

# Stealth

## DIGI-ARC 140LT DV

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Part No. 9020H

# OPERATOR'S MANUAL



# SWP



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# 1 SAFETY



Welding may damage your body or others. Take protection during operation.

Only professionally trained technicians should install, set-up, operate, maintain and repair the equipment.

Do not maintain or repair the machine when the machine is connected to power.



Electric shock can kill.

Never touch electrical parts.

Wear dry, hole-free gloves and clothes to insulate yourself.

Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical contact with work and earth.

Ensure equipment is correctly installed. Earth the work or metal to be welded according the operation manual.

Ensure equipment is operated in a safe position.

Fumes and gases can be dangerous!



Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases.

Use sufficient ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone.

Welding sparks can cause fire or explosion.



Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot welding material can easily go through small cracks and openings to adjacent areas.

Do not weld enclosed tanks or containers.



Have a fire extinguisher readily available.

Hot parts can cause burns.



Do not touch hot parts.

Use torch after cooling or use the welding blow lamp.

Personnel with a heart-pacemaker should keep away from the welding arc.



Rotating parts may be dangerous.

Keep clear of rotating parts (eg fan).

Keep machine parts in a safe position.

## 2 SUMMARY

The DIGI-ARC 140LT DV is a MMA arc welding machine featuring the Insulated Gate Bipolar Transistor (IGBT) power module. Its medium frequency transformer makes it portable, compact, light weight and with low consumption and noise.

The DIGI-ARC 140LT DV offers excellent performance. Constant current output makes the welding arc more stable and a fast dynamic response speed reduces the impact from the arc length current fluctuation.

Other automatic functions protect from under voltage, over current, over heat, etc.

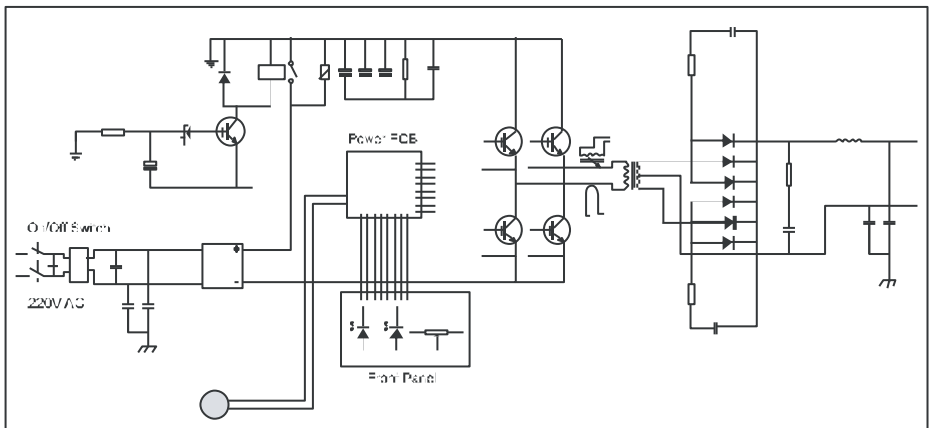
An alarm on the front panel lights, at the same time the output current cuts off. This can prolong production use and greatly improve the reliability of the machine.

The machine can be easily ignited with little splash and good weld bead.

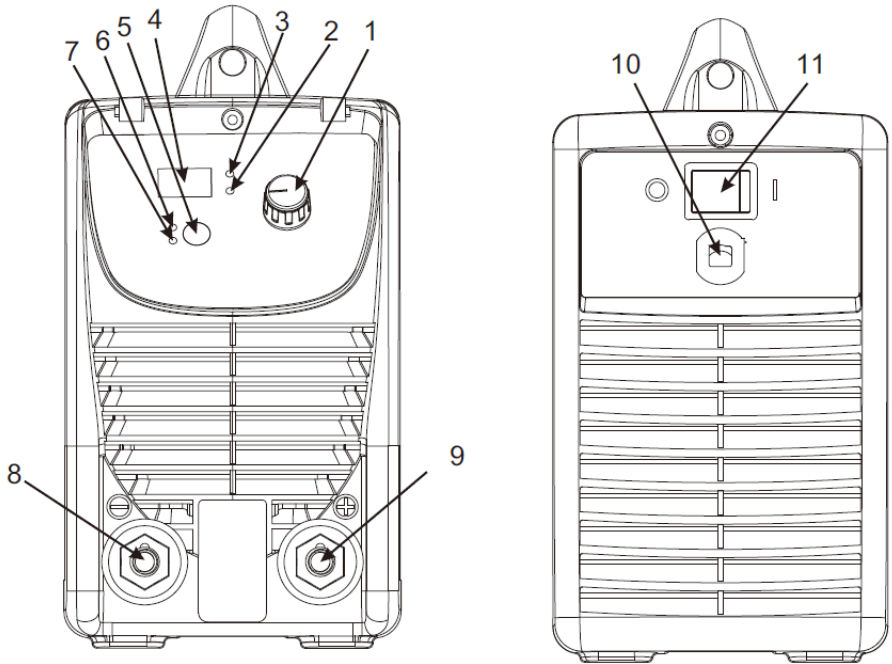
The DIGI-ARC 140LT DV has a high duty cycle – even at 40°C – for continuous operation.

