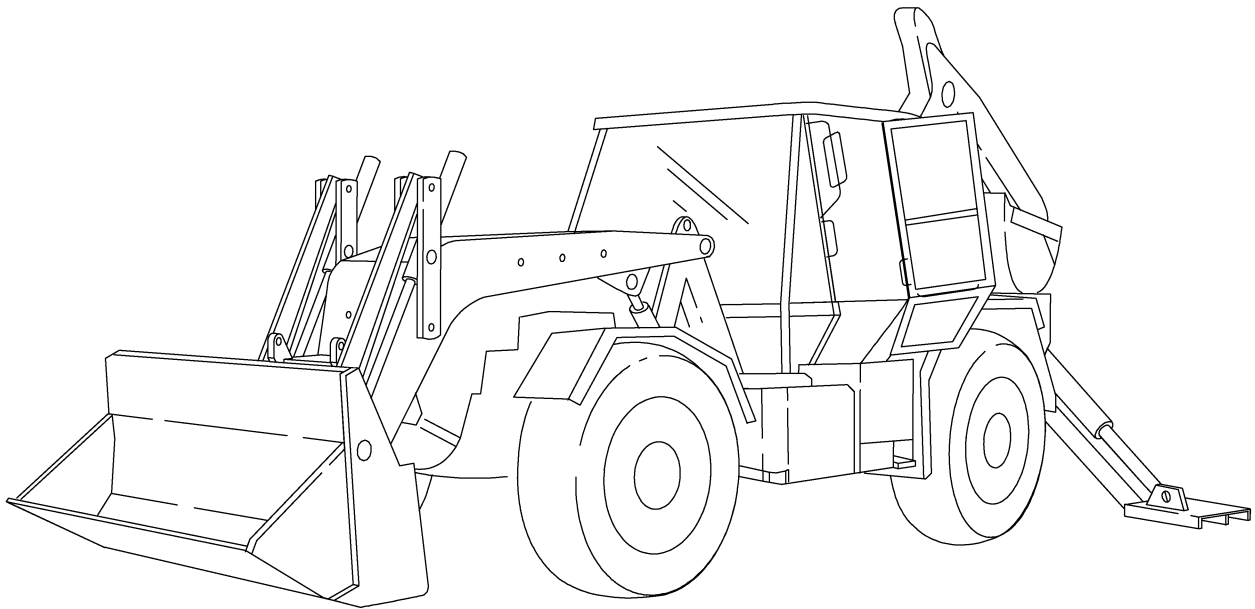


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TECHNICAL MANUAL

**OPERATOR'S MANUAL FOR  
INTERIM HIGH-MOBILITY ENGINEER  
EXCAVATOR (IHMEE)**

NSN 2420-66-148-7692



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# OPERATOR'S MANUAL FOR INTERIM HIGH-MOBILITY ENGINEER EXCAVATOR (IHMEE)

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## PURPOSE OF MANUAL.

The information in this manual is for the operation and maintenance of the Interim High-Mobility Engineer Excavator (IHMEE) vehicle. It is intended to serve as a guide to assist qualified drivers and mechanics in the operation and maintenance of the vehicle.

Keep this manual with the vehicle at all times.

## HOW TO USE THIS MANUAL.

This manual is designed to help operate and maintain the IHMEE. Listed below are some of the features included in this manual to help locate and use the needed information:

- A main Table of Contents lists all chapters and appendixes, along with the sections within them.
- Each chapter begins with a Table of Contents listing all paragraph headings in the chapter.
- A simplified Index at the rear of the manual lists all paragraphs in alphabetical order for easy reference.
- Task boxes have been provided at the beginning of operator maintenance tasks to provide initial setup data.
- Warning, caution, note, and subject headings and other essential information are printed in bold type, making them easier to see.

### **WARNING**

Read all operating instructions and safety rules in this manual carefully. Important information is emphasized in each respective section. Failure to do so could result in personal injury and/or damage to equipment.

Follow these guidelines when using this manual:

- Read all WARNINGS and CAUTIONS before performing any procedure.
- The operator must read this manual and become familiar with the contents before attempting to use the IHMEE.

# CHAPTER 1

## INTRODUCTION

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### Section I. General Information.

**1-1. SCOPE.**

This chapter contains general information on the Interim High-Mobility Engineer Excavator (IHMEE). It also provides a basic overview of the vehicle's systems and components.

**1-2. MAINTENANCE, FORMS, RECORDS, AND REPORTS.**

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 738-750, Functional User's Manual for The Army Maintenance Management System (TAMMS) or AR 700-138, Army Logistics Readiness and Sustainability.

