

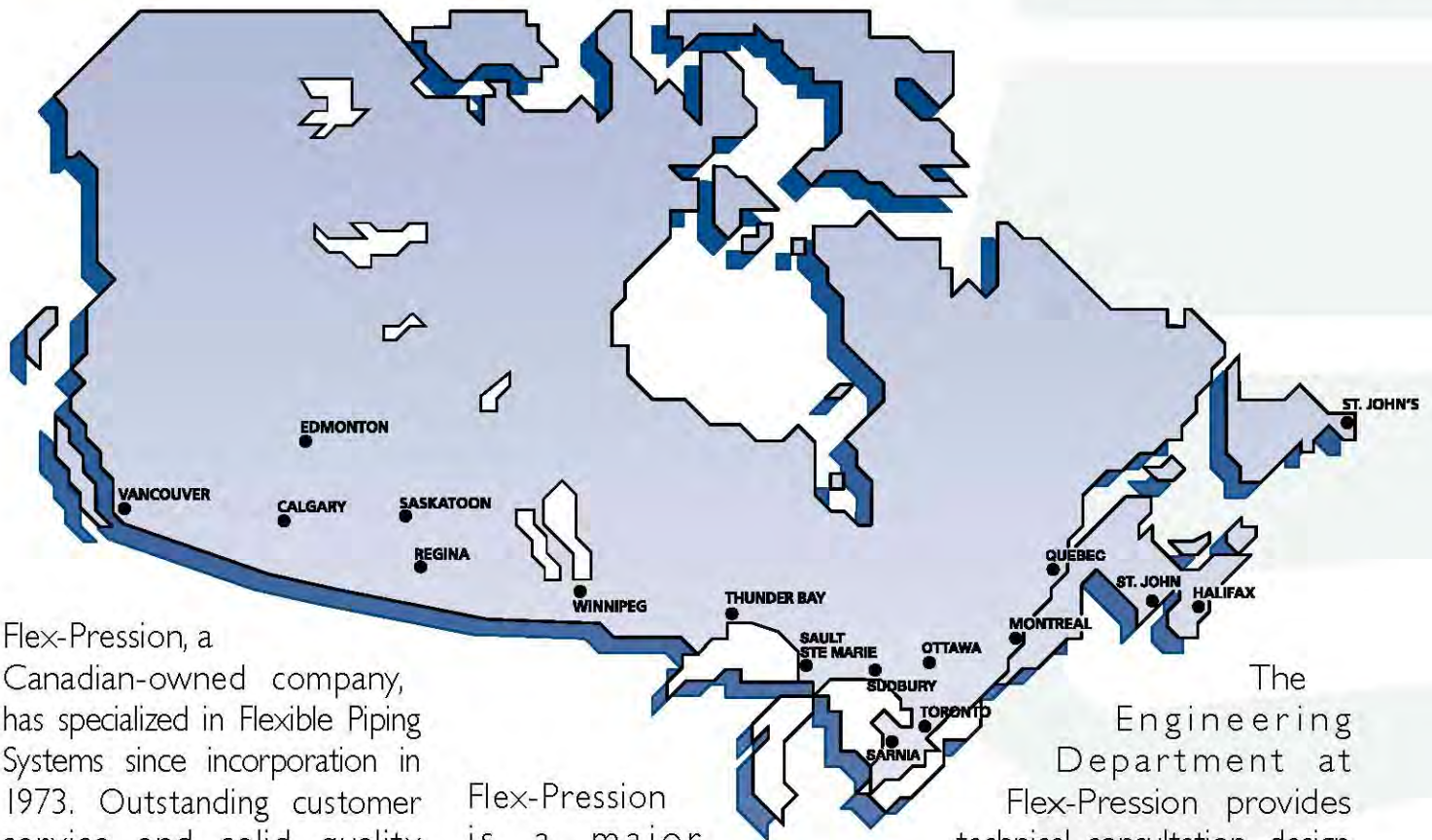


A LEADER IN THE MANUFACTURING OF  
STAINLESS STEEL FLEXIBLE PRODUCTS SINCE 1973





## Covering Industry from Coast to Coast



Flex-Pression, a Canadian-owned company, has specialized in Flexible Piping Systems since incorporation in 1973. Outstanding customer service and solid quality control have established Flex-Pression as a leader in the manufacture of Stainless Steel flexible products. Flex-Pression manufactures Stainless Steel Braid, Convolute Flexible Hose, Metal Hose Assemblies and Expansion Joints to meet all flexible piping applications.

Flex-Pression is a major supplier to the gas, steel, chemical and paper industries, and has an excellent reputation for the flexible transfer of combustible and toxic substances. Flex-Pression uses new technology and innovative production methods to satisfy the needs of international industrial markets, and fully guarantees every product it manufactures.

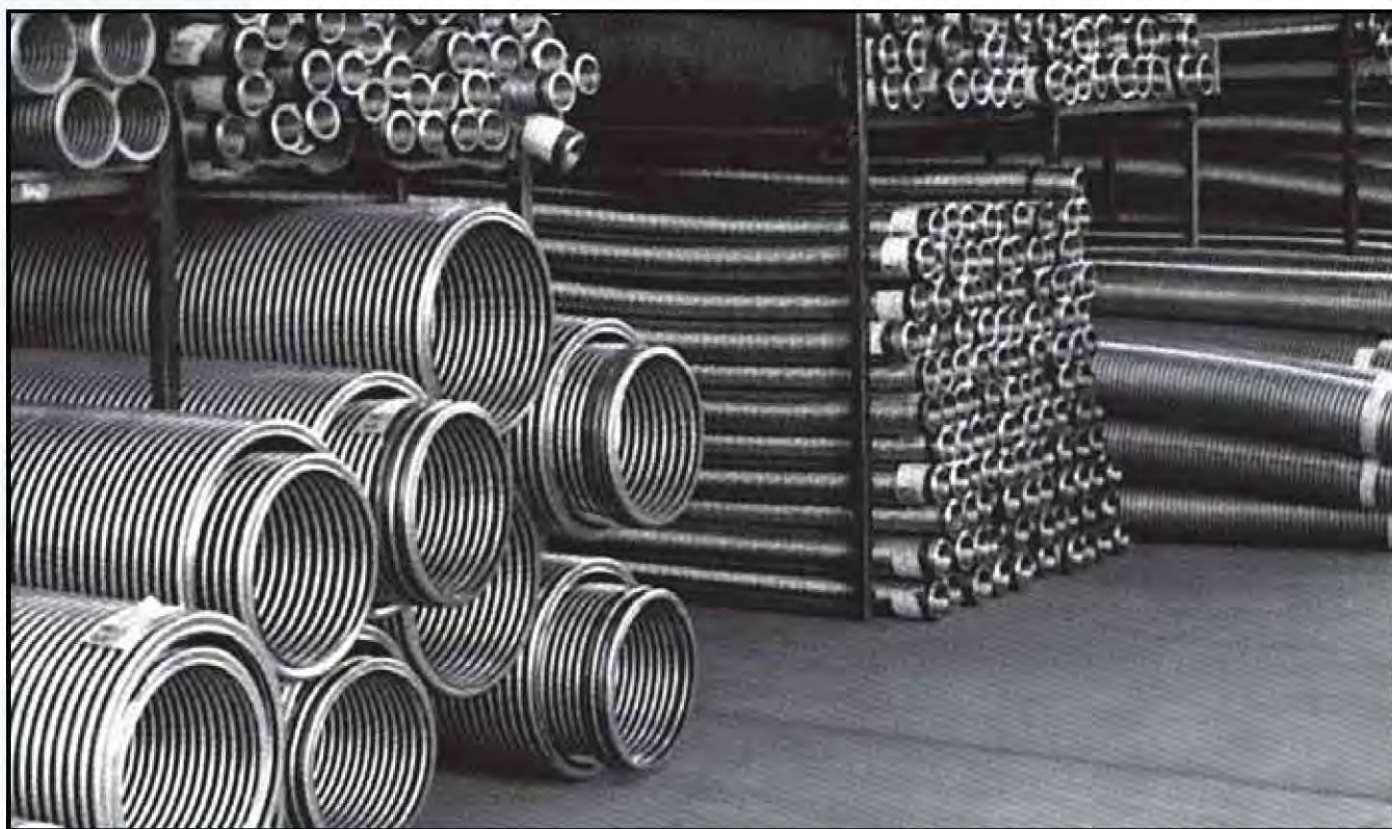
The Engineering Department at Flex-Pression provides technical consultation, design drawings, specifications, and documentation support. Engineering oversees quality control and technical archives, and fully supports the Sales Department as needed.

Flex-Pression continues to improve production capacities, quality control, and customer service to anticipate the demands of new piping applications.

Through a Complete Distribution Network.

**In house capabilities include:**

- Quality assurance certification ISO 9001-2008
- Machinery for manufacturing corrugated metal hose
- Machinery for tubular braiding
- Assembly division for production of hose assemblies and expansion joints
- Destructive and non-destructive testing facilities
- Cleaning and degreasing facilities
- Complete inventory of components



*Flex-Pression stocks a wide variety of flexible piping to meet their clients needs.*

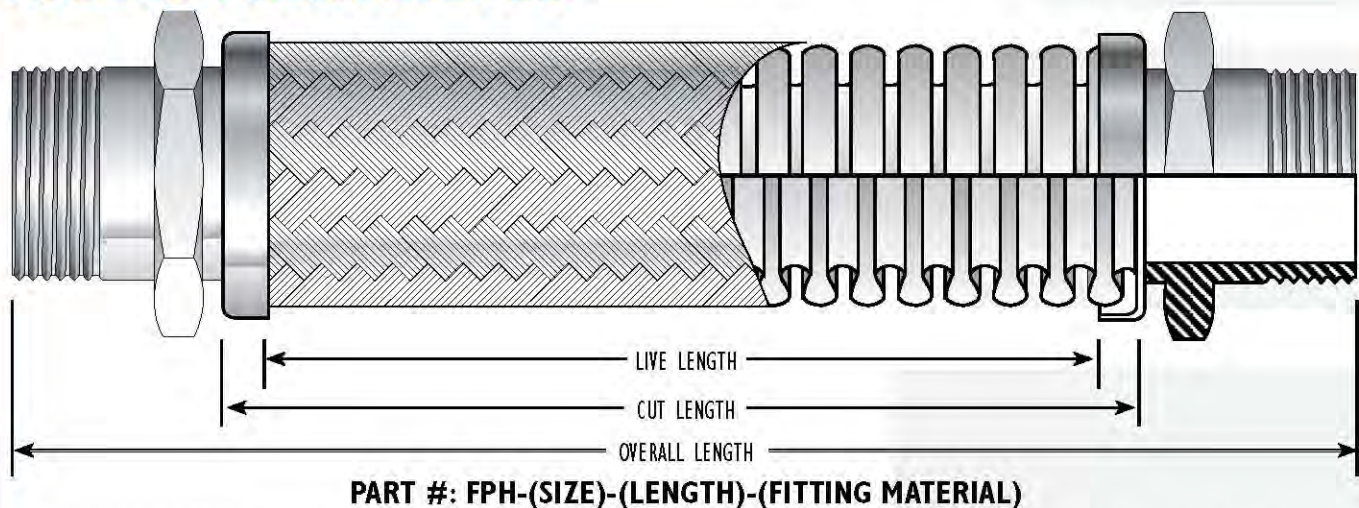


The technical and engineering data in this catalog is based on many years of experience in the metal hose industry. Since Flex-Pression Ltd. does not control or supervise any additional fabrication, installation or improper application of our products, we cannot assume responsibility for subsequent performance.



