

TM 9-3431-254-14&P

**DEPARTMENT
OF THE ARMY TECHNICAL MANUAL**

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

FOR

**WELDING MACHINE
MODEL GCC-300W
(3431-01-032-6289)**

**HEADQUARTERS,
DEPARTMENT OF THE ARMY**

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Instructions

RECEIPT OF EQUIPMENT

Check the equipment received against the invoice to make certain that the shipment is complete and undamaged. If the equipment has been damaged in transit, notify the carrier (railroad, trucking company, etc.) at once and file a claim for damages.

Best results with this equipment will be obtained ONLY if the responsible operating and maintenance personnel have access to this manual, and are familiar with the instructions contained herein.

Give the MODEL, SPECIFICATION and SERIAL numbers of the equipment, and a full description of the parts in error. Refer to EQUIPMENT IDENTIFICATION on front sheet of this manual for an explanation of the specification numbers.

Generally, it is good practice to move the equipment to the site of installation before uncrating. Use care in uncrating in order to avoid damage to the equipment when bars, hammers, etc., are used. A lifting eye which extends through the top of the cabinet has been provided to facilitate handling with a crane or hoist.

DESCRIPTION OF EQUIPMENT

The Model GCC-300-W gasoline engine-driven welding generator is a self-contained unit, mounted on a welded steel frame. The unit is a single operator system, designed for constant current, or constant voltage welding. The unit is covered by a sheet metal canopy, bolted directly to the frame. The canopy has doors enclosing the generator section, but the engine compartment is open at the sides, with a cover over the top. The control panel is at the generator end of the unit. The revolving fields of the generator are axially mounted on a single heavy duty shaft, supported by a ball bearing at the exciter end and by the engine coupling at the drive end.

Industrial Gasoline engine, Model V-465D. It is directly coupled to the welding generator shaft by a flexible coupling.

IDENTIFICATION

The welding generator unit has an identification plate attached to the control panel, below on the left-hand side. The unit is identified as to SPEC number, by the dash (-) number which follows it, as explained on the front sheet of this manual. The engine identification number will be found on the engine nameplate attached to the air shroud of the engine. When ordering spare parts or communicating about this machine, be sure to specify the engine serial number, engine type, unit specification and serial numbers. Left and right-hand sides of the unit are determined when facing the control panel.

GENERATOR

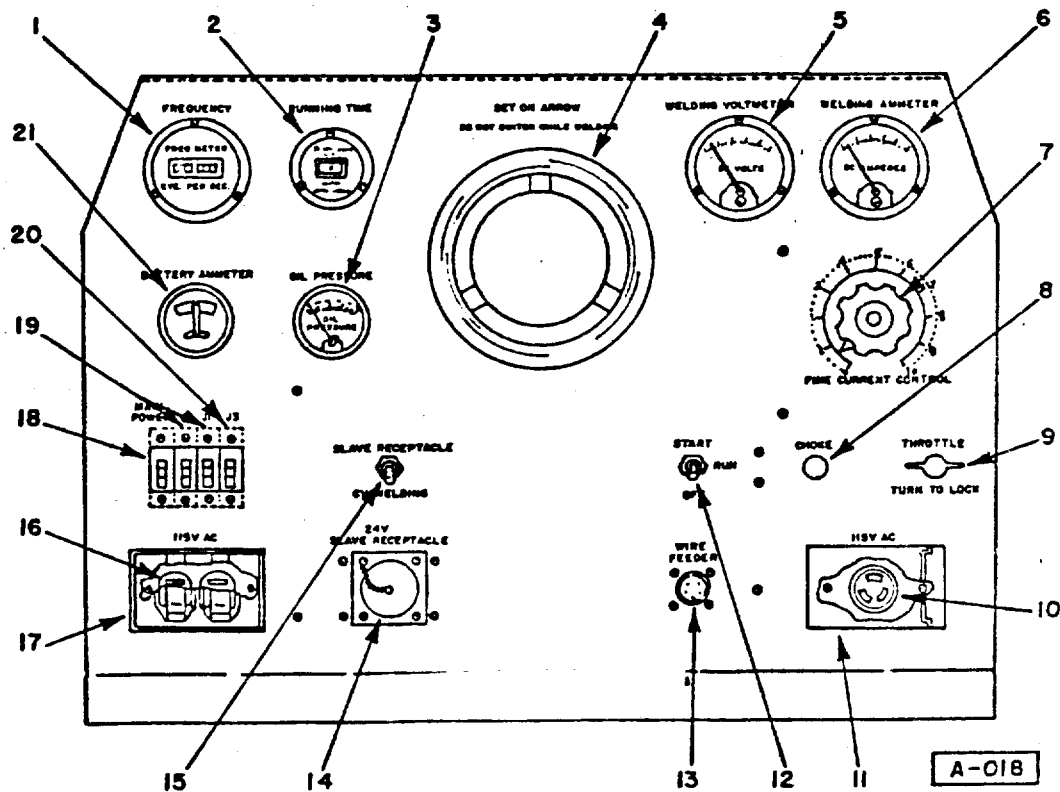
The generator is air cooled by a shaft-mounted fan which draws air through the exciter end and circulates the air through the interior of the generator. Air flow is also directed over the stability reactor and output rectifier. The welding generator is a three-phase alternating current wye connected unit. The output of the welding generator is rectified to direct current and stabilized by a ballast resistor, or a stability reactor, depending upon the mode of welding.

EXCITER

The exciter, or auxiliary generator whose output provides power to a bridge rectifier for excitation of the welding generator, service power for the contactor control and voltage regulator, and to the auxiliary power receptacles on the generator control panel.

ENGINE

The engine used in this unit is an air-cooled



- | | |
|--------------------------------------|----------------------------------|
| 1. Frequency Meter | 12. Start |
| 2. Hour Meter | 13. Wire Feeder Receptacle |
| 3. Oil Pressure Gauge | 14. Slave Receptacle |
| 4. Range Switch | 15. Toggle Switch |
| 5. Welding Voltmeter | 16. Duplex Receptacle (115 V AC) |
| 6. Welding Ammeter | 17. Receptacle Cover |
| 7. Fine Current Control | 18. Circuit Breaker (40 amperes) |
| 8. Choke Control | 19. Circuit Breaker (15 amperes) |
| 9. Engine Throttle | 20. Circuit Breaker (20 amperes) |
| 10. Twist-Lock Receptacle (115 V AC) | 21. Battery Ammeter |
| 11. Receptacle Cover | |

Control Panel
Figure 1

CONTROLS, INSTRUMENTS AND OUTLETS

FREQUENCY METER (1) - Registers the frequency of the voltage supplied to the receptacles (both the duplex receptacle, and the twist-lock receptacle) on the front panel.

HOUR METER (2) - Registers the operational time of the unit. Records cumulative number of hours that the engine has been in operation. Use the hour meter to schedule periodic maintenance and inspections.

OIL PRESSURE GAUGE (3) - The gauge indicates the oil pressure of the engine. The scale of the gauge is 0 to 75 psi (0 to 517 kPa). At 1800 RPM, the oil pressure should read 45 to 50 psi (310 to 345 kPa) when the engine is at operating temperature:

RANGE SWITCH (4) - This is the *coarse current control*, with five detent positions and is used in the constant current mode only. Clockwise rotation increases current, counterclockwise rotation decreases current.