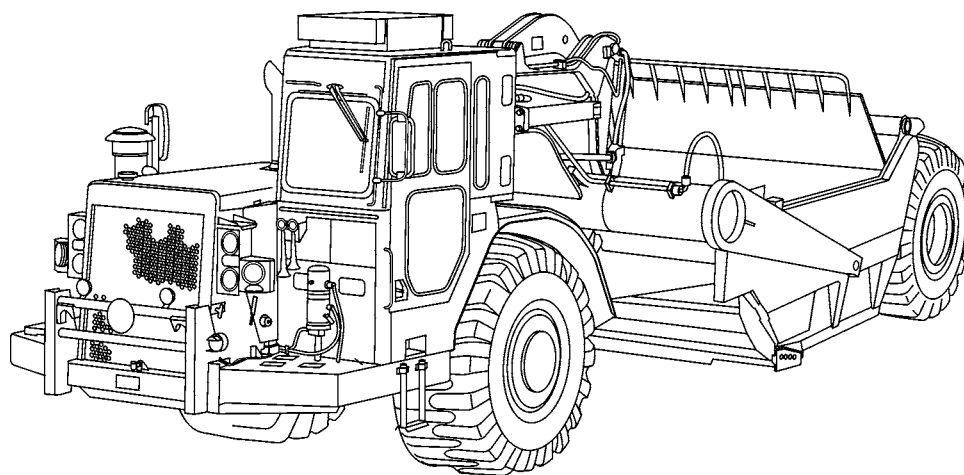

TECHNICAL MANUAL

Unit and Direct Support Maintenance

FOR

SCRAPER, EARTH MOVING,
MOTORIZED, DIESEL ENGINE DRIVEN

MODEL 621B
(NSN 3805-01-153-1854) (EIC: EH3)



SUPERSEDURE NOTICE - This manual supersedes TM 5-3805-248-14&P-2 and TM 3805-248-14&P-3, dated 19 August 1985

DISTRIBUTION STATEMENT A - Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

FEBRUARY 2006

WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to personnel. Also included are explanations of safety and hazardous materials icons used within the technical manual.



BIOLOGICAL - abstract symbol bug shows that a material may contain bacteria or viruses that present a danger to life or health.



CHEMICAL - drops of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.



EAR PROTECTION - Headphones over ears show that noise level will harm ears.



ELECTRICAL - electrical wire to arm with electricity symbol running through human body shows that shock hazard is present.



EYE PROTECTION - person with goggles shows that the material will injure the eyes.



FIRE - flame shows that a material may ignite and cause burns.



FLYING PARTICLES - arrows bouncing off face with face shield shows that particles flying through the air will harm face.



HEAVY PARTS - hand with heavy object on top shows that heavy parts can crush and harm.



HEAVY OBJECT - human figure stooping over heavy object shows physical injury potential from improper lifting technique.



HEAVY PARTS - heavy object on human figure shows that heavy parts present a danger to life or limb.



HOT AREA - hand over object radiating heat shows that part is hot and can burn.



HYDRAULIC FLUID PRESSURE - hydraulic fluid spraying human figure shows that fluid escaping under great pressure can cause injury or death to personnel.



POISON - skull and crossbones shows material is poisonous or is a danger to life.



RADIOACTIVE - identifies a material that emits radioactive energy and can injure human tissue or organs.



SLICK FLOOR - wavy line on floor with legs prone shows that slick floor presents a danger from falling.



VAPOR - human figure in a cloud shows that material vapors present a danger to life or health.

FOR INFORMATION ON FIRST AID, REFER TO FM 4-25-11.



WARNING

CARBON MONOXIDE (EXHAUST GASES) CAN KILL!

- Carbon monoxide is a colorless, odorless, deadly poison which, when breathed, deprives the body of oxygen and causes suffocation. Exposure to air containing carbon monoxide produces symptoms of headache, dizziness, loss of muscular control, apparent drowsiness, and coma. Permanent brain damage or death can result from severe exposure.
 - Carbon monoxide occurs in exhaust fumes of internal combustion engines. Carbon monoxide can become dangerously concentrated under conditions of inadequate ventilation. The following precautions must be observed to ensure safety of personnel when engine of tractor is operated.
1. DO NOT operate engine in enclosed areas.
 2. DO NOT idle engine without adequate ventilation.
 3. DO NOT drive with inspection plates or cover plates removed.
 4. BE ALERT for exhaust poisoning symptoms. They are:
 - Headache
 - Dizziness
 - Sleepiness
 - Loss of muscular control
 5. If you see another person with exhaust poisoning symptoms:
 - Remove person from area.
 - Expose to fresh air.
 - Keep person warm.
 - Do not permit physical exercise.
 - Administer cardiopulmonary resuscitation (CPR), if necessary.
 - Notify a medic.
 6. BE AWARE. The field protective mask for nuclear-biological-chemical (NBC) protection will not protect you from carbon monoxide poisoning.

