

SubArc Playbook

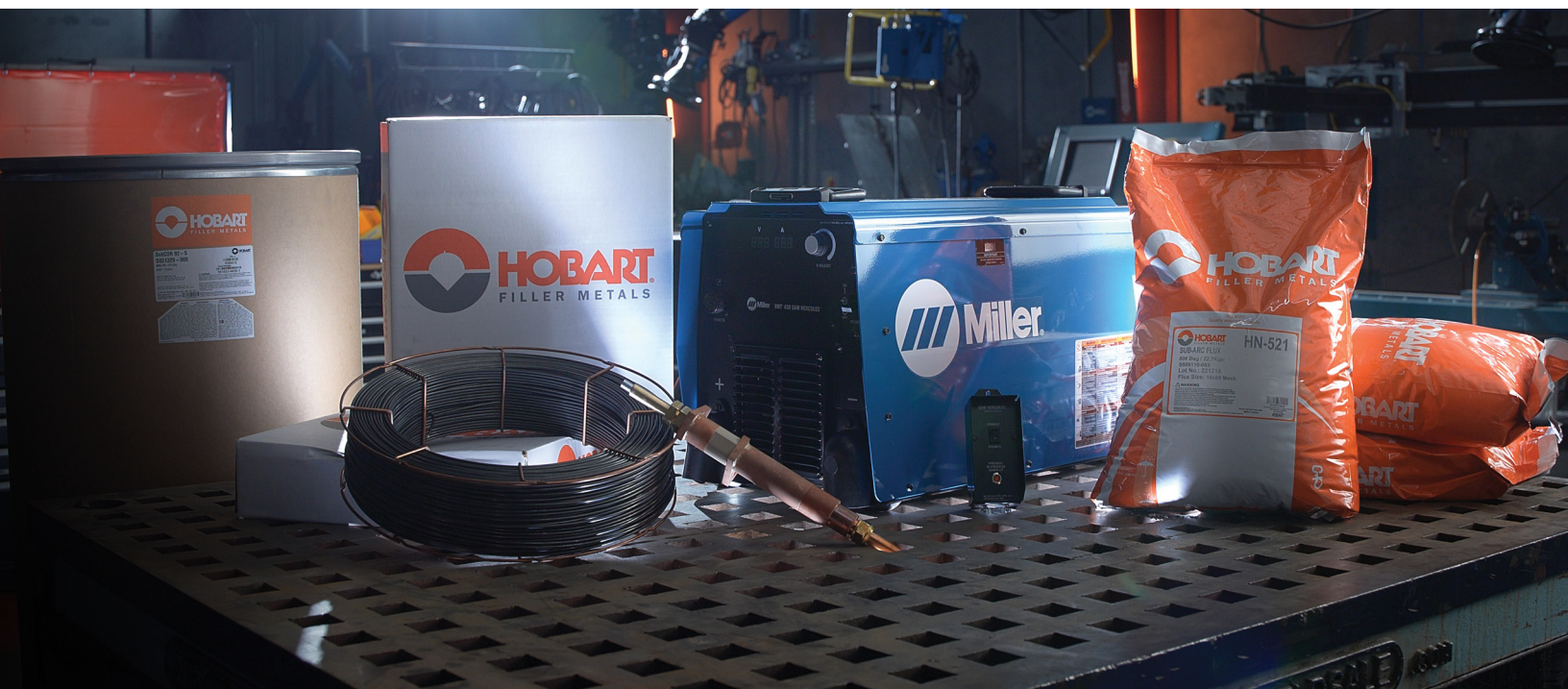
A DISTRIBUTOR GUIDE TO SELLING
SUBARC & SUBCOR SOLUTIONS

Systems
that deliver
ground-breaking
deposition rates



Why SubArc Systems

Engineered for precision, productivity and long-term reliability, these systems deliver consistent submerged arc performance across a wide range of applications.





