



# **Hydrasearch** DEFENSE

## Marine Hose & Fittings





## ***Committed to Quality and Innovation***

Founded in 1962, Hydrasearch is a US-based manufacturer providing mission-critical fluid conveyance solutions for maritime and aerospace markets. We have extensive experience in defense and commercial applications, strategically overcoming technical, regulatory and operational hurdles which others avoid. We support the immediate needs of daily operational logistics, and provide the long-term dependability required to satisfy OEM production.

Over the years, we have built our reputation through strict adherence to product design and quality control, interchangeability with existing products, close attention to customer requirements and delivery needs, and maintaining competitive pricing. Our steadily expanding market presence led to the acquisition of Aeroquip's Marine Military product line in 2023—combining over 120 years of collective experience and innovation in naval fluid conveyance systems.

Today, Hydrasearch products are found in marine vessels and aircraft throughout the world. We supply all major shipyards in the U.S., and our market continues to grow internationally.

## ***A Knowledge Base Built on Experience***

For over 60 years, Hydrasearch has focused on the design, development, and manufacturing of fluid systems and components. Many of our original products were specifically designed hydraulic systems and Underway Replenishment (UNREP) systems for the U.S. Navy. Our in-depth knowledge of hose fitting designs for demanding applications soon led to the development of innovative hose couplings and related products, which are now part of many fuel and water handling systems used by military and commercial customers alike.

## **Hydrasearch Company, LLC.**

203A Log Canoe Circle,  
Stevensville, MD 21666



# Legal Policy Information

### Right to Warn



In order to ensure proper function of products, it is strongly recommended that each part is inspected and serviced monthly. Inspection should include, but is not limited to, visible damage, excessive wear and proper bonding. Failure to properly maintain your product may result in catastrophic failure and/or loss of life.

### Limited Warranty

Hydrasearch Company, LLC (herein called “Hydrasearch”) warrants the products described herein, and manufactured by Hydrasearch to be free from defects in material and workmanship for a period of one (1) year from the date of invoice by Hydrasearch under normal use and service. Hydrasearch’s sole obligation under this warranty is limited to either repairing or replacing, as hereinafter provided, at its option, any product found to Hydrasearch’s satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Hydrasearch’s factory within thirty (30) days after receipt.

The repair or replacement of defective products will be made without charge for parts or labor. This warranty shall not apply to parts or products not manufactured by Hydrasearch, the warranty of such items being limited to the actual warranty extended to Hydrasearch by its supplier.

This warranty shall not apply to any product which has been subject to abuse, negligence, accident or misapplication or to any product which has been altered or repaired by anyone other than Hydrasearch nor to normal maintenance services and the replacement of service items (such as washers, gaskets and lubricants) made in connection with such services.

To the extent permitted by law, this limited warranty shall extend only to the buyer and any other person reasonably expected to use or consume the goods who is injured in person by any breach of warranty. No action may be brought against Hydrasearch for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be construed and enforced to the fullest extent allowable by applicable law.

Other than the obligation of Hydrasearch expressly set forth herein, Hydrasearch disclaims all warranties, express or implied, including but not limited to any implied warranties of merchantability or fitness for a particular purpose, and any other obligation or liability. The foregoing constitutes Hydrasearch’s sole obligation with respect to damages, whether direct, incidental or consequential, resulting from the use or performance of the product.

### Proposition 65 Warning

As a company that may sell or distribute Hydrasearch Company, LLC (“Hydrasearch”) products to California consumers or to other persons or entities that may sell such items to California consumers, Hydrasearch is obligated to notify you of the following:

Hydrasearch is in compliance with the California Safe Drinking Water and Toxic Enforcement Act of 1986 and its supporting regulations (“Proposition 65”), as it provides warnings that comply with a 2015 court-approved settlement. All Hydrasearch products are shipped in cartons with the following warning:

“**WARNING:** This product contains lead, a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.”

If you sell or distribute Hydrasearch products to California consumers, or to other persons or entities that may sell such items to California consumers, in quantities fewer than a full carton, you must provide this warning to each consumer, either by labeling each unit with the above warning, by posting a sign at the point of sale, or by another method.

If you sell Hydrasearch products online to California consumers, you should display this warning message on the product display page, by a clearly marked hyperlink on the product display page, or otherwise prominently displayed to the purchaser before the purchaser completes the purchase of the product.

Hydrasearch will defend and indemnify you if there is a claim made under Proposition 65 for listed chemicals being contained in its products, so long as you have provided the warning per the instructions above. If you sell Hydrasearch products without the warnings we have provided, you are at risk of enforcement and significant penalties.

If you would like more information about the chemicals contained in Hydrasearch products, please visit our website at [www.hydrasearch.com](http://www.hydrasearch.com). Many product display pages contain information about the chemicals contained in our products.

Hydrasearch products made of brass may not be sold to California consumers unless such fittings either contain less than 300 ppm of lead when analyzed pursuant to the EPA test method of 3050B or equivalent or they are sold or distributed with a clear, reasonable and conspicuous warning. So long as it is prominently displayed on the product or the packaging of the product, the above warning complies.

Should you need further explanation or assistance in complying with this notice, please do not hesitate to contact us at [compliance@hydrasearch.com](mailto:compliance@hydrasearch.com)

# Legal Policy Information

### Return Policy

Contact your Hydrasearch Company, LLC customer service representative (information below) to obtain a Return Material Authorization (RMA) form. Original invoice number, purchase order number and date must be provided. Product returned without an RMA number may be refused or returned at the customer’s expense. Hydrasearch is not liable for unauthorized returns.

### Return Material Authorization (RMA)

- Authorization must be obtained prior to return
- RMA expires thirty (30) days from the date issued
- One carton must include a copy of the RMA form to ensure prompt evaluation and possible credit on return
- If credit is applicable, credit may take up to thirty (30) days from receipt of the returned product(s)
- Returned merchandise transportation must be prepaid
- Merchandise must be securely packaged to avoid damage during transit
- All cartons must be marked with authorized RMA number (unmarked shipments will be refused by our receiving department)
- Returned goods should be shipped to the following address:

Hydrasearch Company, LLC  
Returns Dept. RMA # \_\_\_\_\_  
203A Log Canoe Circle  
Stevensville, MD 21666

### Nonconforming Products

- All products will be inspected and processed by our quality department for disposition
- Product(s) shipped in error and/or products deemed nonconforming will be credited at the invoice price paid including freight charges for these items

### Restocking/Unwanted Products

- All products will be inspected and processed by our quality department for disposition
- Restocking charge will apply at a minimum of 25% for all products returned for any other reason than Hydrasearch shipping and/or nonconforming errors
- Product(s) may not be returned unless they are in marketable condition. Any cost incurred to put product(s) in marketable condition will be charged to the customer.
- Products returned damaged/broken will be credited at scrap value only
- Products returned to Hydrasearch must be prepaid freight at the responsibility of the customer
- Non-inventory products may or may not be authorized for return, based solely on the inventory requirements of Hydrasearch
- Special order product(s) or products that do not have standard requirements, are not eligible for return (unless product is found to be nonconforming by our quality department)
- Shaft couplings must be in original, sealed cartons and in salable condition

### Claims

- Claims for damage or loss in transit must be made by customer directly against the carrier. Hydrasearch is not responsible for freight damage
- Photographic evidence is required for all claims
- All claims for defective product or deficient orders must be made in writing by customer within thirty (30) days of receipt

### Limits of Liability and Copyright

This catalog is intended as a product offering. It is not intended to be a technical manual. Information in this catalog is subject to change without notice. All users and distributors of products sold through this catalog should contact Hydrasearch with questions of use, compatibilities, coupling procedures and life of product. Our full time engineering and test staff is always available to recommend uses and to assist distributors and users with any questions.

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HS4182 | Equal to Aeroquip  
P/N FC132

Large Bore  
Hose  
MIL-DTL-24136/4



| Part Number | Hose I.D. | Hose O.D. | Maximum Operating Pressure | Minimum Burst Pressure | Minimum Bend Radius | Vacuum Service | Weight per Foot |
|-------------|-----------|-----------|----------------------------|------------------------|---------------------|----------------|-----------------|
|             | inches    | inches    | PSI                        | PSI                    | inches              | inch/Hg        | pounds          |
|             |           |           |                            |                        |                     |                |                 |
| HS4182-40   | 2½"       | 3.30      | 1,000                      | 4,000                  | 20.00               | Coil           | 2.25            |
| HS4182-48   | 3"        | 3.80      | 900                        | 3,600                  | 24.00               | Coil           | 2.55            |
| HS4182-64   | 4"        | 4.86      | 600                        | 2,400                  | 30.00               | Sleeve         | 3.15            |

| Fitting Reference  | Page | <b>Construction:</b> Synthetic rubber tube and cover with 3 or 6 layers of synthetic yarn reinforcement, in optional braided or spiral construction.<br><b>Application:</b> Fresh and salt water systems, oil applications and fuel systems. For more specific information on fluid applications, see page 290-295.<br><b>Operating Temperature:</b> -40° F to +200° F (-40° C to +100° C) |
|--------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flange             |      |                                                                                                                                                                                                                                                                                                                                                                                            |
| Dogleg             |      |                                                                                                                                                                                                                                                                                                                                                                                            |
| Split Clamp        |      |                                                                                                                                                                                                                                                                                                                                                                                            |
| Tailpiece Assembly |      |                                                                                                                                                                                                                                                                                                                                                                                            |

ER512 | Equal to Aeroquip  
P/N 2580

Large Bore  
Hose  
MIL-DTL-24136/1

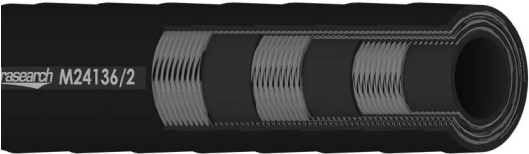


| Part Number  | Hose I.D. | Hose O.D. | Maximum Operating Pressure | Minimum Burst Pressure | Minimum Bend Radius | Vacuum Service | Weight per Foot |
|--------------|-----------|-----------|----------------------------|------------------------|---------------------|----------------|-----------------|
|              | inches    | inches    | PSI                        | PSI                    | inches              | inch/Hg        | pounds          |
|              |           |           |                            |                        |                     |                |                 |
| HOS-ER512-5  | 5"        | 5.88      | 300                        | 1,200                  | 36.00               | Sleeve         | 3.90            |
| HOS-ER512-6  | 6"        | 6.88      | 300                        | 1,200                  | 42.00               | Sleeve         | 5.00            |
| HOS-ER512-8  | 8"        | 8.94      | 300                        | 1,200                  | 54.00               | Sleeve         | 7.00            |
| HOS-ER512-10 | 10"       | 10.94     | 200                        | 800                    | 66.00               | Sleeve         | 8.50            |
| HOS-ER512-12 | 12"       | 13.12     | 150                        | 600                    | 78.00               | Sleeve         | 12.00           |

| Fitting Reference | Page | <b>Construction:</b> Synthetic rubber tube and cover with 6, 8 or 10 layers of spiraled synthetic yarn reinforcement.<br><b>Application:</b> Fresh and salt water systems, fuel systems, oil applications and low pressure air. For more specific information on fluid applications, see page 290-295.<br><b>Operating Temperature:</b> -40° F to +200° F (-40° C to +100° C) |
|-------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flange            |      |                                                                                                                                                                                                                                                                                                                                                                               |
| Dogleg            |      |                                                                                                                                                                                                                                                                                                                                                                               |
| Split Clamp       |      |                                                                                                                                                                                                                                                                                                                                                                               |
|                   |      |                                                                                                                                                                                                                                                                                                                                                                               |

HS133 | Equal to Aeroquip  
P/N FC133

High Pressure  
Hose  
MIL-DTL-24136/2

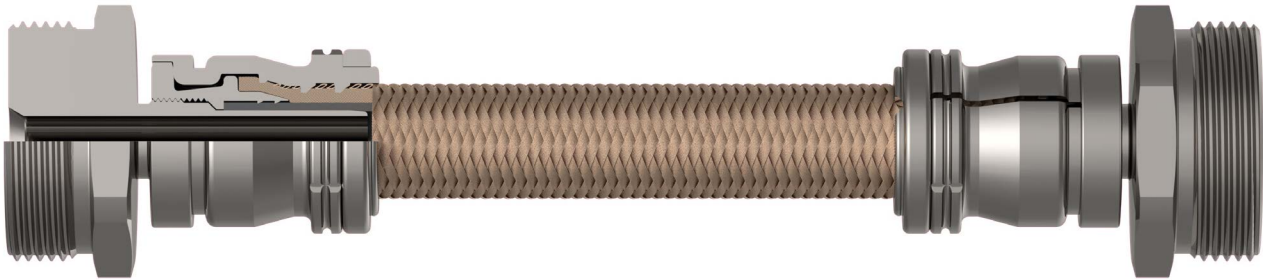


| Part Number | Hose I.D. | Hose O.D. | Maximum Operating Pressure | Minimum Burst Pressure | Minimum Bend Radius | Vacuum Service | Weight per Foot |
|-------------|-----------|-----------|----------------------------|------------------------|---------------------|----------------|-----------------|
|             | inches    | inches    | PSI                        | PSI                    | inches              | inch/Hg        | pounds          |
|             |           |           |                            |                        |                     |                |                 |
| HS133-06    | ¾"        | 1.03      | 2,000                      | 8,000                  | 5.00                | -              | .46             |
| HS133-08    | ½"        | 1.15      | 2,000                      | 8,000                  | 7.00                | -              | .52             |
| HS133-12    | ¾"        | 1.53      | 1,500                      | 6,000                  | 9.50                | -              | .81             |
| HS133-16    | 1"        | 1.81      | 1,400                      | 5,600                  | 11.00               | -              | 1.03            |
| HS133-20    | 1¼"       | 2.06      | 1,000                      | 4,000                  | 16.00               | -              | 1.26            |
| HS133-24    | 1½"       | 2.29      | 1,000                      | 4,000                  | 20.00               | -              | 1.34            |
| HS133-32    | 2"        | 2.83      | 900                        | 3,600                  | 25.00               | -              | 1.88            |

| Fitting Reference | Page | <b>Construction:</b> Synthetic rubber tube and cover with 3 layers of braided synthetic yarn reinforcement<br><b>Application:</b> Fresh and salt water systems, oil applications and fuel systems. For more specific information on fluid applications, see page 290-295.<br><b>Operating Temperature:</b> -40° F to +200° F (-40° C to +100° C) |
|-------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S.A.E. 37°        |      |                                                                                                                                                                                                                                                                                                                                                  |
| O-Ring Seal       |      |                                                                                                                                                                                                                                                                                                                                                  |
| Dogleg            |      |                                                                                                                                                                                                                                                                                                                                                  |
|                   |      |                                                                                                                                                                                                                                                                                                                                                  |

# 5,000 PSI Pneumatic Hose Assemblies

C.P.V. Male O-Ring End Fittings - Reusable or Crimped



Applications:

Hydrasearch's Aeroquip Pneumatic Teflon\* Hose Assemblies are suitable for high pressure service with inert gas systems where operating pressures reach 5,500 psi (351.6 Kg/cm2). The hose is recommended for air, nitrogen and other inert gases, and is also suitable for helium and helium mixtures where a relatively high effusion rate can be accepted. Aeroquip 678 Hose is suitable in a temperature range from -65° F to +450° F. It is NOT recommended for pure oxygen lines without specific engineering approval from Hydrasearch in each case. Primary shipboard applications include compressor discharge lines in H.P. air systems, and charging lines in air and nitrogen systems. The hose is reinforced by multiple spiral layers of 300- series stainless steel wire.

Lengths:

Aeroquip 678619 and AE1000120 Hose Assemblies are available in continuous lengths up to 40 feet. Longer lengths can be assembled using C.P.V. union fittings, or by specifying integral union nipple assemblies.

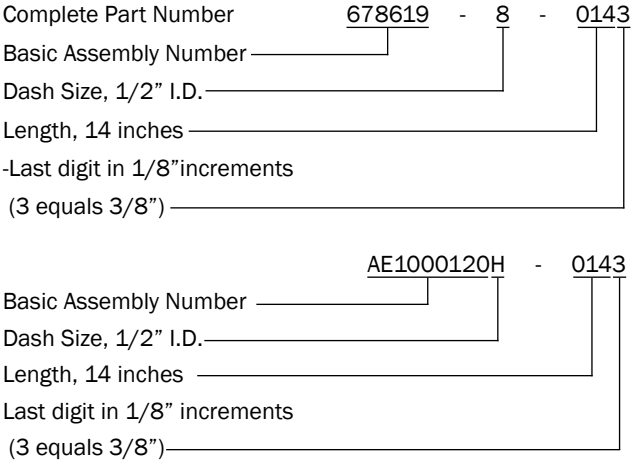
Fittings:

The standard reusable or crimped socket fittings are illustrated above with CRES components. The straight thread male C.P.V. O-Ring style is the standard end configuration. However, a 37° flare swivel fitting and a Walseal male fitting can be supplied on special order.

Certification:

Hose Assemblies are supplied with certification. Traceability documentation to NavShips 0948-045-7010, Level 1, including heat numbers, can be supplied at additional charge when requested.

Example:



How to Order:

The Aeroquip 678619 and AE1000120 Teflon Hose Assemblies should be ordered as detailed below. The complete part number will include the size (-8 only), and the overall length in inches from sealing surface to sealing surface.

# Aircraft Ground Refueling Hose Assemblies



Applications:

Hydrasearch's Aircraft Ground Refueling Hose Assemblies are suitable for medium pressure service with a variety of fixed and rotary wing aircraft. Engineered with integrated electrical grounding systems that prevent static combustion. Common applications include Aircraft Carrier Deck refueling, Field Aviation Refueling Point (FARP) systems, and HEMTT Tanker Aviation Refueling Systems (HTARS).

Military Specifications:

- MIL-DTL-17902G
- MIL-PRF-370J
- MIL-DTL-27516H
- MIL-DTL-6615J
- MIL-PRF-53063B
- MIL-PRF-53064B
- MIL-PRF-53064C

Selection:

- Collapsible and non-collapsible options available
- Available in diameters 1" - 6" according to the military specifications listed below

Certification:

Hose Assemblies can be supplied with various certifications upon request.

