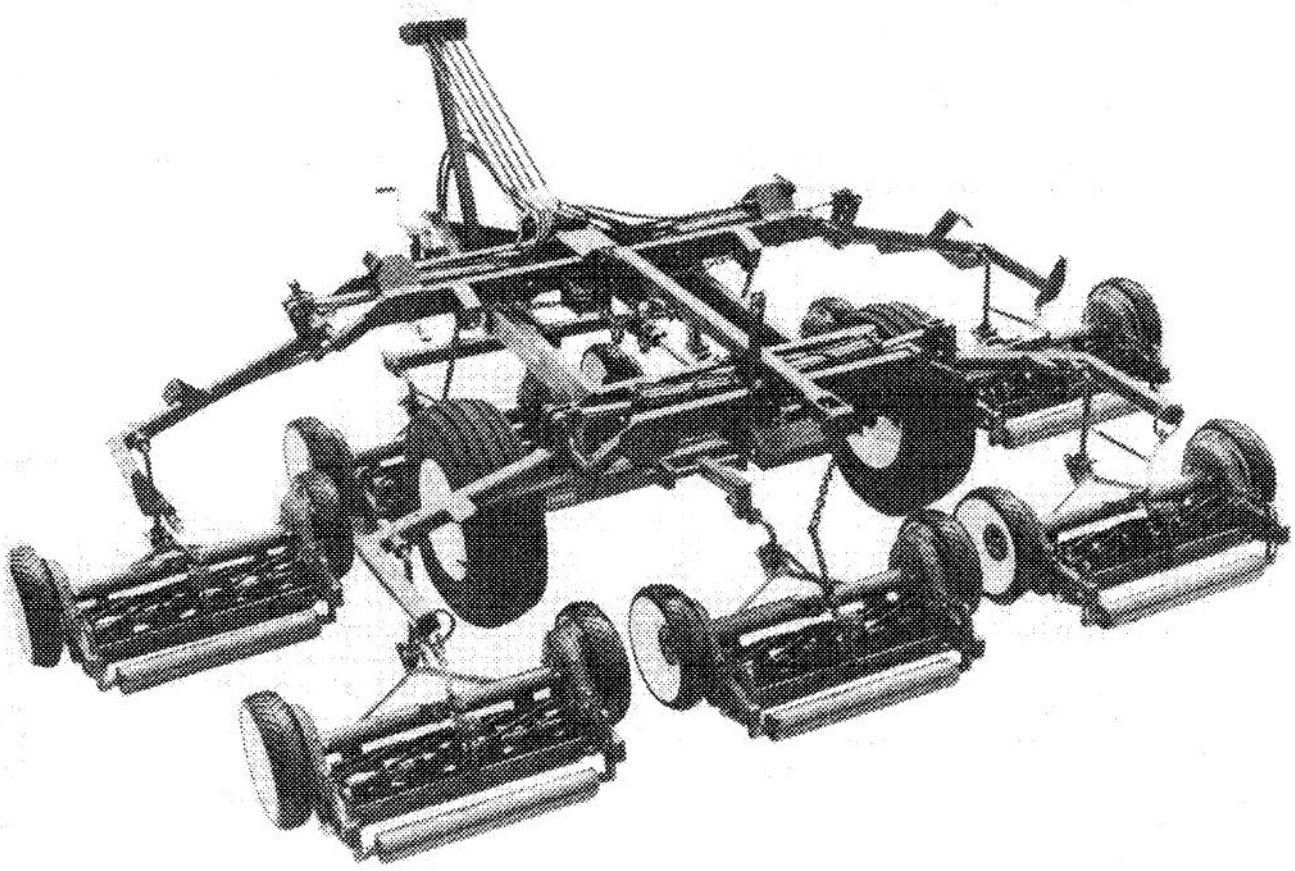
FORM NO. 3312-121 Rev. A

TORO®

MODEL NO. 33457 – 30001
THRU 40001 & UP

OPERATOR'S MANUAL

REELMASTER™ TRANSPORT FRAME



FOREWORD

The REELMASTER™ Transport Frame was developed to meet the ever increasing demand for fine turf-grass mowing and proper turf care.

Because the REELMASTER™ Transport Frame is a high quality turf-care machine produced with the most advanced concepts of engineering and design, Toro is concerned about the future use of the machines and safety of the users. Therefore, those persons involved with all aspects of use and maintenance of these machines should read this manual to familiarize themselves with safety, proper set-up, operation and maintenance instructions. The major sections of the manual are:

1. Safety Instructions
2. Set Up Instructions
3. Before Operation
4. Controls
5. Operating Instructions
6. Maintenance

Safety, mechanical and some general information in this manual is emphasized. DANGER, WARNING and CAUTION identify safety messages. Whenever the triangular safety symbol appears, it is followed by a safety message that must be read and understood. More complete details on safety are covered on page 3. IMPORTANT identifies special mechanical information and NOTE identifies general information worthy of special attention.

Contact the local Authorized TORO Distributor if help concerning set-up, operation, maintenance or safety is ever needed. The local Authorized TORO Distributor is stocked with genuine TORO replacement parts and optional equipment for the complete line of TORO turf care equipment. Keep your TORO all TORO. Buy genuine Toro parts and accessories.

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The Toro Company – 1983
MINNEAPOLIS, MN 55420 – U.S.A.

SAFETY INSTRUCTIONS

This safety alert symbol means CAUTION, WARNING or DANGER — "personal safety instruction". Read and understand the instruction because it has to do with safety. Failure to comply with the instruction may result in personal injury.

The REELMASTER™ Transport Frame is designed, engineered and tested to offer reasonably safe and effective service. However, improper use or maintenance of the machine can result in injury. Compliance with the following safety instructions will reduce the potential for injury.

BEFORE OPERATING

1. Read and understand the contents of this manual before operating the machine. Become familiar with the controls and know how to operate them. A free replacement manual is available by sending complete Model and Serial Number to:

The Toro Company
8111 Lyndale Ave. So.
Minneapolis, MN 55420

The Model and Serial Number Plate is located on the left hand side of main frame.

2. Keep all shields and safety devices in place. If a shield, safety device, information plate, or decal is defective or damaged, repair or replace it before operation is commenced. Tighten any loose nuts, bolts and screws to make sure machine is in safe operating condition.

3. Do not operate machine while wearing sandals, tennis shoes, sneakers or shorts. Also, do not wear loose fitting clothing because it could get caught in moving parts. Always wear long pants and substantial shoes. Wearing safety glasses, safety shoes and a helmet is advisable and required by some local ordinances and insurance regulations.

4. Never carry passengers on either the tractor or transport frame.

5. When leaving the machine unattended, put the cutting units either fully up in transport with safety lockup attached, or fully down in the mowing position.

6. Use of this machine demands complete operator attention. To prevent loss of control and machine damage:

A. Mow and transport only in daylight or when there is good artificial light.

B. Watch for holes or other hidden hazards.

C. Be careful when near sand traps, ditches, water holes, creeks or other hazards.

D. Reduce speed when making sharp turns and when turning on a hillside.

E. Avoid sudden stops and starts.

F. Attach the safety lockup devices to the mowers before transporting the machine for long distances or on public roads.

G. Do not exceed 20 MPH (32 Km/hr) during transport operation. Operate more slowly while traveling over rough terrain or in adverse weather conditions.

H. Do not exceed 6 MPH (9.7 Km/hr) during mowing operation.

7. Refer to operators manual for tractor or tow unit for complete operating and safety instructions pertaining to that unit.

8. Make sure all hydraulic fitting connections are tight and all hydraulic hoses are in good condition before applying pressure to the system. Make sure tow vehicle high pressure, hydraulic supply line is connected to "inlet" port of control valve. Do not reverse "inlet" and "outlet" hydraulic lines.

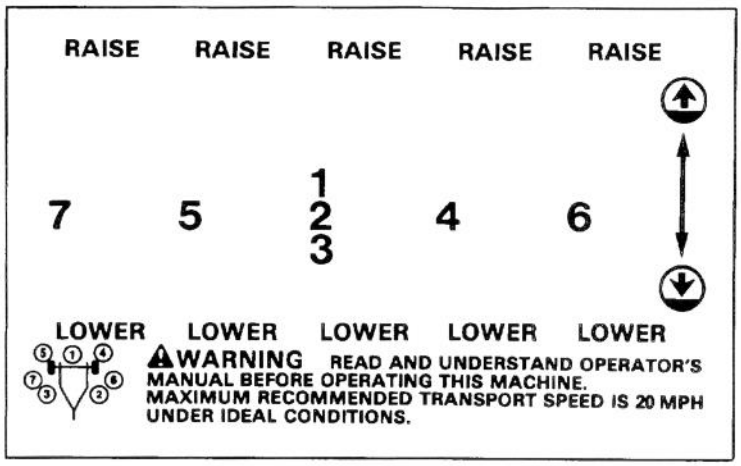
9. Relieve all pressure in the system before disconnecting the lines or performing repairs on the system. All cutting units should be on the ground.

10. Keep hands and body away from pin holes which eject fluid under high pressure. Use paper or cardboard to search for leaks. NOT HANDS.

