

TECHNICAL MANUAL

DIRECT SUPPORT
AND
GENERAL SUPPORT
MAINTENANCE MANUAL

TURBINE ENGINE, FIELD SERVICE
MODEL AGT1500 (M1/1PM1)
(P/N 12287428),
TURBINE ENGINE, FIELD SERVICE
MODEL AGT1500 (M1A1)
(P/N 12324029),
CONTAINER
(NSN 8145-01-112-6574),
TURBINE ENGINE WITH CONTAINER
MODEL AGT1500 (M1/IPM1/M1A1)
(P/N 5705196)
(NSN 2835-01-216-8639),
TURBINE ENGINE WITH CONTAINER
MODEL AGT1500 WITH BATTLE FIELD
OVERRIDE AND PULSE JET
(M1A1/M1A2) (P/N 57K2919)
(NSN 2835-01-408-7048)

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HEADQUARTERS, DEPARTMENT OF THE ARMY

28 OCTOBER 1987

INTERMEDIATE DIRECT SUPPORT
AND INTERMEDIATE GENERAL SUPPORT
MAINTENANCE MANUAL

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AND PULSE JET (M1A1/M1A2) (P/N 57K2919)
(NSN 2835-01-408-7048)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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, directly to: Director, Armament and Chemical Acquisition and Logistics Activity, AI-TN: AMSTA-AC-NML, Rock Island, IL 61299-7630; (E-mail: AMSTA-AC-NML@ria-emh2.army.mil). A reply will be furnished to you.

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* This manual supersedes TM 9-2835-255-34,31 May 1983, including all changes.

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HOW TO USE THIS MANUAL

The safest, easiest, and best way to do maintenance on the turbine engine is to use this manual. Learning to use this TM is as easy as reading through the next few pages. Knowing what's in this manual and how to use it will save you time, work, and help you avoid exposing yourself to unnecessary hazards while you do your job.

So, where do you start?

Right here if this is the first time you are using this TM. Be sure to completely read this section on how to use this manual first. There's a lot of information here you need to know.

ORGANIZATION

This manual is divided into two types of maintenance activities. These are: Troubleshooting or location of faults by symptoms you can detect and Maintenance Procedures that are used to correct faults and replace failed parts. You will be using the procedures in this manual to do one of these types of maintenance. Within this manual you will find the material organized in functional group code order like the Maintenance Allocation Chart in (TM 20-1). This allows the TM to be aligned with its applicable Repair Parts and Special Tools List (RPSTL). For information on how to use the RPSTL, refer to the introduction in TM 9-2835-255-34P.

General Maintenance Instructions (GMI) are provided in Appendix F to assist you with common knowledge information which you might not use every day. They are provided in Appendix F as general instructions so the specific steps won't have to be included in every procedure. You should familiarize yourself with all the information in the GMI. GMI includes information on the following subjects:

Cleaning Mechanical Parts
Painting
Unpacking and Packing
Protecting and Handling Engine
Care of Tubes and Hoses

Removing or Installing Connectors
Care of Removed Parts and Components
Care of Slings
Silver Braze Inspection

HOW TO FIND PROCEDURES

If you're using the manual to perform Troubleshooting, go to page 3-1 and read HOW TO USE TROUBLESHOOTING and proceed according to the instructions there. If you are using the manual to perform repair or replacement of a part that you already know is bad, you would start by locating the part to be replaced in the Alphabetical Index located at the back of the last part of this manual.

HOW TO USE THIS MANUAL - Continued

How do you find the correct procedure?

Look in the Alphabetical Index for a key noun from the vehicle system or part nomenclature. The Alphabetical Index lists each task under one or more headings. For example, the procedure for TOP WELDMENT REPLACEMENT, would be listed under “T” for “TOP Weldment” and also under “W” for “Weldment, Top.”

