

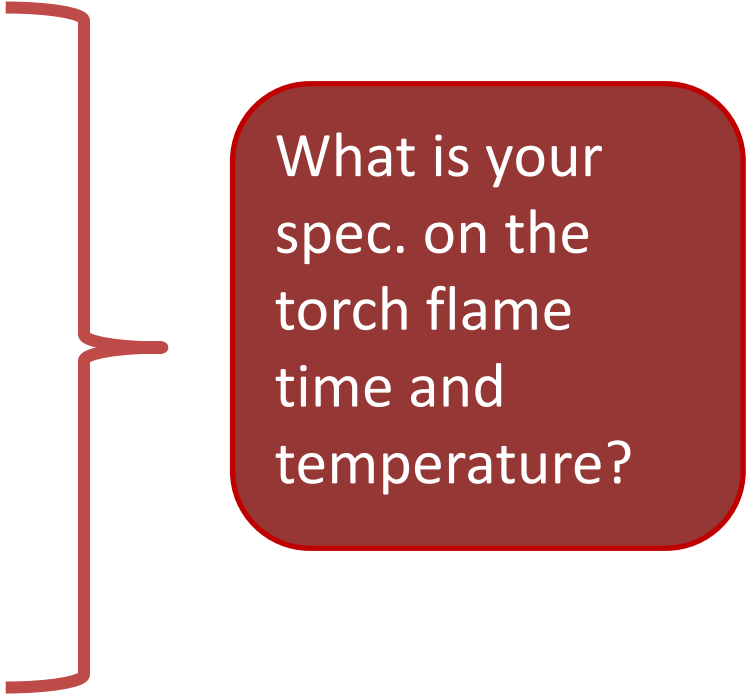
Perfect Flame



HARRIS PRODUCTS®

OEM Brazing

- » Wide variety of raw material tubing specifications
 - Alloy
 - Wall thickness
 - Diameter
- » Brazing filler metals vary in fluidity, shape and size



What is your spec. on the torch flame time and temperature?

Perfect Flame – Flame Temperature

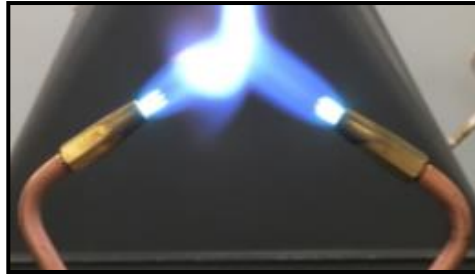
Aluminum Coil

Al → Al



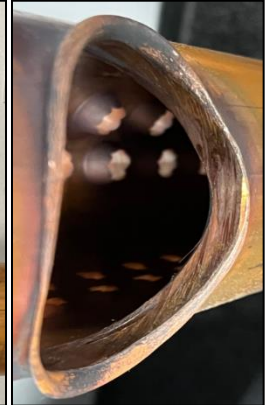
Compressor Stub

Cu → Cu Flashed Steel



Commercial Manifold Elbow

Cu → Cu Nickel



Perfect Flame – Flame Temperature



Flow Rate (SCFH):
Oxygen:
Fuel Gas:
Flame Chemistry
Flame Type:
BTU:
Flame Temp(F):