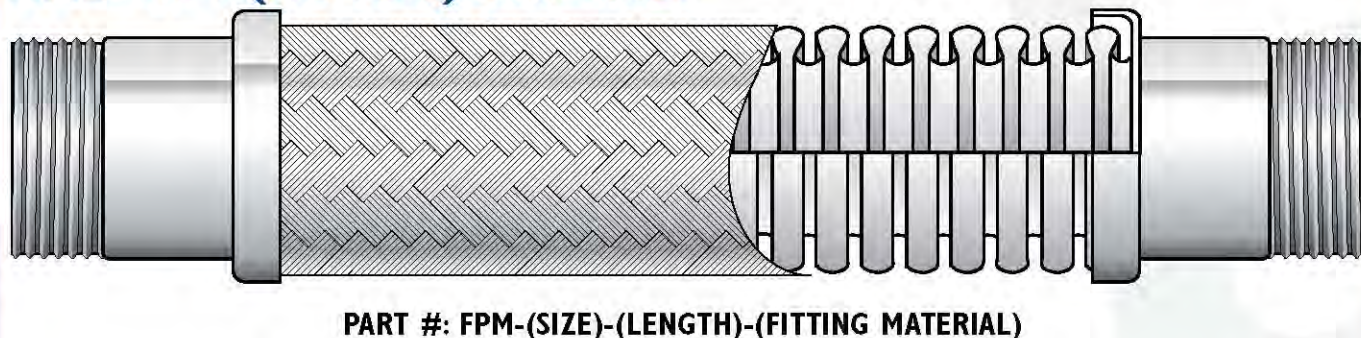
## FLEX-PRESSION METAL HOSE ASSEMBLIES

### MALE NPT HEX ASSEMBLY



- All hose assemblies from 1/4" to 1" come standard with a steel male NPT solid hex fitting.
- This allows for:
  - Easier installation
  - Longer live hose length
  - Greater flexibility
- Also available with stainless steel 304, 316, and Monel 400 hex fittings up to 4".

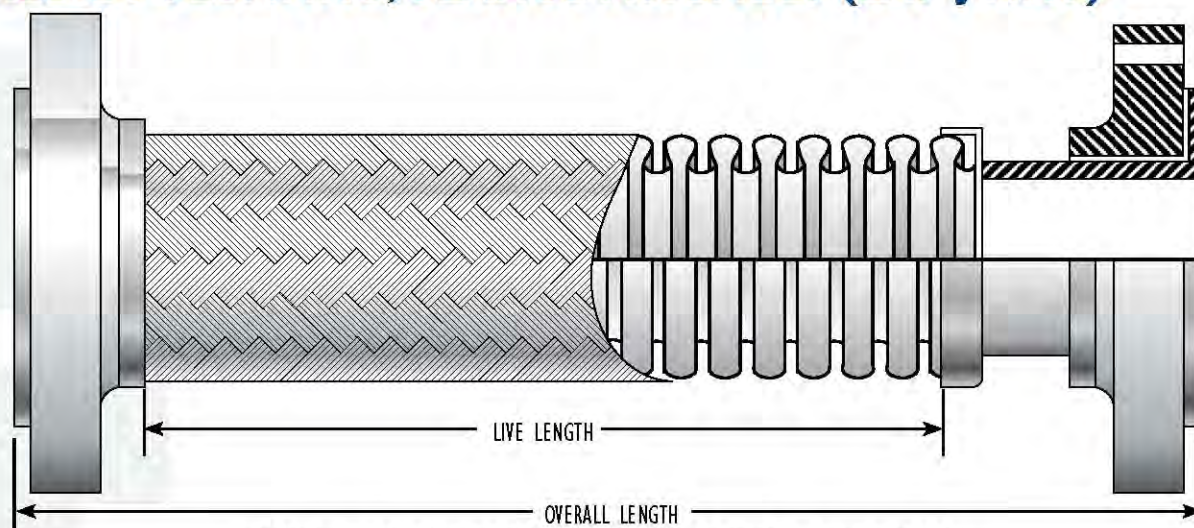
### MALE NPT (NO HEX) ASSEMBLY



- Standard hose assembly available up to 6" I.D.
- Available with steel, stainless steel 304 & 316 as well as Monel 400 fittings.

## FLEX-PRESSION METAL HOSE ASSEMBLIES

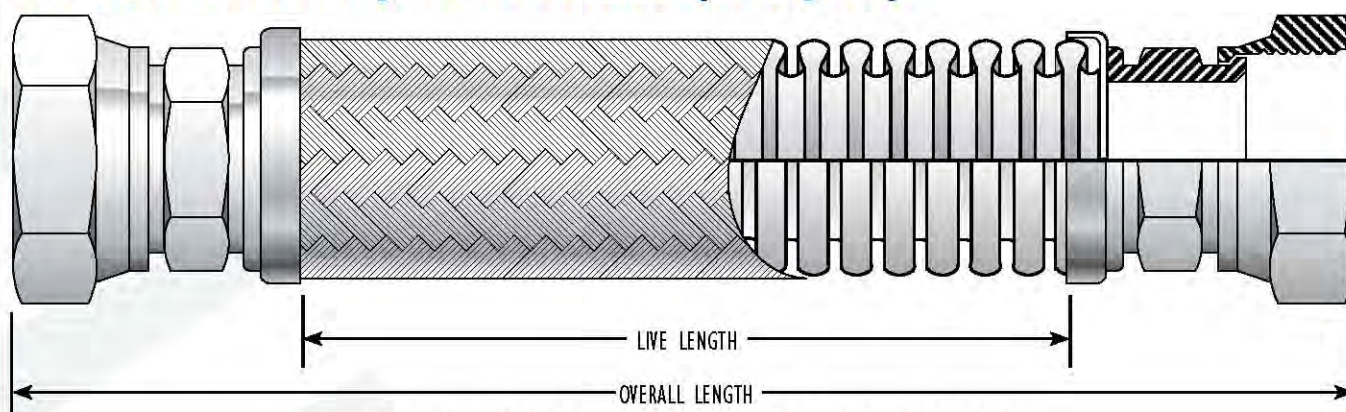
### FIXED BY FLOATING, FLANGE ASSEMBLY (LAP JOINT)



**PART #: FPFFL-(SIZE)-(LENGTH)-(FLANGE MATERIAL)**

- Flanges available in #150, #300, #600 class as well as metric DIN.
- Flanged assemblies can be supplied with galvanized carbon, stainless steel or Monel flanges.
- All stub-ends for floating flanges are stainless steel or Monel. SCH #10, #40 and #80

### FEMALE SWIVEL JIC ASSEMBLY (SAE J514)



**PART #: FPJ-(SIZE)-(LENGTH)-(FITTING MATERIAL)**

- Available with SS316 or Plated Steel nuts and seats

### ALL FLEX-PRESSION HOSE ASSEMBLIES ARE:

- Available in 304, 321, 316L and Monel 400.
- Welded by certified welders, using approved welding procedures, to section IX of the ASME boiler and pressure vessel code.
- Adhere to a strict quality assurance program during all stages of production.
- 100% tested: Hydrostatic, pneumatic and Nitrogen testing available.
- Available with permanent stainless steel tags to include any information requested.
- Available with CRN#
- Available with many other fitting configurations.

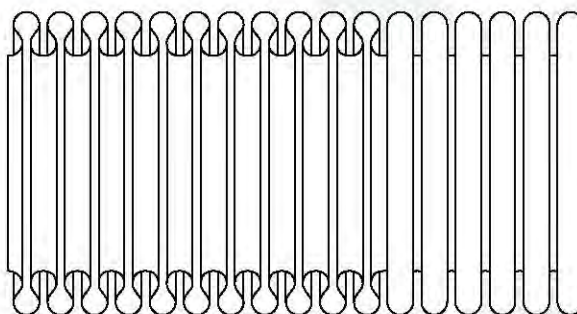


## FLEX-PRESSION ANNULAR CORRUGATED HOSE

### STAINLESS STEEL: 304, 321, 316L & MONEL 400 STANDARD, CLOSE PITCH & SUPERFLEX

| NOMINAL<br>I.D.<br>(INCHES) | HOSE<br>TYPE | HOSE<br>O.D.<br>(INCHES) | WALL<br>THICKNESS<br>(INCHES) | BEND RADIUS<br>STATIC<br>(INCHES) | CONSTANT<br>(INCHES) | MAX WORKING<br>PRESSURE<br>(PSIG) | BURST<br>PRESSURE<br>(PSIG) |
|-----------------------------|--------------|--------------------------|-------------------------------|-----------------------------------|----------------------|-----------------------------------|-----------------------------|
| 1/2"                        | SSU          | 0.76                     | 0.010                         | 1.7                               | 7.0                  | 75                                | ---                         |
|                             | SSB          | 0.81                     |                               |                                   |                      | 1125                              | 4500                        |
| 3/4"                        | SSU          | 1.05                     | 0.010                         | 2.0                               | 8.0                  | 50                                | ---                         |
|                             | SSB          | 1.10                     |                               |                                   |                      | 1050                              | 4200                        |
| 1"                          | SSU          | 1.35                     | 0.010                         | 3.0                               | 10.0                 | 40                                | ---                         |
|                             | SSB          | 1.40                     |                               |                                   |                      | 875                               | 3500                        |
| 1 1/4"                      | SSU          | 1.78                     | 0.015                         | 3.1                               | 10.0                 | 40                                | ---                         |
|                             | SSB          | 1.83                     |                               |                                   |                      | 650                               | 2600                        |
| 1 1/2"                      | SSU          | 2.17                     | 0.016                         | 3.5                               | 11.0                 | 20                                | ---                         |
|                             | SSB          | 2.25                     |                               |                                   |                      | 650                               | 2600                        |
| 2"                          | SSU          | 2.63                     | 0.016                         | 4.5                               | 12.0                 | 15                                | ---                         |
|                             | SSB          | 2.71                     |                               |                                   |                      | 495                               | 1980                        |
| 2 1/2"                      | SSU          | 3.39                     | 0.016                         | 5.0                               | 13.0                 | 12                                | ---                         |
|                             | SSB          | 3.47                     |                               |                                   |                      | 365                               | 1475                        |
| 3"                          | SSU          | 3.97                     | 0.016                         | 7.5                               | 16.0                 | 8                                 | ---                         |
|                             | SSB          | 4.05                     |                               |                                   |                      | 250                               | 1000                        |
| 3 1/2"                      | SSU          | 4.43                     | 0.016                         | 8.0                               | 17.0                 | 7                                 | ---                         |
|                             | SSB          | 4.51                     |                               |                                   |                      | 330                               | 1325                        |
| 4"                          | SSU          | 4.83                     | 0.016                         | 10.0                              | 20.0                 | 5                                 | ---                         |
|                             | SSB          | 4.91                     |                               |                                   |                      | 270                               | 1090                        |
| 5"                          | SSU          | 5.97                     | 0.018                         | 12.0                              | 24.0                 | 3                                 | ---                         |
|                             | SSB          | 6.07                     |                               |                                   |                      | 225                               | 900                         |
| 6"                          | SSU          | 6.95                     | 0.018                         | 15.0                              | 30.0                 | 3                                 | ---                         |
|                             | SSB          | 7.05                     |                               |                                   |                      | 185                               | 739                         |
| 8"                          | SSU          | 9.10                     | 0.020                         | 20.0                              | 40.0                 | 3                                 | ---                         |
|                             | SSB          | 9.30                     |                               |                                   |                      | 142                               | 569                         |
| 10"                         | SSU          | 11.24                    | 0.024                         | 25.0                              | 50.0                 | 2                                 | ---                         |
|                             | SSB          | 11.44                    |                               |                                   |                      | 160                               | 650                         |
| 12"                         | SSU          | 13.26                    | 0.028                         | 30.0                              | 60.0                 | 2                                 | ---                         |
|                             | SSB          | 13.46                    |                               |                                   |                      | 150                               | 600                         |
| 14"                         | SSU          | 14.85                    | 0.040                         | 38.0                              | 75.0                 | 2                                 | ---                         |
|                             | SSB          | 15.05                    |                               |                                   |                      | 130                               | 520                         |
| 16"                         | SSU          | 18.43                    | 0.040                         | 36.0                              | 72.0                 | 1                                 | ---                         |
|                             | SSB          | 18.68                    |                               |                                   |                      | 110                               | 440                         |
| 18"                         | SSU          | 20.40                    | 0.040                         | 37.0                              | 74.0                 | 1                                 | ---                         |
|                             | SSB          | 20.70                    |                               |                                   |                      | 100                               | 400                         |
| 20"                         | SSU          | 22.80                    | 0.040                         | 38.0                              | 76.0                 | 1                                 | ---                         |
|                             | SSB          | 23.10                    |                               |                                   |                      | 80                                | 340                         |

SSU = hose only      SSB = with single braid  
 For SS2B = with double braid, multiply SSB max. working pressure by 1.5  
 Specified pressure ratings are valid at 70°F, for greater operating temperatures, maximum allowable working pressures must be decreased according to the temperature correction factors chart.  
 6" I.D. and above available with heavy duty braided braid. Full vacuum service all sizes. Heavy duty braid and (heavy wall) hose available for higher working pressures.



