



Service Manual

Rubber Track Loader

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ASVparts.com
5060 Fulton Industrial Blvd
Atlanta, GA 30336
877-857-7209

PT-50/60

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1. Product Safety

Chapter Overview

This chapter contains product safety information for the Terex PT-50/60 Rubber Track Loaders. Read and understand all product safety information before attempting to service any Rubber Track Loader.



Safety Alert Symbol

This symbol means: **Attention! Be alert! Your safety is involved!**

The safety alert symbol is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

This symbol is used as an attention-getting device throughout this manual as well as on decals and labels fixed to the machinery to assist in potential hazard recognition and prevention.

Property or equipment damage warnings in this publication are identified by the signal word "NOTICE".

NOTICE

"NOTICE" Indicates a hazardous situation which, if not avoided, could result in property or equipment damage.

The word "Note" is used throughout this manual to draw your attention to specific topics or to supplement the information provided in that section.



Improper or incomplete maintenance/repair of a Rubber Track Loader can be dangerous and may result in machine damage, injury or death.

Do not attempt to perform any type of repair or maintenance on a Rubber Track Loader until you have read and fully understood both this manual and the machine specific operation and maintenance manual.

Refer to the Operation and Maintenance manual for instructions regarding proper machine operation and maintenance techniques before operating or servicing any Rubber Track Loader.

The person(s) in charge of servicing a Rubber Track Loader may be unfamiliar with many of the systems on the machine. This makes it especially important to use caution when performing service tasks. Familiarize yourself with the affected system(s) and components before attempting any type of maintenance or service.

It is not possible to anticipate every potential hazard. The safety messages included in this document and displayed on the machine are not all-inclusive. They are intended to make you aware of potential risks and encourage a safe approach to performing service work. If you use a tool, procedure, work method or operating technique that is not specifically recommended by Terex, you must satisfy yourself that it is safe for you and others. You must also ensure that the machine will not be damaged or be made unsafe by the operation, lubrication, maintenance or repair procedures that you choose.



Basic Precautions

Safety Labels

Safety labels have been included and are displayed in various places throughout the machine to serve as warnings of potentially dangerous conditions. Read and understand all "Safety" labels on any Rubber Track Loader before attempting to operate, maintain or repair it. Replace any damaged, illegible or missing labels immediately, prior to service.

Personal Protective Equipment

Personal protection equipment is recommended when performing maintenance or service on a machine. Always wear appropriate protective equipment for working conditions when working on or around the machine. Loose clothing should not be worn and long hair should be restrained. Wear hard hats, protective face/eyewear, safety shoes and any other equipment necessary to ensure your safety and the safety of others around you as you work.

Entering and Exiting

Always use steps and handholds when entering or exiting a Rubber Track Loader. Clean any mud or debris from steps or work platforms before using them. Always face the machine when using steps and handholds. When it is not possible to use the designed entry/exit system, utilize ladders, scaffolds, or work platforms to safely gain access to the machine.

Lifting

Use a hoist when lifting components that weigh 50 lb (23 kg) or more, to avoid back injury. Make sure all chains, hooks, slings, etc., are in good condition and are of the correct capacity. Be sure hooks are positioned correctly and equipped with a spring latch. Lifting eyes are not to be side loaded during a lifting operation.

Hot Fluids and Components

Stay clear of hot components and system fluids of the engine, exhaust, radiator/oil cooler and hydraulic lines/tubes. Also, use caution when removing fill caps, breathers and plugs on the machine. Hold a rag over the cap or plug to prevent being sprayed or splashed by liquids under pressure. Be especially careful if the machine has been operated recently, fluids may still be hot. To ensure your safety, allow the machine to cool before attempting any service procedure that involves hot fluids or components.

Corrosion Inhibitor

Corrosion inhibitor contains alkali. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Do not take internally. In case of contact, wash skin immediately with soap and water. For eyes, flush with large amounts of water for at least 15 minutes. Call Physician. Keep out of reach of children.