Torch 1 Active
MAIN LINE 1
0.00
0.00

0
0

Torch 2 Active
MAIN LINE 2
0.00
0.00

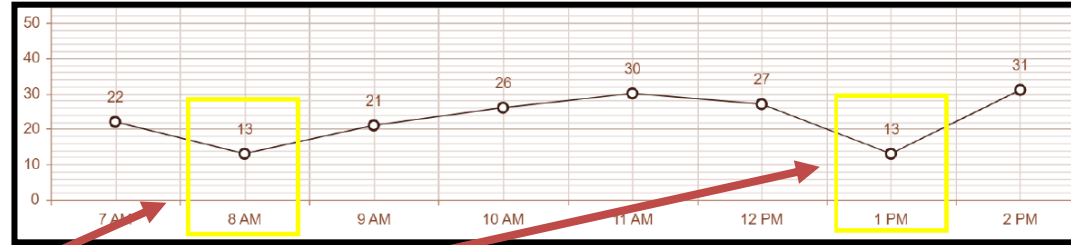
0
0

Torch 3 Active
MAIN LINE 3
0.00
0.00

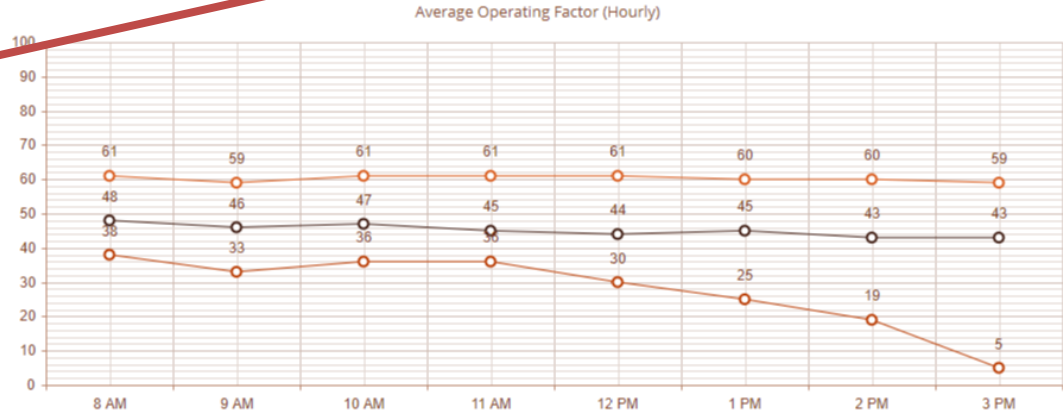
0
0

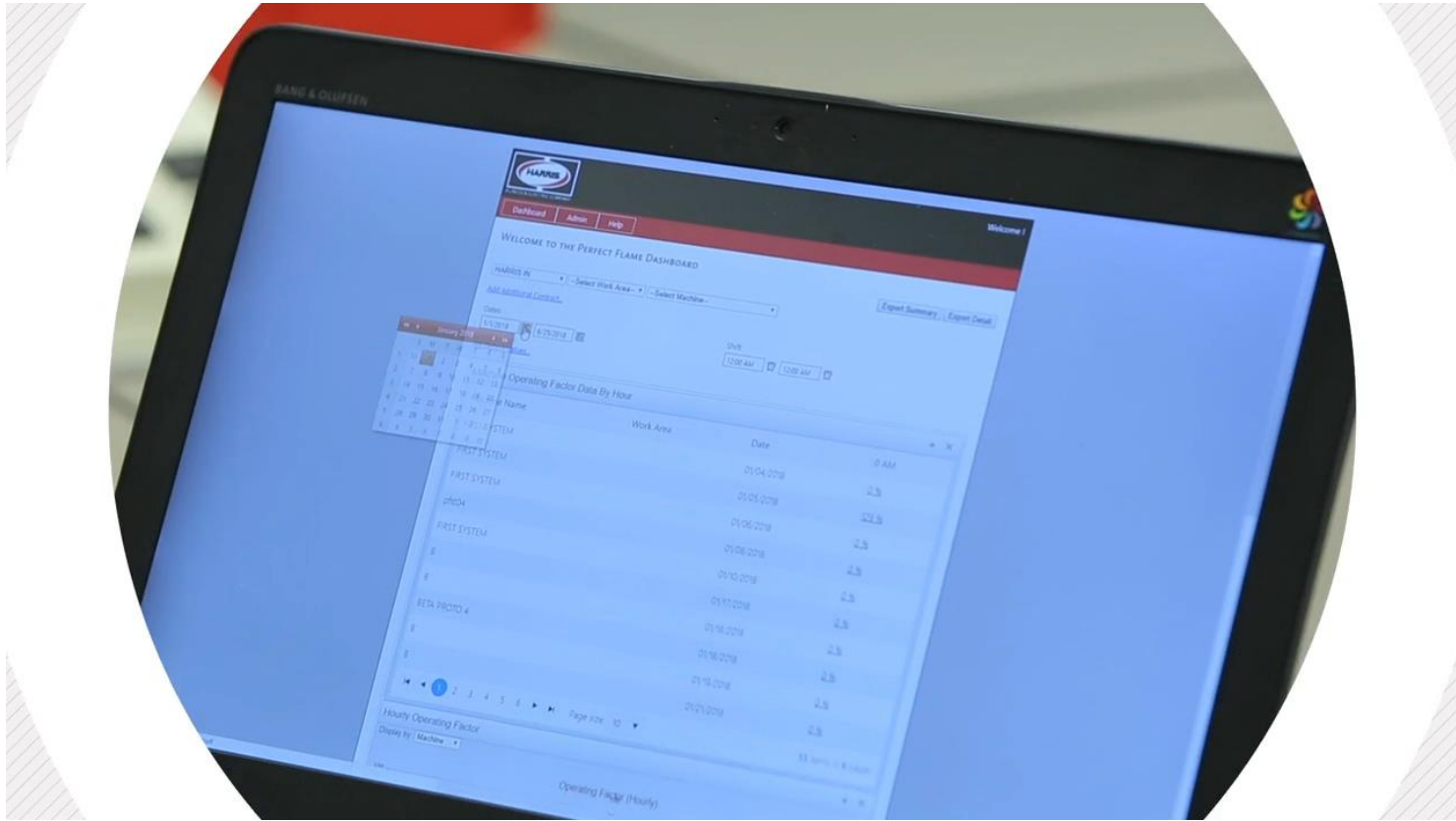
Torch On/Off Time

- » **Brazing time is just as critical as flame temperature!**



What happened at 8am and 1pm?





DMAIC Process



Design: Define the different flames you need for your production with our software



Measure: Using the software program, you can now measure the exact energy (BTU or KCAL) of your flame.



Analyze: Use data to compare to current process to find Perfect Flame for specific application



Improve: Make detailed, repeatable adjustments to the flames to achieve maximum operational efficiency.



Control: Multi-tier security to lock settings in to produce consistent and repeatable flames



HARRIS PRODUCTS*

Perfect Flame – Model ST

- » Toggle between 5 different settings with foot pedal
- » Designed for applications with multiple different braze joints
- » No need to manually adjust flames
 - Password protected flame settings
 - Valveless torch



PERFECT FLAME ™



HARRIS PRODUCTS*

Perfect Flame – Model MT

- » High production operation brazing the same or different joints
- » Three operators can work from one Multi-Torch unit
 - ✓ Same flame on all three torches
 - ✓ Different flame on all three torches



LINCOLN
ELECTRIC

HARRIS PRODUCTS[®]

PERFECT FLAME ™

LINCOLN
ELECTRIC

HARRIS PRODUCTS[®]

Documented Cost Reduction (DCR)

The Harris Products Group is committed going above and beyond the expectations of a normal supplier by helping our customers improve their brazing operations.

- » We strive to help you lower costs, decrease leaks, increase production and improve quality.
- » This Facility Brazing Audit consists of two steps.

1) Preliminary Audit

2) Full Audit

- » Clearance
- » Filler Metal
- » Cleaning
- » Heat Input
- » Flux
- » Post Braze Processes



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Or contact your local Lincoln Electric Representative



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