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RIDE-ON TERMINATORS

T2500 PRO MANUAL



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ORIGINAL LANGUAGE OPERATING MANUAL FOR
BARTELL RIDE-ON TERMINATORS

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REV.	DATE	DESCRIPTION	APPROVED BY:

SAFETY PRECAUTIONS



DANGER EXPLOSION HAZARD

Never operate the machine in an explosive atmosphere, near combustible materials, or where ventilation does not clear exhaust fumes.



WARNING BURN HAZARD

Never come into contact with the engine or muffler when engine is operating or shortly after it is turned off. Serious burns may occur.



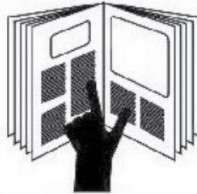
WARNING ROTATING HAZARD

Never place hands or feet inside safety guard rings. Serious injury will result from contact with rotating blades.



CAUTION MOVING PARTS

Before starting the machine, ensure that all guards and safety devices are in place and functioning properly.



ATTENTION READ OWNER'S MANUAL

Read and understand owner's manual before using this machine. Failure to follow operating instructions could result in serious injury or death.

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1. Introduction

The Terminator® Carpet and Tile Removal Machine is intended for use on large demolition and asbestos abatement projects as well as smaller floor covering removal jobs. Designed and built by experienced floor covering demolition and installation experts, the machine incorporates several design features that are essential for efficient operation:

- Tricycle wheelbase and short turning radius allows for better turning ability - especially in narrow spaces.
- Jaw position and tool position adjustments allow for changing the angle of the blade for any application.
- Ballasts in the front and rear provides extra traction needed for tile and glue removal.
- Built-in forklift transportation slots allow for easy loading and unloading at job sites.
- Variable displacement hydraulic control for a smooth start and stop.

If operated and cared for as instructed in this Manual, the Terminator® provides trouble-free, safe, and efficient performance.

2. About This Manual

This Manual contains the information and procedures to assist you to operate and maintain the Terminator® machine safely and correctly. Read this Manual before you operate or service the equipment. If you need additional information or assistance, please get in touch with our Customer Service Department:

Innovatech Products & Equipment Co.
4701 Allmond Ave
Louisville, KY 40209
(425) 402-1881 or 800-267-6682
Fax (425) 402-8547
Email: service@InnovatechProducts.com

NOTE: Throughout this Manual, directional instructions (left, right, up, down, push, pull, etc.) are given from the point of view of the operator performing the action.

3. Important Safety Instructions



WARNING: When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following: **READ ALL INSTRUCTIONS**

1. Safety Instructions for All Tools

- **KEEP GUARDS IN PLACE** and in working order.
- **REMOVE ADJUSTING TOOLS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from the Terminator® before turning tool on.
- **KEEP WORK AREA CLEAN.** Cluttered areas invite accidents.
- **KEEP CHILDREN AWAY.** All visitors should be kept a safe distance from the work area.
- **WEAR PROPPER APPAREL.** No loose clothing, gloves, neckties, rings, bracelets or other jewelry to get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
- **ALWAYS WEAR SAFETY GLASSES.** Also use a face or dust mask if operating in a dusty environment. All users and bystanders must wear eye protection that conforms to ANSI Z87.1. (CAN/CSA Z94.3)
- **MAINTAIN EQUIPMENT WITH CARE.** Keep equipment clean for best and safest performance. Follow instructions for lubrication and changing accessories.
- **DISCONNECT BATTERY** before servicing.
- **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure handles are centered and the engine throttle control is at the lowest setting.
- **USE RECOMMENDED ACCESSORIES.** Consult the instruction manual for recommended accessories.
- **NEVER STAND ON TOOL.** Serious injury could occur if the machine is tipped or rocked.
- **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced. Do not use tool if switch does not turn it on and off.
- **NEVER LEAVE EQUIPMENT RUNNING UNATTENDED. TURN POWER OFF.** Don't leave equipment until it comes to a complete stop.
- **DO NOT OPERATE ELECTRIC TOOLS NEAR FLAMABLE LIQUIDS OR GASSES OR EXPLOSIVE ATMOSPHERES.** Motors in these tools may spark and ignite fumes.
- **ALWAYS PROVIDE PROPER VENTILATION.** Ventilation is required when using the Terminator® T2500 PRO. Positive or negative pressure ventilators must be used in any enclosed space where the machine is to be used. Use carbon monoxide (CO) monitoring when the machine is in-use indoors. The CO generated by propane engines can be hazardous to your health if not proper ventilation is not provided.