Key Benefits



Reliable Performance

A reliable, solid state design engineered for consistency and long-term stability, delivering dependable results in demanding SAW applications.



Easy to Integrate

Modular components integrate with existing setups; ModBus® compatibility supports remote or fully automated welding.



User-Friendly Interface

Simple controls enable fast parameter adjustments, including tandem and parallel configurations.

Applications

- Pressure vessel
- Shipbuilding
- Pipe manufacturing
- Railcar
- Heavy fabrication
- Wind tower

SubArc Digital Series



The SubArc Digital Series provides reliable, precise submerged arc performance through advanced digital controls and robust power delivery. Designed for versatility, the series supports a wide range of welding applications from manual to fully automated setups.

Key Features

Flexible System Design

Three power source options, multiple interface controls, and a wide selection of wire drive motors and accessories to configure the ideal system.

Digital Process Control

Advanced digital control improves arc stability and delivers consistent weld quality across operators and shifts.

Rugged and Reliable

Proven thyristor-based power regulation ensures dependable operation in demanding industrial environments.

Automation-Ready

Digital communication electronics simplify integration with remote control systems, gantries, and advanced automation cells.

All Power Sources Feature

- ✓ *Thermal overload protection*
- ✓ *Line voltage compensation*
- ✓ *Fan-On-Demand™*
- ✓ *Highly reliable thyristor-based power regulation*
- ✓ *IP23 Rating*
- ✓ *Ability to carbon arc gouge*

SubArc Digital Series Portfolio

North America Offerings

	SubArc DC 650 Digital	SubArc DC 1000 Digital	SubArc AC/DC 1000 Digital
RATED OUTPUT	650 A @ 44 V, 100%	1,000 A @ 44 V, 100%	1,000 A @ 44 V, 100%
INPUT POWER REQUIREMENTS	126 A @ 230 V 63 A @ 460 V 50.4 A @ 575 V	180 A @ 230 V 90 A @ 460 V 72 A @ 575 V	122 A @ 460 V
AMPERAGE RANGE (CC MODE)	50-815 A	100-1,250 A	300-1,250 A
VOLTAGE RANGE (SAW MODE)	20-44 V	20-44 V	20-44 V
NET WEIGHT	593 lb (269 kg)	682 lb (309 kg)	1,187 lb (538 kg)

International Offerings

	SubArc DC 800 Digital	SubArc DC 1250 Digital	SubArc AC/DC 1250 Digital
RATED OUTPUT	650 A @ 44 V, 100%	1,000 A @ 44 V, 100%	1,000 A @ 44 V, 100%
INPUT POWER REQUIREMENTS	95 @ 380 V (50 Hz) 90 @ 400 V (50 Hz) 83 @ 440 V (50 Hz)	135 @ 380 V (50 Hz) 128 @ 400 V (50 Hz) 117 @ 440 V (50 Hz)	179 @ 380 V (50 Hz) 176 @ 400 V (50 Hz)
AMPERAGE RANGE (CC MODE)	50-815 A	100-1,250 A	300-1,250 A
VOLTAGE RANGE (SAW MODE)	20-44 V	20-44 V	20-44 V
NET WEIGHT	603 lb (273 kg)	681 lb (309 kg)	1,260 lb (572 kg)



Meet the SubArc Hercules™ System



SubArc Hercules™ customers average **30% higher deposition rates!**

SubArc Hercules™ is your next-generation high-deposition submerged arc welding solution. Designed to help manufacturers significantly increase throughput without compromising weld quality or mechanical properties. Ideal for operations where travel speed, deposition rate, heat input and repeatability are critical, Hercules™ delivers measurable performance gains immediately upon implementation.

Hobart® SubCOR Wire

Specialized metal-cored wire optimized for faster travel speeds and higher deposition for submerged arc welding. The *only* recommended filler metal for achieving optimal performance for SubArc Hercules™.

