



Form No. 3434-992 Rev A

Count on it.

Operator's Manual

Transport Frame Reelmaster®

Model No. 33455—Serial No. 405700000 and Up



This product complies with all relevant European directives, for details please see the separate product specific Declaration of Conformity (DOC) sheet.

Introduction

The Reelmaster Transport frame, when equipped with reel cutting units and mounted behind a tow vehicle is intended to be used by professional, hired operators in commercial applications. It is designed for pulling reel cutting units to cut grass on well-maintained lawns in parks, sports fields, and on commercial grounds. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Visit www.Toro.com for more information, including safety tips, training materials, accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Dealer or Toro Customer Service and have the model and serial numbers of your product ready. [Figure 1](#) identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

Important: With your mobile device, you can scan the QR code on the serial number plate (if equipped) to access warranty, parts, and other product information.

Model No. _____

Serial No. _____

This manual identifies potential hazards and has safety messages identified by the safety-alert symbol ([Figure 2](#)), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



Figure 2
Safety-alert symbol

g000502

This manual uses 2 words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

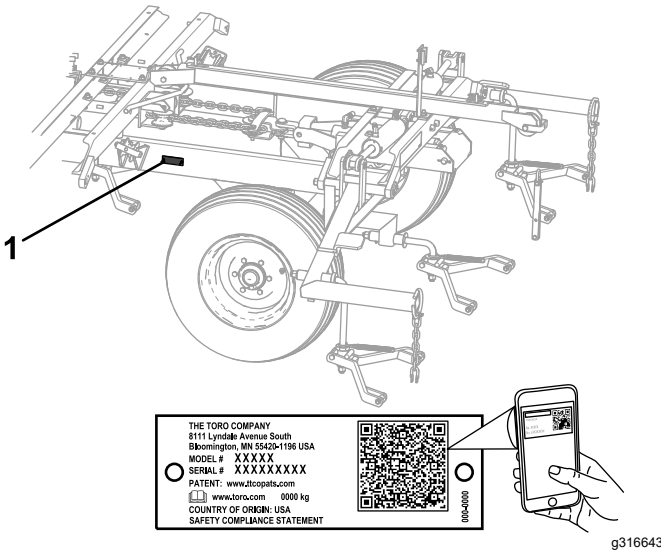


Figure 1

1. Model and serial number location

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Safety

General Safety

- Read and understand the contents of both this *Operator's Manual* and the operator's manual of the tow vehicle before using this machine. Ensure that everyone using this product knows how to use this machine and the tow vehicle and understands the warnings.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Do not put your hands or feet near moving components of the machine.
- Do not operate the machine without all guards and other safety protective devices in place and working on the machine.
- Keep children, bystanders, and pets out of the operating area. Never allow children to operate the machine.
- Always shut off the tow vehicle engine, remove the key (if equipped), and wait for all moving parts to stop, before adjusting, repairing, cleaning, or storing the machine.

Improperly using or maintaining this machine can result in injury. To reduce the potential for injury, comply with these safety instructions and always pay attention to the safety-alert symbol (▲), which means Caution, Warning, or Danger—personal safety instruction. Failure to comply with these instructions may result in personal injury or death.

Safety and Instructional Decals

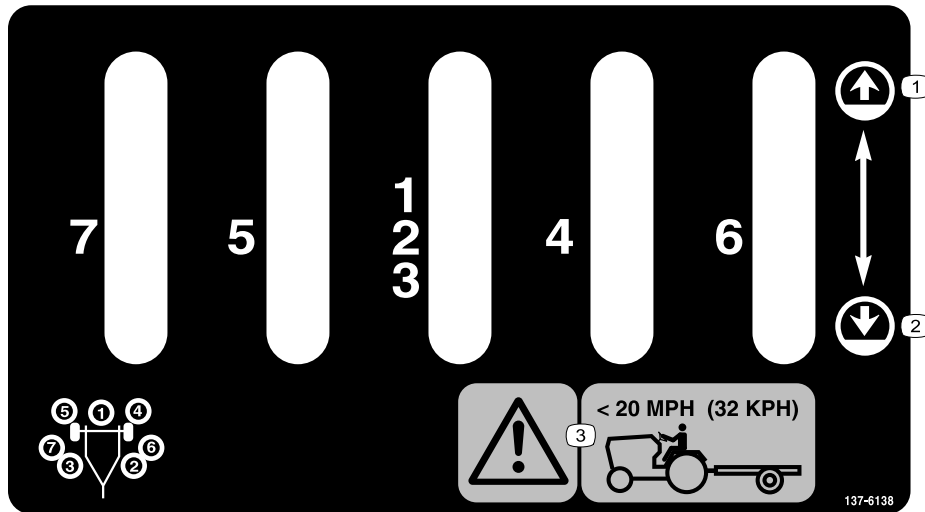


Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.
For more information, please visit www.tlcoCAProp65.com

133-8061 decal133-8061

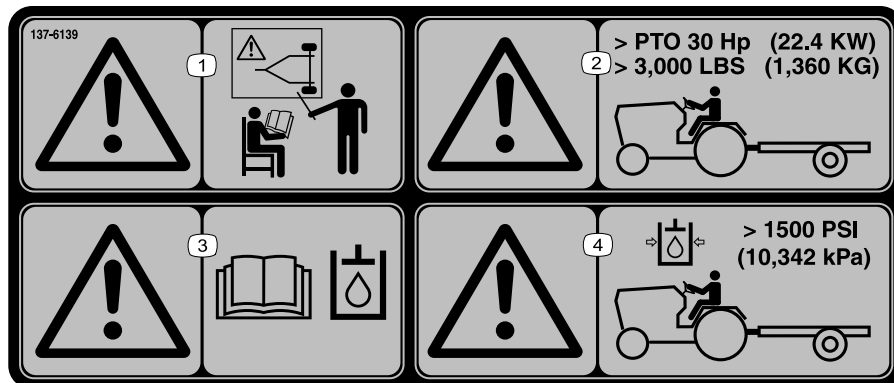
133-8061



decal137-6138

137-6138

1. Valve control lever—raise
2. Valve control lever—lower
3. Warning—do not exceed 32 km/h (20 mph).



decal137-6139

137-6139

1. Warning—all operators should be trained before operating the machine.
2. Warning—tow vehicle PTO must be greater than 22.4 kW (30 hp) and must weigh more than 1,360 kg (3,000 lb).
3. Warning—read the *Operator's Manual* for hydraulic fluid information.
4. Warning—tow vehicle hydraulic system relief pressure must be greater than 10,342 kPa (1,500 psi).

Setup

Loose Parts

Use the chart below to verify that all parts have been shipped.

Procedure	Description	Qty.	Use
1	No parts required	–	Prepare the tow vehicle.
2	Hitch Pin Hairpin Cotter	2 2	Adjust the transport frame hitch.
3	Lower tower Upper tower Capscrew (3/8 x 2-3/4 inch) U-bolt Flange nut (3/8 inch)	1 1 2 2 6	Install the control tower.
4	Control levers with knobs Hex nut Clevis pin (5/16 x 1-1/4 inch) Cotter pin (5/32 x 3/4 inch)	3 3 3 6	Mount the control linkage and levers
5	Supply hose Return hose Female dust cap Male dust cap	1 1 1 1	Connect the supply/return hoses to the tow vehicle.
6	Capscrew (1/2 x 3-1/2 inch) Spacer Locknut (1/2 inch) Long shackles Clevis pin (3/8 x 1-1/2 inch) Cotter pin (1/8 x 3/4 inch) Capscrew (3/8 x 1-1/2 inch) Locknut (3/8 inch) Spring S-hook	10 10 10 4 4 4 1 1 5 5	Install Reelmaster mowers.
7	No parts required	–	Check the tire pressure.

Media and Additional Parts

Description	Qty.	Use
Operator's Manual	1	Read this manual before using the transport frame.
Parts Catalog	1	Review the material and save in an appropriate place.
Declaration of conformity	1	Certificate of compliance

Note: Determine the left and right sides of the machine from the normal operating position.

1

Preparing the Tow Vehicle

No Parts Required

Procedure

1. Verify your tow vehicle meets the specifications listed in the table in [Specifications \(page 14\)](#).
2. Determine whether your machine has an open or closed hydraulic system.

Important: Special operating precautions must be taken if your machine has a closed hydraulic system. See Operating Instructions.

Note: Contact your tow vehicle's Authorized Service Dealer for proper installation of the remote hydraulics because damage may occur to the system if it is improperly installed.

3. Ensure that the tow vehicle's hydraulic system will couple to the remote hydraulic supply/return lines of the transport frame control valve. Quick disconnect couplers are included with the transport frame, but different sized hydraulic quick coupler tips may be substituted to match the existing machine couplers.
4. The hydraulic system of the transport frame is filled at the factory with high-quality hydraulic fluid. Check the level of the hydraulic fluid in the tow vehicle before the engine is first started and daily thereafter. Before operating the transport frame, make sure the hydraulic fluid is suitable for use with the tow vehicle hydraulic system. The recommended replacement fluid is as follows:

Recommended replacement fluid: Toro Premium Transmission/Hydraulic Tractor Fluid; available in 19 L (5 US gallon) pails or 208 L (55 US gallon) drums.

Alternative fluids: If Toro Premium Tractor Fluid is not available, you may use other conventional, petroleum-based Universal Tractor Hydraulic Fluids (UTHF), provided that its specifications fall within the listed range for all the following material properties and that it meets industry standards. We do not recommend the use of synthetic fluid. Consult with your lubricant distributor to identify a satisfactory product.

Note: Toro does not assume responsibility for damage caused by improper substitutions, so

use products only from reputable manufacturers who will stand behind their recommendation.

Material Properties:

Viscosity, ASTM D445 cSt @ 40°C 55 to 62
cSt @ 100°C 9.1 to 9.8

Viscosity Index ASTM D2270 140 to 152

Pour Point, ASTM D97 -35°F to -46°F

Industry Specifications:

API GL-4, AGCO Powerfluid 821 XL, Ford New Holland FNHA-2-C-201.00, Kubota UDT, John Deere J20C, Vickers 35VQ25, and Volvo WB-101/BM

Note: Many hydraulic fluids are almost colorless, making it difficult to spot leaks. A red dye additive for the hydraulic fluid is available in 20 ml (¾ fl oz) bottles. A bottle is sufficient for 15 to 30 L (4 to 8 US gallons) of hydraulic fluid. Order Part No. 44-2500 from your authorized Toro distributor.

