

THE MAIN BRAZING DEFECTS

RECOGNISE THEM TO IMPROVE RESULTS

QUALITY BRAZING COMES FROM CONTROLLING EVERY DETAIL OF THE PROCESS



1. POOR WETTING

The filler metal does not wet the surface.
Cause: dirty surfaces, exsudation, insufficient temperature, unsuitable flux.



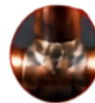
2. INCOMPLETE JOINT FILLING

Incomplete filling of the joints.
Cause: incorrect clearance, unsufficient filler metal, non-uniform temperature.



3. EXCESSIVE OXIDATION

Excessive oxidation of the surface.
Cause: overheating, prolonged heating, insufficient protection.



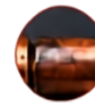
4. EXCESSIVE FILLER METAL OUTSIDE THE JOINT

Excess filler metal outside the joint.
Causes: too much filler metal, poor capillary action.



5. POROSITY

Porosity in the joint.
Causes: contamination, moisture, unsuitable, excessive or unsufficient temperature.



6. JOINT MISALIGNMENT

Misalignment or movement of the components.
Causes: inadequate fixing, movement of solidification.



Prevention, control and standardization are key to achieving reliable brazed joints, reducing scrap and increasing productivity

BRAZING TROUBLESHOOTING GUIDE

Observed Problem	Possible Causes	What to Check/How to Act
The filler metal does not wet the surface	- Contaminated surfaces - Oxidation - Insufficient temperature - Unsuitable flux	Check surface cleaning and preparation, heating temperature and flux selection.
The filler metal melts but does not penetrate the joint	- Incorrect clearance - Non-uniform heating - Contaminated surfaces	Check joint clearance, heat distribution and surface clearing.
Heavy oxidation	- Temperature too high - Prolonged heating - Insufficient protection (flux or atmosphere)	Reduce temperature and time at temperature. Check the flux used.
Incomplete joint	- Insufficient filler metal - Insufficient capillarity - Non-uniform temperature	Check the amount of filler metal, joint clearance and uniform heating of the components.
Excessive filler metal build up	- Too much filler metal - Poor capillary action (excessive clearance)	Reduce filler metal amount and check joint geometry and clearance.
Weak or low strength joint	- Unsuitable filler metal - Incorrect joint design - Overheating - Movement during solidification	Check filler metal selection, thermal cycle, fixturing and joint design.
Non-repeatable results	Variable process parameters (temperature, time, filler metal or flux amount, positioning, etc.)	Standardize the process and monitor key parameters to ensure repeatability and quality.



Prevention, control and standardization are key to achieving reliable brazed joints, reducing scrap and increasing productivity