

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL INVERTER, VIBRATOR PP-1703/U

Headquartes, Department of the Army, Washington 25, D.C.

1 July 1963

WARNING

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Be careful when working on the 115-volt ac output circuit. Serious injury or death may result from contact with these terminals. Never connect or disconnect the input cable with the POWER switch in the ON position.

DON'T TAKE CHANCES!

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Operator and Organizational Maintenance Manual
INVERTER, VIBRATOR PP-1703/U

(CHANGE)

No. 1 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 3 June 1964

TM 11-6125-238-12, 1 July 1963 is changed as follows:

Page 5, Paragraph 3c. Delete and substitute:

c. Reporting of Equipment Manual Improvements. The direct reporting by the individual user of errors, omissions, and recommendations for improving this manual is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8, or 9) will be used for reporting these improvements. This form will be completed in triplicate using pencil, pen, or typewriter. The original and one copy will be forwarded direct to Commanding Officer, U. S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, N. J. 07703. One information copy will be furnished to the individual's immediate supervisor (officer, noncommissioned officer, supervisor, etc.).

Page 21. Section II, Functional Parts List

Delete and substitute:

SECTION 11. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
6125-889-1207		INVERTER-VIBRATOR PP-1703/U: input 24 to 30 vdc, 4 amp; output 115VAC, 0.86 amp; 8-1/2 in lg x 10-3/8 in w x 8-3/4 in h					
		ITEMS COMPRISING AN OPERABLE EQUIPMENT					
		INVERTER-VIBRATOR PP-1703/U (Basic component)		NX	1		
Ord thru AGC		TECHNICAL MANUAL: TM 11-6125-238-12			2		
		RUNNING SPARE ITEMS					
5920-28C-86CC		FUSE, CARTRIDGE: 2-1/2 amp, 32V; Buss p/n AGC-7-1/2 (Mounted in equip)			5		
6130-961-4294		VIBRATOR-INTERRUPTER: 24VDC, 4 amp; 60 cyc freq; single reed; 5-3/16 in lg x 2-1/8" w x 2-1/2 in h; Delta Electric p/n PA61C1 (Mounted in equip)			1		61

PP-1703/U 2

END

By Order of the Secretary of the Army:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

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LOGCOMD (2)
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Corps (2)
USA Corps (3)
MDW (1)
USAMICOM (4)
USAECOM (7)
USASMCOM (2)
USASCC (4)
USA Avn Mat Comd (1)
GENDEP (OS) (2)
Army Dep (2) except
 Lexington, Tobyhanna (12)
 Sacramento (28) Ft Worth (8)
 Letterkenny, Navajo, Savanna (5)
 Sharpe, Charleston (3)
Sig Dep (OS) (12)
Sig Sec, GENDEP (OS) (5)
USAARMBD (2)
USAARTYBD (2)
USA Trans Rd (2)
USA Elct Mat Spt Agcy (9)
USARSOUTHCOC Sig Agcy (1)
Chicago Proc Dist (1)
USA CD Agcy (1)

Instl (2) except Ft Monmouth (63)
 Ft Hancock (4) Ft Gordon (5)
 Ft Huachuca (10)
USATTCARC (1)
USATTCA (1)
USATTCG (1)
USATTCP (1)
1st Fld Sta, USASA (5)
USA Elc R&D Agcy, WSMR (13)
USATC AD (2)
USATC Armor (2)
USATC Engr (2)
USASTC (2)
USA Mbl Equip Cen (1)
USA Pictorial Cen (2)
USATC Inf (2)
WRAMC (1)
AMS (1)
USA Tml (1) except Oakland (5)
POE (1)
Sig Fld Maint Shops (3)
USAERDL (2)
USA Cold Cold Rgns R&E Lab (2)
Svc Colleges (2)
Br Svc Sch (2)
11th Air Assault Div (3)
Units org under fol TOE: (2 ea UNOINDC)
 11-16
 11-57
 11-97
 11-98
 11-117
 11-155
 11-157
 11-500 AA-AE (4)
 11-557
 11-587
 11-592
 11-597

NG: State AG (3).

USAR: None.

For explanation of abbreviations used, see AR 320-50.

CHANGE }
No. 2 {

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 19 February 1974

**Operator and Organizational
Maintenance Manual
INVERTER, VIBRATOR PP-1703/U**

TM 11-6125-238-12, 1 July 1963, is changed as follows:

Page 5, paragraph 2. Delete paragraph 2 and substitute:

2. Indexes of Publications

a. DA Pam 310-4. Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. DA Pam 310-7. Refer to DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

Paragraph 3. Delete paragraph 3 and substitute:

3. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58 (Army)/NAVSUP PUB 378 (Navy)/AFR 71-4 (Air Force)/MCO P4030.29 (Marine Corps), and DSAR 4145.8.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in

Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38 (Army)/NAVSUPINST 4610.33/AFM 75-18/MCO MCO P4610.19 (Marine Corps), and DSAR 4500.15.

3.1. Reporting of Errors

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to Publications, and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-C, Fort Monmouth, NJ 07703.

Page 6, paragraph 6. Delete paragraph 6 and substitute:

6. Item Comprising an Operable Equipment

Inverter-Vibrator PP-1703/U (FSN 6125-889-1207) comprises an operable equipment.