5. Adjust the tow vehicle seat to a comfortable operating position.
6. Adjust the drawbar (hitch) position of the tow vehicle so that the mounting hole is less than 125 cm (50 inches) from the outside of the rear tow vehicle tire ([Figure 3](#)). This will prevent interference with the front cutting unit lift arms. Refer to the *Operator's Manual* for your tow vehicle for the drawbar adjustment procedure.

Note: If the tow vehicle drawbar hitch cannot be adjusted as described above, use caution when turning to avoid contact.

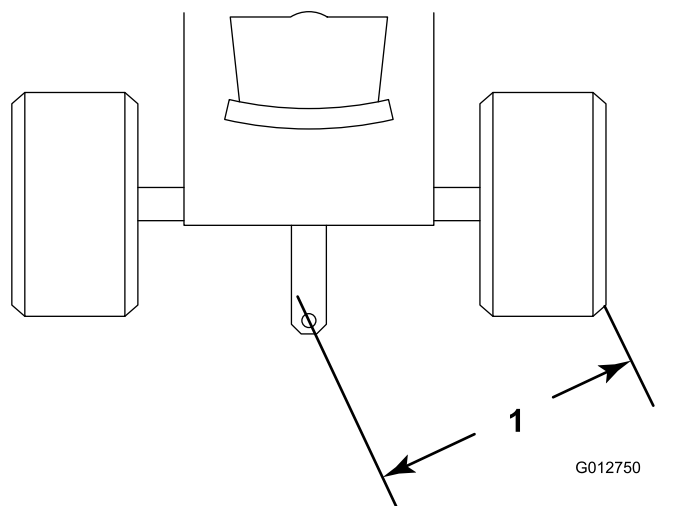


Figure 3

1. Less than 125 cm (50 inches)

2

Adjusting the Transport Frame Hitch

Parts needed for this procedure:

2	Hitch Pin
2	Hairpin Cotter

Procedure

1. Measure the height from the ground to the top of the hitch on the tow vehicle.
2. Adjust the transport frame hitch up or down according to the measurement of the machine hitch. Use the appropriate mounting holes as shown in the table below and in [Figure 4](#).

Tow Vehicle Hitch Height	Frame Mounting Holes
Below 11 inches	Bottom (2) sets of holes
11 to 15 inches	Middle (2) sets of holes
Above 15 inches	Top (2) sets of holes

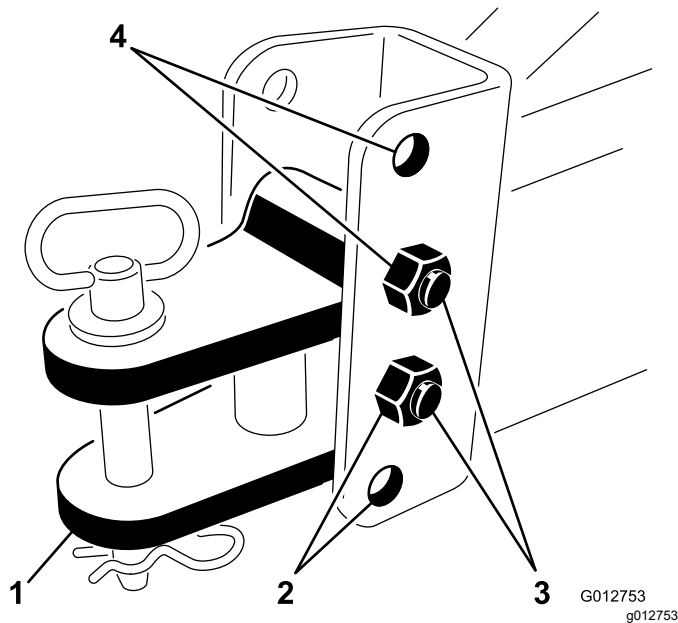


Figure 4

1. Hitch
2. Bottom mounting holes
3. Middle mounting holes
4. Top mounting holes

3. Secure the frame hitch to the machine hitch with the hitch pin and hairpin.
4. Raise the jack, remove the ball pin from the jack, and rotate the jack so that it is in the storage

position. Install the ball pin to secure it in the storage position ([Figure 16](#)).

3

Installing the Control Tower

Parts needed for this procedure:

1	Lower tower
1	Upper tower
2	Capscrew (3/8 x 2-3/4 inch)
2	U-bolt
6	Flange nut (3/8 inch)

Procedure

1. Loosely secure the lower control tower to the center frame tube with 2 U-bolts and 4 flange nuts (3/8 inch) as shown in [Figure 5](#).

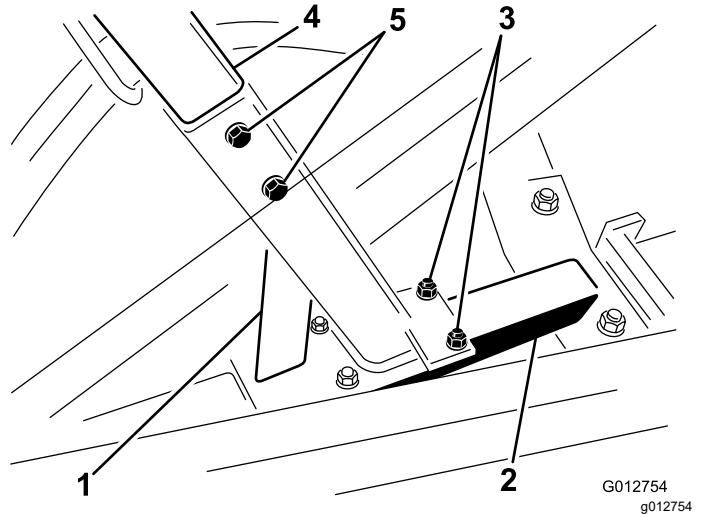


Figure 5

1. Lower control tower
2. Center frame tube
3. U-bolts and flange nuts
4. Upper control tower
5. Capscrews and flange nuts

2. Mount the upper control tower to the lower control tower with 2 capscrews (3/8 x 2-3/4 inch) and 2 flange nuts (3/8 inch) as shown in [Figure 5](#).

Note: Using the holes in the upper control tower tube, adjust the height of the tower to the lowest possible position while still being comfortable for the operator.

- Adjust the control tower forward or backward by sliding the tower on the center frame tube and tightening the flange nuts and U-bolts.

Important: Position the tower in a comfortable position for the operator, within reach. The tower will pitch forward when crossing a ditch or low area in turf.

- Route the supply and return hoses through the hose hanger (Figure 6).

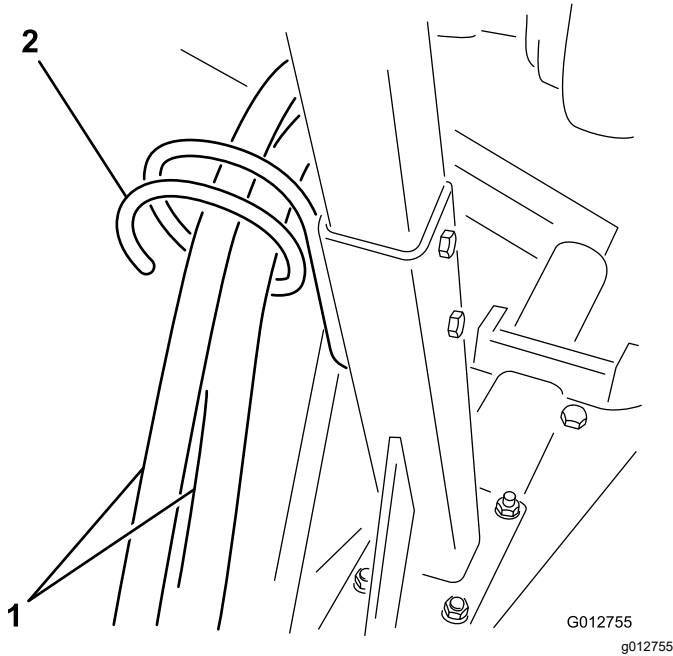


Figure 6

- Supply and return hoses
- Hose hanger

- Secure the upper control linkage tubes to the pivot blocks with the clevis pins and cotter pins (Figure 7).
- Coat the clevis pins with No. 2 lithium grease.

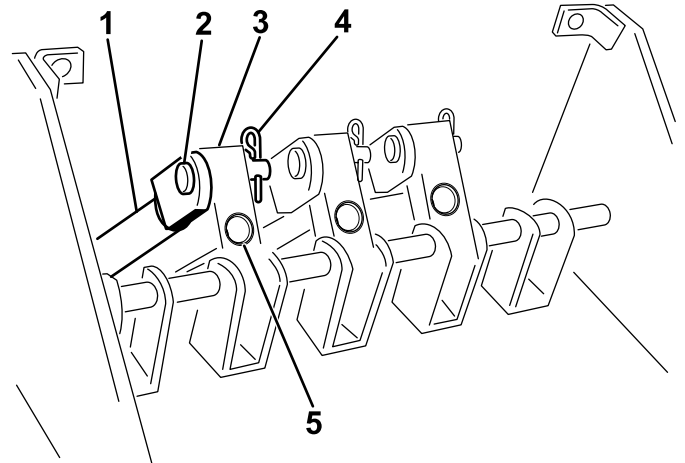


Figure 7

- Upper control linkage tube
- Clevis pin
- Pivot block
- Cotter pin
- Control lever connection hole

- Install the control-panel cover to the control tower with the 4 corresponding capscrews (Figure 8).

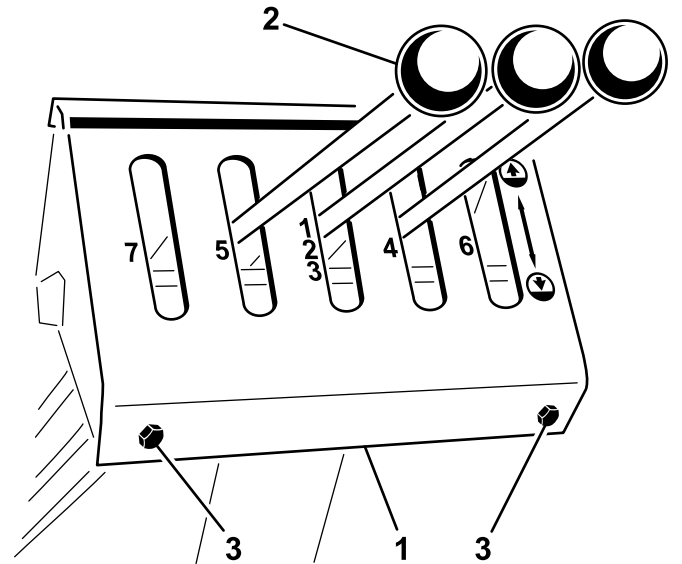


Figure 8

- Control-panel cover
- Control levers
- Capscrews

- Screw the control levers into the pivot blocks (Figure 7 and Figure 8).
- Ensure that the valve-spool levers (Figure 9) are in neutral (middle position) by pivoting the levers

4

Mounting the Control Linkage and Levers

Parts needed for this procedure:

3	Control levers with knobs
3	Hex nut
3	Clevis pin (5/16 x 1-1/4 inch)
6	Cotter pin (5/32 x 3/4 inch)

Procedure

- Remove the control-panel cover from the control tower by removing the 4 capscrews (Figure 8).

in toward the valve, or pulling them out to find the mid position.