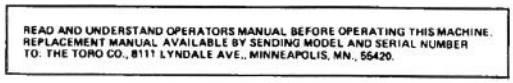
11. Fluid escaping under pressure can have enough force to penetrate skin and do serious damage. If fluid is injected into the skin, see a doctor immediately.

12. If major repairs are ever needed or assistance is desired contact an Authorized TORO Distributor.

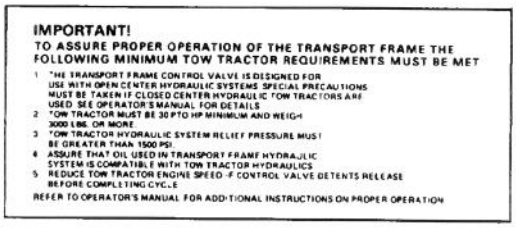
SAFETY AND INSTRUCTION DECALS



ON CONTROL TOWER
(Part No. 47-5600)



ON FRONT OF CONTROL TOWER
(Part No. 47-3770)



ON FRONT OF FRAME
(Part No. 47-3900)

SPECIFICATIONS

Cutting Capacity: 9.4 acres per hour @ 5.5 mph. (Assumes no reduction in total area mowed due to overlap, turning, stops, etc.)

Main Frame Construction: Tubular and structural steel, bolted and electrically welded construction.

Trailer Tongue: Tubular and structural steel welded construction. Trailer clevis is adjustable to 3 positions. Trailer tongue can be removed from frame for storage and shipping purposes.

Control Tower: Adjustable 12-1/2" fore and aft and 7" up and down. Controls are operable from tractor seat. Control tower is mounted on trailer tongue.

Wing Lift Arms: Tubular steel, reinforced welded construction.

Axle Assembly: Implement type.
Max. load capacity = 4940 lbs.*
Axle capacity = 6000 lbs.
Hub capacity = 3560 lbs. each
Wheel capacity = 3000 lbs. each
Tire capacity = 2470 lbs. each @ 28 psi.

*Max. load capacity determined by tire capacity at maximum inflation pressure of 28 psi.

Trailer Transport Wheels: Two 6 bolt, 6" bolt circle, 4.62" pilot, 15 x 8LB implement style wheels with 11L-15 (low profile), 6 ply rating implement rib tires; 24-28 psi recommended tire pressure.

Lifting Mechanism: Hydraulic lift – 1st, 2nd and 3rd cutting units operate together. Cutting units 4 through 7 operate individually. Units can be raised or lowered in any sequence on level ground.

Note: When using 18" wheels on cutting units, raise #1, 2, and 3 cutting units last, and lower them first.

Hydraulic Valve: Heavy duty, directional control valve, parallel circuit, open center, stack design. Cast iron valve bodies, with hardened spools and plated for corrosion protection. Primary relief valve (1500 ± 150 psi), shim adjustable. Relief valve prevents excess pressure build-up in the hydraulic system and safeguards the hydraulic pump and hoses. Field adjustable, hydraulic detents with automatic knockout return to neutral retains spool in "raise" or "lower" position until system pressure feedback returns spool to neutral. Pressure detents set at 1300 ± 100 psi. Closed center conversion kit available for use with tow tractors containing closed center hydraulic systems.

Hydraulic Cylinders: Tie rod construction. 3" bore, double-acting cylinders; chrome-plated rods 1-1/8" diameter (1-3/8" diameter on No. 1 cylinder), precision finished bore in cylinder tubes.

Hydraulic Hoses: SAE J517C, one-wire braid, 1/2" I.D. feed line hoses from tractor to valve body. SAE 100R7, 5/16" I.D. cylinder hoses from valve body to hydraulic cylinders.

Hydraulic System Couplers: Quick disconnect couplers for easy hook-up to tractor.

Hydraulic System Capacity: Two gallons Mobilfluid 423 multifunctional transmission/hydraulic fluid with cylinders retracted.

Jack: Side-screw type trailer jack. 10" stroke. Stores inside trailer tongue when not in use. Load capacity 2200 lbs.

SPECIFICATIONS

Safety/Transport Lockup Devices: Safety straps are provided to prevent accidental lowering of No. 4-7 cutting units during transport. A safety lock-up pin prevents accidental lowering or settling of No. 1, 2, 3 cutting units during transport or storage. All lockup devices store on the transport frame.

Frame Dimensions*:
Length: 150"
Transport Width: 7'11" (w/Reelmaster mowers)
Mowing Width: 14'4" (w/Reelmaster mowers)
Height: 58" (w/Control Tower Collapsed)
Tread Width: 68"
Transport Ground Clearance: 7-1/2"
Weight: 3560 lbs.

Approximate Shipping Weight: 1800 lbs.

Optional Equipment:
Closed Center Conversion Kit, Part No. 48-1900
18" Wheel Conversion Kit, Part No. 51-3060

*Dimensions shown are with cutting units attached.

LOOSE PARTS CHART

Description	Qty.	Use
Lower Tower	1	Install Control Tower.
Upper Tower	1	
Capscrew 3/8-16 x 2-3/4" Lg.	2	
U-Bolt	2	
Flange Nut 3/8-16	6	
Control Levers w/Knobs	5	Mount Control Linkage and Levers.
Hex Nut	5	
Clevis Pin 5/16 x 1-1/4" Lg.	5	
Cotter Pin 5/32 x 3/4" Lg.	10	
Lift Chains	2	Install Lift Chains & Lift Bracket.
Bail Lift Chains	4	
Long Shackle	3	
Short Shackle	4	
Clevis Pin 3/8 x 1-1/2" Lg.	7	
Cotter Pin 1/8 x 3/4" Lg.	7	
Lift Bracket	1	
Hitch Pin	2	Connect Transport Frame to Tractor & Transport Lock-Up.
Hairpin Cotter	2	
Drawbar	7	Mount Drawbars to Lift Bails.
Capscrew 1/2-13 x 4" Lg.	7	
Locknut	7	
Quick Coupler Body	2	Connect Supply/Return Hoses to Tractor.
Quick Coupler Body Caps	2	
Capscrew 1/2-13 x 3-1/2" Lg.	14	Mount Cutting Units to Drawbars and Lift Bail.
Spacer	14	
Locknut 1/2-13	14	
Long Shackles	6	
Clevis Pin 3/8 x 1-1/2" Lg.	6	
Cotter Pin 1/8 x 3/4" Lg.	6	
Capscrew 3/8-16 x 1-1/2" Lg.	1	
Locknut 3/8-16	1	
Spring	7	
S-Hook	7	
Operators Manual	1	
Parts Catalog	1	
Registration Card	1	
Traceability Card	1	
Set Up Report	1	

SET UP INSTRUCTIONS

TRACTOR PREPARATION

To assure proper operation of the transport frame, the following tow tractor requirements must be met:

1. Tow tractor must be 30 PTO HP minimum and weigh 3000 lb. or more.

2. The tractor must have a hydraulic system capable of remote hydraulic operation and a hydraulic directional control valve, manual or spring centered. The transport frame control valve is designed for use with open center hydraulic systems. The tractor hydraulic system relief pressure must be greater than 1500 PSI.

3. Check tractor operators manual or check with tractor dealer to determine which system, open center or closed center, your tractor has. Special operating precautions must be taken if closed center hydraulic system is used. See Operating Instructions, page 12, or a Closed Center Conversion Kit, Toro Part No. 48-1900, is available from your local Authorized Toro Distributor.

Note: Consult your tractor dealer for proper installation of remote hydraulics because damage may occur to system if improperly installed.

4. Assure tractor hydraulic system will couple to remote hydraulic supply/return lines of 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 existing tractor couplers.

5. The hydraulic system of the transport frame has been filled with Mobilfluid 423 which is a multifunctional transmission/hydraulic lubricant. This transmission fluid is designed to satisfy the transmission lubricant, hydraulic, and hydrostatic requirements of most farm and industrial tractors.

Before operating the transport frame, make sure the hydraulic fluid is suitable for use with the tow tractor hydraulic system.

The following is a list of fluids compatible with the transport frame hydraulic system fluid:

Allis Chalmers HPF821 or 322
Allison C-2 Fluid
J.I. Case TCH, TFD or Spec 144, 145 Fluids
John Deere Type 303 Special Purpose Oil
(J-14B) or Hy gard (J-20A)
Ford Tractor M2C41A, M2C53A, M2C86A
International Harvester Co. Hy-Tran Fluid
Massey-Ferguson M1127, M1129A, M1135
Permatran Transmission Fluids
Minneapolis-Moline Hydraulic Fluid and
Part No. 35301 Fluid
Oliver Corp. 102082A E.P. Additive in engine oil.

In all cases, the equipment manufacturer's recommendations regarding drain intervals should be followed.

6. Adjust tractor seat to a comfortable operating position.

7. Adjust tractor drawbar (hitch) so mounting hole is less than 50 inches from outside of rear tractor tire (Fig. 1). This will prevent interference with front cutting unit lift arms.

Note: If tractor drawbar cannot be adjusted as described above, use caution when turning, to avoid contact.

