

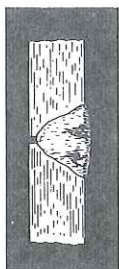
Poor Penetration

WHY

1. Travel speed too fast
2. Welding current too low
3. Poor joint design and/or preparation
4. Electrode diameter too large
5. Wrong type of electrode
6. Excessively long arc length

WHAT TO DO

1. Decrease travel speed
2. Increase welding current
3. Increase root opening or decrease root face



4. Use smaller electrode
5. Use electrode w/ deeper penetration characteristics
6. Reduce arc length

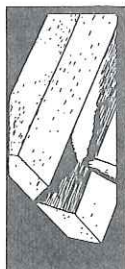
Magnetic Arc Blow

WHY

1. Unbalanced magnetic field during welding
2. Excessive magnetism in parts or fixture

WHAT TO DO

1. Use alternating current
2. Reduce welding current and arc length



3. Change the location of the work connection on the workpiece

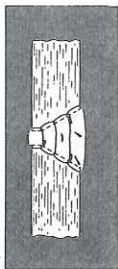
Inclusion

WHY

1. Incomplete slag removal between passes
2. Erratic travel speed
3. Too wide a weaving motion
4. Too large an electrode
5. Letting slag run ahead of arc
6. Tungsten spitting or sticking

WHAT TO DO

1. Completely remove slag between passes
2. Use a uniform travel speed
3. Reduce width of weaving technique



4. Use a smaller electrode size for better access to joint
5. Increase travel speed or change electrode angle or reduce arc length
6. Properly prepare tungsten and use proper current

CAUSES AND CURES OF COMMON WELDING TROUBLES

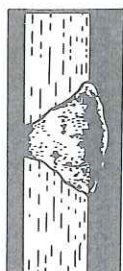
Porous Welds

WHY

1. Excessively long or short arc length
2. Welding current too high
3. Insufficient or damp shielding gas
4. Too fast travel speed
5. Base metal surface covered with oil, grease, moisture, rust, mill scale, etc.
6. Wet, unclean or damaged electrode

WHAT TO DO

1. Maintain proper arc length



2. Use proper welding current
3. Increase Gas Flowrate & check gas purity
4. Reduce travel speed
5. Properly clean base metal prior to welding
6. Properly maintain and store electrode

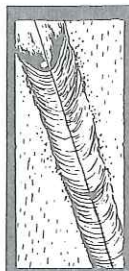
Cracked Welds

WHY

1. Insufficient weld size
2. Excessive joint restraint
3. Poor joint design and/or preparation
4. Filler metal does not match base metal
5. Rapid cooling rate
6. Base metal surface covered with oil, grease, moisture, rust, dirt or mill scale

WHAT TO DO

1. Adjust weld size to part thickness



2. Reduce joint restraint through proper design
3. Select the proper joint design
4. Use more ductile filler
5. Reduce cooling rate through preheat
6. Properly clean base metal prior to welding

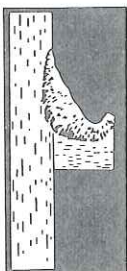
Undercutting

WHY

1. Faulty electrode manipulation
2. Welding current too high
3. Too long an arc length
4. Too fast travel speed
5. Arc blow

WHAT TO DO

1. Pause at each side of the weld bead when using a weaving technique
2. Use proper electrode angles



3. Use proper welding current for electrode size and welding position
4. Reduce arc length
5. Reduce travel speed
6. Reduce effects of arc blow