Power source is warranted for 3 years, parts and labor. Original main power rectifier parts are warranted for 5 years.

**Quick Specs**

**Heavy Industrial Applications**
- Railcar
- Shipbuilding
- Heavy Fabrication
- Pipe Manufacturing
- Pressure Vessel

**Processes**
- Submerged Arc (SAW)
- Electroslag (ESW)
- Air Carbon Arc (CAC-A)

**Input Power**
- Requires 3-Phase Power

**Rated Output**
- DC 650/800: 650 A at 44 V, 100% Duty Cycle
- DC 1000/1250: 1000 A at 44 V, 100% Duty Cycle
- AC/DC 1000/1250: 1000 A at 44 V, 100% Duty Cycle

**Net Weight**
- DC 650/800: 247 kg (545 lb.)
- DC 1000/1250: 292 kg (644 lb.)
- AC/DC 1000/1250: 540 kg (1225 lb.)

**Intuitive setup and operation.**

The SubArc Digital Series Interface controls recognize the power source and wire drive connected, and automatically configure the system for proper operation. The intuitive interface provides the operator the necessary controls to set process parameters and control output. The power sources feature simplified parallel and tandem setups.

**Improved flux delivery system.**

The new SubArc Flux Hopper utilizes a flux valve mechanism that assures continuous delivery of flux to the arc. The unique valve design helps prevent jamming of the solenoid actuator due to dust and debris. A sight glass on the front of the flux hopper allows the weld operator to visually monitor the remaining flux in the hopper.

**Low-voltage accessory operation and improved environmental protection.**

The new Digital Series accessories are powered with 24 VAC control voltage from the power source. All power sources, interface controls and wire drives are IP-23 rated.

All power sources include thermal overload protection, line voltage compensation and Fan-On-Demand™.

**Easy to integrate.**

The new SubArc power sources are easy to integrate by using a standard Modbus® connection. Different levels of integration are possible, from simple remote operation to more complex automated systems.

**Two DC power source models and one AC/DC power source model.**

Power sources have sufficient power capacity to cover applications from traditional DC single-arc to multi-wire tandem welding. In Electroslag welding or other high-current demand, two or more power sources can easily be paralleled (both DC and AC/DC machines).
SubArc DC Digital Specifications (Subject to change without notice.)

<table>
<thead>
<tr>
<th>Model</th>
<th>Amperage/Voltage Ranges</th>
<th>Rated Output</th>
<th>IP Rating</th>
<th>Amps Input at Rated Load Output, 50/60 Hz</th>
<th>Max. Open-Circuit Voltage**</th>
<th>Dimensions</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>230 V 380 V 400 V 440 V 460 V 575 V KVA KW</td>
<td></td>
<td>H: 692 mm (27.25 in.) W: 565 mm (22.25 in.) D: 953 mm (37.5 in.) (not including strain relief)</td>
<td>247 kg (545 lb.)</td>
</tr>
<tr>
<td>SubArc DC 650/800 Digital</td>
<td>50–815 A in CC mode 20–44 V in Subarc mode</td>
<td>650 A at 44 V, 100% duty cycle</td>
<td>IP23</td>
<td>126 77 73 66 63 50.4 50 34.8 3.8* 1.9* 1.8* 1.6* 1.9* 1.4* 1.52* 0.76*</td>
<td>72 VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SubArc DC 1000/1250 Digital</td>
<td>100–1250 A in CC mode 20–44 V in Subarc mode</td>
<td>1000 A at 44 V, 100% duty cycle</td>
<td>IP23</td>
<td>180 109 104 94 90 72 73 53 5.8* 5.2* 5.0* 4.5* 2.9* 2.4* 3.2* 0.5*</td>
<td>66 VDC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*While idling.  **Open-circuit voltages in CV mode are factory set at values less than indicated for CC.

SubArc DC 650 Digital and DC 1000 Digital models are certified by Canadian Standards Association to both the Canadian and U.S. Standards.

All SubArc DC Digital models are manufactured and certified in accordance with IEC-60974-1, -10.