The machine is very stable and keeps working under high temperature and corrosive environments.

## 3 MAIN ELECTRICAL DIAGRAM



#### 4 OPERATION CONTROL AND CONNECTORS



- 1 Welding current adjustment knob. Turn to adjust output current size.
- 2 Alarm lights: alarm indicator; over voltage; over current; machine overheating.
- 3 Power indicator: power indicator; power on light.
- 4 Current display: welding current display when machine is in operation.
- 5 Conversion switch: choose (up), MMA; choose (down), TIG.
- 6 MMA light: choose (up) MMA light on.
- 7 TIG light: choose (down) TIG light on.
- 8 Negative output: connect to pliers.
- 9 Positive output: connect the welding the clamp.
- 10 Cable clamp: secures the mains cable
- 11 Power switch: choose 'ON', power on; choose 'OFF', power off

## 5 INSTALLATION & ADJUSTMENT

Note: Please follow steps in strict accordance with installation instructions!

Electrical connection must be disconnected after power is switched off!

Equipment protection level is IP23. Do not use in the rain!

### 5.1 Installation

- 6.1.1 Each machine is fitted with a power cable based on the input voltage connected to the appropriate selection. Do not select the wrong voltage.
- 6.1.2 With the corresponding input power supply terminal or socket, ensure good contact and prevent oxidation.
- 6.1.3 A multi meter measures the input voltage is within the fluctuation range.
- 6.1.4 Clamp the front panel connector into the jack at the bottom of the cathode and tighten clockwise.
- 6.1.5 Clamp the cable plug into the front panel below the negative welding socket and tighten clockwise.
- 6.1.6 Ensure a good earth.

See above (4) and (5) for DC reverse operation.

Select DCSP operation when using base metals and welding rods.

In general, the basic electrode reverse method is recommended (ie, connected to a positive electrode). When using acid electrodes take extra care.

### 5.2 Operation

- 6.2.1 Use the above method for correct installation. Turn the power switch to 'ON' and the power indicator light and fan come on – the device is working correctly.
- 6.2.2 Note the polarity of wiring. Generally DC welding wires are connected in two ways – positive and reverse polarity.  
Positive Connection: Welding clamp then negative, then positive, then positive work piece; reverse law contrary. Select according to technical requirements. An incorrect selection can result in arc instability and spatter etc.
- 6.2.3 If the work piece distance from the welding machine to the second line (electrode holder and ground) is longer, choose the appropriate conductor. A cross-sectional area should be larger to reduce cable voltage drop.
- 6.2.4 According to the standard pre-set welding electrode current, the electrode clip will be sufficient and you can use short-circuit arc welding. For welding parameters refer to 6.3.

**5.3 Welding Table**

Note: The following table applies to low-carbon steel. For other materials, please refer to related information.

Electrode diameter (mm)	Recommended welding current (A)	Recommended welding voltage (V)
1.0	20~60	20.8~22.4
1.6	44~84	21.76~23.36
2.0	60~100	22.4~24
2.5	80~120	23.2~24.8
3.2	108~148	23.32~24.92

**6 OPERATION NOTICES**

**6.1 Installation**

- 6.1.1 Welding environmental temperature should be between -10°C to 40°C.
- 6.1.2 Welding should be completed in relatively dry environments with air humidity of not more than 90%.
- 6.1.3 Avoid environments containing dust or corrosive gases.
- 6.1.4 Avoid sunlight or rain. Do not allow water or rain water to infiltrated the welding machine.
- 6.1.5 Avoid a strong air flow environment when gas welding.

