

Variable Energy Thermocouple Welder: TW163/V

OPERATING INSTRUCTIONS

DESCRIPTION

The TW163/V is a capacitance-discharge welding unit used for the attachment of thermocouple wires to a work piece. It has variable energy output to suit a range of wire sizes. This unit is battery operated with mains connection for recharging.

FEATURES

- Manual and Auto (Hands Off) operation
- Variable energy level from 18 to 40 Joules
- Rechargeable battery via mains connection
- Low battery LED indicator
- Auto switch-off after 3 minutes to conserve battery
- Output voltage maximum is a safe 60 Volts at 40 Joules
- Stainless-steel or powder-coated case includes shoulder strap and tool storage
- Unit weight approx. 4.5 Kilos

FRONT PANEL CONTROLS

- Charge switch: Turns unit on and starts energy charging
- Auto/Manual Switch: To select Auto (Hands-free) or Manual (Push Weld) operation
- Energy Control: Set to required weld energy (example: 25 joules for 0.7mm wire)
- Weld Button: For discharging energy in Manual mode
- Charging & Ready LED indicators: When Ready is reached, weld can be made
- Low Batt indicator: Steady, then flashes for very-low battery (Unit then off to protect battery)
- Mains indicator: Shows mains is connected & battery is charging (Maximum 6 hours!!)

OPERATION

To weld a wire to a steel body, the magnet is used to make a return contact.

The thermocouple wire is stripped back and the pliers are used to grip this wire about 15mm from the cut end.

The 'charge' button is pushed and released. After a short time the LEDs change from 'charging' to 'ready'.

The thermocouple wire is held firmly against the steel surface and the 'weld' button is pushed. This welds the wire to the steel body (Auto Mode: Weld is made automatically 1.5 seconds after contact). The energy setting knob is used to set the required energy for different wire diameters.

SAFETY PRECAUTIONS

Eye protection is recommended to guard against molten metal spatter when weld occurs.

The weld spark could be a source of ignition for flammable liquids or gases so ensure the TW158 is only used in safe areas.

Avoid looking directly at bright spark when making the welded joint.

Ensure the thermocouple wire is not connected to any control equipment as these might be damaged during energy discharge.

INSTRUMENT CARE

Only charge the battery via the mains connection for 6 hours maximum. Longer will degrade the battery.

The TW163/V unit is NOT waterproof so avoid water ingress to front panel.

Clean front panel using slightly damp cloth or, for tough stains, use cloth impregnated with WD40 cleaner.

SPECIFICATION

Size: 190mm(H) x 300mm(W) x 100mm(D)

Weight approx: 4.5 kilos

Battery Type: Sealed lead-acid (non-spillable) 12V 2.1Ah

Weld Voltage: 37 to 60V (18 to 40 joules output)

Charging Time: Approx. 9 seconds at 40 joules (Following battery recharge)

Battery life: Approx. 1000 welds at 40 joules

EMC: EN61000-6-1:2001, EN61000-6-3:2001

LVD: EN61010-1:2001

Product is CE marked and WEEE compliant

TW163/V VARIABLE ENERGY THERMOCOUPLE WELDING UNIT



FEATURES

Mains LED shows when the battery is on charge.
Low Battery LED shows when the battery needs re-charging.
Tool storage is built into the case.
Very low battery inhibits operation.
Supplied with tools and mains charging lead.
Manual or Auto (Hands-Free) Operation

OPERATION

To weld a wire to a steel body, the magnet is used to make a return contact.
The thermocouple wire is stripped back and the pliers are used to grip this wire about 25mm from the cut end.
The 'charge' button is pushed and released. After a short time the LEDs change from 'charging' to 'ready'.
The thermocouple wire is held firmly against the steel surface and the 'weld' button is pushed. This welds the wire to the steel body (Auto Mode: Weld is made automatically 1.5 seconds after contact).
The energy setting knob is used to set the required energy for different wire diameters.

TECHNICAL DETAILS

Discharge energy	18 to 40 Joules Output.
Battery re-charge time	6 - 8 hours
Supply voltage	100 - 130 VAC or 200 - 260 VAC.
Dimensions	190mm(H), 300mm(W), 100mm(D)
Weight approx.	4.5kg

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