



Robot Program Validation, Teach Mode, and First-Article Safety Guide

Category: Programming Safety

Audience: Programmers, operators, supervisors

Badge: Program Safety

Guidance for safe program prove-out, dry-run, first-article welding, manual jogging, teach mode, speed limitation, and change control.

Important limitation: This document is a general planning aid only. It does not replace OSHA requirements, employer safety programs, equipment manuals, SDS review, qualified risk assessment, training, lockout/tagout procedures, PPE selection, or competent safety review.

Before Running a New Program

- Confirm the correct job, part, fixture, tool, wire, gas, power supply setup, and work offset.
- Review the expected path for clearance from clamps, positioners, rails, power supply, torch cleaner, and workpiece features.
- Use reduced speed or dry-run methods required by site procedure during prove-out.

Teach and Jogging Controls

- Only trained personnel should use teach pendant, manual jog, or program edit functions.
- Maintain awareness of robot arm, torch, cable dress, rails, positioners, and pinch zones.
- Do not stand between the robot and fixed objects.

Change Control

- Document program edits, restart position, recovery steps, and first-piece approval.
- Do not run production until the program has been validated and approved by the responsible person.

Field Checklist

Item	Verified	Notes
Correct program selected		
Fixture verified		
Dry-run complete		
Clearance checked		
Speed limited for prove-out		
First article approved		

Item	Verified	Notes
Program change documented		

Reference Basis

- OSHA 29 CFR 1910 Subpart Q - Welding, Cutting and Brazing.
- OSHA 29 CFR 1910.147 - Control of Hazardous Energy (Lockout/Tagout).
- NIOSH welding fume and manganese exposure resources.
- RAS equipment planning information for robotic arc welding systems using 480V / 60Hz / 3-phase power, RAS-500PR power supply, water-cooled torch packages, torch cleaning, and wire cutting stations.

Revision: RAS Safety Knowledge Base expanded safety resource set. Verify against current site-specific rules before use.