Page 7, paragraph 10*b*. Delete the second sentence of subparagraph *b*.

Page 10, paragraph 18, References column, line 1. Delete "Appx III."

Page 12, paragraph 24, References column, line 3. Delete "Appx III."

Page 20, appendix III. Delete appendix III.

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:

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Major General, United States Army
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LOGCOMDS (3)
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TECOM (2)
USACC (4)
MDW (1)
Armies (2)
Corps (2)
HISA (ECOM) (18)
Svc Colleges (1)
USASESS (5)
USAADS (2)
USAFAS (2)
USAARMS (2)
USAIS (2)
USAES (2)
USAINTS (3)
WRAMC (1)
USACDCEC (10)

ATS (1)
Instl (2) except
Ft Gordon (10)
Ft Huachuca (10)
WSMR (1)
Ft Carson (5)
Ft Richardson (ECOM Ofc) (2)
Army Dep (2) except
LBAD (14)
SAAD (30)
TOAD (14)
ATAD (10)
GENDEP (2)
Sig Sec GENDEP (2)
Sig Dep (2)
SigFLDMS (1)
USAERDAA (1)
USAERDAW (1)
MAAG (1)
USARMIS (1)
Units org under fol TOE:
(1 cy each)
11-16
11-97
1198
11-117
11-158
11-302
11-500(AA-AC)
29-134
29-136

NG: State AG (3)

USAR: None

For explanation of abbreviations used, see AR 310-50.

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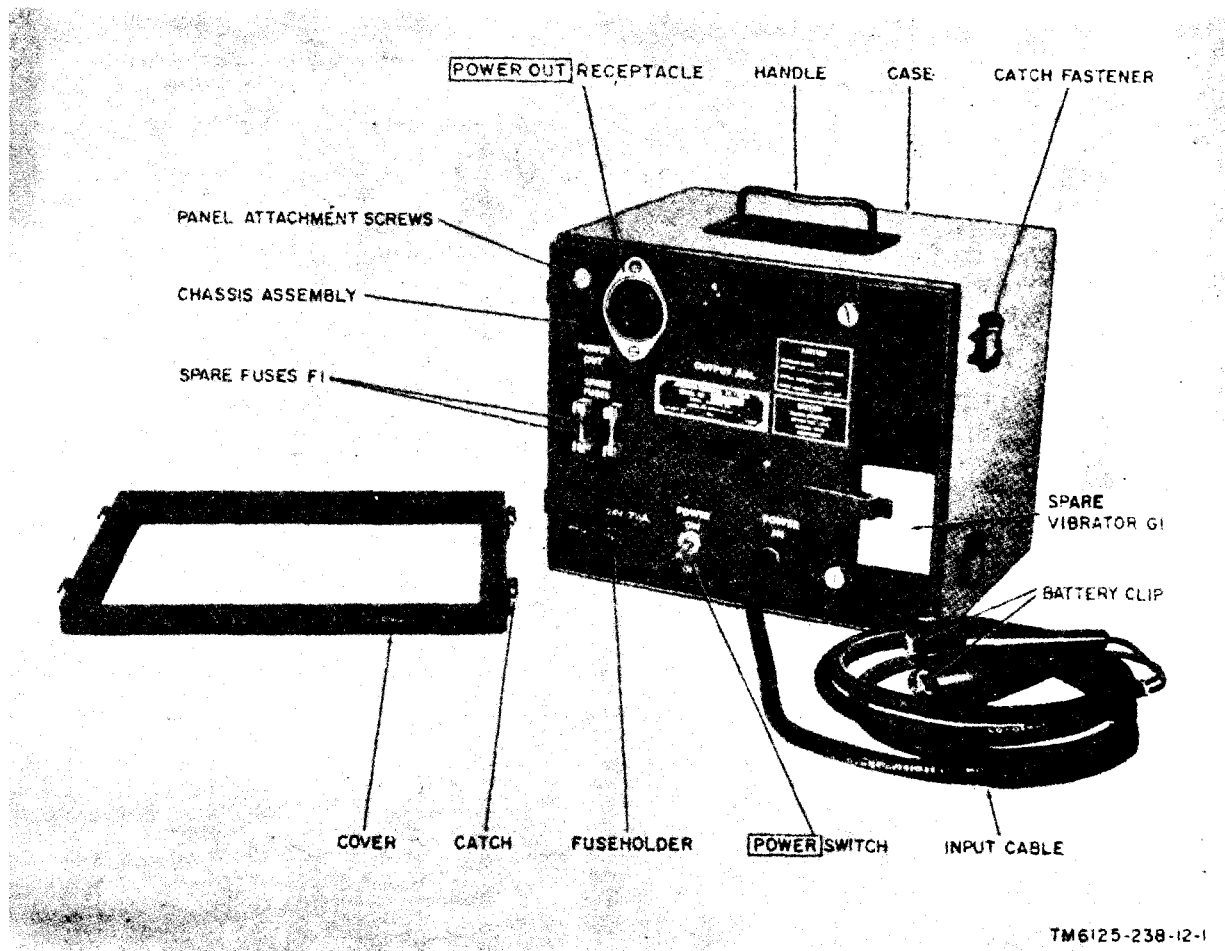


Figure 1. Inverter, Vibrator PP-1703/U, less technical manuals.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope (fig. 1)

This manual describes Inverter, Vibrater PP-1703/U (inverter) and covers its installation, operation, and operator's and second echelon maintenance. It includes operation, cleaning and inspection of the equipment, replacement of parts available for organizational maintenance, and repair functions to be accomplished by the organizational repairman.