7. Coat all pivot points with No. 2 lithium grease or lubricate them with 30 SAE oil.

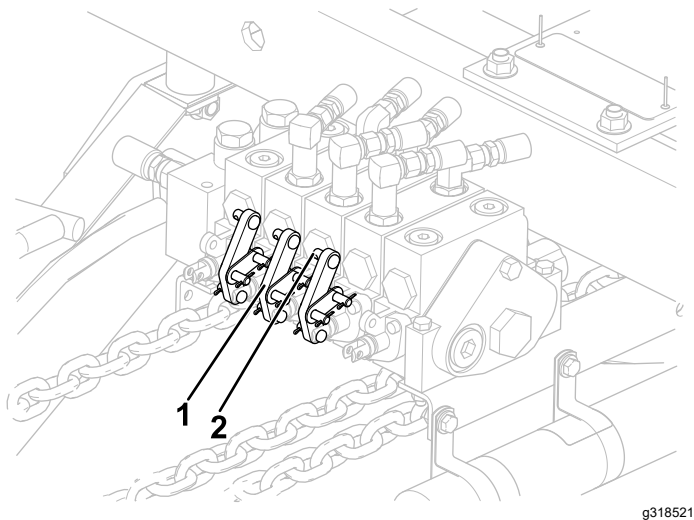


Figure 9

1. Spool-valve levers
2. Mounting pin

8. Thread a hex nut (7/16 inch) onto each of the lower control rods (Figure 10).
9. Coat the first 10 cm (4 inches) of threads on the lower control rods with No. 2 lithium grease.
10. Partially thread the lower control rods into the upper control rod (Figure 10).

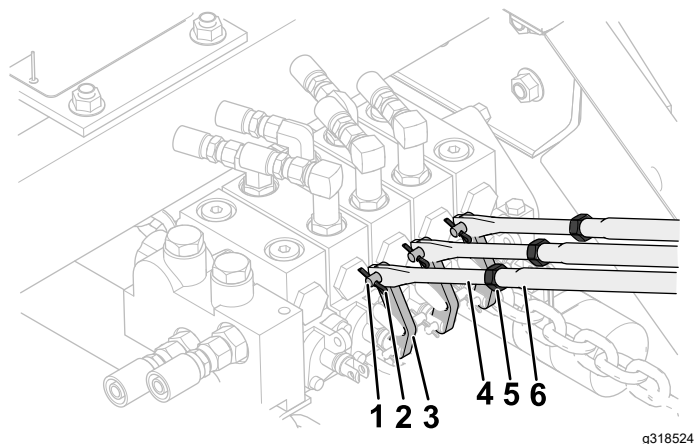


Figure 10

1. Control-valve-lever mounting pin
2. Cotter pins
3. Control-valve lever
4. Lower control rod
5. Hex nut
6. Upper control rod

11. Align the hole on the end of the lower control rod (Figure 10) with the mounting pin in the control-valve lever (Figure 9).

Note: The lever on the control tower should be in the center of the slot (neutral position) if the control rods are adjusted correctly (Figure 11).

12. If the lever on the control tower is not in the center of the slot, adjust it by threading the lower rod into or out of the upper control tube. After each lever is adjusted, check to ensure that all levers are aligned with each other. Readjust the levers if necessary.

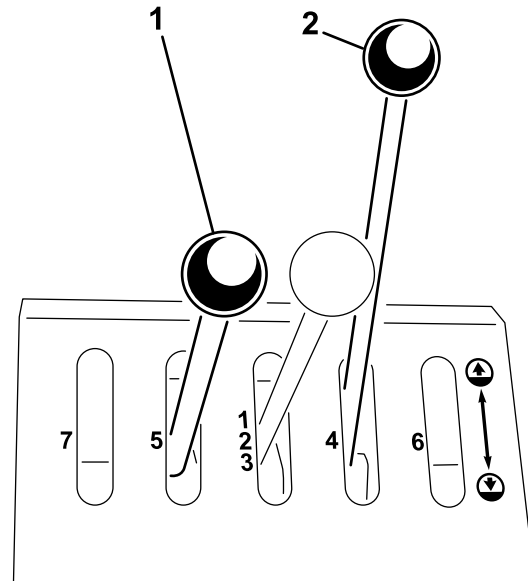


Figure 11

1. Lever in neutral position
2. Lever in raise position

13. Secure the control rods to the control-valve levers with the cotter pins (Figure 10).
14. Check the control lever operation by moving the levers to the raise and lower positions. All of the levers should operate freely with no binding and should be well lubricated. Readjust the control-tube linkages if necessary.
15. When the levers are adjusted correctly, tighten the hex nuts on the lower control rods (Figure 10).

5

Connecting the Supply/Return Hoses to the Tow Vehicle

Parts needed for this procedure:

1	Supply hose
1	Return hose
1	Female dust cap
1	Male dust cap

Procedure

1. Screw the quick couplers (included in loose parts) to the tow vehicle couplers.
2. Remove the dust caps from the supply/return hoses.

Note: Hang the dust caps on the supply/return hoses so they may be used whenever the hoses are uncoupled from the vehicle.

3. Couple the supply hose to the pressure port of vehicle system.

Note: It is possible to connect one male and one female coupler to the vehicle to ensure that the hoses can not be connected incorrectly.

4. Couple the return hose to the return port or tank on the tractor system.

Note: The return hose has an inline check valve visible near the coupler.

Important: Consult your vehicle *Operator's Manual* for the proper installation of the hoses because damage may occur if the hoses are improperly installed.

6

Installing Reelmaster Mowers

Parts needed for this procedure:

10	Capscrew (1/2 x 3-1/2 inch)
10	Spacer
10	Locknut (1/2 inch)
4	Long shackles
4	Clevis pin (3/8 x 1-1/2 inch)
4	Cotter pin (1/8 x 3/4 inch)
1	Capscrew (3/8 x 1-1/2 inch)
1	Locknut (3/8 inch)
5	Spring
5	S-hook

Procedure

1. Align the holes in the draw bar with the brackets on the mower cross-tubes. Secure each side with a capscrew (1/2-13 x 3-1/2 inch), spacer tube, and locknut (1/2-13) as shown in in [Figure 12](#).

Note: The head of the capscrew should be positioned inboard.

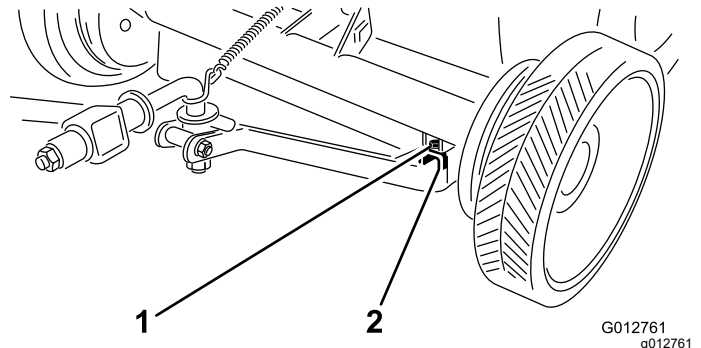


Figure 12

1. Capscrew, spacer tube, and locknut
2. Mounting bracket

Note: If you are attaching Spartan mowers, draw bar clamps (Part no. 5-1090) and mounting fasteners are required to mount the draw bar to the front cross tube of the mower. Contact your local authorized Toro distributor for assistance.

- Secure the lift bracket to #1 lift chain (rear center) with a long shackle, clevis pin, and cotter pin (Figure 13).

Note: Ensure that there are no kinks or twists in the chain before installing the cutting units.

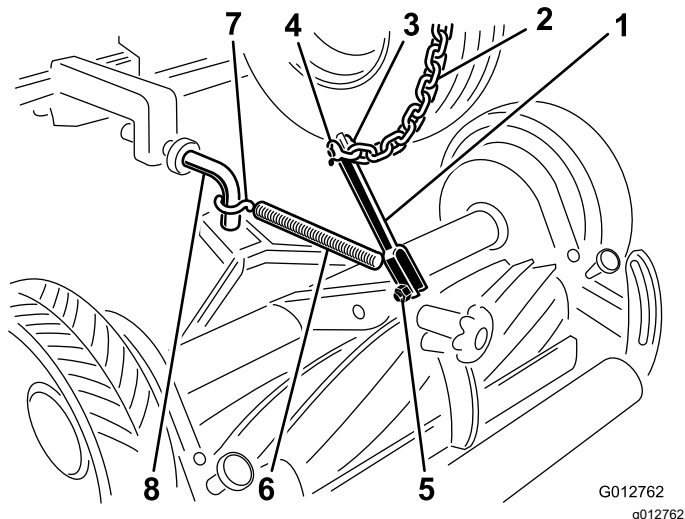


Figure 13

- | | |
|------------------------------|-------------------------|
| 1. Lift bracket | 5. Capscrew and locknut |
| 2. #1 lift chain | 6. Spring |
| 3. Long shackle | 7. S-hook |
| 4. Clevis pin and cotter pin | 8. Lift bail |

- Using the bottom mounting hole in the lift bracket, secure the lift bracket to the mower mounting bracket with a capscrew (3/8 x 1-1/2 inch) and locknut (3/8 inch) as shown in Figure 13.
- Hook the spring to the upper mounting hole in the lift bracket and the other end of the spring to the lift bail with the S-hook (Figure 13).
- On the remaining mowers, secure the lift chains to the mower mounting bracket with the long shackles, clevis pins, and cotter pins (Figure 14).

Note: Ensure that there are no kinks or twists in the chain before installing the cutting units.