2. Additional Safety Rules for Riding Floor Scrapers



CAUTION: FAILURE TO HEED THESE WARNINGS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH AND SERIOUS DAMAGE TO THE TERMINATOR®.

The Terminator® is to be operated only by qualified, trained personnel.

DON'T attempt to operate the Terminator® if you are not thoroughly familiar with the operation of the Terminator®.

DON'T operate the Terminator® unless every guard, warning notice or sign is in place.

DON'T use the Terminator® on roofs or floors not designed to carry the weight of the machine.

DON'T attempt to operate on anything but the designated voltage.

DON'T wedge anything against the motor fan to hold motor shaft.

DON'T operate equipment without guards in place.

DON'T operate the Terminator® near an open flame or smoking materials.

DON'T stand directly behind or in front of the Terminator® when power is enabled.

DON'T lift the hood, inspect the blade, or otherwise service or maintain the Terminator® while power is enabled.

DON'T operate the Terminator® if the top cover is open.

DON'T overreach. Keep proper footing and balance at all times.

DON'T run the machine into piles of debris, as this may cause the machine to become unstable and tip over.

DON'T sit on or stand next to, under or around the Terminator® when it is being transported in a moving vehicle, whether by itself or with other equipment.

DON'T attempt to use the Terminator® on a non-horizontal surface or turn the Terminator® around on a ramp or hill.

DON'T put your hands or feet in the blade area when the Terminator® is running.

DO turn the power off when not in use.

DO use personal safety equipment such as steel toe shoes, safety glasses, gloves, and ear plugs.

DO use gloves when changing blades and removal tools. Tools may be hot and cause burns.

DO familiarize yourself with all safety features and controls before each use.

DO use the Terminator® only for the purpose for which it was designed. Attempting to alter the Terminator® will invalidate applicable warranties and possibly damage the machine.

DO reduce speed next to walls, machinery and other objects.

DO pre-survey the floor for cracks, ditches, trenches, electrical outlets or bolts, which could catch the blade of the machine.

DO operate the Terminator® at a safe speed.

4. General Operating Instructions for the Terminator®

The Terminator® is designed to remove carpet, tile and glue residue from floors.

- When removing product, position removed product so it rolls to the side of the machine or have someone on the side of the machine remove the product. NEVER WALK IN FRONT OF OR BEHIND THE TERMINATOR® WHILE IT IS RUNNING.
- Sharpen blades or dice material into narrower widths if machine slows down or seems to be struggling.
- Do not use the Terminator® within one foot of walls or stationary objects. Damage to objects may occur if the Terminator® strikes them.
- Use safe, OSHA-approved tools and methods for sharpening blades.

5. Safety Features

The T2500 Pro is equipped with several features to help ensure your safety and the safety of workers around you.

1. Auto Stop

The T2500 Pro has a single drive lever located to the right of the operator seat and a jaw height switch to the left of the operator seat. The drive lever controls the forward, reverse, left, and right directions of the machine; the jaw height switch raises and lowers the jaw assembly. You must push (forward) or push (back) and hold the switch in position to move the jaw assembly in the direction desired. When you release the switch, jaw automatically STOPS and will not move again until you push and hold the switch again. Block wheels with a floor block when stopping on a ramp and use the emergency brake. Without the emergency brake the machine may roll forward or backwards on any sloping surface.

2. Strobe Light

An amber light is installed on the rear of engine compartment. When the ignition is in the ON position, the strobe light will flash.

3. Safety Instructions

The Terminator® is designed for safe operation by trained, designated personnel. To help ensure your safety as a designated operator, read these safety instructions before you operate the equipment. Regardless of your experience with machinery, the Terminator® has unique features and systems which you need to know about and understand before you operate or service the machine.

