

CHANGE  
NO. 1

HEADQUARTERS, DEPARTMENT OF  
THE ARMY  
WASHINGTON, D.C., 15 AUGUST 1997

WARRANTY PROGRAM  
FOR  
REFRIGERATION UNIT, MECHANICAL  
5K BTU, DIESEL  
NSN 4110-01-389-9181  
MODEL F5000RD

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1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages  
3 and 4

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3 and 4

2. Retain this sheet in front of manual for reference purposes.

**By Order of the Secretary of the Army:**

Official:

DENNIS J. REIMER  
*General, United States Army*  
*Chief of Staff*

JOEL B. HUDSON  
*Administrative Assistant to the*  
*Secretary of the Army*  
03787

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To be distributed in accordance with DA Form 12-25-E, block no. 6313, requirements for TB 9-4110-255-24.

## DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

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**WARRANTY PROGRAM**  
**FOR**  
**REFRIGERATION UNIT, MECHANICAL**  
**5K BTU, DIESEL**  
**NSN 4110-01-389-9181**  
**MODEL F5000RD**

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Headquarters, Department of the Army, Washington, DC

10 October 1996

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**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this bulletin. If you find any mistake 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 bulletin direct to: Commander, U.S. Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. A reply will be furnished directly to you.

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1. GENERAL. This Warranty Technical Bulletin (WTB) describes the manufacturers warranty for refrigeration unit model F5000RD. Keco Industries, Inc. warrants each refrigeration unit against defects in material or workmanship.

2. EXPLANATION OF TERMS. The following terms, applicable to this WTB, are explained to help the reader understand the application and extent of the warranty.

a. Abuse. The improper use, repair, or handling of warranted items such that the warranty may become void.

b. Acceptance date. The date an item of equipment is accepted into the Army's inventory by the execution of the acceptance block and signing of a DD Form 250, or approved acceptance document, by an authorized representative of the Government.

c. Acquiring command or activity. An activity which procures the items or materiel for a user.

d. Alterations/Modifications. Any alteration after production such as retrofit, conversion, remanufacture, design change, engineering change and the like.

e. Contractor support. Those services that are to be performed and those responsibilities that are placed upon the contractor by the government as specified in the warranty contract/provisions. This support, which may include such things as labor, parts, tools, training technical packages, etc., will be used in support of the warranted equipment during the specified warranty period.

f. Defect. Any condition or characteristic in any supplies or services furnished by the contractor under the contract that is not in compliance with the requirements of the contract.

g. Failed item. A part, component, or end item that fails to perform its intended use.

h. False return rate. The return of suspected defective warranty items to the manufacturer that are eventually determined to be serviceable.

i. Manufacturer's recall.

(1) Safety recall. A manufacturer recalls an item to repair or replace a defective part or assembly which may affect public safety.

(2) Service recall. A manufacturer recalls an item to repair or replace a defective part or assembly which does not affect the safe use of the item.

j. Primary damage. The damage suffered by a part, component, or end item itself upon its failure.

k. Prime contractor. A party that enters into an agreement directly with the United States to furnish part or all of a system.

l. Reimbursement. A written provision in a warranty contract whereby the user may make the necessary repairs, with or without prior approval of the contractor, and the Government will be reimbursed for the repair parts and/or labor costs.

m. Repair. To restore an item to serviceable condition without affecting the warranty.

n. Repairable. An item that may be reconditioned or economically repaired for reuse when it becomes unserviceable.

o. Secondary damage. The damage suffered by an item because of a failure of another item within the same configuration.

p. Serviceable. The condition of an item which may be new or used that meets all the requirements and performs the functions for which it was originally intended.

q. Subcontractor. Any supplier, distributor, vendor or firm that furnishes supplies or service to or for a prime contractor or another subcontractor.

r. Turnaround time. That amount of time that is permitted for an item to be replaced/repared by the contractor/maintenance repair facility and returned to the user. The time is measured from the time the contractor/repair facility receives the request.

s. Validation. The process by which the contractor shall test/measure the WTB to assure its accuracy as it pertains to the warranty item(s).