SubArc DC Digital Control Panel

1. Process Selector Switch
2. Output Selector Switch
3. Output Switch (Contactor)
4. Amperage/Voltage Adjustment Control
5. Fault Indicator
6. Power Switch
SubArc AC/DC Digital

SubArc AC/DC 1000/1250 Digital. AC welding output enables the SubArc AC/DC to be used in tandem arc welding systems with a DC lead arc and AC trailing arc, or with AC/AC arc combinations. Multiple arcs increase deposition rate, resulting in shorter welding cycles. All AC balance control modes can be set directly on the digital interface. The intuitive interface includes two DC modes and 12 best-practice AC balance settings. In multiple-arc configurations, the system automatically adjusts the phase shifting between power sources thereby eliminating arc interaction. There is no need to employ a laptop PC for complex wave shaping.

SubArc AC/DC Digital Specifications (Subject to change without notice.)

<table>
<thead>
<tr>
<th>Model</th>
<th>Amperage/Voltage Ranges</th>
<th>Rated Output</th>
<th>IP Rating</th>
<th>RMS Amps Input at Rated Output, 3-Phase at NEMA Load Voltages and Class 1 Rating</th>
<th>Max. Open-Circuit Voltage</th>
<th>Dimensions</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>SubArc AC/DC 1000/1250 Digital</td>
<td>300–1250 A in CC mode 20–44 V in Subarc mode</td>
<td>1000 A at 44 V, 100% duty cycle</td>
<td>IP23 140 141 122 98 53 3.0* 3.0* 3.0* 2.37* 0.95*</td>
<td>71 VDC</td>
<td>H: 1092 mm (43 in.) (including lift eye) W: 699 mm (27.5 in.) D: 1207 mm (47.5 in.) (not including strain relief)</td>
<td></td>
<td>540 kg (1225 lb.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1250 A at 44 V, 60% duty cycle</td>
<td>179 176 158 122 67 3.0* 3.0* 3.0* 2.37* 0.95*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*While idling.

SubArc AC/DC 1000 Digital model is certified by Canadian Standards Association to both the Canadian and U.S. Standards.

Both SubArc AC/DC Digital models are manufactured and certified in accordance with IEC-60974-1, -10.

SubArc AC/DC Digital Control Panel

1. Output Indicator Light
2. Output Switch (Contactor)
3. Amperage/Voltage Adjustment Control
4. Fault Indicator
5. Power Switch
SubArc Interface

SubArc Interface Specifications (Subject to change without notice.)

<table>
<thead>
<tr>
<th>Model</th>
<th>Type of Input from Welding Power Source</th>
<th>Welding Power Source Type</th>
<th>Weld Voltage and Amperage Capacity</th>
<th>Dimensions</th>
<th>Net Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>SubArc Interface Analog</td>
<td>Single-phase 24 VAC, 25 A, 50/60 Hz</td>
<td>Constant current (CC), constant voltage (CV), DC with remote contactor and output control capabilities</td>
<td>0–60 V 0–1500 A</td>
<td>H: 178 mm (7 in.)  W: 286 mm (11.25 in.)  D: 292 mm (11.5 in.)</td>
<td>8.2 kg (18 lb.)</td>
</tr>
<tr>
<td>SubArc Interface Digital</td>
<td>Single-phase 24 VAC, 25 A, 50/60 Hz</td>
<td>Constant voltage (CV), AC or DC, with remote contactor and output control capabilities</td>
<td>0–60 V 0–1500 A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Certified by Canadian Standards Association to both the Canadian and U.S. Standards.

Manufactured according to the Standard IEC-60974-1, -5, -10.

SubArc Interface Control Panels

1. Jog Speed
2. Preflux Time 0–10 Seconds
3. Run-In Speed
4. CC/CV Switch (Located on Right Side of Access Panel)
5. Crater/Burnback Output
6. Crater Speed
7. Crater Time 0–5 Seconds
8. Burnback Time 0–5 Seconds
9. Postflow Time 0–10 Seconds
10. Voltage Meter
11. Power Switch
12. Output Control Knob
13. Start Button
14. Stop Button
15. Amperage Meter
16. Wire Feed Speed Control Knob
17. Indicator Light
18. Wire Inch Up
19. Wire Inch Down

1. Program Display
2. Program Push Button
3. Adjust Control
4. Sequence Push Button
5. Upper Display
6. Upper Display Push Button
7. Lower Display
8. Lower Display Push Button
9. Flux Push Button
10. Setup Push Button
11. Start Button
12. Power Switch
13. Stop Button
14. Wire Inch Up
15. Wire Inch Down
SubArc Interface Setup

In the new setup the positive sense lead is integrated in the wire feeder motor cable and control cable. A customer supplied negative sense lead is required for optimal performance.