6. T2500 PRO Terminator® Specifications

Element	English	Metric
Length	54"	1371 mm
Width	26.5"	648 mm
Height	58.5"	1486 mm
Weight*	2012 lbs.	913 kg
Tires (OD x W)	15" x 8"	381 mm x 203 mm
Motor Power (SAE J1940)	25 HP @ 3600 RPM	18.6 kW @ 3600 RPM
Max Torque (SAE J1995)	39.0 lb·ft	52.87 N·m
Motor Operating Speed	1000-3600 RPM	
Engine Type	Kohler PCH740	
Engine Oil	SAE 10W or SAE 10W-30 Synthetic	
Engine Oil Capacity	2 Qt	1.6 L
Coolant Capacity	N/A	N/A
Hydraulic Oil Type	ISO 46	
Hydraulic Oil Capacity	7 Gal	26.5 L
Hydraulic Relief Valve Pressure	1800 psi	12.4 MPa

*Weight includes the base machine with 4 Rear, 3 Front, and 2 Wheel Weights

1. Tools and Supplies

Maintenance tools and supplies are not provided with the machine. The following are suggested items to have on the job site.

1. 4" or 7" Grinder
2. 10"-15" Crescent Wrench
3. 16-20 oz. Hammer
4. 3/8" or 1/2" Socket Set
5. Grease Gun
6. WD 40
7. 3/4" Open End and Box Wrench
8. Screw Driver Set
9. Safety Glasses
10. Ear Plugs

7. Ventilation Requirements

The Terminator® engine, like all combustion engines, relies on the combustion of fuel and oxygen to produce power. While most of the exhaust produced is in the form of water vapor and carbon dioxide, the engine also produces harmful carbon monoxide (CO). CO is a colorless, odorless, toxic gas that will cause significant illness or death in sufficient concentrations. NEVER run the Terminator® in enclosed or confined areas without sufficient ventilation.

8. Guards, Warning Notices & Signs

The guards, warning notices and signs are placed on the Terminator® for your protection. If one of them becomes damaged or is lost, contact our Customer Service Department to order a replacement.

9. Service Instructions & Personnel

Like other machinery, the Terminator® requires regular inspection and maintenance of the batteries, motor, hydraulic system and other parts. To prolong the safe and efficient operating life of the machine, clean and service it as instructed in the Maintenance section of this manual.

Always use trained personnel to service the equipment. **Never** allow anyone to service the equipment that has not been specifically trained to do so.

If you need help with a service or maintenance problem, contact our Customer Service Department.

10. Replacement Parts & Materials

The Terminator® is designed and engineered to operate safely and efficiently with the parts and materials installed on it in our factory. To ensure the continued safe and efficient operation of the equipment, use replacement parts and materials that meet both of the following requirements:

- Innovatech must solely authorize replacement parts and materials.
- Replacement parts and materials must be identical to the items originally provided with the machine, except as authorized by Innovatech.

Never use “equivalent” or substitute parts, except as expressly authorized by Innovatech.

If you fail to adhere to these instructions, you may cause injury to yourself and/or others, cause damage to the Terminator®, and invalidate applicable warranties.

If you are in doubt about any replacement parts or materials, call our Customer Service Department for assistance.

11. Uncrating and Preparing the Terminator® for Operation

When you receive the Terminator®, inspect the outside of the crate completely, to detect damage to the crate itself. If it is damaged, notify the carrier immediately and follow his/her instructions to file a claim.

Carefully uncrate the machine and inspect it for damage that may have occurred during shipping. If the shipment is damaged, notify the carrier immediately and file a claim in the normal manner.

Check packing slip for complete shipment. If shipment is incomplete, notify our Customer Service Department within 24 hours.

Remove the crate debris, set aside the blades and other packages, and prepare the Terminator® for operation:

CAUTION! If using conventional non-AGM lead acid batteries, wear acid-resistant gloves and safety glasses and use extreme care when checking battery water levels.

