

Non-Metallic Core Pigtails for High Pressure Cylinder Filling

Introduction

Value pricing, extreme flexibility and long lasting characteristics make non-metallic core pigtails the most widely specified hose assemblies. Our large variety of end fittings, safety and productivity options allow you to select the hose best suited to your application.



PTFE Chemfluor® Core, Stainless Steel Braid

Ideal for a wide range of industrial applications, PTFE Chemfluor is non-porous, chemically inert and requires zero maintenance. PTFE is an FDA approved material. When coupled with the Oxy-Flex® end fitting and cleaned for oxygen use, high temperature capabilities make PTFE the best choice for medical or industrial oxygen filling. Flexible Components PTFE is up to 30% thicker than competitive products for greater flexibility, kink resistance, longer life and less permeation.

- PTFE core, single SS braid. **Style 4TS – 3000 psi**
- PTFE core, double SS braid. **Style 4TD – 3600 psi** with brass end fittings.
- PTFE core, double SS braid. **Style 4TD – 4500 psi** with SS end fittings.
- PTFE core, high density SS braid. **Style 4TH – 5000 psi**
- PTFE core, double SS braid, double SS spiral wrap. **Style 4TX – 6000 psi**



ETFE Tefzel® Core, Stainless Steel Braid

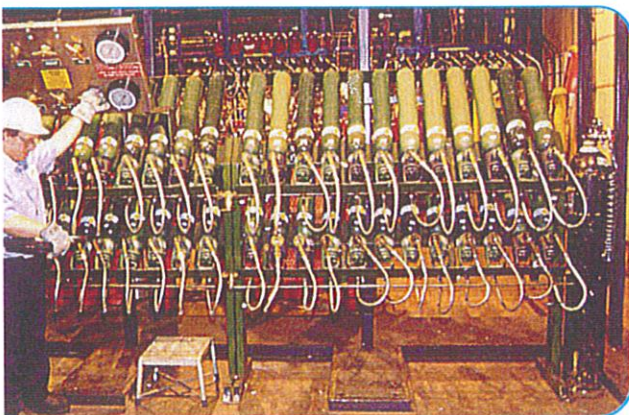
Tefzel pigtails are widely specified for use in hydrogen and helium service. Tefzel has a permeation rate approximately 77% lower than PTFE.

- ETFE core, single SS braid. **Style 4TZ – 3000 psi**
- ETFE core, double SS braid. **Style 4TZD – 3600 psi** with brass end fittings.
- ETFE core, single SS braid. **Style 4TZD – 4500 psi** with SS end fittings.

Synflex® Nylon Core, Polyurethane Outer Jacket

A low cost alternative for nitrogen, argon and helium pigtails only. Available with carbon steel fittings.

- Nylon core, polyurethane cover. **Style 3130 – 3000 psi**
- Polyester core, polyurethane cover, cold temp flexibility. **Style 3160 – 3000 psi**
- Nylon core, polyurethane cover. **Style 3R80 – 5000 psi**



SEE PIGTAIL HOSE SELECTION GUIDE ON PAGE 7

Metallic Core Pigtails for High Pressure Cylinder Filling

Introduction

Many applications require a metal "bellows" type hose which provides an all welded, flexible alternative to rigid pipe and tubing with zero permeation even at high pressures and cryogenic temperatures. A variety of alloys, safety features and options are available so that an assembly matching your precise needs can be provided. All hose assemblies are constructed with heavy-gauge end fittings. Maximum allowable working pressure and date of manufacture are permanently marked on each assembly.

Stainless Steel Inner, Stainless Steel Braid

316 SS pigtails are designed for strong, safe and flexible operation in demanding specialty gas environments. Zero permeation characteristics do not allow gas or atmosphere to pass through its wall in either pressure or vacuum applications. Ideal for flammable, toxic, high purity and small molecule gases.

- SS core, double SS braid. **Style 4MDS6 – 3850 psi**
- SS core, double SS braid. **Style 4MDHP – 4800 psi**

Monel® Inner, Monel Braid

Specify Monel pigtails when 316 SS inner is not compatible with a corrosive gas such as hydrochloric acid.

- Monel core, double Monel Braid. **Style 4MDM – 3000 psi**
- Available with Monel fittings.

Monel® Inner, Stainless Steel Braid

Monel pigtails with SS braid are ideal for oxygen service where particle impingement failure is a concern. The SS braid is more economical and allows higher working pressures than Monel braid.

