

URGENT

MWO effective date is 29 February 2008 and completion date is 01 February 2010.

MWO 9-2330-331-23-1

MODIFICATION WORK ORDER

MODIFICATION OF M872A4 Semi Trailer 12/24-VOLT ELECTRICAL CONVERTER

Headquarters, Department of the Army, Washington, D.C.

29 February 2008

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028-2 (Recommended Changes to Equipment Technical Publications) through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is <http://aeps.ria.army.mil>. The DA Form 2028 is located under the PUBLIC APPLICATIONS section of the AEPS public home page. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond more quickly to your comments and better manage the DA Form 2028 program. You may also mail, fax, or e-mail your letter, DA Form 2028, or DA Form 2028-2 directly to TACOM Life Cycle Management Command, ATTN: AMSTA-LC-LMPP/TECH PUBS 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The e-mail address is ROCK-TACOM-TECH-PUBS@conus.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726. A reply will be furnished to you.

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

MWO 9-2330-331-23-1

1. PURPOSE.

This modification provides the conversion of the 24-volt connection to 12-volt for the Anti-Lock Brake system so it functions with either 12 or 24-volt input.

2. PRIORITY.

This modification is classified as URGENT.

3. END ITEM TO BE MODIFIED.

This MWO applies to manufacturer Serial Numbers 22950-22953, 22955-23474, 25758-25889, 27302-27325, and 27798 only of the below listed item. This is a total of 629 trailers.

NOTE

Application will be controlled/determined by PM Heavy Tactical Vehicles based on approved DCSOPS distribution plans/funding streams for M872A4.

NOMENCLATURE	NSN	PART NO	CAGE	MODEL
Semitrailer, Flatbed Breakbulk/Container, Transporter, 34 Ton	2330-01-497-0706	M872A4	19207	M872A4

Vehicle National Stock Number (NSN) will not change as a result of this MWO.

4. MODULE (S) TO BE MODIFIED.

Not applicable

5. PART (S) TO BE MODIFIED.

Not applicable

6. APPLICATION.

- a. Time Compliance Schedule: The effective date of this MWO is 29 February 2008 and its completion date is 01 February 2010.
- b. The Lowest level of Maintenance authorized to apply the MWO is Field Support (FS) maintenance.
- c. Work force and man-hour requirements for application of the MWO to a single unit, end item, or system:

REQUIREMENTS

DESCRIPTION	WORK FORCE/SKILLS	MAN-HOURS
Removal of Electrical Cover Plate	Operational / Mechanic	.25
Removal of 12-Volt Front Electrical Harness	Operational / Mechanic	.25
Removal of 24-Volt Front Electrical Harness	Operational / Mechanic	.25
Prepare mounting surface for Converter	Operational / Mechanic	.50
Install Converter box	Operational / Mechanic	.25
Install New 12-Volt Front Electrical Harness	Operational / Mechanic	.25
Install New 24-Volt Front Electrical Harness	Operational / Mechanic	.25
Install Electrical Cover Plate	Operational / Mechanic	.25
Test Electrical System	Operational / Mechanic	.25
Total man-hours required for a single application of this MWO		2.50

7. TECHNICAL PUBLICATIONS AFFECTED/CHANGED AS A RESULT OF THIS MWO.

Technical Publication	Date
TM 9-2330-331-14&P	Dec 05

8. MWO KITS, PARTS AND THEIR DISPOSITION.

- a. The following kit is required to accomplish this modification. The security classification of this kit is unclassified. Shipping data is: weight 7 lbs;

NOMENCLATURE	NSN	CAGEC	PART NO
24-Volt Electrical Converter Kit	6150-01-557-2886	19207	M872A4K16011

- b. 24-Volt Electrical Converter Kit component parts are listed below. The listing is used to inventory the kit for completeness.

ITEM	NOMENCLATURE	VENDOR	PART NO.	QTY.
1	Electrical Converter	Weldon	SCM-2412	1
2	Converter Harness	Weldon	0L90-2210-10	1
3	12-Volt Front Cable	Talbert	TAL-110	1
4	24-Volt Front Cable	Talbert	TAL-111	1
5	Self-tapping screws	Talbert	10PHS24-.75	4
6	Self-tapping screws	Talbert	25HHSdst14-.75	8
7	Lock Nuts	Talbert	25LN20	6
8	Lock Pins	USA	USA-063	8
9	Safety Decal	Talbert	909A01003	1
10	MWO Tag	TACOM	10930014	1
11	MWO Tag Screw (Easy Drive)	McMaster-Carr	90081A105	1

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c. Bulk and Expendable Material.