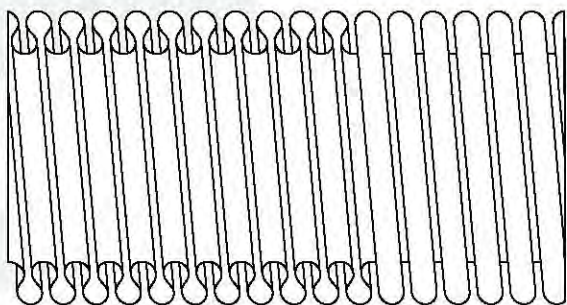
Annular Corrugation.



## FLEX-PRESSION HELICAL CORRUGATED HOSE

### STAINLESS STEEL: 304, 321, 316L & MONEL 400 STANDARD, CLOSE PITCH & SUPERFLEX

| NOMINAL<br>I.D.<br>(INCHES) | HOSE<br>TYPE | HOSE<br>O.D.<br>(INCHES) | WALL<br>THICKNESS<br>(INCHES) | BEND RADIUS        |                                     | MAX WORKING<br>PRESSURE<br>(PSIG) | BURST<br>PRESSURE<br>(PSIG) |
|-----------------------------|--------------|--------------------------|-------------------------------|--------------------|-------------------------------------|-----------------------------------|-----------------------------|
|                             |              |                          |                               | STATIC<br>(INCHES) | CLOSE PITCH<br>CONSTANT<br>(INCHES) |                                   |                             |
| 1/4"                        | SSU          | 0.43                     | 0.010                         | 1.7                | 3.5                                 | 140                               | -                           |
|                             | SSB          | 0.48                     |                               |                    |                                     | 2000                              | 8000                        |
| 3/8"                        | SSU          | 0.59                     | 0.010                         | 2.5                | 5.1                                 | 100                               | -                           |
|                             | SSB          | 0.64                     |                               |                    |                                     | 1850                              | 7400                        |
| 1/2"                        | SSU          | 0.73                     | 0.010                         | 3.4                | 5.9                                 | 75                                | -                           |
|                             | SSB          | 0.78                     |                               |                    |                                     | 1125                              | 4500                        |
| 3/4"                        | SSU          | 1.00                     | 0.010                         | 4.3                | 7.4                                 | 50                                | -                           |
|                             | SSB          | 1.05                     |                               |                    |                                     | 1050                              | 4200                        |
| 1"                          | SSU          | 1.30                     | 0.010                         | 5.5                | 8.4                                 | 40                                | -                           |
|                             | SSB          | 1.35                     |                               |                    |                                     | 875                               | 3500                        |



Helical Corrugation.

SSU = hose only

SSB = with single braid

For SS2B = with double braid, multiply SSB max. working pressure by 1.5. Specified pressure ratings are valid at 70°F, for greater operating temperatures, maximum allowable working pressures must be decreased according to the temperature correction factors chart.

### TEMPERATURE CORRECTION FACTORS

| TEMPERATURE |     | 304-316<br>STAINLESS | 321<br>STAINLESS | MONEL |
|-------------|-----|----------------------|------------------|-------|
| °F          | °C  |                      |                  |       |
| 70          | 21  | 1.00                 | 1.00             | 1.00  |
| 150         | 66  | .96                  | .97              | .93   |
| 200         | 93  | .92                  | .94              | .90   |
| 250         | 121 | .91                  | .92              | .87   |
| 300         | 149 | .86                  | .88              | .83   |
| 350         | 177 | .83                  | .86              | .82   |
| 400         | 204 | .82                  | .83              | .79   |
| 450         | 232 | .80                  | .81              | .77   |
| 500         | 260 | .77                  | .78              | .73   |
| 600         | 316 | .73                  | .74              | .72   |
| 700         | 371 | .69                  | .70              | .71   |
| 800         | 427 | .64                  | .66              | .70   |
| 900         | 482 | .58                  | .62              |       |
| 1000        | 538 |                      | .60              |       |
| 1100        | 593 |                      | .58              |       |
| 1200        | 649 |                      | .55              |       |
| 1300        | 704 |                      | .50              |       |
| 1400        | 760 |                      | .44              |       |
| 1500        | 816 |                      | .40              |       |

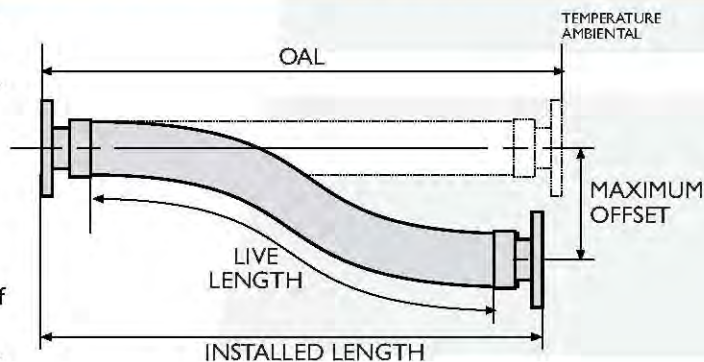




## COMPUTING MINIMUM LENGTHS FOR HOSE ASSEMBLIES

For optimum service life, each hose assembly must be designed to the specific application.

1. Select proper hose, from product pages taking into consideration the size, pressure, and temperature requirement.
2. To compute minimum live length requirements, follow the instructions below:
  - A. Locate the minimum bend radius for intermittent flexure by referring to that column on the product specification page for that hose.
  - B. Locate this bend radii number in the left column of the table below. (If the radii falls between numbers on the table, use next highest number).
  - C. Locate the required offset for your applications in the figures at the top of the table.
  - D. The minimum live length required is the intersecting box of the 2 columns.
  - E. To determine static bend minimum lengths, simply substitute static bend radii data in step B and continue in the same manner.



**OFFSET MOTION**  
(max. dist. from center line)

1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/2" | 2" | 3" | 4" | 5" | 6" | 8" | 10"

**CENTER LINE BEND RADIUS (in.)**

### MINIMUM LIVE LENGTH REQUIRED FOR OFFSET MOTION

|    | 1 1/4 | 1 3/4  | 2 1/4  | 2 1/2  | 3 1/4  | 3 3/4  | 4 1/2  | 5 1/4  | 6 3/4  | 8      | 9 1/4  | 10 1/2 | 12 3/4 | 15     |
|----|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 2  | 1 1/4 | 1 3/4  | 2 1/4  | 2 1/2  | 3 1/4  | 3 3/4  | 4 1/2  | 5 1/4  | 6 3/4  | 8      | 9 1/4  | 10 1/2 | 12 3/4 | 15     |
| 4  | 1 3/4 | 2 1/2  | 3      | 3 1/2  | 4 1/2  | 5      | 6 1/4  | 7 1/4  | 9      | 11 3/4 | 12     | 13 1/2 | 16     | 18 1/2 |
| 6  | 2 1/4 | 3 1/4  | 3 3/4  | 4 1/4  | 5 1/4  | 6 1/4  | 7 1/2  | 8 3/4  | 10 3/4 | 12 3/4 | 14 1/4 | 16     | 19     | 21 1/2 |
| 8  | 2 1/2 | 3 1/2  | 4 1/4  | 5      | 6      | 7      | 8 3/4  | 10     | 12 1/2 | 14 1/2 | 16 1/4 | 18     | 21 1/4 | 24 1/4 |
| 10 | 2 3/4 | 4      | 4 3/4  | 5 1/2  | 6 3/4  | 8      | 9 3/4  | 11 1/4 | 13 3/4 | 16     | 18     | 20     | 23 1/2 | 26 1/2 |
| 12 | 3     | 4 1/4  | 5 1/4  | 6      | 7 1/2  | 8 1/2  | 10 1/2 | 12 1/4 | 15     | 17 1/2 | 19 1/2 | 21 1/2 | 25 1/2 | 28 3/4 |
| 14 | 3 1/4 | 4 3/4  | 5 3/4  | 6 1/2  | 8      | 9 1/4  | 11 1/4 | 13 1/4 | 16 1/4 | 18 3/4 | 21     | 23 1/2 | 27 1/4 | 30 3/4 |
| 16 | 3 1/2 | 5      | 6      | 7      | 8 1/2  | 10     | 12 1/4 | 14     | 17 1/4 | 20     | 22 1/2 | 25     | 29     | 32 3/4 |
| 18 | 3 3/4 | 5 1/4  | 6 1/2  | 7 1/2  | 9      | 10 1/2 | 13     | 14 3/4 | 18 1/4 | 21 1/4 | 24     | 26     | 30 1/2 | 34     |
| 20 | 4     | 5 1/2  | 6 3/4  | 7 3/4  | 9 1/2  | 11     | 13 1/2 | 15 3/4 | 19 1/4 | 22 1/2 | 25     | 27 1/2 | 32 1/4 | 36 1/4 |
| 25 | 4 1/2 | 6 1/4  | 7 1/2  | 8 3/4  | 10 3/4 | 12 1/4 | 15     | 17 1/2 | 21 1/2 | 25     | 28     | 30 1/2 | 35 3/4 | 40     |
| 30 | 4 3/4 | 6 3/4  | 8 1/4  | 9 1/2  | 11 3/4 | 13 1/2 | 16 1/2 | 19     | 23 1/2 | 27 1/4 | 30 1/2 | 33 1/2 | 40     | 43 3/4 |
| 35 | 5 1/4 | 7 1/4  | 9      | 10 1/4 | 12 1/2 | 14 1/4 | 17 3/4 | 20 1/4 | 26 1/4 | 29 1/2 | 32 3/4 | 36     | 42     | 47     |
| 40 | 5 1/2 | 8      | 9 1/2  | 11     | 13 1/2 | 15 1/2 | 19     | 22     | 27     | 31 1/4 | 35     | 38 1/2 | 44 3/4 | 50     |
| 45 | 6     | 8 1/4  | 10     | 11 3/4 | 14 1/4 | 16 1/2 | 20 1/4 | 23 1/2 | 28 1/2 | 33     | 37     | 41     | 47 1/2 | 53     |
| 50 | 6 1/4 | 8 3/4  | 10 3/4 | 12 1/4 | 15     | 17 1/2 | 21 1/2 | 24 1/2 | 30     | 35     | 39     | 43     | 50     | 56     |
| 60 | 6 3/4 | 9 1/2  | 11 3/4 | 13 1/2 | 16 1/2 | 19     | 23 1/4 | 27     | 33     | 38     | 43     | 47     | 54 1/2 | 61     |
| 70 | 7 1/4 | 10 1/4 | 12 3/4 | 14 3/4 | 17 3/4 | 20 1/2 | 25     | 29     | 35 1/2 | 41 1/2 | 46     | 51     | 58 3/4 | 65 3/4 |