SubArc Hercules™ Torch

Features two separate contact tips that allow two sources of power input, enabling the high-deposition process.

SubArc Hercules™ Switch Kit

Allows operators to switch between standard SAW and the SubArc Hercules™ process with a flip of a switch.

XMT® 450 SubArc Hercules™ Power Source

The secondary power source that provides the electrical current to condition the wire during the Hercules™ process.

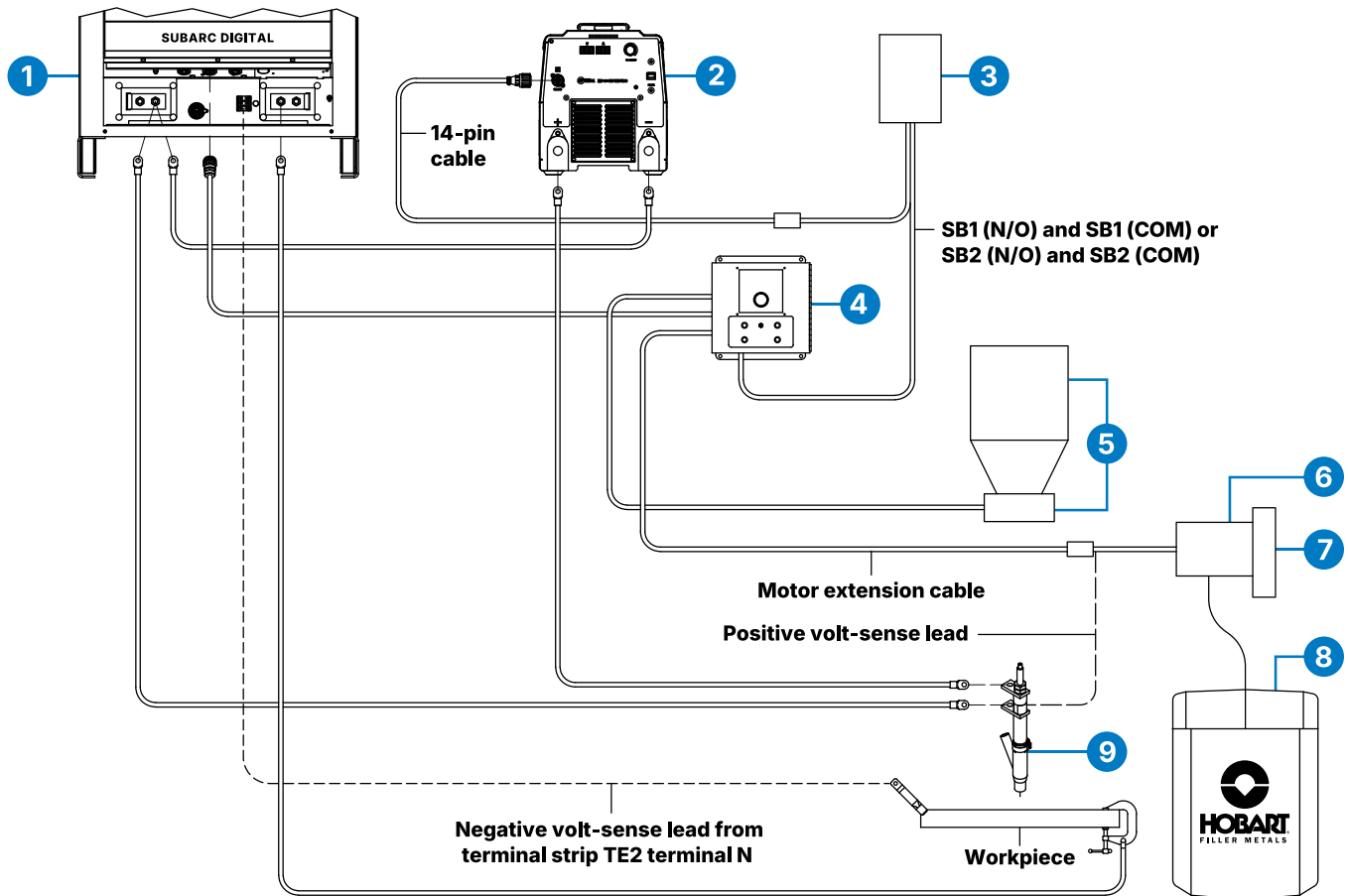
Compatible Products

Compatible with any Miller® SubArc Welding Equipment including our SubArc 3-Wheel Tractor and SubArc Portable Welding System.