NOMENCLATURE	NSN	CAGE	PART	QTY.
Grease: Dielectric	9150-00-040-3891	08125	G305	A/R
Solvent: Dry Cleaning, Type II	6850-00-281-1985	81348	MIL-P-D-680	A/R
Rag: Wiping	7920-00-205-1711	64067	7920-00-205-1711	A/R
Sealant, Silicone, RTV	8030-01-159-4884	11862	1052734	A/R
Sealant, Thread,	8130-01-268-5917	05972	62040	A/R
Tiedown Straps, Nylon	5975-00-156-3253	81343	MS 3367-2-9	A/R

d. Parts Disposition. All parts not used during installation will be returned to stock for disposition in accordance with AR 725-50.

9. SPECIAL TOOLS; TOOL KITS; JIGS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE); AND FIXTURES REQUIRED.

Hand tools and tool kits necessary to apply MWO are listed:

NOMENCLATURE	NSN	CAGE	SUPPLY CATALOG
Tool Kit, General Mechanic's	5180-00-177-7033	50980	SC 5180-90-N26
Drill, Electric, Portable	5130-00-293-1849	81348	SC 4910-95-CL-A74

10. MODIFICATION PROCEDURE.

Installation Instructions for voltage reduction converter kit installation:

WARNING

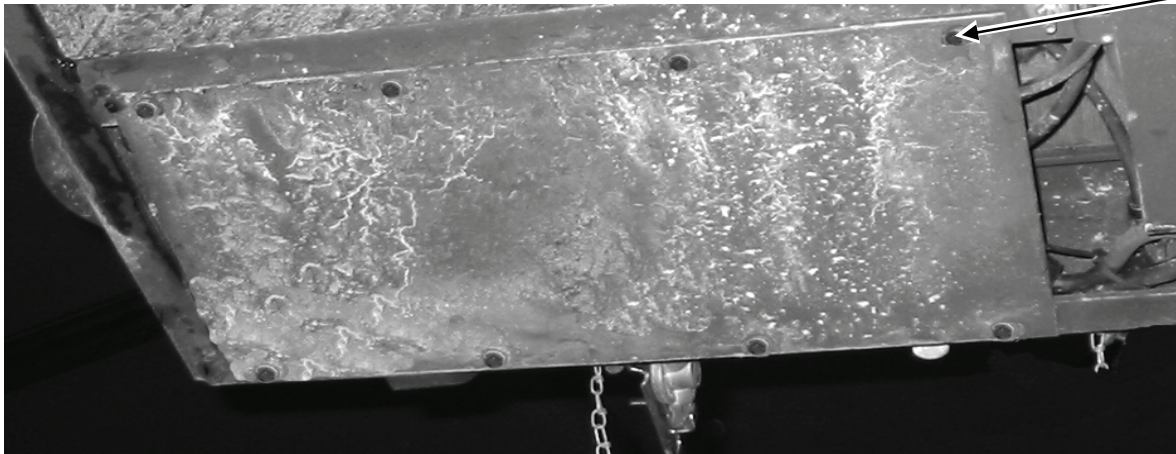
When repairing an electrical malfunction, ALWAYS disconnect towing vehicle electrical connector from semitrailer. Failure to do so may result in serious injury or death due to electric shock.

- a. Uncouple trailer from tractor according to TM 9-2330-331-14&P, WP 0007 00-16.

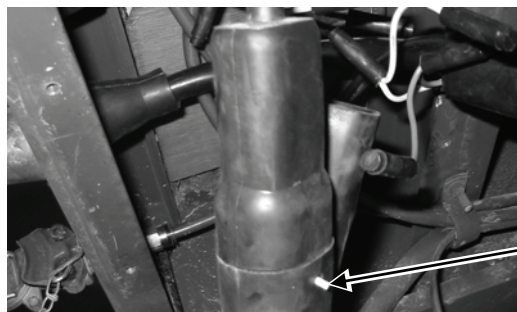
WARNING

Secure electrical cover plate when removing screws. Failure to follow this warning may cause serious injury or damage to equipment.