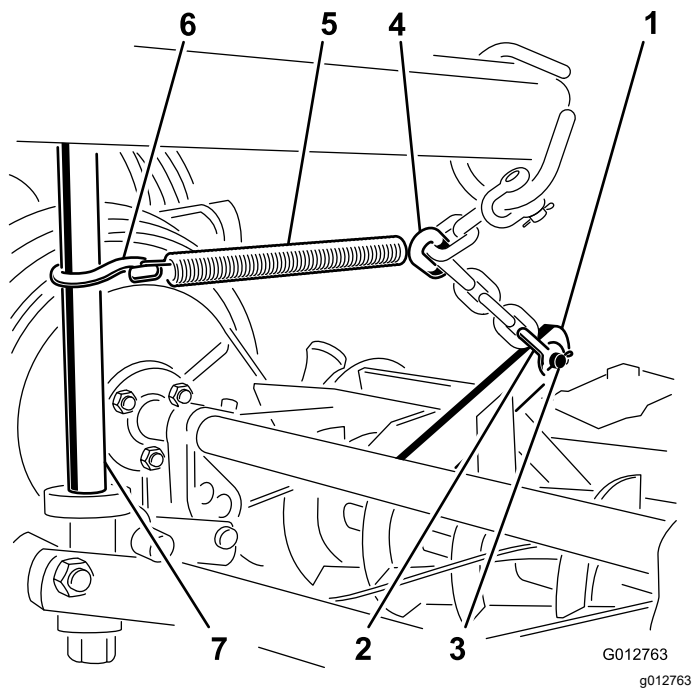


Figure 14

- | | |
|------------------------------|--------------|
| 1. Mounting bracket | 5. Spring |
| 2. Long shackles | 6. S-hook |
| 3. Clevis pin and cotter pin | 7. Lift bail |
| 4. Fifth link from mower | |

- Hook the spring to the fifth link in the chain from the mower and secure the other end of the spring to the lift bail with an S-hook (Figure 14).

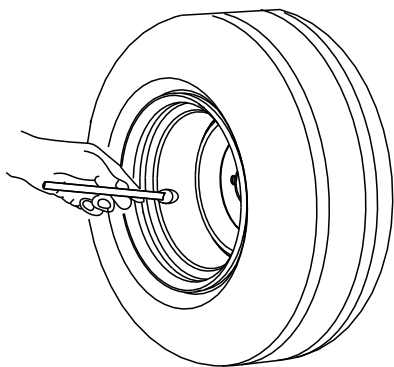
7

Checking the Tire Air Pressure

No Parts Required

Procedure

- Check the tire air pressure daily.
You should measure 165 to 193 kPa (24 to 28 psi).



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Figure 15

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2. If the tire air pressure is not 165 to 193 kPa (24 to 28 psi), add air to or remove air from the tires.

Product Overview

Controls

Transport Frame Controls

Control Levers

The controls are conveniently located on the control tower at the front of the frame.

Hold the lever(s) in their respective positions until the cycle is completed, then return the lever(s) to neutral.

- To raise the mower(s), push the control lever(s) up, to lower the mower(s) push the control lever(s) down.
- To partially raise or lower the mower(s), push the control lever(s) for a short period of time to move the mowers as desired.

Hydraulic System Controls

The transport frame is equipped with an open center hydraulic system, and is designed for use with a tow vehicle using the same system. Special precautions must be taken if the tow vehicle is not an open center hydraulic system. Determine which system is on your tow vehicle and use the following operating procedures:

1. **Open center hydraulic system on the tow vehicle and open center hydraulic system on the transport frame.**

- Connect the supply and return hoses to the tow vehicle valve couplers. Ensure that the high pressure line is connected to the inlet port on the frame valve.

Note: A check valve is installed into the end of the return line.

- Operate the tow vehicle hydraulic-directional-control-valve lever to allow a continual flow of fluid to the transport frame valve.
- Start the tow vehicle and raise or lower the mowers using the control levers

Note: If the mowers will not raise or lower, the supply and return hoses may be reversed. Reinstall the couplers reversing the position. Mark the hoses for future identification or connect a male and female coupler section to the transport hoses to prevent reversal.

Important: After disconnecting the supply/return hose couplers from the tow vehicle valve, always return the tow vehicle hydraulic-directional-control-valve lever to neutral. This deactivates the "remote" hydraulic feature.

2. **Closed center hydraulic system on the tow vehicle and open center hydraulic system on the transport frame.**

- Connect the supply and return hoses to the tow vehicle valve couplers.
- Start the tow vehicle.
- The tow vehicle hydraulic-directional-control lever must be actuated simultaneously with the control levers on the transport frame. Do not restrain the tow vehicle valve lever permanently as damage may occur to the system.
- Raise or lower the mowers using the control levers.

Note: If the mowers will not raise or lower, the supply and return hoses may be reversed. Reinstall the couplers reversing the position. Mark the hoses for future identification, or connect a male and female coupler section to the transport hoses to prevent reversal.

Tow Vehicle Controls

Become familiar with operating the following tractor controls before you operate the transport frame:

- PTO engagement
- Engine/PTO speed
- The rear attachment control (raise/lower)
- Auxiliary valve operation
- Clutch
- Throttle
- Gear selection
- Parking brake

Important: Refer to the tow vehicle Operator's Manual for operating instructions.

Outcross Traction Unit Controls

Refer to the Outcross traction unit *Operator's Manual* for information on controls and operation, as well as additional information on setting up the vehicle for this attachment.

Specifications

Note: Specifications and design are subject to change without notice.

Tow Vehicle Specification

Minimum weight	1,360 kg (3,000 lb)
Minimum PTO output-power rating	22.4 kW (30 hp)
Minimum hydraulic pressure	10,342 kPa (1,500 psi)
Tow system	Drawbar and pin—25 mm (1 inch) diameter

Transport Frame Specification

Length	381 cm (150 inches)
Transport Width	241 cm (95 inches) with Reelmaster mowers
Mowing Width	436 cm (172 inches) with Reelmaster mowers
Height	147 cm (58 inches) with the control tower collapsed
Tread Width	173 cm (68 inches)
Transport Ground Clearance	19 cm (7-1/2 inches)
Net Weight	628 kg (1,384 lb)
Maximum Transport Speed	32 kph (20 mph)

Attachments/Accessories

A selection of Toro approved attachments and accessories is available for use with the machine to enhance and expand its capabilities. Contact your Authorized Service Dealer or Distributor or go to www.Toro.com for a list of all approved attachments and accessories.

To ensure optimum performance and continued safety certification of the machine, use only genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous, and such use could void the product warranty.

Operation

Note: Determine the left and right sides of the machine from the normal operating position.

Before Operation

Before Operation Safety

General Safety

- Never allow children or untrained people to operate or service the machine. Local regulations may restrict the age of the operator. The owner is responsible for training all operators and mechanics.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- Always shut off the tow vehicle engine, remove the key, and wait for all moving parts to stop before adjusting, repairing, cleaning, or storing the machine. Know how to stop the tow vehicle and shut off the engine quickly.
- Keep all guards, safety devices, and decals in place. Repair or replace all safety devices. Do not operate the machine unless they are present and functioning properly.
- Ensure that the tow vehicle is suitable for use with an implement of this weight by checking with the tow vehicle supplier or manufacturer.
- Do not modify this equipment in any manner.

Training Period

Before mowing for the first time, practice operating your tow vehicle and transport frame in a large, clear, level area. Start, stop, raise and lower mowers and maneuver the machine with all mowers down to develop skills necessary to keep control of the extreme outboard mowers to prevent hitting obstacles. Also, practice operating at transport speeds with mowers in transport position to achieve familiarity with all types of operating conditions.

Using the Tow Bar Jack

Supporting the Transport Frame with the Jack

Note: Before performing this procedure, connect the transport frame to a tow vehicle or use jack stands to support the transport frame.

1. Remove the pin from the jack and storage tube (Figure 16).

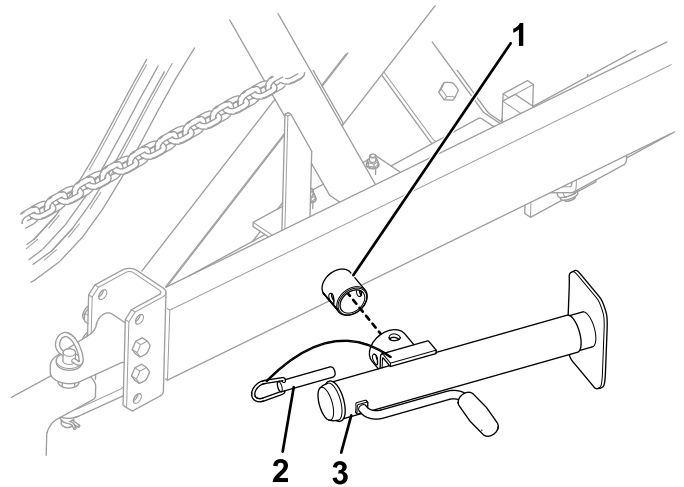


Figure 16

1. Storage tube
2. Ball pin
3. Jack in the horizontal position

2. Rotate the jack vertical (Figure 17).
3. Align the hole in the storage tube with the hole in the jack (Figure 17).
4. Insert the pin through the holes in the storage tube and jack (Figure 17).

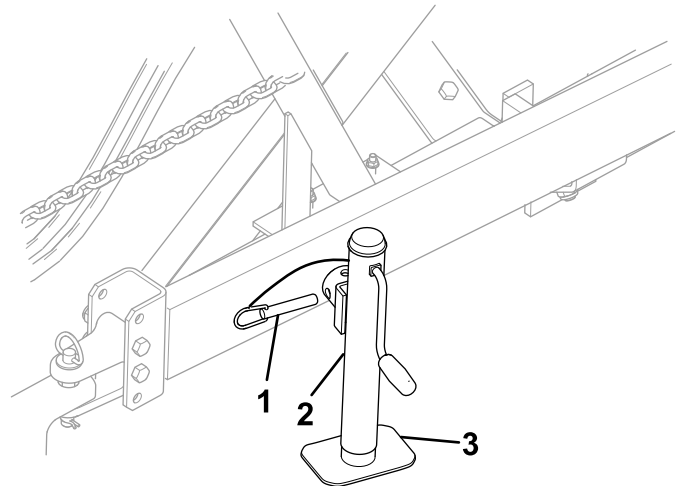


Figure 17

1. Ball pin
2. Jack in the vertical position
3. Jack pad

5. Rotate the jack handle until the transport frame is at the desired height. Rotate the jack handle clockwise to raise the frame and counterclockwise to lower the frame.