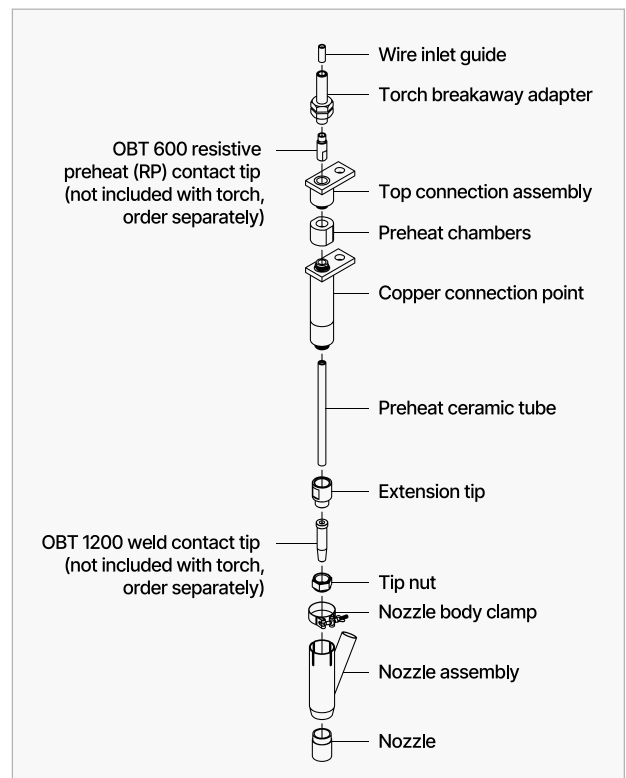
Top Benefits

- ✓ An average of 30% reduction in welding time compared to standard DC electrode positive
- ✓ Industry-leading deposition rate
- ✓ Consistent bead shaping and penetration
- ✓ Streamlined installation
- ✓ Supports high-throughput production environments
- ✓ Cost effective and easy-to-add upgrade to scale operations with existing Miller® SubArc equipment

SubArc Hercules™ System Components



- 1 SubArc Digital Welding Power Source
- 2 XMT® 450 SubArc Hercules™ Power Source
- 3 SubArc Hercules™ Preheat Switch
- 4 SubArc Interface Digital Control
- 5 SubArc Flux Hopper
- 6 SubArc Wire Drive
- 7 Motion Control Integration
- 8 Hobart® SubCOR™ Filler Metal Wire
- 9 SubArc Hercules™ Torch



SubArc Hercules™ Competition

When compared with competitive submerged arc solutions, the SubArc Hercules™ System offers superior deposition rates (31 lbs/hr at 600 amps) at nearly half the costs of the leading competitor, along with easier implementation and ongoing support.

Lincoln® Power Wave AC/DC 1000SD System

Cost: \$\$\$

Adjustable AC balance and frequency

Deposition example 600 amps 50/50AC

5/32" SW

21 lbs/hr

Miller® DC1000 System with Hercules™ Upgrade

Cost: \$\$

Adjustable preheat on wire

Deposition example 600 amps 5 volts preheat

5/32" SubCOR

31 lbs/hr

Lincoln® Long Stick Out

Always on (can't turn on/off when welding)

Requires physical extensions for adjustment

Large voltage drop

Poor arc starts

ESAB® Integrated Cold Electrode

Multi-wire system (3 × 3/32" wires)

Complex configuration

Limited support

Proven Customer Wins

Komatsu Field Test

Demonstrated a 60% reduction in welding time (30% with SubCOR and another 30% with Hercules).