- b. Remove 8 self tapping screws (5) and electrical cover plate under front of trailer. Discard self tapping screws

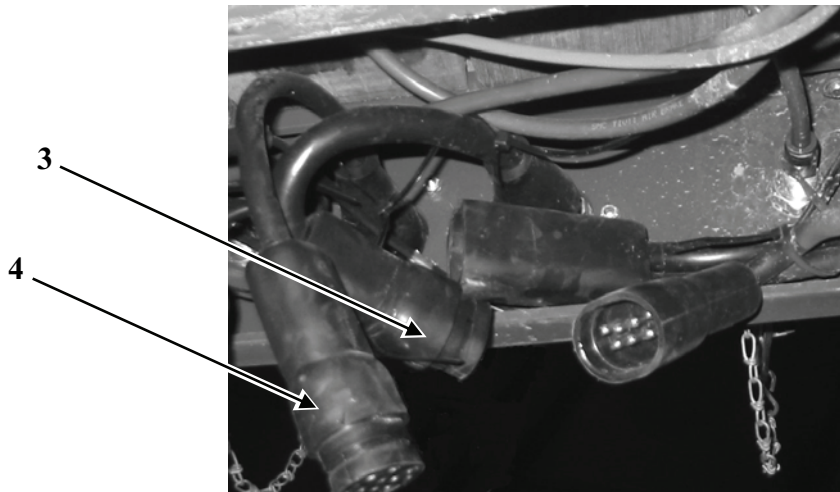


- c. Remove connector lock pin (7) from 12-volt and 24-volt harnesses.



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d. Disconnect 12-volt (3) and 24-volt (4) front harnesses from main harness connection.



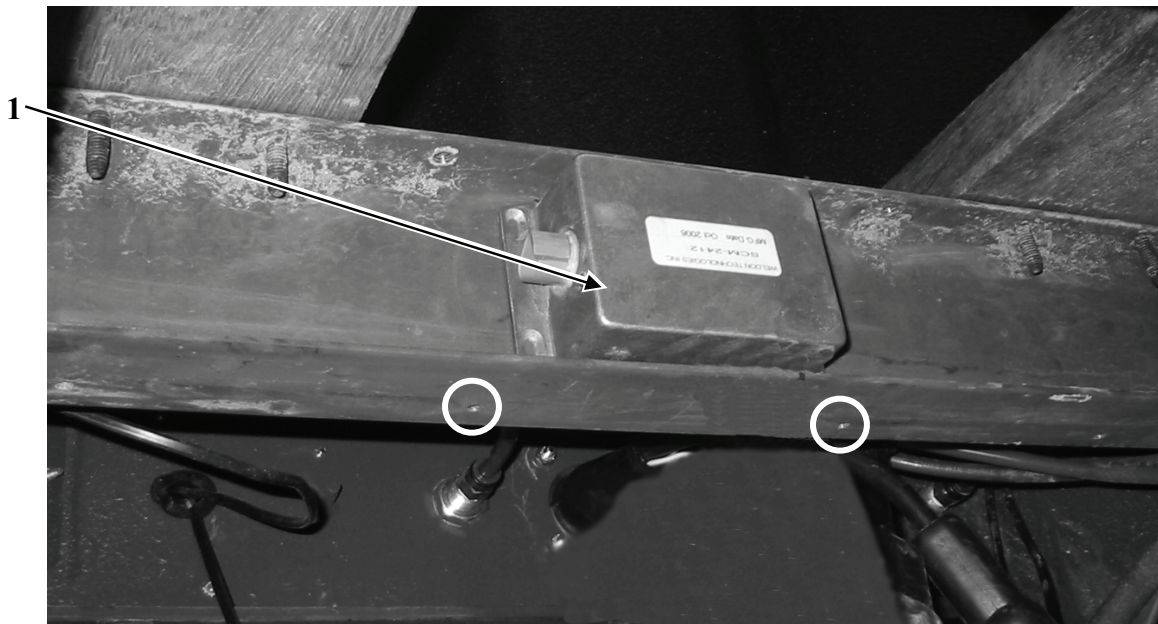
e. Remove 12-volt and 24-volt receptacles according to TM 9-2330-331-14&P, WP 0026 and WP 0027. Discard 12-volt and 24-volt receptacles.