The Best Defense Against Carbon Monoxide Poisoning Is Good Ventilation!



- To avoid injury, eye protection and acid-resistant gloves must be worn when working around batteries. Do not smoke, use open flame, make sparks or create other ignition sources around batteries. If a battery is giving off gases, it can explode and cause injury to personnel. Remove all jewelry such as rings, ID tags, watches, and bracelets. If jewelry or a tool contacts a battery terminal, a direct short will result in instant heating, damage to equipment, and injury to personnel.
- Sulfuric acid contained in batteries can cause serious burns. If battery corrosion or electrolyte makes contact with skin, eyes or clothing, take immediate action to stop the corrosive burning effects. Failure to follow these procedures may result in death or serious injury to personnel.
 - a. **Eyes.** Flush with cold water for no less than 15 minutes and seek medical attention immediately.
 - b. **Skin.** Flush with large amounts of cold water until all acid is removed. Seek medical attention as required.
 - c. **Internal.** If corrosion or electrolyte is ingested, drink large amounts of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Seek medical attention immediately.
 - d. **Clothing/Equipment.** Wash area with large amounts of cold water. Neutralize acid with baking soda or household ammonia.



Compressed air used for cleaning or drying purposes, or for clearing restrictions, should never exceed 30 psi (207 kPa). Use protective equipment and exercise caution to avoid injury to personnel.



Solvent cleaning compound MIL-PRF-680 Type III is an environmentally compliant and low toxic material. However, it may be irritating to the eyes and skin. Use protective gloves and goggles. Use in well-ventilated areas. Keep away from open flames and other sources of ignition.



WARNING

ETHER COLD START SYSTEM



Ether fuel is extremely flammable and toxic. DO NOT smoke and make sure you are in a well-ventilated area away from heat, open flames or sparks. Wear eye protection. Avoid contact with skin and eyes and avoid breathing ether fumes. If fluid enters or fumes irritate the eyes, wash immediately with large quantities of clean water for 15 minutes. Seek medical attention immediately if ether is inhaled or causes eye irritation. Failure to follow this warning may cause death or serious injury to personnel.



WARNING

FUEL HANDLING

- DO NOT smoke or permit any open flame in area of machine while you are servicing diesel fuel system. Be sure hose nozzle is grounded against filler tube during refueling to prevent static electricity. Failure to follow this warning may result in injury to personnel or equipment damage.
- DO NOT perform fuel system checks, inspections or maintenance while smoking or near fire, flames or sparks. Fuel may ignite, causing damage to machine and injury or death to personnel.
- Operating personnel must wear fuel-resistant gloves when handling fuels. If exposed to fuel, promptly wash exposed skin and change fuel-soaked clothing.



WARNING

HAZARDOUS WASTE DISPOSAL

When servicing this machine, performing maintenance, or disposing of materials such as engine coolant, hydraulic fluid, lubricants, battery acids or batteries, and CARC paint, consult your unit/local hazardous waste disposal center or safety office for local regulatory guidance. If further information is needed, please contact The Army Environmental Hotline at 1-800-872-3845.



WARNING

HEARING PROTECTION

Hearing protection is required when operating machine or when within 23 feet of machine when it is operating. Failure to wear hearing protection may result in hearing loss.

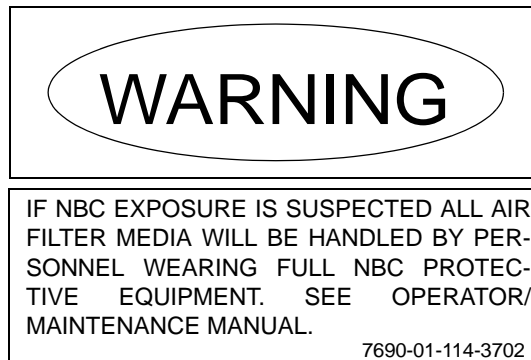


WARNING

NBC EXPOSURE



- If NBC exposure is suspected, personnel wearing protective equipment should handle all air cleaner media. Consult your NBC Officer or NBC NCO for appropriate handling or disposal procedures.
- NBC contaminated filters must be handled using adequate precautions and must be disposed of by trained personnel.



