

TM 12141A-OR/1

U.S. MARINE CORPS TECHNICAL MANUAL

OPERATOR'S MANUAL
FOR
HYDRAULIC EXCAVATOR (HYEX)
250GR

NSN 3815-01-597-5671



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DEPARTMENT OF THE NAVY
Headquarters, U.S. Marine Corps
Washington, DC 20380-0001

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1. This Technical Manual (TM), authenticated for Marine Corps use and effective upon receipt, provides operation and maintenance levels as determined by TM 12141A-OR/1 of the OPERATOR'S MANUAL FOR THE HYDRAULIC EXCAVATOR (HYEX) 250GR, National Stock Number (NSN): 3815-01-597-5671.
2. Safety issues related to the information contained in this manual should be reported to the Marine Corps Systems Command Safety Office at MCSCSafety@usmc.mil. All significant safety hazards that have the potential to affect other commands and require widespread dissemination shall be reported via a Hazard Report per MCO P5102.1B.
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Product Manager, Engineer Systems
Marine Corps Systems Command

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WARNING SUMMARY

WARNING SUMMARY

This warning summary contains general safety and hazardous materials warnings that must be understood and applied during operation and maintenance of the machine. Failure to observe these precautions or operating this machine without training or instruction may result in serious injury or death to personnel.

FIRST AID

First aid is defined as "urgent and immediate lifesaving and other measures, which may be performed for casualties by nonmedical personnel when medical personnel are not immediately available."

FOR FIRST AID INFORMATION, REFER TO MCRP 3-02G (WP 0096).

EXPLANATION OF SAFETY WARNING ICONS



AIR PRESSURE - Human hand blocking air gun shows the need to reduce air pressure before use, or debris may injure user and/or damage equipment.



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



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



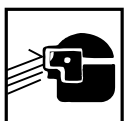
ELECTRICAL - Electrical wire to hand with electricity symbol running through human hand shows shock hazard is present.



EXPLOSION - Human figure in front of explosion symbol shows the material may explode if subjected to high temperatures, sources of ignition, or high pressure.



EXTREMELY COLD SURFACE - Hand touching object with ice formed on both shows surface is extremely cold and can damage human tissue.



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

WARNING SUMMARY - Continued

EXPLANATION OF SAFETY WARNING ICONS - Continued



FIRE - Flame shows material may ignite and cause burns.



FIRE EXTINGUISHER - Fire extinguisher shows material may ignite and a fire extinguisher should be within easy reach.



HEAVY OBJECT - Human figure stooping over heavy object shows physical injury potential for improper lifting technique, and/or aid of assistant(s) and/or lifting device is required.



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



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



HEAVY PARTS - Moving heavy object pinning human figure against stationary object shows heavy, moving parts/objects present a danger to life or limb.



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



HOT AREA - Hand over object radiating heats shows part is hot and can burn.



MOVING PARTS - Hand with fingers caught between gears shows the moving parts of the equipment present a danger to life or limb.

WARNING SUMMARY - Continued

EXPLANATION OF SAFETY WARNING ICONS - Continued



POISON - Skull and crossbones symbol shows dangerous gases, sprays, vapors, liquids, or materials contain compounds that present a danger to life or health.



PROJECTILE HAZARD - Human body with object passing through it shows a projectile hazard exists.



RADIATION - Three circular wedges show the material emits radioactive energy and can injure human tissue.



SEAT BELT USE - Human figure wearing seat belt indicates a seat belt must be used to prevent injury or death in the event of a vehicle crash or rollover.



SKIN IRRITATION - Hand radiating shows material can cause skin irritation.



SLICK FLOOR - Wavy line on floor with legs prone shows slick floor presents a danger of falling.



STEAM HAZARD - Human engulfed in steam cloud shows steam hazard exists that could injure/burn human tissue.



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



WARNING - Triangle with exclamation point within shows a WARNING is present that indicates a potential hazard, which may cause injury or death to personnel.

WARNING SUMMARY - Continued

WARNING DESCRIPTIONS

WARNING



Perform a complete walk around the machine prior to starting the engine. Ensure there is sufficient clearance from personnel and equipment for safe operation of machine. Prior to starting engine, sound horn to alert personnel. Failure to comply may result in injury or death to personnel.

WARNING



SAFE CLEARANCE:

- Before moving the machine or operating the boom, ensure the boom has at least 10 ft (3 m) of clearance from overhead wires, power lines, or structures. If lines are near your operating area, notify your supervisor prior to operating the boom. Failure to comply may result in injury or death to personnel.
- Keep personnel clear of the machine when traveling. Failure to comply may result in injury or death to personnel.

WARNING



PREVENTING CAVE IN

- Work perpendicular to or at an angle to excavation, with travel motors to the rear of the machine. Failure to comply may result in injury or death to personnel.
- Do not drive near the edge of an excavation or trench. Failure to comply may result in injury or death to personnel.
- Do not dig under the machine. Failure to comply may result in injury or death to personnel.
- To prevent the spoil pile from caving in the excavation, spoil piles should be placed at least 3 ft (1 m) from trench. Failure to comply may result in injury or death to personnel.

WARNING SUMMARY - Continued

WARNING DESCRIPTIONS - Continued

WARNING



DIESEL FUEL

- Diesel fuel is highly flammable and can be accidentally ignited. Do not smoke or allow open flame or sparks in the vicinity while working on any part of fuel system. Keep fire extinguisher within easy reach when working with fuel. Failure to comply may result in injury or death to personnel.
- Spilled fuel is slippery and creates a hazardous condition. Clean up and properly dispose of spilled fuel as soon as possible. Failure to comply may result in injury or death to personnel.
- Do not work on fuel system when engine is hot. Failure to comply may result in injury or death to personnel.
- Safety glasses must be worn when working on pressurized systems. Failure to comply may result in injury or death to personnel.