NOTE

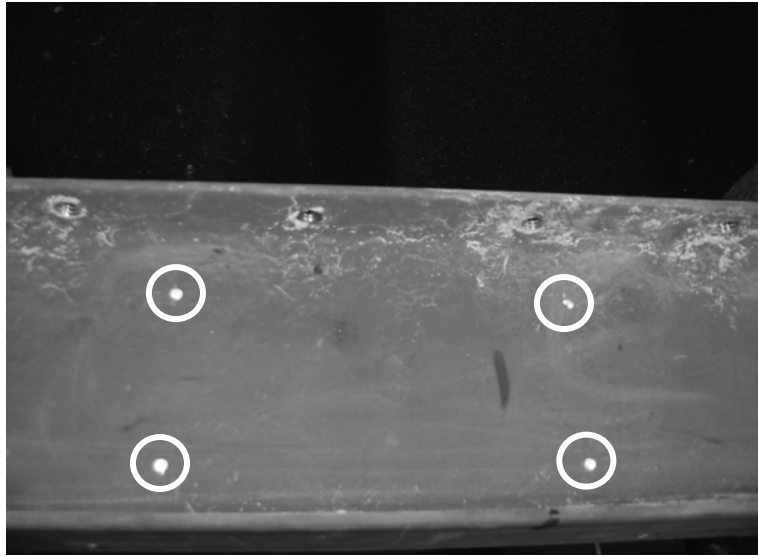
* Converter should fit on flat surface of cross member, as shown.

* Converter will be mounted on the front side of the beam shown. It is only placed as shown to mark hole locations.

f. Place converter (1) on first cross member from front. Center converter between holes for cover plate (Circled). Use converter as template to locate and mark mounting holes.



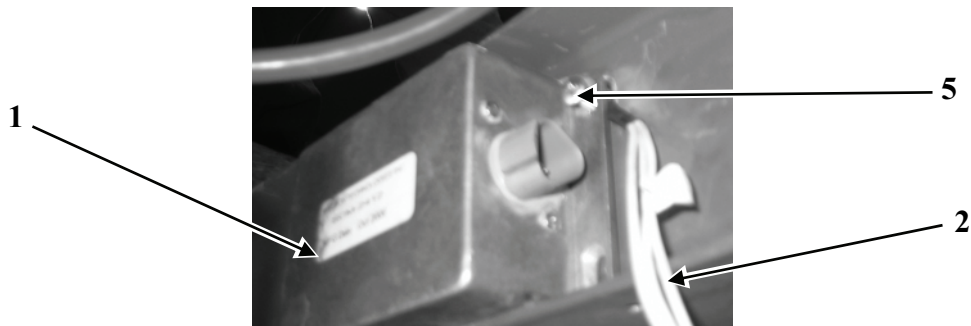
g. Remove converter and drill size #21 holes in cross member where marked (Circled).



h. Remove paint at area around upper right screw hole (Circled). The ground wire will attach here.



i. Mount converter (1) using 4 self-tapping screws (5) placing ground wires from converter harness (2) under converter and upper right screw.

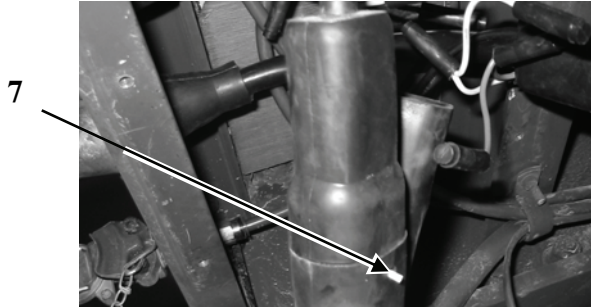


j. Leave the ground screw (5) loose at this time. Torque other self tapping screws to 10 ft. LBS

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k. Install new 12-volt and 24 volt receptacles according to TM 9-2330-331-14&P, WP 0026 and WP 0027.

l. Place dielectric grease on new 12-volt and 24-volt harness connectors and connect them to main harness. Insert lock pin (7) into connections.



m. Connect 24 volt conductor labeled 24 v IN from converter harness to conductor on the 24 volt harness lead. Insert lock pin into connections.

n. Connect the 12 volt conductor labeled 12 v OUT from the converter harness to the 12 volt harness conductor. Insert lock pin into connections.

o. Connect the ground connectors to the converter ground leads.

p. Torque ground screw to 10 ft. LBS.

CAUTION

Do not plug the 12-volt and 24-volt cables into the trailer receptacles at the same time. Damage to the prime movers electrical system may occur.

