Water-Cooled Torch and Coolant System Safety Guide

Category: Cooling System
Audience: Operators, maintenance, service personnel
Badge: Cooling

Guide for safe operation and maintenance of water-cooled torch packages, coolant lines, chiller/cooler units, leaks, flow alarms, and thermal conditions.

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.

Operating Concerns

- Do not weld with a known coolant leak, blocked flow, low coolant, or disabled flow alarm.
- Verify coolant level, flow, hose condition, and routing before production.
- Keep coolant hoses away from robot pinch points, rail travel, hot spatter, and sharp workpiece edges.

Maintenance Concerns

- Follow lockout/tagout and stored energy release requirements before servicing the cooler or torch circuit.
- Allow hot components to cool before handling.
- Use only approved coolant and replacement parts per site and equipment requirements.

Leak Response

- Stop welding, isolate the hazard area, protect against electrical slip/trip/shock hazards, and notify maintenance.
- Clean spills using site procedures and document repeated leak issues.

Field Checklist

Item	Verified	Notes
Coolant level checked		
Flow verified		
No leaks observed		
Hoses routed safely		
Cooler alarms enabled		
Spills cleared		

Item	Verified	Notes
Maintenance lockout used when required		

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.