



# Metal Flexible Hoses

Catalog #. MFH/FH-E2  
June 2011



**High Pressure - MFH Series : 1page**



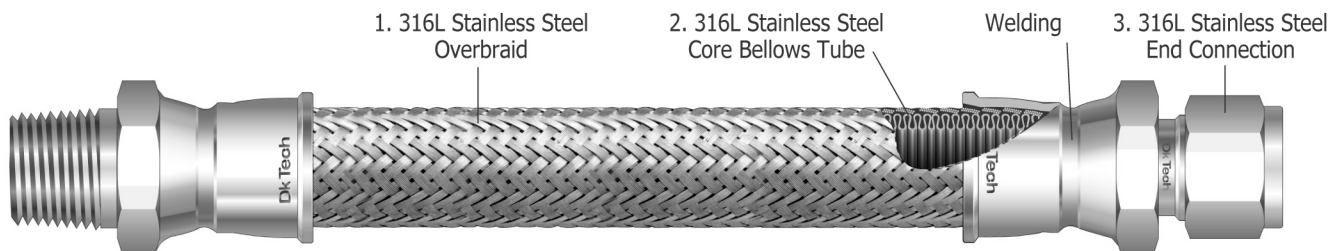
**Medium Pressure - FH Series : 5page**

## Factory Test, Cleaning and Packaging

Using cleaned and passivated parts, the hoses and end connection are welded. Every hose assembly of MFH & FH Series is factory tested using nitrogen or clean air @1000 psig (68 bar) at the room temperature, and individually packed in a plastic sealing bag with an external label. The hydrostatic test of 1.1 times the working pressure or helium leak test is optional.

## High-Pressure - MFH Series

Pressure Rating up to 3600Psig (248bar)



## Materials of Construction

|                             |                            |
|-----------------------------|----------------------------|
| <b>1. Wire braid</b>        | ASTM A313 Type316L         |
| <b>2. Core Bellows Tube</b> | ASTM A240 Type 316L        |
| <b>3. End Connection</b>    | ASTM A479 or A276 Type 316 |

## Features

- High Pressure Application Up to 3600 psig with 316 Stainless Steel Construction.
- High Temperature Application up to 850°F (454°C).
- Wide Choices of End Connections of DK-LOK Tube Port, DK-LOK Tube Stub Adapter, Swivel 37 degree Female, Male and Female NPT/ISO Tapered thread.
- Products Type Approved by DNV : Certificate No. P-12877

## Applications

- Air, Gas, Steam, Vacuum and Water line.

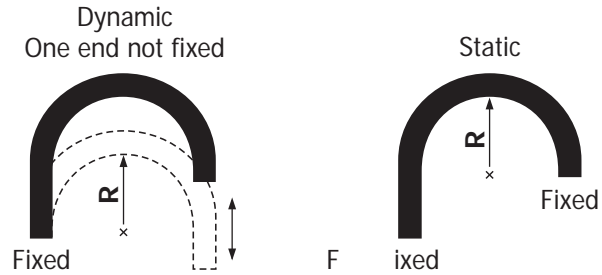


# DK-LOK® High Pressure - MFH Series

Table 1. Working / Burst Pressure and Temperature

| Nominal Hose Size, in. (mm) | MFH Series Designator | Temperature Range             | Working Pressure               | Burst Pressure Minimum | Bending Radius (1) Minimum |              |
|-----------------------------|-----------------------|-------------------------------|--------------------------------|------------------------|----------------------------|--------------|
|                             |                       |                               | psig (bar)                     | psig (bar)             | in (mm)                    | in (mm)      |
|                             |                       |                               | @ -325 to 100°F (-200 to 37°C) | @ 70°F (20°C)          | Static                     | Dynamic      |
| 1/4 (6.35)                  | MFH4                  | -325 to 850°F (-200 to 454°C) | 3600 (248)                     | 14 400 (992)           | 2.25 (57.2)                | 10.0 (254.0) |
| 3/8 (9.52)                  | MFH6                  |                               | 2500 (172)                     | 10 000 (689)           | 3.00 (76.2)                | 12.0 (305.0) |
| 1/2 (12.70)                 | MFH8                  |                               | 2200 (151)                     | 8 800 (606)            | 4.50 (114.3)               | 16.0 (406.4) |

