



BRAZING: 7 WAYS TO LOWER YOUR SCRAP

LOOK FOR EXPERIENCED, KNOWLEDGEABLE BRAZERS WITH THE RIGHT SYSTEMS, PROCESSES, AND PEOPLE TO HELP YOU LOWER SCRAP RATES SIGNIFICANTLY.



Here are the top seven ways you can lower scrap and deliver higher quality parts to your customers.

1 Do your homework before the job is contracted.

To help lower the scrap on the four variables you can control, an expert brazer should work with you to identify improvements that will result in less scrap, better appearance, and lower cost before brazing—or even before the parts are made.

A qualified brazer will be QS-9000 certified and follow the APQP (Advanced Product Quality Planning) process. They should address part design, construction, cleanliness, key characteristics, and specs prior to quoting the brazing work.

Ideally, the Quality Control Manager should have advanced degrees and 5-10 years experience in materials science, metallurgy, and/or physics and provide consultation during this process to assist in the proper alloy treatment. Most brazers have promoted a line worker to this important position, rather than specifically hiring for that function. Ask about—and be confident in—the background of this person; he/she plays a vital role in the success of your job.

Review the brazer's Quality Manual prior to engaging the job. This document is often overlooked, but you should ask for a copy and know your brazer's policies on everything from Control of Customer-Supplied Product to Corrective and Preventive Action. Keep a copy in your file.

2 Ask about inspection of incoming parts.

Every shipment of parts should be visually inspected upon arrival by the brazer for flaws to reduce defective incoming parts. About 40% of the time, washing each part to take off manufacturing residue can decrease the possibility of bad brazes because of flawed parts.

3 Is the brazing team used solely for brazing?

The brazer should have a team dedicated to just brazing in order to produce the highest quality braze on your parts and be able to spot a bad braze. Companies who do brazing along with metal treating and other processes have to cross-train employees, which reduces the employees' competence and effectiveness.

4 What kind of atmospheric system is used?

A "pure atmospheric" system eliminates contaminants within the atmosphere. Brazing is a science where bad brazes (leading to scrapped parts) can be substantially minimized if the brazer has invested in the right atmosphere system. The ideal system is a cryogenic/hydrogen/nitrogen process, which results in zero contaminants within the atmosphere

In brazing parts, there are eight variables that can mean the difference between a high scrap rate and one in the 1-2% range.

The four the brazer can control are:

1. placement of the alloy
2. the atmosphere
3. process time
4. furnace temperature

The four variables you can control are:

1. cleanliness of parts delivered to the brazer
2. gap size
3. part design
4. part material

because it makes the brazing furnace environment most consistent. “Pure atmosphere” use equates to less variation in the process and no impurities, resulting in little-to-no voids in the braze and brighter parts. Only about 2% of brazers, including Franking Brazing, have a “pure atmospheric” system. Why so few? It’s an expensive process to install and maintain.

The other 98% use a “generated atmospheric” system. The problem with a generated atmospheric system is that it already has a certain amount of carbon and other gasses because of the nature of the generated atmosphere. The tolerance for impurity is much lower in the generated atmosphere, resulting in defects ranging from discoloration of parts to voids in the joints, causing a scrap rate as high as 10%.

5 Request a work book.

Every job should have a detailed work instructions book that includes an operator instruction sheet for each part. If your brazer doesn’t volunteer to show you this level of detail, they probably don’t take the time and trouble to document the process and you should consider switching to a brazer that does.

6 Find out specifically how they communicate internally.

Most brazers operate three shifts. To ensure your brazing job is uniform and bad parts are kept at a minimum, find out the process for communicating the requirements for each job in production from shift to shift. In addition, ask specifically how they share the progress and enhancements the previous shifts



made so that you know your job will be consistent regardless of who is inspecting the parts.

7 Tour the facility or ask for recent photos.

100% visual inspection of the assembled parts as they go into the furnace and as

they come out of the furnace should be done to eliminate bad brazes on the spot. Ask your brazer about the inspection areas—they should be brightly lit (think of lighting like a laboratory setting). If you are unable to tour the facility, ask to see photos and check for cleanliness and lighting.

Franklin Brazing’s process scrap rate is 1% with the four variables we control.

We guarantee zero scrap in our Full Assembly Program: we purchase the parts to be brazed from suppliers and maintain an agreed-upon inventory at our facility. We will do the assembly, the brazing, and deliver straight to you or your customer (or the next part of the supply chain).

The benefits to our customers include zero scrap because we’re shouldering the cost responsibility for the parts and elimination of YOUR time spent tracking

down and checking on suppliers to get the right parts at the right locations so the process can go smoothly. About 80% of all brazing jobs involve standard components that could easily fit into our full assembly program. If you think your part may qualify, we’re happy to provide a quote. Complete the information below (for any quote, not just Full Assembly Program) and fax to 800-451-7662, or call us at 800-450-7782.

Please contact me for a quote.

Complete the form below and fax to 800.451.7662

Name: _____

Company: _____

Address: _____

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E-mail address: _____

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