Once you’ve located the correct procedure, read through it to determine if you have everything you need to perform the job, Make sure all the Equipment Conditions have been met. Familiarize yourself with the the potential hazards described by the WARNINGS and CAUTIONS. You must familiarize yourself with the entire maintenance procedure before beginning the maintenance task.

HOW TO USE A MAINTENANCE PROCEDURE

The first page of a maintenance procedure lists everything you will need to perform that procedure. The following paragraphs describe all the blocks of information you will find there.

APPLICABILITY. If the procedure is applicable to specific models, the data under this heading will identify those model differences to you. If the procedure is applicable to all models, it’s assumed and this heading will not even be listed.

TOOLS. Individual tools from your mechanic’s tool kit will not be listed under this heading. If any tools from this kit are required, the tool kit itself will be listed as the first item. Special tools, fabricated tools, and tools from any other source will be listed with a reference to a specific item and appendix number. The referenced appendix will provide you with the necessary information to find or make the tool. Appendix D will list all special tools, tools from supply catalog sets, kits and outfits, and tools which must be acquired through the GSA catalog. Appendix C will list the fabricated tools with complete fabrication instructions. In some procedures two of the same tool may be required to perform the specific steps but only one is included in the mechanic’s tool kit. In such cases, the second tool will be listed as an additional requirement to the mechanic’s tool kit.

SUPPLIES. If any expendable or consumable supplies are needed to perform the task, they will be listed under this heading along with the quantity in parentheses and a reference to an item and appendix in the back of the TM. The referenced appendix will give you the detailed information necessary to requisition the supply if you don’t have it on hand, Replacement parts are not normally listed under this heading. The inspection steps in the removal or disassembly procedure will tell you which parts to replace. Mandatory repair parts (parts that are destroyed in disassembly or not normally re-used, such as gaskets and lockwashers) are listed under this heading by their nomenclature only. Refer to TM 9-2835-255-34P for information you need on repair parts.

PERSONNEL REQUIRED. The number of personnel required to perform the procedure will be listed here. You will find this heading only in procedures that require more than one person.

EQUIPMENT CONDITION. This heading will list only the special conditions you will have to meet in order to perform the procedure. In addition to these specific conditions any repairs must be done on clean work surface:

HOW TO USE THIS MANUAL - Continued

Procedures that must be completed before starting the specific job you are doing (Preliminary Procedures) will be listed in past tense with a page or TM reference. You will have to do all the procedures listed under "EQUIPMENT CONDITION" of those tasks also before starting the specific procedure you have set out to do. As an example, when the equipment condition of Spline shaft removed (page 6-2)" is listed and you go to that procedure and find an equipment condition of "Engine disconnected from transmission (TM 34-I)," then you must do that procedure also.

REFERENCES. These are other technical publications you will need to do the task. This heading will appear only when other references are needed,

FEATURES OF THE NEW PROCEDURE FORMAT

MULTIPLE EXPERIENCE LEVEL COVERAGE. This means that the TM is written with both SUMMARY and DETAIL steps. The SUMMARY steps in all capital letters are basic steps that the experienced mechanic requires to perform the job. The detail steps, if needed, follow immediately and are lettered and shown in regular case letters. This reduces the material the experienced mechanic needs to review to perform a job.

PICTORIAL WARNINGS. Certain general warnings are shown by pictures rather than by text within procedures. Refer to the list of WARNINGS found just after the front cover of this TM for the specific meaning of each pictorial warning used in this TM, You must become familiar with them. Until you are, always refer to the detailed WARNING in the front of the TM. These pictorial warnings are just as important as the specific text warnings that are also used throughout the TM. When you see a pictorial warning in the very beginning of the procedure you should heed the precautions throughout. For example, when you see the following pictorial warning,



then you should follow the precautions for keeping away from open fire and use in a well-ventilated area whenever you use the adhesive in the procedure. Failure to heed these warnings could result in injury or death to yourself or others,

USE OF TOOLS AND PERSONNEL. Each procedure lists the tool kits and tools that you will need for that procedure. The procedural steps will not tell you how and where to use common tools. Also, the procedural steps will not tell you which persons do which steps in procedures with more than one person. The mechanic responsible for the task should direct the rest of the personnel what to do. If you have difficulty determining what tools to use or how to use personnel see your supervisor for help.

