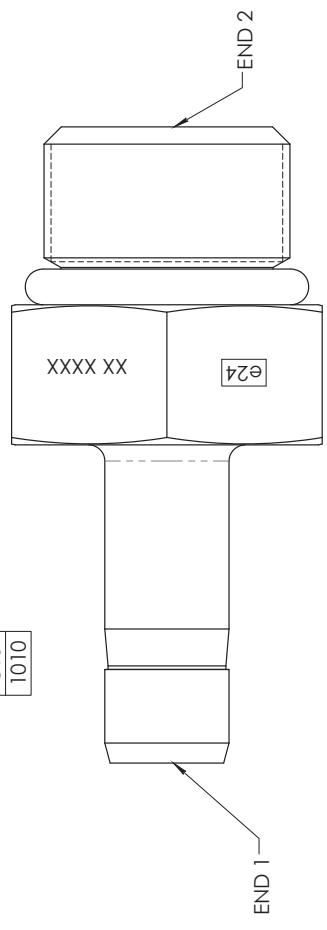
DWG. NO. REDUCER-EC79-APPROVAL

NOTE(S):  
 1.) THE TWO ENDS ARE AVAILABLE IN ANY COMBINATION.  
 MATERIAL: ASTM A276-316  
 O-RING MATERIAL: FKM ELASTOMER F103 OR V75T  
 TUBE MATERIAL: ASTM A269-316L  
 TUBE WALL THICKNESS: 1.0 mm - 2.5mm & 0.035" - 0.095"  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

| END 1 | END 2                          | DESIGNATOR | SAE/MS THREAD SIZE |
|-------|--------------------------------|------------|--------------------|
| 6M0   | 3/16" MALE SAE LIGHT DUTY (ST) | 3ST        | 3/8-24             |
| 8M0   | 3/16" FEMALE SAE PORT (ST)     |            |                    |
| 10M0  | 1/4" MALE SAE LIGHT DUTY (ST)  | 4ST        | 7/16-20            |
| 12M0  | 1/4" FEMALE SAE PORT (ST)      |            |                    |
| 14M0  | 3/8" MALE SAE LIGHT DUTY (ST)  | 6ST        | 9/16-18            |
| 15M0  | 3/8" FEMALE SAE PORT (ST)      |            |                    |
| 16M0  | 1/2" MALE SAE HEAVY DUTY (STH) | 8STH       | 3/4-16             |
| 400   | 1/2" FEMALE SAE PORT (ST)      |            |                    |
| 500   |                                |            |                    |
| 600   |                                |            |                    |
| 810   |                                |            |                    |
| 1010  |                                |            |                    |



SAE FEMALE ADAPTER



SAE MALE ADAPTER

|   |   |                 |
|---|---|-----------------|
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|   | MATERIAL<br>SAP CHANGE NUMBER<br>DCN-00144731 | SCALE<br>4:1    |



NOTES:

1.) THE TWO ENDS ARE AVAILABLE IN ANY COMBINATION.

MATERIAL: ASTM A276-316

TUBE MATERIAL: ASTM A269-316L

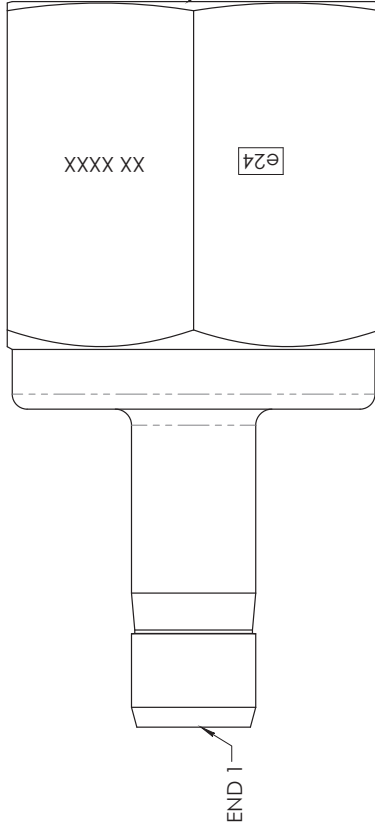
TUBE WALL THICKNESS: 1.0 mm - 2.5mm & 0.035" - 0.095"

PRESSURE RATING: UP TO 35 Mpa (5,076 psi)