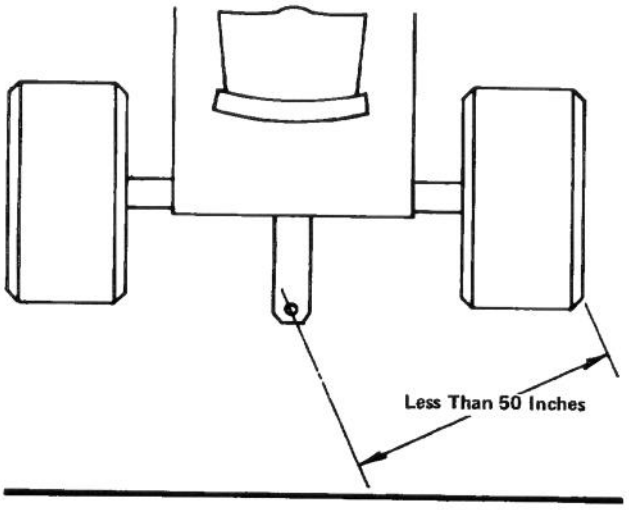


Figure 1

INSTALL JACK

1. Remove jack from storage position by removing pin and sliding jack off storage tube (Fig. 2).

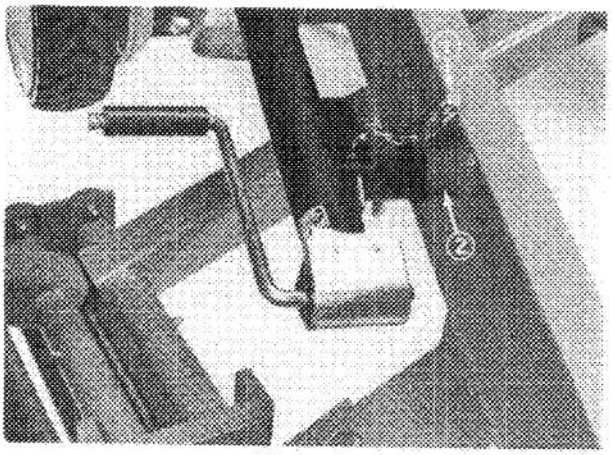


Figure 2

1. Pin
2. Storage tube

SET UP INSTRUCTIONS

2. Raise front of frame and slide jack onto mounting tube aligning mounting holes in jack with holes in mounting tube. Secure with pin. (Fig. 3).

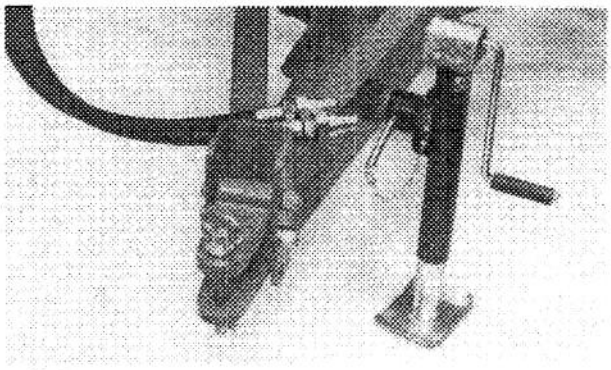


Figure 3

3. Jack frame to desired height, by rotating jack handle clockwise to raise and counter-clockwise to lower.

ADJUST HITCH

1. Measure height from ground to top of hitch on tow tractor.

2. Adjust transport frame hitch up or down according to measurement of tractor hitch. Use appropriate mounting holes as shown in chart below and in Fig. 4.

Tractor Hitch Height	Frame Mounting Holes
Below 11"	Bottom (2) Sets of Holes
11" to 15"	Middle (2) Sets of Holes
Above 15"	Top (2) Sets of Holes

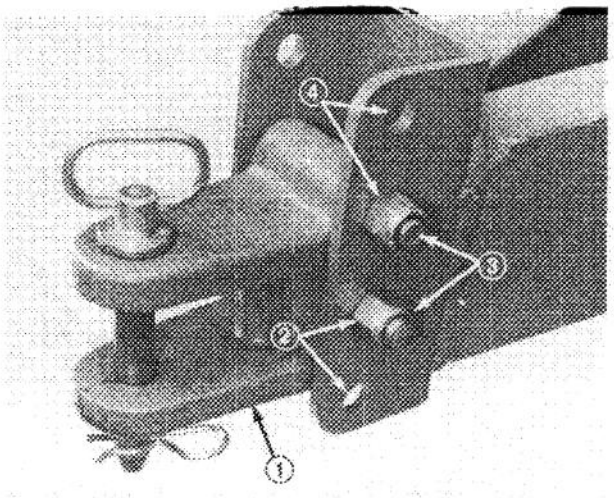


Figure 4

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

3. Secure frame hitch to tractor hitch with hitch pin and hairpin cotter.

4. Reinstall jack to storage tube on inside of frame channel and secure with pin.

INSTALL CONTROL TOWER

1. Loosely secure lower control tower to center frame tube with (2) U-bolts and (4) 3/8-16 flange nuts (Fig. 5).

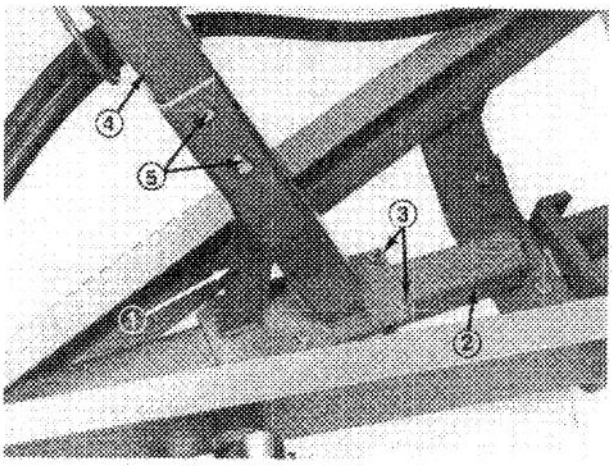


Figure 5

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

2. Mount upper control tower to lower control tower with (2) 3/8-16 x 2-3/4 capscrews and (2) 3/8-16 flange nuts (Fig. 5).

Note: Adjust height of control tower for operator comfort by using appropriate mounting holes in upper control tower tube. Keep height of tower as low as possible.

3. Adjust control tower fore and aft by sliding tower on center frame tube and tightening flange nuts and U-bolts.

Note: Position tower as far back as possible, but within comfortable reach of operator. Tower will pitch forward when crossing a ditch or low area in turf.

4. Route supply and return hoses through hose hanger (Fig. 6).

SET-UP INSTRUCTIONS

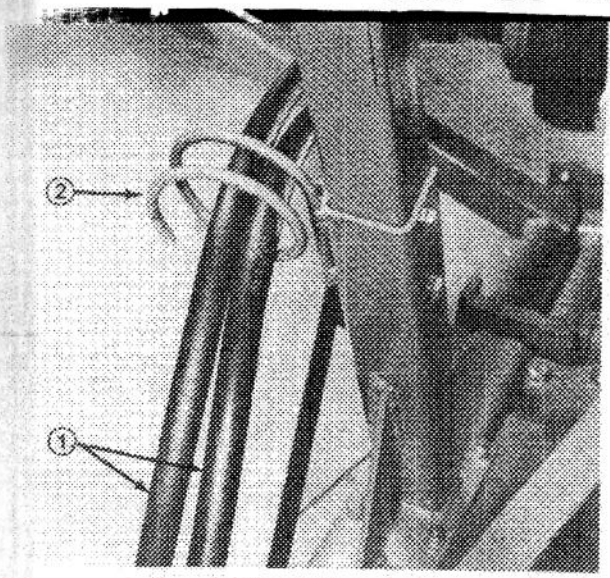


Figure 6

1. *Supply and return hoses*
2. *Hose hanger*

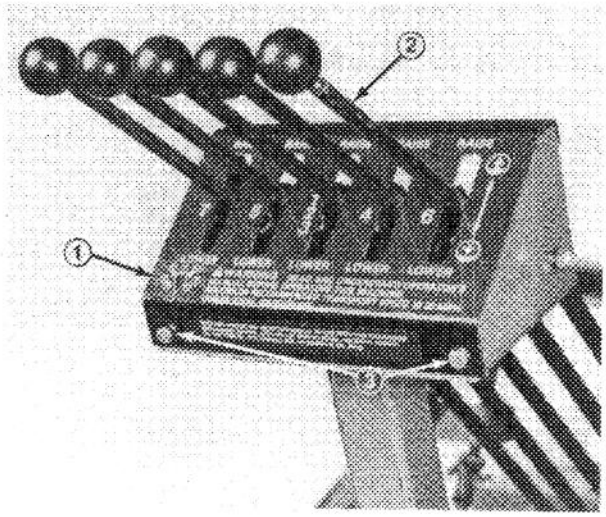


Figure 8

1. *Control panel cover*
2. *Control levers*
3. *Mounting capscrews (4)*

MOUNT CONTROL LINKAGE AND LEVERS

Note: To ease in assembly of linkage, control panel cover may be removed from control tower, by removing (4) capscrews (Fig. 8).

1. Secure upper control linkage tubes to pivot blocks with clevis pins and cotter pins (Fig. 7). Coat pins with #2 gun grease.

