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TECHNICAL MANUAL

**OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT
AND GENERAL SUPPORT MAINTENANCE
MANUAL INCLUDING REPAIR PARTS LIST**

FOR

**TORCH OUTFIT, WELDING, GAS
MODEL 137
(NSN 3431-00-691-1415)**

This copy is a reprint which includes current
pages from Change 1.

HEADQUARTERS, DEPARTMENT OF THE ARMY

31 JULY 1981

Technical Manual }
No. 9-3431-258-14&P }

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 31 July 1981

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REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located in the back of this manual direct to: Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished directly to you.

NOTE

This manual is published for the purpose of identifying an authorized commercial manual for the use of the personnel to whom this welding set is issued.

Manufactured by: Westinghouse Electric Corp.
Industrial Electric Div.
P.O Box 300
Sykesville, MD 21784

Procured under Contract No. DAAA09-79-C-2019

This technical manual is an authentication of the manufacturers' commercial literature and does not conform with the format and content specified in AR 310-3, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment.

INSTRUCTIONS FOR REQUISITIONING PARTS

NOT IDENTIFIED BY NSN

When requisitioning part not identified by National Stock Number, it is mandatory that the following information be furnished to the supply office:

- 1 Manufacturer's Federal Supply Code Number 0815
- 2 Manufacturer's Part Number exactly as listed herein
- 3 Nomenclature exactly as listed herein including dimensions if necessary
- 4 Manufacturer's Model Number Model 10
- 5 Manufacturer's Serial Number (En Item)
- 6 Any other information such as Type Exam Number or Electrical Characteristics if applicable
- 7 If D Form 134 is used, fill in all blocks except 4, 5, 6 and Remark field is accordance with A 726-60

Complete Form as follows:

(a) Block 1, 4, 5, 6, list manufacturer's Federal Supply Code Number 0815 followed by manufacturer's Part Number for the repair part.

(b) Complete Remark field as follows:

Model (nomenclature of repair part)
For NSN 0421 00 001 1410
Manufacturer Westinghouse Electric Corp

Model 10,

Serial 10 En Item

Any other pertinent information such as Type Dimensions etc

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INTRODUCTION

The SP-9 and SP-10 Welding Gun is intended for use as part of a complete package for control of gas shielded consumable metal arc welding. The package includes the SP-9 or SP-10 Gun and the CV-2 Control when used with a constant potential welder. When arc spot welding is to be performed with a constant voltage welder, the CVS-2 Control and the CVAS-2 Timer is used. The guns may be used with a constant current DC Welder when the CC-2 Control is used. The WCP-1 Welder, a constant potential welder with a built-in gun control, may also be used with these guns.

DESCRIPTION

The SP Welding Gun

Type SP-9 Welding Gun is designed for use with 1/16-inch to 3/64-inch diameter aluminum welding wire on one-pound spools, 0.035-inch to 3/64-inch diameter Type MS 21 mild steel welding wire on 1-1/2 pound spools, and 0.035-inch to 3/64-inch diameter stainless steel welding wire on one-pound Spools. It can also be used with 10-pound spools of 3/64-inch diameter aluminum wire.

The SP-10 Welding Gun is designed for use with 0.020-inch and 0.030-inch diameter aluminum welding wire on one-pound spools, 0.020-inch to 0.030-inch diameter Type MS-21 mild steel welding wire on 1-1/2 pound spools, and 0.020-inch to 0.030-inch diameter stainless steel welding wire on one pound spools.

The Welding Gun SP-9 and SP-10 are compact, light-weight units designed to give dependable service over an extended period. All exposed parts of the gun are fully insulated from welding voltage for operator safety and prevention of accidental shorts. The distribution of weight and the cable and hose arrangement give excellent balance which make the welding guns easy to handle in all positions. The total weight of either welding gun (including a one-pound wire spool) is less than four pounds.

Each welding gun consists primarily of a gun barrel housing with a removable tapered nozzle, a mounting bracket with a shielding gas valve operated by the trigger, a handle of high impact plastic which contains the wire drive motor, a protective shield with electrode speed control, a plastic reel cover, a control cable, a welding current cable, and a gas hose.

The tapered nozzle (Part 1 on Drawing 483A756) is held by a nozzle holder (2) which is threaded to the gun barrel housing (3). A copper guide tube (4) passes thru the gun barrel and is secured by a thumbscrew (5). Mounted within the mounting bracket are a front guide bushing (6) and a rear guide bushing (7). The mounting bracket also includes a ball type shielding gas valve operated by the trigger (8) through a plunger. The trigger also actuates the weld switch (9). Pivoted on the side of the mounting bracket is a swing arm (10) on which is mounted an idler roll (11).

DESCRIPTION

The SP Welding Gun - Continued

The swing arm is secured in the closed position by a pressure screw (12) and a pressure spring (13). A 50-foot control cable (14) extends from the base of the handle, and has a plug for connection to the control.

A protective shield (15) is **secured** to the mounting bracket and includes the electrode speed control (16). A four-inch diameter spool of welding electrode (17) is mounted on the spool shaft supported by the shield. A plastic cover (18) is secured to the spool shaft supported by the shield. A plastic cover (18) is secured to the spool shaft by a knurled thumbscrew. The combination of protective shield and plastic cover completely enclose the welding wire spool and provide protection against spatter or other foreign matter. The plastic cover also enables the operator to see the quantity of welding wire remaining the spool. An adjustable spool brake (19) is secured to the protective shield, and bears against the wire spool to prevent uncoiling of the welding wire.

In operation, the welding electrode from the spool passes thru the rear guide bushing, between the drive and idler roll, thru the front guide bushing, and thru the guide tube. The wire then passes thru the nozzle to the arc. Welding current is transmitted thru the current cable to the gun barrel and to the guide bar, which in turn, transmits welding current to the welding wire. When the weld trigger is squeezed, the wire drive motor is energized to feed the welding wire to the arc and the gas valve opens to supply shielding gas to the arc area.

NOTE : Inching circuit not included in CV-2 Control.
Inch button will operate when this gun is
used with CVS-2 or CC-2 Control.

INSTALLATION

Immediately after opening the carton, make a careful examination of the contents to ensure that no damage has occurred during shipment. Do not discard any packing without first accounting for all small parts such as guide tubes. If any shortage or damage is discovered or suspected, promptly file a claim with the carrier and notify the nearest Sales Office.

Gas Connections

Gas is supplied to the welding gun thru the gas hose which must be connected thru a regulator and flowmeter to the shielding gas supply.

Location

The ideal location for this welding equipment is a clean, dry place where the temperature does not exceed 40°C. (104°F.). Under these conditions, the system can be expected to give excellent performance with a minimum of maintenance.