APPLICABLE FOR STATIC BEND ONLY

## MINIMUM LIVE HOSE LENGTH FOR NORMAL VIBRATION

|      |        |      |        |    |        |        |        |        |         |        |     |     |         |         |
|------|--------|------|--------|----|--------|--------|--------|--------|---------|--------|-----|-----|---------|---------|
| 1/4" | 3/8"   | 1/2" | 3/4"   | 1" | 1 1/4" | 1 1/2" | 2"     | 2 1/2" | 3"      | 3 1/2" | 4"  | 5"  | 6"      | 8"      |
| 5"   | 5 1/2" | 6"   | 6 1/2" | 7" | 8 1/2" | 9"     | 9 1/4" | 9 1/2" | 10 1/2" | 11"    | 12" | 13" | 14 1/2" | 16 3/4" |

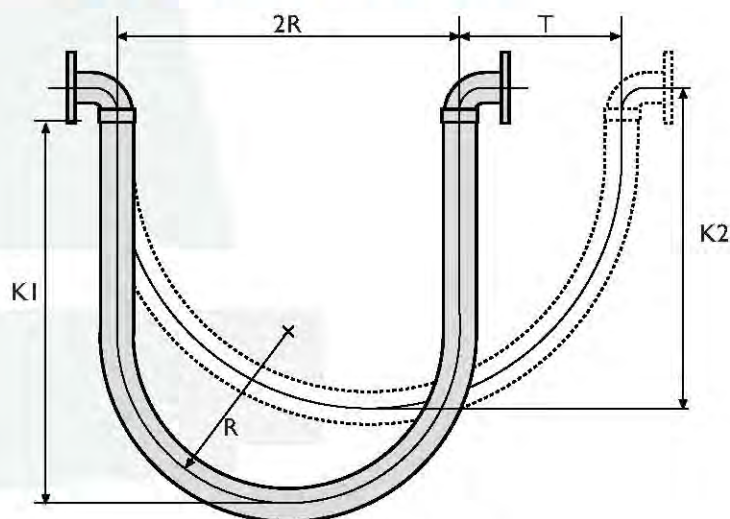
### NOTES:

1. If vibration is severe, add 20% to minimum live length.
2. Add braid sleeves length: 1/4" to 3/4" dia add 1", 1" to 2" dia add 1 1/2" and 2 1/2" to 12" dia add 2".
3. Add fittings length to obtain overall length.
4. If vibration is extremely severe, consult our engineering department.



## COMPUTING MINIMUM LENGTHS FOR HOSE ASSEMBLIES

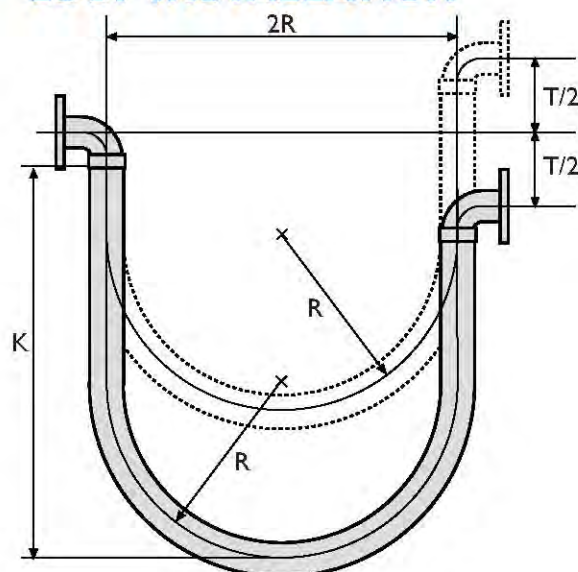
### HORIZONTAL TRAVEL LOOP INSTALLATION



$$\begin{aligned} \text{L.L.} &= 4 \cdot R + 1.57T \\ K1 &= 1.43 \cdot R + 0.785T \\ K2 &= 1.43 \cdot R + T/2 \end{aligned}$$

**Note:** Always use pipe elbows for this type of installation.

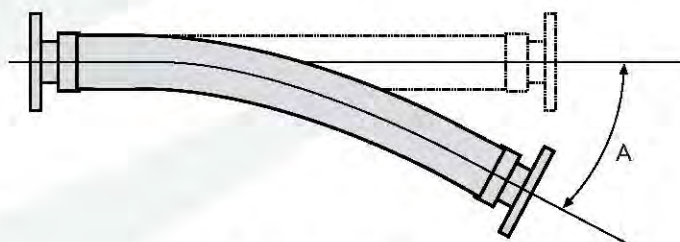
### VERTICAL TRAVEL LOOP INSTALLATION



$$\begin{aligned} \text{L.L.} &= 4 \cdot R + T/2 \\ K &= 1.43 \cdot R + T/2 \end{aligned}$$

**Note:** Always use pipe elbows for this type of installation.

### ANGULAR



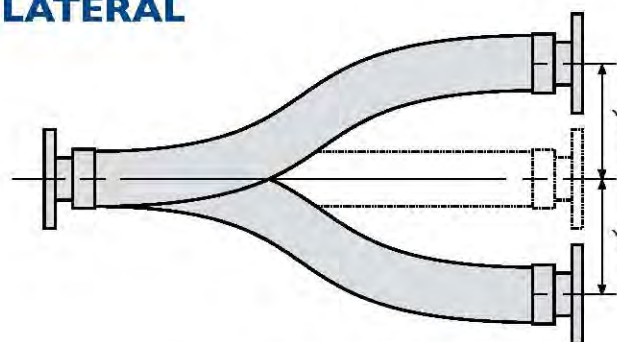
$$\text{L.L.} = \frac{3.1416 \cdot R \cdot A}{180} + 2 \cdot F$$

L.L. = HOSE LIVE LENGTH (INCHES)  
 I.L.L. = INSTALLED HOSE LIVE LENGTH (INCHES)  
 R = CENTERLINE BEND RADIUS (INCHES)  
 Y = LATERAL OFFSET (INCHES)  
 A = BEND ANGLE (DEGREES)  
 T = TRAVERSE (INCHES)  
 F = HOSE NOMINAL DIAMETER (INCHES)

#### NOTES:

- For intermittent offset, movement must not exceed 25% R value.
- F is a safety factor to eliminate stress on welds caused by movement.

### LATERAL



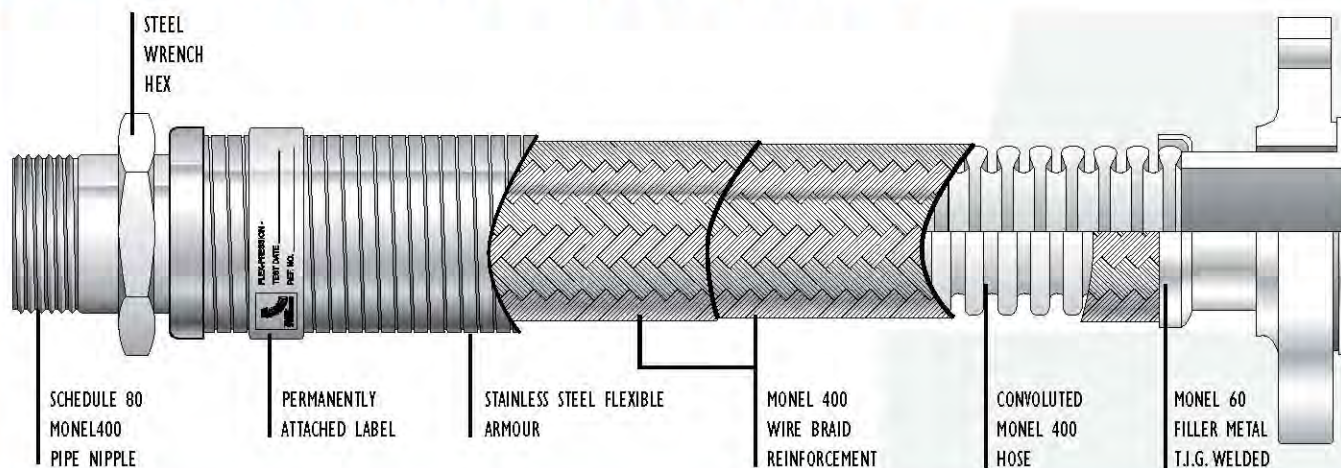
$$\begin{aligned} \text{L.L.} &= \sqrt{(6 \cdot Y \cdot R) + Y^2} + (2 \cdot F) \\ \text{I.L.L.} &= 0.95 \cdot \text{L.L.} \end{aligned}$$

**Note:** Where motion "Y" occurs both sides of centerline, hose live length should be based on total travel or 2 times "Y".



## CHLORINE TRANSFER HOSE ASSEMBLIES

### MONEL CHLORINE TRANSFER HOSE ASSEMBLIES



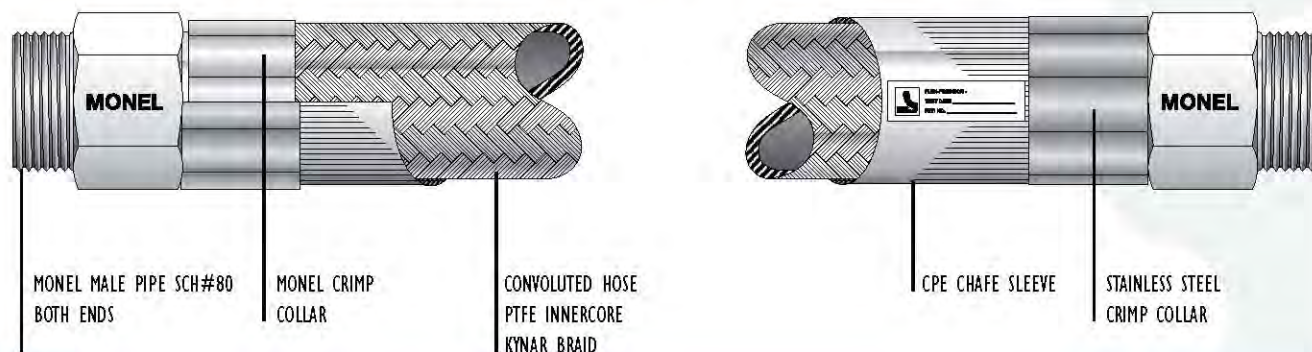
- Complies with Chlorine Institute Pamphlet #6 specifications.
- All assemblies tested at twice the operating pressure.
- Flanged assemblies also made using schedule 80 Monel stub ends with steel floating flanges.
- All components in stock for prompt assembly.
- All assemblies permanently labeled, cleaned, dried and capped.