- Monel core, double SS braid. **Style 4MDMS – 4200 psi**
- Available with Monel or SS fittings.

PIGTAIL HOSE SELECTION GUIDE

HOSE STYLE		TS	TD	TH	TX	TZ	TZD	SYN3130	SYN3160	SYN3R80	4MDS6	4MDHP	4MDM	4MDMS
LINER MATERIAL		PTFE	PTFE	PTFE	PTFE	ETFE	ETFE	NYLON	POLYESTER	NYLON	316LSS	316LSS	MONEL	MONEL
MAX. WORKING PRESSURE (PSIG)		3,000	3,600 4,500	5,000	6,000	3,000	3,600 4,500	3,000	3,000	5,000	3,850	4,800	3,000	4,200
GAS	CGA CONNECTION													
**Acetylene	510	V	V	V	E	G	G	A	A	A	G	G	G	G
Air	346	E	E	G	G	G	G	A	A	A	G	G	G	G
Argon	580	E	E	G	G	G	G	A	A	A	G	G	G	G
**Arsine	510	N	N	N	N	N	N	N	N	N	N	N	G	G
Carbon Dioxide	320	E	E	G	G	N	N	N	N	N	G	G	G	G
**Carbon Monoxide	350	V	V	V	V	V	V	N	N	N	E	E	G	G
**Chlorine	660	N	N	N	N	N	N	N	N	N	N	N	V	V
**Fluorine	679	N	N	N	N	N	N	N	N	N	N	N	V	V
Helium	580	V	V	G	G	E	E	A	A	A	E	E	V	V
**Hydrogen	350	G	G	G	G	V	V	N	N	N	V	V	G	G
**Natural Gas	350	G	G	V	V	G	G	N	N	N	E	E	G	G
Nitrogen	580	E	E	V	V	G	G	A	A	A	G	G	G	G
Nitrous Oxide	326	V	V	G	G	G	G	N	N	N	G	G	G	G
Oxygen	540	E*	E*	G	G	N	N	N	N	N	G	G	V	V
**Silane	350 or 510	N	N	N	N	N	N	N	N	N	N	N	V	V

