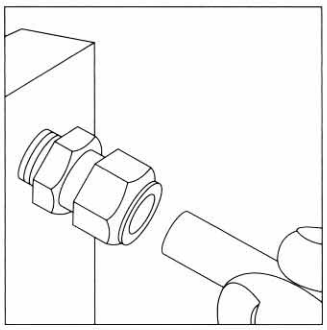
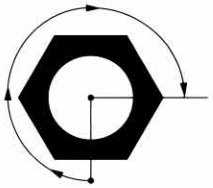
Engineering Report

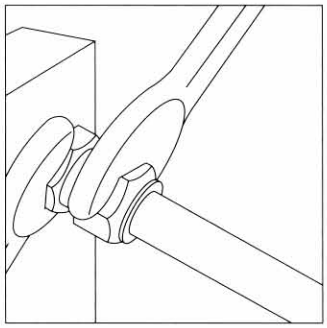
Assembly and Remake Instructions



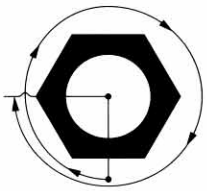
SIZE 1 thru 3
(1/16" - 3/16")



Only 3/4 Turn from Finger Tight is necessary to seal and will result in additional remakes of the fitting



SIZE 4 thru 16
(1/4" - 1")



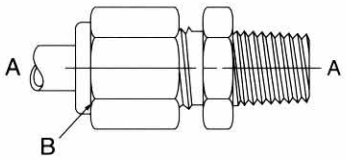
1-1/4 Turns from Finger Tight

1. Parker instrument tube fittings are sold completely assembled and ready for immediate use. Simply insert the tube as illustrated until it bottoms in the fitting body. (If the fitting is disassembled, note that the small tapered end of the ferrule(s) go into the fitting body.)

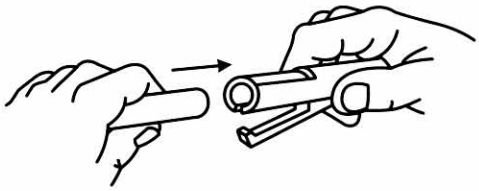
2. Tighten nut finger tight. Then tighten nut with wrench an additional 1-1/4 turns indicated below. Hold fitting body with a second wrench to prevent body from turning. It is helpful to mark the nut to facilitate counting the number of turns.

For maximum number of remakes, mark the fitting and nut before disassembly. Before retightening, make sure the assembly has been inserted into the fitting until the ferrule(s) seats in the fitting. Retighten the nut by hand. Rotate the nut with a wrench to the original position as indicated by the previous marks lining up. (A noticeable increase in mechanical resistance will be felt indicating the ferrule(s) are being re-sprung into sealing position.)

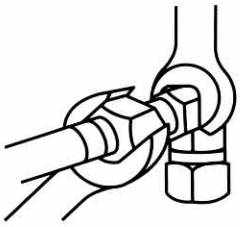
Then snug the nut 1/12 turn (1/2 hex flat) as shown from A to B, past the original position.



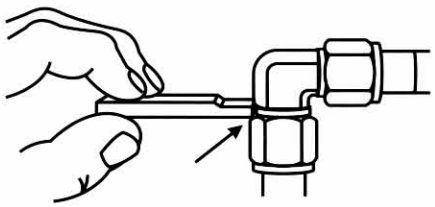
Gaugeability Instructions



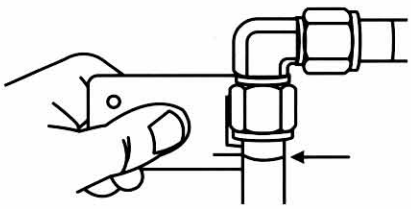
1. Put tube marker completely onto tube.



2. From "finger tight" position, wrench 1-1/4 turns for 1/4" to 1" size fittings (1/16" .1/8" and 3/16" size tube fittings only wrench 3/4 turn from finger tight position). Hold fitting body hex with second wrench to prevent body from turning as you tighten. It is a good idea to mark the nut (scribe or ink) to help you count the turns.



3. Now select the proper size inspection gauge and try to place it, as shown, between the nut and the body hex. If gauge DOES NOT FIT AT ANY POINT between them, you have correctly tightened the nut. If you can slip the gauge into the space, the fitting is not properly made up, and you must repeat the assembly procedure.



