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NASA TECH BRIEF

NASA Pasadena Office

Low-Cost Tool Set for Removing Brazed Fittings

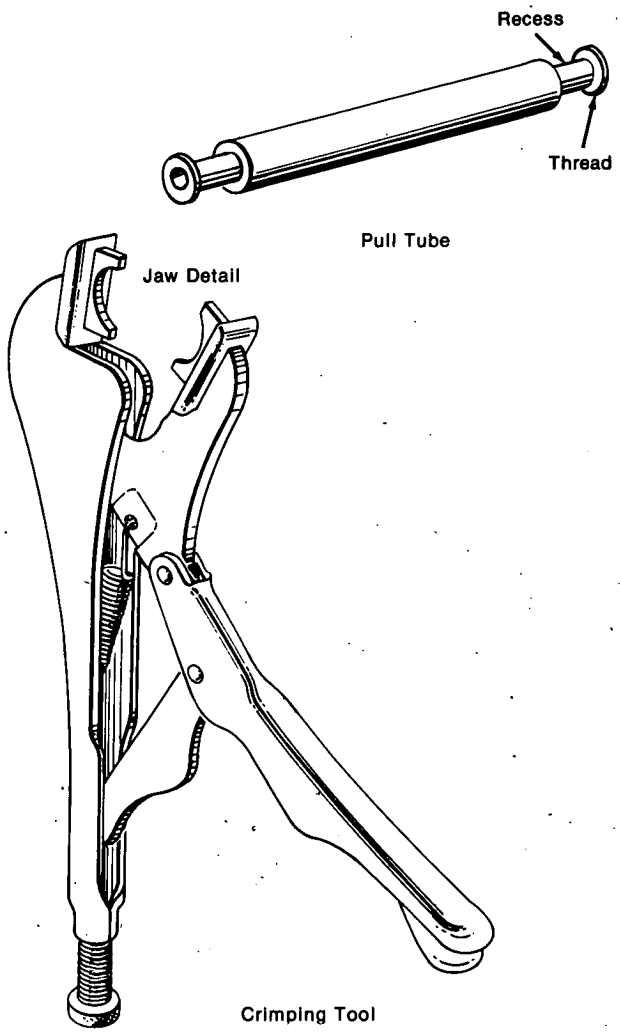

Figure 1. Tool Set for Removing Brazed Fittings

The problem:

In some critical applications fluid delivery tubes must be firmly connected to prevent leakages. A common method is to attach all fittings to the tubes by brazing. Threaded fittings cannot be used because they are more likely to leak. This creates a maintenance problem. Special tools designed to disconnect the brazed fittings are expensive and become useless after several applications.

The solution:

A low-cost tool set has been developed to disconnect brazed fittings.

How it's done:

The set includes a crimping tool and a pull tube as shown in Figure 1. The crimping tool is a modified vise-grip pliers which has special jaws designed to crimp the fittings. The pull tube has a single thread on each end. The tube can be used twice, once on each end, and then discarded.

The fittings are removed by following the procedure shown in Figure 2. The first step is to cut the fitting between the two tubes [Figure 2(a)] using a conventional tube cutter. Next the pull tube is inserted into the cut fitting [Figure 2(b)]. The thread of the pull tube must be worked in past the burr caused by the tube cutter. Then the fitting is crimped into the recess of the pull tube [Figure 2(c)]. An induction heater then is applied to the brazed portion of the fitting, and the fitting is removed by pulling the pull tube with regular pliers [Figure 2(d)].

(continued overleaf)

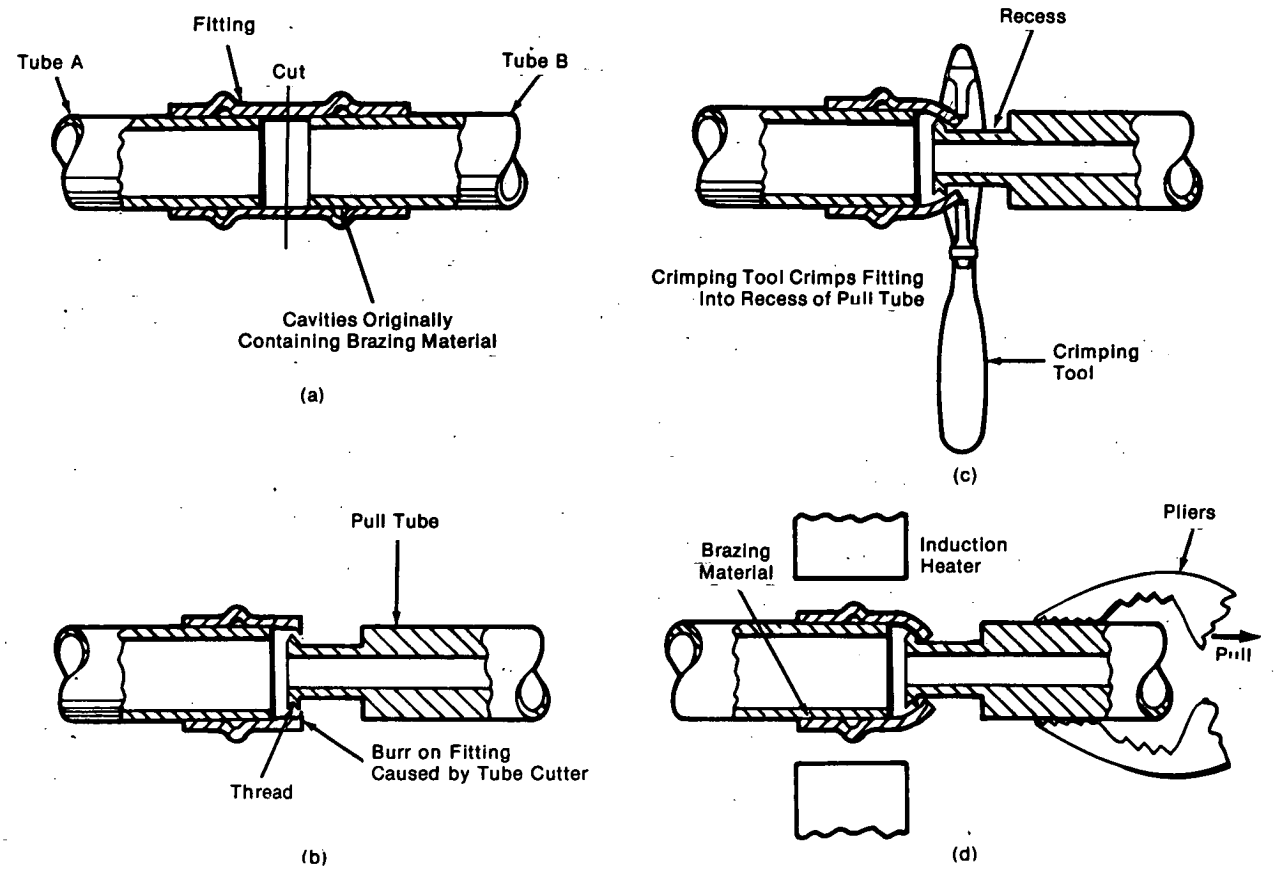

Figure 2. Fitting Removal Procedure: (a) Cutting, (b) Pull Tube Insertion, (c) Crimping, and (d) Fitting Removal

Note:

Requests for further information may be directed to:

Technology Utilization Officer
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Patent status:

NASA has decided not to apply for a patent.

Source: Anthony Giandomenico of
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