(1) Radius measured to inside of bend



## Temperature - Pressure Ratings

To determine an allowable pressure at a specific temperature, multiply the working pressure on table 1 by an applicable factor shown on table 2. **Example:** MFH6 Series at 500°F(260°C). 2500 psig x 0.65 = 1,625psig

Table 2. Temperature De-rating Factors

| Temperature°F | -325 | 100  | 200  | 300  | 400  | 500  | 600  | 700  | 800  | 850  |
|---------------|------|------|------|------|------|------|------|------|------|------|
| Temperature°C | -200 | 37   | 93   | 148  | 204  | 260  | 315  | 371  | 426  | 454  |
| Factors       | 1.00 | 1.00 | 0.84 | 0.76 | 0.70 | 0.65 | 0.62 | 0.59 | 0.57 | 0.56 |

## Ordering Information and Table of Dimensions

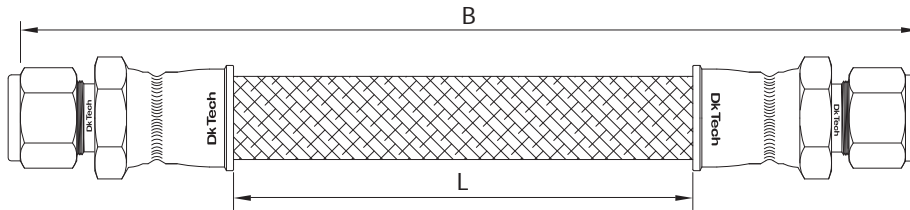


Table 3. Hose Assembly of DK-LOK Tube Fittings at both Ends.

| Ordering Number |             | END Connections DK-LOK Tube Fittings | Overall Length B in. (CM) | Live Length L in. (CM) | Hose I.D. Minimum in. (mm) | Hex.Flat Max. OD on the assembly |
|-----------------|-------------|--------------------------------------|---------------------------|------------------------|----------------------------|----------------------------------|
| MFH4-           | DL4DL4-12-S | 1/4                                  | 12.0 (30.5)               | 8.12 (20.6)            | 0.19 (4.8)                 | 13/16 in.                        |
|                 | DL4DL4-36-S |                                      | 36.0 (91.4)               | 32.1 (81.5)            |                            |                                  |
|                 | DL4DL4-48-S |                                      | 48.0 (122)                | 51.7 (131.4)           |                            |                                  |
| MFH6-           | DL6DL6-18-S | 3/8                                  | 18.0 (45.7)               | 14.0 (35.6)            | 0.28 (7.1)                 | 15/16 in.                        |
|                 | DL6DL6-36-S |                                      | 36.0 (91.4)               | 32.0 (81.3)            |                            |                                  |
|                 | DL6DL6-48-S |                                      | 48.0 (122)                | 44.1 (122)             |                            |                                  |
| MFH8-           | DL8DL8-18-S | 1/2                                  | 18.0 (45.7)               | 13.5 (34.3)            | 0.40 (10.2)                | 1 1/16 in.                       |
|                 | DL8DL8-48-S |                                      | 48.0 (122)                | 43.5 (110)             |                            |                                  |