Petrosmith Field Test

Showed 1/2" x 72" vessel moving from three fill passes to two with no repairs after 100% NDT inspection.

SubArc Portable Welding System

A ready-to-weld mobile system that delivers the flexibility to handle any application that requires precisely positioned equipment.



SubArc DC 650 Portable Welding System (951675)

SubArc DC 1000 Portable Welding System (951676)

Ideal For

Fabrication	Pressure vessel
Manufacturing	Pipe fabrication/construction
1G roll-out applications	

Key Product Features

- ✓ Motorized column with pendant control provides 44 inches (1,117 mm) of vertical travel
- ✓ Manual telescoping boom provides 31 inches (787 mm) of horizontal travel
- ✓ Manual cross slides provide 7.87 inches (200 mm) of fine vertical and horizontal torch adjustment
- ✓ Ease of positioning the weld head through use of integrated motorized column, manual telescoping boom, cross slides, and 360-degree column rotation
- ✓ Built-in caster wheels and fork pockets for mobility

SubArc 3-Wheel Tractor

A compact, flexible SubArc System with an all-in-one interface that allows operators to control the tractor and welding functions from a single panel.

Ideal For

Bridge decks
Beam construction
Shipbuilding
Railcar
Storage tank construction

(951755)

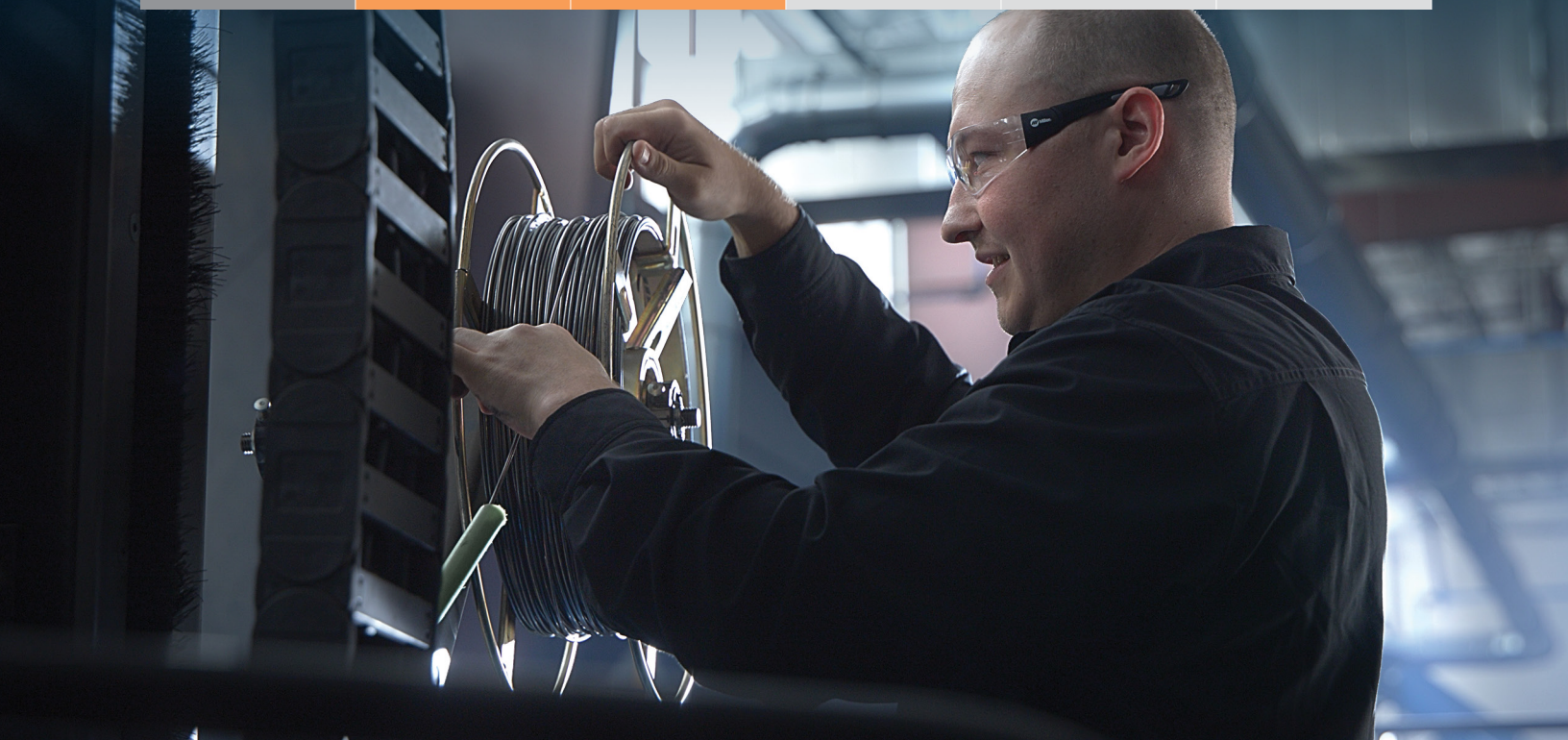


Key Product Features

- ✓ Vertical, horizontal, and rotary torch adjustment allows for greater access to hard-to-reach spots
- ✓ Flexible mast configuration allows the torch to be positioned in multiple weld zones and adapts to your weld application
- ✓ Easy-to-use foot- or hand- operated clutch for easy engagement and disengagement of the tractor drive system; when disengaged, freewheeling movement of the tractor allows for ease of movement and repositioning