t. Verification. The process of determining the accuracy and adequacy of the WTB provided by the contractor. This process is performed by the Government/user.

u. WARCO. Warranty Control Offices established at the General Support/Director of Industrial Operations Level, or equivalent, who serve as the intermediary between the troops owning the equipment and the local dealer, contractor, or manufacturer. All warranty claim actions will be processed through the WARCO.

v. Warranty. A promise or statement of fact from a seller to a purchaser on the nature, usefulness, or condition of the supplies or performance of services to be furnished. The main purpose of a warranty in a government contract are to outline the rights and obligations of the contractor and the government for defective items or services. It also serves to foster quality performance by the contractor but is not a substitute for an adequate quality assurance program.

w. Warranty claim. Action started by the equipment user for authorized warranty repair, replacement, or reimbursement made from the local dealer or manufacturer.

x. Warranty period. Time during which the warranty is in effect. Normally measured as the maximum number of years, months, days, miles, or hours used.

y. Warranty start date. The date the warranty is put into effect.

3. COVERAGES-SPECIFIC. The specifics of Refrigeration units as defined in TM 9-4110-255-14 only. coverage for this warranty are listed in table 1. This warranty applies only to Model F5000RD.

**Table 1. Specifics of Coverage**

Nomenclature:	Refrigeration Unit, Mechanical, 5K BTU, Diesel
Line Item Number:	R65544
Model Number:	F5000RD
National Stock Number:	4110-01-389-9181
Manufacturer:	Keco industries, Inc. (94833) 7375 Industrial Road Florence, KY 41042-2911
Contract Number:	DAAK01-94-D-0012
Part Number:	(94833) 148K0000-1
Serial Numbers:	940422 thru 940424 961807 thru 961810
Length of Time Coverage:	12 months from the date the refrigeration unit is placed into service by the Government. Not to exceed 24 months from the date of equipment acceptance as shown on the Material Inspection and Receiving Report (DD Form 250). This accounts for up to 12 months storage.
Serial Numbers:	940425 thru 940614 952817 thru 952828
Length of Time Coverage:	12 months from the date the refrigeration unit is placed into service by the Government. Not to exceed 36 months from the date of equipment acceptance as shown on the Material Inspection and Receiving Report (DD Form 250). This accounts for up to 24 months storage.
Type of Coverage:	Warrants that the supplies and parts of the refrigeration unit, at the time of acceptance or delivery, conform to the following: <ul style="list-style-type: none"> <li>a. Contract defined design and manufacturing requirements.</li> <li>b. Free from defects in materials and workmanship for the above time coverage.</li> <li>c. Conform to all contract defined performance requirements.</li> </ul>

4. CONTRACTOR RESPONSIBILITIES.

a. Replacement Parts. Only new or repaired parts will be used as replacement parts for warranted items. The contractor is ultimately responsible for identifying the parts needing replacement.

b. Cost to Government. Replacements for warranted items will be furnished at no cost to the Government.

c. Return Time. Items covered by this warranty will be shipped within 10 days of receipt of failed item.

d. Failure to Deliver Promptly. If failed parts are not promptly replaced, the contractor will pay costs incurred by the Government in procuring such parts from another source. The Contracting Officer will determine when this applies.

e. Warranty Status Report. The contractor will prepare and furnish a warranty status report in accordance with the contract as long as this warranty is in effect.

f. Unit Testing. The contractor will repair, rework or modify all parts of the refrigeration unit used during testing to a like new condition. The warranty of those items will start at the time the item is installed.

g. Warranty Coverage of Replaced or Repaired Items. Supplies and parts that are replaced or repaired during the warranty period will be covered through the conclusion of the original refrigeration unit warranty.

h. Shipping Costs. The shipping costs from the original contract line item delivery point to the contractor and return is the contractor's responsibility for items that are replaced or repaired under this warranty.