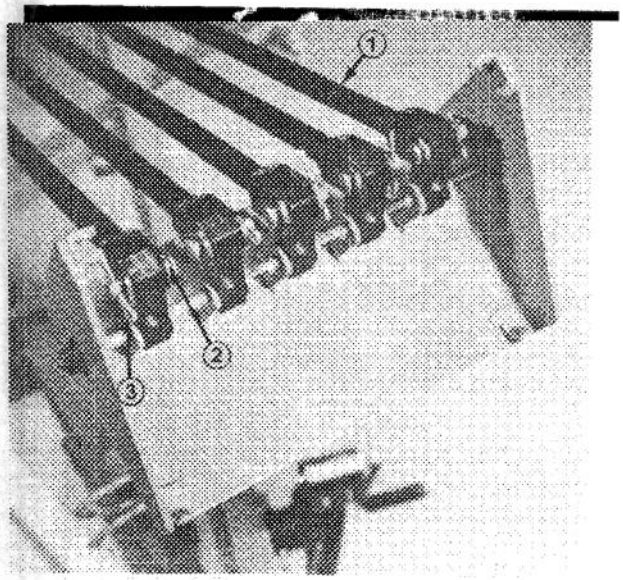


Figure 7

1. *Upper control linkage tubes*
2. *Clevis pins*
3. *Cotter pins*

2. Reinstall control panel cover (if previously removed), to control tower with (4) capscrews (Fig. 8).

3. Screw control levers into pivot blocks (Fig. 8).

4. Check to make sure valve spool levers (Fig. 9) are in neutral (middle position) by pivoting levers in toward valve, or pulling them out to find mid position. Coat all pivot points with #2 gun grease or lubricate with #30 SAE oil.

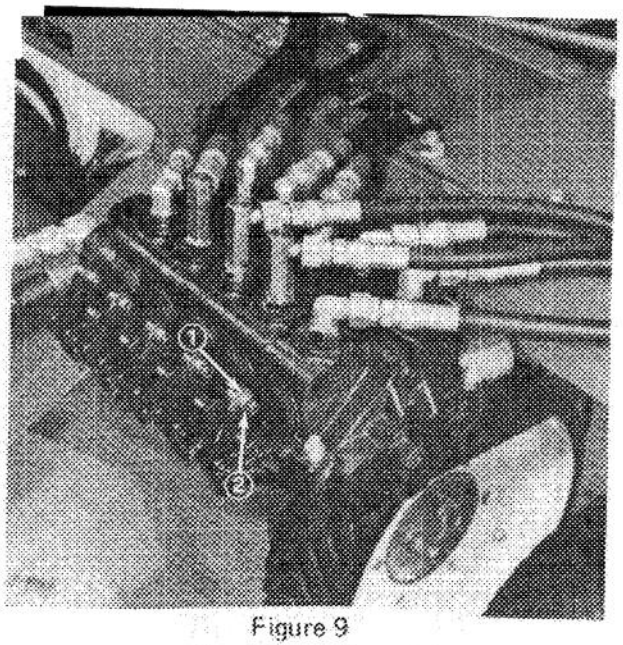


Figure 9

1. *Valve spool levers*
2. *Mounting pin*

5. Thread 7/16-14 hex nuts onto lower control rods. Partially thread lower control rods into upper control tubes (Fig. 10). Coat threads with #2 gun grease.

SET UP INSTRUCTIONS

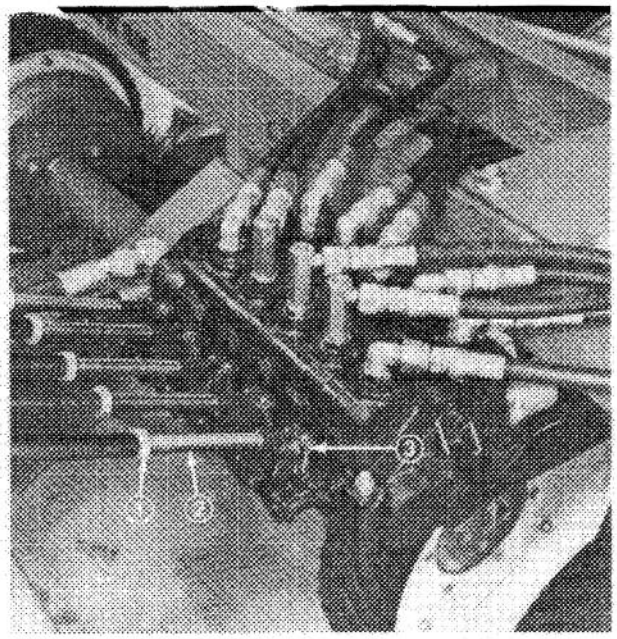


Figure 10

1. Hex nut
2. Lower control rod
3. Cotter pins

6. Align hole on end of lower control rod (Fig. 10) with mounting pin in control valve lever (Fig. 9). Lever on control tower should be in center of slot (neutral position) if adjusted correctly (Fig. 11). Thread lower rod into or out of upper control tube to adjust. After each lever is adjusted, check to make sure all levers are aligned with each other. Readjust if necessary.

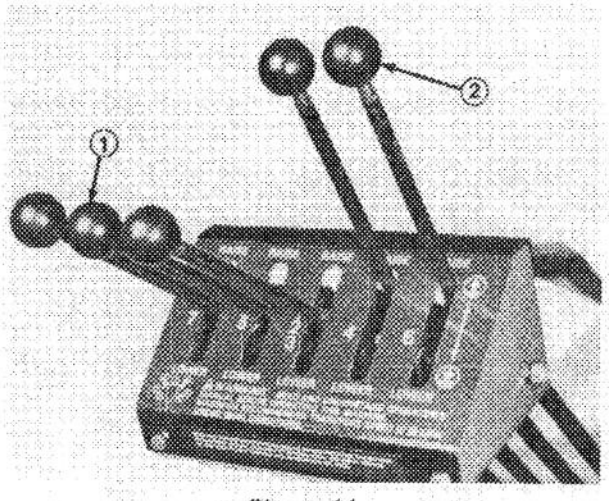


Figure 11

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

7. Secure control rods to control valve levers with cotter pins (Fig. 10).

8. Check control lever operation by moving levers to raise and lower positions. Levers should stay in raise and lower position if adjusted correctly and spring back to neutral if pulled or pushed. Readjust control tube linkages if necessary. All levers should operate freely with no binding and should be well lubricated.

9. When adjusted correctly, tighten jam nuts on lower control rods (Fig. 10).

CONNECT SUPPLY/RETURN HOSES TO TRACTOR

1. Screw quick couplers (included in loose parts) to tractor couplers.

2. Remove dust caps from supply/return hoses.

Note: Store dust caps on hose hanger so they may be used whenever hoses are uncoupled from tractor.

3. Couple supply hose to pressure port of tractor system.

4. It is recommended that a male and female section of the coupling be attached to both tractor and frame. This will prevent reversing the hoses.

5. Couple return hose to return port or tank on tractor system.

Note: Consult your tractor operators manual for proper installation of hoses because damage may occur if hoses are improperly installed.

INSTALL LIFT CHAINS

1. Connect (2) outer lift chains to pulley support with short shackles, clevis pins and cotter pins (Fig. 13).

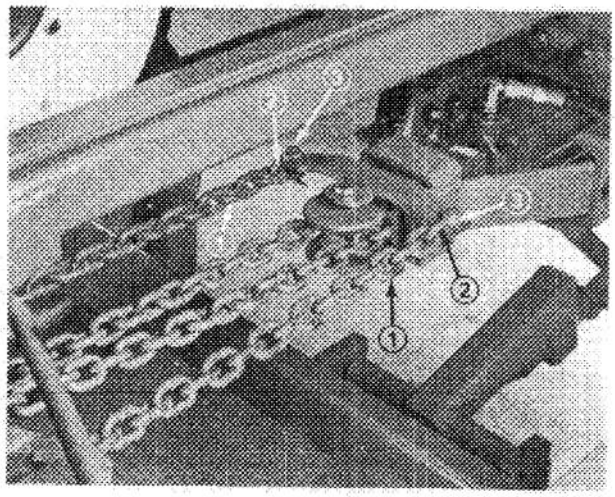


Figure 12

1. Outer life chains
2. Short shackles
3. Clevis pins & cotter pins

SET UP INSTRUCTIONS

2. Route chains forward, around middle sheaves and outward over side sheaves.

3. Secure short lift chains to No. 4 and No. 5 lift arms (rear) with short shackles, clevis pins and cotter pins (Fig. 13). Secure to welded ring.

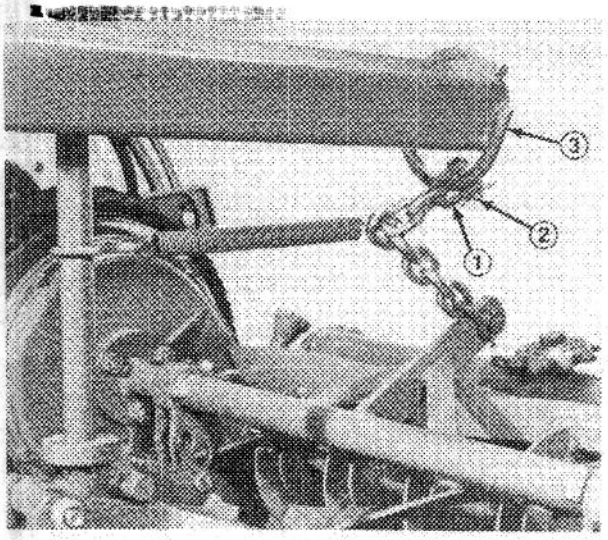


Figure 13

1. *Short shackle*
2. *Clevis pin & cotter pin*
3. *Welded ring*

4. Secure short lift chains to No. 6 and No. 7 lift arms (side) with long shackles, clevis pins and cotter pins (Fig. 14). Secure to outer hole in lift arm bracket.