# DK-LOK® High Pressure - MFH Series

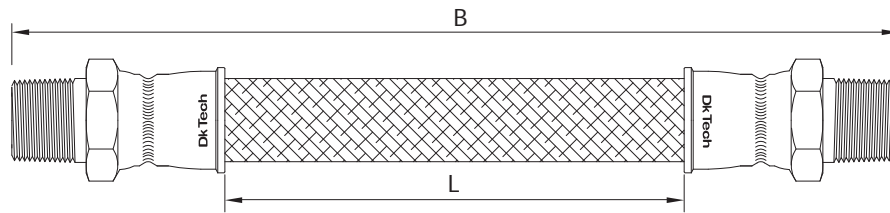


Table 4. Hose Assembly of DK-LOK Tube Fitting end to Male NPT end

| Ordering Number | END Connections        |          | Overall Length B<br>in. (CM) | Live Length L<br>in. (CM) | Hose I.D.<br>Minimum<br>in. (mm) | Hex.Flat<br>Max. OD<br>on the assembly |
|-----------------|------------------------|----------|------------------------------|---------------------------|----------------------------------|--|
|                 | DK-LOK<br>Tube Fitting | Male NPT |                              |                           |                                  |  |
| MFH4-           | DL4M4N-12-S            | 1/4      | 12.0 (30.5)                  | 8.26 (21.0)               | 0.19 (4.8)                       | 13/16 in.                              |
|                 | DL4M4N-36-S            |          |                              |                           |                                  |  |
|                 | DL4M4N-48-S            |          |                              |                           |                                  |  |
| MFH6-           | DL6M6N-18-S            | 3/8      | 18.0 (45.7)                  | 14.2 (36.1)               | 0.28 (7.1)                       | 15/16 in.                              |
|                 | DL6M6N-36-S            |          |                              |                           |                                  |  |
|                 | DL6M6N-48-S            |          |                              |                           |                                  |  |
| MFH8-           | DL8M8N-18-S            | 1/2      | 18.0 (45.7)                  | 13.6 (34.5)               | 0.40 (10.2)                      | 1 1/16 in.                             |
|                 | DL8M8N-48-S            |          | 48.0 (122)                   | 43.7 (111)                |                                  |  |

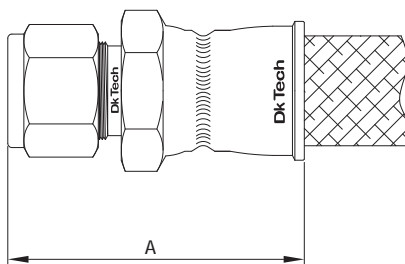
Table 5. Hose Assembly of DK-LOK Tube Fitting end to Tube Stub Adapter end



| Ordering Information | END Connections         |                      | Overall Length B<br>in. (CM) | Live Length L<br>in. (CM) | Hose I.D.<br>Minimum<br>in. (mm) | Max. O. D.<br>on the assembly |
|----------------------|-------------------------|----------------------|------------------------------|---------------------------|----------------------------------|-------------------------------|
|                      | DK-LOK<br>Tube Fittings | Tube Stub<br>Adapter |                              |                           |                                  |                               |
| MFH4-                | DL4TA4-12-S             | 1/4                  | 12.0 (30.5)                  | 8.26 (21.0)               | 0.16 (4.1)                       | 0.81 (20.6)                   |
|                      | DL4TA4-24-S             |                      |                              |                           |                                  |                               |
|                      | DL4TA4-36-S             |                      |                              |                           |                                  |                               |
|                      | DL4TA4-48-S             |                      |                              |                           |                                  |                               |
| MFH8-                | DL8TA8-12-S             | 1/2                  | 12.0 (30.5)                  | 7.5 (19.0)                | 0.37 (9.40)                      | 1.06 (26.9)                   |
|                      | DL8TA8-24-S             |                      |                              |                           |                                  |                               |
|                      | DL8TA8-36-S             |                      |                              |                           |                                  |                               |
|                      | DL8TA8-48-S             |                      |                              |                           |                                  |                               |