How to Order:

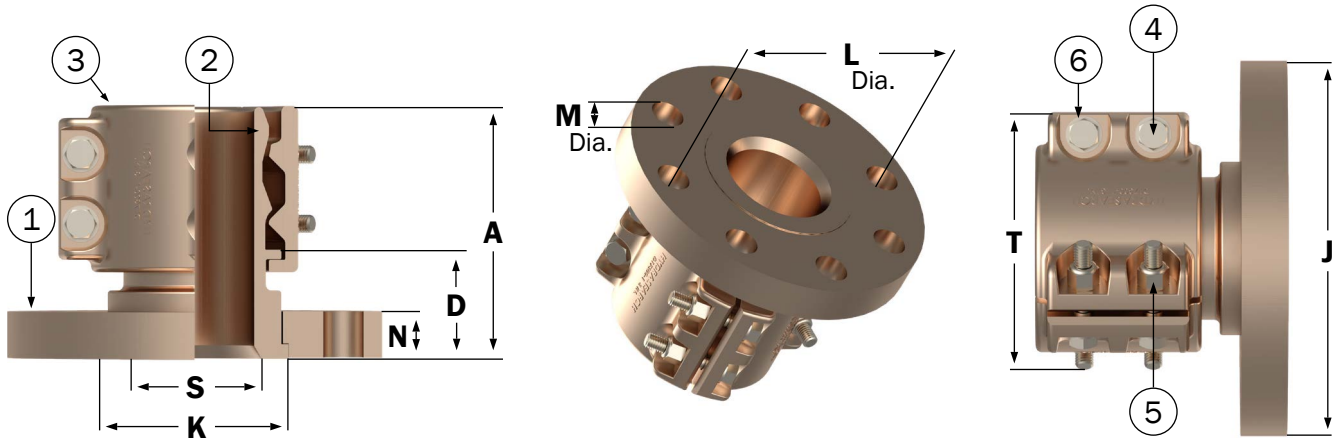
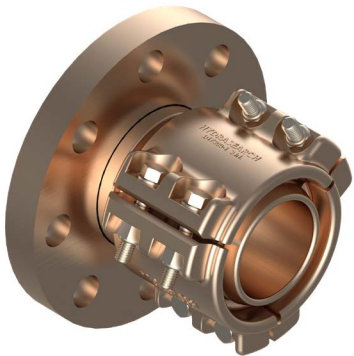
Contact Hydrasearch Sales personnel

Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group IV, Class I,  
400lb. Flange per MIL-PRF-20042

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions      |                |          |                   |      |      |      |      |      |      |      |      |      |                 |
|-----------------|----------------|----------|-------------------|------|------|------|------|------|------|------|------|------|-----------------|
| Part Number     | Drawing Number | IPS Size | No. of Bolt Holes | M    | A    | D    | J    | K    | L    | N    | S    | T    | Est. Wt. (lbs.) |
| EF-449A1-2-40   | C17995         | 2"       | 7                 | 0.69 | 5.11 | 2.20 | 6.5  | 3.22 | 5.19 | 0.81 | 2.24 | 5.35 | 12.00           |
| EF-449A1-2.5-48 | C17996         | 2½"      | 8                 | 0.81 | 5.11 | 2.20 | 7.56 | 3.78 | 6.00 | 0.94 | 2.71 | 5.58 | 17.00           |
| EF-449A1-3-48   | C17997         | 3"       | 8                 | 0.81 | 5.11 | 2.20 | 8.13 | 4.44 | 6.56 | 0.94 | 3.31 | 5.58 | 18.00           |
| EF-449A1-3.5-64 | C17998         | 3½"      | 9                 | 0.81 | 5.54 | 2.63 | 8.69 | 5.22 | 7.13 | 1.00 | 3.81 | 6.50 | 23.00           |
| EF-449A1-4-64   | C17999         | 4"       | 9                 | 0.81 | 5.54 | 2.63 | 9.25 | 5.22 | 7.69 | 1.00 | 4.28 | 6.50 | 26.00           |

| Components         |                 |          |          |          |          |          |              |
|--------------------|-----------------|----------|----------|----------|----------|----------|--------------|
| Description        | Req'd per Ass'y | 2-40     | 2.5-48   | 3-48     | 3.5-64   | 4-64     | Material     |
| Swivel Flange<br>① | 1               | C17798   | C17801   | C17802   | C17803   | C17804   | Alum. Bronze |
| Nipple<br>②        | 1               | C17306   | C18016   | C17308   | C18015   | C17210   | Alum. Bronze |
| Segment<br>③       | 3               | D17299-1 | D17300-1 | D17300-1 | D17301-1 | D17301-1 | Alum. Bronze |
| Bolt<br>④          | 6               | B17673-2 | B17673-1 | B17673-1 | B17987   | B17987   | Monel        |
| Lock Nut<br>⑤      | 6               | B18176   | B18176   | B18176   | B17984   | B17984   | Monel        |
| Washer<br>⑥        | 6               | B18175   | B18175   | B18175   | B17986   | B17986   | Monel        |

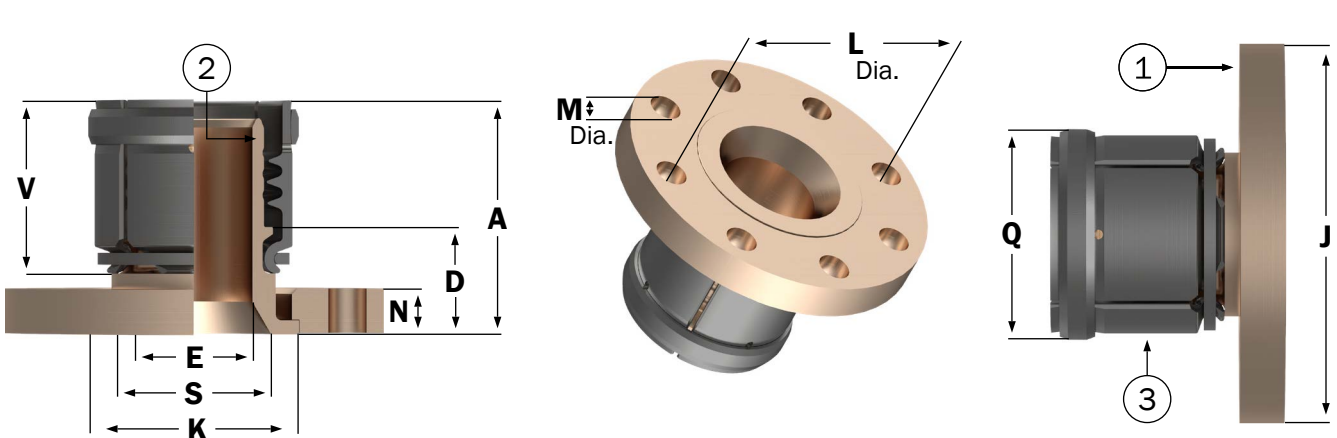
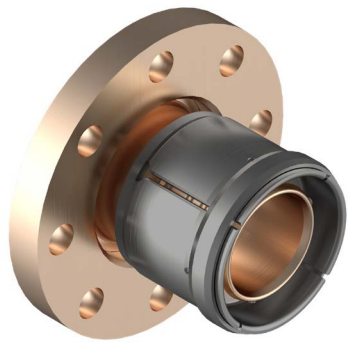
All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group IV, Class I,  
400lb. Flange per MIL-PRF-20042

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions       |          |                   |      |      |      |      |      |      |     |      |      |      |      |                 |  |
|------------------|----------|-------------------|------|------|------|------|------|------|-----|------|------|------|------|-----------------|--|
| Part Number      | IPS Size | No. of Bolt Holes | A    | D    | E    | J    | K    | L    | M   | N    | Q    | S    | V    | Est. Wt. (lbs.) |  |
| 375-190752-32-40 | 2"       | 7                 | 5.16 | 2.34 | 2.06 | 6.50 | 3.28 | 5.19 | .69 | .83  | 3.90 | 2.24 | 3.69 | 11.96           |  |
| 375-190752-40-48 | 2½"      | 8                 | 5.17 | 2.30 | 2.51 | 7.56 | 3.78 | 6.00 | .81 | .95  | 4.50 | 2.71 | 3.69 | 16.68           |  |
| 375-190752-48-48 | 3"       | 8                 | 5.17 | 2.30 | 2.51 | 8.12 | 4.50 | 6.56 | .81 | .95  | 4.50 | 3.31 | 3.69 | 17.49           |  |
| 375-190752-56-64 | 3½"      | 9                 | 5.54 | 2.74 | 3.45 | 8.69 | 5.22 | 7.12 | .81 | 1.02 | 5.44 | 3.81 | 3.69 | 22.90           |  |
| 375-190752-64-64 | 4"       | 9                 | 5.54 | 2.74 | 3.45 | 9.25 | 5.22 | 7.69 | .81 | 1.02 | 5.44 | 4.28 | 3.69 | 25.63           |  |

| Components         |                 |             |       |       |       |       |       |              |
|--------------------|-----------------|-------------|-------|-------|-------|-------|-------|--------------|
| Description        | Req'd per Ass'y | Part Number |       |       |       |       |       | Material     |
|                    |                 | Size        |       |       |       |       |       |              |
|                    |                 | Base No.    | 32-40 | 40-48 | 48    | 56-64 | 64    |              |
| Swivel Flange<br>① | 1               | 188-74048-  | 32-40 | 40-40 | 48-48 | 56-48 | 64-64 | Alum. Bronze |
| Nipple<br>②        | 1               | 188-4112-   | 40    | 40    | 48-48 | 56-48 | 64-64 | Alum. Bronze |
| Socket Assy.<br>③  | 1               | 4-1205-     | 40    | 40    | 48    | 48    | 64    | Monel        |
| Grip Segment       | 4               | 4-1205-1-   | 40    | 40    | 48    | 48    | 64    | Monel        |
| Ring               | 1               | 4-21004-    | 40    | 40    | 48    | 48    | 64    | Monel        |
| Band               | 1               | 4-2103-     | 40    | 40    | 48    | 48    | 64    | Monel        |

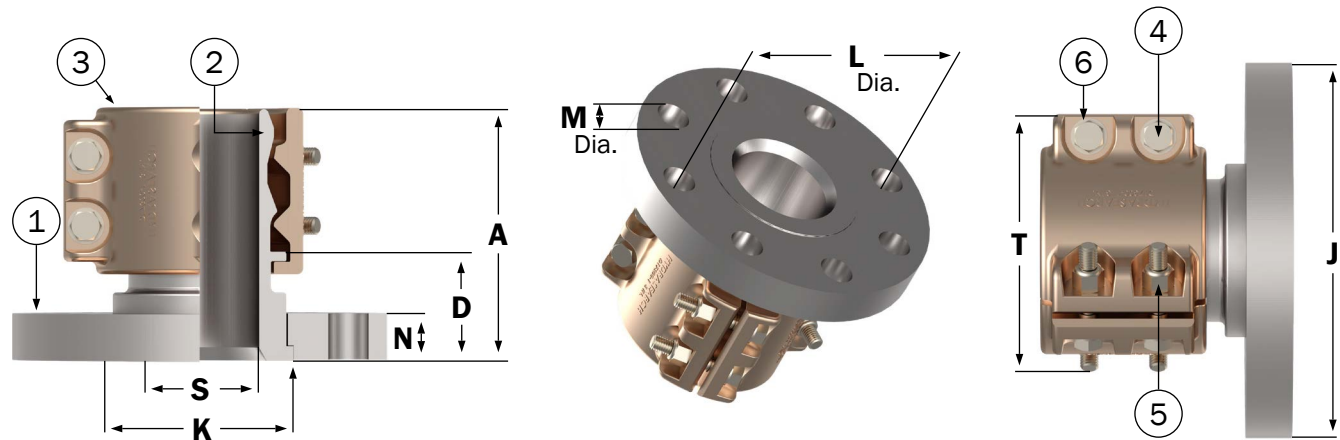
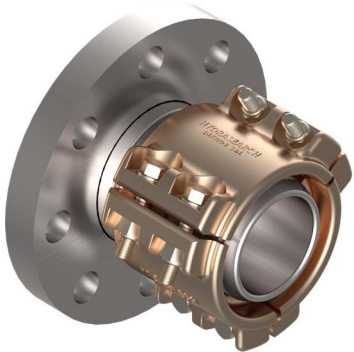
All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

Hose to Flange

End Fitting - Straight

400lb. Flange per MIL-PRF-20042

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions         |                |          |                   |     |      |      |      |      |      |     |      |      |                 |
|--------------------|----------------|----------|-------------------|-----|------|------|------|------|------|-----|------|------|-----------------|
| Part Number        | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | J    | K    | L    | N   | S    | T    | Est. Wt. (lbs.) |
| EF-449A1-2.5-40-SS | C18581         | 2½"      | 8                 | .81 | 5.11 | 2.20 | 7.56 | 3.22 | 6.00 | .94 | 2.24 | 5.35 | 16.00           |

| Components         |                 |          |                 |
|--------------------|-----------------|----------|-----------------|
| Description        | Req'd per Ass'y | 2.5-40   | Material        |
| Swivel Flange<br>① | 1               | C18156   | Stainless Steel |
| Nipple<br>②        | 1               | C18152   | Stainless Steel |
| Segment<br>③       | 3               | D17299   | Alum. Bronze    |
| Bolt<br>④          | 6               | B17673-2 | Monel           |
| Lock Nut<br>⑤      | 6               | B18176   | Monel           |
| Washer<br>⑥        | 6               | B18175   | Monel           |

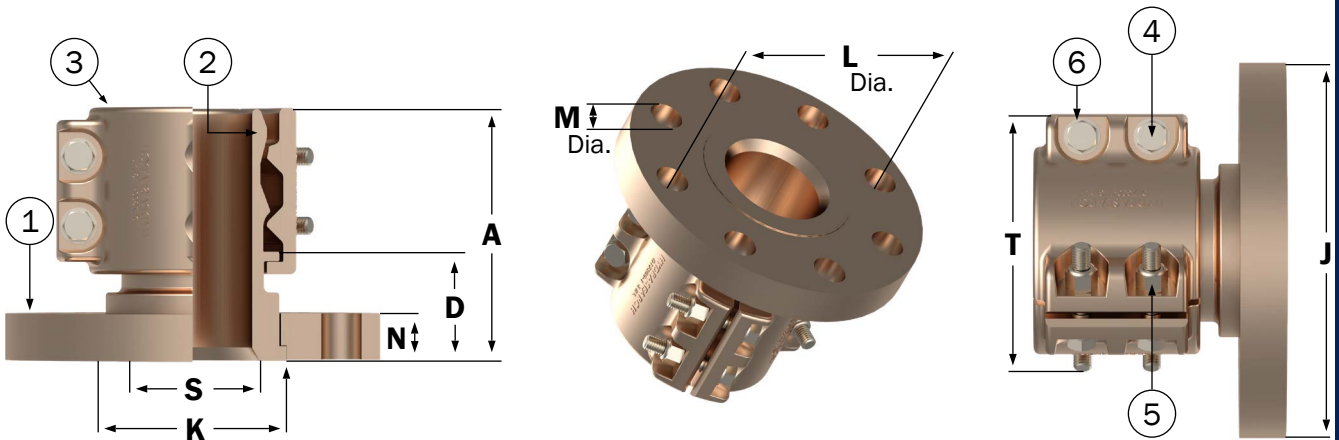
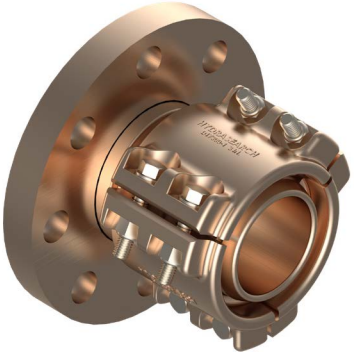
All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group IV, Class III,  
250lb. Flange per MIL-PRF-20042

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions      |                |          |                   |      |      |      |      |      |      |      |      |      |                 |
|-----------------|----------------|----------|-------------------|------|------|------|------|------|------|------|------|------|-----------------|
| Part Number     | Drawing Number | IPS Size | No. of Bolt Holes | M    | A    | D    | J    | K    | L    | N    | S    | T    | Est. Wt. (lbs.) |
| EF-449A2-2-40   | C18000         | 2"       | 6                 | 0.69 | 5.11 | 2.2  | 5.56 | 3.22 | 4.44 | 0.81 | 2.24 | 5.35 | 10              |
| EF-449A2-2.5-40 | C17089         | 2½"      | 6                 | 0.69 | 5.11 | 2.2  | 6.13 | 3.22 | 5    | 0.94 | 2.24 | 5.35 | 12              |
| EF-449A2-2.5-48 | C18002         | 2½"      | 6                 | 0.69 | 5.11 | 2.2  | 6.13 | 3.78 | 5    | 0.94 | 2.71 | 5.58 | 13              |
| EF-449A2-3-48   | C17092         | 3"       | 8                 | 0.69 | 5.11 | 2.2  | 6.63 | 4.44 | 5.5  | 0.94 | 3.31 | 5.58 | 13              |
| EF-449A2-3.5-64 | C18004         | 3½"      | 8                 | 0.69 | 5.54 | 2.63 | 7.19 | 5.22 | 6.06 | 1    | 3.81 | 6.5  | 18              |
| EF-449A2-4-64   | C17090         | 4"       | 8                 | 0.69 | 5.54 | 2.63 | 7.69 | 5.22 | 6.56 | 1    | 4.28 | 6.5  | 20              |

| Components         |                 |          |          |          |          |          |          |              |
|--------------------|-----------------|----------|----------|----------|----------|----------|----------|--------------|
| Description        | Req'd per Ass'y | 2-40     | 2.5-40   | 2.5-48   | 3-48     | 3.5-64   | 4-64     | Material     |
| Swivel Flange<br>① | 1               | C17812   | C17307   | C17813   | C17309   | C17815   | C17310   | Alum. Bronze |
| Nipple<br>②        | 1               | C17306   | C17306   | C18016   | C17308   | C18015   | C17210   | Alum. Bronze |
| Segment<br>③       | 3               | D17299-1 | D17299-1 | D17300-1 | D17300-1 | D17301-1 | D17301-1 | Alum. Bronze |
| Bolt<br>④          | 6               | B17673-2 | B17673-2 | B17673-1 | B17673-1 | B17987   | B17987   | Monel        |
| Lock Nut<br>⑤      | 6               | B18176   | B18176   | B18176   | B18176   | B17984   | B17984   | Monel        |
| Washer<br>⑥        | 6               | B18175   | B18175   | B18175   | B18175   | B17986   | B17986   | Monel        |

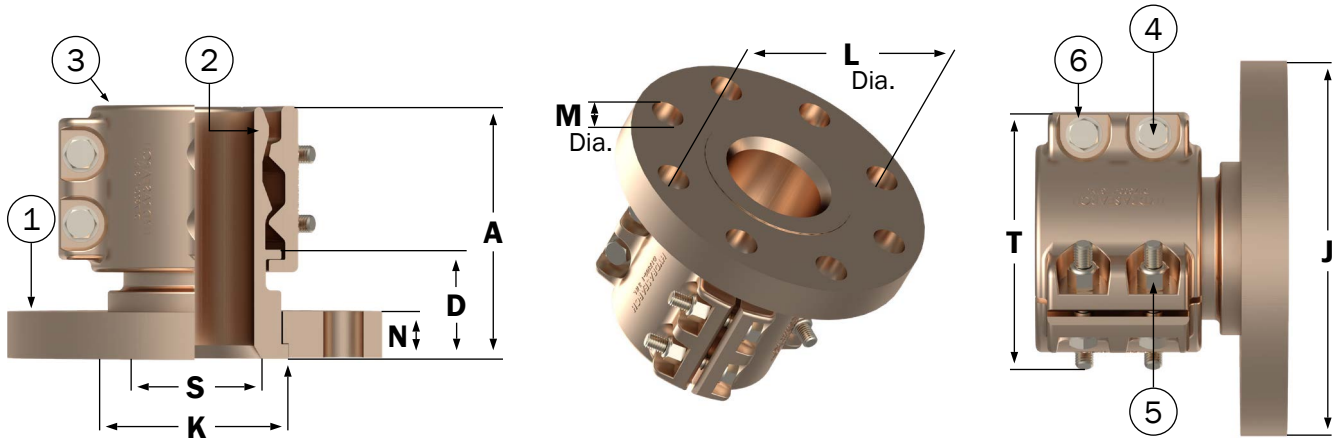
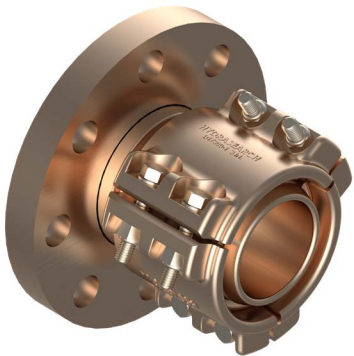
All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group IV, Class II,  
150/400lb. Flange per MIL-PRF-20042

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions      |                |          |                   |      |      |      |      |      |      |      |      |      |                 |
|-----------------|----------------|----------|-------------------|------|------|------|------|------|------|------|------|------|-----------------|
| Part Number     | Drawing Number | IPS Size | No. of Bolt Holes | M    | A    | D    | J    | K    | L    | N    | S    | T    | Est. Wt. (lbs.) |
| EF-449A5-2-40   | C18567         | 2"       | 6                 | 0.56 | 5.11 | 2.20 | 5.56 | 3.22 | 4.44 | 0.81 | 2.24 | 5.35 | 10.00           |
| EF-449A5-2.5-40 | C18568         | 2½"      | 6                 | 0.56 | 5.11 | 2.20 | 6.13 | 3.22 | 5.00 | 0.94 | 2.24 | 5.35 | 12.00           |
| EF-449A5-2.5-48 | C18569         | 2½"      | 6                 | 0.56 | 5.11 | 2.20 | 6.13 | 3.78 | 5.00 | 0.94 | 2.71 | 5.58 | 13.00           |
| EF-449A5-3-48   | C18570         | 3"       | 8                 | 0.56 | 5.11 | 2.20 | 6.63 | 4.44 | 5.50 | 0.94 | 3.31 | 5.58 | 13.00           |
| EF-449A5-3.5-64 | C18571         | 3½"      | 8                 | 0.56 | 5.54 | 2.63 | 7.19 | 5.22 | 6.06 | 1.00 | 3.81 | 6.50 | 18.00           |
| EF-449A5-4-64   | C18572         | 4"       | 8                 | 0.56 | 5.54 | 2.63 | 7.69 | 5.22 | 6.56 | 1.00 | 4.28 | 6.50 | 20.00           |

| Components      |                 |          |          |          |          |          |          |              |
|-----------------|-----------------|----------|----------|----------|----------|----------|----------|--------------|
| Description     | Req'd per Ass'y | 2-40     | 2.5-40   | 2.5-48   | 3-48     | 3.5-64   | 4-64     | Material     |
| Swivel Flange ① | 1               | C17765   | C17796   | C17795   | C17766   | C17794   | C17767   | Alum. Bronze |
| Nipple ②        | 1               | C17306   | C17306   | C18016   | C17308   | C18015   | C17210   | Alum. Bronze |
| Segment ③       | 3               | D17299-1 | D17299-1 | D17300-1 | D17300-1 | D17301-1 | D17301-1 | Alum. Bronze |
| Bolt ④          | 6               | B17673-2 | B17673-2 | B17673-1 | B17673-1 | B17987   | B17987   | Monel        |
| Lock Nut ⑤      | 6               | B18176   | B18176   | B18176   | B18176   | B17984   | B17984   | Monel        |
| Washer ⑥        | 6               | B18175   | B18175   | B18175   | B18175   | B17986   | B17986   | Monel        |