5. GOVERNMENT RESPONSIBILITY.

a. User's Responsibility. Using units are responsible for reporting failures to:

U.S. Army Aviation and Troop Command  
 ATTN: AMSAT-A-TC  
 4300 Goodfellow Boulevard  
 St. Louis, MO 63120-1798  
 Autovon 693-3081  
 Commercial 314-263-3081

b. Removal/Installation Labor. The government may, if the failure is within the capabilities of the user as established by the Maintenance Allocation Chart (MAC) in TM 9-4110-255-14, provide the labor for the field removal and reinstallation of components and parts.

c. Inspection of Equipment. Only trained or qualified personnel that has knowledge of the equipment and its requirements will inspect the equipment for nonconformance deficiencies.

d. Documentation of Equipment. The Government will fully document the cause, if known, and description of each defect. This information will be provided with the returned part.

e. Packaging of Returned Items. Returned items will be packaged in proper containers that will prevent shipping damage.

f. Shipping Costs. The Government is responsible for shipping costs for all items that are defective through no fault of the contractor.

6. GOVERNMENT MAINTENANCE. The Government is responsible to perform normal care, servicing and preventative maintenance in accordance with the requirements of TM 9-4110-255-14. See the Maintenance Allocation Chart (MAC) in that manual to determine maintenance level that is approved to perform these tasks.

7. OWNING UNIT RESPONSIBILITIES.

a. Warranty Card. The warranty card that is supplied (overpacked) with each unit must be filled out showing the warranty start date. This will be done when the unit is placed into service. A copy will be sent to:

U.S. Army Aviation and Troop Command  
 (ATCOM)  
 ATTN: AMSAT-A-TC  
 4300 Goodfellow Blvd  
 St. Louis, MO 63120-1798  
 and  
 Keco Industries, Inc.  
 7375 Industrial Road  
 P.O. BOX 428  
 Florence, KY 41022-428

Failure to do this may void warranty.

☆U.S. GOVERNMENT PRINTING OFFICE: 1997 - 655-024/60237


<p><b>WARRANTY CARD</b> REFRIGERATION UNIT, MECHANICAL, 5 K, DIESEL</p>	
<p>PART NUMBER: 94833-148K0000-1 NSN: 4110-01-389-9181 SERIAL NUMBER: _____ DATE: _____ (DATE UNIT PLACED IN SERVICE)</p> <p>(SEE WARRANTY PLATE ON UNIT AND WARRANTY BULLETIN TB9-4110-255-24) KECO INDUSTRIES, INC. FLORENCE, KY</p> <p>THIS WARRANTY IS INVALID UNLESS BOTH CARDS ARE COMPLETED AND SENT TO THE APPROPRIATE AUTHORITY. (ADDRESS ON OTHER SIDE OF CARD)</p>	
<p><b>WARRANTY CARD</b> REFRIGERATION UNIT, MECHANICAL, 5 K, DIESEL</p>	
<p>PART NUMBER: 94833-148K0000-1 NSN: 4110-01-389-9181 SERIAL NUMBER: _____ DATE: _____ (DATE UNIT PLACED IN SERVICE)</p> <p>(SEE WARRANTY PLATE ON UNIT AND WARRANTY BULLETIN TB9-4110-255-24) KECO INDUSTRIES, INC. FLORENCE, KY</p> <p>THIS WARRANTY IS INVALID UNLESS BOTH CARDS ARE COMPLETED AND SENT TO THE APPROPRIATE AUTHORITY. (ADDRESS ON OTHER SIDE OF CARD)</p>	

Figure 1. Warranty Card

b. Additional Requirements. See paragraph 6.

8. WARRANTY CONTROL OFFICE RESPONSIBILITIES. The Warranty Control Office (WARCO) serves as intermediary between the troops owning the refrigeration unit and Keco. All warranty claim actions will be processed through WARCO.