SubArc Modbus Operation

Easy method of integrating standard components while controlling them over Modbus communication. Using the standard SubArc Interface, wire feed motor and flux hopper, the integrator can remotely adjust settings and operation of the SubArc Interface. Documentation is available.

High-level method where the integrator uses only the digital power sources and controls them over Modbus communication. Benefits from Miller technology-driven arc performance while integrating into a custom-made welding solution.

SubArc System Parallel and Tandem Configurations

Parallel setup. Only like power sources can be paralleled. Paralleling of two machines to increase maximum welding current is done by connecting the paralleling cable from RC2 on the first unit to RC1 on the second unit. This works for both DC as well as AC/DC machines. Daisy chaining multiple machines to achieve higher output is done in the same way. No special tools needed... plug and play.

Tandem setup. To use two or more AC arcs, the arc must be phase shifted to prevent arc to arc interaction. This is done by connecting the tandem cable from RC2 on the first unit to RC3 on the second unit. This automatically sets the optimum phase shift for AC welding. No special tools needed... plug and play.
Wire Drive Assemblies

SubArc Strip Drive 100 Digital Low Voltage
#300 939
#300 940* With mounting bracket
Heavy-duty, right-angle wire drive assembly designed for automated strip clad applications.

SubArc Wire Drive 400 Digital Low Voltage
#300 938* Standard speed
#300 938 001 Standard speed, for use with Tractor

SubArc Wire Drive 780 Digital Low Voltage
#300 941* High speed
Right-angle wire drive assembly.

*Includes adapter plate allowing mounting to 63.5-, 108-, and 118-mm (2.5-, 4.25-, and 4.625-inch) bolt-hole patterns.

Wire Drive Assembly Specifications (Subject to change without notice.)

<table>
<thead>
<tr>
<th>Model</th>
<th>Wire Feed Speed Range</th>
<th>Wire Diameter Range</th>
<th>Rating</th>
<th>Type of Input Power</th>
<th>Input Power Cord</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>SubArc Strip Drive 100 Digital Low Voltage</td>
<td>0.3–1.6 m/min. (10–69 IPM)</td>
<td>N/A (Strip cladding applications)</td>
<td>1/5 HP, 21 RPM</td>
<td>38 VDC</td>
<td>1.2 m (4 ft.)</td>
<td>9.1 kg (20 lb.)</td>
</tr>
<tr>
<td>SubArc Wire Drive 400 Digital Low Voltage</td>
<td>0.8–10.2 m/min. (30–400 IPM)</td>
<td>2.4–5.6 mm (3/32–7/32 in.)</td>
<td>1/5 HP, 85 RPM</td>
<td>38 VDC</td>
<td>1.2 m (4 ft.)</td>
<td>15 kg (33 lb.)</td>
</tr>
<tr>
<td>SubArc Wire Drive 400 Digital Low Voltage for Tractor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SubArc Wire Drive 780 Digital Low Voltage</td>
<td>1.3–19.8 m/min. (50–780 IPM)</td>
<td>1.6–3.2 mm (1/16–1/8 in.)</td>
<td>1/4 HP, 143 RPM</td>
<td>38 VDC</td>
<td>1.2 m (4 ft.)</td>
<td>15 kg (33 lb.)</td>
</tr>
</tbody>
</table>

Accessories

Drive Rolls
“V” Knurled drive rolls for use with hard-shelled cored wires.
- #132 955 1.6 mm (1/16 in.)
- #132 960 2.0 mm (5/64 in.)
- #132 961 2.4 mm (3/32 in.)
- #132 962 2.8 mm (7/64 in.)
- #132 963 3.2 mm (1/8 in.)
- #193 700 4.0 mm (5/32 in.)
- #193 701 4.8 mm (3/16 in.)
- #193 702 5.6 mm (7/32 in.)

Cables

SubArc Control Cables
- #260 622 030 9.1 m (30 ft.)
- #260 622 050 15.2 m (50 ft.)
- #260 622 080 24.4 m (80 ft.)
- #260 622 100 30.5 m (100 ft.)
- #260 622 120 36.6 m (120 ft.)
- #260 622 200 61.0 m (200 ft.)
Cable between SubArc Interface and power source.