1. To remove the Terminator® from a crate with a forklift:

1. Forklift slots have been provided on the sides of the Terminator® for moving the terminator with a forklift.

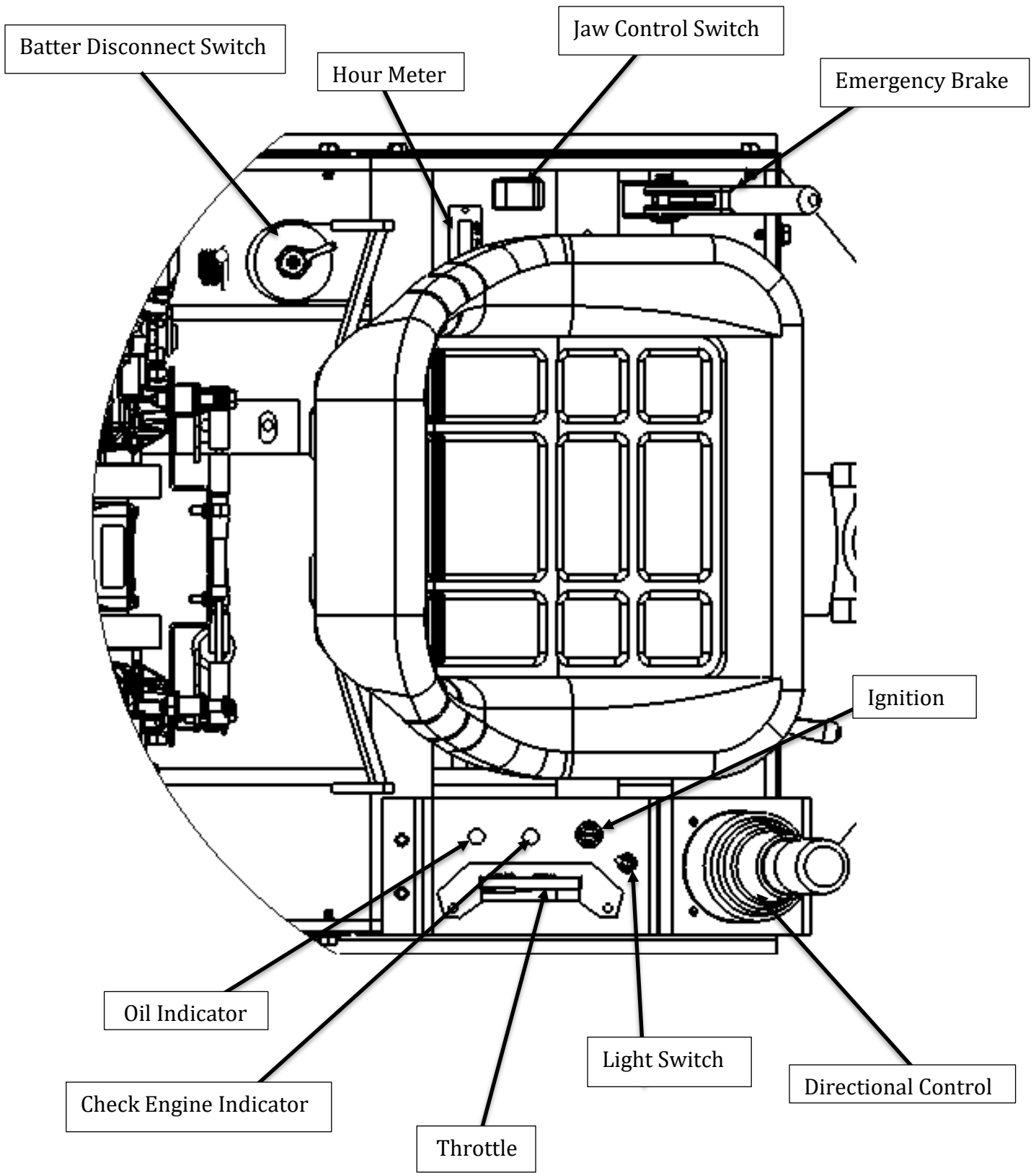
2. To remove the Terminator® from a crate without a forklift:

1. Turn the Battery Disconnect to the “On” position.
2. Take 2 x 4’s off the edge of the crate and between the wheels.
3. Place 2 x 4’s behind the crate of the rear of the machine.
4. Make a ramp with the 2 x 4’s and the crate material.
5. To start the Terminator®, turn the key.
6. Raise the front wheel 5 inches by using the jaw adjustment slider on the joystick.
7. Pull back both joysticks evenly. The machine will start moving slowly.
8. Ensure that both rear wheels come off the crate evenly. Failure to back off evenly could result in the machine tipping over and harm to the operator.
9. As the machine moves back, ensure that the center wheel clears the crate. If the center wheel does not clear the crate, raise the machine until the wheel clears.
10. Once the machine is on the ramp, slide it all the way to the bottom, then raise the jaw assembly up and set the center wheel down on the ground.