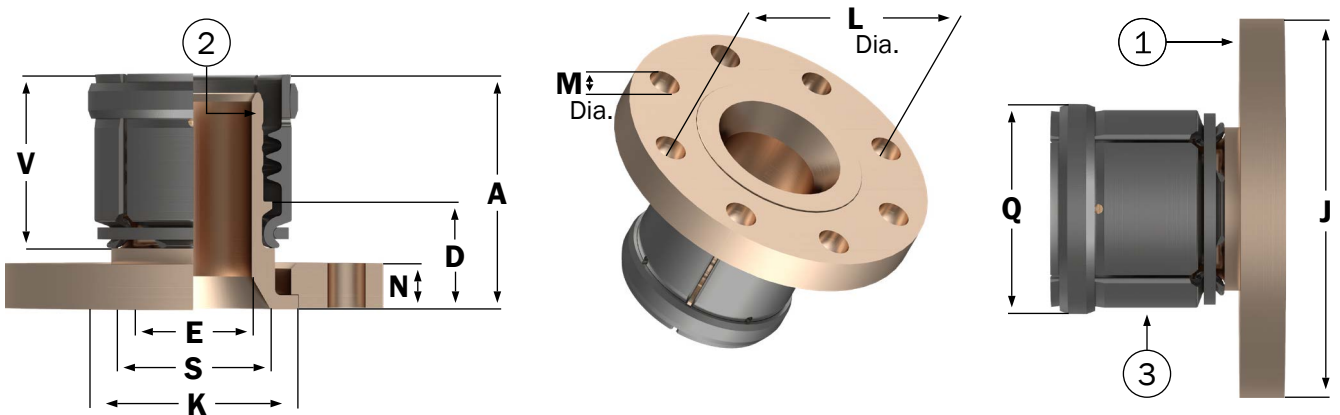
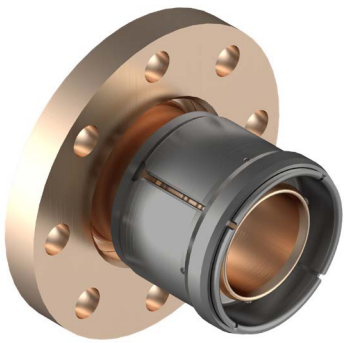
All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group IV, Class II,  
150/400lb. Flange per MIL-PRF-20042

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions       |          |                   |      |      |      |      |      |      |     |      |      |      |      |                 |
|------------------|----------|-------------------|------|------|------|------|------|------|-----|------|------|------|------|-----------------|
| Part Number      | IPS Size | No. of Bolt Holes | A    | D    | E    | J    | K    | L    | M   | N    | Q    | S    | V    | Est. Wt. (lbs.) |
| 375-190751-32-40 | 2"       | 6                 | 5.16 | 2.34 | 2.06 | 5.56 | 3.28 | 4.44 | .56 | .81  | 3.90 | 2.24 | 3.69 | 10.23           |
| 375-190751-40-40 | 2½"      | 6                 | 5.16 | 2.34 | 2.06 | 6.12 | 3.28 | 5.00 | .56 | .94  | 3.90 | 2.24 | 3.69 | 11.94           |
| 375-190751-40-48 | 2½"      | 6                 | 5.17 | 2.30 | 2.51 | 6.12 | 3.78 | 5.00 | .56 | .94  | 4.50 | 2.71 | 3.69 | 12.81           |
| 375-190751-48-48 | 3"       | 8                 | 5.17 | 2.30 | 2.51 | 6.62 | 4.50 | 5.50 | .56 | .94  | 4.50 | 3.31 | 3.69 | 13.04           |
| 375-190751-56-64 | 3½"      | 8                 | 5.54 | 2.74 | 3.45 | 7.19 | 5.22 | 6.06 | .56 | 1.00 | 5.44 | 3.81 | 3.69 | 17.90           |
| 375-190751-64-64 | 4"       | 8                 | 5.54 | 2.74 | 3.45 | 7.69 | 5.22 | 6.56 | .56 | 1.00 | 5.44 | 4.28 | 3.69 | 19.80           |

| Components      |                 |             |       |       |       |       |       |       |              |
|-----------------|-----------------|-------------|-------|-------|-------|-------|-------|-------|--------------|
| Description     | Req'd per Ass'y | Part Number |       |       |       |       |       |       |              |
|                 |                 | Size        |       |       |       |       |       |       |              |
|                 |                 | Base No.    | 32-40 | 40    | 40-48 | 48    | 56-64 | 64    | Material     |
| Swivel Flange ① | 1               | 188-74045-  | 32-40 | 40-40 | 40-48 | 48-48 | 56-64 | 64-64 | Alum. Bronze |
| Nipple ②        | 1               | 1884112-    | 40    | 40    | 40-48 | 48-48 | 56-64 | 64-64 | Alum. Bronze |
| Socket Assy. ③  | 1               | 4-1205-     | 40    | 40    | 48    | 48    | 64    | 64    | Monel        |
| Grip Segment    | 4               | 4-1205-1    | 40    | 40    | 48    | 48    | 64    | 64    | Monel        |
| Ring            | 1               | 4-21004-    | 40    | 40    | 48    | 48    | 64    | 64    | Monel        |
| Band            | 1               | 4-2103-     | 40    | 40    | 48    | 48    | 64    | 64    | Monel        |

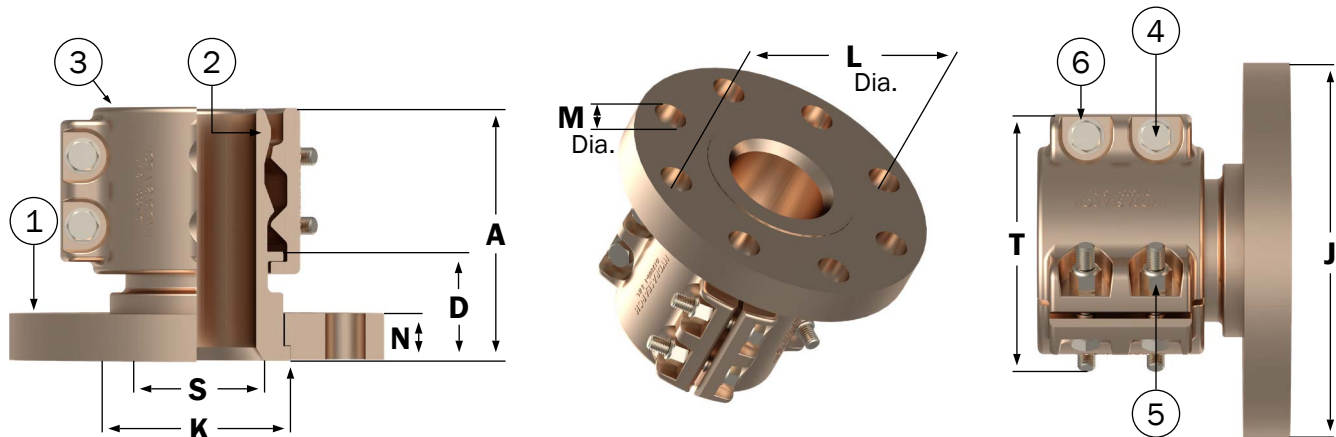
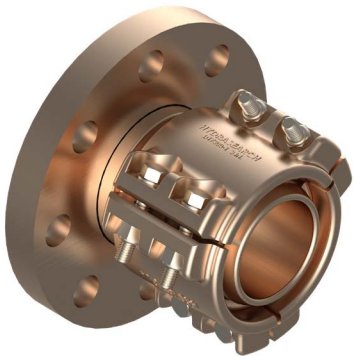
All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group IV, Class IV,  
150lb. Flange per MIL-PRF-20042

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions      |                |          |                   |     |      |      |      |      |      |     |      |      |                 |
|-----------------|----------------|----------|-------------------|-----|------|------|------|------|------|-----|------|------|-----------------|
| Part Number     | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | J    | K    | L    | N   | S    | T    | Est. Wt. (lbs.) |
| EF-449A3-2-40   | C17989         | 2"       | 6                 | .56 | 5.11 | 2.20 | 5.56 | 3.22 | 4.44 | .44 | 2.24 | 5.35 | 8.00            |
| EF-449A3-2.5-40 | C17990         | 2½"      | 6                 | .56 | 5.11 | 2.20 | 6.13 | 3.22 | 5.00 | .50 | 2.24 | 5.35 | 9.00            |
| EF-449A3-2.5-48 | C17991         | 2½"      | 6                 | .56 | 5.11 | 2.20 | 6.13 | 3.78 | 5.00 | .50 | 2.71 | 5.58 | 10.00           |
| EF-449A3-3-48   | C17992         | 3"       | 8                 | .56 | 5.11 | 2.20 | 6.63 | 4.44 | 5.50 | .50 | 3.31 | 5.58 | 11.00           |
| EF-449A3-3.5-64 | C17993         | 3½"      | 8                 | .56 | 5.54 | 2.63 | 7.19 | 5.22 | 6.06 | .50 | 3.81 | 6.50 | 15.00           |
| EF-449A3-4-64   | C17994         | 4"       | 8                 | .56 | 5.54 | 2.63 | 7.69 | 5.22 | 6.56 | .50 | 4.28 | 6.50 | 16.00           |

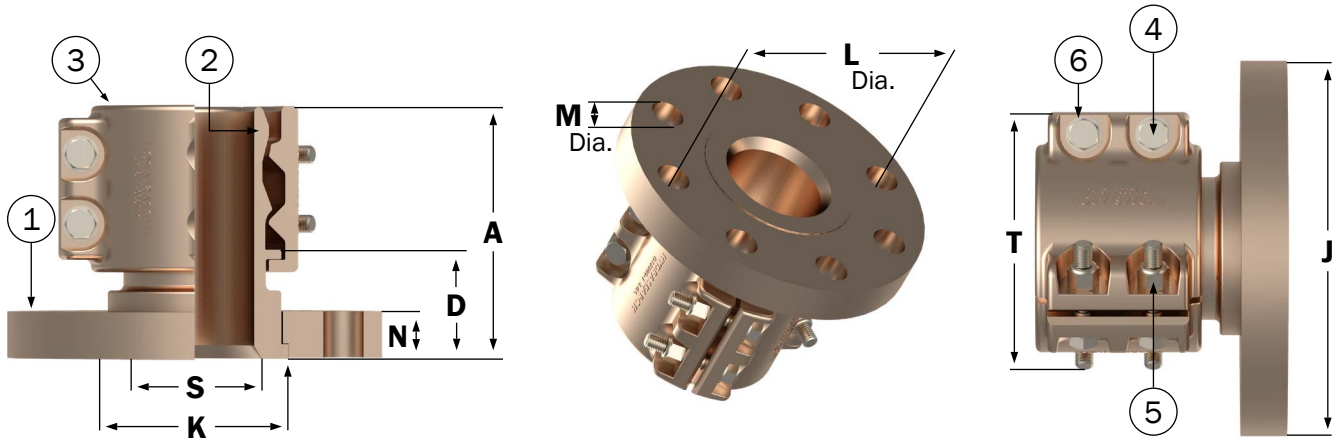
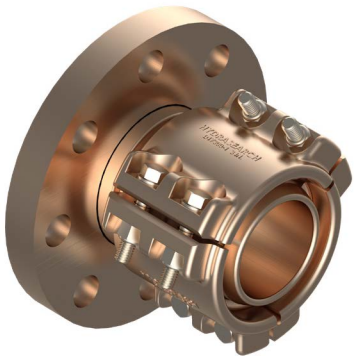
| Components         |                 |          |          |          |          |          |        |              |
|--------------------|-----------------|----------|----------|----------|----------|----------|--------|--------------|
| Description        | Req'd per Ass'y | 2-40     | 2.5-40   | 2.5-48   | 3-48     | 3.5-64   | 4-64   | Material     |
| Swivel Flange<br>① | 1               | C17925   | C17929   | C17931   | C17933   | C17938   | C17940 | Alum. Bronze |
| Nipple<br>②        | 1               | C17306   | C17306   | C18016   | C17308   | C18015   | C17210 | Alum. Bronze |
| Segment<br>③       | 3               | D17299-1 | D17299-1 | D17300-1 | D17300-1 | D17301-1 | D      |              |

Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group IV, Class V,  
150lb. Flange per A.N.S.I. B16.5

For use with the following hose: HS4265, HS4224, 2562, 150901



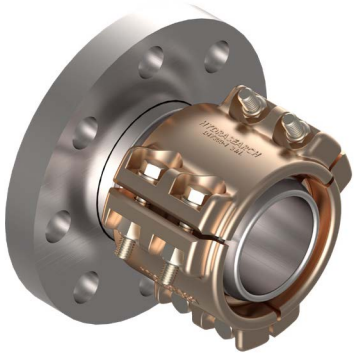
| Dimensions      |                |          |                   |     |      |      |      |      |      |     |      |      |                 |
|-----------------|----------------|----------|-------------------|-----|------|------|------|------|------|-----|------|------|-----------------|
| Part Number     | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | J    | K    | L    | N   | S    | T    | Est. Wt. (lbs.) |
| EF-449A4-2-40   | C17979         | 2"       | 4                 | .75 | 5.11 | 2.2  | 6.00 | 3.22 | 4.75 | .42 | 2.24 | 5.35 | 9.00            |
| EF-449A4-2.5-40 | C17980         | 2½"      | 4                 | .75 | 5.11 | 2.20 | 7.00 | 3.22 | 5.50 | .48 | 2.24 | 5.35 | 11.00           |
| EF-449A4-2.5-48 | C17981         | 2½"      | 4                 | .75 | 5.11 | 2.20 | 7.00 | 3.78 | 5.50 | .48 | 2.71 | 5.58 | 12.00           |
| EF-449A4-3-48   | C17982         | 3"       | 4                 | .75 | 5.11 | 2.20 | 7.50 | 4.44 | 6.00 | .48 | 3.31 | 5.58 | 12.00           |
| EF-449A4-3.5-64 | C17985         | 3½"      | 8                 | .75 | 5.54 | 2.63 | 8.50 | 5.22 | 7.00 | .48 | 3.81 | 6.50 | 17.00           |
| EF-449A4-4-64   | C17988         | 4"       | 8                 | .75 | 5.54 | 2.63 | 9.00 | 5.22 | 7.50 | .48 | 4.28 | 6.50 | 18.00           |

| Components         |                 |          |          |          |          |          |          |              |
|--------------------|-----------------|----------|----------|----------|----------|----------|----------|--------------|
| Description        | Req'd per Ass'y | 2-40     | 2.5-40   | 2.5-48   | 3-48     | 3.5-64   | 4-64     | Material     |
| Swivel Flange<br>① | 1               | C17966   | C17968   | C17969   | C17970   | C17971   | C17972   | Alum. Bronze |
| Nipple<br>②        | 1               | C17306   | C17306   | C18016   | C17308   | C18015   | C17210   | Alum. Bronze |
| Segment<br>③       | 3               | D17299-1 | D17299-1 | D17300-1 | D17300-1 | D17301-1 | D17301-1 |              |

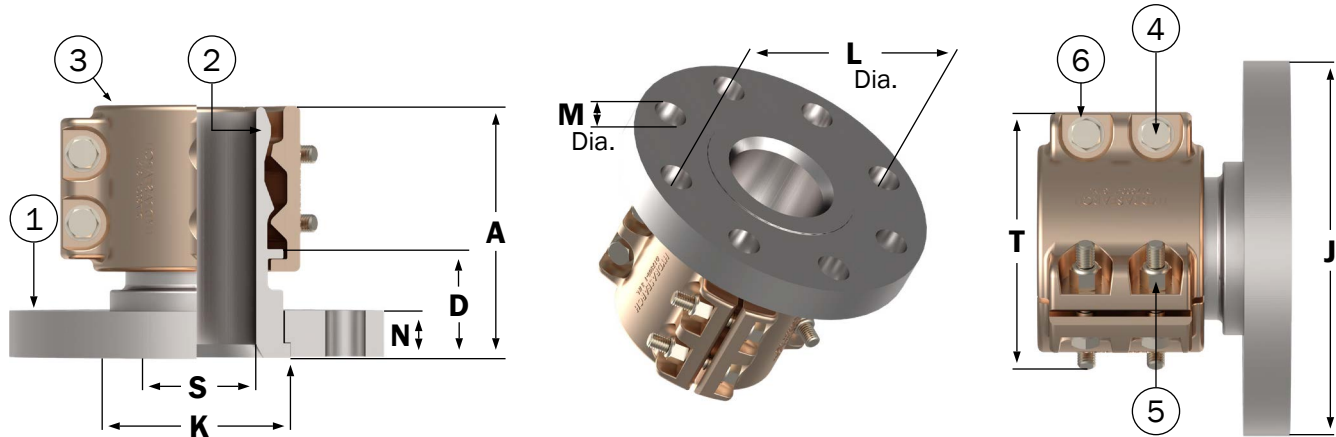
Hose to Flange

End Fitting - Straight

150lb. Flange per A.N.S.I. B16.5



For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions         |                |          |                   |     |      |      |      |      |      |     |      |      |                 |
|--------------------|----------------|----------|-------------------|-----|------|------|------|------|------|-----|------|------|-----------------|
| Part Number        | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | J    | K    | L    | N   | S    | T    | Est. Wt. (lbs.) |
| EF-449A4-2.5-40-SS | C18192         | 2½"      | 4                 | .75 | 5.16 | 2.20 | 7.00 | 3.28 | 5.50 | .48 | 2.24 | 5.35 | 11              |
| EF-449A4-2.5-48-SS | C18193         | 2½"      | 4                 | .75 | 5.17 | 2.20 | 7.00 | 3.78 | 5.50 | .48 | 2.71 | 5.58 | 12              |
| EF-449A4-3-48-SS   | C18194         | 3"       | 4                 | .75 | 5.17 | 2.20 | 7.50 | 4.50 | 6.00 | .48 | 3.31 | 5.58 | 13              |
| EF-449A4-4-64-SS   | C19663         | 4"       | 8                 | .75 | 5.54 | 2.63 | 9.00 | 5.22 | 7.50 | .48 | 4.28 | 6.50 | 18              |

| Components      |                 |          |          |          |          |                 |
|-----------------|-----------------|----------|----------|----------|----------|-----------------|
| Description     | Req'd per Ass'y | 2.5-40   | 2.5-48   | 3-48     | 4-64     | Material        |
| Swivel Flange ① | 1               | C18149   | C18150   | C18151   | C19632   | Stainless Steel |
| Nipple ②        | 1               | C18152   | C18153   | C18154   | C19633   | Stainless Steel |
| Segment ③       | 3               | D17299-1 | D17300-1 | D17300-1 | D17301-1 | Alum. Bronze    |
| Bolt ④          | 6               | B17673-2 | B17673-1 | B17673-1 | B17987   | Monel           |
| Lock Nut ⑤      | 6               | B18176   | B18176   | B18176   | B17984   | Monel           |
| Washer ⑥        | 6               | B18175   | B18175   | B18175   | B17986   | Monel           |

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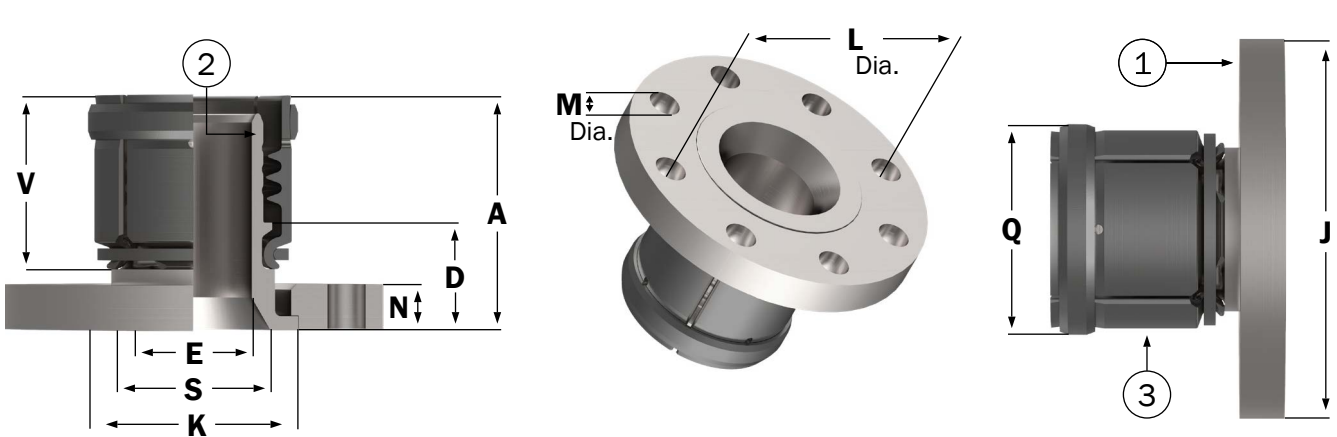
Hose to Flange