2. Index of Publications

Refer to the latest issue of DA PAM 310-4 to determine whether there are new editions, changes, or additional publications pertaining to your equipment. Department of the Army Pamphlet No. 310-4 is an index of current Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders which are available through publications supply channels. The index lists the indi-

vidual parts (-10, -20, -35P, etc) and the latest changes to and revisions of each equipment publications.

3. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions in TM 38-750.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSANDA Publication 378 (Navy), and AFR 71-4 (Air Force).

c. Comments on Manual. Forward all comments on this publication direct to: Commanding Officer, U. S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, New Jersey. (DA Form 1598 (Record of Comments on Publications), DA Form 2496 (Disposition Form), or letter maybe used.)

Section II. DESCRIPTION AND DATA

4. Purpose and Use

a. Inverter, Vibrater PP-1703/U (fig. 1) is a portable vibrator-type power supply that supplies 115 volts alternating current (ac) at 60 cycles per second (cps). The primary power source required is a 24-, 26-, 28-, or 30-volt storage battery. The inverter can be operated continuously with a power output of 80 watts maximum (24-volt primary source), 67 watts maximum (26-volt primary source), 53 watts maximum (28-volt primary source), or 40 watts maximum (30-volt primary source).

b. The inverter may be used to supply power to Test Set, Electron Tube TV-7/U (or any other electrical equipment that

operates on 115-volt, 60-cycle power with a power consumption of not more than 80 watts) at locations where 115 volts ac is not available.

5. Technical Characteristics

Input voltage 24, 26, 28, or
30 Volts dc.

Rated input current:

24-volt source 4 amperes.
26-volt source 3.23 amperes.
28-volt source 2.46 amperes.
30-volt source 1.68 amperes.

Input cable96 inches long.

Output frequency 60 cps, ± 3 cps.

output voltage 115 volts, ± 5
volts ac.

Output amperage 0.86 ampere
maximum.

Output power:

24-volt source 80 watts maxi-
mum,

26-volt source 67 watts maxi-
mum.

28-volt source 53 watts maxi-
mum.

30-volt source 40 watts maxi-
mum.

Weight 30 pounds

Altitude 10,000 feet
maximum.

Operating temperature . . -54° C to +65°
C (-65.2° F to
+149° F).

6. Table of Components

The components of the PP-1703/U are listed in the basic issue items list (appx III). The major components are illustrated in figure 1.

7. Description of Inverter, Vibrator PP-1703/U (fig. 1)

Inverter, Vibrator PP-1703/U is housed in a waterproof steel case equipped with a carrying handle. The case is equipped with a watertight cover for protection during transportation. All controls and the output receptacle are located on the front panel. The input cable passes through the front panel and is terminated with two large alligator clips. The vibrator unit is encased in a metal box that plugs into a six-prong socket and is held in place by a vibrator holddown channel.

8. Additional Equipment Required

Caution: Do not operate the inverter without a suitable load because the vibrator and the filter capacitors may become damaged.

The inverter requires a suitable load and a 24-, 26-, 28-, or 30-volt storage battery.

CHAPTER 2

INSTALLATION AND OPERATION INSTRUCTIONS

Section 1. SERVICE UPON RECEIPT OF EQUIPMENT

9. Unpacking

a. Packaging Data. When packed for shipment, the PP-1703/U is padded on all sides and packaged in double corrugated cartons with a sealed moisture-vaporproof barrier between the inner carton and the outer carton. A diagram of atypical packaging arrangement is shown in figure 2. Packed for shipment, the dimensions are 13-1/2 inches high, 15 inches wide, 12-1/2 inches deep, has a volume of 1.47 cubic feet, and weighs 41 pounds.

b. Removing Contents.

- (1) Open the outer corrugated carton and the moisture-vaporproof barrier that covers the inner corrugated carton.
- (2) Remove the inner corrugated carton.
- (3) Open the inner corrugated carton.
- (4) Remove the corrugated pads and the equipment from the inner corrugated carton.

10. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage according to instructions in paragraph 3.

b. See that the equipment is complete as listed on the packing slip. If a packing slip is not available, check the equipment against the basic issue items list (appx III). However, the absence of a minor component that does not affect proper functioning of the equipment should not prevent the equipment from being used.

c. If the equipment has been used or reconditioned, see whether it has been changed by a modification work order (MWO). If the equipment has been modified,

the MWO number should appear on the front panel near the nomenclature plate. Check to see whether the MWO number and appropriate notations concerning the modification have been entered in the equipment manual.

Note: Current MWO's applicable to the equipment are listed in DA Pam 310-4.

11. Connections (fig. 1)

Caution: Before making the connections given in b below, be sure that the POWER switch is set to OFF. To avoid damage to the vibrator and the filter capacitors, do not operate the inverter without a load.

a. OUTPUT ADJ. Switch Positions.

- (1) When using a 30-volt storage battery, set the OUTPUT ADJ. switch to position 1.
- (2) When using a 28-volt storage battery, set the OUTPUT ADJ. switch to position 2.
- (3) When using a 26-volt storage battery, set the OUTPUT ADJ. switch to position 3.
- (4) When using a 24-volt storage battery, set the OUTPUT ADJ. switch to position 4.

b. Connections.