#### How to order:

| SIZE (INCHES) | BASIC PART NO.* | LENGTH (INCHES) | FITTINGS                       |
|---------------|-----------------|-----------------|--------------------------------|
| 1/2"          | *FP-MON2B-8     | IN              | MONEL SCHEDULE 80 MALE NIPPLES |
| 3/4"          | FP-MON2B-12     | INCHES          | OR                             |
| 1"            | FP-MON2B-16     | AS              | MONEL SCHEDULE 80              |
| 1 1/4"        | FP-MON2B-20     | REQUIRED        | STUB ENDS WITH STEEL           |
| 1 1/2"        | FP-MON2B-24     |                 | FLOATING FLANGES               |
| 2"            | FP-MON2B-32     |                 |                                |

\* N.B. Basic Part No. *FPMON: Monel Hose*  
*FPTFE: PTFE Hose*

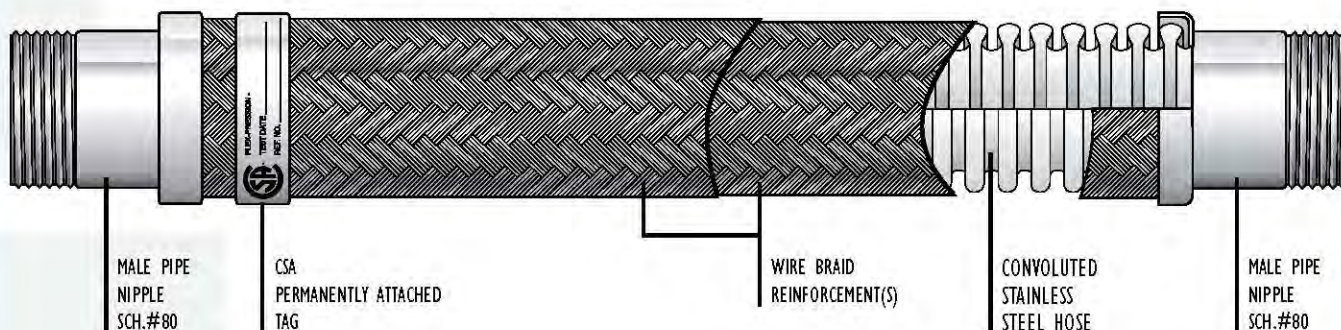
### TEFLON CHLORINE TRANSFER HOSE ASSEMBLIES



## CSA INTERNATIONAL CERTIFICATION FOR FLEX-PRESSION

### STAINLESS STEEL CSA METAL HOSE ASSEMBLIES

for natural gas, propane and ammonia transfer, all sizes



Meets the requirements of standard CR96-001

- Stainless steel flexible metal hose assemblies for natural gas, propane and ammonia service.
- 1/2" I.D. through 6" I.D. with fittings welded each end.
- Permanently attached CSA TAGS
- All assemblies tested for 350 P.S.I. Max. working pressure with 1750 P.S.I. Min. burst
- All standard steel and stainless steel fittings and flanges can be supplied from stock.
- Special threads, elbows etc., also available.
- CSA Group certificate 1102447

#### How to order:

| SIZE (INCHES) | BASIC PART NO. | LENGTH (INCHES) | FITTINGS            |
|---------------|----------------|-----------------|---------------------|
| 1/2"          | FP-SSB-8       | OVERALL LENGTH  | SPECIFY             |
| 3/4"          | FP-SSB-12      | AS REQUIRED.    | (EXAMPLES MATERIAL, |
| 1"            | FP-SSB-16      | USE 4 DIGITS,   | 0144 IS THREAD,     |
| 1 1/4"        | FP-SSB-20      | FIRST 3 TOTAL   | 14 1/2" FLANGE ETC, |
| 1 1/2"        | FP-SSB-24      | INCHES AND      | OVERALL FIXED OR    |
| 2"            | FP-SSB-32      | LAST DIGIT      | -3000 IS FLOATING,  |
| 2 1/2"        | FP-SSB-40      | FRACTIONS       | 25 FEET SPECIAL     |
| 3"            | *FP-SS2B-48    | OF AN INCH      | OVERALL) ELBOWS,    |
| 4"            | *FP-SS2B-64    | IN EIGHTS.      |                     |
| 6"            | *FP-SS2B-96    |                 |                     |

\* Denotes double braid Note: When B16.5 150# flanges are used, the maximum rated working pressure is 275 P.S.I.

## PTFE HOSE

### WCS/BCS STYLE

#### PTFE Tube:

- Pure PTFE: white or static dissipating conductive.  
WCS: natural white PTFE tube  
BCS: conductive tube to  $10^{-6}$  MΩ
- Tubes are "low profile", self-draining, helical convolution form.
- Neutral to taste, color or odor.
- Non-stick, non-contaminating tube cleans easily.
- Steam, detergent or caustic cleanable.
- High tensile type 304 stainless steel braided

#### Approvals:

- F.D.A. (Food and Drug Administration)
- United States PHARMACOPEIA Class VI

#### Size Range: 1/2" to 4"

#### Temperature Rating:

- -100°F (-73°C) to +450°F (+232°C)



### TS/TB SERIES

#### Inner Tube:

- Pure PTFE: white or static dissipating conductive.  
TS Series: white  
TB Series: conductive
- Stainless steel braided.
- Neutral to taste, color or odor.
- Non-stick, non-contaminating tube cleans easily.
- Steam, detergent or caustic cleanable.

#### Approvals:

- F.D.A. Approved
- United States PHARMACOPEIA Class VI

#### Temperature Rating:

- -100°F (-73°C) to +500°F (+260°C)



### TLCT/WTLCT

#### Construction:

- Smooth tube internally bonded to a rubber hose type construction. Multiple reinforcement, double helix wire supported. Chemically resistant, ozone and abrasion resistant cover.
- Pure PTFE: white tube (TLCT) or antistatic (CTLCT).
- Easy to clean
  - Assured sterility
  - Non-stick smooth tube
  - Can be cleaned with steam, caustics, solvents or other cleaning agents.

#### Approvals:

- F.D.A. (Food and Drug Administration)
- PHARMACOPEIA Class VI

#### Temperature Rating:

- 177°C (350°F) to -40°C (-40°F).  
Hose has successfully passed internal steam tests at 208°C (406°F).



### FGR SERIES HOSE (RUBBER)

- From water to wine, from fragrance to flavours, our FGR is a proven transfer hose.

#### Construction:

- TUBE: high temperature rated Nitrile-PVC blend. Pure white.
- REINFORCEMENT AND COVER: multi plies of high temperature rated rubber; fabric reinforcements for pressure capability and a dual helix wire that enables the hose to flex easily, withstand vacuum and facilitate static grounding.

**Approvals:**  registered and U.S.D.A. approved. All hose materials and fittings exceed F.D.A., U.S.D.A., N.D.A. and  standards.

**Size Range:** 1/2 inch I.D. through 4 inch I.D.

**Temperature Rating:** -40°F to +250°F



## CONVOLUTED SS BRAIDED WCS/BCS

| SIZE<br>INCHES | I.D.<br>INCHES | O.D.<br>INCHES | PART NUMBER    | MINIMUM<br>BEND<br>RADIUS<br>INCHES | VACUUM<br>IN./HG | MAXIMUM<br>WORKING<br>PRESSURE<br>(P.S.I.) | MINIMUM<br>BURST PRESSURE<br>(ROOM TEMP)<br>(P.S.I.) | WEIGHT |
|----------------|----------------|----------------|----------------|-------------------------------------|------------------|--------------------------------------------|------------------------------------------------------|--------|
| 1/2            | 0.50           | 0.687          | 2708WCS or BCS | 2.50                                | Full             | 1500                                       | 6000                                                 | 0.20   |
| 3/4            | 0.75           | 1.093          | 2712WCS or BCS | 3.00                                | Full             | 1200                                       | 4800                                                 | 0.32   |
| 1              | 1.00           | 1.360          | 2716WCS or BCS | 3.25                                | Full             | 1000                                       | 4300                                                 | 0.41   |
| 1 1/4          | 1.25           | 1.594          | 2720WCS or BCS | 6.00                                | 26               | 750                                        | 3200                                                 | 0.70   |
| 1 1/2          | 1.50           | 1.900          | 2724WCS or BCS | 6.50                                | 24               | 650                                        | 2600                                                 | 0.75   |
| 2              | 2.00           | 2.425          | 2732WCS or BCS | 7.50                                | 20               | 450                                        | 2100                                                 | 1.05   |
| 3              | 3              | 3.85           | 48TWOB/TBOB    | 14.00                               | FULL             | 175                                        | 700                                                  | 2.60   |
| 4              | 4              | 5.00           | 64TWOB/TBOB    | 16.00                               | FULL             | 150                                        | 600                                                  | 3.20   |

## SMOOTH "TRUE" BORE SS BRAIDED TS/TB

| I.D.<br>INCHES | O.D.<br>INCHES | PART NUMBER | MINIMUM<br>BEND<br>RADIUS<br>INCHES | VACUUM<br>IN./HG | MAXIMUM<br>WORKING<br>PRESSURE<br>(P.S.I.) | MINIMUM<br>BURST PRESSURE<br>(ROOM TEMP)<br>(P.S.I.) | WEIGHT |
|----------------|----------------|-------------|-------------------------------------|------------------|--------------------------------------------|------------------------------------------------------|--------|
| 1/8"           | .24            | -2TS/TB     | 1.5                                 | 29.9             | 3,000                                      | 15,000                                               | .05    |
| 1/4"           | .38            | -4TS/TB     | 2.5                                 | 29.9             | 3,000                                      | 13,500                                               | .08    |
| 3/8"           | .52            | -6TS/TB     | 3.5                                 | 29.9             | 2,500                                      | 10,000                                               | .12    |
| 1/2"           | .66            | -8TS/TB     | 4.0                                 | 29.9             | 2,000                                      | 8,500                                                | .15    |
| 3/4"           | .88            | -12TS/TB    | 7.0                                 | 29.9             | 1,200                                      | 4,800                                                | .22    |
| 1"             | 1.160          | -16TS/TB    | 12.0                                | 20               | 800                                        | 3,200                                                | .31    |
| 1"             | 1.275          | -16TD/TBD   | 9.0                                 | 20               | 1,200                                      | 4,800                                                | .33    |
| 1 1/2"         | 1.740          | -24TD/TBD   | 15.0                                | 15               | 900                                        | 4,000                                                | .44    |

## SMOOTH BORE RUBBER COVERED TLCT

| I.D.<br>INCHES | O.D.<br>INCHES | PART NUMBER | MINIMUM<br>BEND<br>RADIUS<br>INCHES | VACUUM<br>IN./HG                        | RECOMMENDED<br>WORKING<br>PRESSURE<br>(P.S.I.) (BAR) | MINIMUM<br>BURST PRESSURE<br>(ROOM TEMP)<br>(P.S.I.) (BAR) | WEIGHT |     |      |
|----------------|----------------|-------------|-------------------------------------|-----------------------------------------|------------------------------------------------------|------------------------------------------------------------|--------|-----|------|
| 1/2            | 0.91           | 8TLCT/WTLC  | 3.0                                 | FULL<br>VACUUM<br>RATED<br>ALL<br>SIZES | 500                                                  | 35.0                                                       | 2100   | 147 | 0.35 |
| 3/4            | 1.25           | 12TLCT/WTLC | 4.5                                 |                                         | 500                                                  | 35.0                                                       | 2100   | 140 | 0.62 |
| 1              | 1.50           | 16TLCT/WTLC | 6.0                                 |                                         | 450                                                  | 31.5                                                       | 1800   | 126 | 0.75 |
| 1 1/4          | 1.75           | 20TLCT/WTLC | 9.0                                 |                                         | 320                                                  | 22.4                                                       | 1600   | 112 | 0.98 |
| 1 1/2          | 2.05           | 24TLCT/WTLC | 11.0                                |                                         | 300                                                  | 21.0                                                       | 1350   | 94  | 1.20 |
| 2              | 2.65           | 32TLCT/WTLC | 13.5                                |                                         | 250                                                  | 17.5                                                       | 1200   | 84  | 1.50 |
| 2 1/2          | 3.20           | 40TLCT/WTLC | 20.0                                |                                         | 200                                                  | 14.0                                                       | 900    | 63  | 2.35 |
| 3              | 3.70           | 48TLCT/WTLC | 22.0                                |                                         | 150                                                  | 10.5                                                       | 700    | 49  | 2.50 |
| 4              | 4.70           | 64TLCT/WTLC | 40.0                                |                                         | 150                                                  | 10.5                                                       | 600    | 42  | 3.60 |