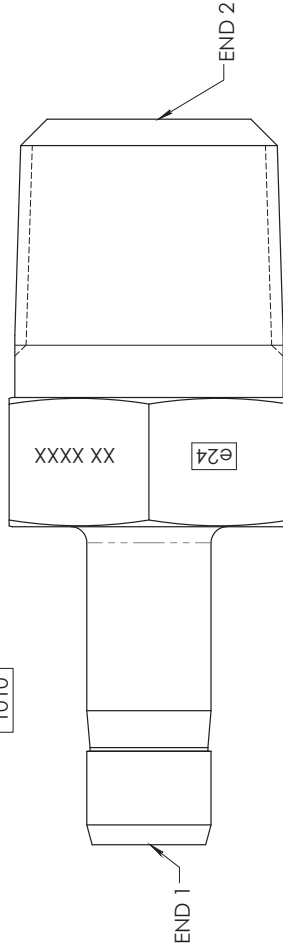
MARKING METHOD: LASER MARKED

TEMPERATURE RATING: (-40C TO +120C)

|       |                 |
|-------|-----------------|
| END 1 | END 2           |
| 6MO   | 1/4" MALE NPT   |
| 8MO   | 1/4" FEMALE NPT |
| 10MO  |                 |
| 12MO  |                 |
| 14MO  |                 |
| 15MO  |                 |
| 16MO  |                 |
| 400   |                 |
| 500   |                 |
| 600   |                 |
| 810   |                 |
| 1010  |                 |



NPT FEMALE ADAPTER



NPT MALE ADAPTER

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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES  
 .XX ±.01  
 .XXX ±.005  
 .XXXX ±.0015  
 ANGLES ±.30 MINUTES  
 INTERPRET DIM. AND TOL. PER ASME Y14.5M-1994