- (1) Connect the battery clips (on the input cable) to the storage battery. Polarity is not important; either battery clip may be connected to either battery terminal. Be sure the battery clips make good contact and are firmly seated.
- (2) Connect the equipment to be powered to the POWER OUT receptacle.

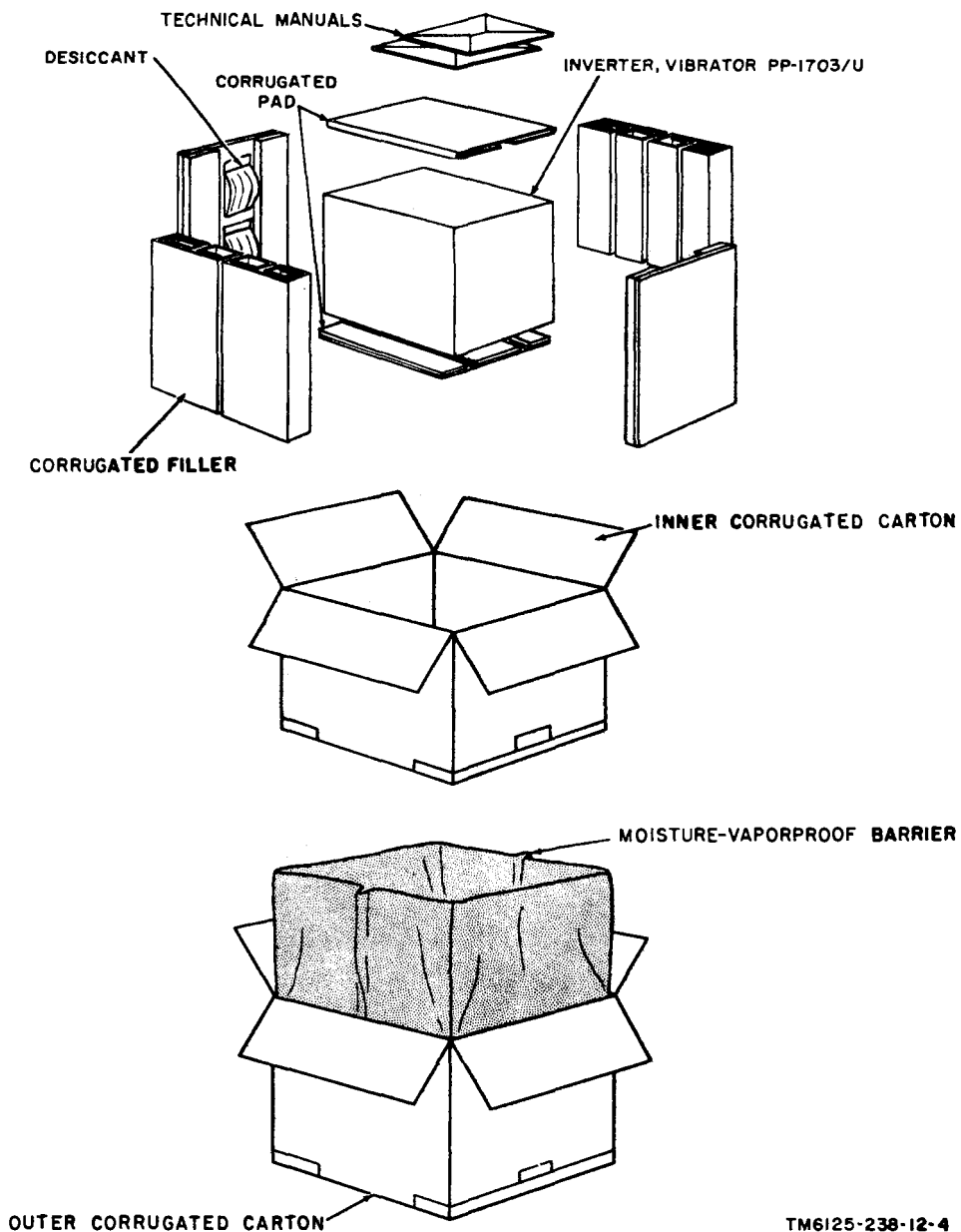


Figure 2. Typical packaging.

Section II. OPERATOR'S CONTROLS

12. Damage from Improper Settings

Take the following precautions when setting the controls.

a. Check to see that the OUTPUT ADJ. switch is in the proper position for the source of voltage being used. If this switch

is placed in the wrong position, the equipment may become damaged.

b. Do not place the POWER switch to ON before connections are made to the storage battery and the load.

