

VERSATILE

Service Manual



NEW HOLLAND

Tractor
150, 160

40015011

Reprinted

FOREWORD

This service manual provides instructions for troubleshooting, removal, inspection, replacement and overhaul of 1977, 1978, 1979, 1980 and 1981 Model 150 VERSATILE® Tractor components.

The service manual should be used in conjunction with the parts manual for the specific model year.

A table of contents precedes each section providing detailed coverage of the information contained within that section. The index at the end of the book should ease location of specific information, and an up-to-date list of Perkins Distributors is provided following the index.

REVISIONS AND ADDITIONS

The purpose of a loose-leaf service manual is to enable us to keep the book updated.

When changes are made, pages will be forwarded to you marked either as replacement or additional pages.

Replacement pages will carry the same page number as the original. Discard the original page and insert the replacement page in its place. Added pages will carry the original page number plus an alphabetical suffix. Insert these pages after the existing page.

Please complete the feedback page at the back of the book and return it to Versatile Farm Equipment Company. Such information will help us improve our service manuals in the future.

Safety

This section contains general safety precautions which should be thoroughly studied and practiced by all service personnel.

GENERAL SAFETY

1. Mount a fire extinguisher near the service area. Maintain it as recommended by the manufacturer.
2. Never operate the tractor in a closed building. If it is absolutely necessary to do so, be sure the building is well ventilated.
3. Always keep sleeves, jackets or other clothing relatively tight and belted. Loose clothing might catch in moving tractor parts.
4. Never jump from the tractor cab. Always use steps and handholds when mounting and dismounting tractor.
5. Park the tractor on a level, clear area before beginning any maintenance procedure. Shut down the engine and remove the ignition key; apply parkbrake; chock the front and back or at least two wheels. Ensure that all operating controls are in neutral. Always disengage the PTO clutch and three-point hitch. Engage articulation lock (1981 Model).
6. Always lower implements to the ground when leaving equipment.
7. Always operate tractor controls from the operator's seat.

TRANSPORT SAFETY

1. Use a trailer having a carrying capacity of at least 12 000 lb (5 500 kg) to haul the tractor.
2. Securely chain the tractor to the trailer; block the wheels and engage the parkbrake to prevent tractor movement. Engage articulation lock (1981 Model).

JACKING SAFETY

1. Select a jack strong enough to carry the load. The minimum required jack capacity is five tons (4.5 t).
2. Stabilize the tractor by putting transmission into gear, engaging the parkbrake, and chocking the wheels securely. Engage the articulation lock (1981 Model).
3. To prevent jackknifing, use two hoists or two floor jacks to lift the rear frame.
4. Put the jack securely under the axle tube, frame or drawbar where it is strong enough to support the lifted weight.
5. Use a heavy block as a base for the jack if working on the ground. It should be long enough to keep the jack from tipping, sinking or shifting. Any additional blocking should be under the jack.
6. Jack up the front and/or rear frame just enough to install steel safety stands under the axle tubes or frame.
7. Check the jack position after it has started to lift. Lower the jack immediately if it starts to lean. Reset the jack; block the tractor more securely and lift again.
8. Keep the tractor stable by not raising it so high that it will slide off the jack handle.
9. Put support stands under the tractor. Lower the jack and let the tractor rest on the stands. This provides solid support for the tractor when the jack is removed.

HOIST SAFETY

1. Use a chain hoist and frame to lift the tractor. The minimum hoist capacity required is five tons (4.5 t); for the A-frame or overhead support, five tons (4.5 t); and for the support stands, three tons (2.7 t).
2. Protect yourself from injury as the tractor is being raised by doing the following:
 - a. Do not stand on the tractor as you are lifting.

- b. Keep hands away from pinch points where the chain links tighten or the chain is against the tractor frame.
 - c. Do not let the tractor swing and strike personnel or the frame as it leaves the ground.
 - d. Keep support stands nearby and place under the tractor when the necessary height is reached.
 - e. Do not go under a tractor supported by a chain hoist. Place support stands under the tractor before working under it.
 - f. Engage articulation lock (1981 Model).
3. Extreme care must be exercised when hoisting, lowering or moving any component of the transmission.

MAINTENANCE SAFETY

- 1. Shut down the engine before repairing tractor.
 - 2. Be alert when approaching the tractor while it is running, especially the PTO, articulation joint and three-point hitch.
 - 3. Engage articulation lock during overhaul operations (1981 Models).
 - 4. Never oil, grease or adjust the tractor while it is in motion. Never run engine while the tractor is being adjusted, cleaned or repaired.
 - 5. Before repairing any hydraulic system component, shut down engine and move all implement controls forward and backward several times to remove pressure. Disconnect any component that may be connected to the hoses.
 - 6. Wear a face shield or goggles to protect your eyes and heavy gloves to protect your hands when searching for hydraulic leaks or charging the air conditioning system.
- 7. Escaping hydraulic oil under pressure can penetrate the skin, causing severe personal injury. Use a piece of cardboard or wood when searching for leaks. If injured by escaping hydraulic oil, get immediate medical attention.
 - 8. Do not smoke and avoid open flames when filling the batteries.
 - 9. Shut down the engine and remove the ignition key before disconnecting or servicing PTO drivelines.
 - 10. Do not remove the cooling system pressure cap while the engine is hot. Cool engine to less than 165° F (74° C).
 - 11. Stop engine before making any linkage adjustments.
 - 12. Welding fuel tanks is dangerous and not recommended.
 - 13. Repair adhesive is easily flammable. Keep the adhesive and its vapors from heat, sparks and flame.
 - 14. During adhesive use, and until the vapor is gone, avoid using spark producing electrical equipment. Keep the container closed when not in use.
 - 15. Use adhesive only in a well-ventilated area.