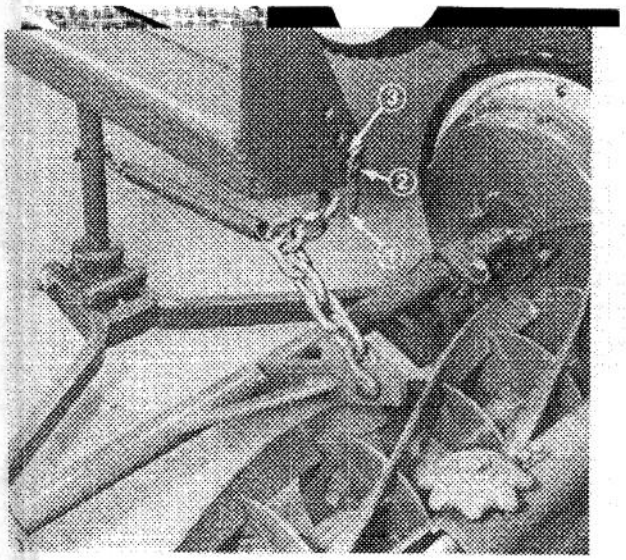


Figure 14

1. *Long shackles*
2. *Clevis pin and cotter pin*
3. *Outer mounting holes*

INSTALL DRAWBAR

1. Align mounting holes in drawbar with mounting hole in lift bail housing. Offset hole in drawbar should be positioned up (Fig. 15).

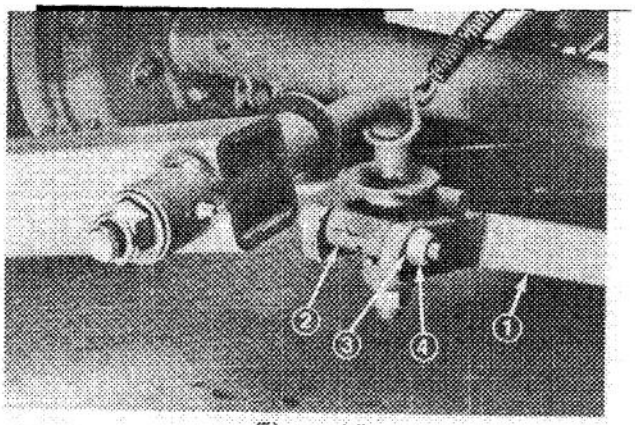


Figure 15

1. *Drawbar*
2. *Lift bail housing*
3. *Offset hole in drawbar – UP*
4. *Capscrew & locknut*

2. Secure drawbars to lift bails with 1/2-13 x 4" lg. capscrew and 1/2-13 locknut.

INSTALL MOWERS (Reelmaster mower)

Note: If 18" wheels are to be used on the mowers, Conversion Kit, part no. 51-3060 is required to reposition the cutting units in the number 6 and number 7 positions on the frame. Secure remaining mowers as instructed.

1. Align holes in drawbar with brackets on mower cross-tubes. Secure each side with 1/2-13 x 3-1/2" capscrew, spacer tube and 1/2-13 locknut (Fig. 16).

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

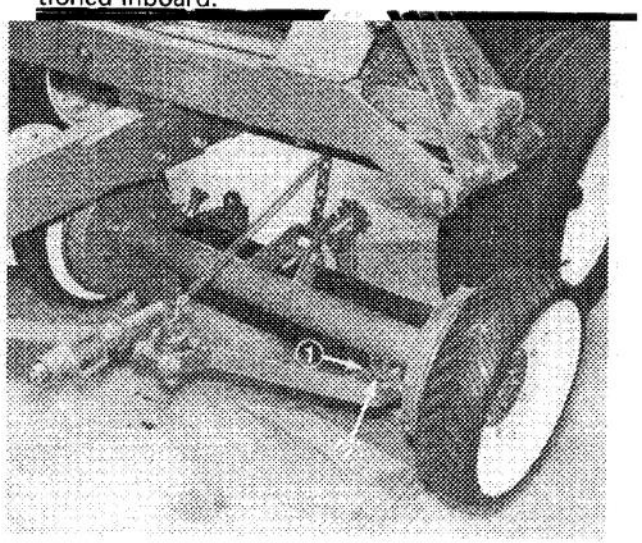


Figure 16

1. *Capscrew, spacer tube & locknut*
2. *Mounting bracket*

SET UP INSTRUCTIONS

Note: If Spartan mowers are to be attached, drawbar clamps, Part No. 5-1090 and mounting fasteners will be required to mount drawbar to front cross tube of mower. Contact your local Authorized Toro Distributor for assistance.

2. Secure lift bracket to #1 lift chain (rear center) with a long shackle, clevis pin and cotter pin (Fig. 17).

Note: Make sure there are no kinks or twists in chain before installing cutting units.

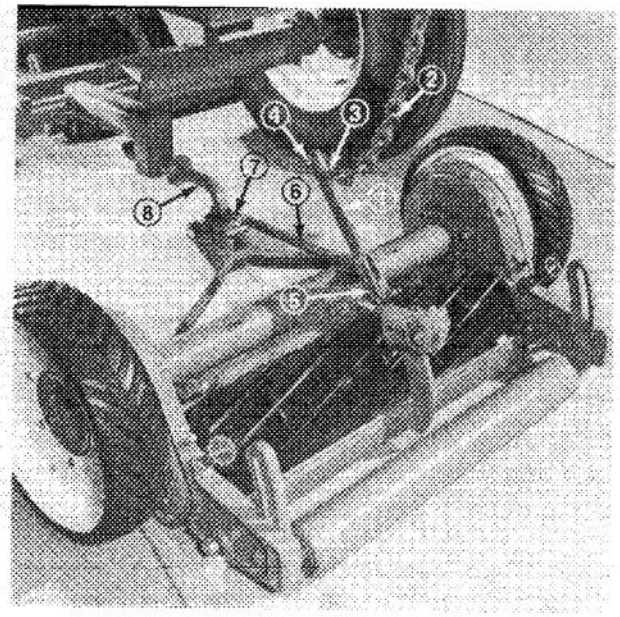


Figure 17

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

3. Secure lift bracket to mower mounting bracket with a 3/8-16 x 1-1/2" lg. capscrew and 3/8-16 locknut (Fig. 17). Use bottom mounting hole in lift bracket.

4. Hook spring to upper mounting hole in lift bracket and other end of spring to lift bail with S-hook (Fig. 17).

5. On remaining mowers, secure lift chains to mower mounting bracket with long shackles, clevis pins and cotter pins (Fig. 18).

Note: Make sure there are no kinks or twists in chain before installing cutting units.

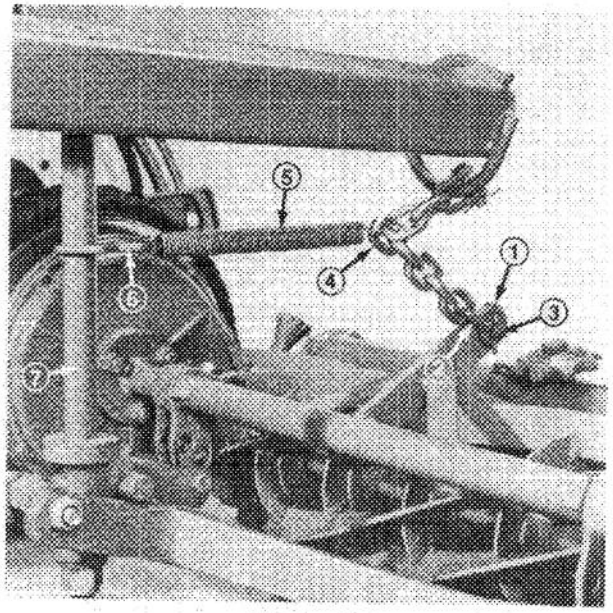


Figure 18

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

6. Hook spring to fifth link in chain from mower and secure other end of spring to lift bail with S-hook (Fig. 18).

CHECK TIRE PRESSURE

Correct air pressure is 24-28 psi.

OPERATING INSTRUCTIONS

CONTROLS

The controls are conveniently located on control tower at front of frame. To raise mower(s), push control lever(s) up, to lower mower(s) push control lever(s) down. Detents in the control valve will hold lever(s) in their respective positions until the cycle is completed, then lever(s) will return to neutral. To partially raise or lower mower(s), partially actuate control lever(s) to move mowers as desired.

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

1. Open center hydraulic system on tractor and open center hydraulic system on transport frame.

A. Connect supply/return hoses to tractor valve couplers. Make sure high pressure line is connected to inlet port on frame valve.