E–Excellent, V–Very Good, G–Good, A–Acceptable, N–Not Acceptable

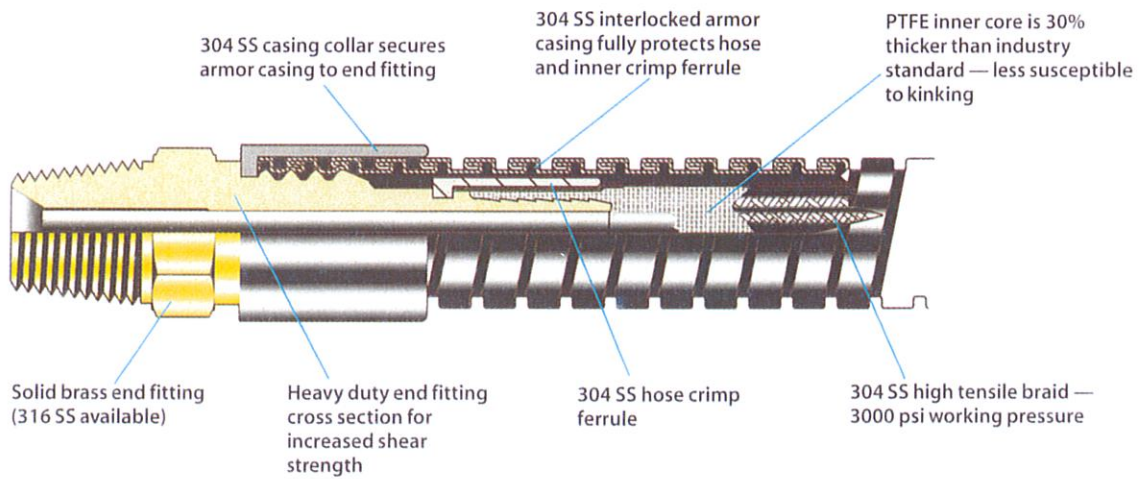
* When coupled with Oxy-Flex fitting

All hose are considered to be 0.250 ID

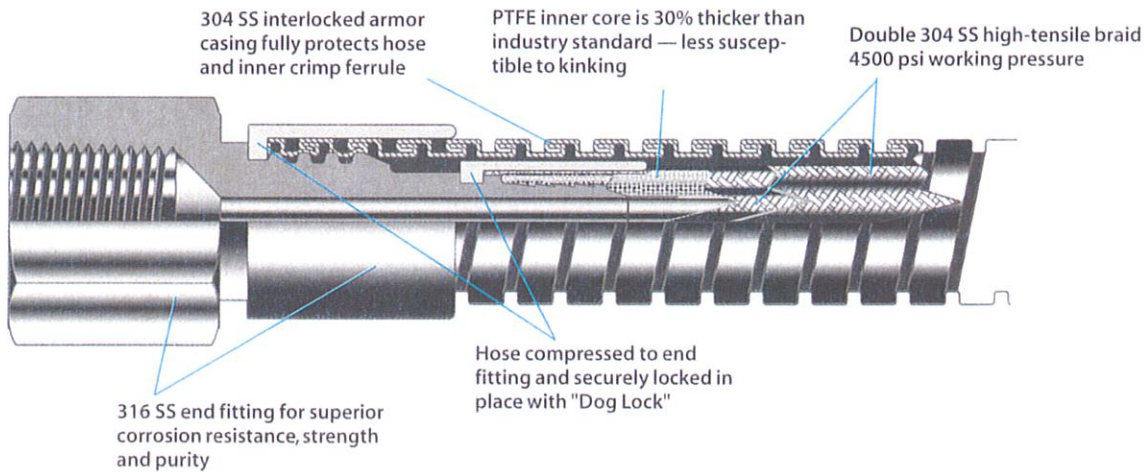
**Flammable and poisonous gases should always be filled, stored, transfilled or used in a well-ventilated area.

Non-Metallic Core Pigtail Cross Sections

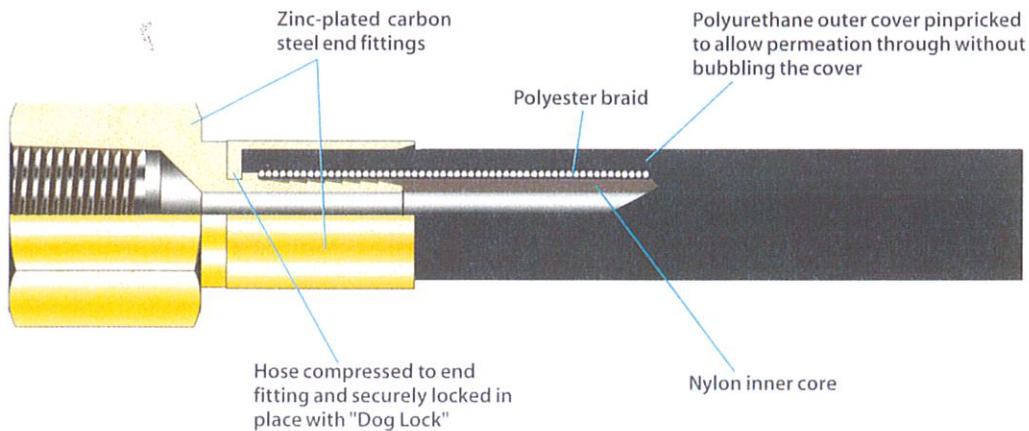
1/4" Style 4TS (shown with Brass Male NPT and SS Armor Casing)



1/4" Style 4TD (shown with SS Female NPT and Armor Casing)

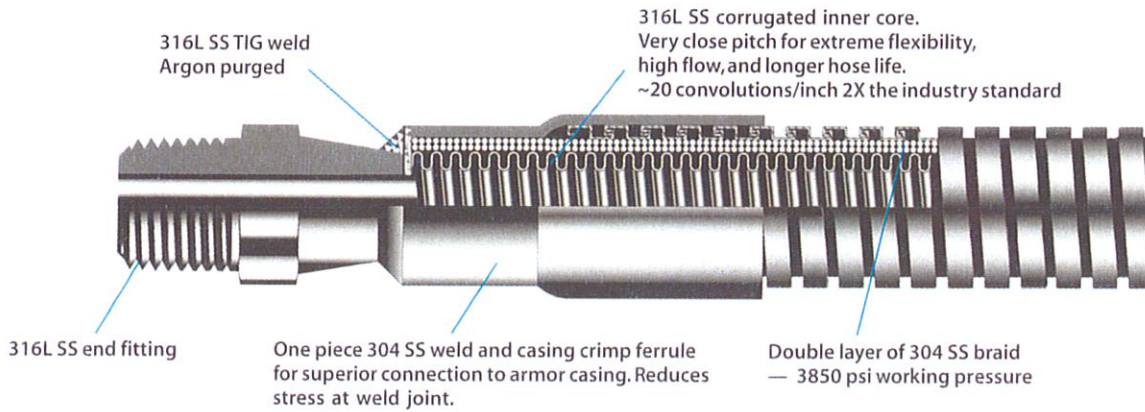


1/4" Style 3130, 3160 and 3R80 (shown with Carbon Steel Female NPT)