- ✓ Locking front wheel can be secured in place to follow a desired travel path
- ✓ Regulated travel speed ensures your actual and set travel speeds are consistent, improving weld quality
- ✓ Easily accommodates a 60 pound (27 kg) wire reel for fewer wire changeovers
- ✓ IP23 rated, providing a high level of protection for harsh environments

SubCOR Portfolio

	EM13K-S MOD	SubCOR 92-S	SubCOR N1-S	SubCOR 100F3-S	SubCOR 120-S
WIRE TYPE	Carbon Steel	Low-Alloy	Low-Alloy	Low-Alloy	Low-Alloy
CLASSIFIED TENSILE STRENGTH	70 ksi	80 ksi	70 ksi	90-100 ksi	110 ksi
COMMON MARKET SEGMENTS	Heavy Equipment Pressure Vessel, Oil & Gas, General Fabrication, and ConFab	Utility Pole, Bridge, and Weathering Applications	ConFab, Heavy Equipment, Weathering Applications, and Bridge	Bridge, Offshore Heavy Equipment, and ConFab	High Strength Low-Alloy Pressure Vessels, ConFab, and Heavy Equipment
COMPATIBLE HOBART FLUX	HA-495 HN-590 SWX 120 SWX 150 HN-521	HA-495 HN-590 SWX 150 HN-521	HN-590 SWX 150 HN-521	HN-590 HN-521	SWX 150 HN-521
DATA SHEET					



SubCOR Products

Recommended Applications

- Long seam and circumferential welds
- Large diameter circumferential welds
- Thick groove welds
- Lap joints and joggle joints
- Fillet weld sizes greater than or equal to 3/16" (1F or 2F)
- Sheet and thin-plate welding (3/16" and above)

Not Recommended For

- Square-groove welding when weldment thickness > 5/16"
- Joint designs requiring deep narrow penetration

Pain Points Addressed

- Struggling to balance travel speed with penetration profile
- Productivity lower than company goals and objectives
- Maxed out deposition rate on existing equipment
- Funding capital and equipment lead times
- Stuck doing the same old thing and need for continuous improvement