B. Restrain tractor hydraulic directional control valve lever to allow a continual flow of fluid to the transport frame valve.

C. Start tractor and raise or lower mowers using control levers. Levers will return to neutral position when cycle is completed. If levers will not stay in detent position until cycle is completed, linkage may need lubrication, adjusting, or tractor engine may be running too fast. Transport frame detents are designed to operate at flow rates of approx. four gallons per minute or less.

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

IMPORTANT: After disconnecting supply/return hose couplers from tractor valve always return tractor hydraulic directional control valve lever to neutral, to deactivate "remote" hydraulic feature.

2. Closed center hydraulic system on tractor and open center hydraulic system on transport frame.

Note: A closed center conversion kit is available from your local Toro Distributor and is recommended for use with this type of system. If kit is not used, follow these procedures for operation.

A. Connect supply/return hoses to tractor valve couplers.

B. Start tractor.

C. Tractor hydraulic directional control lever must be actuated simultaneously with control levers on transport frame. Do not restrain tractor valve lever permanently, damage may occur to system.

D. Raise or lower mowers using control levers. Control valve detents may not function properly when used with this system. If they do not function properly, manually hold lever(s) in raise or lower position.

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

3. Closed center hydraulic system on tractor and closed center conversion kit mounted to transport frame valve.

A. Connect supply/return hoses from frame valve to tractor valve couplers.

B. Restrain tractor hydraulic directional control valve lever to allow continual pressure at frame valve.

Note: When transporting frame, return tractor control valve lever to neutral because the cylinders may gradually extend causing lift arms to lower.

C. Start tractor and raise or lower mower using control levers. Control valve detents may not function properly when used with this system. If they do not function properly, manually hold lever(s) in raise or lower position.

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

IMPORTANT: After disconnecting supply/return hose couplers from tractor valve, always return tractor hydraulic directional control valve to neutral.

4. Open center hydraulic system on tractor and closed center conversion kit mounted to transport frame valve.

A. NEVER use this combination.

OPERATING INSTRUCTIONS

TRAINING OPERATION

Before mowing for the first time, practice operating your Tractor 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.

CAUTION

Maximum recommended transport speed is 20 miles per hour (32 km/hr) where conditions permit.

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 straps 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 control panel as a guide to lowering mowers (Fig. 19).

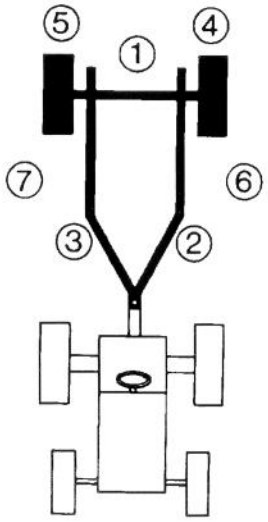


Figure 19

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 six miles per hour (9.7 km/hr). Traveling too fast can cause mechanical damage to the mowers and does not significantly increase the overall efficiency. Mowing at four to six miles per hour (6.4 to 9.7 km/hr) 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.

TRANSPORT OPERATION

1. Make sure that all mowers are in full transport position before moving to the next mowing area.

2. Remove (4) hairpin cotters securing transport straps to center frame channel and lift off straps (Fig. 20).

OPERATING INSTRUCTIONS

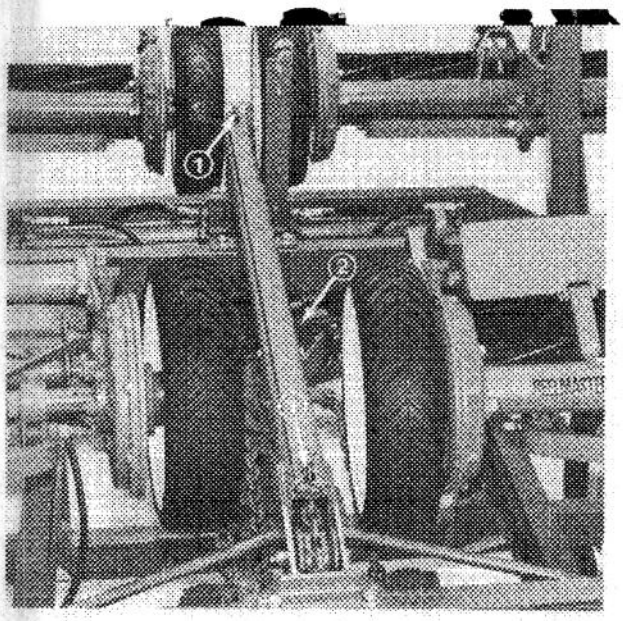


Figure 20

1. Hairpin cotters
2. Transport straps

3. Mount transport straps to mounting pins on lift arms and secure with hair pin cotters (Fig. 21).

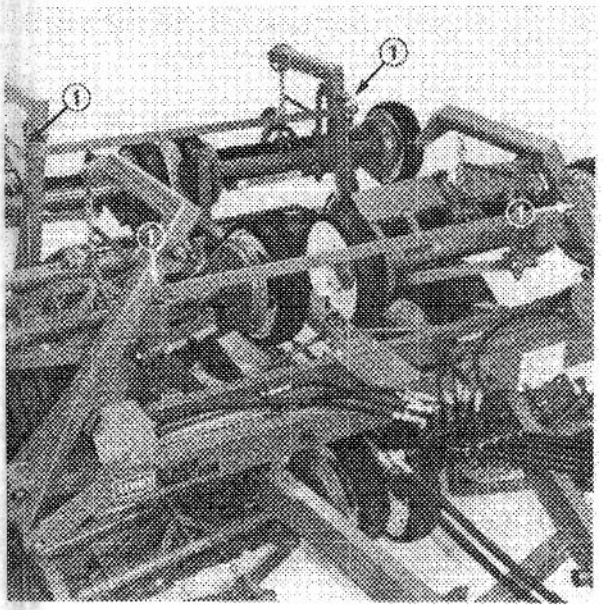


Figure 21

1. Mounting pins on lift arms

4. Remove hairpin cotter securing lockup pin to center cylinder rest (Fig. 22).

5. Slide lockup pin through holes in lockup bracket and secure with hairpin cotter (Fig. 23).

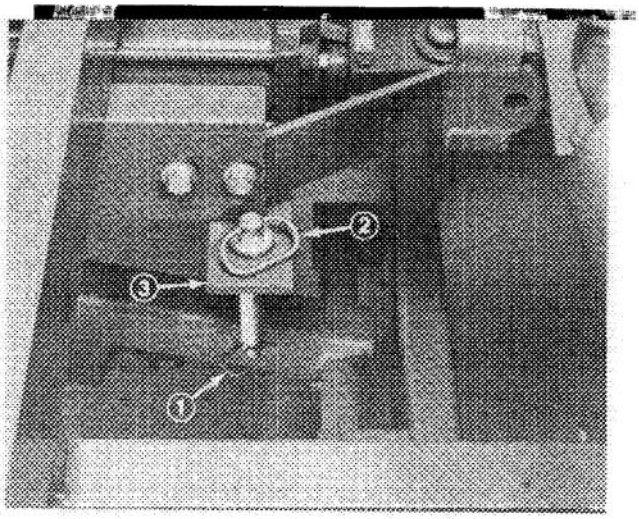


Figure 22

1. Hairpin cotter
2. Lockup pin
3. Cylinder rest

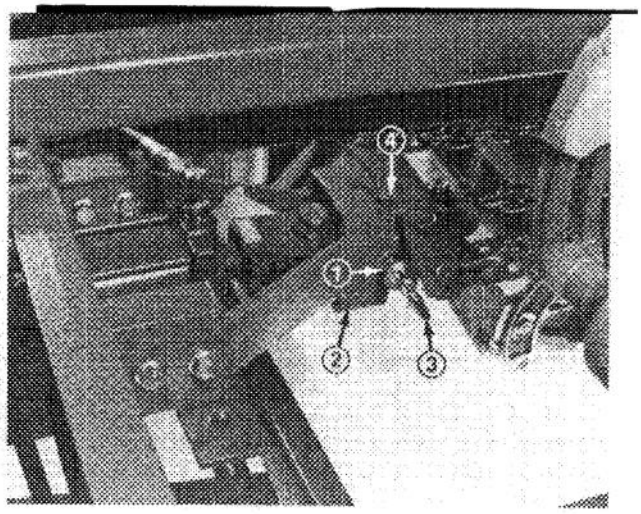


Figure 23

1. Mounting hole
2. Lockup bracket
3. Lockup pin
4. Hairpin cotter

CAUTION

Never exceed 20 MPH (32 km/hr). Reduce speed and shift into a lower gear before descending a steep or long grade. .

Note: In some areas there are regulations requiring a slow moving vehicle sign be attached to vehicle during transport. A mounting bracket (Fig. 24) is attached to rear cross channel of transport frame. A standard slow moving vehicle sign will fit bracket.