End Fitting - Straight

150lb. Flange per A.N.S.I. B16.5



For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions       |          |                   |      |      |      |      |      |      |     |     |      |      |      |                 |
|------------------|----------|-------------------|------|------|------|------|------|------|-----|-----|------|------|------|-----------------|
| Part Number      | IPS Size | No. of Bolt Holes | A    | D    | E    | J    | K    | L    | M   | N   | Q    | S    | V    | Est. Wt. (lbs.) |
| 412-190767-32-40 | 2"       | 4                 | 5.16 | 2.34 | 2.06 | 6.00 | 3.28 | 4.75 | .75 | .44 | 3.90 | 2.24 | 3.69 | 8.58            |
| 412-190767-40-40 | 2½"      | 4                 | 5.16 | 2.34 | 2.06 | 7.00 | 3.28 | 5.50 | .75 | .50 | 3.90 | 2.24 | 3.69 | 10.81           |
| 412-190767-40-48 | 2½"      | 4                 | 5.17 | 2.30 | 2.51 | 7.00 | 3.78 | 5.50 | .75 | .50 | 4.50 | 2.71 | 3.69 | 11.68           |
| 412-190767-48-48 | 3"       | 4                 | 5.17 | 2.30 | 2.51 | 7.50 | 4.50 | 6.00 | .75 | .50 | 4.50 | 3.31 | 3.69 | 11.97           |
| 412-190767-56-64 | 3½"      | 8                 | 5.54 | 2.74 | 3.45 | 8.50 | 5.22 | 7.00 | .75 | .50 | 5.44 | 3.81 | 3.69 | 17.00           |
| 412-190767-64-64 | 4"       | 8                 | 5.54 | 2.74 | 3.45 | 9.00 | 5.22 | 7.50 | .75 | .50 | 5.44 | 4.28 | 3.69 | 18.05           |

| Components      |                 |             |       |       |       |       |       |       |                 |
|-----------------|-----------------|-------------|-------|-------|-------|-------|-------|-------|-----------------|
| Description     | Req'd per Ass'y | Part Number |       |       |       |       |       |       |                 |
|                 |                 | Size        |       |       |       |       |       |       |                 |
|                 |                 | Base No.    | 32-40 | 40    | 40-48 | 48    | 56-64 | 64    | Material        |
| Swivel Flange ① | 1               | 407-74021-  | 32-40 | 40-40 | 40-48 | 48-48 | 56-64 | 64-64 | Stainless Steel |
| Nipple ②        | 1               | 407-4112-   | 40    | 40    | 40-48 | 48-48 | 56-64 | 64-64 | Stainless Steel |
| Socket Assy. ③  | 1               | 4-1205-     | 40    | 40    | 48    | 48    | 64    | 64    | Monel           |
| Grip Segment    | 4               | 4-1205-1    | 40    | 40    | 48    | 48    | 64    | 64    | Monel           |
| Ring            | 1               | 4-21004-    | 40    | 40    | 48    | 48    | 64    | 64    | Monel           |
| Band            | 1               | 4-21023-    | 40    | 40    | 48    | 48    | 64    | 64    | Monel           |

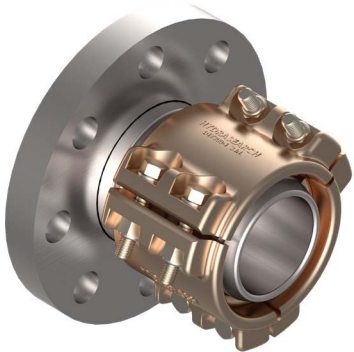
All dimensions are in inches. Dimensional information is for reference only. Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.



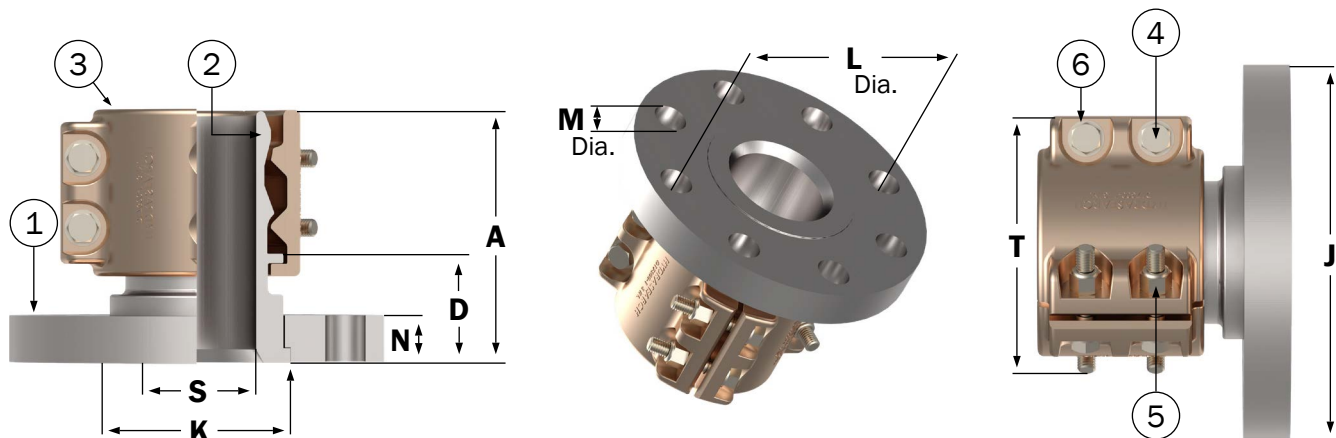
Hose to Flange

End Fitting - Straight

600lb. Flange per A.N.S.I. B16.5



For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions         |                |          |                   |     |     |      |     |      |      |      |      |      |                 |
|--------------------|----------------|----------|-------------------|-----|-----|------|-----|------|------|------|------|------|-----------------|
| Part Number        | Drawing Number | IPS Size | No. of Bolt Holes | M   | A   | D    | J   | K    | L    | N    | S    | T    | Est. Wt. (lbs.) |
| EF-449A7-2.5-40-SS | C21183         | 2½"      | 8                 | .88 | 5.2 | 2.28 | 7.5 | 3.22 | 5.34 | 1.12 | 2.24 | 5.35 | 18.90           |

| Components      |                 |          |                 |
|-----------------|-----------------|----------|-----------------|
| Description     | Req'd per Ass'y | 2.5-40   | Material        |
| Swivel Flange ① | 1               | C21181   | Stainless Steel |
| Nipple ②        | 1               | C18152   | Stainless Steel |
| Segment ③       | 3               | D17299-1 | Alum. Bronze    |
| Bolt ④          | 6               | B17673-2 | Monel           |
| Lock Nut ⑤      | 6               | B18176   | Monel           |
| Washer ⑥        | 6               | B18175   | Monel           |

All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

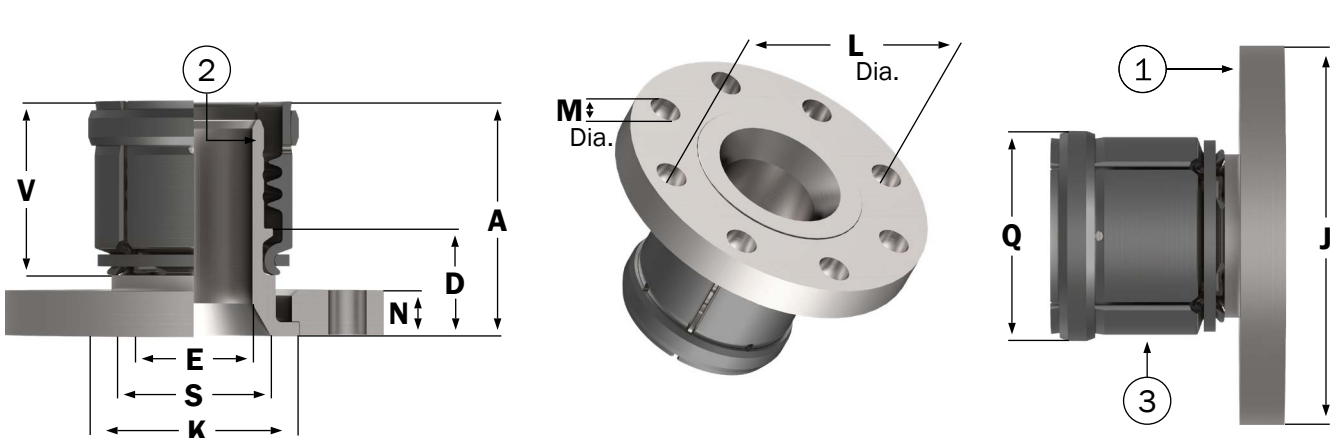
Hose to Flange

End Fitting - Straight

600lb. Flange per A.N.S.I. B16.5



For use with the following hose: HS4265, HS4224, 2562, 150901



|                   |   | Part Number → | Size ↓ |              |
|-------------------|---|---------------|--------|--------------|
| Components        |   | Base No.      | 40-40  | Material     |
| Swivel Flange ①   | 1 | 407-74031-    | 40-40  | Alum. Bronze |
| Nipple ②          | 1 | 407-4112-     | 40     | Alum. Bronze |
| Socket Assembly ③ | 3 | 4-1205-       | 40     | Monel        |
| Socket Segment    | 6 | 4-1205-1-     | 40     | Monel        |
| Ring              | 6 | 4-21004-      | 40     | Monel        |
| Band              | 6 | 4-21023-      | 40     | Monel        |

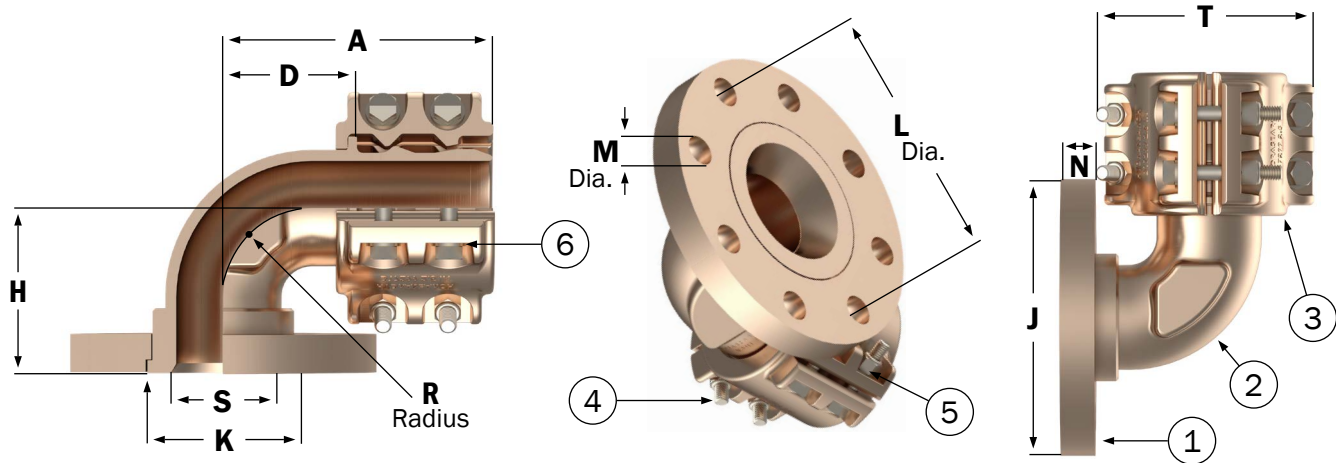
All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

Hose to Flange

End Fitting - 90°

MIL-DTL-24787/1,  
Type FL, Group IV, Class I,  
400lb. Flange per MIL-PRF-20042

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions        |                |          |                   |     |      |      |      |      |      |      |      |      |      |                 |
|-------------------|----------------|----------|-------------------|-----|------|------|------|------|------|------|------|------|------|-----------------|
| Part Number       | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | H    | J    | K    | L    | N    | R    | S    | Est. Wt. (lbs.) |
| 90EF-449B1-2-40   | D17911         | 2"       | 7                 | .69 | 5.75 | 2.83 | 3.50 | 6.50 | 3.22 | 5.19 | .81  | 1.88 | 2.24 | 13.00           |
| 90EF-449B1-2.5-48 | D17913         | 2½"      | 8                 | .81 | 6.01 | 3.09 | 4.00 | 7.56 | 3.78 | 6.00 | .94  | 2.09 | 2.71 | 18.00           |
| 90EF-449B1-3-48   | D17916         | 3"       | 8                 | .81 | 6.01 | 3.09 | 4.00 | 8.13 | 4.44 | 6.56 | .94  | 2.09 | 3.31 | 20.00           |
| 90EF-449B1-3.5-64 | D17917         | 3½"      | 9                 | .81 | 6.80 | 3.88 | 4.62 | 8.69 | 5.22 | 7.13 | 1.00 | 2.81 | 3.81 | 27.00           |
| 90EF-449B1-4-64   | D17924         | 4"       | 9                 | .81 | 6.80 | 3.88 | 4.62 | 9.25 | 5.28 | 7.69 | 1.00 | 2.81 | 4.28 | 30.00           |

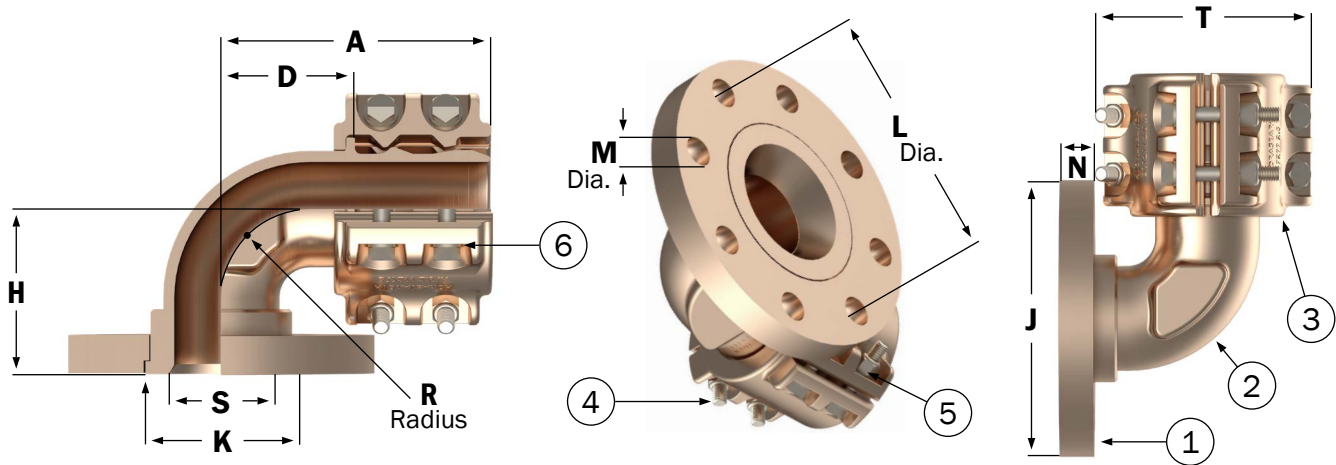
| Components      |                 |          |          |          |          |          |              |
|-----------------|-----------------|----------|----------|----------|----------|----------|--------------|
| Description     | Req'd per Ass'y | 2-40     | 2.5-48   | 3-48     | 3.5-64   | 4-64     | Material     |
| Swivel Flange ① | 1               | C17798   | C17801   | C17802   | C17803   | C17804   | Bronze       |
| Elbow ②         | 1               | D17862   | D17870   | D17886   | D17890   | D17896   | Alum. Bronze |
| Segment ③       | 3               | D17299-1 | D17300-1 | D17300-1 | D17301-1 | D17301-1 | Alum. Bronze |
| Bolt ④          | 6               | B17673-2 | B17673-1 | B17673-1 | B17987   | B17987   | Mon          |

Hose to Flange

End Fitting - 90°

MIL-DTL-24787/1,  
Type FL, Group IV, Class II,  
150/400lb. Flange per MIL-PRF-20042

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions        |                |          |                   |     |      |      |      |      |      |      |      |      |      |      |                 |
|-------------------|----------------|----------|-------------------|-----|------|------|------|------|------|------|------|------|------|------|-----------------|
| Part Number       | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | H    | J    | K    | L    | N    | R    | S    | T    | Est. Wt. (lbs.) |
| 90EF-449B5-2-40   | D18573         | 2"       | 6                 | .56 | 5.75 | 2.83 | 3.50 | 5.56 | 3.22 | 4.44 | .81  | 1.88 | 2.24 | 5.35 | 11.00           |
| 90EF-449B5-2.5-40 | D18574         | 2½"      | 6                 | .56 | 5.75 | 2.83 | 3.50 | 6.13 | 3.22 | 5.00 | .94  | 1.88 | 2.24 | 5.35 | 13.00           |
| 90EF-449B5-2.5-48 | D18575         | 2½"      | 6                 | .56 | 6.01 | 3.09 | 4.00 | 6.13 | 3.78 | 5.00 | .94  | 2.09 | 2.71 | 5.58 | 15.00           |
| 90EF-449B5-3-48   | D18576         | 3"       | 8                 | .56 | 6.01 | 3.09 | 4.00 | 6.63 | 4.44 | 5.50 | .94  | 2.09 | 3.31 | 5.58 | 16.00           |
| 90EF-449B5-3.5-64 | D18577         | 3½"      | 8                 | .56 | 6.80 | 3.88 | 4.62 | 7.19 | 5.22 | 6.06 | 1.00 | 2.81 | 3.81 | 6.50 | 22.00           |
| 90EF-449B5-4-64   | D18578         | 4"       | 8                 | .56 | 6.80 | 3.88 | 4.62 | 7.69 | 5.28 | 6.56 | 1.00 | 2.81 | 4.28 | 6.50 | 24.00           |

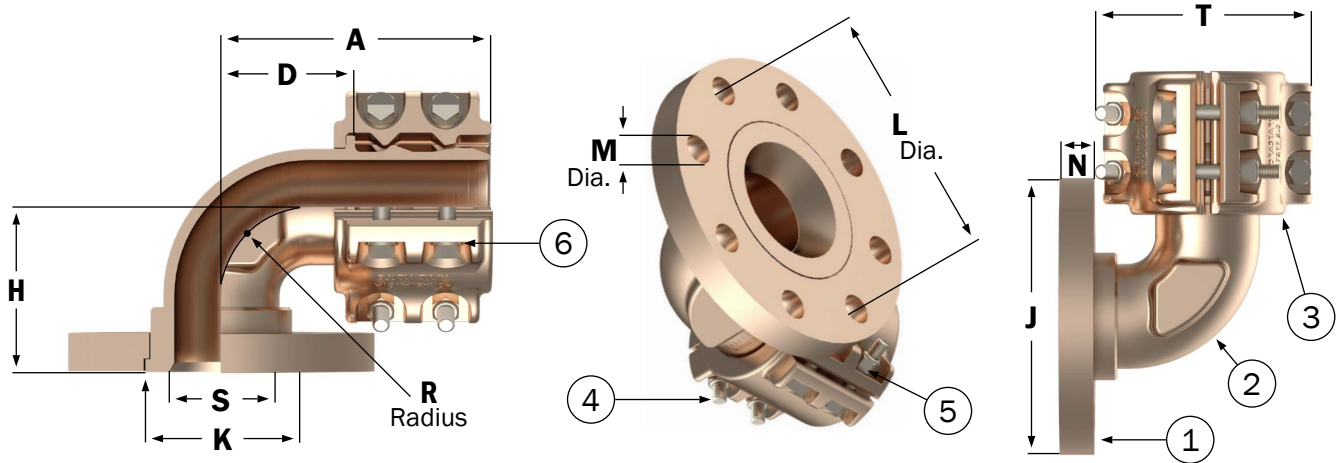
| Components      |                 |        |        |        |        |        |        |              |
|-----------------|-----------------|--------|--------|--------|--------|--------|--------|--------------|
| Description     | Req'd per Ass'y | 2-40   | 2.5-40 | 2.5-48 | 3-48   | 3.5-64 | 4-64   | Material     |
| Swivel Flange ① | 1               | C17765 | C17796 | C17795 | C17766 | C17794 | C17767 | Alum. Bronze |
| Elbow ②         | 1               |        |        |        |        |        |        |              |