Stowing the Jack

1. Ensure that the transport frame is securely attached to the tow vehicle.
2. Rotate the jack handle to fully raise the jack pad; refer to [Figure 17](#).
3. Remove the pin and rotate the tow bar jack horizontal.
4. Align the hole in the storage tube with the hole in the jack.
5. Insert the pin through the holes in the storage tube and jack.

During Operation

During Operation Safety

General Safety

- The owner/operator can prevent and is responsible for accidents that may cause personal injury or property damage.
- Wear appropriate clothing, including eye protection; long pants; substantial, slip-resistant footwear; and hearing protection. Tie back long hair and do not wear loose jewelry or loose clothing.
- Do not operate the machine while ill, tired, or under the influence of alcohol or drugs.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Keep all bystanders out of the operating area.
- Do not carry passengers on the machine and keep bystanders and pets away from the machine during operation.
- Operate the machine only in good visibility to avoid holes or hidden hazards.
- Look behind and down before backing up to be sure of a clear path.
- Use care when approaching blind corners, shrubs, trees, or other objects that may obscure your vision.
- When transporting the machine on public roads, follow all traffic regulations and use any additional accessories that may be required by law, such as lights, turn signals, slow-moving vehicle (SMV) signs, and others as required.

- Reduce speed when operating on rough, uneven terrain, and near curbs, holes, and other sudden changes in terrain.
- To avoid causing the machine to tip over, be careful when turning and avoid unsafe maneuvers.

Slope Safety

- Slopes are a major factor related to loss of control and rollover accidents, which can result in severe injury or death. You are responsible for safe slope operation. Operating the machine on any slope requires extra caution.
- Review the tow vehicle specifications to ensure that you do not exceed its slope capabilities.
- Evaluate the site conditions to determine if the slope is safe for machine operation, including surveying the site. Always use common sense and good judgment when performing this survey.
- Review the slope instructions, listed below, for operating the machine on slopes. Before you operate the machine, review the site conditions to determine whether you can operate the machine in the conditions on that day and at that site. Changes in the terrain can result in a change in slope operation for the machine.
 - Avoid starting, stopping, or turning the machine on slopes. Avoid making sudden changes in speed or direction. Make turns slowly and gradually.
 - Do not operate a machine under any conditions where traction, steering, or stability is in question.
 - Remove or mark obstructions such as ditches, holes, ruts, bumps, rocks, or other hidden hazards. Tall grass can hide obstructions. Uneven terrain could overturn the machine.
 - Be aware that operating the machine on wet grass, across slopes, or downhill may cause the machine to lose traction.
 - Use extreme caution when operating the machine near drop-offs, ditches, embankments, water hazards, or other hazards. The machine could suddenly roll over if a wheel goes over the edge or the edge caves in. Establish a safety area between the machine and any hazard.

Mowing Operation

1. Be sure all mowers are properly adjusted; height of cut, bedknife to reel, all mowers in gear.

Consult the mower operators manual for proper adjustment procedures.

2. When arriving at area to be mowed, remove safety strap and lockup pins and approach area with mowers in transport position.
3. Push the control levers downward to lower the mowers with frame in motion to eliminate possibility of spinning tractor drive wheels on the turf causing turf damage. Use the diagram on top of the control panel as a guide to lowering mowers (Figure 18).

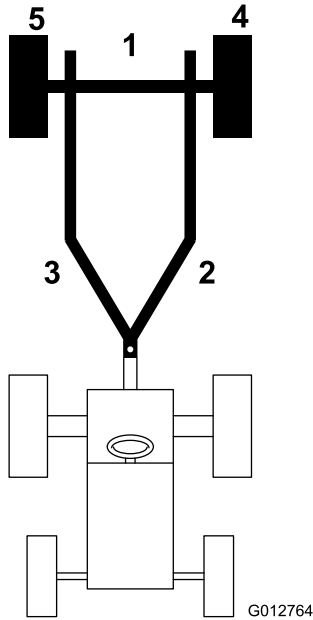


Figure 18

- | | |
|-------------------|-------------------|
| 1. Cutting unit 1 | 4. Cutting unit 4 |
| 2. Cutting unit 2 | 5. Cutting unit 5 |
| 3. Cutting unit 3 | |

Important: Make sure that no persons are working on or near the mowers before raising or lowering.

4. It usually works best to mow the outer portion of the area first, then work your way to the center. Down shift the tractor prior to climbing a steep incline to eliminate the need to downshift halfway up which could cause tire slippage and turf damage. Do not raise the mowers above halfway while operating on severe hillsides or tractor and frame stability may be affected. Do not accelerate when making a turn on turf area. This will cause the tires to damage the turf.
5. Vary the mowing speeds to match the terrain conditions. Slow down in rough terrain conditions to keep the mowers from bouncing. Never exceed 9.7 km/h (6 mph). Traveling too fast can cause mechanical damage to the mowers and does not significantly increase the

overall efficiency. Mowing at 6.4 to 9.7 km/h (4 to 6 mph) produces the finest turf appearance.

6. Reverse the direction of travel each time an area is mowed. This reduces a grain condition in the turf where the grass tends to grow in the direction of mower travel. Occasionally mowing at 90 degrees to the usual mowing direction will also contribute to reducing the condition.
7. Reduction in compaction of the soil and turf can be achieved by occasionally leaving one or two of the outboard mowers in the transport position while mowing the periphery of the mowing area. This offsets the tractor and mower wheel tracks from the previous mowing and prevents operating in the same path continuously. On golf courses, cross cut each end of the fairway at the tee and green to reduce the amount of travel at these locations. Considerable traffic is concentrated in these areas by golfers and carts. Any reduction in travel by the mowing equipment is beneficial to the turf.
8. When mowing around obstacles such as trees, etc., one or more cutting units may be raised to narrow overall width.

After Operation

After Operation Safety

General Safety

- Park the tow vehicle and machine on a firm, level surface; shut off the engine, remove the key, and wait for all moving parts to stop before adjusting, repairing, cleaning, or storing the machine.
- Only disconnect the machine from the tow vehicle while on a level surface.
- When disconnecting the machine, always chock the wheels to prevent movement.
- Keep all parts of the machine in good working condition and all hardware tightened.
- Replace all worn, damaged, or missing decals.

Towing Safety

- Before towing the machine, check with your local county or state safety towing regulations, in addition to meeting Department of Transportation (DOT) Safety Towing Regulations.
- Tow only with a machine that has a hitch designed for towing. Do not attach towed equipment except at the hitch point.

- Always inspect the hitch and coupling for wear. Do not tow the machine with damaged or missing hitches or couplings.
- Avoid sudden stops and starts. This can cause skidding or jack knifing. Smooth, gradual starts and stops will improve towing.
- Avoid sharp turns to prevent rolling.
- Chock the wheels while parked to prevent movement.

Raising the Mowers to the Transport Position

Note: Before moving to the next mowing area, make sure that all mowers are in the full transport position.

1. Remove hairpins securing the transport strap to the center frame channel and lift off the strap (Figure 19).

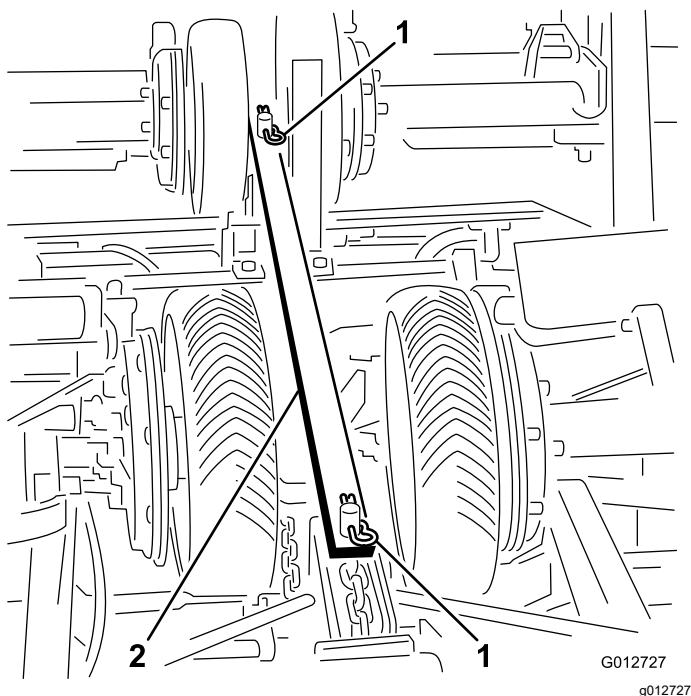


Figure 19

Unit shown with 5-7 Conversion Kit installed

1. Hairpins
 2. Transport straps
-
2. Mount the transport strap to the mounting pins on the lift arms and secure it with hairpins (Figure 20).