NOTE

Perform troubleshooting procedures for electrical connections per TM 9-2330-331-14&P WP 0012 00-2, if lights do not operate correctly.

q. Plug the 24-volt cable from prime mover into receptacle and check the operation of the lights including the ABS indicator light.

r. Disconnect 24-volt cable from receptacle.

s. Plug the 12-volt cable from prime mover into receptacle and check the operation of the lights including the ABS indicator light.

t. Disconnect 12-volt cable from receptacle.

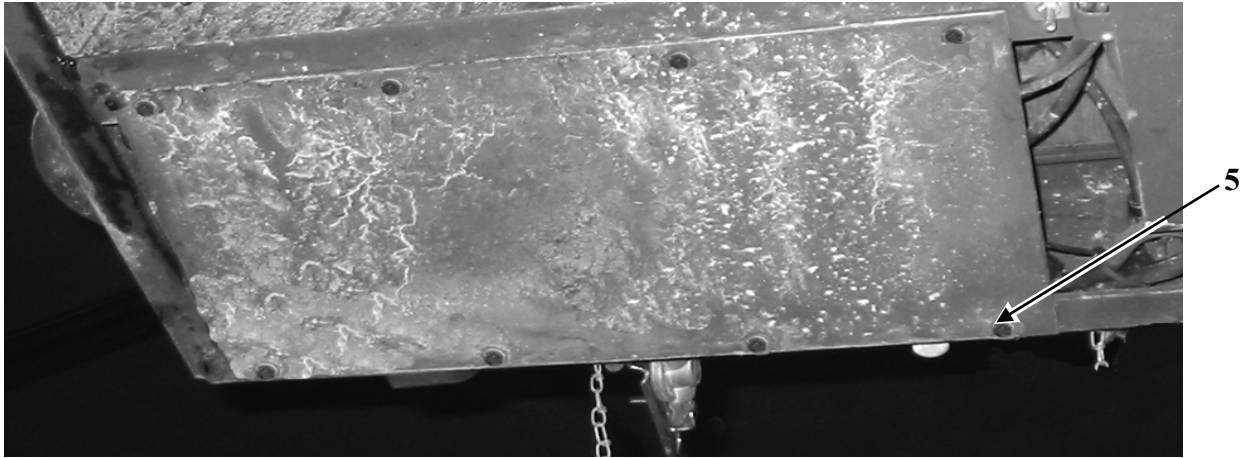
u. Coat the ground self tapping screw and nut with sealant to prevent corrosion.

v. Install tie wraps to hold harnesses in place.

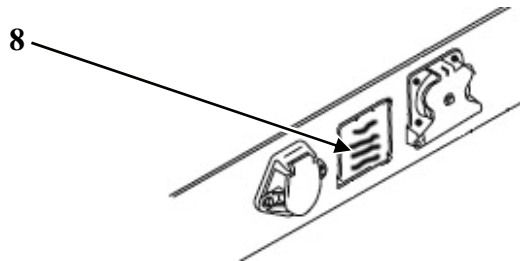
WARNING

Secure electrical cover plate when installing screws. Failure to follow this warning may cause serious injury or damage to equipment

- w. Install cover plate using new self tapping screws (5) with lock tight sealant on screw threads. Torque screws to 28 ft. LBS



- x. Place Caution label between the 12-volt and 24-volt receptacles.



11. CALIBRATION REQUIREMENTS.

Not applicable to this MWO

12. WEIGHT AND BALANCE DATA.

No significant weight added or removed. (Less than two pounds.)

13. QUALITY ASSURANCE REQUIREMENTS.

- a. General. The following information is furnished to ensure the proper application of this MWO and provide clarification in regard to the adequacy of installer's inspection methods and procedures applicable to Quality Assurance (QA). Inspection shall be IAW TM 9-2330-331-14&P, and MWO.

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- b. **Installer Responsibilities.** The installer is responsible for following instructions in MWO 9-2330-331-23-1, and TM 9-2330-331-14&P. The installer will report Voltage Converter Kits received that are damaged or missing component parts so the kit supplier can be properly notified. Any discrepancies noted will be corrected before the vehicle leaves the installer's work area. Requirements contained in this MWO shall be included in the installer's inspection plan or quality assurance program. As a minimum, a checklist will be maintained indicating all requirements have been satisfactorily accomplished for each kit. These requirements shall not be construed as eliminating the installer's responsibility from complete compliance with provisions of the contract and submitting to the Government products that meet all requirements of the contract.
- c. **Government Verification.** All QA operations, installation changes, and inspections performed by the installer are subject to Government verification at unannounced and varying intervals. Verification will consist of observations and inspections to confirm that practices, methods, and procedures of the installer's written inspection plan are being properly applied; and that Government product inspection to confirm the quality of product offered for Government acceptance does not deviate from prescribed acceptance standards specified in TM 9-2330-331-14&P. Deviations will be brought to the attention of the installer for correction.
- d. **In-process Inspection.** During normal assembly operations, paragraph 10, Modification Procedure, will be used to check the installer's work. After installation is complete, the installer will correct any defects noted before the Trailer is placed in service. All Trailers modified during a production shift will be checked to ensure product quality.