Hose to Flange

End Fitting - 90°

MIL-DTL-24787/1,  
Type FL, Group IV, Class IV,  
150lb. Flange per MIL-PRF-20042

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions        |                |          |                   |     |      |      |      |      |      |      |     |      |      |      |                 |
|-------------------|----------------|----------|-------------------|-----|------|------|------|------|------|------|-----|------|------|------|-----------------|
| Part Number       | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | H    | J    | K    | L    | N   | R    | S    | T    | Est. Wt. (lbs.) |
| 90EF-449B3-2-40   | D17928         | 2"       | 6                 | .56 | 5.75 | 2.83 | 3.50 | 5.56 | 3.22 | 4.44 | .44 | 1.88 | 2.24 | 5.35 | 9.00            |
| 90EF-449B3-2.5-40 | D17930         | 2½"      | 6                 | .56 | 5.75 | 2.83 | 3.50 | 6.13 | 3.22 | 5.00 | .50 | 1.88 | 2.24 | 5.35 | 10.00           |
| 90EF-449B3-2.5-48 | D17932         | 2½"      | 6                 | .56 | 6.01 | 3.09 | 4.00 | 6.13 | 3.78 | 5.00 | .50 | 2.09 | 2.71 | 5.58 | 12.00           |
| 90EF-449B3-3-48   | D17937         | 3"       | 8                 | .56 | 6.01 | 3.09 | 4.00 | 6.63 | 4.44 | 5.50 | .50 | 2.09 | 3.31 | 5.58 | 13.00           |
| 90EF-449B3-3.5-64 | D17939         | 3½"      | 8                 | .56 | 6.80 | 3.88 | 4.62 | 7.19 | 5.22 | 6.06 | .50 | 2.81 | 3.81 | 6.50 | 19.00           |
| 90EF-449B3-4-64   | D17941         | 4"       | 8                 | .56 | 6.80 | 3.88 | 4.62 | 7.69 | 5.28 | 6.56 | .50 | 2.81 | 4.28 | 6.50 | 20.00           |

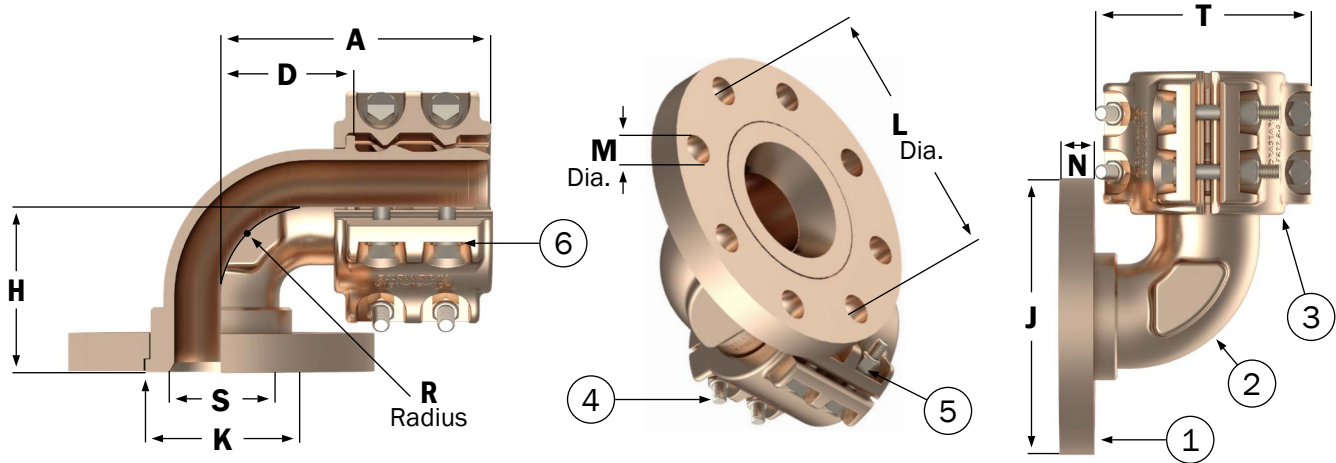
| Components         |                 |        |        |        |        |        |        |          |
|--------------------|-----------------|--------|--------|--------|--------|--------|--------|----------|
| Description        | Req'd per Ass'y | 2-40   | 2.5-40 | 2.5-48 | 3-48   | 3.5-64 | 4-64   | Material |
| Swivel Flange<br>① | 1               | C17925 | C17929 | C17931 | C17933 | C17938 | C17940 | Bronze   |
| Elbow<br>          |                 |        |        |        |        |        |        |          |

Hose to Flange

End Fitting - 90°

MIL-DTL-24787/1,  
Type FL, Group IV, Class V,  
150lb. Flange per A.N.S.I. B16.5

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions        |                |          |                   |     |      |      |      |      |      |      |     |      |      |      |                 |
|-------------------|----------------|----------|-------------------|-----|------|------|------|------|------|------|-----|------|------|------|-----------------|
| Part Number       | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | H    | J    | K    | L    | N   | R    | S    | T    | Est. Wt. (lbs.) |
| 90EF-449B4-2-40   | D17956         | 2"       | 4                 | .75 | 5.75 | 2.83 | 3.50 | 6.00 | 3.22 | 4.75 | .42 | 1.88 | 2.24 | 5.35 | 9.00            |
| 90EF-449B4-2.5-40 | D17957         | 2½"      | 4                 | .75 | 5.75 | 2.83 | 3.50 | 7.00 | 3.22 | 5.50 | .48 | 1.88 | 2.24 | 5.35 | 12.00           |
| 90EF-449B4-2.5-48 | D17959         | 2½"      | 4                 | .75 | 6.01 | 3.09 | 4.00 | 7.00 | 3.78 | 5.50 | .48 | 2.09 | 2.71 | 5.58 | 13.00           |
| 90EF-449B4-3-48   | D17961         | 3"       | 4                 | .75 | 6.01 | 3.09 | 4.00 | 7.50 | 4.44 | 6.00 | .48 | 2.09 | 3.31 | 5.58 | 14.00           |
| 90EF-449B4-3.5-64 | D17963         | 3½"      | 8                 | .75 | 6.80 | 3.88 | 4.62 | 8.50 | 5.22 | 7.00 | .48 | 2.81 | 3.81 | 6.50 | 21.00           |
| 90EF-449B4-4-64   | D17964         | 4"       | 8                 | .75 | 6.80 | 3.88 | 4.62 | 9.00 | 5.28 | 7.50 | .48 | 2.81 | 4.28 | 6.50 | 22.00           |

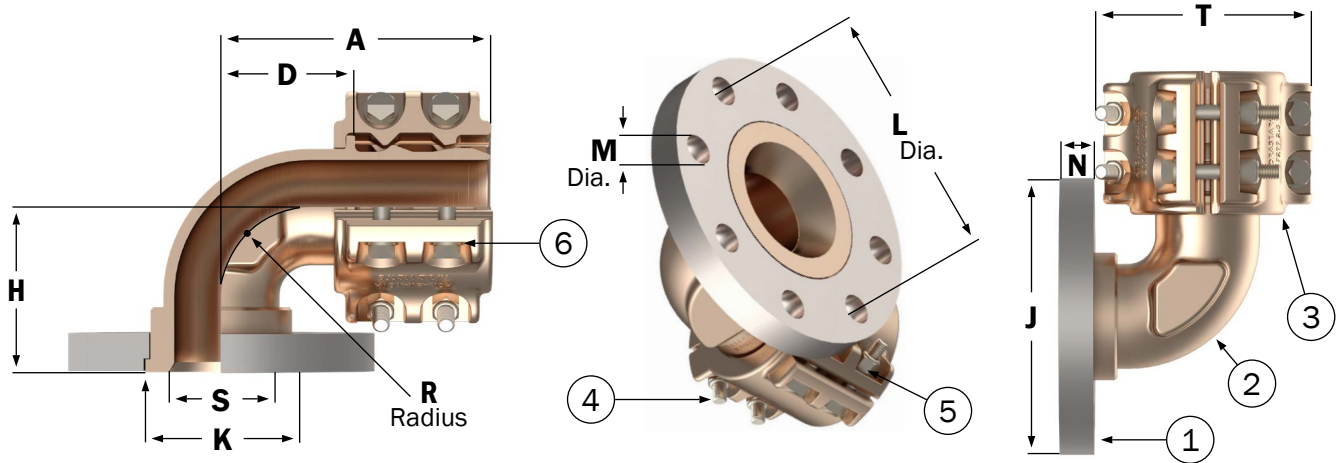
| Components         |                 |        |        |        |        |        |        |          |
|--------------------|-----------------|--------|--------|--------|--------|--------|--------|----------|
| Description        | Req'd per Ass'y | 2-40   | 2.5-40 | 2.5-48 | 3-48   | 3.5-64 | 4-64   | Material |
| Swivel Flange<br>① | 1               | C17966 | C17968 | C17969 | C17970 | C17971 | C17972 | Bronze   |
| Elbow<br>          |                 |        |        |        |        |        |        |          |

Hose to Flange

End Fitting - 90°

150lb. Flange per A.N.S.I. B16.5

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions            |                |          |                   |     |      |      |      |      |      |      |     |      |      |      |                 |  |
|-----------------------|----------------|----------|-------------------|-----|------|------|------|------|------|------|-----|------|------|------|-----------------|--|
| Part Number           | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | H    | J    | K    | L    | N   | R    | S    | T    | Est. Wt. (lbs.) |  |
| 90EF-449B4-2-40-BSS   | D19627         | 2"       | 4                 | .75 | 5.75 | 2.83 | 3.50 | 6.00 | 3.22 | 4.75 | .42 | 1.88 | 2.24 | 5.35 | 9.00            |  |
| 90EF-449B4-2.5-40-BSS | C19626         | 2½"      | 4                 | .75 | 5.75 | 2.83 | 3.50 | 7.00 | 3.22 | 5.50 | .48 | 1.88 | 2.24 | 5.35 | 12.00           |  |
| 90EF-449B4-2.5-48-BSS | D19628         | 2½"      | 4                 | .75 | 6.01 | 3.09 | 4.00 | 7.00 | 3.78 | 5.50 | .48 | 2.09 | 2.71 | 5.58 | 13.00           |  |
| 90EF-449B4-3-48-BSS   | D18582         | 3"       | 4                 | .75 | 6.01 | 3.09 | 4.00 | 7.50 | 4.44 | 6.00 | .48 | 2.09 | 3.31 | 5.58 | 14.00           |  |
| 90EF-449B4-3.5-64-BSS | D19629         | 3½"      | 8                 | .75 | 6.80 | 3.88 | 4.62 | 8.50 | 5.22 | 7.00 | .48 | 2.81 | 3.81 | 6.50 | 21.00           |  |
| 90EF-449B4-4-64-BSS   | D19630         | 4"       | 8                 | .75 | 6.80 | 3.88 | 4.62 | 9.00 | 5.28 | 7.50 | .48 | 2.81 | 4.28 | 6.50 | 22.00           |  |

| Components  |                 |      |        |   |  |  |  |  |
|-------------|-----------------|------|--------|---|--|--|--|--|
| Description | Req'd per Ass'y | 2-40 | 2.5-40 | 2 |  |  |  |  |



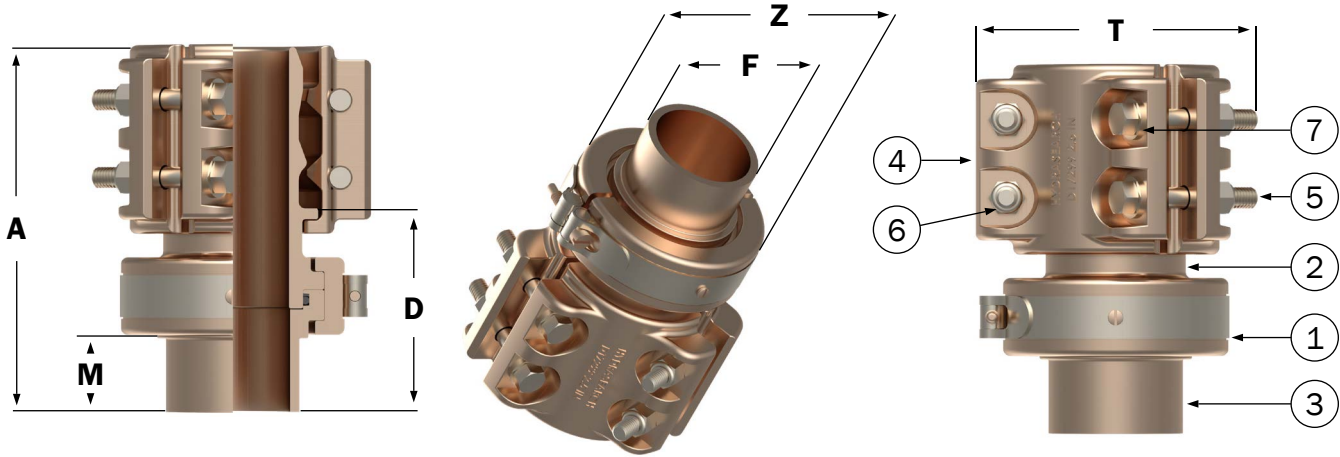
Male Sil-Braze to Hose

End Fitting - Straight

MIL-DTL-24787/4,  
Type E, Group IV



For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions      |                |          |      |      |      |      |      |      |                 |
|-----------------|----------------|----------|------|------|------|------|------|------|-----------------|
| Part Number     | Drawing Number | IPS Size | A    | D    | F    | M    | Z    | T    | Est. Wt. (lbs.) |
| EF-449CA-2-40   | C18058         | 2"       | 6.51 | 3.62 | 2.38 | 1.31 | 4.00 | 5.00 | 8.00            |
| EF-449CA-2.5-48 | C18059         | 2½"      | 6.37 | 3.52 | 2.88 | 1.12 | 4.42 | 5.50 | 10.00           |
| EF-449CA-3-48   | C18060         | 3"       | 7.81 | 4.90 | 3.50 | 2.55 | 5.19 | 5.50 | 13.00           |
| EF-449CA-3.5-64 | C18061         | 3½"      | 7.94 | 5.03 | 4.00 | 2.55 | 5.56 | 6.56 | 16.00           |
| EF-449CA-4-64   | C18062         | 4"       | 8.22 | 5.30 | 4.50 | 2.69 | 6.12 | 6.56 | 17.00           |

| Components        |                 |          |          |          |          |          |              |
|-------------------|-----------------|----------|----------|----------|----------|----------|--------------|
| Description       | Req'd per Ass'y | 2-40     | 2.5-48   | 3-48     | 3.5-64   | 4-64     | Material     |
| Clamp Assy.<br>①  | 1               | C18078   | C18079   | C18080   | C18081   | C18082   | Alum. Bronze |
| Nipple<br>②       | 1               | C18096   | C18097   | C18100   | C18103   | C18105   | Alum. Bronze |
| Tailpiece<br>③    | 1               | C18088   | C18089   | C18090   | C18091   | C18092   | Alum. Bronze |
| Grip Segment<br>④ | 3               | D17299-1 | D17300-1 | D17300-1 | D17301-1 | D17301-1 | Alum. Bronze |
| Bolt<br>⑤         | 6               | B17673-2 | B17673-1 | B17673-1 | B17987   | B17987   | Monel        |
| Lock Nut<br>⑥     | 6               | B18176   | B18176   | B18176   | B17984   | B17984   | Monel        |
| Washer<br>⑦       | 6               | B18175   | B18175   | B18175   | B17986   | B17986   | Monel        |

All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions,

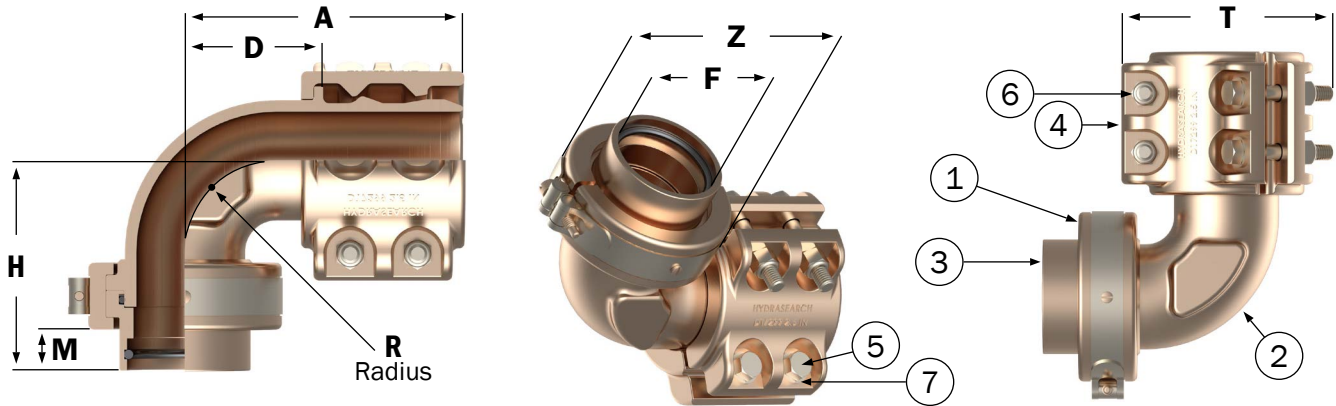
Female Sil-Braze to Hose

End Fitting - 90°

MIL-DTL-24787/4,  
Type EL, Group IV



For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions       |                |          |      |      |      |      |      |      |      |      |                 |
|------------------|----------------|----------|------|------|------|------|------|------|------|------|-----------------|
| Part Number      | Drawing Number | IPS Size | A    | D    | F    | H    | M    | R    | Z    | T    | Est. Wt. (lbs.) |
| 90EF-449D-2-40   | D18063         | 2"       | 5.75 | 2.84 | 2.38 | 4.31 | .83  | 1.88 | 5.35 | 4.00 | 10.00           |
| 90EF-449D-2.5-48 | D18064         | 2½"      | 6.01 | 3.09 | 2.88 | 5.06 | .99  | 2.09 | 4.42 | 5.58 | 12.00           |
| 90EF-449D-3-48   | D18065         | 3"       | 6.01 | 3.09 | 3.50 | 4.95 | .85  | 2.09 | 5.19 | 5.58 | 14.00           |
| 90EF-449D-3.5-64 | D18066         | 3½"      | 6.76 | 3.85 | 4.00 | 5.55 | 1.08 | 2.81 | 5.56 | 6.50 | 20.00           |
| 90EF-449D-4-64   | D18067         | 4"       | 6.80 | 3.89 | 4.50 | 5.66 | 1.12 | 2.81 | 6.12 | 6.50 | 22.00           |

| Components        |                 |          |          |          |          |          |              |
|-------------------|-----------------|----------|----------|----------|----------|----------|--------------|
| Description       | Req'd per Ass'y | 2-40     | 2.5-48   | 3-48     | 3.5-64   | 4-64     | Material     |
| Clamp Assy.<br>①  | 1               | C18078   | C18079   | C18080   | C18081   | C18082   | Alum. Bronze |
| Elbow<br>②        | 1               | D18124   | D18125   | D18126   | D18127   | D18128   | Alum. Bronze |
| Tailpiece<br>③    | 1               | C18083   | C18084   | C18085   | C18086   | C18087   | Alum. Bronze |
| Grip Segment<br>④ | 3               | D17299-1 | D17300-1 | D17300-1 | D17301-1 | D17301-1 | Alum. Bronze |
| Bolt<br>⑤         | 6               | B17673-2 | B17673-1 | B17673-1 | B17987   | B17987   | Monel        |
| Lock Nut<br>⑥     | 6               | B18176   | B18176   | B18176   |          |          |              |