OPERATING INSTRUCTIONS

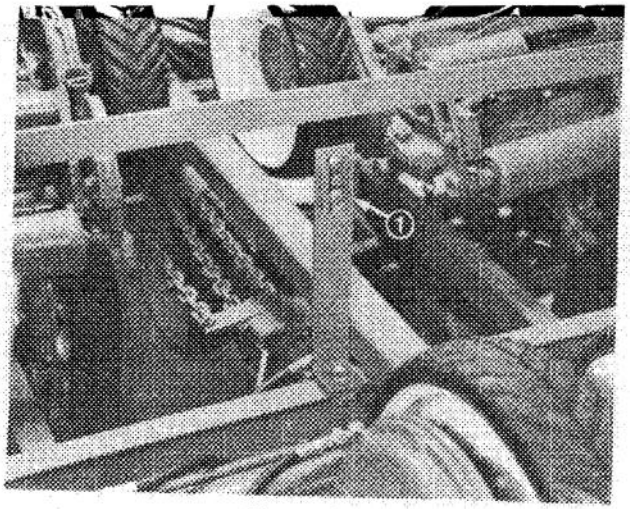


Figure 24

1. Slow moving vehicle mounting bracket

6. When mowing is to be resumed, remove transport straps from lift arms. Store on center frame channel and secure with (4) hairpin cotters (Fig. 20). Remove lockup pin secured to lockup bracket and secure to cylinder rest with hairpin cotter (Fig. 22).

INSPECTION AND CLEAN-UP AFTER MOWING

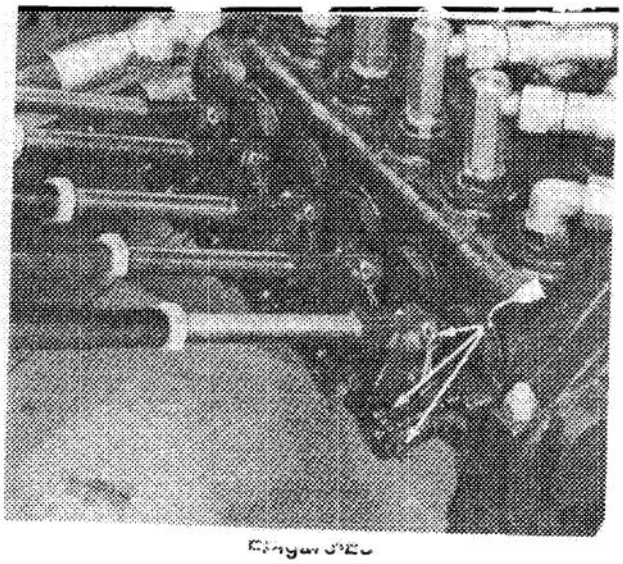
At the completion of mowing operation, thoroughly wash the machine with a garden hose without a nozzle so excessive water pressure will not cause contamination and damage to seals and bearings. After cleaning, it is recommended the machine be inspected for possible hydraulic fluid leaks, damage or wear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

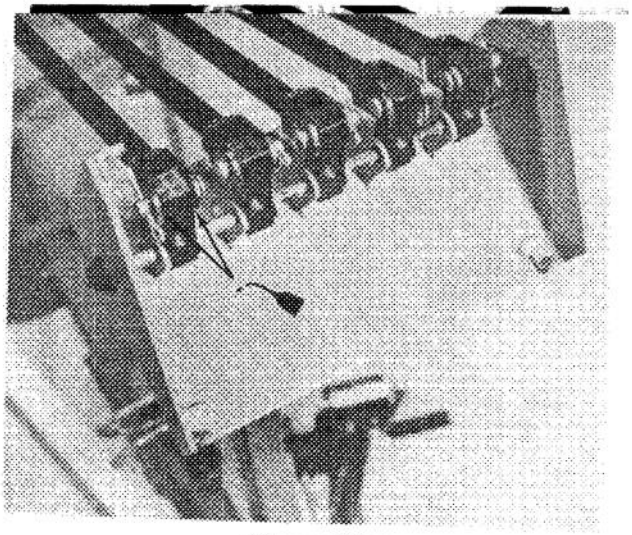
GREASING AND OILING FRAME COMPONENTS

Apply Mobilux No. 2 grease to all hydraulic frame fittings and SAE 30 engine oil to all wear or friction points every 50 hours of operation. There are 25 grease fittings on the Transport Frame. Clean the grease fittings with a clean rag prior to greasing to make sure no foreign matter will be forced into the bushings with the lubricant. While applying grease, make certain the bushings are taking grease. Apply lubricant to the fitting until some of the grease comes out from the sides of the bushings.

Wipe the fittings and sides of the bushings clean after servicing.

Lightly oil wear or friction points whenever grease fittings are being serviced. The grease fittings and wear and friction points are indicated in the following pictures.