## End Connections

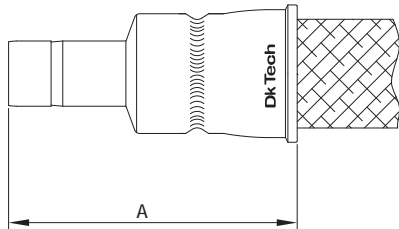
Table 6. DK-LOK Tube Fitting Ends



| Applicable<br>Hose<br>Series | DK-LOK End Connection |                            |                      |                             |                 |
|------------------------------|-----------------------|----------------------------|----------------------|-----------------------------|-----------------|
|                              | Designator            | DK-LOK<br>Tube<br>Fittings | Length<br>A          | Hex.Flat<br>as<br>a Max. OD | I.D.<br>Minimum |
|                              |                       | Fractional OD              | Dimensions, in. (mm) |                             |                 |
| MFH4-                        | DL4                   | 1/4                        | 1.94 (49.3)          | 13/16 in.                   | 0.19 (4.8)      |
| MFH6-                        | DL6                   | 3/8                        | 2.02 (51.3)          | 15/16 in.                   | 0.28 (7.1)      |
| MFH8-                        | DL8                   | 1/2                        | 2.24 (56.9)          | 1 1/16 in.                  | 0.41 (10.4)     |
|                              |                       | Metric OD                  | Dimensions, in. (mm) |                             |                 |
| MFH4-                        | DM6M                  | 6M                         | 2.45 (62.2)          | 13/16 in.                   | 0.19 (4.8)      |
| MFH6-                        | DM8M                  | 8M                         | 2.49 (63.2)          | 15/16 in.                   | 0.25 (6.4)      |
| MFH6-                        | DM10M                 | 10M                        | 2.03 (51.6)          | 15/16 in.                   | 0.31 (7.9)      |
| MFH8-                        | DM12M                 | 12M                        | 2.24 (56.9)          | 1 1/16 in.                  | 0.38 (9.7)      |

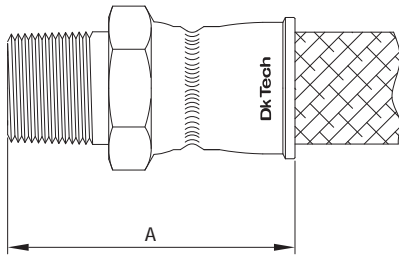
## End Connections

Table 7. Tube Stub Adapter Ends



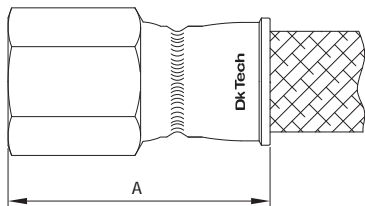
| Applicable Hose Series | Tube Stub Adapter End Connection |              |                      |                       |              |
|------------------------|----------------------------------|--------------|----------------------|-----------------------|--------------|
|                        | Designator                       | Tube OD Size | Length A             | Hex.Flat as a Max. OD | I.D. Minimum |
|                        |                                  | Fractional   | Dimensions, in. (mm) |                       |              |
| MFH4                   | TA4                              | 1/4          | 1.76 (44.7)          | 0.81 (20.6)           | 0.16 (4.1)   |
| MFH6                   | TA6                              | 3/8          | 1.82 (46.2)          | 0.98 (24.9)           | 0.27 (6.9)   |
| MFH8                   | TA8                              | 1/2          | 2.22 (56.4)          | 1.06 (26.9)           | 0.37 (9.4)   |
|                        |                                  | Metric       | Dimensions, in. (mm) |                       |              |
| MFH4                   | TM6                              | 6M           | 1.75 (44.4)          | 0.81 (20.6)           | 0.16 (4.1)   |
| MFH6                   | TM10                             | 10M          | 1.85 (47.0)          | 0.98 (24.9)           | 0.28 (7.1)   |
| MFH8                   | TM12                             | 12M          | 2.25 (57.2)          | 1.06 (26.9)           | 0.35 (8.9)   |