HOW TO USE THIS MANUAL - Continued

REFERENCES. References from one procedure to another within this TM will be by page number. Referencing within other levels of maintenance, you will have to know which vehicle you are working on. References within other levels of maintenance direct you to the maintenance level and vehicle (i.e., TM 20-1). If you are working on an M1 or IPM1 engine, you will have to go to the 255 series manuals, and on the M1A1, the 264 series manuals. Referencing to other maintenance publications will be by the full TM identification. You will have to go to the Alphabetical Index of that TM to find the information you need.

PROCEDURE ORGANIZATION. Most of the procedures in this TM fall into the category of either a replacement or repair. These procedures will contain both the removal and installation or the disassembly and assembly steps in the same procedure.

LOCATING COMPONENTS. The use of locator illustrations in this TM have been minimized. Equipment which is specifically located in the performance of the procedures to meet the Equipment Conditions may not have locators in the beginning of the procedure. Where locators are required, they will usually be used in the beginning of the Removal subtask. Locators may be used in Installation subtasks. If for some reason you are in doubt of location of a component, refer to (TM 10). If you still have trouble see your supervisor.

CHAPTER 1

INTRODUCTION

SECTION I. GENERAL INFORMATION

SCOPE

Type of Manual: Intermediate Direct Support and Intermediate General Support

This manual contains use of container and troubleshooting and maintenance procedures for the following turbine engine and engine components.

Top Weldment
Engine Shipping Container
Forward Engine Module
Rear Engine Module

Gearbox Module
Accessory Gearbox
Reduction Gearbox Lubrication System
Starter Motor

Model Number and Equipment Name AGT1500 - Turbine Engine and Container

Purpose of Equipment: Provides propulsion power for the Abrams series tanks.

MAINTENANCE FORMS AND RECORDS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, as contained in the Maintenance Management update.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Refer to TM 750-244-6 for instructions on destruction of army materiel to prevent enemy use.

PREPARATION FOR STORAGE AND SHIPMENT

Refer to (TM 20-1) for instructions on preparation for storage and shipment.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

If your equipment needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design. Tell us why a procedure is hard to perform. Put the improvement on an SF 368 (Quality Deficiency Report). Mail it to us at: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-QRT, Warren, MI 48397-5000. A reply will be furnished to you.

SECTION I. GENERAL INFORMATION (Continued)

WARRANTY INFORMATION

All parts warranted by the manufacturer and the period of coverage are called out in the Department of the Army Technical Bulletin TB 9-2835-255-14. Warranty starts on the date found on DA Form 2408-9 in the logbook. See details as described in TB 9-2835-255-14. Report all defects in materiel or workmanship to your supervisor who will take appropriate action.

SECTION II. EQUIPMENT DESCRIPTION AND DATA

Refer to (TM 10-1) and (TM 20-1) for Equipment Description and Data.

CHAPTER 2

GENERAL INSTRUCTIONS

SECTION I. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT**COMMON TOOLS AND EQUIPMENT**

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

Refer to Maintenance Allocation Chart (TM 20-1) and Repair Parts and Special Tools List (TM 9-2835-255-34P) for special tools. Tools to be fabricated are located in Appendix C, Illustrated List of Manufactured Items.

REPAIR PARTS

Repair parts are listed and illustrated in the Repair Parts and Special Tools List (TM 9-2835-255-34P) covering Intermediate Direct Support and General Support Maintenance for this equipment.

SECTION II. SERVICE UPON RECEIPT

For Service upon Receipt refer to (TM 20-1).