## FOOD GRADE HOSE FGR

| I.D.<br>INCHES | O.D.<br>INCHES | PART NUMBER | DYNAMIC<br>BEND RADIUS | MAXIMUM<br>WORKING<br>PRESSURE<br>(P.S.I.) | MINIMUM<br>BURST PRESSURE<br>(ROOM TEMP)<br>(P.S.I.) | WEIGHT |
|----------------|----------------|-------------|------------------------|--------------------------------------------|------------------------------------------------------|--------|
| 1/2            | 1              | HOSFGR-08   | 5"                     | 400                                        | 1650                                                 | 0.4    |
| 3/4            | 1 3/16         | HOSFGR-12   | 6"                     | 375                                        | 1500                                                 | 0.5    |
| 1              | 1 7/16         | HOSFGR-16   | 8"                     | 350                                        | 1450                                                 | 0.6    |
| 1 1/2          | 2              | HOSFGR-24   | 10"                    | 300                                        | 1200                                                 | 0.9    |
| 2              | 2 9/16         | HOSFGR-32   | 12"                    | 250                                        | 1050                                                 | 1.3    |
| 2 1/2          | 3 1/8          | HOSFGR-40   | 16"                    | 150                                        | 700                                                  | 1.9    |
| 3              | 3 5/8          | HOSFGR-48   | 20"                    | 150                                        | 600                                                  | 2.3    |
| 4              | 4 11/16        | HOSFRG-64   | 28"                    | 150                                        | 600                                                  | 3.1    |



## PTFE HOSE FITTINGS: 316SS, MONEL & PTFE ENCAPSULATED

### MALE NPT & FEMALE NPT FJIC & MJIC UNION



**STYLE 03**  
MALE PIPE THREAD



**STYLE 06**  
FEMALE PIPE THREAD



**STYLE 02**  
JIC FEMALE SWIVEL



**STYLE 08**  
JIC/ADAPTOR UNION, MALE

### COMPRESSION FITTINGS



**STYLE 31FN**  
COMPRESSION CONNECTOR  
(WITH FERRULE AND NUT)



**STYLE 32**  
COMPRESSION TUBE  
ADAPTOR



**STYLE 10**  
SOME SIZES AVAILABLE  
PTFE 'ENCAPSULATED'



**STYLE 11**  
'MINI' SERIES



**STYLE 20**  
BEVEL SEAT

### PTFE 'ENCAPSULATED' CAM & GROOVE FITTINGS



**STYLE 16T**  
FEMALE CAM & GROOVE



**STYLE 17T**  
MALE CAM & GROOVE



**STYLE 18T**  
CAM & GROOVE  
X FLG. ADAPTOR

### "O" RING FEMALE WITH NUT



**STYLE 16**  
FEMALE WITH NUT

### LAP JOINT FLANGE



**STYLE 12T**  
PTFE LINED FLANGE  
RETAINER, LAP JOINT



**STYLE 12**  
FLANGE RETAINER, LAP JOINT

### BUTT WELD



**STYLE 41**  
TUBE BUTT WELD

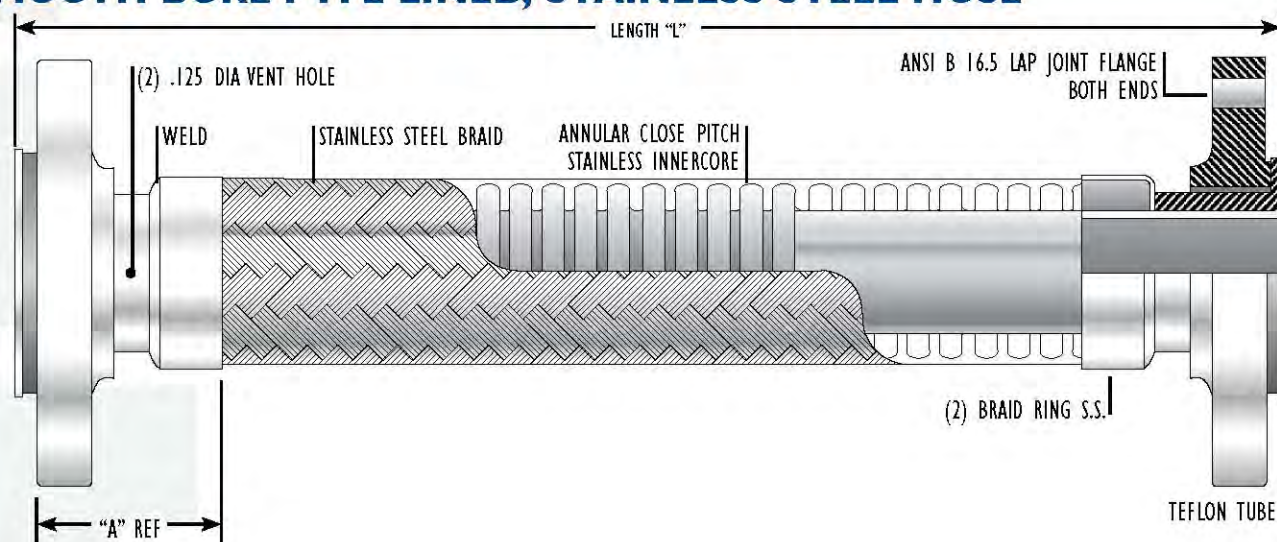


**STYLE 01**  
PIPE BUTT WELD

### SANITARY

## M.T.L. SERIES

### SMOOTH BORE PTFE LINED, STAINLESS STEEL HOSE



#### How to order:

| PART NUMBER       | NOM SIZE | HOSE I.D. | HOSE O.D. | WORKING PRESSURE (P.S.I.) |       | MIN. BEND RADIUS (INCHES) | VACUUM RATING @ 70°F | VACUUM RATING @ 250°F | 'A' REF |
|-------------------|----------|-----------|-----------|---------------------------|-------|---------------------------|----------------------|-----------------------|---------|
|                   |          |           |           | 70°F                      | 350°F |                           |                      |                       |         |
| 16MTL1212SCT-"L"  | 1"       | 0.86      | 1.50      | 275                       | 200   | 10                        | FULL                 | FULL                  | 3.00    |
| 24MTL1212SCT-"L"  | 1 1/2"   | 1.32      | 2.12      | 275                       | 200   | 12                        | FULL                 | FULL                  | 3.00    |
| 32MTL1212SCT-"L"  | 2"       | 1.82      | 2.75      | 275                       | 200   | 18                        | FULL                 | FULL                  | 3.50    |
| 48MTL1212SCT-"L"  | 3"       | 2.90      | 4.10      | 275                       | 200   | 28                        | FULL                 | 26"                   | 3.50    |
| 64MTL1212SCT-"L"  | 4"       | 3.75      | 5.12      | 250                       | 190   | 42                        | FULL                 | 24"                   | 4.00    |
| 96MTL1212SCT-"L"  | 6"       | 5.75      | 7.30      | 200                       | 160   | 60                        | 22" Hg               | 20"                   | 4.50    |
| 128MTL1212SCT-"L" | 8"       | 7.75      | 9.45      | 185                       | 160   | 84                        | 22" Hg               | C.F.                  | 5.00    |

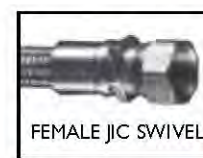
1. Temperature range: -65°F to +350°F

2. Test pressure: 1.5 times oper. pressure

3. Clean, dry, cap and seal

4. Class 300 flanges also available.

### HIGH PRESSURE PTFE HOSE



| NOMINAL SIZE (IN.) | PART NUMBER | HOSE SIZE I.D. (In.) | NOM. HOSE SIZE O.D. (In.) | MAX. OPERATING PRESSURE (P.S.I.) ROOM TEMP. | MIN. BURST PRESSURE (P.S.I.) ROOM TEMP. | MIN. BURST PRESSURE (P.S.I.) 400°F/204°C | MIN. BEND RADIUS (INCHES) | WEIGHT PER FOOT (Lbs.) |
|--------------------|-------------|----------------------|---------------------------|---------------------------------------------|-----------------------------------------|------------------------------------------|---------------------------|------------------------|
| 1/4                | 1704TH000   | 0.212                | 0.375                     | 5000                                        | 16000                                   | 12000                                    | 1.50                      | 0.11                   |
| 3/8                | 1706TH000   | 0.308                | 0.475                     | 5000                                        | 16000                                   | 12000                                    | 2.50                      | 0.18                   |
| 1/2                | 1708TH000   | 0.402                | 0.600                     | 5000                                        | 16000                                   | 12000                                    | 2.88                      | 0.24                   |
| 5/8                | 1710TH000   | 0.495                | 0.710                     | 5000                                        | 16000                                   | 12000                                    | 3.25                      | 0.33                   |
| 3/4                | 1712TH000   | 0.618                | 0.970                     | 5000                                        | 16000                                   | 12000                                    | 4.00                      | 0.66                   |
| 1                  | 1716TH000   | 0.868                | 1.250                     | 5000                                        | 16000                                   | 9000                                     | 5.00                      | 1.02                   |

#### Construction:

Smooth tube of anti-static (conductive) PTFE. Braid(s) reinforcements of densely packed, high tensile Type 304 stainless steel wire. Reinforcement design varies size by size. Fittings are Type 316 stainless steel.

#### Operating Temperature:

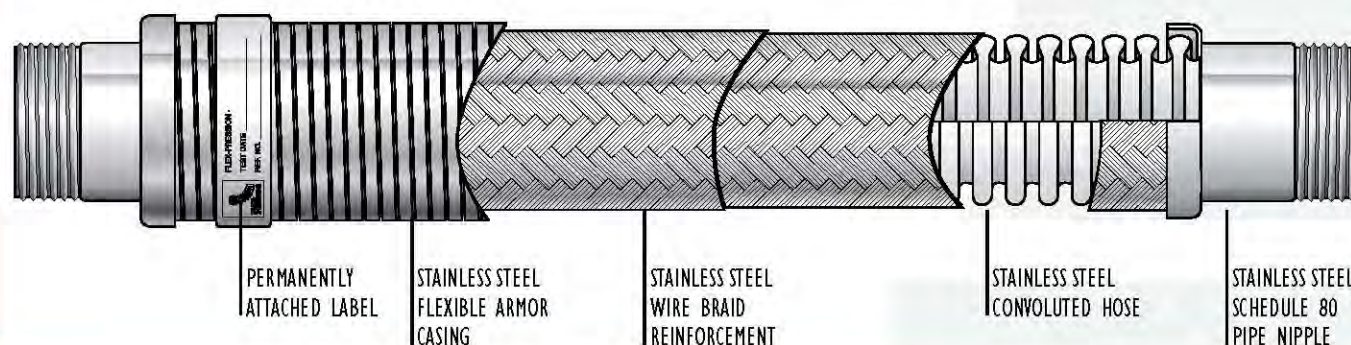
-65°F (-54°C) to 400°F (204°C)



## CHOOSE THE RIGHT HOSE FOR THE RIGHT APPLICATION

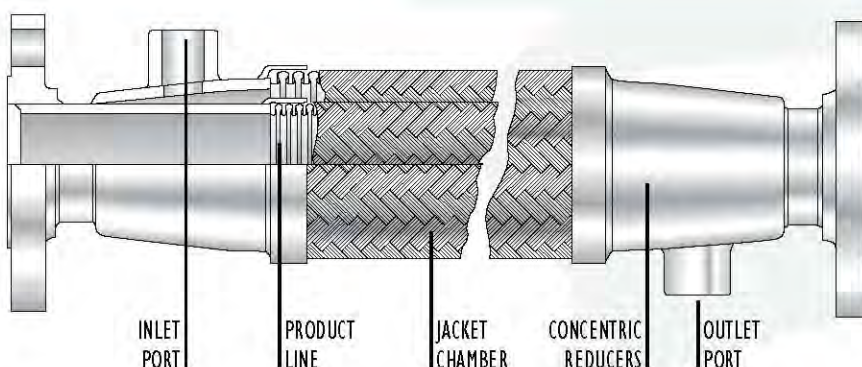
### ANHYDROUS AMMONIA TRANSFER HOSE

Complies with standards ANSI K61.1/CGA - G2.1/TFI - M1 all stainless steel construction