TITLE APPROVAL/SCHEDULE DRAWING

MATERIAL SAP CHANGE NUMBER DCN-00144731

SHEET 3 of 3  
 SCALE 4:1  
 REV. B

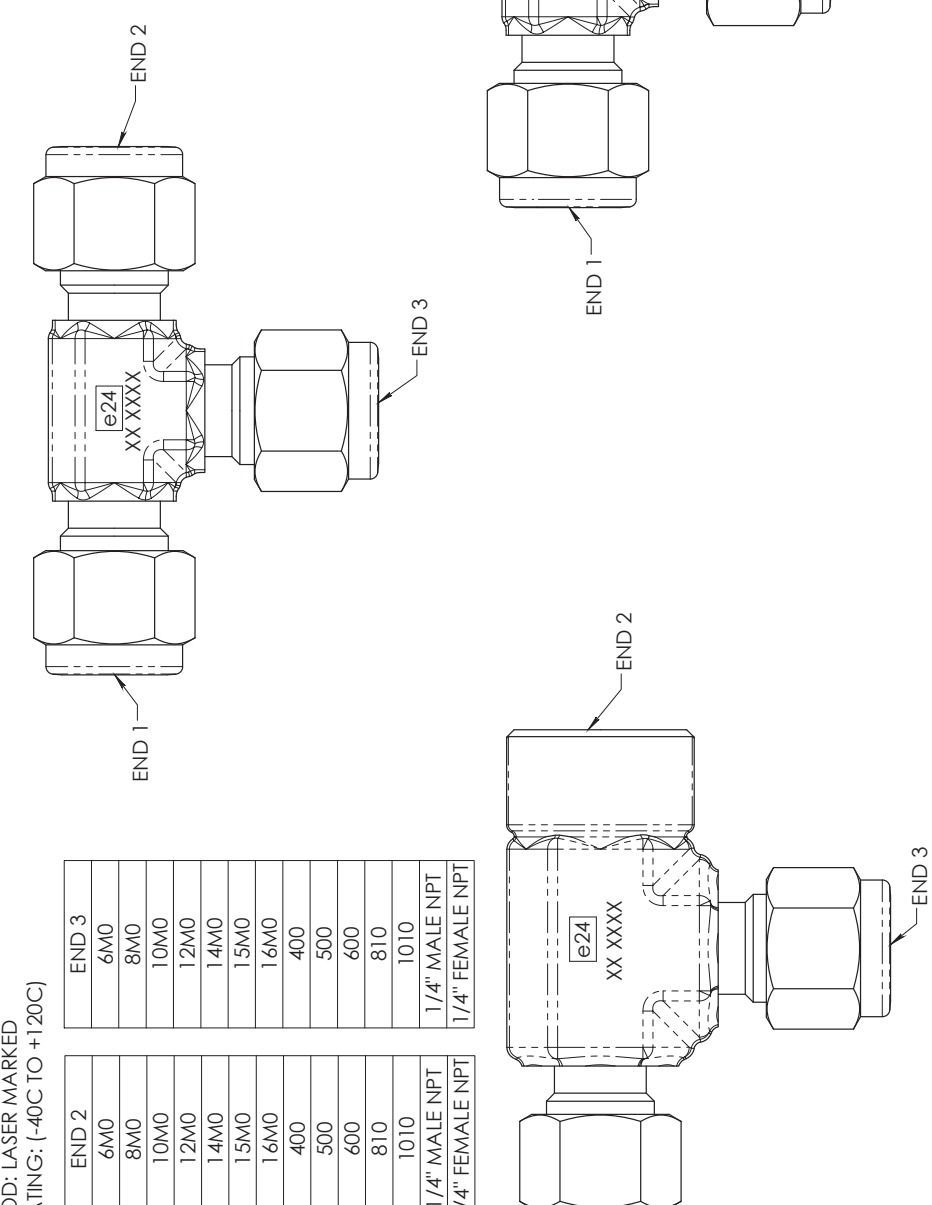
DWG. NO. REDUCER-EC79-APPROVAL



|           |              |   |  |
|-----------|--------------|---|--|
| REVISIONS |              | NOTE(S):  |  |
| REV.      | DCN          | 1.) THE THREE ENDS ARE AVAILABLE IN ANY COMBINATION AND ANY POSITION. |  |
| -         | DCN-00098509 |   |  |
| A         | DCN-00117092 |   |  |

MATERIAL: ASTM A276-316  
 TUBE MATERIAL: ASTM A269-316L  
 TUBE WALL THICKNESS: 1.0mm - 2.5mm & 0.035" - 0.095"  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

| END 1           | END 2           | END 3           |
|-----------------|-----------------|-----------------|
| 6MO             | 6MO             | 6MO             |
| 8MO             | 8MO             | 8MO             |
| 10MO            | 10MO            | 10MO            |
| 12MO            | 12MO            | 12MO            |
| 14MO            | 14MO            | 14MO            |
| 15MO            | 15MO            | 15MO            |
| 16MO            | 16MO            | 16MO            |
| 400             | 400             | 400             |
| 500             | 500             | 500             |
| 600             | 600             | 600             |
| 810             | 810             | 810             |
| 1010            | 1010            | 1010            |
| 1/4" MALE NPT   | 1/4" MALE NPT   | 1/4" MALE NPT   |
| 1/4" FEMALE NPT | 1/4" FEMALE NPT | 1/4" FEMALE NPT |



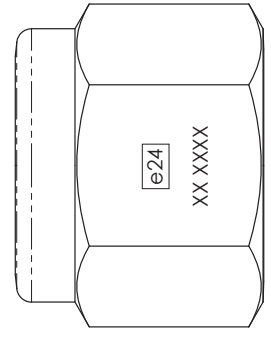
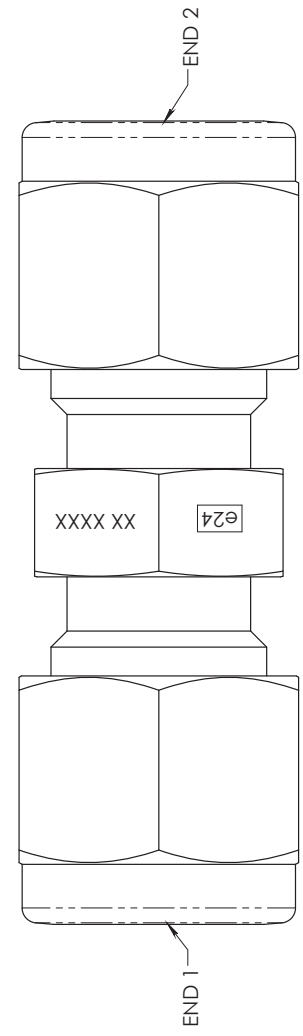
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|--|--|--|--|---|--|--|--|---|--|

| REVISIONS |              |
|-----------|--------------|
| REV.      | DCN          |
| -         | DCN-00098509 |
| A         | DCN-00117092 |

NOTE(S):  
 1.) THE TWO ENDS ARE AVAILABLE IN ANY COMBINATION.