9. ALTERATIONS/MODIFICATIONS. Alterations and modifications shall not be made unless expressly authorized or directed by:

U.S. Army Aviation and Troop Command  
ATTN: AMSAT-A-TC  
4300 Goodfellow Blvd  
St. Louis, MO 63120-1798  
Autovon 693-3081  
Commercial 314-263-3081

10. DESIGN/PERFORMANCE SPECIFICATIONS.

a. Refrigeration Unit Specification. See MIL-R-0012574L dated 22 May 1992 for specific design, performance and testing requirements. Use information that applies to Type I, Diesel Engine Driven.

b. Routine Testing. See TM 9-4110-255-14 for routine refrigeration unit acceptance at point of delivery or testing after service and maintenance.

c. Testing Personnel Qualifications. Should testing in accordance with MIL-R-0012574L become necessary, it should be done only by qualified, experienced personnel. This type of testing also requires controlled conditions as outlined in the specification. Personnel used for testing in accordance with TM 9-4110-255-14 is governed by the Maintenance Allocation Chart in that manual.

d. Warranty Label. See TM 9-4110-255-14 for location of warranty label.

<p><b>WARRANTED ITEM</b></p> <p>WARRANTY TECHNICAL BULLETIN (WTB) TB9-4110-255-24</p> <p>WARRANTY EXPIRES [REDACTED]</p> <p>CONTRACT NUMBER DAAK01-94-D-0012</p> <p>THE ACTUAL WARRANTY IS ONE YEAR FROM DATE UNIT IS PLACED INTO SERVICE OR THE DATE STAMPED ABOVE, WHICHEVER OCCURS FIRST.</p> <p>FAILURE TO FILL OUT AND RETURN WARRANTY CARD WHEN UNIT IS PLACED INTO SERVICE MAY VOID WARRANTY.</p>
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Figure 2. Warranty Label

11. NULLIFICATION.

a. Warranty Void If. This warranty will not apply to supplies or parts that have been subject to:

- (1) Abuse
- (2) Misuse
- (3) Neglect
- (4) Accident

(5) Items that have been repaired, maintained or altered in any way that has adversely affected their condition.

(6) Combat damage.

(7) Improper use or installation. (See TM 9-4110-255-14 for operation and installation instructions).

12. ABUSE DETERMINATION. When damage to warranted items is not obvious, but suspected to be the result of abuse, the activity responsible for the equipment shall carefully document the nature, extent, probable cause, and estimated time and place of occurrence of the damage. The documented data shall be analyzed, and compared to similar cases (if existent), to determine whether the damage was accidental or intentional. Appropriate action shall be taken to prevent recurrence of accidental or intentional abuse through training, added precautionary and/or handling and usage labeling or instruction, and personnel disciplinary measures.

13. CLAIM PROCEDURES.

a. TAG FAILED ITEMS. Failed warranty items will immediately be tagged/identified to prevent improper repair or use.

b. TAGS AND FORMS. See DA Pam 738-750 for information pertaining to handling, processing and filling out the following tags and forms:

- (1) DA Form 2402-Exchange Tag.
- (2) DA Form 2407-Maintenance request form.
- (3) DA Form 5504-Maintenance request form.

14. FALSE RETURNS. In the event that it is determined that a failure was not subject to the guarantees described in this bulletin, Keco will be reimbursed for any and all expenses incurred by the Warranty Claim Action (WCA).

a. The Submitting Government Unit May be Penalized in One or All of the Following Ways.

- (1) Cost of item
- (2) Loss of time
- (3) Nonavailability of refrigeration unit

b. Monitoring False Returns. False returns will be monitored by the responsible activity, usually the commodity command.

15. REPORTING. Reporting or recording action on a failed item shall be as specified in DA Pam 738-750. Contractor unique forms shall not be used.

16. STORAGE/SHIPMENT/HANDLING. See TM 9-4110-255-14 for storage and packaging information pertaining to the total refrigeration unit.

a. Component Packaging. Individual components must be carefully packaged in appropriate containers that will prevent damage during shipment or storage.

b. Shipment. Shipment of failed warranty items shall not be made without direct authority from the supporting warranty control office. Notify WARCO.