4. Then place the proper size inspection gauge against the fitting, as shown, pressing it against the hex face. Burnish mark on tube should line up with gauge band. If it does, you know the tube is correctly inserted. If the burnish mark does not line up with the band, either the tubing has been incorrectly marked, or incorrectly inserted and you must repeat the marking and assembly procedure.

For additional information please contact your local authorized Parker Instrumentation distributor or call Parker Instrumentation Connectors Division and ask for Bulletin 4230-B15.2.

Instrumentation Connectors Division
Parker Hannifin Corporation
Huntsville, Alabama

Parker Instrumentation

Engineering Report

Suparcase

The Parker Suparcase ferrule is a breakthrough in technology transfer from extensive research into super-corrosion resistant austenitic stainless steel by Parker's Research and Development Group. The Suparcase ferrule has been developed to greatly enhance the corrosion resistance and hardness of ASTM type 316 stainless steel. Due to the Suparcase ferrule's unique set of physical characteristics, it is ideal for instrumentation fitting ferrules which must seal and grip on commercial stainless steel tubing.

Suparcase is a proprietary chemical process for the treatment of ASTM 316 stainless steel ferrules that imparts a unique set of physical characteristics that greatly enhances the corrosion resistance and hardness of ASTM 316 stainless steel. The Parker Suparcase ferrules offer several important advantages over untreated ASTM 316 stainless steel.

The first advantage lies in performance in corrosive environments. When compared to untreated ASTM 316 stainless steel, Suparcase offers at least equivalent or better performance in the following corrosive environments:

50% sulfuric acid solution at 25°C
50% nitric acid solution at 25°C
30% acetic acid solution at 25°C
5% sodium hypochlorite at 25°C
Type II simulated black liquor at 25°C
(TAPPI TIS 0402-09)

In addition, Parker Suparcase offers the following features, advantages and benefits to the user:

- It is superior or equal to ASTM type 316 stainless steel in a broad range of corrosive applications.
- Suparcase is not affected by the standard working temperatures of ASTM type 316 stainless steel.
- It offers superior resistance to pitting compared to ASTM 316 and is superior to ASTM 316 in stress corrosion tests.
- It has a high surface hardness that prevents galling and increases remakes.
- Suparcase is proven in field applications throughout the world.

For complete information on Suparcase, contact your local authorized Parker Instrumentation distributor or call Parker Instrumentation Division and ask for Bulletin 4230-B15.1.

Heat Code Traceability

Parker Hannifin's Instrumentation Connectors Division offers Heat Code Traceability (HCT) on CPI, A-lok, Instrumentation Pipe, Automatic Buttweld and MiniButtweld Fittings. It is also available on VacuSeal Couplings and UltraSeal Couplings.

HCT refers to the fact that a specific part can be traced back to the original mill heat of metal from which it was made. Beginning with the original melt, a package of documents is created which completely describes the metal in physical and chemical terms. The end result is that a number, which is permanently stamped to the part, refers back to the document package.

The HCT number is stamped on the material (bar stock or forging) prior to manufacturing. The concept is useful because it provides a method for complete material accountability for the manufacturer and end customer.

HCT offers these advantages:

- Raw materials for manufacture must meet code requirements. This can be verified through documentation so that the customer is certain that what is ordered is received.
- HCT provides a record of chemical analysis with the raw material. Thus, in areas requiring welding, the correct welding technique is applied.
- HCT relieves the user of Parker instrumentation tube fittings of any doubts. It acts as an assurance for today and for tomorrow.

The material used in Parker Hannifin instrumentation fitting components is 316 or 316L (welded products) stainless steel as specified and referenced in Section III of the ASME Boiler and Pressure Vessel code.

The American Society of Mechanical Engineers (ASME) Boiler and Vessel Code, Section III, latest issue, entitled Rules for Construction of Nuclear Power Plant Components, is the principal document covering this type of fitting in the nuclear field. ANSI Standard B.31.1, Power Piping, and ANSI Standard B.31.7, Nuclear Power Piping, are also important documents in the field.

In addition to the documentation of chemical and physical properties, great care is taken throughout the manufacture of Parker's tube fittings to ensure that potential stress corrosion will not be a problem in normal usage of the parts. Manufacturing processes avoid exposure of the parts to mercury or halogens, and control of thermal treatment avoids the condition known as continuous grain boundary carbide precipitation.

For additional information please contact your local authorized Parker Instrumentation distributor or call Parker Instrumentation Connectors Division and ask for Bulletin 4230-B15.

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