

Introduction

The basic flareless bite type fitting was first developed in Europe in the early 1930s. The Ferulok fitting was later developed by Parker Hannifin and introduced to the U.S. market in the mid-1940s. The Ferulok fitting design utilizes a combination of proven European features, coupled with many innovative product improvements instituted by Parker Hannifin. Today, the Ferulok fitting design and performance capabilities far exceed the strict requirements of SAE J514 and Military Standards (MILF18866). The Ferulok fitting is a flareless fitting that consists of a body, a one-piece precision machined ferrule, and a nut. On assembly, the ferrule "bites" into the outer surface of the tube with sufficient strength to hold the tube against pressure, without significant distortion of the inside tube diameter.

The ferrule also forms a pressure seal against the fitting body. Ferulok fittings have a visible bite, allowing the fitting assembler to visually inspect the bite quality, thus significantly minimizing the risk of improper assembly and related service problems.

Ferulok fittings are especially suitable for use with tube wall thickness ranging from medium to extra heavy. (Refer to Table D2, "Recommended Tube Wall Thickness.") Ferulok's robust construction and proven sealing characteristics have gained it popularity in diverse markets and applications. Ferulok fittings are routinely used in markets such as: machine tools, air compressors, chemical, military, oil refineries, paper making, thermoplastics processing, and many general industrial hydraulic applications.

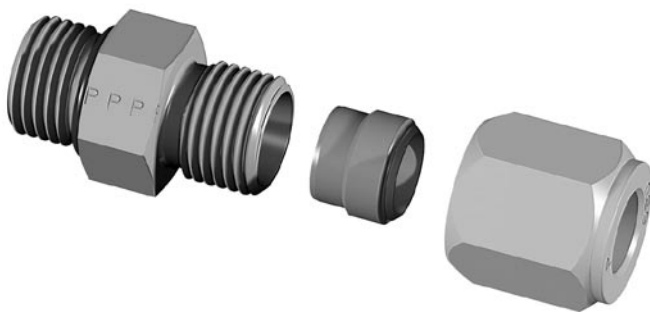


Fig. D1 – Ferulok Components: Body, Ferrule and Nut

Design and Construction

The three components of the Ferulok fitting are designed and manufactured to produce a high pressure, leak-free joint upon proper assembly.

The Ferulok Body – Ferulok fitting bodies are available in over thirty configurations. The shaped products (i.e. elbows, tees, crosses) are hot forged, then machined to the stringent Ferulok fitting specifications. The forging process used by Parker further improves the strength and metallurgical properties of the fitting material. Straight products are made from cold drawn bar stock. The cold drawing operation ensures consistently tight dimensional tolerances, smooth surfaces and significantly improved strength.

The Ferulok Ferrules – Ferulok fitting ferrules are precision machined with all dimensions and surfaces closely controlled, particularly the critical bite edge, which is monitored on an on-going basis. Ferrules are then heat-treated in a manner that provides the hardness, strength, and toughness necessary to satisfy the demanding service conditions that exist in industry today.

The Ferulok Nuts – Ferulok fitting nuts are either cold formed to size and shape, or machined from cold drawn material. The cold forming and cold drawing operations provide a more tightly packed grain structure, thus improving the material's strength. In addition, cold forming significantly improves the fatigue or endurance strength of the nuts.

Ferulok Fittings	Steel		Stainless Steel	
	ASTM	Type	ASTM	Type
Cold Formed Bodies	A576	C1010/C1008	—	—
Forged Bodies	A576	1214/1215	A182	316
Bar Stock Bodies	A108	12L14	A479	316
Cold Formed Tube Nuts	A576	C1010	A479	316L
Bar Stock Tube Nuts	A108	12L14	A479	316
Tube Ferrules	A108	12L14	A564	630

Table D1 – Standard Material Specifications for Ferulok Fittings

Note: On request, Ferulok can be furnished in materials other than those shown above.

Finish: Zinc with yellow chromate (being changed to Zinc Chromium 6 Free) is used on all standard steel products.

Dimensions and pressures for reference only, subject to change.