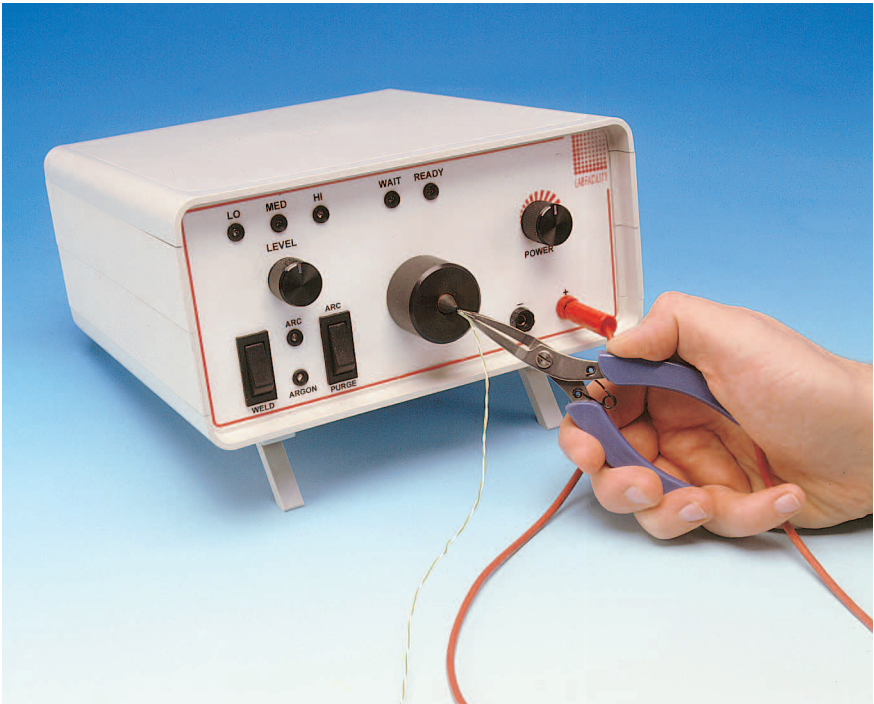




LABFACILITY

TEMPERATURE & PROCESS TECHNOLOGY

Thermocouple & Fine Wire Welder Model No. L60+



Operating Instructions

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THERMOCOUPLE AND FINE WIRE WELDER MODEL L60+

Operating Instructions

The L60+ welder is designed for sensor manufacturers to produce commercial grade thermocouple junctions, and by users of large numbers of exposed junction thermocouples such as test and development laboratories where multipoint temperature sensing of test pieces is required.

No special skills are required and most people will be capable of producing quality work with minimal practice. A satisfactory thermocouple junction is produced without using argon, but where argon is available a momentary purge is automatically triggered immediately prior to the weld to give optimum weld integrity.



Safety Note

1. Always protect the eyes with a suitable filter during welding – never view the weld discharge with the naked eye.
2. Avoid touching the rear of the welder during operation as the power switch heat sink may run hot. This is a normal operating condition.
3. Do not allow the hand to directly contact the welding electrode during operation.

Accessories

Standard:

Wire Holding Pliers With Lead

Safety Glasses

Magnifying Eyeglass

Spare Carbon Electrode

Spare 2A Fuse

Argon Hose

Hexagon key (for electrode change)

Mains Lead

Footswitch (Allows One Handed Operation)

Optional:

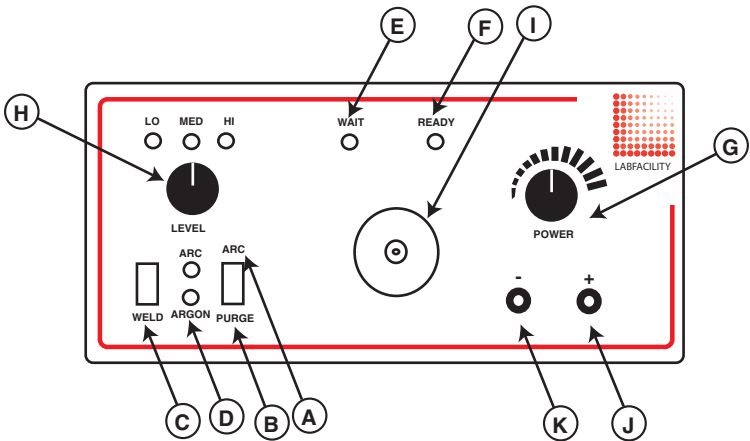
Spare Carbon Electrodes

Gas Flow Meter & Valve



Front Panel Controls

- A** Arc Argon gas and weld current controlled by the “Weld” switch. LED indication.
- B** Purge Allows the gas line and electrode shield to be purged of air prior to a new welding period.
- C** Weld Switch Initiates a welding operation (in “arc” mode also opens the Argon valve).
- D** Argon LED Indicates when the Argon control valve is open and gas is flowing.
- E** Wait LED Glows when weld charge is building.
- F** Ready LED “Ready to Weld” indication.
- G** Power Rotary control of the capacitor charge voltage.
- H** Level selector Selects the total capacitance available giving the following values with LED indication.
 “LO” = 0 to 6 Joules
 “MED” = 0 to 28 Joules
 “HI” = 0 to 64 Joules
- I** Electrode Holder Holds the replaceable carbon electrode which is accessible by removing the outer Argon Shield.
- J** Red socket Output socket for using the pliers supplied.
- K** Black socket Output socket, this provides an additional earth.



Welding

Arc Welding

1. Connect the work-holding pliers to the red output socket.
2. Depress the purge switch for 3 or 4 seconds to rid the system of air.
3. Reset the mode to “Arc”.
4. Set the energy level to the desired value.
5. Prepare the wires to be welded and grip in the pliers, leaving about 1mm or more protruding.
6. Position the wires 5 or 6mm in front of the carbon, whilst steadying the hand.
7. Press the “weld” switch or foot switch and slowly move the work towards the carbon until the arc is struck.
8. Release the switch and remove the work for examination.

Preparation of Wires for Arc welding

For small diameter wires, strip off about 12mm of insulation and twist together. Then, with side cutters or scissors cut the wire off square leaving sufficient un-insulated material to give approximately 1mm protruding when gripped in the welding pliers. Larger diameter wires may be held side by side in the welding pliers, but ensure that they are in firm contact with each other and trimmed off square. This method will be found useful for attaching solid leads to resistance thermometer detectors. However, when attaching stranded leads, it will be found more convenient to use the twisting method and then to carefully untwist after welding.

Energy Settings

Arc Welding

The following settings may be used as a guide. The correct setting for a particular metal combination and wire gauge will produce a spherical bead. A flattened bead indicates that the energy setting is too high.

Wire Diameter (mm)

Switch at "LOW"	0.1	Switch at "HIGH"	0.3
	0.15		0.5
	0.2		0.7
	0.25		0.8

Electrodes

To replace or adjust carbon electrode, first turn the welder on its side and slacken screw on base of argon shield, which may be then pulled off. This reveals grub screw which holds carbon electrode in place.



Maintenance

Apart from keeping the electrode in good order, no other maintenance is required.

Specifications

General

Energy Output	0-60 Joules
Welding Capacity	Wires up to 1.1mm diameter
Duty Cycle	Minimum 5-10 welds/min

Mechanical

Physical Dimensions	220mm Wide x 120mm High x 250mm Depth
Weight	4kg

Electrical

Power Supply	110-120 Vac or 220-250 Vac, 50-60Hz
Power Consumption	Max 170VA dropping to 20VA during charging

All information given is correct at time of going to press. Please note that specifications and availability of certain items may be subject to change.





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