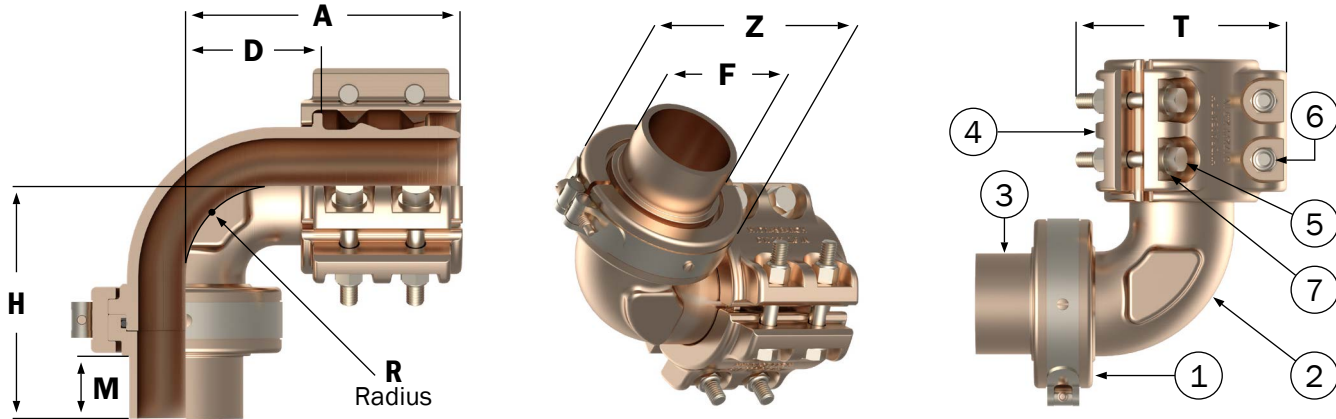
Male Sil-Braze to Hose

End Fitting - 90°

MIL-DTL-24787/4,  
Type EL, Group IV



For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions        |                |          |      |      |      |      |      |      |      |      |                 |
|-------------------|----------------|----------|------|------|------|------|------|------|------|------|-----------------|
| Part Number       | Drawing Number | IPS Size | A    | D    | F    | H    | M    | R    | Z    | T    | Est. Wt. (lbs.) |
| 90EF-449DA-2-40   | D18068         | 2"       | 5.70 | 2.83 | 2.38 | 4.82 | 1.31 | 1.88 | 4.00 | 5.35 | 10.00           |
| 90EF-449DA-2.5-48 | D18069         | 2½"      | 6.01 | 3.09 | 2.88 | 5.19 | 1.12 | 2.09 | 4.42 | 5.58 | 12.00           |
| 90EF-449DA-3-48   | D18070         | 3"       | 6.01 | 3.09 | 3.50 | 6.65 | 2.55 | 2.09 | 5.19 | 5.58 | 16.00           |
| 90EF-449DA-3.5-64 | D18071         | 3½"      | 6.76 | 3.85 | 4.00 | 7.02 | 2.55 | 2.81 | 5.56 | 6.50 | 21.00           |
| 90EF-449DA-4-64   | D18072         | 4"       | 6.80 | 3.89 | 4.50 | 7.23 | 2.69 | 2.81 | 6.12 | 6.50 | 24.00           |

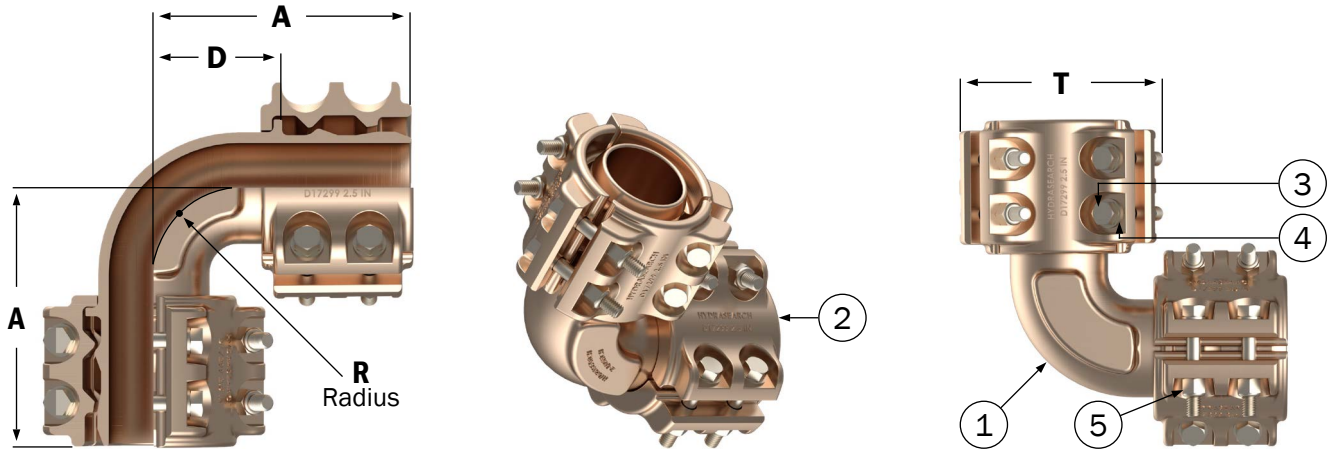
| Components        |                 |          |          |          |          |          |              |
|-------------------|-----------------|----------|----------|----------|----------|----------|--------------|
| Description       | Req'd per Ass'y | 2-40     | 2.5-48   | 3-48     | 3.5-64   | 4-64     | Material     |
| Clamp Assy.<br>①  | 1               | C18078   | C18079   | C18080   | C18081   | C18082   | Alum. Bronze |
| Elbow<br>②        | 1               | D18124   | D18125   | D18126   | D18127   | D18128   | Alum. Bronze |
| Tailpiece<br>③    | 1               | C18088   | C18089   | C18090   | C18091   | C18092   | Alum. Bronze |
| Grip Segment<br>④ | 3               | D17299-1 | D17300-1 | D17300-1 | D17301-1 | D17301-1 | Alum. Bronze |
| Bolt<br>⑤         | 6               | B17673-2 | B17673-1 | B17673-1 | B17987   | B17987   | Monel        |
| Lock Nut<br>⑥     | 6               | B18176   | B18176   | B18176   | B17984   | B17984   |              |

Hose to Hose

Elbow - 90° Dogleg

MIL-DTL-24787/5,  
Type D, Group IV

For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions    |                |          |      |      |      |      |                 |
|---------------|----------------|----------|------|------|------|------|-----------------|
| Part Number   | Drawing Number | IPS Size | A    | D    | R    | T    | Est. Wt. (lbs.) |
| 90ELB-449E-40 | D17856         | 2½"      | 5.75 | 2.84 | 1.88 | 5.35 | 12.00           |
| 90ELB-449E-48 | D17859         | 3"       | 5.96 | 3.04 | 2.09 | 5.58 | 14.00           |
| 90ELB-449E-64 | D17860         | 4"       | 6.80 | 3.89 | 2.81 | 6.50 | 23.00           |

| Components     |                 |          |          |          |             |  |
|----------------|-----------------|----------|----------|----------|-------------|--|
| Description    | Req'd per Ass'y | 40       | 48       | 64       | Material    |  |
| Elbow ①        | 1               | D19512-2 | D19610-2 | D20741-2 | Alum. Bonze |  |
| Grip Segment ② | 6               | D17299-1 | D17300-1 | D17301-1 | Alum. Bonze |  |
| Bolt ③         | 6               | B17673-2 | B17673-1 | B17987   | Monel       |  |
| Lock Nut ④     | 6               | B18176   | B18176   | B17984   | Monel       |  |
| Washer ⑤       | 6               | B18175   | B18175   | B17986   | Monel       |  |

All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

Hose to Hose

Elbow - 90° Dogleg

MIL-DTL-24787/5,  
Type D, Group IV

For use with the following hose: HS4265, HS4224, 2562, 150901

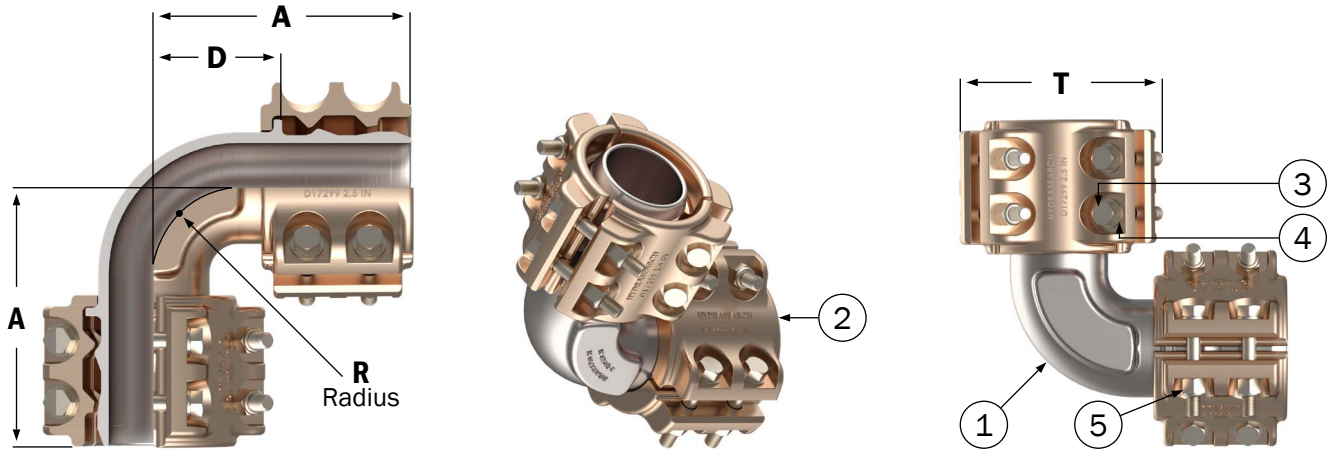


Hose to Hose

Elbow - 90° Dogleg



For use with the following hose: HS4265, HS4224, 2562, 150901



| Dimensions       |                |          |      |      |      |      |                 |
|------------------|----------------|----------|------|------|------|------|-----------------|
| Part Number      | Drawing Number | IPS Size | A    | D    | R    | T    | Est. Wt. (lbs.) |
| 90ELB-449E-40-SS | D18506         | 2½"      | 5.75 | 2.84 | 1.88 | 5.35 | 12.00           |
| 90ELB-449E-48-SS | D18475         | 3"       | 5.96 | 3.04 | 2.09 | 5.58 | 14.00           |
| 90ELB-449E-64-SS | D21693         | 4"       | 6.80 | 3.89 | 2.81 | 6.50 | 23.00           |

| Components     |                 |          |          |          |                 |  |
|----------------|-----------------|----------|----------|----------|-----------------|--|
| Description    | Req'd per Ass'y | 40       | 48       | 64       | Material        |  |
| Elbow ①        | 1               | D19512-1 | D19610-1 | D20741-1 | Stainless Steel |  |
| Grip Segment ② | 6               | D17299-1 | D17300-1 | D17301-1 | Alum. Bonze     |  |
| Bolt ③         | 6               | B17673-2 | B17673-1 | B17987   | Monel           |  |
| Lock Nut ④     | 6               | B18176   | B18176   | B17984   | Monel           |  |
| Washer ⑤       | 6               | B18175   | B18175   | B17986   | Monel           |  |

All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

Hose to Hose

Elbow - 90° Dogleg



For use with the following hose: HS4265, HS4224, 2562, 150901



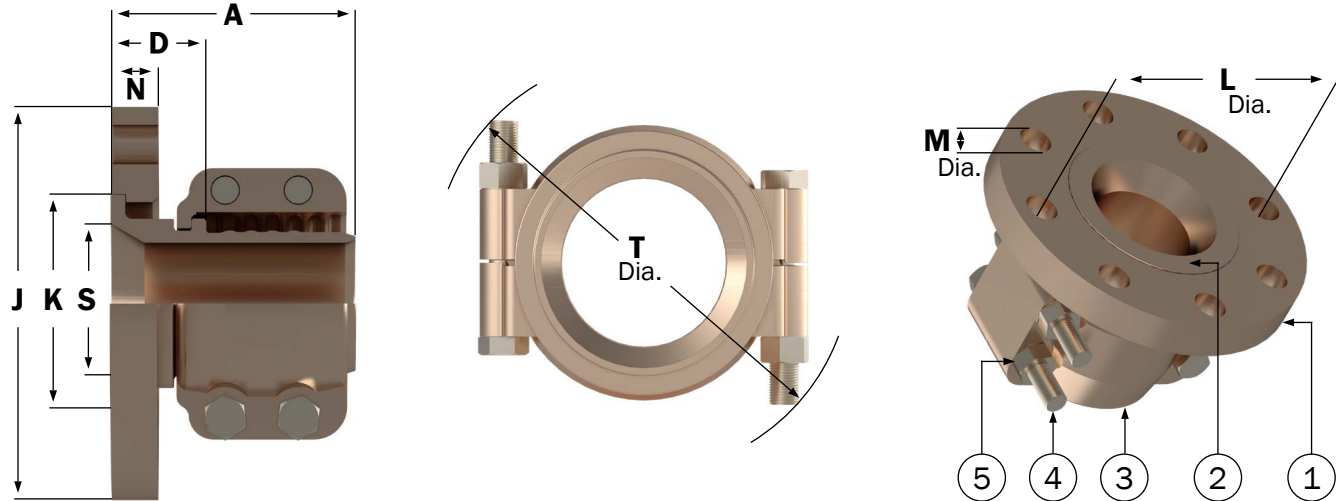
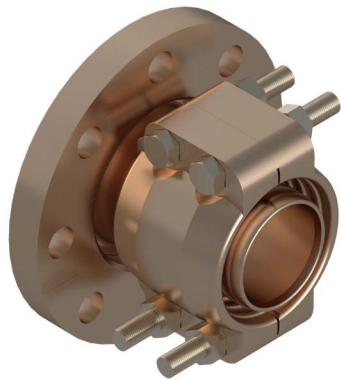
| Dimensions |
|------------|
|------------|

Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group X, Class I,  
400lb. Flange per MIL-PRF-20042

For use with the following hose: HS4182 & FC132



| Dimensions       |                |          |                   |     |      |      |      |      |      |      |      |      |                 |
|------------------|----------------|----------|-------------------|-----|------|------|------|------|------|------|------|------|-----------------|
| Part Number      | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | J    | K    | L    | N    | S    | T    | Est. Wt. (lbs.) |
| EF-1546A1-2-40   | C18411         | 2"       | 7                 | .69 | 4.37 | 1.96 | 6.50 | 3.28 | 5.19 | .81  | 2.25 | 6.70 | 15.00           |
| EF-1546A1-2.5-40 | C18696         | 2½"      | 8                 | .81 | 4.87 | 2.46 | 7.56 | 3.28 | 6.00 | .94  | 2.25 | 6.70 | 16.00           |
| EF-1546A1-2.5-48 | C18412         | 2½"      | 8                 | .81 | 5.44 | 2.55 | 7.56 | 3.78 | 6.00 | .94  | 2.71 | 7.65 | 22.00           |
| EF-1546A1-3-48   | C18413         | 3"       | 8                 | .81 | 4.85 | 1.96 | 8.13 | 4.50 | 6.56 | .94  | 3.31 | 7.65 | 23.00           |
| EF-1546A1-3.5-64 | C18414         | 3½"      | 9                 | .81 | 5.24 | 2.37 | 8.69 | 5.22 | 7.13 | 1.00 | 3.81 | 8.91 | 31.00           |
| EF-1546A1-4-64   | C18415         | 4"       | 9                 | .81 | 5.24 | 2.37 | 9.25 | 5.22 | 7.69 | 1.00 | 4.28 | 8.91 | 34.00           |

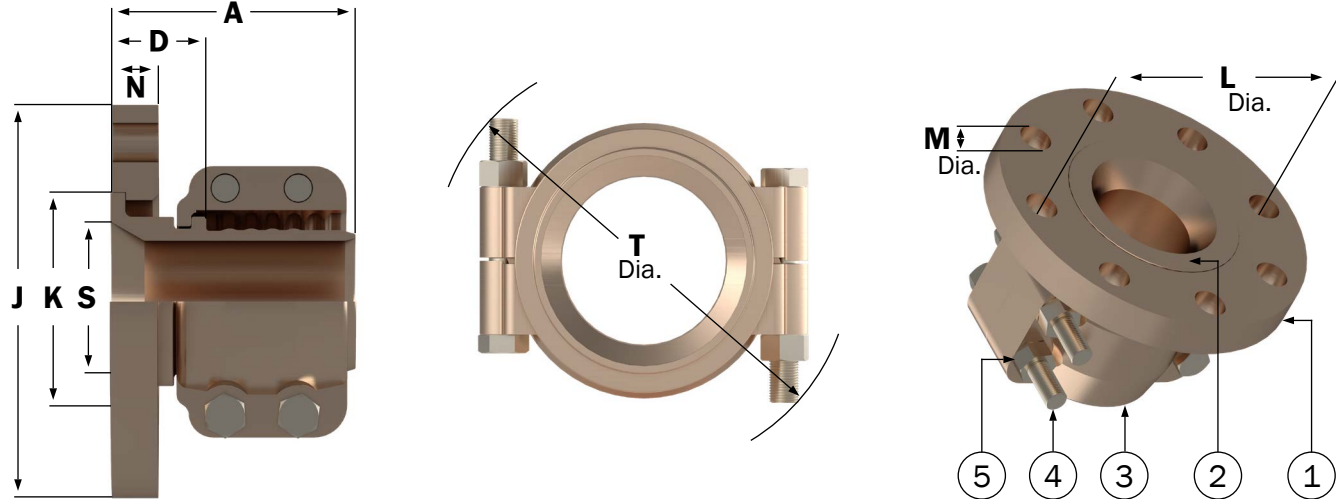
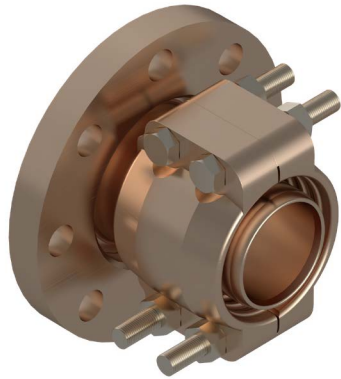
| Components      |                 |          |        |        |        |        |        |              |
|-----------------|-----------------|----------|--------|--------|--------|--------|--------|--------------|
| Description     | Req'd per Ass'y | 2-40     | 2.5-40 | 2.5-48 | 3-48   | 3.5-64 | 4-64   | Material     |
| Swivel Flange ① | 1               | C17798   | C17799 | C17801 | C17802 | C17803 | C17804 | Alum. Bronze |
| Nipple ②        | 1               | C23042-1 | C17708 | C17857 | C17706 | C17858 | C17707 | Alum. Bronze |

Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group X, Class II,  
150/400lb. Flange per MIL-PRF-20042

For use with the following hose: HS4182 & FC132



| Dimensions       |                |          |                   |     |      |      |      |      |      |      |      |      |                 |
|------------------|----------------|----------|-------------------|-----|------|------|------|------|------|------|------|------|-----------------|
| Part Number      | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | J    | K    | L    | N    | S    | T    | Est. Wt. (lbs.) |
| EF-1546A2-2-40   | C18352         | 2"       | 6                 | .56 | 4.37 | 1.96 | 5.56 | 3.28 | 4.44 | .81  | 2.25 | 3.70 | 15.00           |
| EF-1546A2-2.5-40 | C18695         | 2½"      | 6                 | .56 | 4.87 | 2.46 | 6.13 | 3.28 | 5.00 | .94  | 2.25 | 6.70 | 16.00           |
| EF-1546A2-2.5-48 | C18351         | 2½"      | 6                 | .56 | 5.44 | 2.55 | 6.13 | 3.78 | 5.00 | .94  | 2.71 | 7.65 | 18.00           |
| EF-1546A2-3-48   | C18350         | 3"       | 8                 | .56 | 4.85 | 1.96 | 6.63 | 4.50 | 5.50 | .94  | 3.31 | 7.65 | 18.00           |
| EF-1546A2-3.5-64 | C18416         | 3½"      | 8                 | .56 | 5.24 | 2.37 | 7.19 | 5.22 | 6.06 | 1.00 | 3.81 | 8.91 | 26.00           |
| EF-1546A2-4-64   | C17768         | 4"       | 8                 | .56 | 5.24 | 2.37 | 7.69 | 5.22 | 6.56 | 1.00 | 4.28 | 8.91 | 28.00           |

| Components         |                 |          |          |          |        |        |        |              |
|--------------------|-----------------|----------|----------|----------|--------|--------|--------|--------------|
| Description        | Req'd per Ass'y | 2-40     | 2.5-40   | 2.5-48   | 3-48   | 3.5-64 | 4-64   | Material     |
| Swivel Flange<br>① | 1               | C17765   | C17796   | C17795   | C17766 | C17794 | C17767 | Alum. Bronze |
| Nipple<br>②        | 1               | C23042-1 | C17708   | C17857   | C17706 | C17858 | C17707 | Alum. Bronze |
| Grip Segment<br>③  | 2               | D17739-1 | D17739-1 | D17743-1 |        |        |        |              |