12. Loading/Unloading Procedures

- Do not load or unload the Terminator® on uneven ground.
- Ensure ramps into moving vehicles are stable and square to the ground.
- Always turn off the Terminator® before transporting it.
- Load and unload the machine with a properly weighted forklift or lift-gate.
- Make sure all safety stops are installed on a lift-gate before loading or unloading.
- Never position yourself under/around the machine while moving it with other machinery.
- Park the machine with the jaw completely down after loading.
- Properly secure the machine with chains, tire chocks, and other necessary tie downs.
- Never ride in a moving vehicle next to a Terminator®. It may tip, causing severe injury.

13. Operator Controls



1. Drive/Jaw Controls

The jaw control is located to the left of the operator seat. The drive joystick controls the direction of rotation of the rear wheels. The jaw height rocker switch controls the vertical position of the jaw assembly. The throttle lever controls the RPM of the engine.

- Push the joystick forward and hold it in position to move the machine forward.
- Pull the joystick back hold it in position to move the machine in reverse
- Push the joystick right to turn the machine to the right.
- Push the joystick left to turn the machine to the left.
- To move the jaw assembly down, push and hold the jaw rocker switch forward. To move the jaw assembly up, push and hold the jaw rocker switch backward.

2. Auto Stop

When you release the drive joystick, the motor continues to run but the drive or jaw motion automatically stops and will not start again until you push or pull the joystick.

3. Operator Presence Switch & Safety Grips

The Terminator[®] is equipped with a seat presence switch on the underside of the seat. The operator must also be seated to engage the operator presence switch within the seat. The wheel hydraulics will not function without an operator properly seated. **WARNING:** The Terminator[®] will stop abruptly if the operator leaves the seat while the machine is moving.

4. Emergency Brake

The Terminator[®] is supplied with an emergency brake to prevent unintended movement when left unattended. The brake handle is located to the left of the operator seat. Pull the handle up to engage the brake, push the handle down to release the brake. To increase tension on the brake you can rotate the end of the handle in a clockwise direction. Rotate the end of the handle counter clockwise to reduce the tension.

14. Display & Indicators

1. Oil Indicator Light

The oil indicator light illuminates when there is abnormal oil temperature or oil level.

2. Malfunction Indicator Light

The Malfunction Indicator Light (Check Engine) will illuminate when the engine is running out of specification and can also show any active error codes from the engine control unit (ECU).

15. Acceptable Carbon Monoxide Levels

IMPORTANT! OSHA Requirement – What Service Personnel Should Know!

The CO level shall not exceed 35 parts per million (PPM) measured over an 8-hour period in the work environment. 1,000,000 PPM is equivalent to 100% of all exhaust gases. For each one one-hundredth of one percent, you will have 100 PPM.

With adequate ventilation and following the enclosed adjustment instructions, you should be able to keep the CO level below the OSHA requirement. Innovatech strongly recommends the use of a CO analyzer.

16. Blade Assembly

Blades are available in different configurations and thickness. An assortment of blades is included in the purchase price of the Terminator[®]. Extra blades are available upon request from Innovatech Products & Equipment Co., Inc.

Installing a Blade:

1. Raise the jaw assembly to maximum up position.
2. Unwrap the pre-sharpened blades and select the blade thickness and length you need for the job.
3. Loosen the 7 holding bolts.
4. Insert the sharpened blade.
5. Tighten bolts firmly, starting from the center and working out. Bolts should be snug but not over-tightened.

17. Taking Up Floor Coverings

1. Insert the blade. (See Blade Assembly)
2. Lower the jaw assembly to the floor. Lift the caster wheel off the floor 1/4 inch. Use previous procedures to drive forward.
3. As the Terminator[®] is removing flooring material, it is recommended to have another person at the side of the machine removing accumulating debris.

18. Ballast

The T2500 PRO Terminator[®] can be equipped with weight plates in the front (30 lbs. each) and in the rear (63 lbs. each) to provide traction for tough jobs. These weights can be easily removed to reduce traction or assist in transportation. Wear gloves whenever handling the weights to reduce the risk of injury, following OSHA approved lifting techniques.

19. Tricycle or Caster Wheelbase and Tires

The tricycle wheelbase is designed for a better turning ability. The wheel bearings on the front caster roller require lubrication with grease every 30 hours of machine operation. There are three fittings, two on the wheel and one on the housing. When running over debris such as carpet, the carpet yarn will get caught between the wheel and the housing. Clean out wheel and housing regularly.