MATERIAL: ASTM A276-316  
 TUBE MATERIAL: ASTM A269-316L  
 TUBE WALL THICKNESS: 1.0mm - 2.5mm & 0.035" - 0.095"  
 PRESSURE RATING: UP TO 35 Mpa (5,076 psi)  
 MARKING METHOD: LASER MARKED  
 TEMPERATURE RATING: (-40C TO +120C)

| END 1 | END 2 |
|-------|-------|
| 6M0   | 6M0   |
| 8M0   | 8M0   |
| 10M0  | 10M0  |
| 12M0  | 12M0  |
| 14M0  | 14M0  |
| 15M0  | 15M0  |
| 16M0  | 16M0  |
| 400   | 400   |
| 500   | 500   |
| 600   | 600   |
| 810   | 810   |
| 1010  | 1010  |



DWG. NO. UNION-EC79-APPROVAL

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TOLERANCE ON ENGLISH DIMENSIONS UNLESS OTHERWISE SPECIFIED  
 XXX ±.001  
 ANGLES ±1 DEGREE  
 --DIMENSIONS ARE INCHES NEXT TO [MILLIMETERS].

TITLE APPROVAL/SCHEDULE DRAWING  
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 SAP CHANGE NUMBER DCN-00117092

SHEET 1 of 1  
 SCALE NONE  
 REV. A  
 DWG. NO. UNION-EC79-APPROVAL

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DWG. NO. NF SET ABT-EC79-H35-APPROVAL

**NOTES:**

1.) THE TWO ENDS ARE AVAILABLE IN ANY COMBINATION

NOMINAL PRESSURE RATING: UP TO 35 MPA (5,076 PSI)

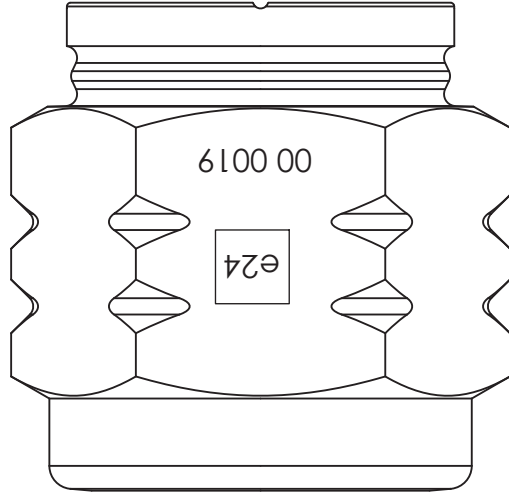
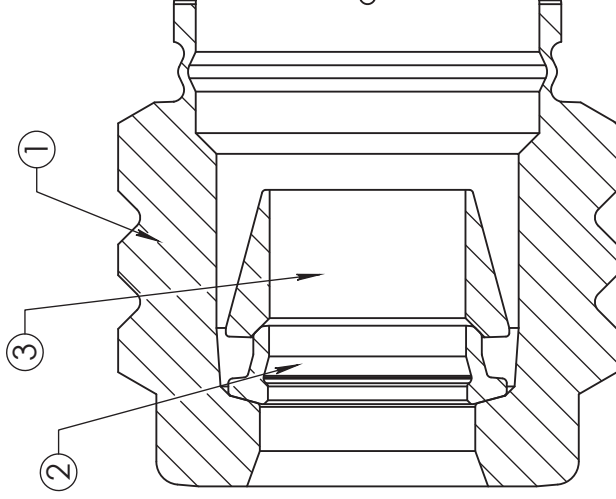
MAWP AS TESTED PER EN406: 43.75 MPA (6,345 PSI)

MARKING METHOD: LASER MARKED

TEMPERATURE RATING: (-40C TO +120C)

| SIZES  |
|--------|
| 4ABT   |
| 6ABT   |
| 8ABT   |
| 6MABT  |
| 8MABT  |
| 10MABT |
| 12MABT |

| ITEM NO. | DESCRIPTION   | MATERIAL                        | QTY. |
|----------|---------------|---------------------------------|------|
| 1        | ABT NUT       | ASTM A276-316                   | 1    |
| 2        | BACK FERRULE  | ASTM A276-316                   | 1    |
| 3        | FRONT FERRULE | ASTM A276-316 WITH HDPE COATING | 1    |



UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES  
 .XX ±.01  
 .XXX ±.005  
 .XXXX ±.0015  
 ANGLES ±30 MINUTES  
 INTERPRET DIM. AND TOL. PER ASME Y14.5M-1994

TITLE APPROVAL/SCHEDULE DRAWING

MATERIAL

SAP CHANGE NUMBER

SCALE 2:1

DATE 1/31/2020

DWG. NO.

NF SET ABT-EC79-H35-APPROVAL

SHEET 1 of 1

VS.

REV. -