14. RECORDING AND REPORTING OF THE MODIFICATION.

- a. **Records and Reports.** The organization responsible for MWO application will report application information as follows:
 - (1) Reporting will be accomplished by electronic means. MWO application information can be input directly into the Modification Management Information System (MMIS) over the Internet. If Internet is not available, recording will be on a 3.5-inch disk or CD, which will be mailed to the MMIS administrator. Entry into the MMIS system is password protected. New users can register on-line at <https://www.mmis.army.mil>. Passwords are normally approved and issued within 48 hours.

- (2) Submission will be comprised of nine (9) data elements listed in the table below. Elements 1,2,4,6,7,8 & 9 are given for this MWO (as shown). The person reporting the MWO data, will acquire the remaining elements (3 & 5), and input all nine into MMIS.

<u>DATA Elements</u>	Input Data
1. Material Change Number (MCN)	1-07-02-0001
2. MWO Number	9-2330-331-23-1
3. Unit Identification Code (UIC) @ Battalion Level	
4. NSN of End Item	2330-01-497-0706
5. Serial Number	
6. USA Registration Number	
7. Date of Application	
8. Hours required for Application.	2.5
9. Software Version	NA

- (3) For off-line reporting, the 3.5-inch disk or CD shall be mailed to the following address:

Commander
TACOM-Warren
ATTN: AMSTA-LC-LPMP
Warren, MI 48397-5000

b. Marking Equipment.

- (1) After the Voltage Converter Kit is installed, mark MWO 9-2330-331-23-1 in the MWO Applied block and Date Applied in Date Block on MWO instruction plate P/N 10930014, NSN 9905-00-858-5682.
- (2) To install the MWO instruction plate, drill a single 0.104 inch diameter hole (#37 - drill size) on the right (Curbside) of the trailer and centered over the existing data plate, contents and location tag, Figure 3, WP 0003 00-5. Use #4-3/16 MWO Tag screws, item #11 from the kit, to attach.

15. MATERIAL CHANGE (MC) NUMBER.

- a. The Material Change (MC) Number for this MWO is 1-07-02-0001

16. MODIFICATION IDENTIFICATION.

MWO Tag attached per paragraph 14, b, (2) above.

By Order of the Secretary of the Army:

GEORGE W. CASEY, JR.
General, United States Army
Chief of Staff

Official:



JOYCE E. MORROW
Administrative Assistant to the
Secretary of the Army

0803101

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 391054,
requirements for MWO 9-2330-331-23-1.

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS	Use Part II (reverse) for Repair Parts and Special Tools Lists (RPSTL) and Supply Catalogs/Supply Manuals SC/SM).	Date
For use of this form, see AR 25-30; the proponent agency is ODISC4.		
TO: (Forward to proponent of publication or form) (Include ZIP Code)		FROM: (Activity and location) (include ZIP code)

PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER MWO 9-2330-331-23-1	DATE 29 FEB 2008	TITLE Voltage Converter
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ITEM	PAGE	PARA	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON
0052 00-4						Inspection Step 1 WP reference should be (WP 0003 00)

SAMPLE

**Reference to line numbers within the paragraph or subparagraph.*

TYPED, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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TO: (Forward direct to addressee listed in publication)	FROM: (Activity and location) (Include Zip Code)	Date
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PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION NUMBER MWO 9-2330-331-23-1	DATE 29 FEB 2008	TITLE: Unit, Direct Support and General Support Maintenance Repair Parts and Special Tools List
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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III – REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed).*

SAMPLE

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RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA	Use Part II (<i>reverse</i>) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE
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TO: (<i>Forward to proponent of publication or form</i>) (<i>Include ZIP Code</i>)	FROM: (<i>Activity and location</i>) (<i>Include ZIP Code</i>)
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PART II - REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

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