### **1-3. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRS) AND SUBMITTING QUALITY DEFICIENCY REPORTS (QDRS).**

If your vehicle needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (QDR) and mail it to us at:

U.S. Army Tank-automotive and Armaments Command  
ATTN: AMSTA-TR-E/PQDR MS 267  
Warren, MI 48397-5000

We'll send you a reply.

### **1-4. CORROSION PREVENTION AND CONTROL (CPC).**

Corrosion Prevention and Control (CPC) of Army materiel is a constant concern. It is important that any corrosion problem with this item be reported so that the problem can be corrected and improvements made to prevent the problem in future items.

While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

If a corrosion problem is identified, it can be reported using SF 368, Product Quality Deficiency Report (QDR). Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem.

The form should be submitted to the address specified in DA PAM 738-750, Functional User's Manual for The Army Maintenance Management System (TAMMS).

### **1-5. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.**

Command decision, according to the tactical situation, will determine when the destruction of the IHMEE vehicle will be accomplished. A destruction plan will be prepared by the using organization unless one has been prepared by a higher authority. For general destruction procedures for this equipment, refer to TM 750-244-6, Procedures for Destruction of Tank-automotive Equipment to Prevent Enemy Use (U.S. Army Tank-automotive and Armaments Command).

### **1-6. WARRANTY INFORMATION.**

The IHMEE vehicles are warranted by ADI Limited and various component equipment manufacturers. The warranty starts on the date found in block 23 of DA Form 2408-9, in the logbook. Report all defects in material or workmanship to the supervisor, who will take appropriate action through the Unit maintenance shop. Refer to TB 5-2420-230-14 for more information on the warranty procedures for the IHMEE vehicles.

**1-7. METRIC SYSTEM.**

The equipment described herein contains metric components and requires metric, common, and special tools. Therefore, metric units and English units will be used throughout this publication. English values are listed first, with the metric equivalent shown afterward in parentheses. An English-to-metric conversion table is included as the last page of this manual inside the back cover.

**1-8. REFERENCE INFORMATION.**

This listing includes a nomenclature cross-reference list and a list of abbreviations used in this manual.

**a. Nomenclature Cross-Reference List.**

<u>Common Name</u>	<u>Official Nomenclature</u>
Engine coolant	- Antifreeze, ethylene glycol mixture
Glad hand	- Quick-disconnect air coupling
Light bulb	- Incandescent lamp
Service brake pedal	- Brake pedal
Accelerator	- Throttle pedal
Washer fluid	- Windshield cleaning compound

**b. Abbreviations/Acronyms.**

amp	ampere
A/C	Air-Conditioning
AAL	Additional Authorization List
ADI	Australian Defense Industries
AOAP	Army Oil Analysis Program
BII	Basic Issue Item
BO	Blackout
BRT	Bright
°C	degree Celsius
CAGE	Commercial and Government Entity
CARC	Chemical Agent Resistant Coating
CBR	Chemical, Biological, Radiological
CCA	Cold-Cranking Amps
cfm	cubic feet per minute
cid	cubic inch displacement
CKT	Circuit
cm	centimeter
COEI	Components of End Item
CPC	Corrosion Prevention and Control
CTA	Common Table of Allowance
DA	Department of the Army
DS/GS	Direct Support/General Support
EGS	Electronic Gear Shift
EIR MD	Equipment Improvement Report and Maintenance Digest

EIR MS	Equipment Improvement Report and Maintenance Summary
EMI	Electromagnetic Interference
°F	degree Fahrenheit
fl oz	fluid ounce
FOPS	Falling Object Protection Structure
ft.	foot
g.	gram
gal	gallon
GCWR	Gross Combination Weight Rating
GPFU	Gas Particulate Filter Unit
gpm	gallons per minute
GVW	Gross Vehicle Weight
GVWR	Gross Vehicle Weight Rating
HDI	Isocyanate
hp	horsepower
HVAC	Heating, Ventilation, and Air-Conditioning
id	inside diameter
IHMEE	Interim High-Mobility Engineer Excavator
in	inch
inH <sub>2</sub> O	inches of water
ISO	International Standards Organization
JTA	Joint Tables of Allowances
kg	kilogram
km/h	kilometers per hour
kPa	kilopascal
kW	kilowatt
L	liter
L/min	liters per minute
lb.	pound
lbf.	pound-force
lbf/ft	pound-force foot
lbf/in.	pound-force inch
LED	Light-Emitting Diode
LOEP	List of Effective Pages
m	meter
m <sup>3</sup> /min	cubic meters per minute
mi.	mile
min.	minute
ml	milliliter
mm	millimeter
mmH <sub>2</sub> O	millimeters of water
mph	miles per hour
N·m	Newton meters
NBC	Nuclear, Biological, Chemical
od	outside diameter
OTC	Oshkosh Truck Corporation
oz	ounce
PMCS	Preventive Maintenance Checks and Services
psi	pound-force per square inch
pt.	pint
QDR	Quality Deficiency Reports
qt.	quart
RFI	Radio-Frequency Interference
ROPS	Rollover Protection Structure



