



METALLIC CORE PIGTAILS

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. 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.** ¼" and ½"NPT, Teflon Lined, 3600 PSI-SS Ends

- ¼" - Part Number BH09-002-11-XX-S-XX
- ½" - Part Number BH22-004-11-36 -XX-S

The convoluted inner tube is made in stainless steel, material grade AISI 316L, and the braid in stainless steel, material grade AISI 304. The convoluted profile makes the hose flexible even under high pressure. The braid is closely wrought over the tube, making the high pressure hose suitable for very high pressures. The stainless steel alternative is often used when the demands are high regarding purity, because of the fact that the stainless steel high pressure hose is 100% free from permeation.

To obtain maximum quality control of the manufactured applications, we burst pressure test every batch of hose brought into stock. The results are archived for minimum 10 years. Our pressure test certificate of the manufactured batch is sent together with goods. To ensure the purity of the high pressure products sent out, we clean the hoses internally, cap the fittings and pack them individually in plastic bags. We also label all products with a batch number to ensure traceability.



SPECIFICATIONS – PTFE AND ETFE

Hose Style	Size ID (in)	Size OD w/o Armor (in)	Size OD w/ Armor (in)	Inner Core Wall Thick	MAWP (PSIG)	Min Burst Pressure (PSIG)
TF02	0.250	0.375	0.560	0.040	3500	14500
TF04	0.250	0.400	0.625	0.040	4500	18000
TF06	0.220	0.500	0.725	0.040	6000	24600
TF51	0.250	0.375	0.560	0.030	3500	13500

MATERIAL PREFERENCES – PTFE AND ETFE VS

Teflon vs. Metal inner hose: gas and cryogenic hoses are available with either teflon or metal inner hoses. To ensure long life, it is very important that you select the correct material for each application.

Corrugated vs. Smooth bore inner core: one of the most common causes of metal hose failure is "high velocity" gas flow. Because of the ribs on the corrugated type hose, high velocity flow (above recommended levels) can damage or crack a metal type hose. To avoid hose damage, it is important to know the velocity of gas flowing through the hose. We have provided charts that will help you determine velocity flow levels. If you find that a particular application requires a higher than recommended gas flow velocity, in this case we would suggest that you switch to a smooth bore PTFE or ETFE type hose (dependent on the gas). Smooth bore hoses are designed to handle higher velocity gas flow requirements.

Effusion: metal inner core hoses will not effuse or diffuse gas. I.E. They have zero permeation: this is why they are preferred for high purity and hazardous specialty gases, as well as hydrogen and helium when in a constant pressurized application. Pressurized gas will permeate or effuse through the wall of the PTFE hose at rates consistent with the gas molecule size and weight, and with atmospheric gases this effusion is hardly noticeable and minimal. For hydrogen and helium, the ETFE or hose has typically 1/3 the effusion rate of a PTFE hose, so ETFE (or "post sintered") is the recommended inner core material for H2 and He cylinder filling applications.

Flexibility: teflon hoses tend to be a bit more forgiving in terms of flexibility than all metallic hoses. If an application requires constant flexing, a PTFE or ETFE type hose will work best.

Trailer transfill/cylinder filling, cylinder cradles - high velocity: the inside of a teflon gas service hose is smooth bore, whereas a metal inner hose is convoluted (ribbed). In high velocity applications (tube trailer transfill, cylinder fill) a smooth surface will work best. A convoluted hose in a high pressure drop (high velocity up to critical velocity) can experience internal hose vibration and leading to cracking of the corrugated inner core.