To order this NBC decal use:

National Stock Number (NSN) - 7690-01-114-3702

Part Number (PN) - 12296626

Commercial and Government Entity Code (CAGEC) - 19207

WARNING

OPERATION SAFETY

- Use caution and maintain three-point contact at all times when mounting and dismounting machine, to avoid injury to personnel.
- DO NOT allow riders on machine. Failure to follow this warning may result in serious injury or death to personnel.
- DO NOT operate machine unless seat belt has been fastened. Failure to follow this warning may result in serious injury or death, in the event of an accident.
- BE ALERT for personnel in the area while operating machine. Always check to ensure area is clear of personnel and obstructions before starting engine, moving machine or lowering or raising scraper bowl. Failure to follow this warning may result in serious injury or death to personnel or damage to equipment.
- Never leave the operator's position without applying the parking brake. Failure to follow this warning may result in death to injury to personnel or damage to equipment.
- Never use starting fluid or spray to aid in starting the engine, other than the on-board ether cold start system. Failure to follow this warning may result in death or injury to personnel or damage to equipment.
- Always use a ground guide when driving machine up or down ramps in preparation for highway or marine. Failure to use a ground guide may result in death or injury to personnel or damage to equipment.
- When loaded and traveling across a hillside, reduce speed significantly BEFORE turning uphill. Failure to do so may cause machine to roll over, resulting in injury or death to personnel.

Do NOT operate machine if parking brake was applied due to a malfunction of airbrake system or parking brake. Correct any problem before attempting to operate machine. Personal injury or death can result from a brake malfunction.



WARNING

PREPARATION FOR TRANSPORT

- Use caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure that any lifting device used is in good condition and of suitable lift capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may cause death or injury to personnel.
- Always use a ground guide when moving machine during preparation for transport procedures (driving up and down ramps or onto rail flatcars). Failure to use a ground guide may result in death or injury to personnel or damage to equipment.
- Use assistance and handle windshield with caution to ensure it does not become damaged. Failure to do so may damage windshield or cause personnel injury from cut glass if windshield breaks.
- Use extreme caution when climbing on ladder. Failure to exercise caution may result in a fall, causing injury to personnel.



WARNING

PRESSURIZED COOLING SYSTEM



- DO NOT service cooling system unless engine has been allowed to cool down. This is a pressurized cooling system and escaping steam or hot coolant will cause serious burns.
- DO NOT remove cooling system radiator cap when engine is hot. Allow engine to cool down. Failure to follow this warning may cause serious burns.
- Wear effective eye, glove, and skin protection when handling coolants. Failure to do so may cause injury.



WARNING

SLAVE STARTING

- When slave starting tractor, use NATO slave cable that DOES NOT have loose or missing insulation.
- DO NOT proceed if suitable cable is not available.
- DO NOT use civilian-type jumper cables.
- DO NOT allow disabled and booster machines to come in contact with each other at any time during slave starting.

WARNING

TIRES

- Operating machine with underinflated or defective tire may lead to tire failure and loss of traction or control. Damage to equipment or injury to personnel may result.
- If tire pressure is 0 psi (0 kPa) do NOT inflate. Notify Unit Maintenance.
- Use a self-inflating chuck and stand at a distance behind tire when inflating tire. Failure to do so could result in injury or death to personnel.

WARNING

WORK SAFETY



- Lifting cables, chains, hooks, and slings used for lifting machine must be in good condition and of suitable capacity. Failure to follow this warning may result in injury or death to personnel and damage to equipment.



- Improper use of lifting equipment and improper attachment of cables to machine can result in serious personnel injury and equipment damage. Observe all standard rules of safety.
- Ensure engine compartment access door is securely supported in open position. Failure to do so could cause door to slam shut, causing serious injury to personnel.



- Hitch and steering movement can reduce clearances suddenly and cause personnel injury. Always stop engine BEFORE working in area of hitch link.
- Configuration changes to cutting edge should NEVER be attempted without first securing the bowl by blocking it so that it is firmly supported. Failure to follow this warning may cause injury to personnel.



- Use extreme caution when handling heavy parts. Provide adequate support and use assistance during procedure. Ensure that any lifting device used is in good condition and of suitable load capacity. Keep clear of heavy parts supported only by lifting device. Failure to follow this warning may result in death or injury to personnel.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

Date of issue for original manual is:

Original 15 February 2006

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 42 AND TOTAL NUMBER OF WORK PACKAGES IS 130 CONSISTING OF THE FOLLOWING:

Page/WP No.	*Change No.
Cover/(Back Blank)	0
a to h	0
A/(B Blank)	0
i to vi	0
WP 0257 00 to 387 00	0
Index-1 to Index-9/(Index-10 Blank)	0

* Zero in this column indicates an original page or work package.