The rear tires are solid rubber, tubeless, and require no maintenance. Over time, they may wear out and need replacing. Before each job, inspect the rear tires and lug bolts. Tighten the lug bolts as needed to 70 ft.-lbs. torque – it is important to keep the lug bolts tight.

The wheel hubs should be tightened from 310 to 350 ft.-lbs. Inspect and re-torque every 60 hours of operation. Lift the machine off the floor so no weight is on the wheel when re-torquing the pack nut.

20. Carbon Monoxide Information

U.S. Department of Labor – Program Highlights
Fact Sheet No. OSHA 92-11

1. What is Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, tasteless gas, and is a common industrial hazard. Mild poisoning can cause such symptoms as nausea, dizziness, or headaches while severe poisoning can result in brain or heart damage, or even death. The incomplete burning of any material containing carbon, such as gasoline, natural gas, oil, propane, coal, or wood, produces this poisonous gas. Forges, blast furnaces, and coke ovens all produce CO, but one of the most common sources of exposure in the workplace is the internal combustion engine.

Be suspicious of CO poisoning if you develop dizziness, a flushed face, headaches, or general weakness. Although CO is itself odorless, it may mix with other gases that do have an odor. Therefore, be aware that the smell of other gases does not automatically exclude the presence of CO.

2. Are You Likely to Be Poisoned?

If you have a heart condition, your condition may be aggravated by CO exposure. Ingestion of barbiturates or alcohol may increase the effects of CO exposure. Smokers have a higher carboxyhemoglobin than non-smokers, and therefore face a greater risk of CO exposure on the job.

Harmful levels of CO are a potential danger to workers of: acetylene workers, blast furnace workers, boiler room workers, brewery workers, carbon black makers, coke oven workers, diesel engine operators, dock workers, garage mechanics, metal oxide reducers, miners, organic chemical synthesizers, petroleum refinery workers, pulp and paper workers, steel workers, toll booth and tunnel attendants, and warehouse workers.

3. What Are the Symptoms?

Large amounts of CO can kill in minutes. The more CO in the air and the longer you are exposed to it, the greater the danger. Any one or more of the following symptoms can signal CO poisoning: headaches, tightness across the chest, nausea, drowsiness, inattention, or fatigue. As the amount of CO in the air increases, symptoms that are more serious may develop such as lack of coordination, weakness, and confusion. The poisoning can be reversed if caught in time. However, even if you recover, acute poisoning can result in permanent damage to the parts of the body that require oxygen, such as the heart and brain. There is a significant reproductive risk involved with CO. An American Journal of Industrial Medicine article quotes two studies showing that acute CO exposures that were non-lethal to the mother were associated with fetal loss.

4. What Can You Do About CO?

If you suspect CO, get out of the area and into the open fresh air. Remove anyone overcome by the gas immediately and give the person artificial respiration. Call for a doctor and continue the artificial respiration until the doctor arrives or the person recovers. Prompt action can make the difference between life and death.

5. Employers

- Install an effective ventilation system to remove poisonous CO from the area.
- Maintain appliances and equipment in good order, adjusting flames, burners, and drafts to reduce the formation of CO.
- Consider switching from fossil fuel-powered equipment to battery-powered machinery when possible.
- Provide approved respirators for emergency use. Regular respirators (negative pressure) will not work in this atmosphere. If necessary, provide an independent air supply to workers.
- Install CO monitors or regularly test air in areas when CO is generated or used.
- Provide pre-placement and periodic medical examinations for workers who may be exposed to CO. If possible, transfer affected workers to other jobs.
- Inform workers of the hazards of CO and train them in the proper use of respirators.

6. Workers

- Report to your employer any condition that might make CO form or accumulate.
- Be alert to ventilation problems, especially in enclosed areas where gases of burning fuels may be released.
- Report complaints early. Do not overexert yourself if you suspect CO poisoning. Physical activity increases the body's need for oxygen, increasing the danger of poisoning.
- If you get sick, tell your doctor about the possibility of exposure to CO.
- Think carefully about your smoking habits. Tobacco, when burned, releases CO which reduces the oxygen-carrying ability of the blood even before any industrial exposure is factored in.

7. Federal Standards

The Occupational Safety and Health Administration (OSHA) standard for exposure to CO prohibits workers' exposure to more than 50 parts of gas per million parts of air (PPM), averaged over an 8-hour work day. There is also a ceiling limit of 200 PPM measured over a 15-minute period.