Table 8. Male Pipe Ends



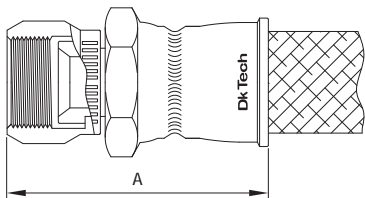
| Applicable Hose Series | Male Pipe End Connection |           |                   |                       |                       |
|------------------------|--------------------------|-----------|-------------------|-----------------------|-----------------------|
|                        | Designator               | Pipe Size | Length A in. (mm) | Hex.Flat as a Max. OD | I.D. Minimum in. (mm) |
| NPT Threads            |                          |           |                   |                       |                       |
| MFH4                   | M4N                      | 1/4       | 1.80 (45.7)       | 13/16 in.             | 0.19 (4.8)            |
| MFH6                   |                          |           | 1.81 (46.0)       | 15/16 in.             |                       |
| MFH6                   | M6N                      | 3/8       | 1.81 (46.0)       | 15/16 in.             | 0.38 (9.7)            |
| MFH8                   | M8N                      | 1/2       | 2.15 (54.5)       | 1 1/16 in.            | 0.47 (11.9)           |
| BSP/ISO Threads        |                          |           |                   |                       |                       |
| MFH4                   | M4R                      | 1/4       | 1.80 (45.7)       | 13/16 in.             | 0.28 (7.1)            |
| MFH8                   | M8R                      | 1/2       | 2.16 (54.9)       | 1 1/16 in.            | 0.47 (11.9)           |

Table 9. Female Pipe Ends



| Applicable Hose Series | Female Pipe End Connection |                 |                   |                       |                       |
|------------------------|----------------------------|-----------------|-------------------|-----------------------|-----------------------|
|                        | Designator                 | NPT Thread Size | Length A in. (mm) | Hex.Flat as a Max. OD | I.D. Minimum in. (mm) |
| MFH4                   | F4N                        | 1/4             | 1.81 (46.0)       | 13/16 in.             | 0.28 (7.1)            |
| MFH6                   | F6N                        | 3/8             | 1.85 (47.0)       | 15/16 in.             | 0.38 (9.7)            |
| MFH8                   | F8N                        | 1/2             | 2.18 (55.5)       | 1 1/16 in.            | 0.47 (11.9)           |

Table 10. SAE J514, 37 degree Swivel Ends



| Applicable Hose Series | Swivel Female End Connection |             |             |                       |              |
|------------------------|------------------------------|-------------|-------------|-----------------------|--------------|
|                        | Designator                   | Female Size | Length A    | Hex.Flat as a Max. OD | I.D. Minimum |
| MFH4                   | KS4                          | 1/4         | 1.87 (47.5) | 13/16 in.             | 0.17 (4.3)   |
| MFH6                   | KS6                          | 3/8         | 1.97 (50.0) | 15/16 in.             | 0.28 (7.1)   |
| MFH8                   | KS8                          | 1/2         | 2.15 (54.6) | 1 1/16 in.            | 0.42 (10.7)  |

## Medium-Pressure - FH Series

Pressure Rating up to 1600Psig (110bar)

### Features

- Designed for general purpose including positive pressure and vacuum service.
- Stainless steel construction of core bellows tube, wire braid, and end connection.
- Single braid layer for pressure containment.
- Custom length available.

