

How Ferulok Fittings Work

As mentioned in the introduction, the ferrule in the Ferulok fitting forms pressure tight seals with the tube and the fitting body. These seals are the result of several key characteristics graphically shown in Fig. D2. Below are detailed explanations of each of these key features.

- When properly assembled, the wedging action of the Ferulok design will cause the end of the tube to press firmly against the seat in the body. This action will cause the tube to develop a small indentation circumferentially on the bottom of the tube. This indentation serves as a good post assembly inspection criterion.
- As the ferrule moves forward, it contacts the tapered seat of the body, which causes the ferrule to cam inward into the tube. The leading edge of the hardened ferrule makes a clean 360° cut into the outside diameter of the tube. This cut is often termed a “bite” and thus “bite type fitting”. As the ferrule makes its bite, a small ridge of material is plowed up in front of the ferrule. This intimate contact of the tube ridge with the ferrule’s front face and bite edge gives the fitting its ability to retain high pressure without leaking or blowing off. A second seal point is also created between the now bowed ferrule and the fitting body seat.
- As the ferrule bites into the tube, the mid section will bow and the inside diameter of the back area firmly grips the tube. This action keeps the stresses, caused by flexural and vibration loading, from being concentrated in the bite area. The “compression grip” at the back end is a key factor for long life in rigorous applications.

When properly assembled to the recommended tube, Ferulok fittings will consistently seal until the applied pressure is great enough to cause tube burst.

Although not as common, Ferulok fittings can be purchased without nuts and sleeves for use as a hose adapter (Fig. D3). Sealing occurs between the 24° cone of the fitting body and the hose swivel as shown.

Assembly and Installation

Please refer to [Section T](#) for the assembly and installation instructions for Ferulok® fittings.

Tube Recommendation

Maximum tube wall thickness is based on the pressure holding capability of Ferulok fittings. Tubes above the recommended range can be used. However, the pressure holding capability of the assembly will be limited to the fitting capacity. The proper Ferulok assembly procedures as outlined on [pages T23 - T26](#) of this catalog are critical to the performance of the fitting. Steel Ferulok works best with seamless or welded and drawn fully annealed tube, SAE J356, SAE J524, SAE J525 (max. hardness, RB72) or equivalent specification steel tube. For stainless steel Ferulok fittings, types 304 and 316 of ASTM A269, ASTM A213 (max. hardness, RB90) or equivalent stainless steel tube is recommended.

Ferulok fittings are also suitable for use with soft metal tube and various types of plastic tubes such as nylon, polyethylene, etc. When used with plastic tube, it is strongly recommended that a tube insert, such as T23UI, be used to prevent tube pull out due to tensile loading.

Consult the [Parker Hannifin Tube Fittings Division](#) for other combinations of tube and tube fitting materials not shown.

Dimensions and pressures for reference only, subject to change.

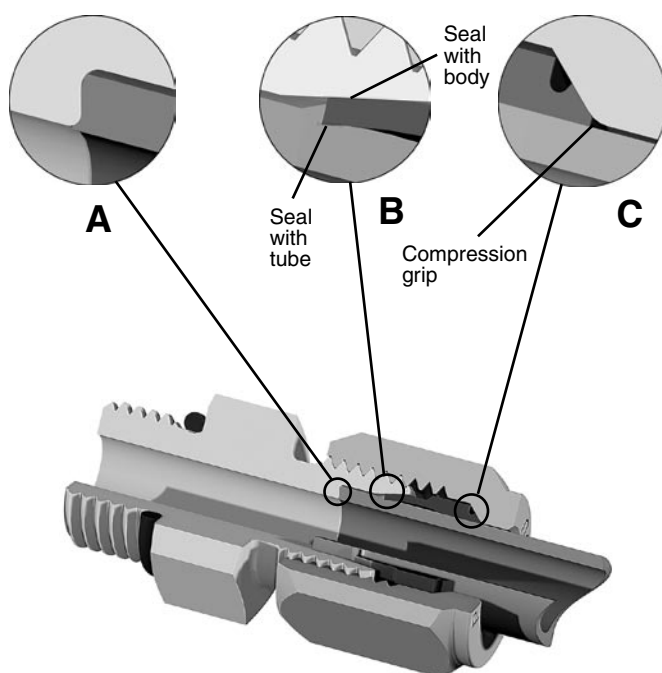


Fig. D2 – Assembled Ferulok Fitting with Tube

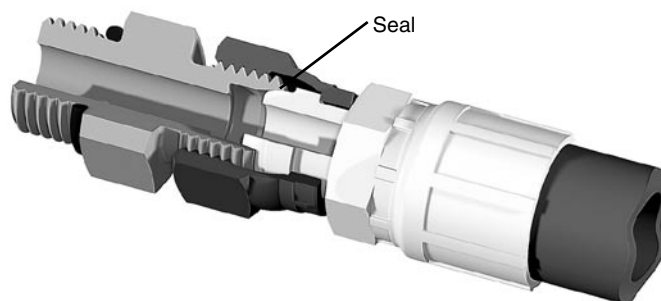


Fig. D3 – Ferulok Fitting with Hose Assembly

Size		Steel Stainless Steel	
O.D. Inches	Dash Number	Minimum Wall Thickness	Maximum Wall Thickness
1/8	-2	0.010	0.035
3/16	-3	0.020	0.049
1/4	-4	0.028	0.065
5/16	-5	0.028	0.065
3/8	-6	0.035	0.095
1/2	-8	0.049	0.120
5/8	-10	0.058	0.120
3/4	-12	0.065	0.120
7/8	-14	0.072	0.120
1	-16	0.083	0.148
1 1/4	-20	0.095	0.188
1 1/2	-24	0.095	0.220
2	-32	0.095	0.220

Table D2 — Recommended Tube Wall Thickness

Visual
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