Discovery Questions

- *Are you familiar with the advantages of Metal Core SubArc?*
- *Would you like to increase productivity and consistently get more parts out the door?*
- *Have you considered improvements in your submerged arc process?*
- *What technologies have you investigated?*
- *Would you be interested in a low capital solution?*
- *Are you struggling with part re-work due to burn-through?*
- *Are you struggling with balancing productivity with weld quality and/or appearance?*
- *Are you interested in maximizing the use of the submerged arc process in place of the GMAW and FCAW processes?*
- *Would you be open to displacing GMAW and FCAW to improve productivity and consistency?*



SubArc Products

Target Market Industries

- Railcar
- Shipbuilding
- Heavy fabrication
- Pipe manufacturing
- Shipbuilding

Recommended Applications

- Large weldments
- High volume weld joints
- Linear welds
- Flat and horizontal welding only

Not Recommended For

- Circumferential welding of weldment diameters <10"
- Out-of-position welding

Pain Points Addressed

- Equipment reliability issues
- Overly complicated equipment
- Maintaining consistent heat input (CV+C)
- Process control

Discovery Questions

- *Are you experiencing low productivity?*
- *Are you facing challenges with process control?*
- *Are you experiencing downtime related to inverter equipment?*
- *Are your operators struggling with complicated equipment/interface?*

Frequently Asked Questions

What makes SubArc Hercules™ different?

Our leading-edge technology uses a secondary power source with an innovative torch that enables resistive conditioning of the specialized wire. This delivers much higher deposition rates, reducing the number of passes needed without compromising the weld quality you're used to.

Can SubArc Hercules™ integrate with existing SubArc equipment?

Yes. SubArc Hercules™ can be added to existing Miller® SubArc setups with minimal changes, making it easy for customers to upgrade.

What training is available?

Miller® and Hobart® offer installation support, operator training, and on-site visits depending on customer needs.

Why is SubCOR wire the required wire for SubArc Hercules™?

The lubricant on the wire was designed to withstand the high temperatures of the Hercules™ process.

Is the SubArc Hercules™ System compatible with competitive equipment?

No. It is only compatible with Miller® power sources.

Which wires and fluxes are recommended for SubArc Hercules™?

Hobart® SubCOR wires paired with compatible fluxes deliver the best performance.

How does the SubArc Hercules™ process affect penetration?

The SubArc Hercules™ process does not significantly change the penetration compared to the standard SubCOR penetration profile. SubCOR penetration profile is wider and broader than standard solid wire.

How do I measure heat input for a Hercules™ set-up with two power sources?

Add heat input from SubArc power source and heat input from secondary (XMT) power source together.

SubArc Power Supply $((Amps \times Volts \times 60 / Travel\ Speed) / 1000)$
+ **XMT 450** $((Amps \times Volts \times 60 / Travel\ Speed) / 1000) = KJ/in$

With SubArc Hercules™ does your heat input increase with the added heat input from the XMT secondary power source?

As deposition rate is increased with the SubArc Hercules™ process, travel speed is also increased, which would maintain or reduce heat input.

Software & Firmware Updates

SubArc software, firmware, and operator interface updates are available through the MillerWelds support portal.