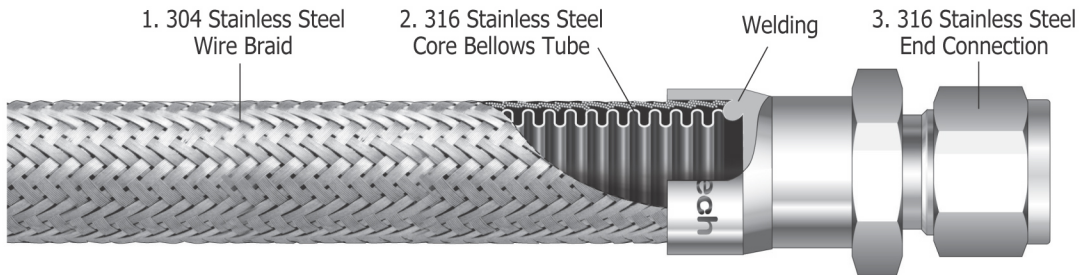


Table 11. Working / Burst Pressure and Temperature

| Nominal Hose Size, in. (mm) | FH Series | Temperature Range                | Working Pressure                   | Burst Pressure   | Minimum Bending Radius in (mm) |            |
|-----------------------------|-----------|----------------------------------|------------------------------------|------------------|--------------------------------|------------|
|                             |           |                                  | psig (bar)                         | psig (bar)       | Static                         | Dynamic    |
| 1/4 (6.35)                  | FH4       | -325 to 800°F<br>(-200 to 426°C) | @ -325 to 300°F<br>(-200 to 148°C) | @ 70°F<br>(20°C) |                                |            |
| 3/8 (9.52)                  | FH6       |                                  | 1600 (110)                         | 6400 (440)       | 0.75 (19.0)                    | 4.33 (110) |
| 1/2 (12.70)                 | FH8       |                                  | 1470 (101)                         | 6000 (413)       | 0.87 (22.1)                    | 5.91 (150) |
| 3/4 (19.05)                 | FH12      |                                  | 1110 (76.4)                        | 4500 (310)       | 1.04 (26.4)                    | 6.50 (165) |
| 1 (25.4)                    | FH16      |                                  | 860 (59.2)                         | 3500 (241)       | 1.61 (40.9)                    | 8.86 (225) |
| 1 1/4 (31.75)               | FH20      |                                  | 680 (46.8)                         | 2680 (184)       | 1.89 (48.0)                    | 10.2 (259) |
| 1 1/2 (38.10)               | FH24      |                                  | 680 (46.8)                         | 2600 (179)       | 2.16 (54.9)                    | 11.8 (300) |
| 2 (50.80)                   | FH32      |                                  | 520 (35.8)                         | 2200 (151)       | 2.33 (59.2)                    | 13.4 (340) |
|                             |           |                                  | 450 (31.0)                         | 1800 (124)       | 3.10 (78.7)                    | 15.4 (391) |

Table 12. Temperature De-rating Factors

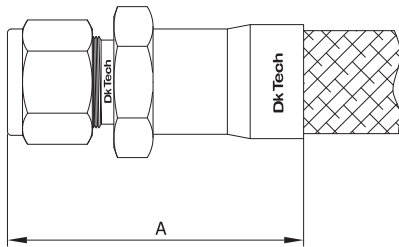
To determine an allowable pressure at a specific temperature, multiply the working pressure on table 1 by an applicable factor shown on table 12.

**Example:** FH4 Series at 500°F(260°C). 1600 psig x 0.86 = 1,376psig

| Temperature°F | -325 to 300 | 400  | 500  | 600  | 700  | 750  | 800  |
|---------------|-------------|------|------|------|------|------|------|
| Temperature°C | -200 to 148 | 204  | 260  | 315  | 371  | 398  | 426  |
| Factors       | 1.00        | 0.93 | 0.86 | 0.81 | 0.77 | 0.75 | 0.74 |

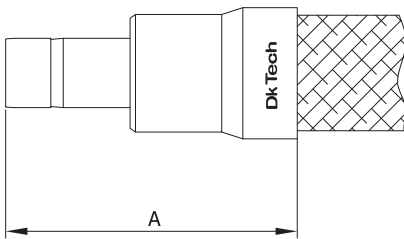
## Ordering Information and Table of Dimensions

Table 13. Hose Assembly of DK-LOK Tube Fittings at both Ends.