RPM	.....	revolutions per minute
RPSTL	.....	Repair Parts and Special Tools List
SAE	.....	Society of Automotive Engineers
SER	.....	service
SOP	.....	Standard Operating Procedure
TAMMS	.....	The Army Maintenance Management System
TDA	.....	Tables of Distribution and Allowance
TM	.....	Technical Manual
V	.....	Volt
Vdc	.....	Volts direct current
W	.....	watt

## Section II. Equipment Description.

### 1-9. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

#### a. Equipment Characteristics.

The IHMEE is manufactured by ADI Limited to provide a highly mobile, multipurpose, engineering excavator for engineering construction.

#### WARNING

- The IHMEE requires an escort and may not exceed 30 mph (48 km/h) when operating on primary roads. Failure to comply may result in injury to personnel and/or damage to equipment.
- Do not exceed 25 mph (40 km/h) when operating the vehicle on secondary roads or cross-country. Failure to comply may result in injury to personnel and/or damage to equipment.

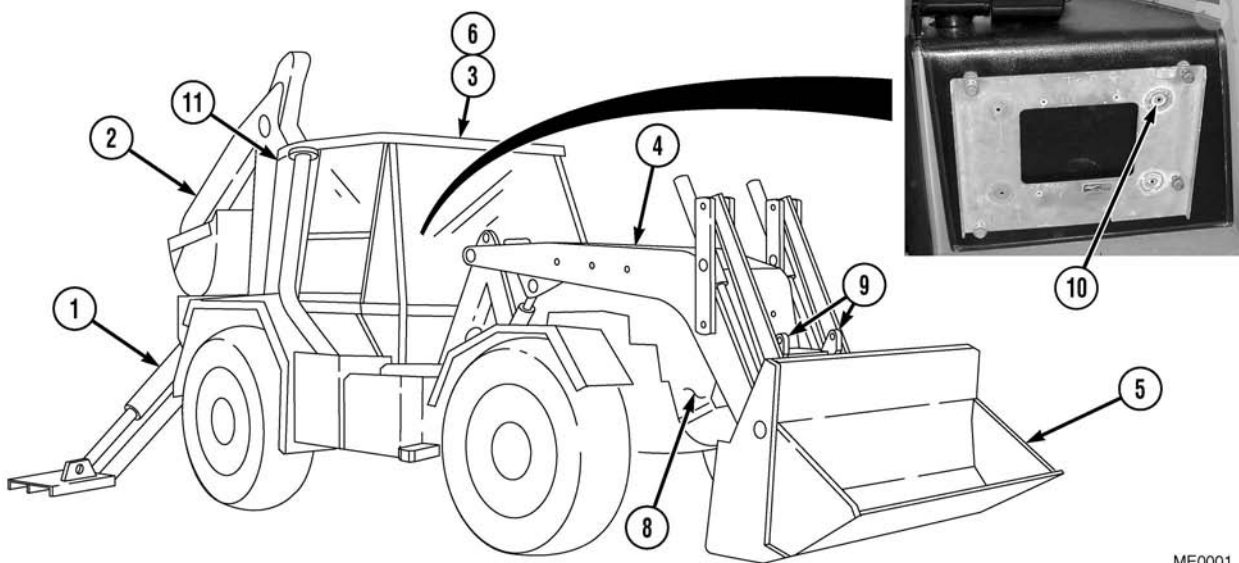
The IHMEE is a high-speed, all-terrain, multipurpose engineering vehicle fitted with a Front-End Loader (FEL) and a backhoe. The IHMEE can be fitted with a forklift and towing attachments. The vehicle suspension and transmission enable the IHMEE to maintain average speeds of 30 mph (48 km/h) on primary roads or 25 mph (40 km/h) on secondary roads or cross-country. The cab is fully enclosed and air-conditioned and provides seating for the operator and one passenger.