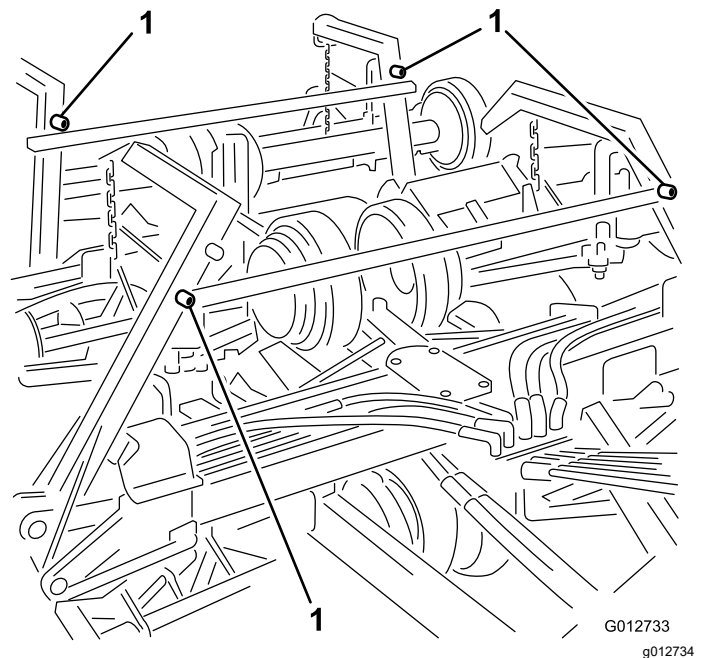


Figure 20

Unit shown with 5-7 Conversion Kit installed

1. Mounting pins on lift arms
-

3. Remove the hairpin securing the lockup pin to the center cylinder rest (Figure 21).

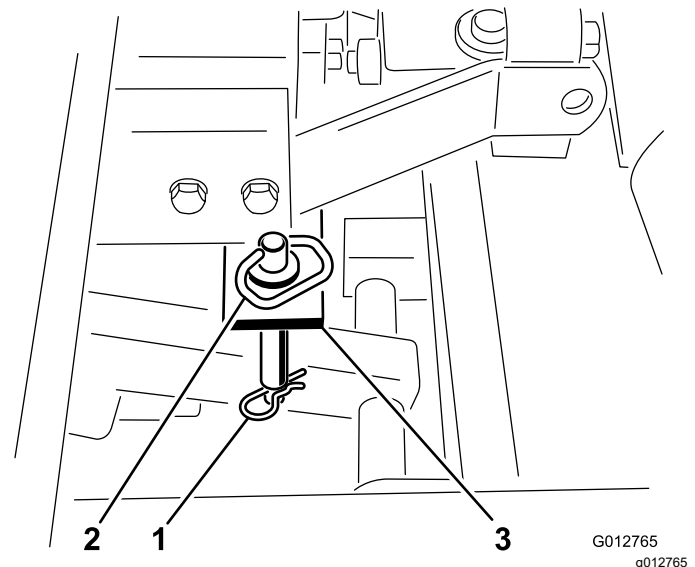


Figure 21

1. Lockup pins
 2. Hairpin
 3. Cylinder rest
-

4. Slide the lockup pin through the holes in the lockup bracket and secure it with a hairpin (Figure 22).

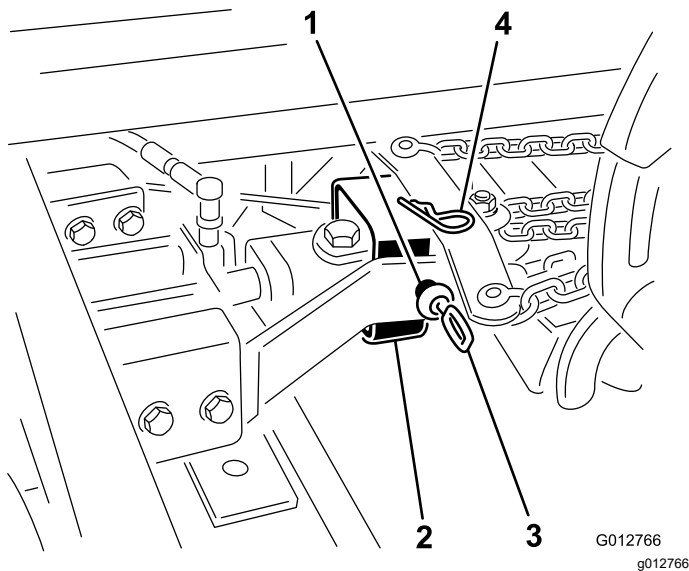


Figure 22

- | | |
|-------------------|---------------|
| 1. Mounting hole | 3. Lockup pin |
| 2. Lockup bracket | 4. Hairpin |

lockup bracket and secure to cylinder rest with hairpin cotter (Figure 21).

Inspection And Clean-up After Mowing

At the completion of mowing operation, thoroughly wash the machine with a garden hose without a nozzle so excessive water pressure will not cause contamination and damage to seals and bearings. After cleaning, it is recommended the machine be inspected for possible hydraulic fluid leaks, damage or wear to hydraulic and mechanical components and the cutting units checked for sharpness.

Note: In some areas there are regulations requiring a slow moving vehicle sign be attached to vehicle during transport. A mounting bracket (Figure 23) is attached to the rear cross channel of the transport frame. A standard slow moving vehicle sign will fit on the bracket.

⚠ CAUTION

Never exceed 32 km/h (20 mph) while transporting.

Reduce speed and shift into a lower gear before descending a steep or long grade.

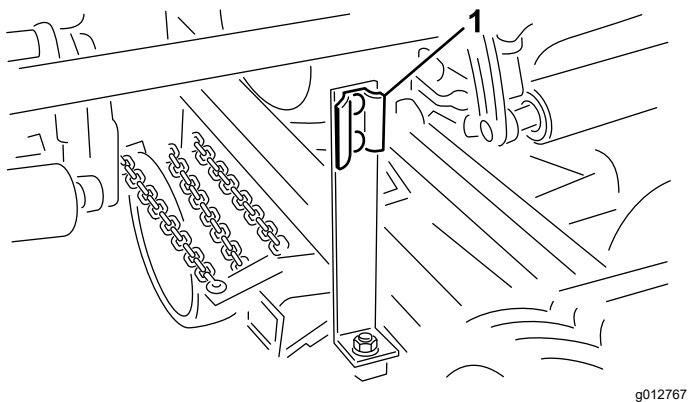


Figure 23

1. Slow moving vehicle mounting bracket

5. When mowing is to be resumed, remove transport strap from lift arms. Store on center frame channel and secure with hairpin cotters (Figure 19). Remove lockup pin secured to

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
Every 50 hours	<ul style="list-style-type: none">• Grease the transport frame fittings.• Lightly oil the wear and friction points.

Maintenance Safety

- Before cleaning, servicing, or adjusting the machine, do the following:
 - Park the tow vehicle and machine on a level surface.
 - Shut off the tow vehicle engine, remove the key, and wait for all moving parts to stop.
 - Chock the wheels.
 - Remove the machine from the tow vehicle.
- Perform only those maintenance instructions described in this manual. If major repairs are ever needed or you need assistance, contact an authorized Toro distributor.
- Support the machine with blocks or jack stands when working beneath it.
- Ensure that all guards are installed securely after maintaining or adjusting the machine.
- Do not allow untrained personnel to service the machine.
- Keep all parts in good working condition and all fasteners tightened. Replace all damaged or missing decals.
- Do not interfere with the intended function of a safety device or reduce the protection provided by a safety device. Check their proper operation regularly.
- Altering this machine in any manner may affect the operation of the machine, performance, durability, or its use may result in injury or death. Such use could void the product warranty of The Toro® Company.

Lubrication

Service Interval: Every 50 hours

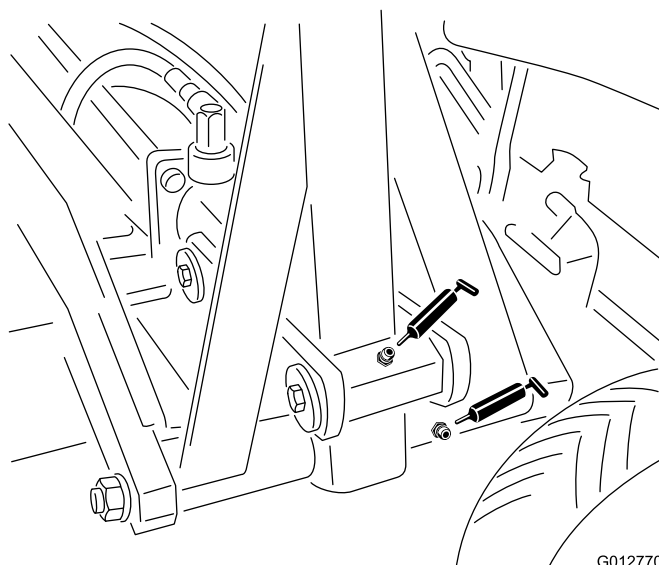
Every 50 hours

Grease Specification

Grease Type	Use
No. 2 lithium base grease	Hydraulic frame fittings
SAE 30 engine oil	Wear or friction points

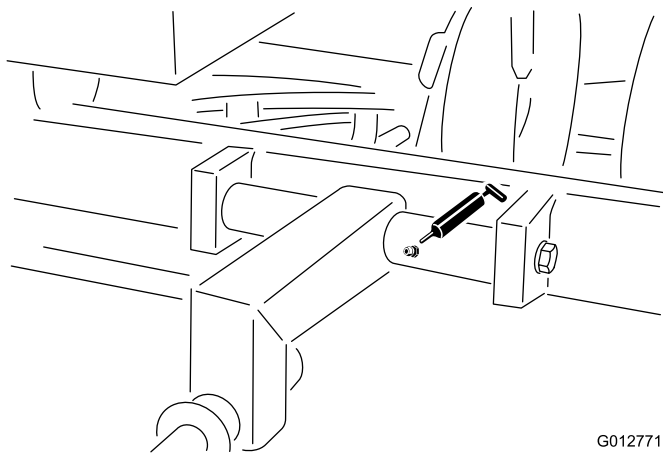
Greasing the Hydraulic Frame Fittings

There are 27 grease fittings on the transport frame. Clean the grease fittings with a clean rag prior to greasing to ensure that no foreign matter is forced into the bushings with the lubricant. While applying grease, ensure that the bushings are taking grease. Apply lubricant to the fitting until some of the grease comes out from the sides of the bushings.



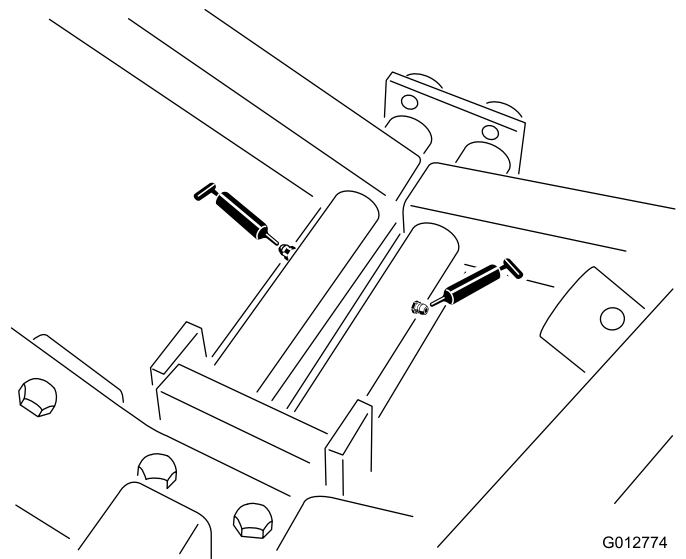
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Figure 24