13. Inverter, Vibrator PP-1703/U, Controls (fig. 3)

Control	Function
POWER switch -- OUTPUT ADJ. switch (4-position rotary).	<p>Turns inverter on and off.</p> <p><i>Sw pos Function</i></p> <p>1 Arranges the circuits of the inverter for use with a 30-volt storage battery to power a load having a power dissipation of 40 watts maximum.</p> <p>2 Arranges the circuits of the inverter for use with a 28-volt storage battery to power a load having a power dissipation of 53 watts maximum.</p> <p>3 Arranges the circuits of the inverter for use with a 26-volt storage battery to power a load having a power dissipation of 67 watts maximum.</p> <p>4 Arranges the circuits of the inverter for use with a 24-volt storage battery to power a load having a power dissipation of 80 watts maximum.</p>

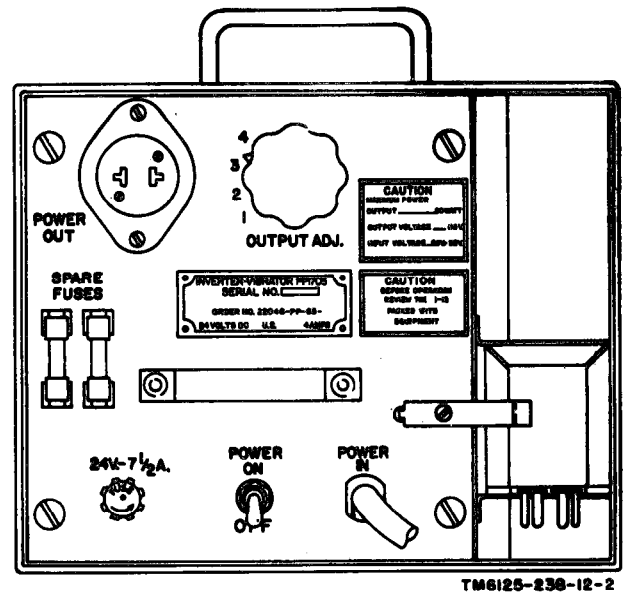


Figure 3. Inverter, Vibrator PP-1703/U, controls.

Section III. OPERATING INSTRUCTIONS

14. Preliminary Control Settings (fig. 3)

- See that the equipment is connected properly (para 11).
- Set the OUTPUT ADJ. switch to the proper setting for the equipment to be powered.

Position	Input voltage (dc)	Maximum power delivered to load
1	30	40 watts
2	28	53 watts
3	26	67 watts
4	24	80 watts

- Set the switch of the equipment to be powered to on.

15. Starting and Stopping Procedures

Caution: Always turn the power off at the Inverter (by setting the POWER switch to OFF) and *not* at the switch of the equipment being powered. Excessive voltage and possible damage to the inverter will result.

a. Starting. Set the POWER switch of the inverter to ON. An audible hum will be heard. This is a normal condition and results from the mechanical operation of the vibrator G1. The powered equipment should operate within approximately 30 seconds.

b. Stopping. Set the POWER switch of the Inverter to OFF.

CHAPTER 3

OPERATOR'S MAINTENANCE

16. Scope of Operator's Maintenance

The maintenance duties assigned to the operator of Inverter, Vibrator PP-1703/U are listed below together with a reference to the paragraph covering the specific maintenance function. The duties assigned do not require tools or test equipment other than those issued with the equipment.

- a. Daily preventive maintenance checks and services (para 18).
- b. Cleaning (para 19).
- c. Repairs (para 20).

17. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. *Systematic Care.* The procedures given in paragraphs 18 and 19 cover routine systematic care and cleaning es-

sential to proper upkeep and operation of the equipment.

b. *Preventive Maintenance Checks and Services.* The preventive maintenance checks and services chart (para 18) outlines functions to be performed daily. These checks and services are to maintain Army electronic equipment in a combat serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the chart indicates what to check, how to check, and what the normal conditions are; the *References column* lists the paragraphs that contain additional information. If the defect cannot be remedied by the operator, higher echelon maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38-750.

18. Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Inverter -----	Check equipment for completeness and general condition --	Appx III. Para 19.
2	Exterior surfaces -----	Clean exterior surfaces of equipment -----	
3	Output receptacle -----	Inspect output receptacle for breakage and firm seating.	
4	Input cable -----	Inspect input cable for cuts, cracked, or gouged jacket, fraying, or kinks.	
5	Hardware -----	Inspect all exterior hardware for looseness and damage. The inverter cover, carrying handle, catch and catch fastener, and all bolts and screws must be tight and not damaged.	
6	Preservation -----	Inspect the equipment to determine that it is free of bare spots, rust, and corrosion. If these conditions exist, refer to higher echelon for repair.	
7	Fuse -----	The fuse in use should be 7-1/2 amperes, 32 volts (Federal stock No. 5920-280-8600).	
8	Knob and switch -----	During operation (item 10), check knob and switch for proper mechanical action. Action must be positive without backlash, binding, or scraping.	
9	Connections -----	Connect the equipment as specified in paragraph 11.	
10	Operation -----	Set the POWER switch to ON. The equipment being powered should operate normally.	Para 20.

19. Cleaning

Inspect the exterior of the PP-1703/U. The exterior surfaces should be free of dust, dirt, grease, and fungus.

a. Remove dust and loose dirt with a Clean soft cloth.

Warning: Cleaning Compound (Federal stock No. 7930-395-9542) is flammable and its fumes are toxic. Provide adequate ventilation. Do not use near a flame.

b. Remove grease, fungus, and ground-in dirt from the cases; use a cloth dampened (not wet) with cleaning compound.

c. Remove dust or dirt from plugs and jacks with a brush.

d. Clean the front panel and the OUTPUT ADJ. knob; use a soft clean cloth. If dirt is difficult to remove, dampen the cloth with water; mild soap may be used for more effective cleaning.