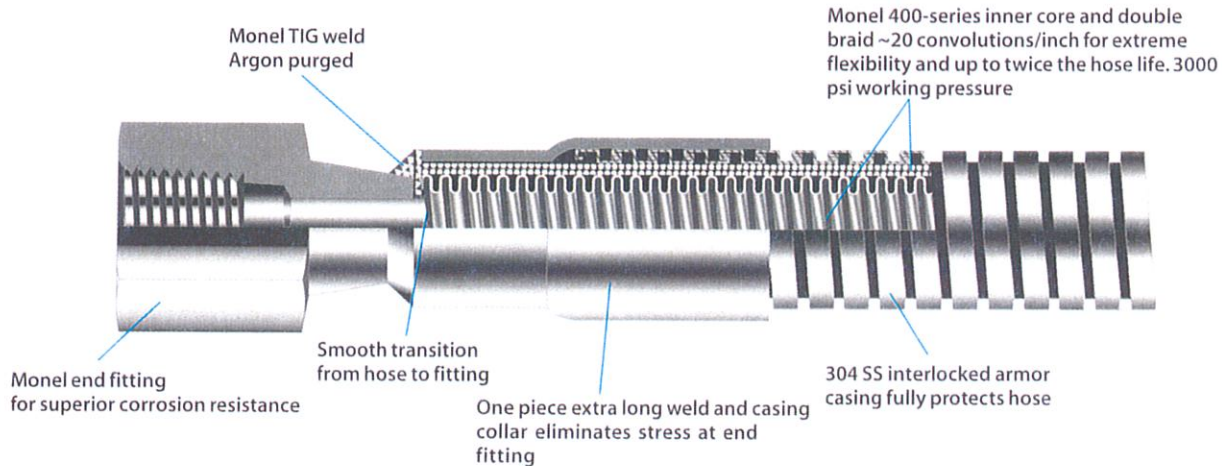


Metallic Core Pigtail Cross-Sections

1/4" Style 4MDS6 (shown with SS Male NPT and Armor Casing)



1/4" Style 4MDM (shown with Monel Female NPT and SS Armor Casing)

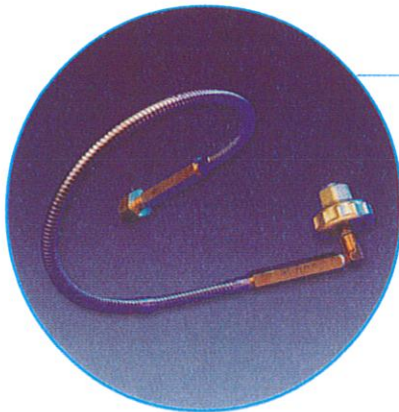


PIGTAIL HOSE SPECIFICATIONS

HOSE STYLE	SIZE ID (IN)	SIZE O.D. W/O ARMOR (IN)	SIZE O.D. W/ ARMOR (IN)	INNER CORE WALL THICKNESS (IN)	MAWP (PSIG)	MIN. BURST PRESSURE (PSIG)	MIN. BEND RADIUS (W/O ARMOR) (IN)	MIN. BEND RADIUS (W/ ARMOR) (IN)	WEIGHT PER FOOT (W/O ARMOR) (LBS)	WEIGHT PER FOOT (W/ ARMOR) (LBS)	TEMPERATURE RANGE ("F)	CONDUCTIVE (YES/NO)
4TS	0.250	0.375	0.560	0.040	3,000	13,500	1.5	2.7	0.08	0.26	-100F to 450	no
4TD	0.250	0.400	0.625	0.040	4,500 3,600	18,000	1.5	2.7	0.10	0.26	-100F to 450	no
4TH	0.220	0.390	0.625	0.040	5,000	20,000	1.6	2.7	0.10	0.26	-100F to 450	yes
4TX	0.220	0.500	0.725	0.040	6,000	24,600	1.6	2.7	0.24	0.40	-100F to 450	yes
4TZ	0.250	0.375	0.560	0.030	3,000	13,500	1.5	2.7	0.08	0.22	-100F to 250	no
4TZD	0.250	0.400	0.625	0.030	4,500 3,600	18,000	1.5	2.7	0.10	0.26	-100F to 250	no
43130	0.250	0.512	N/A	0.040	3,000	12,000	1.3	N/A	0.06	N/A	-40F to 212	no
43160	0.250	0.512	N/A	0.040	3,000	12,000	1.3	N/A	0.06	N/A	-65F to 212	no
43R80	0.250	0.627	N/A	0.040	5,000	20,000	1.3	N/A	0.12	N/A	-40F to 212	no
4MDS6	0.285	0.445	0.725	0.010	3,850	15,400	2.5	2.7	0.29	0.49	Cryo to 1500	yes
4MDHP	0.285	0.445	0.725	0.010	4,800	19,200	2.5	2.7	0.29	0.49	Cryo to 1500	yes
4MDM	0.285	0.445	0.725	0.010	3,000	12,000	2.5	2.7	0.33	0.53	Cryo to 1500	yes
4MDMS	0.285	0.445	0.725	0.010	4,200	16,800	2.5	2.7	0.33	0.53	Cryo to 1500	yes