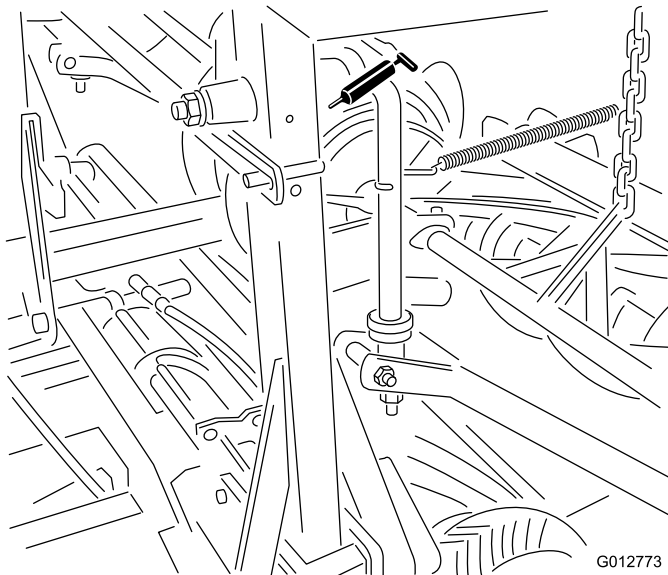
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Figure 25



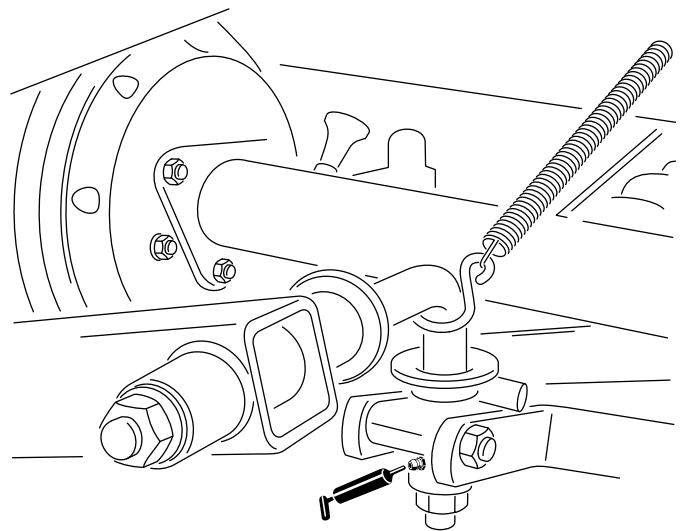
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Figure 27



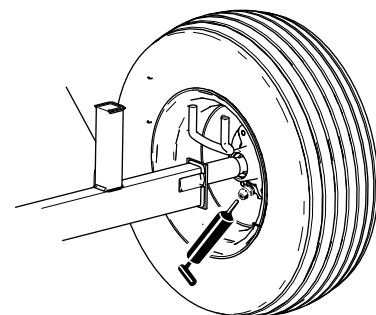
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Figure 26



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Figure 28



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Figure 29

Oiling the Wear and Friction Points

Lightly oil wear or friction points whenever grease fittings are being serviced.

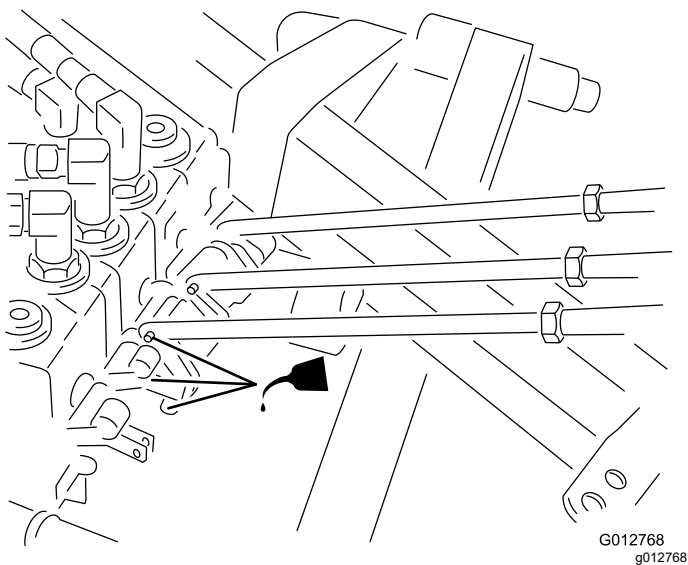


Figure 30

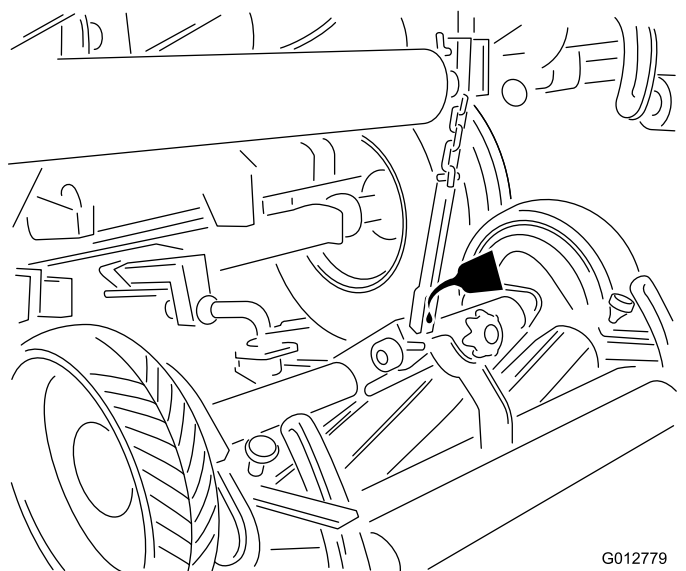


Figure 33

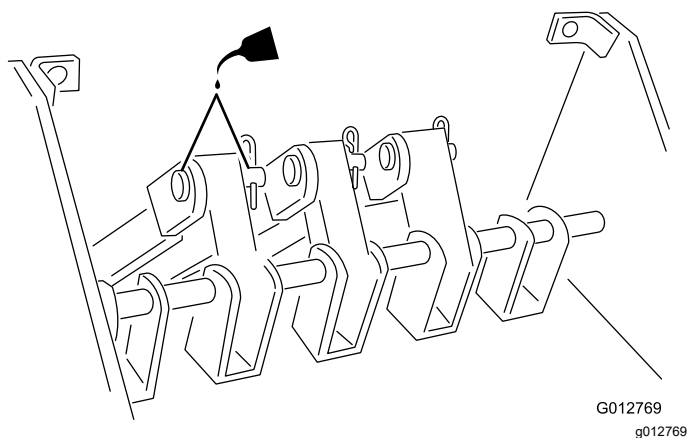


Figure 31

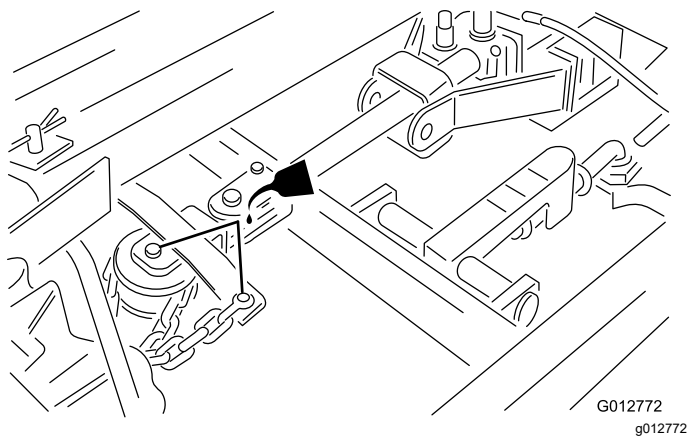


Figure 32

Changing the Hydraulic Fluid

Drain and replace the transport frame hydraulic fluid whenever the tow vehicle fluid is changed, if the fluid is not compatible with the tow vehicle fluid, or if the fluid becomes contaminated.

1. Start the tow vehicle, remove all cutting units, raise the lift arms until all lift cylinders are fully retracted, and then shut off the tow vehicle.
2. Disconnect the supply and return hose couplers from the tow vehicle couplers.
3. Disconnect the supply and return hoses from the transport frame control valve and drain the hoses into a drain pan.
4. Disconnect the hydraulic hoses connected to the front row of the control valve, Row "A" ([Figure 34](#)). Drain each hose into a drain pan and reconnect them to the corresponding valves.

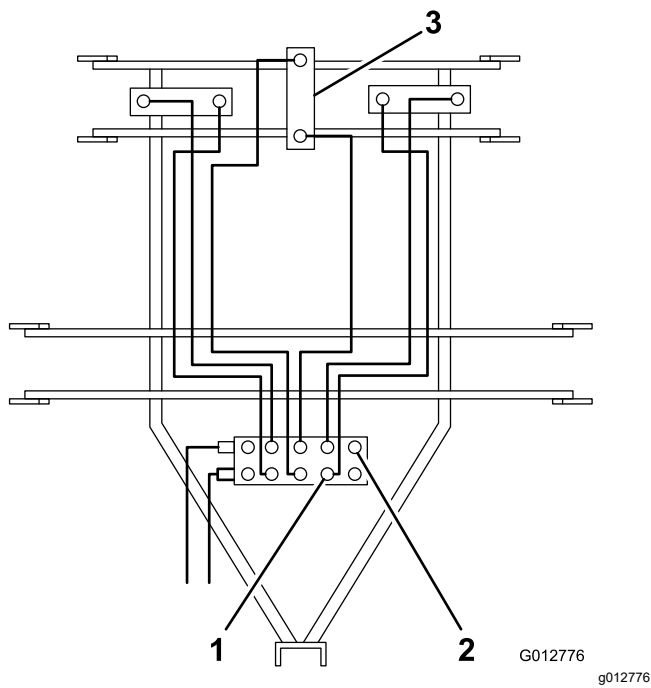


Figure 34

- | | |
|------------|---------------------|
| 1. Row "A" | 3. #1 lift cylinder |
| 2. Row "B" | |

- Disconnect the hydraulic hoses that are connected to the back row of the control valve, Row "B" (Figure 34). Drain each line and cylinder by carefully pulling down the lift arms until all fluid is pumped out of the hoses and cylinders and into a drain pan. Reconnect the hoses to the control valve.

Note: #1 cylinder is not connected to a lift arm to aid in draining the cylinder. Extend the cylinder by using a winch or other pulling device.

- Connect the supply and return hoses to the transport frame control valve.
- Fill the tow vehicle hydraulic-fluid reservoir to the appropriate level using the correct fluid; refer to the *Operator's Manual* for your tow vehicle.
- Connect the supply and return hose couplers to the tow vehicle valve couplers.
- Start the tow vehicle, raise the lift arms until all lift cylinders are fully retracted, and then shut off the tow vehicle.

Note: Do not manually pry the lift arms up to retract the cylinders as cylinder damage may occur.