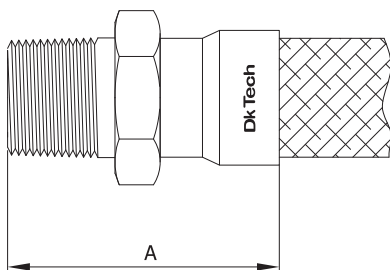
| Ordering Number |                | End Connections      |       | Overall Length in (CM) | A in. (mm)  |
|-----------------|----------------|----------------------|-------|------------------------|-------------|
|                 |                | DK-LOK Tube Fittings |       |                        |             |
| FH4-            | DL4DL4-12-S    | 1/4                  | 1/4   | 12.0 (30.5)            | 1.87 (47.5) |
| FH6-            | DL6DL6-18-S    | 3/8                  | 3/8   | 18.0 (45.7)            | 2.07 (52.6) |
| FH8-            | DL8DL8-36-S    | 1/2                  | 1/2   | 36.0 (91.4)            | 2.43 (61.7) |
| FH12-           | DL12DL12-48-S  | 3/4                  | 3/4   | 48.0 (122)             | 2.62 (66.6) |
| FH16-           | DL16DL16-12-S  | 1                    | 1     | 12.0 (30.5)            | 3.20 (81.3) |
| FH20-           | DL20DL20-18    | 1 1/4                | 1 1/4 | 18.0 (45.7)            | 3.79 (96.3) |
| FH24-           | DL24DL24-36-S  | 1 1/2                | 1 1/2 | 36.0 (91.4)            | 4.25 (108)  |
| FH32-           | DL32-DL32-48-S | 2                    | 2     | 48.0 (122)             | 5.22 (133)  |

Table 14. Hose Assembly of DK-LOK Tube Stub Adapter at both Ends.



| Ordering Number |               | End Connections |       | Overall Length in (CM) | A in. (mm)  |
|-----------------|---------------|-----------------|-------|------------------------|-------------|
|                 |               | Tube Adapter    |       |                        |             |
| FH4-            | TA4TA4-12-S   | 1/4             | 1/4   | 12.0 (30.5)            | 1.52 (38.6) |
| FH6-            | TA6TA6-18-S   | 3/8             | 3/8   | 18.0 (45.7)            | 1.81 (46.0) |
| FH8-            | TA8TA8-36-S   | 1/2             | 1/2   | 36.0 (91.4)            | 2.16 (54.9) |
| FH12-           | TA12TA12-48-S | 3/4             | 3/4   | 48.0 (122)             | 2.50 (63.5) |
| FH16-           | TA16TA16-12-S | 1               | 1     | 12.0 (30.5)            | 2.99 (75.9) |
| FH20-           | TA20TA20-18   | 1 1/4           | 1 1/4 | 18.0 (45.7)            | 3.91 (99.3) |
| FH24-           | TA24TA24-36-S | 1 1/2           | 1 1/2 | 36.0 (91.4)            | 4.47 (114)  |
| FH32-           | TA32TA32-48-S | 2               | 2     | 48.0 (122)             | 5.45 (138)  |

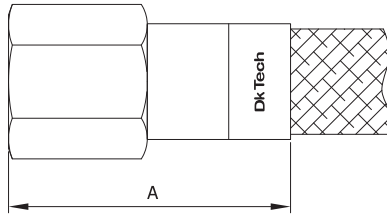
Table 15. Hose Assembly of Male Pipe at both Ends.