FUEL AND FLUID SAFETY

- 1. Do not smoke and avoid open flame when:
 - a. Filling the fuel tanks
 - b. Filling the batteries
 - c. Working near a disassembled air conditioning system. Refrigerant vapor and flame combined produce lethal phosgene gas.

2. Add coolant to the radiator only when the engine is stopped. Turn the radiator slightly to relieve pressure before completely removing the cap.
3. Do not use an open pail or can for transporting fuel. Use only an approved container manufactured for that purpose.
4. If clothes are splashed with fuel, change immediately. Fuel-soiled clothes are an extreme fire hazard.
5. Dispose of all fuel-soaked rags. Do not leave them lying around a work area where they may be exposed to flame, spark or cigarette smoking.
3. Do not load, raise bucket and articulate tractor simultaneously.
4. Lower the loader arms, stop engine and engage parkbrake before leaving the operator's seat.
5. Never leave loader with bucket raised. When not in use, bucket should rest on the ground. Hydraulic hoses can rupture under pressure causing loader to collapse.
6. Never operate loader with frayed or damaged hoses or leaking fittings.
7. Never stand or work under the raised bucket.

LOADER SAFETY

1. Keep children away from the loader operation area.
2. Keep bucket low when transporting a load.
8. Never allow anyone to ride in the loader bucket.
9. Raise and lower loader slowly to prevent tipping.
10. Keep bucket low when backing down ramps and slopes.

SECTION 2: ENGINE SYSTEMS

Table of Contents

1 INTRODUCTION

1.1	General	2-4
1.2	Specifications	2-4
1.2.1	Fluids and Capacities	2-4
1.2.2	Torque Values	2-4
1.2.3	Filters	2-5
1.3	Troubleshooting	2-5
1.4	Engine Replacement	2-6
1.4.1	Special Tools and Equipment	2-6
1.4.2	Removal	2-6
1.4.3	Installation	2-11
1.5	Engine Mount Replacement	2-13
1.5.1	Special Tools and Equipment	2-13
1.5.2	Rear Mounts	2-14
1.5.3	Front Mounts	2-15

2 FUEL SYSTEM

2.1	General	2-16
2.2	Troubleshooting	2-17
2.2.1	Troubleshooting Chart	2-17
2.2.2	Inspection	2-18
2.3	Air Bleeding	2-18
2.4	Fuel Hoses	2-19
2.4.1	Replacement	2-19
2.4.1.1	Supply and Return Hoses	2-19
2.4.1.2	Fuel Crossover Hose	2-20
2.4.1.3	Breather Hoses	2-21
2.5	Fuel Tank	2-21
2.5.1	Right Tank Replacement	2-21
2.5.1.1	Removal	2-21
2.5.1.2	Installation	2-21
2.5.2	Left Tank Replacement	2-21
2.5.2.1	Removal	2-21
2.5.2.2	Installation	2-23
2.5.3	Fuel Level Sender Replacement	2-23

3 COOLING SYSTEM

3.1	General	2-25
3.2	Troubleshooting	2-26

3.2.1	Troubleshooting Chart	2-26
3.2.2	Inspection	2-26
3.2.2.1	General	2-26
3.2.2.2	Temperature Gauge	2-27
3.2.2.3	Thermostat	2-27
3.3	Removal and Installation of Engine Coolant Radiator	2-27
3.3.1	Removal	2-29
3.3.2	Installation	2-29
3.4	Hose Replacement	2-31
3.4.1	Top Radiator Hose	2-31
3.4.2	Bottom Radiator Hose	2-31
3.5	Reverse Flushing of Engine Cooling System	2-31
3.5.1	Special Tools and Equipment	2-31
3.5.2	Procedure	2-31

4 INTAKE AND EXHAUST SYSTEM

4.1	General	2-33
4.2	Troubleshooting	2-34
4.3	Air Cleaner Assembly Replacement	2-34
4.3.1	Removal	2-34
4.3.2	Installation	2-34
4.4	Muffler Replacement	2-34

5 LUBRICATION SYSTEM

5.1	Troubleshooting Chart	2-37
5.2	Engine Oil and Filter Change	2-37

6 COLD START AID

6.1	General	2-38
6.2	Troubleshooting	2-38
6.2.1	Troubleshooting Procedure	2-38
6.2.1.1	1977 To 1980 Models	2-38
6.2.1.2	1981 Models	2-39
6.2.2	Troubleshooting Checklist	2-30
6.3	Replacement of Cold Start Cylinder	2-40
6.4	Removal and Installation of Cold Start Valve	2-41

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