**6.2 Safety**

This welding machine has been installed with a over-voltage, over-current and over-temperature protection circuit. When the grid voltage, output current and internal temperatures exceed the set temperature, the welding machine will automatically cease working. Excessive use will result in welding damage, so please note:

- 6.2.1 Ensure good ventilation  
The Digi-Arc 140LT DV is equipped with cooling fans. Before use, please check the vents are clear and the distance surrounding welding is not be less than 0.3 metres.
- 6.2.2 Prevent overload  
The welder should ensure that the duty cycle current is kept within the standard range (see technical data table). Any current overload will shorten the life of the machine welding machine and may even ignite.
- 6.2.3 Prevent over-voltage  
The welding voltage within the circuit will automatically compensate to ensure the welding current is in the permitted range. If the voltage exceeds the



allowable value it can damage the machine. The welder should be fully aware of this and take appropriate preventive measures.

- 6.2.4 Each welding machine comes with a grounding screw. Use a 2.5mm earthing cable to be connected to the chassis to discharge any static electricity.
- 6.2.5 If the welding work exceeds the standard loading time, the machine may suddenly cease working safely and the front panel alarm indicator lights up. In this event do not unplug the power, to ensure the cooling fan rotates and the red light goes out. When the temperature has dropped to a reasonable extent, welding can recommence.

## 7 MAINTENANCE

The following operations require the welder has sufficient electrical expertise and can demonstrate a comprehensive knowledge of working safely with valid qualifications and documents. Check to make sure the welding power input cable is not broken.

- 7.1 Periodically inspect the internal circuit connections are intact and reliable (especially the joints or components). If any rust and debris is found, sand off, clean, reconnect and tighten.
- 7.2 Do not allow hands, hair and tools near live components or fans inside the machine.
- 7.3 Regularly clean machine with dry compressed air. Compressed air pressure should be at a reasonable level in order to avoid damage to the welding of small internal components. Dust the machine regularly.
- 7.4 Avoid water or water vapour getting inside the welding machine inside. In the event of accidental ingress, the machine should be thoroughly dried. Only when you are sure that any moisture or water has been thoroughly dried from inside may you use the machine. Suitable tools for checking the moisture content within are advised.
- 7.5 Regularly inspect the cable insulation for damage. In the event of any damage wrap or replace the cable.
- 7.6 When not using the machine, place back in the case and keep in a dry environment.

## 8 TROUBLESHOOTING AND SERVICE

Common faults and solutions:

Symptom	Solution
Power indicator does not light, fan does not turn, no welding output	<ul style="list-style-type: none"> <li>- Make sure the power switch is turned on.</li> <li>- Confirm that the power input cable is connected to electricity.</li> </ul>
Fan switch not working Fluctuation in current High / Low	<ul style="list-style-type: none"> <li>- Assess any damage and replace where necessary.</li> <li>- Check for poor connections (eg plug-ins).</li> </ul>
Power indicator light shows fan rotating normally but no welding output	<ul style="list-style-type: none"> <li>- Check all connectors inside the machine.</li> <li>- Check circuit output connections.</li> <li>- If the alarm indicator light is on check: That the machine is not overheating. If so maintain power, so that the fan continues and the temperature drops. When the light goes out continue working.</li> <li>- Check if the thermal switch is damaged and replace if necessary.</li> </ul>
Hot welding clamp	<ul style="list-style-type: none"> <li>- Welding clamp current is too small. Replace with larger clamp.</li> </ul>
Welding arc flares	<ul style="list-style-type: none"> <li>- Check +/- polarity is correct for welding process.</li> </ul>

## 9 PARTS LIST

9020H-02 COVER  
9020H-05 ROCKER SWITCH – USE 9000H-07  
9020H-07 REAR PANEL  
9020H-08 FAN  
9020H-13 BASE  
9020H-15 CURRENT TRANSFORMER – USE 9012-36  
9020H-17 FRONT PANEL  
9020H-21 KNOB – USE 9000H-33  
9020H-22 FRONT PCB  
9020H-24 MAIN PCB ASSEMBLY  
9020H-25 CONTROL PCB



**Specialised Welding Products Ltd**

Unit 1, Farringdon Industrial Centre, Farringdon, Nr Alton, Hampshire GU34 3DD, UK  
tel: +44 (0)1420 588180 • fax: +44 (0)1420 588184 • email: [sales@swp.uk.net](mailto:sales@swp.uk.net)