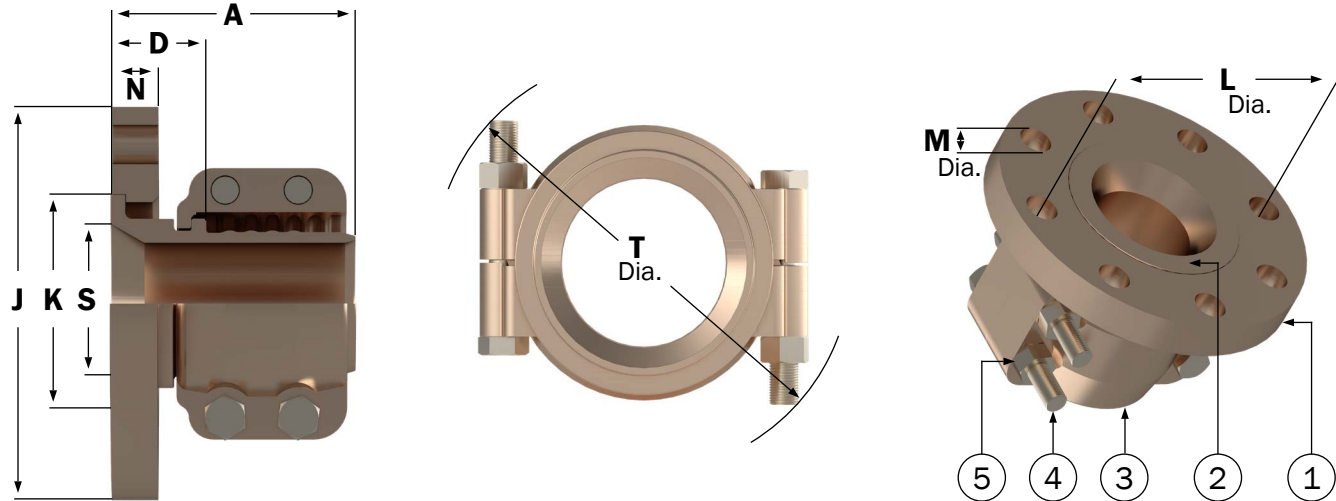
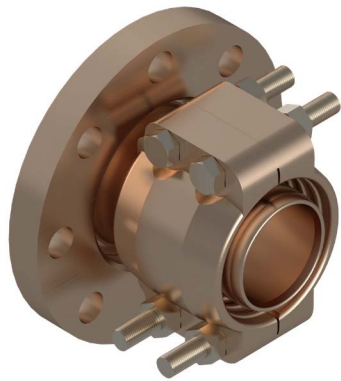


Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group X, Class IV,  
150lb. Flange per MIL-PRF-20042

For use with the following hose: HS4182 & FC132



| Dimensions       |                |          |                   |     |      |      |      |      |      |     |      |      |                 |
|------------------|----------------|----------|-------------------|-----|------|------|------|------|------|-----|------|------|-----------------|
| Part Number      | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | J    | K    | L    | N   | S    | T    | Est. Wt. (lbs.) |
| EF-1546A4-2-40   | C18687         | 2"       | 6                 | .56 | 4.37 | 1.96 | 5.56 | 3.28 | 4.44 | .44 | 2.25 | 6.70 | 12.00           |
| EF-1546A4-2.5-40 | C18688         | 2½"      | 6                 | .56 | 4.87 | 2.46 | 6.13 | 3.28 | 5.00 | .50 | 2.25 | 6.70 | 13.00           |
| EF-1546A4-2.5-48 | C18689         | 2½"      | 6                 | .56 | 5.44 | 2.55 | 6.13 | 3.78 | 5.00 | .50 | 2.71 | 7.65 | 15.00           |
| EF-1546A4-3-48   | C18690         | 3"       | 8                 | .56 | 4.85 | 1.96 | 6.63 | 4.50 | 5.50 | .50 | 3.31 | 7.65 | 16.00           |
| EF-1546A4-3.5-64 | C18691         | 3½"      | 8                 | .56 | 5.24 | 2.37 | 7.19 | 5.22 | 6.06 | .50 | 3.81 | 8.91 | 24.00           |
| EF-1546A4-4-64   | C18692         | 4"       | 8                 | .56 | 5.24 | 2.37 | 7.69 | 5.22 | 6.56 | .50 | 4.28 | 8.91 | 25.00           |

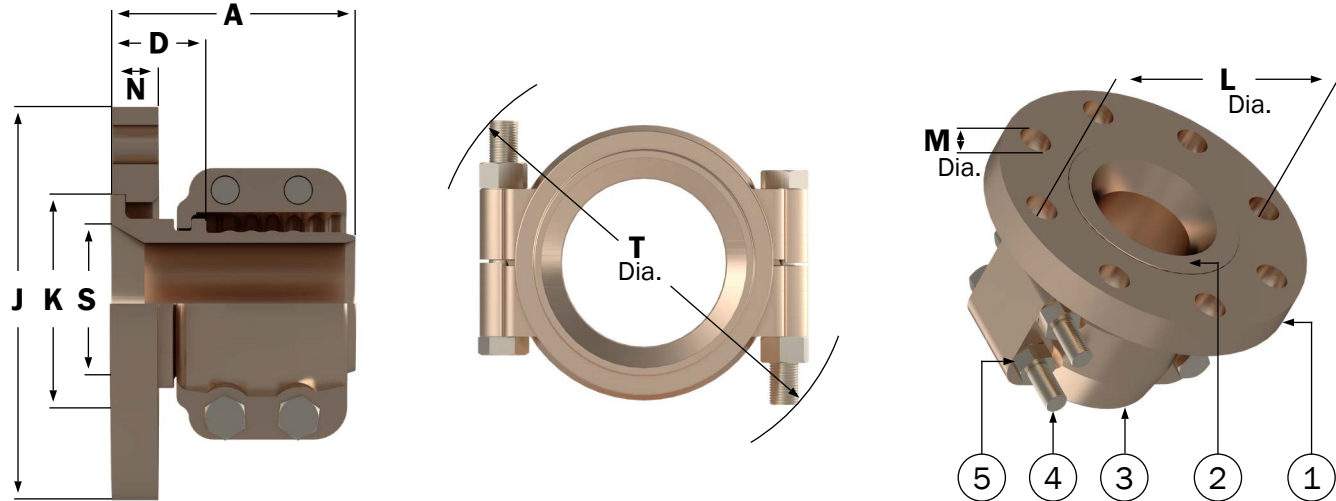
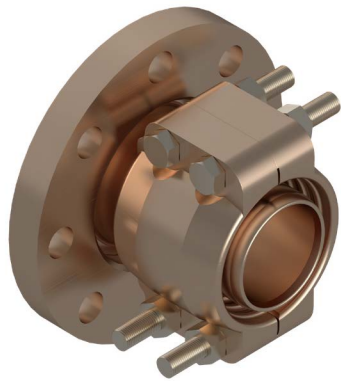
| Components         |                 |          |          |          |          |          |        |              |
|--------------------|-----------------|----------|----------|----------|----------|----------|--------|--------------|
| Description        | Req'd per Ass'y | 2-40     | 2.5-40   | 2.5-48   | 3-48     | 3.5-64   | 4-64   | Material     |
| Swivel Flange<br>① | 1               | C17925   | C17929   | C17931   | C17933   | C17938   | C17940 | Alum. Bronze |
| Nipple<br>②        | 1               | C23042-1 | C17708   | C17857   | C17706   | C17858   | C17707 | Alum. Bronze |
| Grip Segment<br>③  | 2               | D17739-1 | D17739-1 | D17743-1 | D17743-1 | D17726-1 | D17    |              |

Hose to Flange

End Fitting - Straight

MIL-DTL-24787/1,  
Type F, Group X, Class V,  
150lb. Flange per A.N.S.I. B16.5

For use with the following hose: HS4182 & FC132



| Dimensions       |                |          |                   |     |      |      |      |      |      |     |      |      |                 |
|------------------|----------------|----------|-------------------|-----|------|------|------|------|------|-----|------|------|-----------------|
| Part Number      | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | J    | K    | L    | N   | S    | T    | Est. Wt. (lbs.) |
| EF-1546A5-2-40   | C18681         | 2"       | 4                 | .75 | 4.37 | 1.96 | 6.00 | 3.28 | 4.75 | .42 | 2.25 | 6.70 | 12.00           |
| EF-1546A5-2.5-40 | C18682         | 2½"      | 4                 | .75 | 4.87 | 2.46 | 7.00 | 3.28 | 5.50 | .48 | 2.25 | 6.70 | 13.00           |
| EF-1546A5-2.5-48 | C18683         | 2½"      | 4                 | .75 | 5.44 | 2.55 | 7.00 | 3.78 | 5.50 | .48 | 2.71 | 7.65 | 15.00           |
| EF-1546A5-3-48   | C18684         | 3"       | 4                 | .75 | 4.85 | 1.96 | 7.50 | 4.50 | 6.00 | .48 | 3.31 | 7.65 | 16.00           |
| EF-1546A5-3.5-64 | C18685         | 3½"      | 8                 | .75 | 5.24 | 2.37 | 8.50 | 5.22 | 7.00 | .48 | 3.81 | 8.91 | 24.00           |
| EF-1546A5-4-64   | C18686         | 4"       | 8                 | .75 | 5.24 | 2.37 | 9.00 | 5.22 | 7.50 | .48 | 4.28 | 8.91 | 25.00           |

| Components         |                 |          |        |        |        |        |        |              |
|--------------------|-----------------|----------|--------|--------|--------|--------|--------|--------------|
| Description        | Req'd per Ass'y | 2-40     | 2.5-40 | 2.5-48 | 3-48   | 3.5-64 | 4-64   | Material     |
| Swivel Flange<br>① | 1               | C17966   | C17968 | C17969 | C17970 | C17971 | C17972 | Alum. Bronze |
| Nipple<br>②        | 1               | C23042-1 | C17708 | C17857 | C17706 | C17858 | C17707 | Alum. Bronze |
| Grip Segment<br>③  | 2               | D17739-1 |        |        |        |        |        |              |





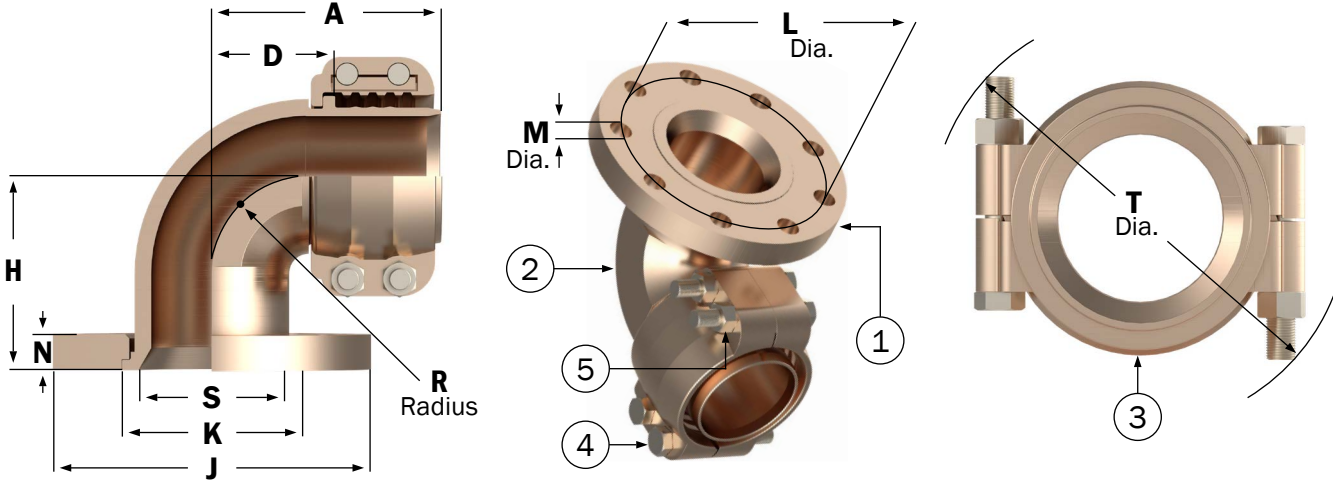
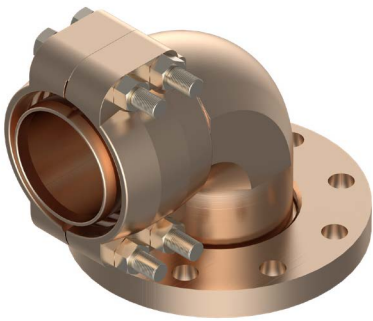


Hose to Flange

End Fitting - 90°

MIL-DTL-24787/1,  
Type FL, Group X, Class IV,  
150lb. Flange per MIL-PRF-20042

For use with the following hose: HS4182 & FC132



Dimensions

| Part Number        | Drawing Number | IPS Size | No. of Bolt Holes | M   | A    | D    | H    | J    | K    | L    | N   | R    | S    | T    | Est. Wt. (lbs.) |
|--------------------|----------------|----------|-------------------|-----|------|------|------|------|------|------|-----|------|------|------|-----------------|
| 90EF-1546B4-2-40   | C18709         | 2"       | 6                 | .56 | 5.25 | 2.84 | 3.50 | 5.56 | 3.22 | 4.44 | .44 | 1.88 | 2.24 | 6.70 | 15.00           |
| 90EF-1546B4-2.5-40 | C18714         | 2½"      | 6                 | .56 | 5.25 | 2.84 | 3.50 | 6.13 | 3.22 | 5.00 | .50 | 1.88 | 2.24 | 6.70 | 16.00           |
| 90EF-1546B4-2.5-48 | C18495         | 2½"      | 6                 | .56 | 5.78 | 2.89 | 3.87 | 6.13 | 3.78 | 5.00 | .50 | 2.09 | 2.71 | 7.65 | 19.00           |
| 90EF-1546B4-3-48   | C18715         | 3"       | 8                 | .56 | 5.78 | 2.89 | 4.00 | 6.63 | 4.50 | 5.50 | .50 | 2.09 | 3.31 | 7.65 | 20.00           |
| 90EF-1546B4-3.5-64 | D18720         | 3½"      | 8                 | .56 | 6.78 | 3.91 | 4.62 | 7.19 | 5.22 | 6.06 | .50 | 2.81 | 3.81 | 8.91 | 29.00           |
| 90EF-1546B4-4-64   | D18723         | 4"       | 8                 | .56 | 6.78 | 3.91 | 4.62 | 7.69 | 5.28 | 6.56 | .50 | 2.81 | 4.28 | 8.91 | 30.00           |

Components

| Description        | Req'd per Ass'y | 2-40     | 2.5-40   | 2.5-48   | 3-48     | 3.5-64 | 4-64   | Material     |
|--------------------|-----------------|----------|----------|----------|----------|--------|--------|--------------|
| Swivel Flange<br>① | 1               | C17925   | C17929   | C17931   | C17933   | C17938 | C17940 | Alum. Bronze |
| Elbow<br>②         | 1               | C18052   | C18052   | D18305   | D18306   | D18307 | D18308 | Alum. Bronze |
| Grip Segment<br>③  | 2               | D17739-1 | D17739-1 | D17743-1 | D17743-1 | D177   |        |              |

















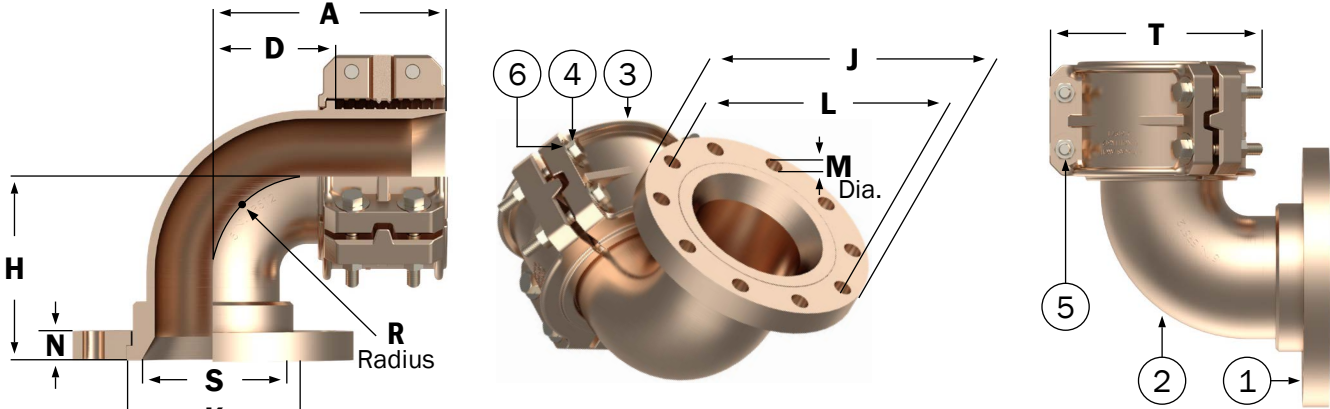


Hose to Flange

End Fitting - 90°

MIL-DTL-24787/1,  
Type FL, Group IX, Class III,  
250lb. Flange per MIL-PRF-20042

For use with the following hose: ER512 & 2580



| Dimensions   |                |          |                   |     |       |      |       |       |       |       |      |      |       |       |                 |
|--------------|----------------|----------|-------------------|-----|-------|------|-------|-------|-------|-------|------|------|-------|-------|-----------------|
| Part Number  | Drawing Number | IPS Size | No. of Bolt Holes | M   | A     | D    | H     | J     | K     | L     | N    | R    | S     | T     | Est. Wt. (lbs.) |
| 90EF-5-250F  | D17111         | 5"       | 10                | .69 | 8.63  | 4.50 | 6.76  | 9.06  | 6.38  | 7.81  | 1.06 | 3.50 | 5.31  | 9.25  | 59.00           |
| 90EF-6-250F  | D17112         | 6"       | 12                | .69 | 9.20  | 5.07 | 7.34  | 10.13 | 7.38  | 8.88  | 1.19 | 4.00 | 6.31  | 10.38 | 68.00           |
| 90EF-8-250F  | D17113         | 8"       | 14                | .69 | 10.56 | 6.18 | 8.67  | 12.38 | 9.83  | 11.06 | 1.31 | 5.00 | 8.31  | 13.00 | 101.00          |
| 90EF-10-250F | D19091         | 10"      | 15                | .81 | 12.10 | 7.75 | 9.80  | 15.00 | 12.04 | 13.44 | 1.44 | 6.38 | 10.31 | 14.50 | 147.00          |
| 90EF-12-250F | D19739         | 12"      | 18                | .81 | 14.32 | 9.04 | 10.70 | 17.63 | 14.48 | 16.06 | 1.50 | 7.38 | 12.33 | 17.10 | -               |

| Components         |                 |          |          |          |          |          |              |
|--------------------|-----------------|----------|----------|----------|----------|----------|--------------|
| Description        | Req'd per Ass'y | 5"       | 6"       | 8"       | 10"      | 12"      | Material     |
| Swivel Flange<br>① | 1               | C16915-1 | C16915-2 | C16915-3 | C18827   | C18828   | Bronze       |
| Elbow<br>②         | 1               | D16920   | D16921   | D16922   | D18826   | D18833   | Alum. Bronze |
| Grip Segment<br>③  | 3               | D16194-1 | D16198-1 | D16080-1 | D18345-1 | D18282-1 | Alum. Bronze |
| Bolt<br>           |                 |          |          |          |          |          |              |