**APPENDIX A**

**REFERENCES**

DA Pam 738-750	The Army Maintenance Management System (TAMS)
DD Form 250	Material Inspection and Receiving Report Maintenance Management Update, Issue 9
DA Form 2407	Maintenance Request
DA Form 2402	Exchange Tag
DA Form 2408-9	Acceptance Report
DA Form 5504	Maintenance Request
DA Form 2028-2	Recommended Changes to Equipment Technical Publications
TM 9-4110-255-14	Technical Manual, Operator's, Unit, Direct Support, and General Support Maintenance Manual for Refrigeration Unit, Mechanical, 5K BTU, Diesel, Model F5000RD, NSN 4110-01-389-9181

**By Order of the Secretary of the Army:**

Official:

DENNIS J. REIMER  
*General, United States Army*  
*Chief of Staff*

JOEL B. HUDSON  
*Administrative Assistant to the*  
*Secretary of the Army*  
03092

DISTRIBUTION:

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**These are the instructions for sending an electronic 2028:**

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: "Whomever" <whomever@avma27.army.mil>  
To: mpmt%avma28.army.mil@st-louis-emh.army.mil

Subject: DA Form 2028

1. **From:** Joe Smith
2. **Unit:** home
3. **Address:** 4300 Park
4. **City:** Hometown
5. **St:** MO
6. **Zip:** 77777
7. **Date Sent:** 19-OCT-93
8. **Pub no:** 55-2840-229-23
9. **Pub Title:** TM
10. **Publication Date:** 04-JUL-85
11. **Change Number:** 7
12. **Submitter Rank:** MSG
13. **Submitter FName:** Joe
14. **Submitter MName:** T
15. **Submitter LName:** Smith
16. **Submitter Phone:** 123-123-1234
17. **Problem:** 1
18. **Page:** 2
19. **Paragraph:** 3
20. **Line:** 4
21. **NSN:** 5
22. **Reference:** 6
23. **Figure:** 7
24. **Table:** 8
25. **Item:** 9
26. **Total:** 123
27. **Text:**

This is the text for the problem below line 27.

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



**SOMETHING WRONG WITH THIS PUBLICATION?**

THEN . . . JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

PFC John DOE  
CO 4 3rd Engineer Bn  
Fl. Leonardwood, MO 63108

DATE SENT 22 August 1992

PUBLICATION NUMBER  
TM 1-1520-250-10

PUBLICATION DATE  
15 June 1992

PUBLICATION TITLE  
Operator's manual MH60K Helicopter

BE EXACT PIN-POINT WHERE IT IS

IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
6	2-1 a		
B1		4-3	

In line 6 of paragraph 2-1a the manual states the engine has 6 cylinders. The engine on my set only has 4 cylinders. Change the manual to show 4 cylinders.

Callout 16 in figure 4-3 is pointed to a bolt. In key to figure 4-3, item 16 is called a shim. Please correct one or the other

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

JOHN DOE, PFC (268) 317-7111

SIGN HERE

JOHN DOE *John Doe*

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.  
DRSTS-M verprint2, 1 Nov 80

P.S. - IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION, MAKE A CARBON COPY OF THIS AND GIVE TO YOUR HEADQUARTERS.

FILL IN YOUR  
UNITS ADDRESS



FOLD BACK

DEPARTMENT OF THE ARMY

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OFFICIAL BUSINESS

COMMANDER  
U.S. ARMY AVIATION AND TROOP COMMAND  
ATTN: AMSAT-I-MP  
4300 GOODFELLOW BOULEVARD  
ST. LOUIS, MO 63120-1798

TEAR ALONG PERFORATED LINE

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN . . . JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

**SOMETHING WRONG** WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER

TB 9-4110-255-24

PUBLICATION DATE

10 October 1996

PUBLICATION TITLE

Refrigeration Unit, 5K BTU, Diesel

BE EXACT PIN-POINT WHERE IT IS

PAGE NO

PARA-GRAPH

FIGURE NO

TABLE NO

IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE

**DA FORM 2028-2**  
1 JUL 79

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OFFICIAL BUSINESS

COMMANDER  
U.S. ARMY AVIATION AND TROOP COMMAND  
ATTN: AMSAT-I-MP  
4300 GOODFELLOW BOULEVARD  
ST. LOUIS, MO 63120-1798

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