| Ordering Number |               | End Connections |       | Overall Length in (CM) | A in. (mm)  |
|-----------------|---------------|-----------------|-------|------------------------|-------------|
|                 |               | Male NPT        |       |                        |             |
| FH4-            | M4NM4N-12-S   | 1/4             | 1/4   | 12.0 (30.5)            | 1.70 (43.2) |
| FH6-            | M6NM6N-18-S   | 3/8             | 3/8   | 18.0 (45.7)            | 1.90 (48.5) |
| FH8-            | M8NM8N-36-S   | 1/2             | 1/2   | 36.0 (91.4)            | 2.32 (58.9) |
| FH12-           | M12NM12N-48-S | 3/4             | 3/4   | 48.0 (122)             | 2.45 (62.2) |
| FH16-           | M16NM16N-12-S | 1               | 1     | 12.0 (30.5)            | 3.05 (77.5) |
| FH20-           | M20NM20N-18   | 1 1/4           | 1 1/4 | 18.0 (45.7)            | 3.14 (79.8) |
| FH24-           | M24NM24N-36-S | 1 1/2           | 1 1/2 | 36.0 (91.4)            | 3.38 (85.9) |
| FH32-           | M32NM32N-48-S | 2               | 2     | 48.0 (122)             | 3.63 (92.2) |



Table 16. Hose Assembly of Male Pipe end to Female Pipe end



| Ordering Number |               | End Connections |            | Overall Length in (CM) | A in. (mm)  |
|-----------------|---------------|-----------------|------------|------------------------|-------------|
|                 |               | Male NPT        | Female NPT |                        |             |
| FH4-            | M4NF4N-12-S   | 1/4             | 1/4        | 12.0 (30.5)            | 1.87 (47.5) |
| FH6-            | M6NF6N-18-S   | 3/8             | 3/8        | 18.0 (45.7)            | 2.07 (52.6) |
| FH8-            | M8NF8N-36-S   | 1/2             | 1/2        | 36.0 (91.4)            | 2.43 (61.7) |
| FH12-           | M12NF12N-48-S | 3/4             | 3/4        | 48.0 (122)             | 2.62 (66.6) |
| FH16-           | M12NF12N-12-S | 1               | 1          | 12.0 (30.5)            | 3.20 (81.3) |
| FH20-           | M20NF20N-18-S | 1 1/4           | 1 1/4      | 18.0 (45.7)            | 3.79 (96.3) |
| FH24-           | M24NF24N-36-S | 1 1/2           | 1 1/2      | 36.0 (91.4)            | 4.25 (108)  |
| FH32-           | M32NF32N-48-S | 2               | 2          | 48.0 (122)             | 5.22 (133)  |

## Ordering Information for MFH & FH Series

| Hose Series  | End Connection and Overall Length   |  |   | Material Designator |
|--|---|--|---|---------------------|
|  | Standard End Connections and Standard Overall Length  | Custom End Connections   | Custom Overall Length   |                     |
| MFH4-<br>MFH6-<br>MFH8-<br><br>or<br>FH4-<br>FH6-<br>FH8-<br>FH12-<br>FH16-<br>FH20-<br>FH24-<br>FH32- | Select the applicable order number from the hose assembly Table 3 to 5 for MFH Series and Table 13 to 16 for FH Series. | Select the designators of your hose assembly's both end connections from Table 6 to 10 for MFH Series and Table 13 to 16<br><br>Insert them into your order No.<br><br>For MFH Series.<br>i.e., MFH4- <b>KS4F4N</b> -12<br><br>For FH Series.<br>i.e., FH4- <b>DL4TA4</b> -12- | When order in CM, use the unit of "CM", when order in inch, do not use "inch" on your order No.<br><br>Examples:<br>For 100CM overall length,<br>MFH4-DL4DL4- <b>100CM</b> -<br><br>For 10 inch overall length,<br>MFH4-DL4DL4- <b>10</b> - | -S: SS316           |

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All dimensions shown in this catalog are for reference only and are subject to change. We reserve the right to change specifications stated in this catalog for our continuing program of product improvement.

## Safe Component Selection

The Selection of component for any applications or system design must be considered to ensure safe performance. Component function, material compatibility, component ratings, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK Tech accepts no liability for any improper selection, installation, operation or maintenance.