Motor Extension Cables
- #254 232 010 3 m (10 ft.)
- #254 232 025 7.6 m (25 ft.)
- #254 232 065 19.8 m (65 ft.)
Cable between SubArc Interface and drive motor.

Flux Hopper Extension Cables
- #260 623 010 3 m (10 ft.)
- #260 623 025 7.6 m (25 ft.)
- #260 623 065 19.8 m (65 ft.)
Cable between SubArc Interface and flux hopper.

SubArc Parallel Cable
- #260 775 015 4.6 m (15 ft.)

SubArc Tandem Cable
- #260 878 015 4.6 m (15 ft.)
Submerged Arc Torches

OBT 600    #043 923
600-amp, 100-percent-duty-cycle torch with concentric flux flow nozzle. Used with 1.6 – 5.6 mm (1/16 – 7/32 in.) wire.

OBT 600 Torch Body Extensions
#043 967   25.4 mm (1 in.)
#043 969   50.8 mm (2 in.)
#043 973   101.6 mm (4 in.)
#043 975   152.4 mm (6 in.)

OBT 1200    #043 900
1200-amp, 100-percent-duty-cycle torch with concentric flux flow nozzle. Used with 1.6 – 5.6 mm (1/16 – 7/32 in.) wire. OBT 1200 features a replaceable breakaway adapter to prevent costly damage.

OBT 1200 Torch Body Extension   #043 981
Extension length is 215.9 mm (8.5 in.). Overall length with extension is 228.6 mm (9 in.).

OBT Torch Contact Tips
OBT 600 OBT 1200 Wire Size
#192 700 #192 141 1.6 mm (1/16 in.)
#192 701 #199 026 2.0 mm (5/64 in.)
#192 702 #192 142 2.4 mm (3/32 in.)
#192 703 #200 771 2.8 mm (7/64 in.)
#192 704 #192 143 3.2 mm (1/8 in.)
#192 705 #192 144 4.0 mm (5/32 in.)
#192 706 #192 136 4.8 mm (3/16 in.)
#192 707 #200 756 5.6 mm (7/32 in.)

1200-Amp Twin-Wire Torches
#301 143 Short, 288 mm (11.3 in.)
#301 144 Long, 427 mm (16.8 in.)
Used with 1.2 – 2.4 mm (3/64 – 3/32 in.) wires.

1200-Amp Twin-Wire Torch Contact Tips
#264 595 1.2 mm (3/64 in.)
#264 596 1.6 mm (1/16 in.)
#264 597 2.0 mm (5/64 in.)
#264 588 2.4 mm (3/32 in.)

Internal and External Cladding Heads
Our range of external Strip Cladding Heads are designed for both Electroslag and Submerged Arc strip cladding. Strip size can vary from 30 to 120 mm (1-3/16 to 4-3/4 in.). The internal Strip Cladding Heads are designed for Submerged Arc strip cladding. Strip size, 30 mm (1-3/16 in.).

Contact Miller for a full overview of welding torches and cladding heads.

SubArc Flux Hopper
Digital Low Voltage
#300 942
Flux hopper with automatic flux valve will carry 11.3 kg (25 lb.) of flux. Sized to allow hook-up of any flux-hopper-mounted recovery system. Slag screen is provided. Includes 3.3 m (11 ft.) power cord.

Single-Wire Straightener  #199 733
For use with SubArc Wire Drive 400 Digital Low Voltage or 780 Digital Low Voltage. For 1.6 – 5.6 mm (1/16 – 7/32 in.) wires.

Twin-Wire Straightener
#301 160 Single adjustment
#301 162 Double/separate adjustment
For Twin-Wire Torches only.

Contact Miller for a full overview of powered or manual slides.