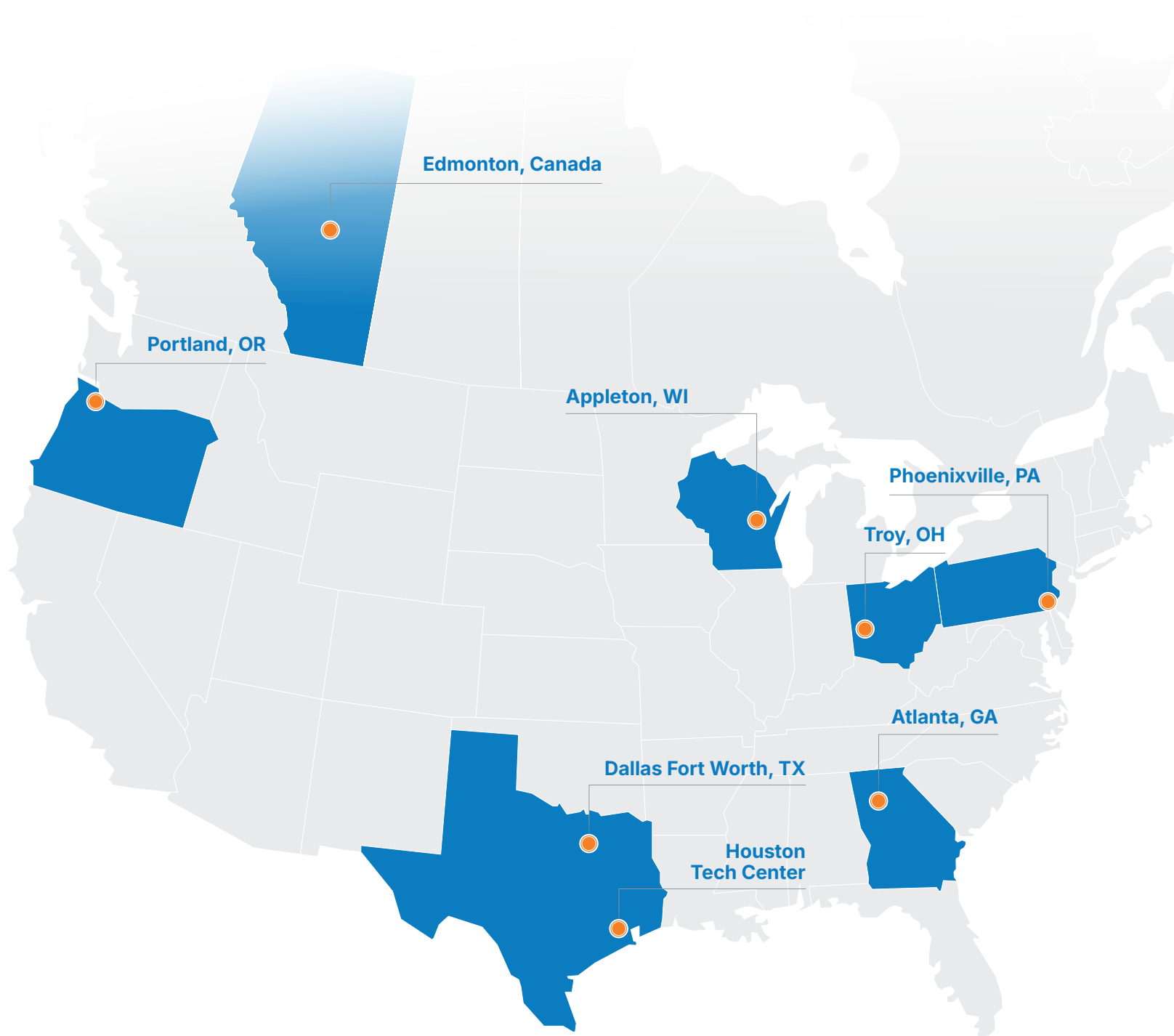


Key Resources

RESOURCE	QR CODE
Miller® SubArc Landing Page	
SubArc Digital Series Spec Sheet	
SubArc Hercules™ System Spec Sheet	
SubArc Tractor Spec Sheet	
SubArc Portable Welding System Spec Sheet	
Hobart® Filler Metals	



Demo Locations





Miller Electric Mfg. LLC

1635 W. Spencer St.
Appleton, WI 54912
920-734-9821

MillerWelds.com

Hobart Filler Metals

101 Trade Square East
Troy, OH 45373
937-332-4000

HobartBrothers.com