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**MAINTENANCE MANUAL
Unit and Direct Support Maintenance**

FOR

**SCRAPER, EARTH MOVING,
MOTORIZED, DIESEL ENGINE DRIVEN
MODEL 621B
(NSN 3805-01-153-1854) (EIC: EH3)**

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 (*Recommended Changes to Equipment Technical Publications*), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is <https://aeeps.ria.army.mil/>. The DA Form 2028 is located under the Public Applications section in the AEPS Public Home Page. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax or e-mail your letter or DA Form 2028 direct to: AMSTA-LC-LPIT/TECH PUBS, TACOM-RI, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The e-mail address is: TACOM-TECH-PUBS@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726.

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HOW TO USE THIS MANUAL

INTRODUCTION

1. This manual is designed to help you operate the scraper and perform operator troubleshooting and maintenance on the equipment.
2. This manual is written in work package format:
 - a. Chapters divide the manual into major categories of information.
 - b. Each chapter is divided into work packages, which are identified by a 6-digit number (e.g. 0001 00, 0002 00, etc.) located on the upper right-hand corner of each page. The work package page number (e.g. 0001 00-1, 0001 00-2, etc.) is located centered at the bottom of each page.
 - c. If a Change Package is issued to this manual, added work packages use the 5th and 6th digits of their number to indicate new material. For instance, work packages inserted between WP 0001 00 and WP 0002 00 are numbered WP 0001 01, WP 0001 02, etc.
3. Due to the size of this manual, it is separated into two volumes:
 - a. The first volume (TM 5-3805-248-23-1) consists of Chapters 1 through 3 (through WP 0256 00).
 - b. The second volume (TM 5-3805-248-23-2) contains Chapters 4 through 6.
 - c. Both volumes will have Chapter 5, *Supporting Information*, for reference purposes.
4. Scan through this manual to become familiar with its organization and contents before attempting to operate or maintain the equipment.

CONTENTS OF THIS MANUAL

1. A *Warning Summary* is located at the beginning of this manual. Become familiar with these warnings before operating or performing operator troubleshooting or maintenance on the scraper.
2. A *Table of Contents*, located in the front of the manual, lists all chapters and work packages in the publication.
 - a. The Table of Contents also provides *Reporting Errors and Recommending Improvements* information and DA Form 2028 addresses, for the submittal of corrections to this manual.
 - b. If you cannot find what you are looking for in the Table of Contents, refer to the alphabetical *Index* at the back of the manual.
3. Chapter 1, *Introductory Information with Theory of Information*, provides general information on the manual and the equipment.
4. Chapter 2, *Troubleshooting Procedures*. WP 0008 00 is a *Troubleshooting Symptom Index*. If the machine malfunctions, this index should always be consulted to locate the appropriate troubleshooting procedure.
5. Chapter 3 deals with *Unit Field Maintenance*: Major areas covered are *Preventive Maintenance Checks and Services (PMCS)* and operator level maintenance tasks.
6. Chapter 4, consists of *Direct Support Field Maintenance*.
7. Chapter 5 includes *Supporting Information: Illustrated List of Manufactured Items; Torque Limits; References; Maintenance Allocation Chart (MAC) Introduction; Maintenance Allocation Chart (MAC); and Expendable and Durable Items List*.
8. Chapter 6 consists of *General Support/Depot or Sustainment Maintenance*.

FEATURES OF THIS MANUAL

1. WARNINGS, CAUTIONS, NOTES, subject headings, and other important information are highlighted in **BOLD** print as a visual aid.

WARNING

A WARNING indicates a hazard that may result in death or serious injury.

CAUTION

A CAUTION is a reminder of safety practices or directs attention to practices that may result in damage to equipment.

NOTE

A NOTE is a statement containing information that will make the procedures easier to perform.

2. Statements and words of particular interest may be printed in CAPITAL LETTERS for emphasis.
3. Within a procedural step, reference may be made to another work package in this manual or to another manual. These references indicate where you should look for more complete information.

If you are told: "If red band is showing, service air cleaner as soon as possible (WP 0015 00)", go to Work Package 0015 00 in this manual for instructions on servicing the air cleaner.

4. Illustrations are placed after, and as close to, the procedural steps to which they apply. Callouts placed on the art may be text or numbers, or both; whichever method is easier for the soldier.
5. Numbers located at lower right corner of art (e.g. 394-001; 394-002, etc.) are art control numbers and are used for tracking purposes. Disregard these numbers.
6. Technical instructions include metric units as well as standard units. For your reference, a *Metric Conversion Chart* is located on the inside back cover of the manual.

NOTE

If at any time you are unsure how to use this manual or you cannot locate the information you need, notify your supervisor.