Special Pigtail Assemblies & Safety Options

Flexible Components brand is considered the innovator, not imitator, in the industry. Here are a few examples of products designed to enhance your safety and productivity.

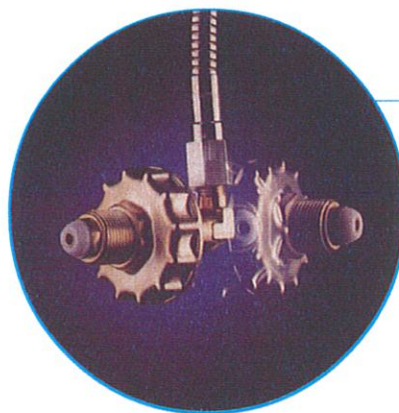


Oxy-Flex® Distance Volume Piece

Integral to the Oxy-Flex pigtail, the Distance Volume Piece (DVP) contains the heat of adiabatic compression, which may occur in a quickly-pressurized hose where one end is closed off with a valve or check valve. The DVP prevents the heated slug of gas from affecting the PTFE tube of the pigtail. Constructed with solid brass and a 1/4" female NPT for connection to CGA 540 or other nipple.

Option code **DV**

P/N of hose shown: 4TS71**DV**74**DV**LBA0540-36"

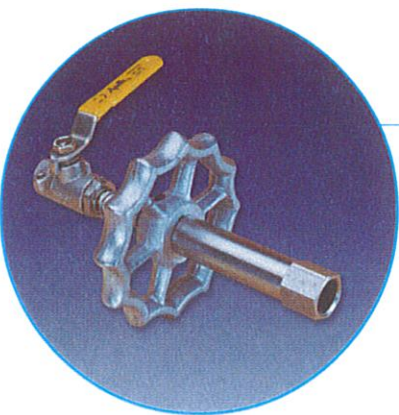


Swiv-L-Flex® (available with TS or TD hose styles)

Specifically designed for palletized cylinder fill operations employing overhead fill manifolds. Swivels 360° for ease of connection regardless of the cylinder valve inlet's orientation to the pigtail.

STYLE 06X

(shown with optional elbow and hand tight CGA580)



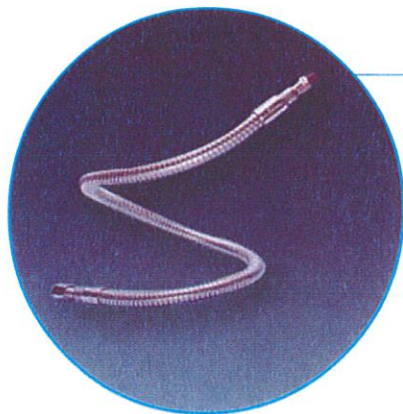
Quick Connect Handwheel w/ ball valve for Carbon Dioxide (Style HBV)

For quick connections of any Flexible Components pigtail to CGA 320 valves.

Comes complete with SS 1/4 turn ball valve and extra gaskets.