SubArc Tractor
#300 945 Tractor only
#951 615 Analog Weld Control Package
#951 614 Digital Weld Control Package
SubArc tractor packages include SubArc Tractor with remote start/stop control and guide rolls, SubArc Interface weld controller (analog or digital), SubArc Wire Drive 400 for Tractor, 11.3-kg (25 lb.) capacity flux hopper with valve, 27-kg (60 lb.) wire reel, OBT 600 torch and wire straightener. See Lit. No. AD/7.5 for more information.
## Ordering Information

<table>
<thead>
<tr>
<th>Equipment and Options</th>
<th>Stock No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SubArc DC 650 Digital</td>
<td>#907 622</td>
<td>230/460/575 V, 60 Hz</td>
</tr>
<tr>
<td>SubArc DC 800 Digital (50 Hz)</td>
<td>#907 623</td>
<td>380/400/440 V, 50 Hz, CE</td>
</tr>
<tr>
<td>SubArc DC 1000 Digital</td>
<td>#907 624</td>
<td>230/460/575 V, 60 Hz</td>
</tr>
<tr>
<td>SubArc DC 1250 Digital (50 Hz)</td>
<td>#907 625</td>
<td>380/400/440 V, 50 Hz, CE</td>
</tr>
<tr>
<td>SubArc AC/DC 1000 Digital</td>
<td>#907 620</td>
<td>460 V, 60 Hz</td>
</tr>
<tr>
<td></td>
<td>#951 618</td>
<td>575 V, 60 Hz with 575 V to 460 V step-down transformer</td>
</tr>
<tr>
<td>SubArc AC/DC 1250 Digital (50 Hz)</td>
<td>#907 621</td>
<td>380/400 V, 50 Hz, CE</td>
</tr>
</tbody>
</table>

### Controls

- **SubArc Interface Analog** #300 937 CC/CV, DC analog control
- **SubArc Interface Digital** #300 936 CV, AC/DC digital control

### Drive Motors

- **SubArc Strip Drive 100 Digital Low Voltage** #300 939 Heavy-duty, right-angle drive motor for automated strip clad applications
- **SubArc Wire Drive 400 Digital Low Voltage** #300 938 Same as above with mounting bracket
- **SubArc Wire Drive 780 Digital Low Voltage** #300 941 High-speed, right-angle drive assembly. Maximum speed 19.8 mpm (780 IPM)

### Torches

- **OBT 600** #043 923 600 amp, 100% duty cycle, air cooled
- **OBT 600 Torch Body Extensions**
  - #043 967 25.4 mm (1 in.)
  - #043 969 50.8 mm (2 in.)
  - #043 973 101.6 mm (4 in.)
  - #043 975 152.4 mm (6 in.)
- **OBT 1200** #043 900 1200 amp, 100% duty cycle, air cooled
- **OBT 1200 Torch Body Extension** #043 981 228.6 mm (9 in.)
- **1200-Amp Single-Wire Torches** #301 141 Short, 288 mm (11.3 in.), 1200 amp
- **1200-Amp Twin-Wire Torches**
  - #301 143 Short, 288 mm (11.3 in.), 1200 amp
  - #301 144 Long, 427 mm (16.8 in.), 1200 amp
- **Contact Tips** See page 7 for contact tips for all torches

### Internal and External Cladding Heads

- Contact Miller

### Accessories

- **SubArc Control Cables** See page 6
- **Motor Extension Cables** See page 6
- **Flux Hopper Extension Cables** See page 6
- **SubArc Parallel Cable** #260 775 015 4.6 m (15 ft.)
- **SubArc Tandem Cable** #260 878 015 4.6 m (15 ft.)
- **SubArc Flux Hopper Digital Low Voltage** #300 942 11-kg (25 lb.) flux capacity
- **Single-Wire Straightener** #199 733 For SubArc Wire Drive 400 Digital Low Voltage or 780 Digital Low Voltage
- **Twin-Wire Straightener**
  - #301 160 Single adjustment for Twin-Wire Torches only
  - #301 162 Double/separate adjustment for Twin-Wire Torches only
- **Wire Reel** #108 008 For 27-kg (60 lb.) coil, requires Spool Support Assembly (#119 438)
- **Spool Support Assembly** #119 438 Support for 27-kg (60 lb.) reels
- **Light-Duty Cross Slide** #195 411 Provides 152.4-mm (6 in.) travel adjustment, load capacity of 68 kg (150 lb.)
- **Heavy-Duty Cross Slide** #300 482 Provides 152.4-mm (6 in.) travel adjustment, load capacity of 90.7 kg (200 lb.)
- **SubArc Tractor** See page 7

**Date:**

**Total Quoted Price:**

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