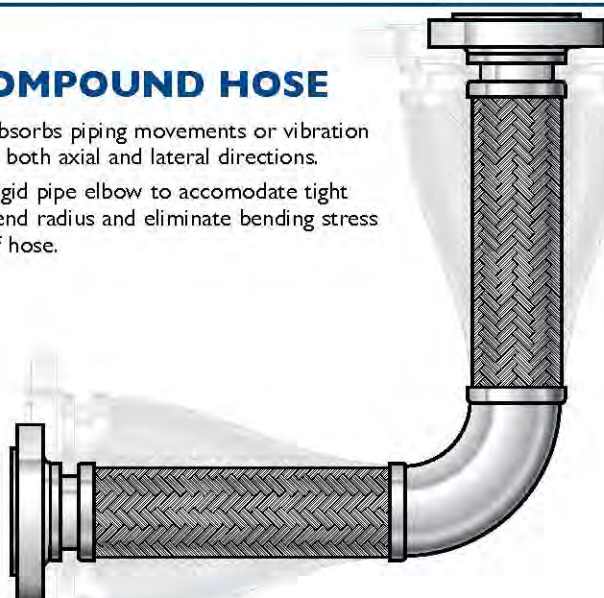
### JACKETED HOSE

- For transfer lines where temperature must be maintained for steady flow of product.
- Jacket can be used under full vacuum and in cryogenic applications.
- Inlet & Outlet ports designed to allow injection of steam, hot oil or coolant.
- Available with many end fitting configurations including: male NPT, female JIC, Butt Weld pipe or tube.



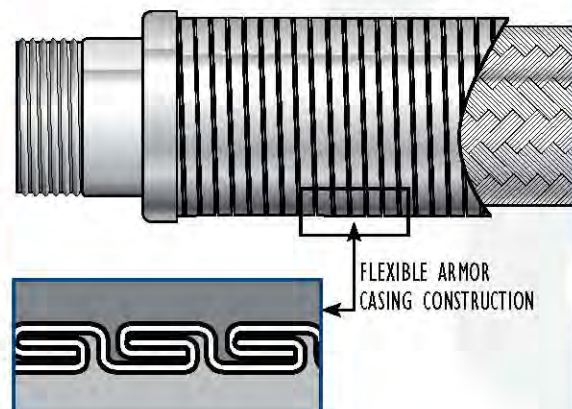
### COMPOUND HOSE

- Absorbs piping movements or vibration in both axial and lateral directions.
- Rigid pipe elbow to accommodate tight bend radius and eliminate bending stress of hose.



### FLEXIBLE ARMOR CASING

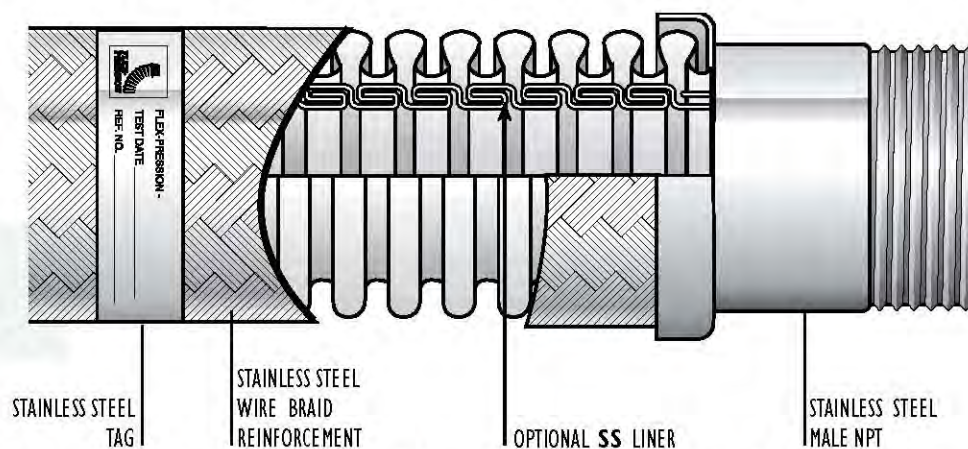
- Protection against kinking and braid abrasion
- Added measure of protection for operators



## CHOOSE THE RIGHT HOSE FOR THE RIGHT APPLICATION

### OXYGEN TRANSFER HOSE

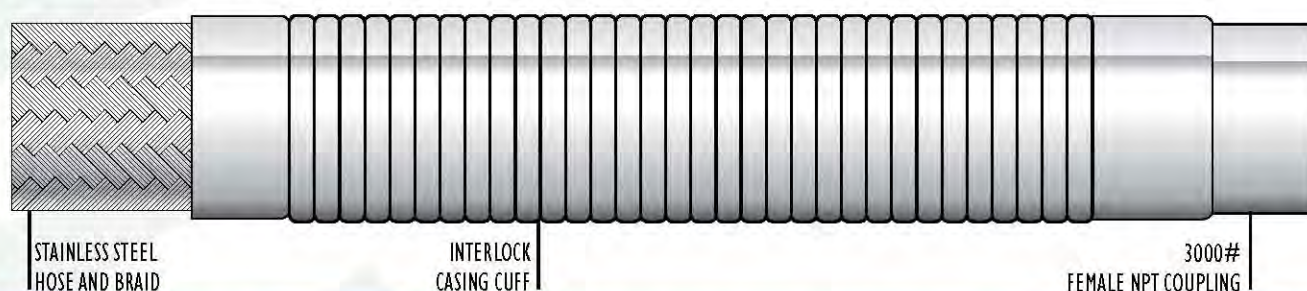
- **Stainless steel construction**
- **Cleaned, degreased, capped and bagged for Oxygen Service**
- **Optional stainless steel liner for high velocity applications**



- **Interlock casing also available for strain relief or rugged applications**

### CRYOGENIC TRANSFER HOSE

- **Stainless steel construction**
- **For bulk transfer of liquids**
- **Used on cryogenic liquid cylinders and vaporizer manifolds**
- **Many other fitting options available**



### FLOW VELOCITY RESTRICTIONS IN METAL HOSES

When flow velocity exceeds the values shown below, resonant vibration can occur in hoses and cause premature failure. When flow velocity exceeds these values, an increase in the hose inside diameter or an inside interlocked metal liner are advised.

| INSTALLATION CONFIGURATION | MAXIMUM VELOCITY (FT/SEC) |         |           |         |
|----------------------------|---------------------------|---------|-----------|---------|
|                            | GAS                       |         | LIQUID    |         |
|                            | UNBRAIDED                 | BRAIDED | UNBRAIDED | BRAIDED |
| STRAIGHT RUN               | 100                       | 150     | 50        | 75      |
| 45° BEND                   | 75                        | 115     | 40        | 60      |
| 90° BEND                   | 50                        | 75      | 25        | 40      |
| 180° BEND                  | 25                        | 38      | 12        | 19      |

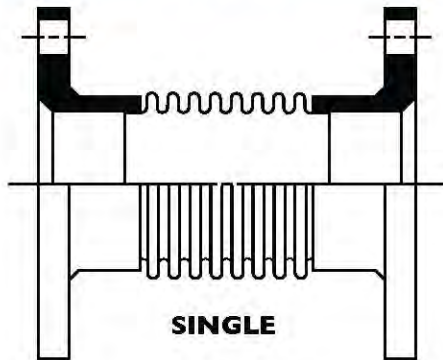


## EXPANSION JOINTS

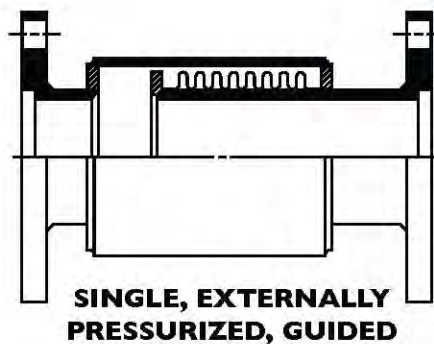
Flex-Pression will assist you with the correct selection of a metal expansion joint to absorb pipe or ducting movements. Our engineering department can provide information regarding style, material and design parameters to ensure safe and effective operation of the expansion joint. A full range of materials including stainless steel, inconel and hastelloy is available for consideration as well as a complete selection of joints to accomodate virtually any media and movement.

### CLASSIFICATION BY MOVEMENTS

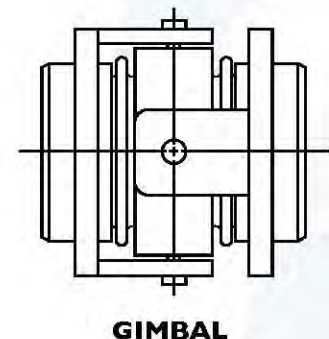
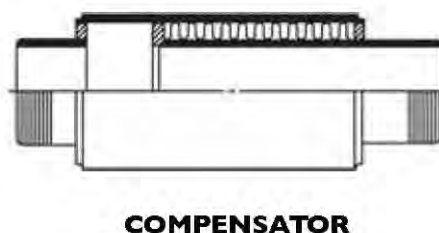
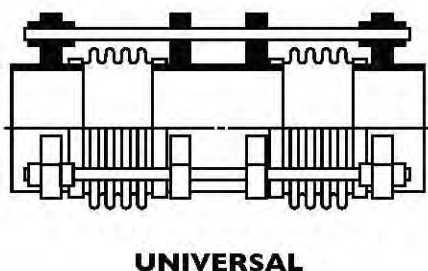
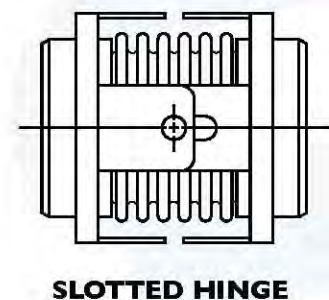
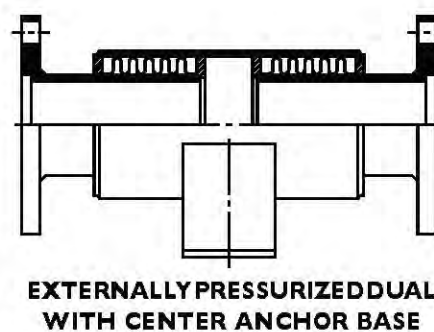
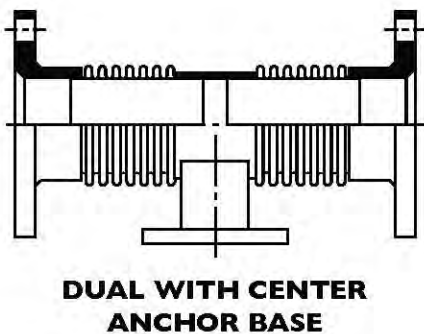
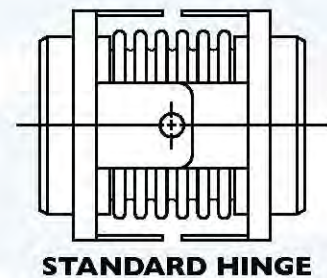
AXIAL, LATERAL, ANGULAR  
ROTATION, VIBRATION  
ISOLATION