P/N 7704HBV320

Special Pigtail Assemblies & Safety Options

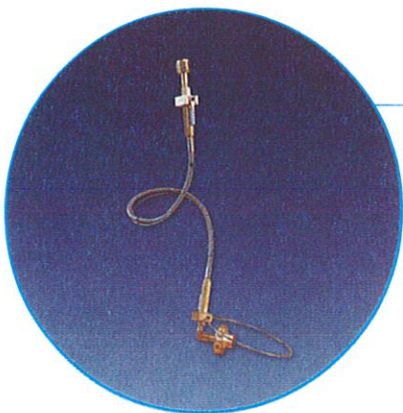


Armor Casing

For hoses that are constantly handled and flexed, armor casing protects against kinking, braid abrasion or stress at the end fittings. The smooth surface also provides additional handling protection for operators, plus the capability to support a 600 lb load under tension. Armor casing is protected under a special 3 year limited warranty. See back cover for details.

Option code **A**

P/N of hose shown: 4MDS60306S6**A**-36"



Exterior Cable

Used when policy requires a tethered pigtail. Available with or without armor casing. Shown with optional Oxy-Flex® DVP with CGA 540 wrench tight, CGA 540 hand tight, elbow and valve loop.

Option code **TP**

P/N of hose shown: 4TS71DV74DVLB**TP**0540-36"

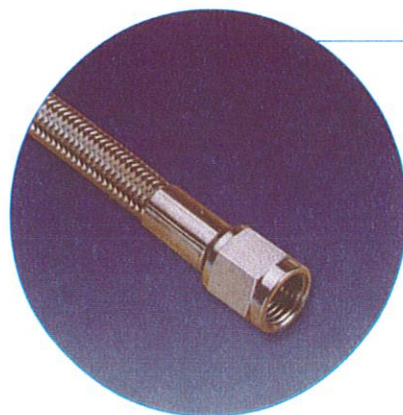


Valve Loop

Easily attached in the field to any pigtail with a 1/4" hex female NPT. Includes a heavy-duty SS ring that fits over a standard CGA cylinder valve and prevents the pigtail from whipping in the event of CGA thread failure.

P/N 7704VLOOP

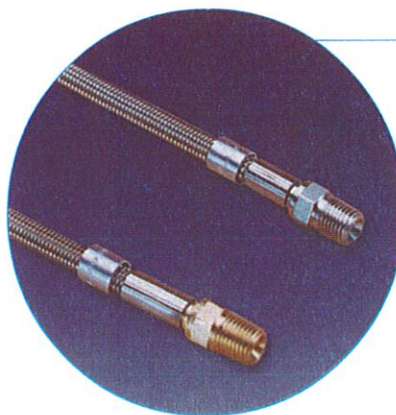
End Fittings for Compressed Gas Pigtails



Female Flare
37° & 45°

STYLE 02

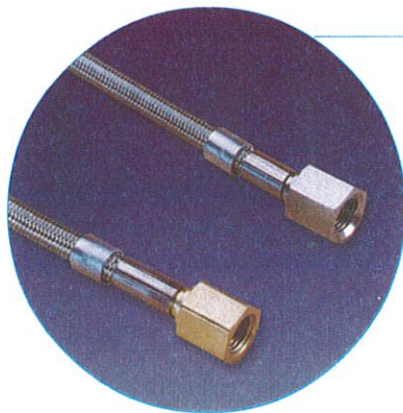
For hose style
TS, TD, TZ, TZD,
TH, 3130, 3160,
3R80, MDS6,
MDHP, MDM,
MDMS
Available in
S6, M, C



Male NPT

STYLE 03

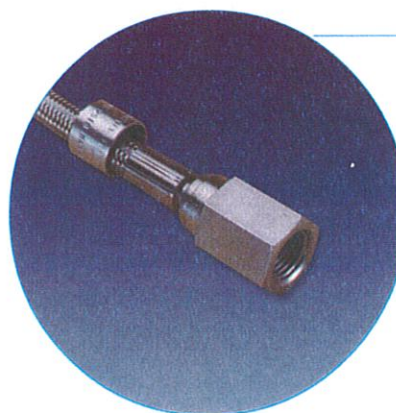
For hose style
TS, TD, TZ, TZD,
TH, TX, 3130,
3160, 3R80,
MDS6, MDHP,
MDM, MDMS
Available in
S6, B, M, C



Female NPT

STYLE 06

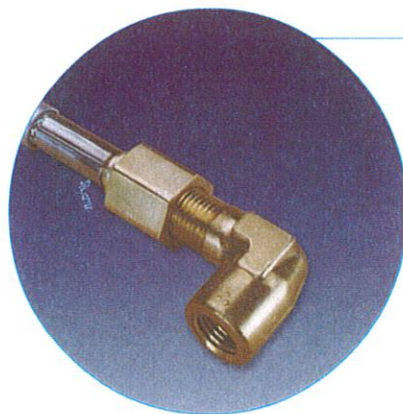
For hose style
TS, TD, TZ, TZD, TH,
TX, 3130, 3160,
3R80, MDS6,
MDHP,
MDM, MDMS
Available in
S6, B, M, C