20. Repairs

(fig. 1)

a. Replacement of fuse.

(1) Turn the cap of the fuseholder counterclockwise and remove fuseholder cap and fuse.

(2) Insert a new fuse into the fuseholder and secure the fuseholder cap by turning clockwise.

b. Replacement of Vibrator.

(1) Loosen the four panel attachment screws (fig. 1) and slide the chassis assembly out of the case.

(2) Remove the vibrator holddown channel (fig. 4) and pull vibrator G1 out of socket X1.

(3) Insert a new vibrator (G1) into socket X1 and secure it in position with the vibrator holddown channel.

(4) Slide the chassis assembly into the case and secure it in position with the four panel attachment screws.

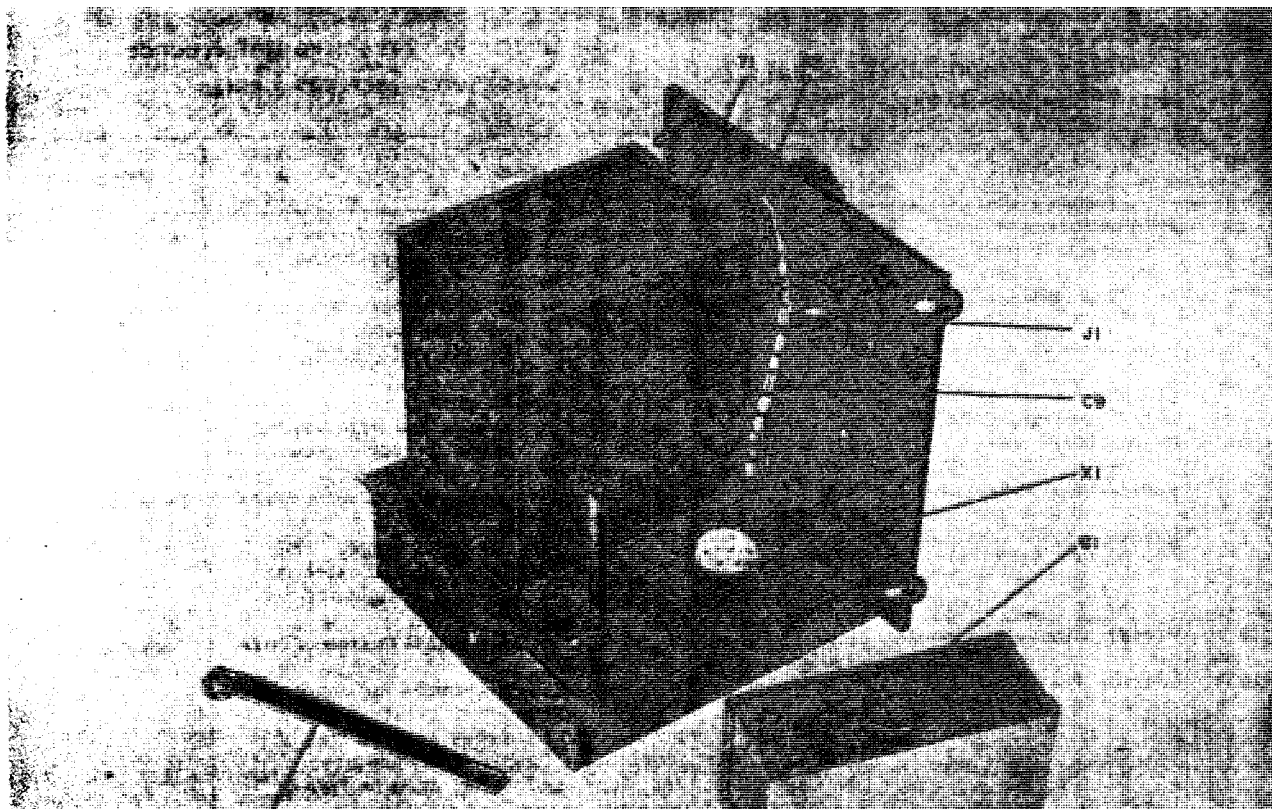


Figure 4. Inverter, Vibrator PP-1703/U, vibrator removed.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE

21. Scope of Organizational Maintenance

The maintenance duties assigned to the second echelon repairman are listed below together with a reference to the paragraph covering the specific maintenance function.

- a. Quarterly preventive maintenance checks and services (para 24).
- b. Cleaning and touchup painting (para 25).
- c. Troubleshooting (para 26).

22. Tools, Materials, and Test Equipment Required

The tools, materials, and test equipment required for organizational maintenance are listed below.

- a. *Tools.* Tool Equipment TE-123.
- b. *Materials.*
 - (1) Cleaning Compound (Federal stock No. 7930-395-9542).

- (2) Cleaning cloth.
- (3) Fine sandpaper (supplied in Tool Equipment TE-123).

c. *Test Equipment.* Multimeter AN/URM-105.

23. Quarterly Maintenance

Quarterly preventive maintenance checks and services on Inverter, Vibrator PP-1703/U are required. All deficiencies or shortcomings will be recorded in accordance with the requirements of TM 38-750. Perform all the checks and services listed in the quarterly preventive maintenance checks and services chart (para 24) in the sequence listed.