WARNING



LUBRICATING OIL

- Prolonged contact with lubricating oil may cause skin rash. Remove saturated clothing immediately and thoroughly wash skin that comes in contact with lubricating oil. Failure to comply may result in injury or death to personnel.
- Spilled oil is slippery and creates a hazardous condition. Clean up and properly dispose of hydraulic oil. Failure to comply may result in injury or death to personnel.

WARNING



Ensure electrical power is off prior to working on all electrical connections. Remove all jewelry such as rings, ID tags, bracelets, etc., prior to working on or around vehicle. Jewelry and tools can catch on equipment, contact positive electrical circuits, and cause a direct short, severe burns, or electrical shock. Failure to comply may result in injury or death to personnel.

WARNING SUMMARY - Continued

WARNING DESCRIPTIONS - Continued

WARNING



LEAD-ACID BATTERIES

- Avoid battery electrolyte contact with skin, eyes, and clothing. If battery electrolyte spills, immediately take the following action to stop burning effects:
- External - If battery electrolyte contacts skin, immediately flush affected area with cold running water. Failure to comply may result in injury or death to personnel.
- Eyes - If battery electrolyte contacts eyes, immediately flush eyes with cold water for 15 minutes and seek immediate medical attention. IMPORTANT - If only one eye is affected, ensure the affected eye is always kept lower than the unaffected eye, during both flushing and transport. This will help keep the affected eye from draining into and contaminating the unaffected eye. Failure to comply may result in injury or death to personnel.
- Internal - If battery electrolyte is ingested, drink large amounts of water or milk. Follow with milk of magnesia, a beaten egg or vegetable oil, and seek immediate medical attention. Failure to comply may result in injury or death to personnel.
- Clothing or vehicle - Immediately flush area with cold water and neutralize battery electrolyte with baking soda or household ammonia solution. Failure to comply may result in injury or death to personnel.
- Batteries produce explosive gases. Do not smoke or use open flame near batteries. Do not allow hot, sparking, or glowing objects near batteries. If batteries are giving off gases, the presence of heat, flame, or spark may cause fire and/or explosion. Failure to comply may result in injury or death to personnel.
- Wear proper eye protection, gloves, and an apron when working near batteries. Failure to comply may result in injury or death to personnel.

WARNING SUMMARY - Continued

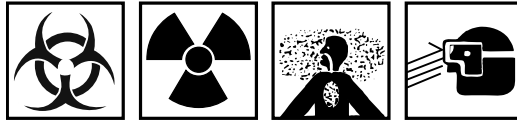
WARNING DESCRIPTIONS - Continued

WARNING



Chemical Agent Resistant Coating (CARC) paint contains isocyanate which is highly irritating to skin and respiratory system. High concentrations of isocyanate can produce symptoms of itching and reddening of skin, a burning sensation in the throat and nose, and watering of the eyes. In extreme concentrations, isocyanate can cause cough, shortness of breath, pain during respiration, increased sputum production, and chest tightness. First aid for ingestion: do not induce vomiting. Seek immediate medical attention. First aid for skin contact: remove contaminated clothing. Wash skin thoroughly with soap and water. If symptoms persist, seek medical attention. First aid for eye contact: flush with water for 15 minutes or until irritation subsides. If symptoms persist, seek medical attention. First aid for inhalation: move to fresh air. If not breathing, provide artificial respiration. If symptoms persist, seek medical attention. Failure to comply may result in injury or death to personnel.

WARNING



If Chemical, Biological, Radiological, or Nuclear Explosive (CBRNe) exposure is suspected, all filter media should be handled by personnel wearing protective equipment. Consult your unit CBRNe Officer or CBRNe NCO for appropriate handling or disposal instructions. Failure to comply may result in injury or death to personnel.

WARNING



Personnel hearing can be permanently damaged if exposed to constant high noise levels of 85 dB or greater. Failure to comply may result in injury to personnel.

WARNING



Unless otherwise specified, perform all maintenance procedures with all attachments lowered to the ground, pilot shutoff lever in the up position, and engine shut off. Failure to comply may result in injury or death to personnel.

WARNING SUMMARY - Continued

WARNING DESCRIPTIONS - Continued

WARNING



Do not operate bucket or any attachment if the quick attach wedge is not fully seated and the safety lock pin is not in the locked position . The bucket or attachment may fall. One exception to this rule is when specifically instructed to do so during the removing and installing of bucket or attachment to and from machine. Failure to comply may result in injury or death to personnel.

WARNING SUMMARY - Continued

WARNING DESCRIPTIONS - Continued

WARNING



CARBON MONOXIDE

- 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 to personnel can result from severe exposure.
- Carbon monoxide occurs in exhaust fumes from internal combustion engines. It also occurs in exhaust fumes from engine coolant heater (arctic machine only). 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 HYEX is operated:

DO NOT operate engine in enclosed areas without adequate ventilation.

DO NOT idle engine without adequate ventilation.

DO NOT drive machine with inspection plates or cover plates removed.

BE ALERT for exhaust poisoning symptoms. They are:

- Headache
- Dizziness
- Sleepiness
- Loss of muscular control

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

BE AWARE. The field protective mask for Chemical, Biological, Radiological, or Nuclear Explosive (CBRNe) protection will NOT protect you from carbon monoxide poisoning.

THE BEST DEFENSE AGAINST CARBON MONOXIDE POISONING IS GOOD VENTILATION. Failure to comply may result in injury or death to personnel.

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ebooklibonline@outlook.com