Female NPT
(Swiv-L-Flex®)

STYLE 06X

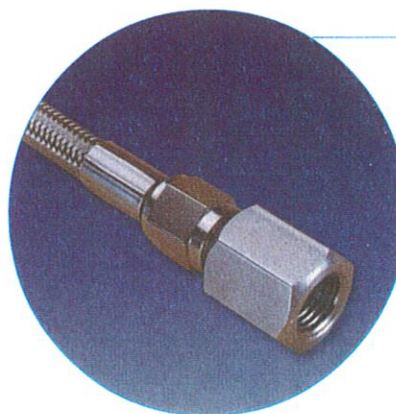
For hose style
TS, TD, TZ, TZD
Available in S6



90° Elbow NPT

STYLE 1

For hose style
TS, TD, TZ, TZD,
TH, TX, 3130,
3160, 3R80,
MDS6, MDHP,
MDM, MDMS
Available in B



Female Flare x
Female NPT
Union

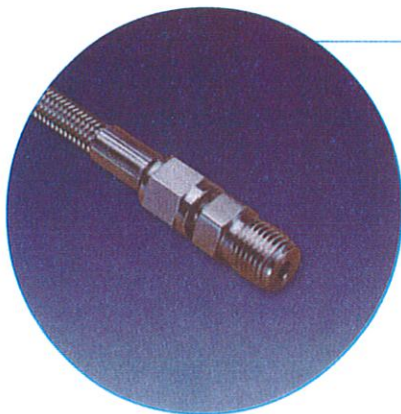
STYLE 07

For hose style
TS, TD, TZ, TZD,
TH, 3130, 3160,
3R80, MDS6,
MDHP, MDM,
MDMS
Available in
S6, C

S4 = 304 Stainless Steel
S6 = 316 Stainless Steel
B = Brass
M = Monel
C = Carbon Steel

Step-up and step-down fittings available

End Fittings for Compressed Gas Pigtails



Female Flare x Male NPT Union

STYLE 08

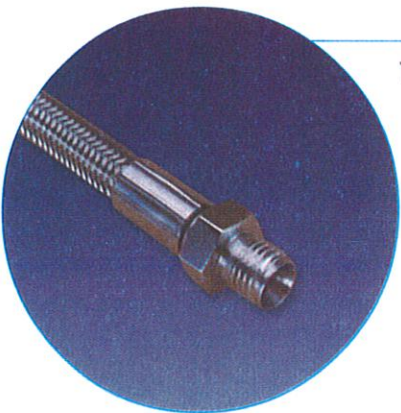
For hose style
TS, TD, TZ, TZD,
TH, 3130, 3160,
3R80, MDS6,
MDHP, MDM,
MDMS
Available in S6, C



Distance Volume Piece (Oxy-Flex®)

STYLE DV

For hose style
TS, TD
Available in B



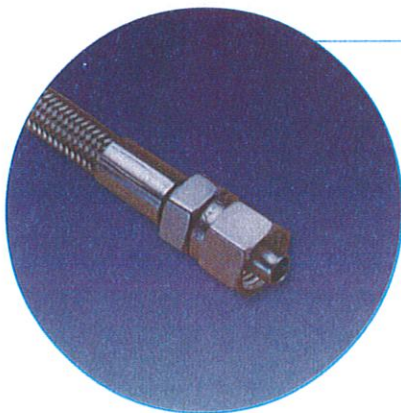
Tube Connector

STYLE 31

STYLE 31 FN

(with ferrules & nut)

For hose style
TS, TD, TZ, TZD,
MDS6, MDHP
Available in S6



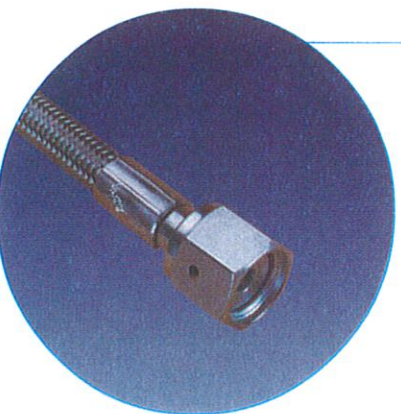
Tube Adapter

STYLE 32

STYLE 32 FN

(with ferrules & nut)