- Check the hydraulic-fluid level in the tow vehicle. Add approximately 7,571 ml (2 gallons) of the appropriate hydraulic fluid to raise fluid to the proper level; ; refer to the *Operator's Manual* for your tow vehicle.

- Start the tow vehicle and cycle the lift arms up and down at least 2 full cycles. Check the hydraulic-fluid level with the lift arms **raised** and add fluid if needed.
- Install the cutting units.

Replacing the Wheel Bearings

- Jack up the wheel being serviced. Support with jack stand to prevent it from falling.
- Remove the hub cap, cotter key, slotted nut, and washer (Figure 35).

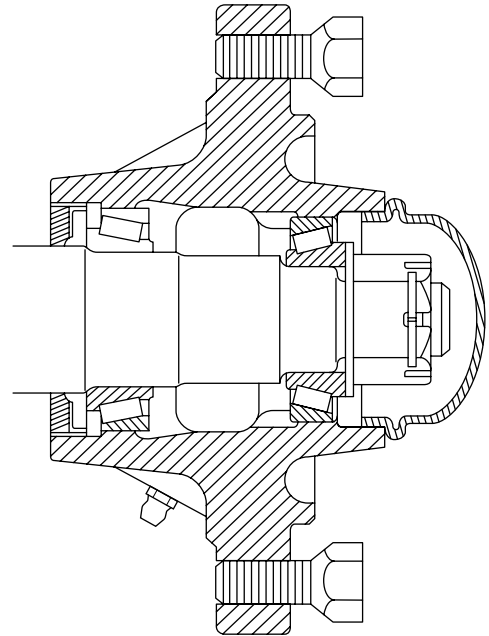


Figure 35

- Pull off the wheel and outer bearing cone. Remove the inner bearing cone and seal from the hub. A slot in the hub is provided so the cone and seal can be removed with the bearing cup. Drive against bearing cup.
- Clean the hub with a solvent.
- Press the new cups in the hub, being certain they are fully seated.
- Pack the new cones with wheel bearing grease. Coat bearing journal and adjacent bearings in hub.
- Grease the sealing lip and slip the new seal on the extended race of the inner bearing cone.
- Reassemble in reverse order of disassembly.
- Tighten the slotted nut until the bearings bind slightly when rotating the wheel by hand. Back off the slotted nut to the nearest cotter pin hole and secure with a new cotter pin.

10. Reinstall the hub caps.

Replacing the Lift-Arm Bushing

1. Position lift arm in the down position.
2. Remove the cutting unit.
3. Remove the nut from the end of the pin (Figure 36).

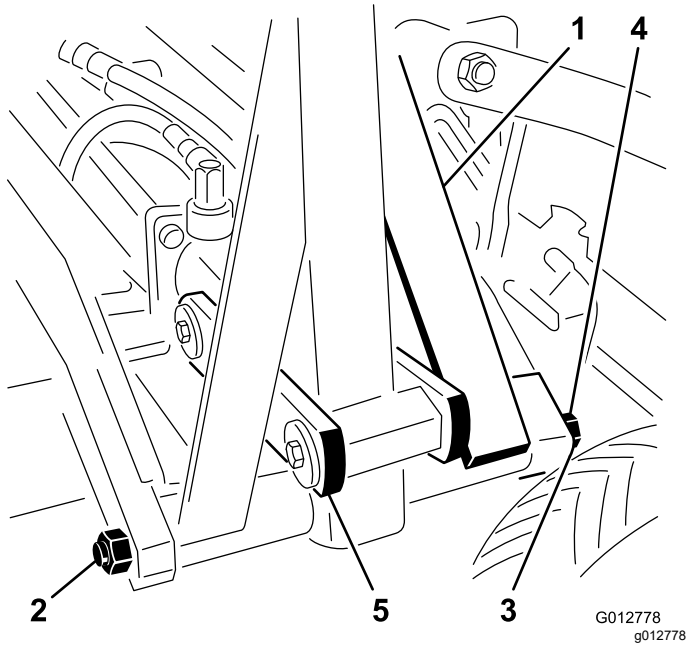


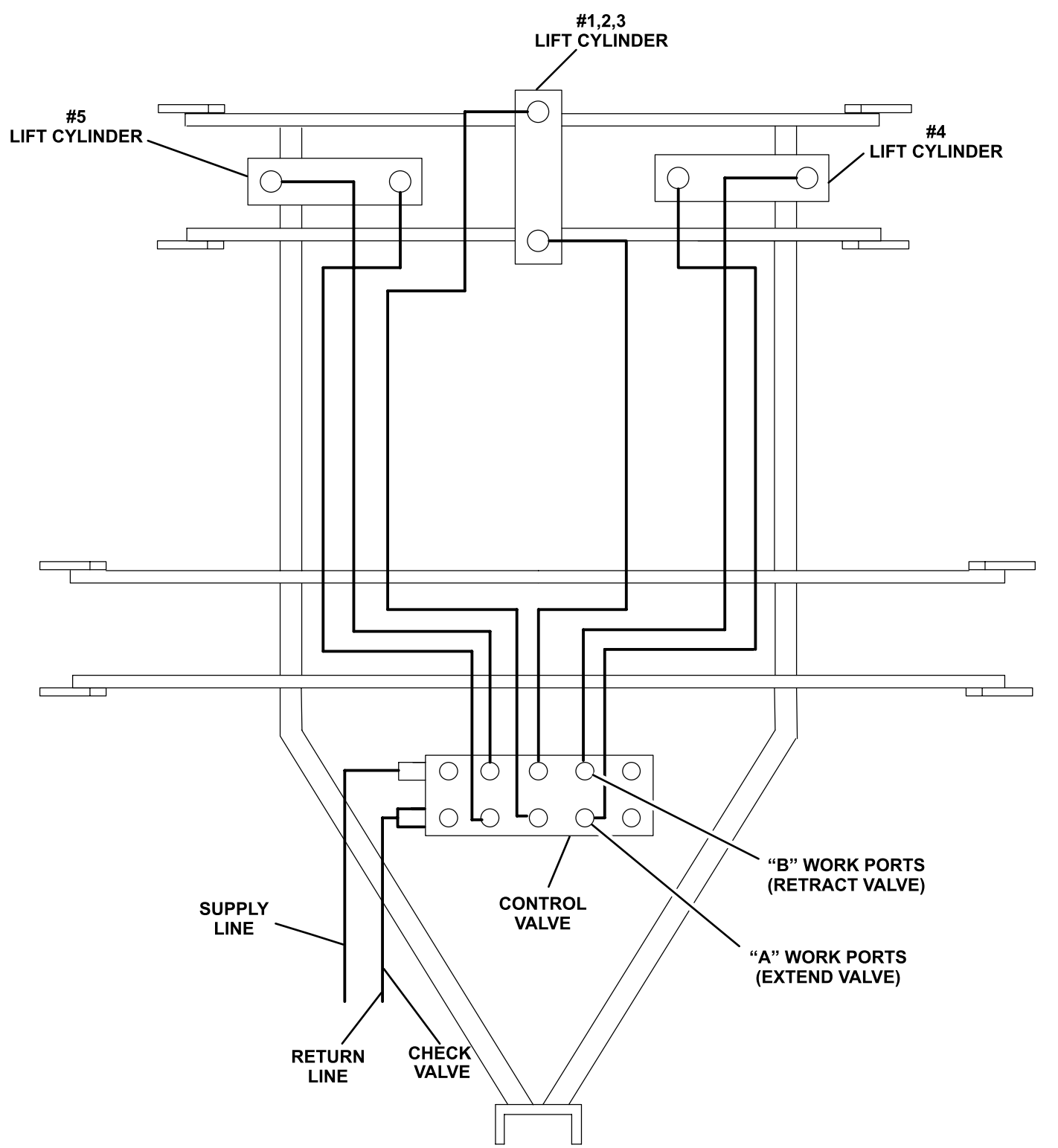
Figure 36

- | | |
|-----------------|-------------|
| 1. Lift arm | 4. Capscrew |
| 2. Nut | 5. Link |
| 3. Pin assembly | |

4. Remove the capscrew from the pin assembly.
5. Remove the link between the hydraulic cylinder and the lift arm.
6. Remove the pin assembly.
7. Remove the bushings in the lift arm.
8. Insert and size the new bushings and replace the pin.
9. Replace the capscrew and nut.
10. Install the link.
11. Grease the bushing with Mobilux #2 grease or equivalent.

Important: It may be necessary to drive the pin assembly out of the lift arm. Be careful not to damage the threads.

Schematics



Hydraulic Schematic (Rev. A)

g337511

Notes:



The Toro Warranty

Two-Year or 1,500 Hours Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Commercial product ("Product") to be free from defects in materials or workmanship for 2 years or 1,500 operational hours*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

* Product equipped with an hour meter.

Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists. If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196

952-888-8801 or 800-952-2740
E-mail: commercial.warranty@toro.com

Owner Responsibilities

As the product owner, you are responsible for required maintenance and adjustments stated in your *Operator's Manual*. Repairs for product issues caused by failure to perform required maintenance and adjustments are not covered under this warranty.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, or modified non-Toro branded accessories and products.
- Product failures which result from failure to perform recommended maintenance and/or adjustments.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner.
- Parts consumed through use that are not defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, flow meters, and check valves.
- Failures caused by outside influence, including, but not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.
- Normal noise, vibration, wear and tear, and deterioration. Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows.

Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact your Authorized Toro Service Center.

Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part. Parts replaced under this warranty are covered for the duration of the original product warranty and become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use remanufactured parts for warranty repairs.

Deep Cycle and Lithium-Ion Battery Warranty

Deep cycle and Lithium-Ion batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner. Note: (Lithium-Ion battery only): Refer to the battery warranty for additional information.

Lifetime Crankshaft Warranty (ProStripe 02657 Model Only)

The ProStripe which is fitted with a genuine Toro Friction Disc and Crank-Safe Blade Brake Clutch (integrated Blade Brake Clutch (BBC) + Friction Disc assembly) as original equipment and used by the original purchaser in accordance with recommended operating and maintenance procedures, are covered by a Lifetime Warranty against engine crankshaft bending. Machines fitted with friction washers, Blade Brake Clutch (BBC) units and other such devices are not covered by the Lifetime Crankshaft Warranty.

Maintenance is at Owner's Expense

Engine tune-up, lubrication, cleaning and polishing, replacement of filters, coolant, and completing recommended maintenance are some of the normal services Toro products require that are at the owner's expense.

General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note Regarding Emissions Warranty

The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the Engine Emission Control Warranty Statement supplied with your product or contained in the engine manufacturer's documentation.



Count on it.