#### b. Capabilities.

The IHMEE has the following mobility performance:

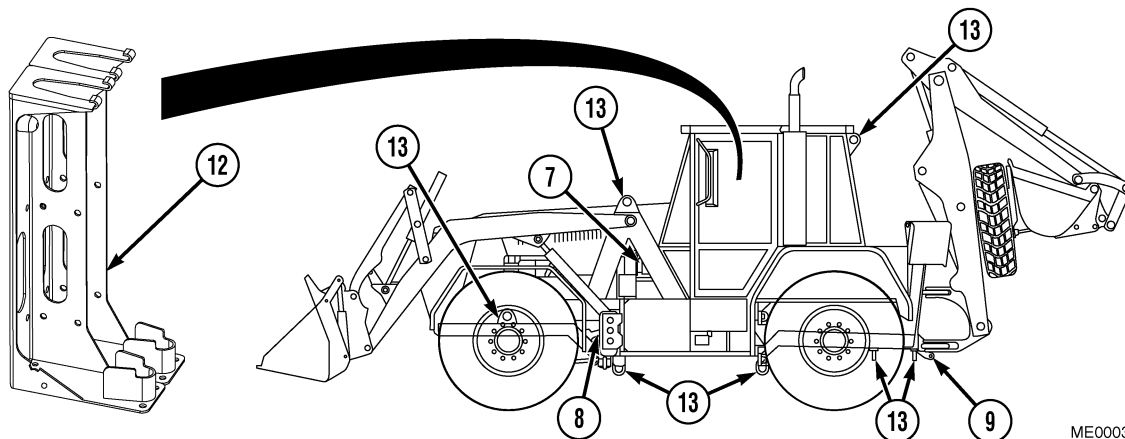
- Average highway speed of 30 mph (48 km/h) on sealed roads having a grade up to 7 percent.
- Cross-country capabilities.
- Capability to ford water obstacles to a depth of 30 in. (762 mm) with wake.
- Air, sea, rail, and road transportable.

**1-10. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.**



ME0001

- (1) **Stabilizer.** Use in conjunction with the backhoe to stabilize vehicle during earth-moving operation.
- (2) **Backhoe.** Digs excavations and trenches.
- (3) **Cab.** All-steel construction.
- (4) **Front-End Loader (FEL) Arms.** Used for lifting 4-in-1 bucket during excavating and filling excavations.
- (5) **4-in-1 Bucket.** Used for excavating and filling excavations.
- (6) **Rollover Protection Structure/Falling Object Protection Structure (ROPS/FOPS).** Provides protection to the operator and passenger from falling objects or in the event of a vehicle rollover.
- (7) **NATO Slave Receptacle.** The NATO connector is a standard receptacle with which one vehicle can be slave-started with another in the event of battery failure.
- (8) **Army Oil Analysis Program (AOAP) Sampling Valves.** Valves designed to simplify the process of collecting oil samples for AOAP.
- (9) **Front and Rear Towing Lugs.** Provides connecting points for towing the IHMEE if it is disabled.
- (10) **Radio Mount.** Used to secure radio inside the cab.
- (11) **Radio Antenna Mount.** Provides a location to mount a communications antenna.



ME0003

(12) **Rifle Racks.** Used to store weapons inside cab.

(13) **Slings and Tie-Down Points.** Locations provided to air-lift the IHMEE and/or to tie it down during shipping.

**1-11. EQUIPMENT DATA.**

*WEIGHTS AND PAYLOADS*

Gross Vehicle Weight Rating (GVWR) . . . . . 26,433 lb. (11 990 kg)

*GENERAL SPECIFICATIONS*

**WARNING**

- The IHMEE requires an escort and may not exceed 30 mph (48 km/h) when operating on primary roads. Failure to comply may result in injury to personnel and/or damage to equipment.
- Do not exceed 25 mph (40 km/h) when operating the vehicle on secondary roads or cross-country. Failure to comply may result in injury to personnel and/or damage to equipment.

Maximum average speed . . . . . 30 mph (48 km/h)

Maximum off-road speed . . . . . 25 mph (40 km/h)

Travel speeds (with 14R-24 tires and engine at 2,500 RPM)

<u>Ratio</u>	<u>Speed</u>
Low 1	4 mph (7 km/h)
Low 2	9 mph (15 km/h)
Low 3	16 mph (26 km/h)
Low 4	26 mph (42 km/h)
High 1	11 mph (17 km/h)
High 2	23 mph (37 km/h)
High 3	30 mph (48 km/h) - <i>Maximum allowed speed based on safety issue</i>
High 4	30 mph (48 km/h) - <i>Maximum allowed speed based on safety issue</i>

Road range (maximum) . . . . . 373 mi. (600 km)

Fording depth (maximum) . . . . . 30 in. (760 mm) with wake

Gradient (maximum) . . . . . 60 percent

Side slope (maximum) . . . . . 20 percent

Vertical obstacle (maximum) . . . . . 24 in. (620 mm)