For hose style
TS, TD, TZ, TZD,
MDS6, MDHP
Available in S6



O Ring Female

STYLE 33

For hose style
TS, TD, TZ, TZD,
MDS6, MDHP
Available in S6



Vacuum Female

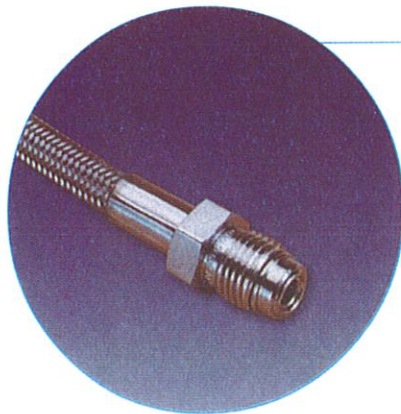
STYLE 34

For hose style
TS, TD, TZ, TZD,
MDS6, MDHP,
MDM, MDMS
Available in
S6, M

S4 = 304 Stainless Steel
S6 = 316 Stainless Steel
B = Brass
M = Monel
C = Carbon Steel

Step-up and step-down fittings available

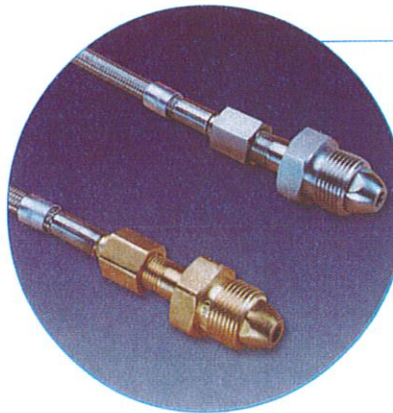
End Fittings for Compressed Gas Pigtails



Vacuum Male

STYLE 35

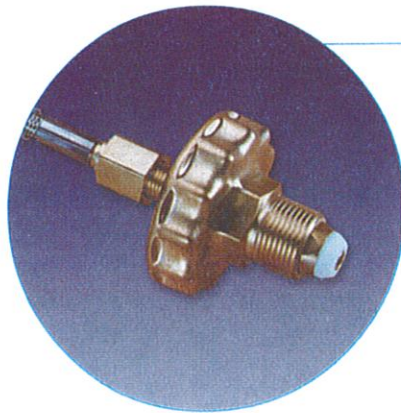
For hose style
TS, TD, TZ, TZD,
MDS6, MDHP,
MDM, MDMS
Available in S6, M



CGA Wrench Tight on Female NPT

STYLE 71

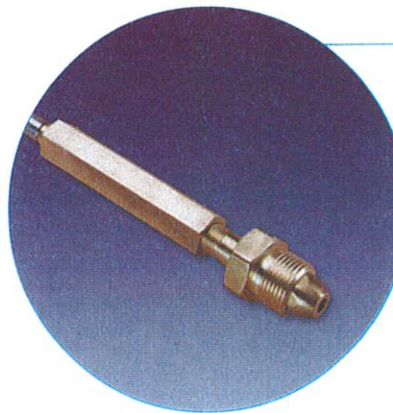
For hose style
TS, TD, TZ, TZD,
TH, TX, 3130,
3160, 3R80,
MDS6, MDHP,
MDM, MDMS
Available in S6, B



CGA Hand Tight on Female NPT

STYLE 74

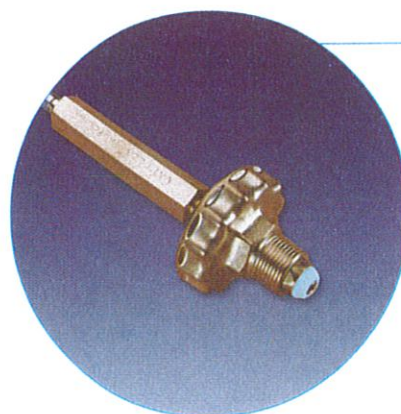
For hose style
TS, TD, TZ, TZD,
TH, TX, 3130,
3160, 3R80,
MDS6, MDHP,
MDM, MDMS
Available in B



CGA Wrench Tight on Oxy-Flex®

STYLE 71DV

For hose style
TS, TD
Available in B



CGA Hand Tight on Oxy-Flex®

STYLE 74DV

For hose style
TS, TD
Available in B

S4 = 304 Stainless Steel
S6 = 316 Stainless Steel
B = Brass
M = Monel
C = Carbon Steel

Step-up and step-down fittings available