AXIAL MOVEMENT



VARIOUS COMBINATIONS TO  
ABSORB AXIAL, LATERAL AND  
ANGULAR MOVEMENTS



Typical expansion joints are designed to E.J.M.A. standards.  
Expansion joints with "U" stamp are designed to A.S.M.E boiler and pressure vessel code.  
Welding is per A.S.M.E boiler and pressure vessel code section IX.  
Inspection and testing include: Hydrostatic pressure test, liquid penetrant and x-ray examination. (as requested)

# CORROSION RESISTANCE CHART

| MEDIA                       | TEMP °F | 18-8 STAINLESS STEEL | 18-8 MO | PTFE | MEDIA                   | TEMP °F | 18-8 STAINLESS STEEL | 18-8 MO | PTFE | MEDIA                     | TEMP °F | 18-8 STAINLESS STEEL | 18-8 MO | PTFE |
|-----------------------------|---------|----------------------|---------|------|-------------------------|---------|----------------------|---------|------|---------------------------|---------|----------------------|---------|------|
| Acetic Acid                 | 70°     | A                    | A       | A    | Chromic Acid (10%)      | Boiling | C                    | B       | A    | Paraffin                  | Hot     | A                    | A       | A    |
| Acetic Anhydride            | Boiling | A                    | A       | A    | Cider                   | 70°     | A                    | A       | A    | Phosphoric Acid (20%)     | Boiling | C                    | B       | A    |
| Acetone                     | Boiling | A                    | A       | A    | Citric Acid (15%)       | Boiling | B                    | A       | A    | Potassium Carbonate       | Hot     | A                    | A       | A    |
| Acetylene                   | 70°     | A                    | A       | A    | Coffee                  | Boiling | A                    | A       | A    | Potassium Chloride (5%)   | Boiling | B                    | B       | A    |
| Alcohols                    | Boiling | B                    | A       | A    | Copper Chloride (5%)    | 70°     | C                    | C       | A    | Potassium Chromate (25%)  | Boiling | A                    | A       | A    |
| Aluminum Chloride           | 70°     | C                    | C       | A    | Copper Nitrate          | Hot     | A                    | A       | A    | Potassium Cyanide         | 70°     | A                    | A       | A    |
| Aluminum Hydroxide          | 70°     | A                    | A       | A    | Copper Sulfate          | Boiling | A                    | A       | A    | Potassium Hydroxide (50%) | Boiling | B                    | A       | A    |
| Aluminum Sulfate (10%)      | Boiling | B                    | A       | A    | Corn Oil                | 70°     | A                    | A       | A    | Potassium Sulfate (5%)    | Hot     | B                    | A       | A    |
| Ammonia, Dry                | Hot     | A                    | A       | A    | Cottonseed Oil          | 70°     | A                    | A       | A    | Propane                   | 70°     | A                    | A       | A    |
| Ammonia, Moist              | Boiling | A                    | A       | A    | Creosote                | Hot     | A                    | A       | A    | Rosin                     | Molten  | A                    | A       | A    |
| Ammonium Hydroxide          | 70°     | A                    | A       | A    | Crude Oil               | Hot     | B                    | A       | A    | Sea Water                 | 70°     | B                    | B       | A    |
| Ammonium Chloride (50%)     | Boiling | B                    | B       | A    | Ethers                  | 70°     | A                    | A       | A    | Sewage                    | 70°     | A                    | A       | A    |
| Ammonium Nitrate            | 70°     | A                    | A       | A    | Ethyl Acetate (conct)   | 70°     | A                    | A       | A    | Soap Solutions            | 70°     | A                    | A       | A    |
| Ammonium Sulfate            | Boiling | B                    | A       | A    | Ethyl Chloride          | 70°     | A                    | A       | A    | Sodium Bicarbonate (5%)   | 150°    | A                    | A       | A    |
| Amyl Acetate (conct)        | 70°     | A                    | A       | A    | Ethylene Glycol         | 70°     | A                    | A       | A    | Sodium Bisulfite          | 70°     | A                    | A       | A    |
| Amyl Alcohol                | 70°     | A                    | A       | A    | Ferric Chloride         | 70°     | C                    | C       | A    | Sodium Carbonate (50%)    | Boiling | A                    | A       | A    |
| Aniline (conct)             | 70°     | A                    | A       | A    | Ferric Sulfate (10%)    | Boiling | B                    | A       | A    | Sodium Chloride (5%)      | 150°    | C                    | B       | A    |
| Aniline Hydrochloride       | 70°     | C                    | C       | A    | Ferrous Sulfate         | Boiling | B                    | A       | A    | Sodium Cyanide            | 70°     | A                    | A       | A    |
| Asphalt                     | Hot     | A                    | A       | A    | Formaldehyde (40%)      | 70°     | B                    | B       | A    | Sodium Hydroxide          | Boiling | A                    | A       | A    |
| Atmosphere, Industrial      | 70°     | A                    | A       | A    | Formic Acid (50%)       | 50°     | B                    | A       | A    | Sodium Hypochlorite (5%)  | 70°     | C                    | B       | A    |
| Barium Carbonate            | 70°     | A                    | A       | A    | Freon                   | 70°     | A                    | A       | B    | Sodium Nitrate            | 70°     | B                    | B       | A    |
| Barium Chloride             | Hot     | B                    | A       | A    | Fruit Juices            | 70°     | A                    | A       | A    | Sodium Peroxide (10%)     | 150°    | A                    | A       | A    |
| Barium Hydroxide            | Hot     | A                    | A       | A    | Furfural                | 70°     | A                    | A       | A    | Sodium Phosphate          | 70°     | A                    | A       | A    |
| Barium Sulfate              | 70°     | A                    | A       | A    | Gasoline                | 70°     | A                    | A       | A    | Sodium Sulfate (10%)      | 150°    | B                    | A       | A    |
| Barium Sulfide              | 70°     | A                    | A       | A    | Gelatine                | 70°     | A                    | A       | A    | Sodium Sulfide (10%)      | 150°    | B                    | A       | A    |
| Beer                        | 70°     | A                    | A       | A    | Glue (Acid Solution)    | 70°     | B                    | A       | A    | Sodium Thiosulfate        | 70°     | A                    | A       | A    |
| Benzene                     | Hot     | A                    | A       | A    | Glycerine               | 70°     | A                    | A       | A    | Steam                     | 200°    | A                    | A       | A    |
| Benzoic Acid                | 70°     | A                    | A       | A    | Hydrobromic Acid        | 70°     | C                    | C       | A    | Stearic Acid              | 70°     | B                    | A       | A    |
| Benzol                      | Hot     | A                    | A       | A    | Hydrochloric Acid       | 70°     | C                    | C       | A    | Sugar Solutions           | 70°     | A                    | A       | A    |
| Black Liquor                | Hot     | B                    | B       | A    | Hydrocyanic Acid        | 70°     | A                    | A       | A    | Sulfur, Dry               | 350°    | A                    | A       | A    |
| Bleaching Powder, Wet       | 70°     | C                    | C       | A    | Hydrofluoric Acid       | 70°     | C                    | C       | A    | Sulfur, Molten            | 200°    | C                    | B       | A    |
| Borax (5%)                  | Hot     | A                    | A       | A    | Hydrogen Peroxide       | 70°     | A                    | A       | A    | Sulfur Chloride, Dry      | Hot     | C                    | C       | A    |
| Boric Acid (5%)             | Boiling | B                    | A       | A    | Hydrogen Sulfide, Dry   | 70°     | A                    | A       | A    | Sulfur Dioxide, Dry       | 70°     | A                    | A       | A    |
| Bromine, Dry                | 70°     | C                    | C       | C    | Hydrogen Sulfide, Moist | 70°     | B                    | A       | A    | Sulfur Dioxide, Moist     | 70°     | C                    | B       | A    |
| Bromine, Moist              | 70°     | C                    | C       | C    | Kerosene                | 70°     | A                    | A       | A    | Sulfur Trioxide, Dry      | 70°     | B                    | B       | A    |
| Butane                      | 70°     | A                    | A       | A    | Lacquers                | 70°     | C                    | A       | A    | Sulfuric Acid (95-100%)   | 70°     | A                    | A       | A    |
| Buttermilk                  | 70°     | A                    | A       | A    | Lacquers Solvents       | 70°     | C                    | A       | A    | Sulfuric Acid (80-95%)    | 70°     | B                    | B       | A    |
| Butyl Alcohol               | 70°     | A                    | A       | A    | Lactic Acid (5%)        | 150°    | B                    | A       | A    | Sulfuric Acid (40-80%)    | Boiling | C                    | C       | A    |
| Butyric Acid (5%)           | Boiling | A                    | A       | A    | Lime                    | 70°     | A                    | A       | A    | Sulfuric Acid (40%)       | 300°    | C                    | C       | A    |
| Calcium Chloride            | 70°     | B                    | A       | A    | Lime-Sulfur             | 70°     | B                    | B       | B    | Tannic Acid               | 150°    | A                    | A       | A    |
| Calcium Hydroxide (20%)     | Boiling | C                    | A       | A    | Linseed Oil             | 70°     | A                    | A       | A    | Tar                       | 150°    | A                    | A       | A    |
| Calcium Hypochlorite (20%)  | 70°     | C                    | B       | A    | Magnesium Chloride (5%) | Hot     | C                    | B       | A    | Tartaric Acid (10%)       | 70°     | B                    | A       | A    |
| Cane Sugar Syrups           | Hot     | A                    | A       | A    | Magnesium Sulfate       | Hot     | B                    | A       | A    | Toluene                   | 70°     | A                    | A       | A    |
| Carbolic Acid (phenol)      | Boiling | A                    | A       | A    | Mercury                 | 70°     | A                    | A       | A    | Trichloroacetic Acid      | 70°     | C                    | C       | A    |
| Carbon Dioxide, Dry         | Hot     | A                    | A       | A    | Mercury Salts           | 70°     | C                    | C       | A    | Trichlorethylene, Dry     | 70°     | A                    | A       | A    |
| Carbon Dioxide, Moist       | Hot     | A                    | A       | A    | Methyl Chloride, Dry    | 70°     | A                    | A       | A    | Trichlorethylene, Moist   | 70°     | C                    | B       | A    |
| Carbonated Water            | 70°     | A                    | A       | A    | Milk                    | Hot     | A                    | A       | A    | Turpentine                | 70°     | A                    | A       | A    |
| Carbonated Beverages        | 70°     | A                    | A       | A    | Mine Water              | 70°     | A                    | A       | A    | Varnish                   | 70°     | A                    | A       | A    |
| Carbon Tetrachloride, Dry   | Boiling | A                    | A       | A    | Natural Gas             | 70°     | A                    | A       | A    | Vinegar                   | 70°     | A                    | A       | A    |
| Carbon Tetrachloride, Moist | Boiling | C                    | C       | A    | Nitric Acid (conct)     | Boiling | B                    | A       | A    | Water                     | 70°     | A                    | A       | A    |
| Chlorine, Dry               | 70°     | C                    | B       | A    | Nitrogen                | 70°     | A                    | A       | A    | Zinc Chloride             | Boiling | C                    | B       | A    |
| Chlorine, Moist             | 70°     | C                    | C       | A    | Oleic-Acid              | Boiling | B                    | A       | A    | Zinc Sulfate              | Boiling | B                    | A       | A    |
| Chlorinated Water           | 70°     | C                    | C       | A    | Oxalic Acid (10%)       | Boiling | C                    | B       | A    |                           |         |                      |         |      |
| Chloroform, Dry             | 70°     | A                    | A       | A    | Oxygen                  | 70°     | A                    | A       | A    |                           |         |                      |         |      |

A = Resistant    B = Partially Resistant    C = Non Resistant



6590 rue Abrams  
St-Laurent QC H4S 1Y2  
Tel: (514) 334-9888  
Fax: 334-1044