24. Quarterly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Publications -----	Inspect manual for completeness and to see if it is in usable condition. Be sure that all Changes to the manual are on hand.	DA Pam 310-4.
2	Modification work orders --	Check to see that all urgent MWO's have been applied and that all routine MWO's have been scheduled.	DA Pam 310-4.
3	Completeness -----	Check the equipment for completeness and general condition.	Appx III.
4	Cleanliness -----	Clean exterior surfaces of the equipment -----	Para 19.
5	Output receptacle -----	Inspect output receptacle for breakage and firm seating.	
6	Input cable -----	Inspect input cable for cuts, cracked or gouged jacket, fraying, or kinks.	
7	Fuse -----	The fuse in use should be 7-1/2 amperes, 32 volts (Federal stock No. 5920-280-8600).	Para 26.
8	Hardware -----	Inspect all hardware for looseness and damage. The inverter cover, carrying handle, catch and catch fastener, and all bolts and screws must be tight and not damaged.	
9	Preservation -----	Inspect the equipment to determine that it is free of bare spots, rust, and corrosion.	Para 25.
10	Interior -----	Inspect interior components and hardware for cleanliness and general physical condition. a. Interior components and hardware must be free of dust, dirt, corrosion, fungus, and moisture. b. Capacitors, resistors, and wiring must be free of cracks, blistering, burns, and discoloration.	
11	Knob and switch -----	During operational check (item 13), observe that the mechanical action of the knob and switch is smooth and free of external or internal binding.	
12	Connections -----	Connect the equipment as specified in paragraph 11.	
13	Operational check -----	Set the POWER switch to ON. The equipment being powered should operate normally.	Para 26.

25. Cleaning and Touchup Painting

Instructions

Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TM 9-213.

26. Troubleshooting

a. General. Troubleshooting of this equipment is based upon the operational check contained in the quarterly preventive

maintenance checks and services chart. To troubleshoot the equipment, perform the functions given in sequence No. 7 and 13 of the quarterly checks and services chart (para 24). When an abnormal condition or result is observed, note the sequence number and turn to the corresponding item number in the troubleshooting chart (b below). Perform the checks and corrective actions indicated in the troubleshooting chart. If the corrective measures indicated do not result in correction of the trouble, higher echelon maintenance is required.

b. Troubleshooting Chart.

Item	Trouble symptom	Probable trouble	Checks and corrective measures
7 13	<p>Fuse is defective -----</p> <p>a. Vibrator does not operate (no hum).</p> <p>b. Output voltage low (less than 110 volts ac).</p> <p>c. Output voltage high (more than 120 volts ac).</p>	<p>Defective fuse or vibrator -----</p> <p>a. Poor battery contacts, battery not fully charged, fuse burned out, vibrator not seated properly in socket, or vibrator defective.</p> <p>b. OUTPUT ADJ. switch improperly set, battery not fully charged, or defective vibrator.</p> <p>c. OUTPUT ADJ. switch is improperly set.</p>	<p>Replace fuse or vibrator (para 20).</p> <p>a. Clean battery clips and battery terminals. Check condition of battery; use Multimeter AN/URM-105. If battery voltage is low, charge or replace battery. Replace fuse (para 20). Seat vibrator firmly in socket XI (fig. 4). Replace vibrator (para 20).</p> <p>b. Set OUTPUT ADJ. switch properly (para 14). Charge or replace battery. Replace vibrator (para 20).</p> <p>c. Set OUTPUT ADJ. switch properly (para 14).</p>

CHAPTER 5

SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

Section 1. SHIPMENT AND LIMITED STORAGE

27. Disassembly of Equipment

Disassemble Inverter, Vibrator PP-1703/U as follows:

a. Disconnect the input cable (fig. 1) from the storage battery and fold it into the case.

b. Position the cover on the case and secure it in position with the four catch fasteners,

28. Repackaging for Shipment or Limited Storage

The exact procedure for repackaging depends on the material available and the conditions under which the equipment is to be shipped or stored. Adapt the procedures outlined below whenever circumstances permit. The information concerning the original packaging (para 9) will also be helpful.

a. Material Requirements The following materials are required for packaging Inverter, Vibrator PP-1703/U. For stock numbers of materials, consult SB 38-100.

Material	Quantity
Moisture-vaporproof barrier paper ----	30 sq ft
Waterproof tape -----	18 ft
Corrugated cardboard -----	30 sq ft
Gummed tape -----	12 ft
Corrugated pad -----	6 lb

b. Packaging.

(1) Cushion the inverter on all surfaces with corrugated pads.

(2) Place the cushioned inverter within a wrap of corrugated cardboard (inner corrugated carton).

(3) Secure the wrap with gummed tape.

c. Packing.

(1) Pack the secured wrap and technical manuals in moisture-vaporproof barrier paper.

(2) Place this package within a wrap of corrugated cardboard (outer corrugated carton).

(3) Secure the package with waterproof tape.

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

29. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedures outlined in paragraph 30. will be used to prevent further use of the equipment.

30. Methods of Destruction

Use any of the following methods to destroy the equipment.

a. Smash. Smash capacitors, transformer, resistors, sockets, plugs, control switch, and vibrators; use sledges, axes,

handaxes, pickaxes, hammers, or crow-bars.

b. Cut. Cut the input cable and wiring; use axes, handaxes, or machetes.

c. Burn. Burn the input cable and technical manuals; use gasoline, kerosene, oil, flame throwers, or incendiary grenades.

d. Bend. Bend the panel and case.

e. Explode. If explosives are necessary, use firearms, grenades, or TNT.

f. Dispose. Bury or scatter the destroyed parts in slit trenches, foxholes, or throw them into streams.