21. Propane Safety

Liquid petroleum gas (propane) is flammable and potentially explosive. Always obey proper handling, lighting, and ventilating procedures provided by the manufacturer. Obey the safety warnings and procedures below, which are provided to supplement, not replace or substitute, the manufacturer's instructions.

NOTE: All new propane tanks must be purged before use.

1. Precautions & Warnings

- Wear insulated gloves when you handle propane tanks.
- Do not attempt to adjust the pressure regulator because the manufacturer sets it. Only a qualified liquid petroleum gas service technician should make adjustments.
- Inspect the fuel lines and connectors before each job or at the beginning of the day to detect any possible problems. Never check for propane leaks with an open flame.
- Never use ammoniated household-type detergents to detect leaks or to clean any portion of the fuel system or the tank. These substances can cause cracks on brass fittings and on the fuel line. If the leak cannot be located, take the tank to a certified liquid petroleum gas service representative.
- Never store or carry propane containers in a closed space or inside your passenger vehicle. Propane containers are equipped with safety devices that relieve excessive pressure by discharging gas to the atmosphere.
- Never fill a tank more than 80% of capacity. Overfilling can cause uncontrolled gas flow, which in turn can cause fire and/or an explosion.

2. What to Do If You Smell Gas

- Immediately extinguish any open flames, pilot lights, and all smoking materials.
- Turn the engine OFF; do not touch any electrical switches or other devices that may produce a spark.
- Shut OFF the propane tank
- Open all doors and windows to allow maximum ventilation.
- Leave the area until the odor clears.
- Inspect the propane lines and connectors to determine the source of the leak. Correct the problem before you use the Terminator® again.

22. Maintenance Procedures

1. Change Hydraulic Oil every 18 months with NUTO H 46 or ISO 46 or if fluid is overheated 200°F or higher.
2. Change hydraulic filter every 50 hours initially.
3. Clean Caster Wheel and Back Tires with wire wheel when necessary.
4. Look for leaks, find and tighten fittings. Do not over-tighten fittings.
5. Check all hoses and clamps once a week.
6. Inspect rear tires and lug bolts. Tighten lug bolts as needed to 70 ft.-lbs. torque.
7. Check wheel hub every 60 hours of operation. Wheel hub pack nut should be torqued from 310 to 350 ft.-lbs.

Procedure / Hours	Every 8 Hours (daily)	Every 50 Hours (weekly)	Every 100 Hours	Every 200 Hours	Every 1000 Hours	Every 2000 Hours	Yearly	Each 2 Years
Check Hydraulic Oil Level	•							
Change Hydraulic Oil Filter		(initially)		•				
Change Hydraulic Oil					•			
Check Brake Pad Wear			•					
Adjust Emergency Brake as needed	•							
Replace Brake Pads (as needed)							•	
Re-torque Wheel Lugs		•						
Re-torque Pack Nuts		•						
Adjust Wheel Scrapers		•						
Grease Caster Wheel		•						
Check Engine Oil/Replenish	•							
Change Engine Oil		(Initially)	•					
Clean Spark Plug and Adjust if Necessary			•					
Replace Spark Plug						•		
Check Air Cleaner	•							
Clean Air Cleaner			•					
Replace Air Cleaner^					•			
Replace Intake Pipe/Clamp Bands								•
Check Fuel Filter			•					
Replace Fuel Filter			As needed					
Fuel Line Clamps/Hoses	•							
Check for Fuel Leakage		•						
Replace LPG Hoses								•

Procedure / Hours	Every 8 Hours (daily)	Every 50 Hours (weekly)	Every 100 Hours	Every 200 Hours	Every 1000 Hours	Every 2000 Hours	Yearly	Every 2 Years
Change Breather Tube								•
Check PCV Valve					•			
Check LPG Vaporizer Regulator					•			
Change LPG Vaporizer Water Hoses								•
Check LPG Vaporizer Regulator Inner Parts*								•
LPG Lockoff Valve					•		•	
Check Radiator Coolant	•							
Change Radiator Coolant								•
Check Radiator Hoses and Clamp Bands				•				
Change Radiator Hoses and Clamp Bands								•
Clean Radiator and Water Jacket							•	
Check Fan Belt Tension			•					
Adjust Fan Belt Tension			As needed					
Adjust Valve Clearance *					•			

Warranty

Innovatech warrants to the original buyer, for a period of one (1) year or 300 operating hours (whichever comes first) from the date of delivery, that the Equipment is free from defects in materials and workmanship and that the Equipment conforms to the operating specifications supplied with the Equipment. The foregoing warranty is subject to proper operation and maintenance of the Equipment in accordance with the operating instruction and manual supplied to Buyer with the Equipment.