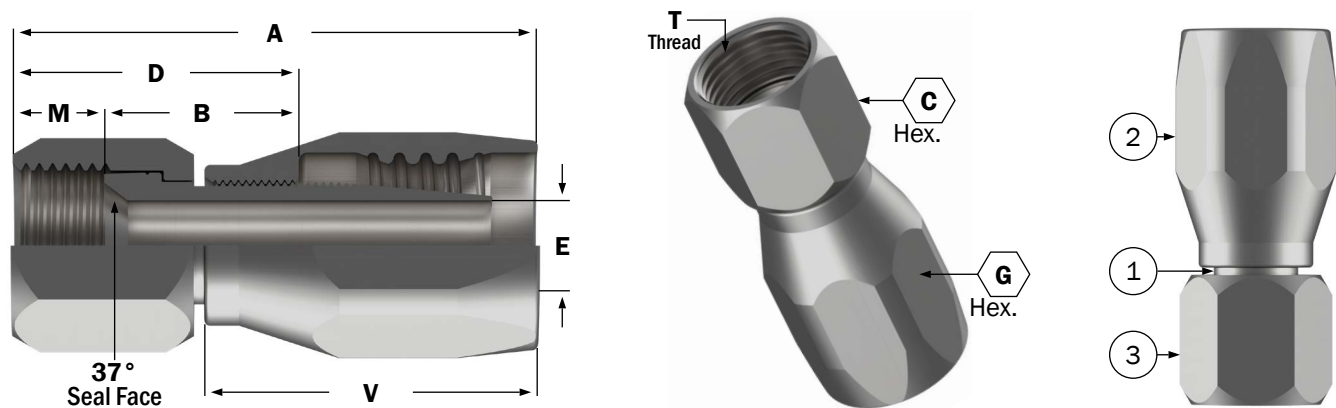


Hose to Female J.I.C. (37°) Flare

End Fitting - Straight

MIL-DTL-24787/2,  
Type A, Group VIII

For use with the following hose: Synthetic yarn & wire reinforced hoses i.a.w. MIL-DTL-24136/3, MIL-DTL-24135/10/12, e.g. HS P/N 2580



| Dimensions    |                |           |                |      |      |      |      |     |      |     |      |                 |
|---------------|----------------|-----------|----------------|------|------|------|------|-----|------|-----|------|-----------------|
| Part Number   | Drawing Number | Hose Size | T Thread CL-2A | A    | B    | C    | D    | E   | G    | M   | V    | Est. Wt. (lbs.) |
| EF-1488A-0404 | C19219         | 1/4"      | 7/16"-20       | 1.82 | .85  | .56  | 1.20 | .17 | .63  | .35 | 1.10 | .10             |
| EF-1488A-0505 | C19220         | 5/16"     | 1/2"-20        | 2.00 | 1.01 | .63  | 1.39 | .23 | .69  | .38 | 1.20 | .10             |
| EF-1488A-0606 | C19221         | 3/8"      | 9/16"-48       | 2.15 | 1.01 | .69  | 1.39 | .30 | .81  | .38 | 1.30 | .20             |
| EF-1488A-0808 | C19222         | 1/2"      | 3/4"-16        | 2.49 | 1.09 | .88  | 1.51 | .38 | .94  | .42 | 1.52 | .30             |
| EF-1488A-1010 | C19223         | 5/8"      | 7/8"-14        | 2.90 | 1.09 | 1.00 | 1.60 | .48 | 1.12 | .51 | 1.80 | .40             |
| EF-1488A-1212 | C19224         | 3/4"      | 1 1/16"-12     | 3.17 | 1.11 | 1.25 | 1.68 | .60 | 1.25 | .57 | 2.02 | .60             |

| Components  |                 |          |          |          |          |          |          |          |
|-------------|-----------------|----------|----------|----------|----------|----------|----------|----------|
| Description | Req'd per Ass'y | 0404     | 0505     | 0606     | 0808     | 1010     | 1212     | Material |
| Nipple ①    | 1               | B18978-2 | B18979-2 | B18980-2 | C18647-2 | B18981-2 | B18982-2 | Monel    |
| Socket ②    | 1               | C18984-2 | C18985-2 | C18986-2 | C18648-2 | C18987-2 | C18988-2 | Monel    |
| Nut ③       | 1               | B18972-2 | B18973-2 | B18974-2 | B18778-2 | B18975-2 | B18976-2 | Monel    |

All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

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HS1488 Equivalent | P/N 4-411

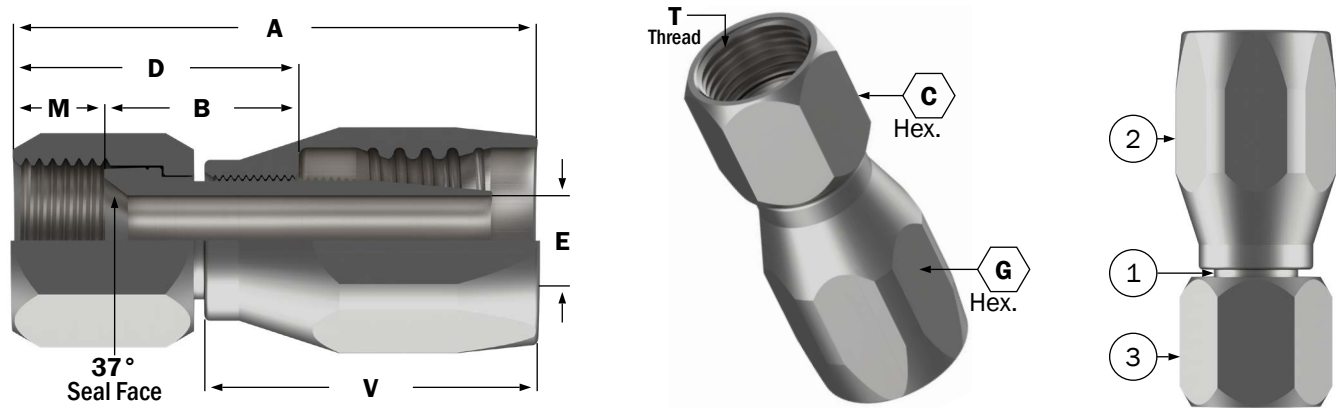
## Hose to Female J.I.C. (37°) Flare

End Fitting - Straight

MIL-DTL-24787/2,  
Type A, Group VIII



**For use with the following hose:** Synthetic yarn & wire reinforced hoses i.a.w. MIL-DTL-24136/3, MIL-DTL-24135/10/12, e.g. HS P/N 2580



| Dimensions  |           |                |      |      |      |      |     |      |     |      |                 |
|-------------|-----------|----------------|------|------|------|------|-----|------|-----|------|-----------------|
| Part Number | Hose Size | T Thread CL-2A | A    | B    | C    | D    | E   | G    | M   | V    | Est. Wt. (lbs.) |
| 4-411-4     | 1/4"      | 7/16"-20       | 1.75 | .65  | .56  | 1.00 | .17 | .62  | .35 | 1.10 | .10             |
| 4-411-5     | 5/16"     | 1/2"-20        | 1.90 | .74  | .62  | 1.12 | .23 | .69  | .38 | 1.20 | .10             |
| 4-411-6     | 3/8"      | 9/16"-18       | 2.05 | .77  | .69  | 1.15 | .30 | .81  | .38 | 1.30 | .20             |
| 4-411-8     | 1/2"      | 3/4"-16        | 2.52 | .95  | .88  | 1.38 | .39 | .94  | .43 | 1.65 | .30             |
| 4-411-10    | 5/8"      | 7/8"-14        | 2.80 | 1.00 | 1.00 | 1.51 | .48 | 1.12 | .51 | 1.80 | .40             |
| 4-411-12    | 3/4"      | 1 1/16"-12     | 3.15 | 1.01 | 1.25 | 1.58 | .61 | 1.25 | .57 | 2.10 | .60             |

| Components  |                 | Part Number |    |    |    |    |     |     |  | Material |
|-------------|-----------------|-------------|----|----|----|----|-----|-----|--|----------|
|             |                 | Size        |    |    |    |    |     |     |  |          |
| Description | Req'd per Ass'y | Base No.    | -4 | -5 | -6 | -8 | -10 | -12 |  |          |
| Nipple<br>① | 1               | 4-1251-     | 4  | 5  | 6  | 8  | 10  | 12  |  | Monel    |
| Socket<br>② | 1               | 4-1210-     | 4  | 5  | 6  | 8  | 10  | 12  |  | Monel    |
| Nut<br>③    | 1               | 4-1290-     | 4  | 5  | 6  | 8  | 10  | 12  |  | Monel    |







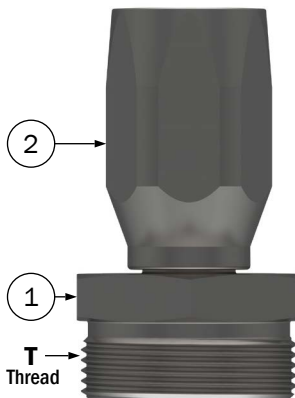
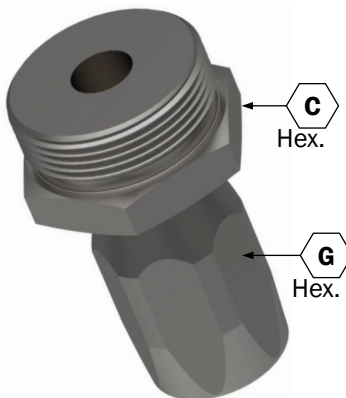
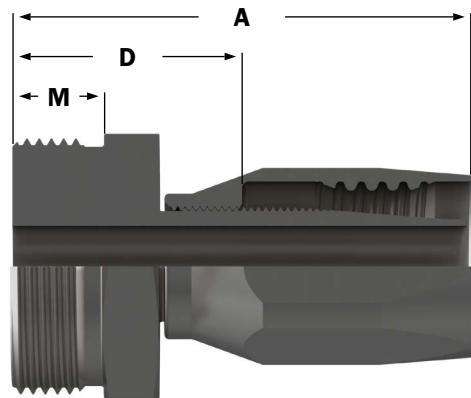
Hose to Male “O” Ring Seal

End Fitting - Straight

MIL-DTL-24787/3,  
Type C, Group VIII



For use with the following hose: Synthetic yarn & wire reinforced hoses i.a.w. MIL-DTL-24136/3, MIL-DTL-24135/10/12, e.g. HS P/N 2580



Dimensions

| Part Number   | Drawing Number | I.P.S. Size | T Thread CL-3A | A    | C    | D    | G    | M   | Est. Wt. (lbs.) |
|---------------|----------------|-------------|----------------|------|------|------|------|-----|-----------------|
| EF-1488C-0206 | C19319         | 1/8"        | 1"-14          | 2.05 | 1.06 | 1.00 | .81  | .50 | .30             |
| EF-1488C-0408 | C19320         | 1/4"        | 1 3/16"-12     | 2.39 | 1.25 | 1.12 | .94  | .62 | .50             |
| EF-1488C-0610 | C19321         | 3/8"        | 1 3/8"-12      | 2.73 | 1.44 | 1.15 | 1.12 | .62 | .60             |
| EF-1488C-0812 | C19322         | 1/2"        | 1 3/4"-12      | 3.02 | 1.80 | 1.38 | 1.25 | .62 | 1.00            |

Components

| Description | Req'd per Ass'y | 0206     | 0408     | 0610     | 0812     | Material |
|-------------|-----------------|----------|----------|----------|----------|----------|
| Nipple ①    | 1               | C19014   | C19015   | C19016-1 | -        | Monel    |
| Socket ②    | 1               | C18986-2 | C18648-2 | C18987-2 | C18988-2 | Monel    |

All dimensions are in inches.  
Dimensional information is for reference only.  
Variations from these dimensions, on actual parts, may occur as the result of engineering revisions.

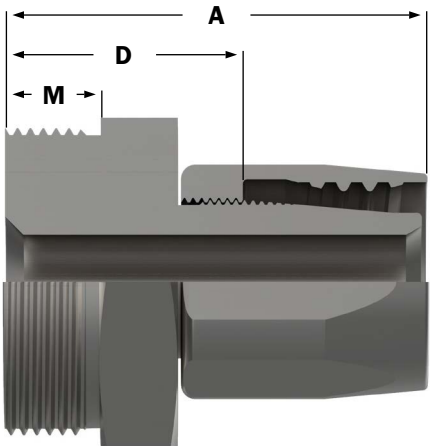
Hose to Male “O” Ring Seal

End Fitting - Straight

MIL-DTL-24787/3,  
Type C, Group VIII



For use with the following hose: Synthetic yarn & wire reinforced hoses i.a.w. MIL-DTL-24136/3, MIL-DTL-24135/10/12, e.g. HS P/N 2580



HS1488 Equivalent | P/N 4-190911

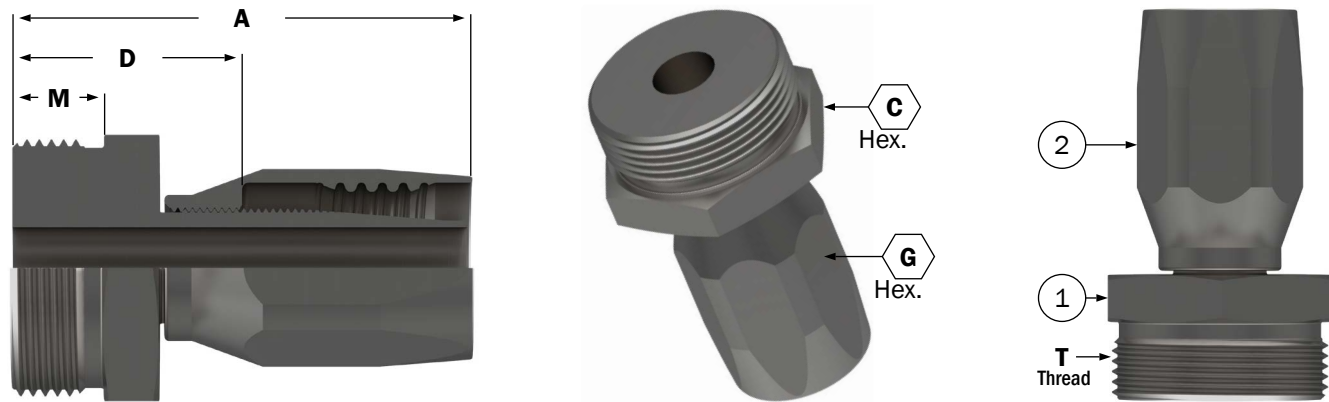
## Hose to Male “O” Ring Seal

End Fitting - Straight

MIL-DTL-24787/3,  
Type C, Group VIII



**For use with the following hose:** Synthetic yarn & wire reinforced hoses i.a.w. MIL-DTL-24136/3, MIL-DTL-24135/10/12, e.g. HS P/N 2580



| Dimensions      |             |                |      |      |      |      |     |                 |
|-----------------|-------------|----------------|------|------|------|------|-----|-----------------|
| Part Number     | I.P.S. Size | T Thread CL-3A | A    | C    | D    | G    | M   | Est. Wt. (lbs.) |
| 4-190911-1/8-6  | 1/8"        | 1"-14          | 2.06 | 1.06 | 1.16 | .81  | .50 | .28             |
| 4-190911-1/4-8  | 1/4"        | 1 3/16"-12     | 2.54 | 1.25 | 1.39 | .94  | .62 | .46             |
| 4-190911-3/8-10 | 3/8"        | 1 3/8"-12      | 2.75 | 1.44 | 1.46 | 1.12 | .62 | .65             |
| 4-190911-1/2-12 | 1/2"        | 1 3/4"-12      | 3.12 | 1.81 | 1.55 | 1.25 | .62 | 1.03            |

| Components  |                 | Part Number |       |       |        |        |  | Material |
|-------------|-----------------|-------------|-------|-------|--------|--------|--|----------|
|             |                 | Size        |       |       |        |        |  |          |
| Description | Req'd per Ass'y | Base No.    | 1/8-6 | 1/4-8 | 3/8-10 | 1/2-12 |  |          |
| Nipple ①    | 1               | 4-220779-   | 1/8-6 | 1/4-8 | 3/8-10 | 1/2-12 |  | Monel    |
| Socket ②    | 1               | 4-1210-     | 6     | 8     | 10     | 12     |  | Monel    |

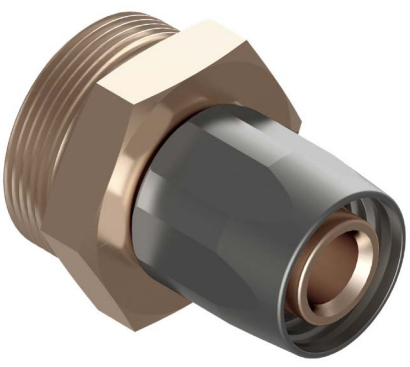
All dimensions are in inches.  
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HS1488 Equivalent | P/N 375-190911

## Hose to Male “O” Ring Seal

End Fitting - Straight

MIL-DTL-24787/3,  
Type C, Group VIII







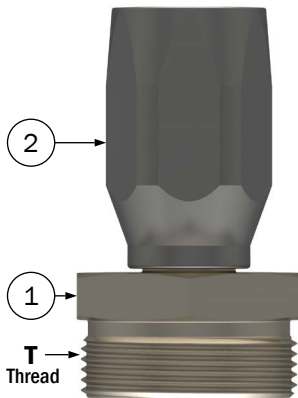
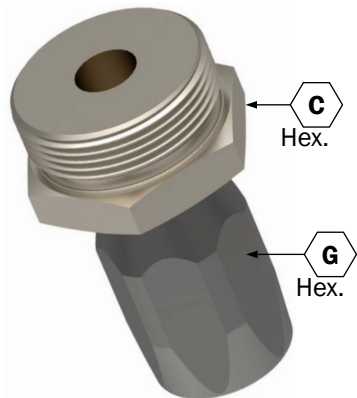
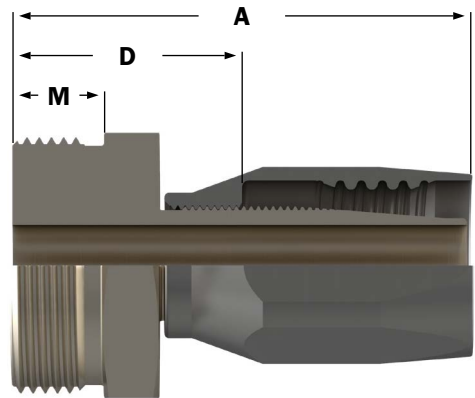


Hose to Male “O” Ring Seal

End Fitting - Straight



For use with the following hose: Synthetic yarn & wire reinforced hoses i.a.w. MIL-DTL-24136/3, MIL-DTL-24135/10/12, e.g. HS P/N 2580



| Dimensions       |                |             |                |      |      |      |      |     |                 |
|------------------|----------------|-------------|----------------|------|------|------|------|-----|-----------------|
| Part Number      | Drawing Number | I.P.S. Size | T Thread CL-3A | A    | C    | D    | G    | M   | Est. Wt. (lbs.) |
| EF-MSS1488C-0610 | C19304         | 3⁄8"        | 1 3⁄8"-12      | 2.73 | 1.44 | 1.43 | 1.12 | .62 | .60             |
| EF-MSS1488C-0812 | C19305         | 1⁄2"        | 1 3⁄4"-12      | 3.02 | 1.80 | 1.54 | 1.25 | .62 | 1.00            |

| Components  |                 |          |          |                 |
|-------------|-----------------|----------|----------|-----------------|
| Description | Req'd per Ass'y | 0610     | 0812     | Material        |
| Nipple ①    | 1               | C19016-2 | C19017-2 | Stainless Steel |
| Socket ②    | 1               | C18987-2 | C18988-2 | Monel           |

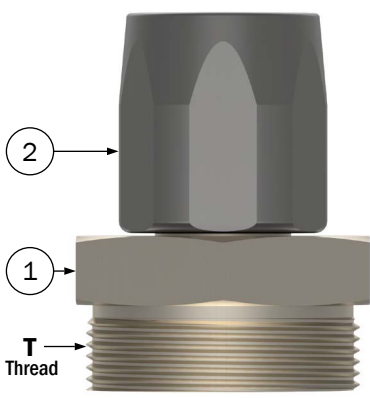
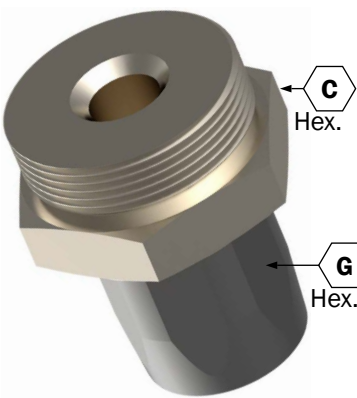
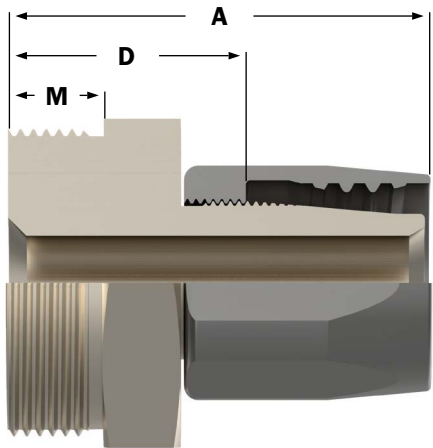
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Hose to Male “O” Ring Seal

End Fitting - Straight



For use with the following hose: Synthetic yarn & wire reinforced hoses i.a.w. MIL-DTL-24136/3, MIL-DTL-24135/10/12, e.g. HS P/N 2580



| Dimensions       |                |             |                |   |   |   |   |   |                 |
|------------------|----------------|-------------|----------------|---|---|---|---|---|-----------------|
| Part Number      | Drawing Number | I.P.S. Size | T Thread CL-2A | A | C | D | G | M | Est. Wt. (lbs.) |
| EF-MSS1488C-1216 | C19306         | 3⁄4"        |                |   |   |   |   |   |                 |















































































































































