APPENDIX I

REFERENCES

Following is a list of applicable publications available to the operator and organizational maintenance repairman of Inverter, Vibrator PP-1703/U.

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.
SB 38-100	Preservation, Packaging, and Packing Materials, Supplies, and Equipment Used by the Army.
TM 9-213	Painting Instructions for Field Use.
TM 11-6625-203-12	Operation and Organizational Maintenance, Multimeter AN/URM-105, including Multimeter ME-77/U.
TM 38-750	The Army Equipment Record System and Procedures.

APPENDIX II

MAINTENANCE ALLOCATION

Section 1. INTRODUCTION

1. General

a. This appendix assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon. It also specifies the tools and other equipment authorized at each echelon to perform the assigned maintenance functions.

b. Columns in the maintenance allocation chart are as follows:

- (1) *Part or component.* This column shows only the nomenclature or standard item name.
- (2) *Maintenance function.* This column indicates the various maintenance functions allocated to the echelon capable of performing the operation.
 - (a) *Service.* To clean and to preserve.
 - (b) *Inspect.* To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.
 - (c) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.
 - (d) *Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses or vibrators.
 - (e) *Overhaul.* To restore an item to *completely serviceable* condition as prescribed by serviceability standards developed and published by heads of technical serv-

ices. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process,

- (3) *1st, 2d, 3d, 4th, and 5th echelon.* The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.
- (4) *Tools required.* This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipments required to perform the maintenance function. These numbers are identified in section III.
- (5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding columns.

c. Columns in the allocation of tools for maintenance are as follows:

- (1) *Tools required for maintenance functions.* This column lists the tool and test equipment required to perform the maintenance functions.
- (2) *1st, 2d, 3d, 4th, and 5th echelon.* The dagger symbol (†) indicates that the tool or test equipment is allocated to that echelon.
- (3) *Tool code.* This column lists the tool code assigned.

2. Maintenance by Using Organization

When this equipment is used by signal service organizations organic to theater headquarters or communication zones,

those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

Section II. MAINTENANCE ALLOCATION CHART

PART OR COMPONENT	MAINTENANCE FUNCTION	ECHELON					TOOLS REQUIRED	REMARKS
		1	2	3	4	5		
INVERTER-VIBRATOR PP-1703/U	service	X						
	inspect	X						
	test		X				1,2,4,5 3	Operational condition
	repair	X		X				Voltage output
	overhaul		X			X	5 5	All tests Replace fuse and vibrator only

Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	ECHELON					TOOL CODE	REMARKS
	1	2	3	4	5		
PP-1703/U (continued)							
FREQUENCY METER AN/TSM-16			+	+	+	1	
MULTIMETER TS-352()/U			+	+	+	2	See TM for NOTE on voltage readings
MULTITESTER AN/URM-105			+			3	See TM for NOTE on voltage readings
OSCILLOSCOPE AN/USM-89			+	+	+	4	
TOOL EQUIPMENT TE-123			+	+	+	5	

PP-1703/U

APPENDIX III

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

1. General

This appendix lists items supplied for initial operation and for running spares. The list includes parts and material issued as part of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

2. Columns

Columns are as follows:

a. Federal Stock Number. This column lists the Ii-digit Federal stock number.

b. Designation by Model. Not used.

c. Description. Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description on the requisition.

d. Unit of Issue. The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

e. Expendability. Nonexpendable items are indicated by NX. Expendable items are not annotated.

f. Quantity Authorized. Under "Items Comprising an Operable Equipment", the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spare Items", the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

g. Illustrations. The "Item No." column lists the reference designation used for identification of the item in the text of the manual.

Section II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXP	QTY AUTH	ILLUSTRATION	
						FIGURE NO.	ITEM NO.
6125-889-1207		INVERTER-VIBRATOR PP-1703/U: input data 24 to 30V DC, 4 amp; output data 115V AC 0.86 amp; 8-1/2 in lg x 10-3/8 in w x 8-3/4 in h o/a		NX			
Order thru AGC		ITEMS COMPRISING AN OPERABLE EQUIPMENT TECHNICAL MANUAL TM 11-6125-238-12			1		
5920-280-8600		RUNNING SPARE ITEMS FUSE, CARTRIDGE: 7-1/2 amp 32 v; Buss part #AGC-7-1/2 (Not mounted)			5		
		VIBRATOR, INTERRUPTER: 24 vdc, 4 amp; 60 cyc freq; single reed; 1-5/32 in lg x 2-1/8 in w x 2-17/32 in h; Delta Electric part #PA6101 (L3WC7-2) (Mounted in equipment)			1		G1

PP-1703/U

1

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Br Svc Sch (2)
GENDEP (OS) (2)
Sig Dep (OS) (12)
Sig Sec. GENDEP (OS) (5)
Army Dep (2) except
Ft Worth (8)
Lexington (12)

Sacramento (28)
Tobyhannn (12)
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NG: State AG (3).

USAR: None.

For explanation of abbreviations used. see AR 320-50.

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