Warranty claims shall be made by Buyer in writing. Innovatech's sole obligation under the foregoing warranty, where it appears to Innovatech's satisfaction that the defect was present at the time of delivery, is at Innovatech's sole option, to repair, replace or correct any such defect.

EXCEPT AS STATED ABOVE THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED. INNOVATECH EXPRESSLY DISCLAIMS ANY WARRANTY, EXPRESS OR IMPLIED, THAT EQUIPMENT SOLD HERE UNDER IS OF MERCHANTABLE QUALITY OR THAT IT CAN BE USED FOR OR IS FIT FOR ANY PARTICULAR PURPOSE. ANY DESCRIPTION OF THE EQUIPMENT IN THIS AGREEMENT OR IN MANUALS, BROCHURES OR LITERATURE AND ANY USE OF ANY SAMPLE, MODEL OR PROTOTYPE OF THE EQUIPMENT IS FOR THE SOLE PURPOSE OF IDENTIFYING OR ILLUSTRATING THE EQUIPMENT, IS NOT PART OF THE BASIS OF THE AGREEMENT BETWEEN INNOVATECH AND BUYER, AND DOES NOT CONSTITUTE A WARRANTY THAT THE EQUIPMENT, AS SUPPLIED, WILL CONFORM TO ANY DESCRIPTION OR TO ANY SAMPLE, MODEL OR PROTOTYPE. INNOVATECH DISCLAIMS ANY WARRANTY RESPECTING OPERATING CAPACITY OR CAPABILITY OF THE EQUIPMENT OR THE ABILITY OF THE EQUIPMENT TO MEET ANY PARTICULAR NEEDS OF THE BUYER. THE EQUIPMENT IS POWERED TO OPERATE AS STATED IN THE OPERATING SPECIFICATIONS SUPPLIED WITH THE EQUIPMENT BUT IT IS UNDERSTOOD AND AGREED TO BUY BUYER THAT ACTUAL OPERATING CAPABILITIES VARY UNDER DIFFERENT OPERATING CONDITIONS FOR WHICH INNOVATECH CAN ASSUME NO RESPONSIBILITY.

BUYER'S EXCLUSIVE REMEDY FOR CLAIMS ARISING UNDER THIS AGREEMENT SHALL BE FOR REPAIR OR, AT INNOVATECH'S SOLE OPTION, REPLACEMENT OF ANY ITEM OF DEFECTIVE EQUIPMENT. INNOVATECH'S LIABILITY FOR ANY LOSSES OR DAMAGE, WHETHER ON ACCOUNT OF NEGLIGENCE, BREACH, AND WARRANTY OR OTHERWISE SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE PARTICULAR ITEM OF EQUIPMENT WITH RESPECT TO WHICH SUCH LOSSES OR DAMAGE OCCURRED.

IN NO EVENT WILL INNOVATECH BE LIABLE FOR ANY DAMAGES CAUSED BY BUYER'S FAILURE TO PERFORM BUYER'S RESPONSIBILITIES, OR FOR ANY LOST PROFITS, LOST PRODUCTION, LOSS OF ANTICIPATED PROFITS OF OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF INNOVATECH HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

IN NO EVENT WILL INNOVATECH BE LIABLE FOR ANY DAMAGES RESULTING FROM ANY CLAIM AGAINST BUYER BY ANY OTHER PARTY.

FACTORY SERVICE

A warranty will not be valid unless a written claim authorization comes with returned parts. Innovatech will not provide for any shipping costs for items returned for repair. To obtain warranty repairs, buyer must prepay shipment and return all warranty parts to Innovatech. Damage occurring during shipment is deemed the responsibility of the carrier and claims should be made directly with such carrier.

It will be the customer's responsibility to pay for any non-warranty replacement parts plus the current hourly labor rates for any work done on any machine or part. Service is available upon request; call Innovatech for current labor rates.

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