Batteries

Do not smoke when inspecting the battery electrolyte level. Never disconnect any charging unit circuit or battery circuit cable from the battery when the charging unit is operating. A spark can cause an explosion from the flammable vapor mixture of hydrogen and oxygen that is released from the electrolyte through the battery outlets. Do not let electrolyte solution make contact with skin or eyes. Electrolyte solution is an acid. In case of contact, immediately wash skin with soap and water. For eyes, flush with large amounts of water for at least 15 minutes. Call Physician. Keep out of reach of children.

Pressurized Items

1. Do not use hands or any other body part to check for fluid leaks in the hydraulic system. Always use a solid material like wood or metal to check for this type of leak. Leaking fluid under pressure can penetrate body tissue. Fluid penetration can cause serious injury and even death. If fluid is injected into your skin, get treatment immediately. Seek treatment from a doctor that is familiar with this type of injury.
2. Relieve pressure from the hydraulic system before disconnecting or removing any lines, fittings or related items. Do this by relaxing all hydraulic actuators. If the lift arms are raised, make sure they are securely braced. Be alert for possible pressure release when disconnecting any device from a pressurized system.
3. Lower the lift arms before performing any work on the machine. If this cannot be done, make sure they are securely braced to prevent them from dropping unexpectedly during service.
4. Loose or damaged fuel, oil, hydraulic, lines, tubes and hoses can cause fires. Do not bend or strike high pressure lines or install ones that have been bent or damaged. Check lines, tubes and hoses carefully. See item 1 for precautions on checking for fluid leaks.
5. Pressurized air or water can also cause injury. When pressurized air or water is used for cleaning, wear a protective face shield, protective clothing, and protective shoes. The recommended maximum air pressure for cleaning purposes is 30 psi (205 kPa). When using a pressure washer, keep in mind that nozzle pressures are typically very high. Generally, pressures are well above 2000 psi (13790 kPa). Follow all recommended practices provided by the pressure washer manufacturer.



Repair



Accidental machine starting can cause injury or even death to personnel working on a Rubber Track Loader.

As a precaution, disconnect the battery cables from the battery terminals, tape the battery clamps and remove the key from the ignition switch prior to performing any service work on a Rubber Track Loader.

Place a “Do Not Operate” tag prominently on the machine to inform personnel that the machine is being serviced.

1. Disconnect the battery and discharge any capacitor before beginning work on a machine. Attach a **Do Not Operate** tag in the cab to alert any operator that service is in progress.
2. If possible, make all repairs with the machine parked on a level, hard surface. Use blocks to prevent the machine from rolling while working on or under the machine.
3. Do not work on or under any machine that is supported only by a hydraulic jack or hoist. Always use some sort of mechanical support to ensure that the machine will not fall. Terex jack stands work well to support the machine while performing maintenance or repair work.
4. Make sure the work area around the machine is safe and make yourself aware of any hazardous conditions that may exist. If the engine needs to be started inside an enclosure, make sure that the engine's exhaust is properly vented.
5. Be sure all protective devices including guards and shields are properly installed and functioning correctly before beginning any service task. If a guard or shield must be removed to perform the repair work, use extra caution.
6. Always use the appropriate tools for the work to be performed. Tools should be in good condition and you should understand how to use them properly before performing any service work.
7. When replacing fasteners, use parts of equivalent grade and size. Do not use a lesser quality fastener if replacements are necessary.
8. Be prepared to stop an engine if it has been recently overhauled or the fuel system has been recently serviced. If the engine has not been assembled correctly, or if the fuel settings are not correct, the engine can possibly overspeed and cause bodily injury, death or property damage. Be prepared to shut off the fuel and air supply to the engine in order to stop the engine.
9. Be careful when removing cover plates. Gradually back off the last two bolts or nuts located on opposite sides of the cover. Then, pry the cover loose to relieve any spring or other pressure before removing the last two nuts or bolts completely.
10. Repairs requiring welding should be performed only by personnel adequately trained and knowledgeable in welding procedures and with the guidance of appropriate reference information. Determine the type of metal being welded and select the correct welding procedure and filler material to provide a weld that is as strong or stronger than the original weld.
11. Take precautions to avoid damaging wiring during removal and installation operations. Carefully route wires so that they will not contact sharp corners, objects or hot surfaces during operation.
12. When performing service that requires the lift arms to be in the raised position, always utilize the lift arm brace located on the rear of the loader tower.
13. Relieve hydraulic system pressure by relaxing all hydraulic actuators prior to attempting any hydraulic maintenance or repair.
14. Always tighten connections to the correct torque specification. Make sure that all shields, clamps and guards are installed correctly to avoid excessive heat, vibration or unwanted contact between parts during operation. Shields that protect exhaust components from oil spray in event of a line, tube or seal failure must be correctly installed.
15. Do not operate a machine if any rotating part is damaged or contacts other parts during operation. Any high speed rotating component that has been damaged or altered should be checked for balance before reusing. Make sure all protective devices, including guards and shields, are properly installed and functioning correctly before starting the engine or operating the machine.


1. Product Safety

⚠ Attachments

Only use attachments that are recommended by Terex.

Make sure that all necessary guards and protective equipment are in place and functioning prior to operating any attachment.

Wear protective glasses and protective equipment as required by conditions or as recommended in the attachment's operation manual.

	<p>When replacement parts are required for your machine, use only genuine Terex replacement parts or parts that meet or exceed original specifications including, but not limited to physical dimensions, type, strength and material.</p> <p>Installing lesser components can lead to premature failures, product damage, personal injury or death.</p>
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Ensure that all personnel are far enough away from the work area so they will not be struck by flying objects.

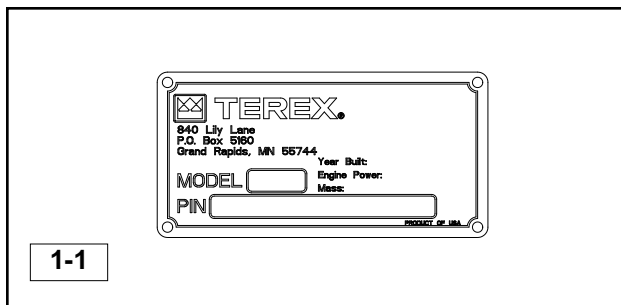
Stay clear of the cutting edges, pinching surfaces or crushing surfaces of the attachment while performing any attachment maintenance, testing or adjustments.

⚠ Machine Labels and Decals

Labels and decals placed on the machine provide safety information and operating instructions. Familiarize yourself with the location and significance of these labels to ensure your safety.


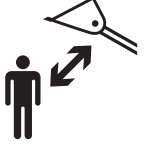

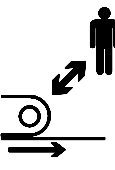





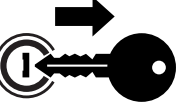




Product Identification Number

The Product Identification Number (PIN) is located on the left side of the firewall next to the operator seat. (figure 1-1). Always provide the PIN when contacting the dealer about parts, service, warranty or accessories. No warranty claims will be processed unless the PIN is provided.



⚠ Safety Label Examples

Examples of the labels and decals displayed on the machine are shown on this page.

<p>⚠ WARNING</p>  <p>Crush Hazard Death or serious injury can result from contact with moving lift arm or attachment.</p>	 <p>Keep clear of lift arms and attachments.</p>
<p>⚠ DANGER</p>  <p>Crush Hazard Serious injury or death can result from contact with moving machine.</p>	 <p>Keep clear of moving machine.</p>
<p>⚠ WARNING</p>  <p>Fall Hazard Serious injury or death can result from falling.</p>	 <p>Use the provided access system when entering or exiting the machine.</p>
<p>⚠ WARNING</p>  <p>Crush Hazard Death or serious injury can result from contact with moving lift arm or attachment.</p>	 <p>Install lift arm brace prior to servicing.</p>
<p>⚠ WARNING</p>  <p>Entanglement Hazard Rotating parts can cause personal injury.</p>	 <p>Keep away from fan and belt while the engine is running. Stop engine before servicing.</p>
<p>⚠ WARNING</p>  <p>Burn Hazard Hot fluid under pressure can scald.</p>	 <p>Allow the machine to cool thoroughly before opening.</p>
<p>NOTICE</p>  <p>Fire Hazard Flammable debris can collect near hot components and lead to a fire.</p>	 <p>Read Operator's manual Keep engine, exhaust and chassis areas free of debris.</p>