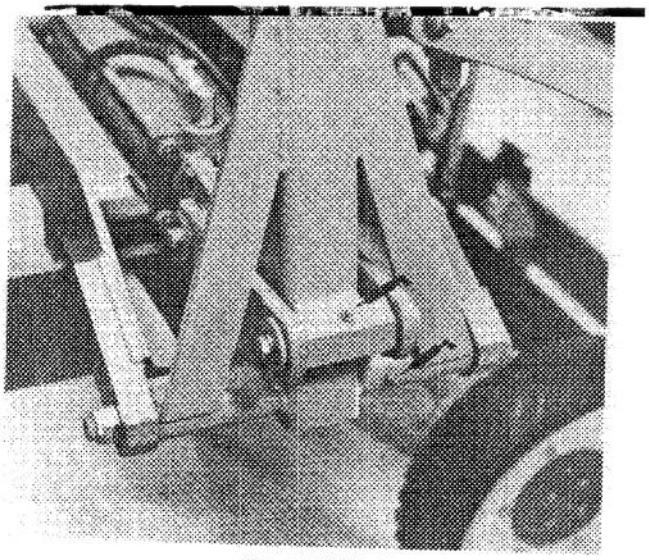


Figure 27

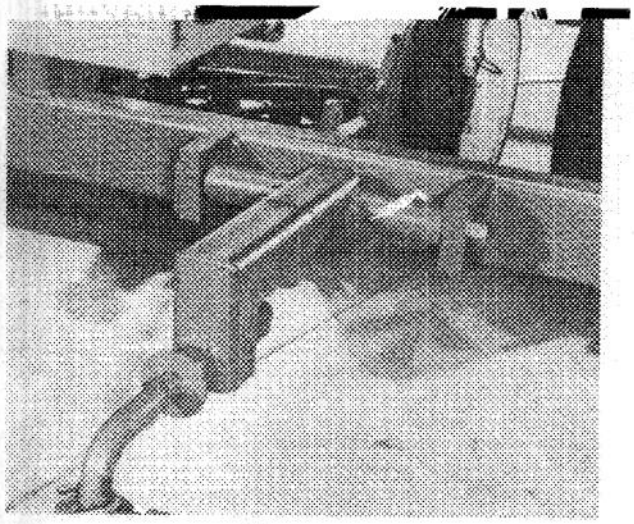


Figure 28

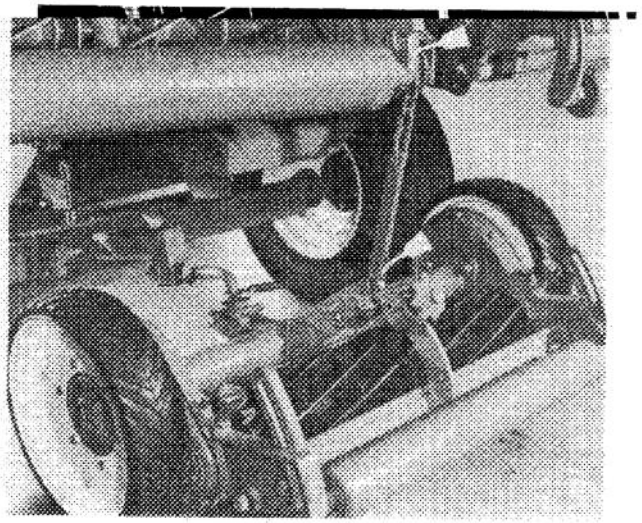


Figure 31

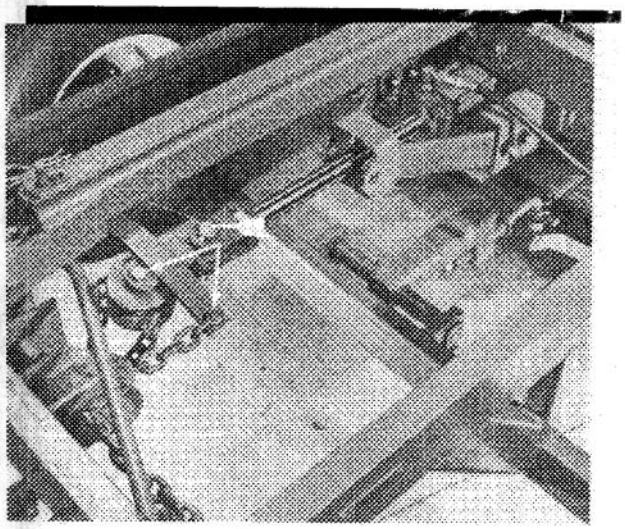


Figure 29

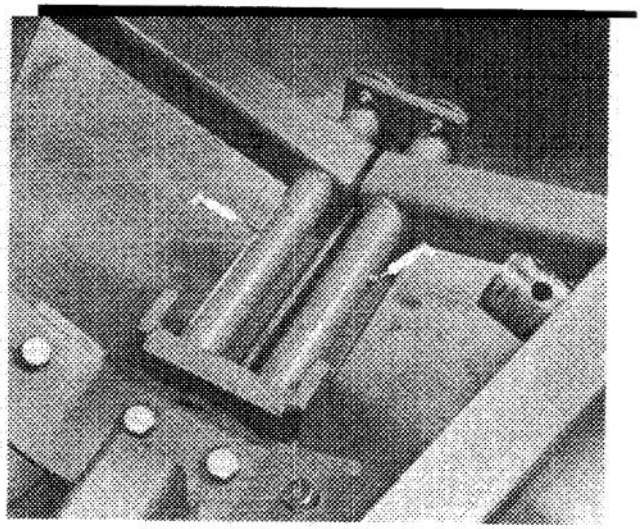


Figure 32

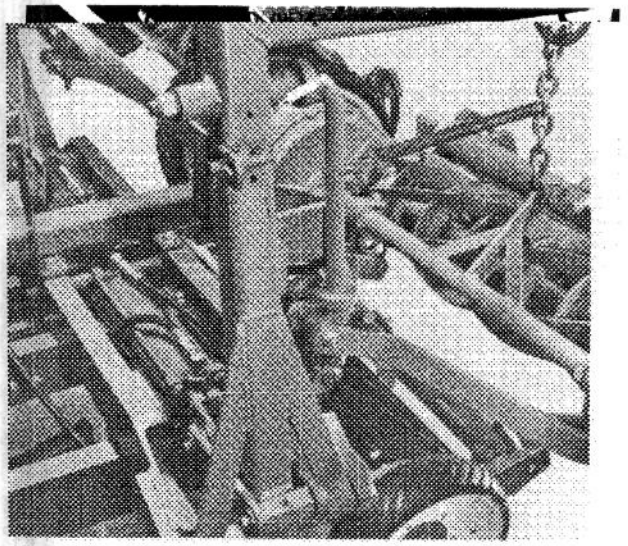


Figure 30

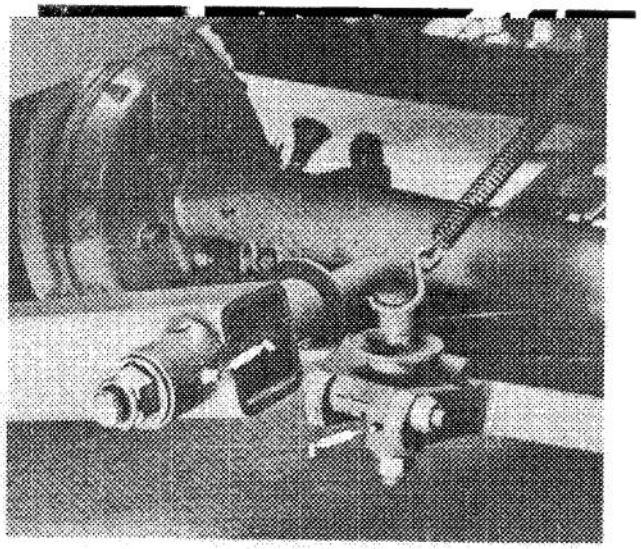


Figure 33

MAINTENANCE

CHANGING HYDRAULIC FLUID

Drain and replace the hydraulic system fluid whenever the tractor fluid is changed, if fluid is not compatible with tractor fluid, or if fluid becomes contaminated.

1. Start tractor, remove all cutting units, and raise lift arms until all lift cylinders are fully retracted, then stop tractor.

2. Disconnect supply/return hose couplers from tractor couplers.

3. Disconnect supply/return hoses from frame control valve and drain hoses into drain pan.

4. Disconnect hydraulic hoses connected to front row of control valve, Row "A" (Fig. 34). Drain each hose into drain pan and reconnect to valve.

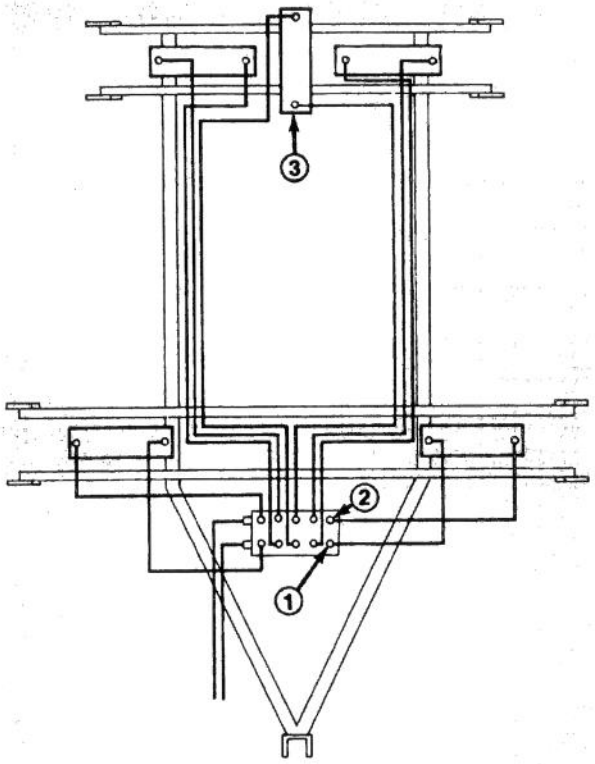


Figure 34

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

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

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

6. Connect supply/return hoses to frame control valve.

7. Fill tractor hydraulic fluid reservoir to appropriate level, using correct fluid.

8. Connect supply/return hose couplers to tractor valve couplers.

9. Start tractor, raise lift arms until all lift cylinders are fully retracted and then stop tractor.

Note: Do not manually pry lift arms up to retract cylinders, or cylinder damage may result.

10. Check hydraulic fluid level in tractor. Add approximately 2 gallons of appropriate hydraulic fluid to raise fluid to proper level.

11. Start tractor and cycle lift arms up and down at least two full cycles. Recheck hydraulic fluid level with lift arms RAISED and add fluid if necessary.

12. Reinstall cutting units.

WHEEL BEARINGS

To replace the wheel bearings proceed as follows:

1. Jack up the wheel being serviced. Support with jack stand to prevent it from falling.

2. Remove the hub cap, cotter key, slotted nut, and washer (Fig. 35).

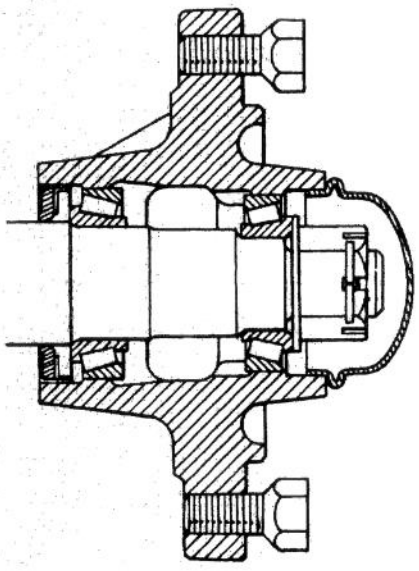


Figure 35

3. 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.

4. Clean the hub with a solvent.

5. Press the new cups in the hub, being certain they are fully seated.

6. Pack the new cones with wheel bearing grease. Coat bearing journal and adjacent bearings in hub.

7. Grease the sealing lip and slip the new seal on the extended race of the inner bearing cone.

8. Reassemble in reverse order of disassembly.

9. 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.

LIFT ARM BUSHING REPLACEMENT

To replace the lift arm bushing proceed as follows:

1. Position lift arm in the down position.

2. Remove cutting unit.

3. Remove nut from end of pin (Fig. 36).

4. Remove capscrew from pin assembly.

5. Remove link between hydraulic cylinder and lift arm.

6. Remove pin assembly.

7. Remove bushings in lift arm.

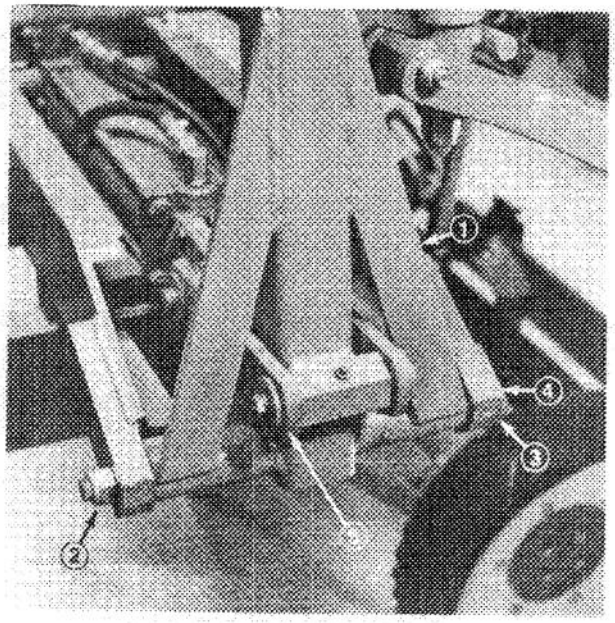


Figure 36

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

8. Insert and size new bushings and replace pin.

9. Replace capscrew and nut.

10. Reinstall link.

11. Grease 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.

HYDRAULIC SCHEMATIC

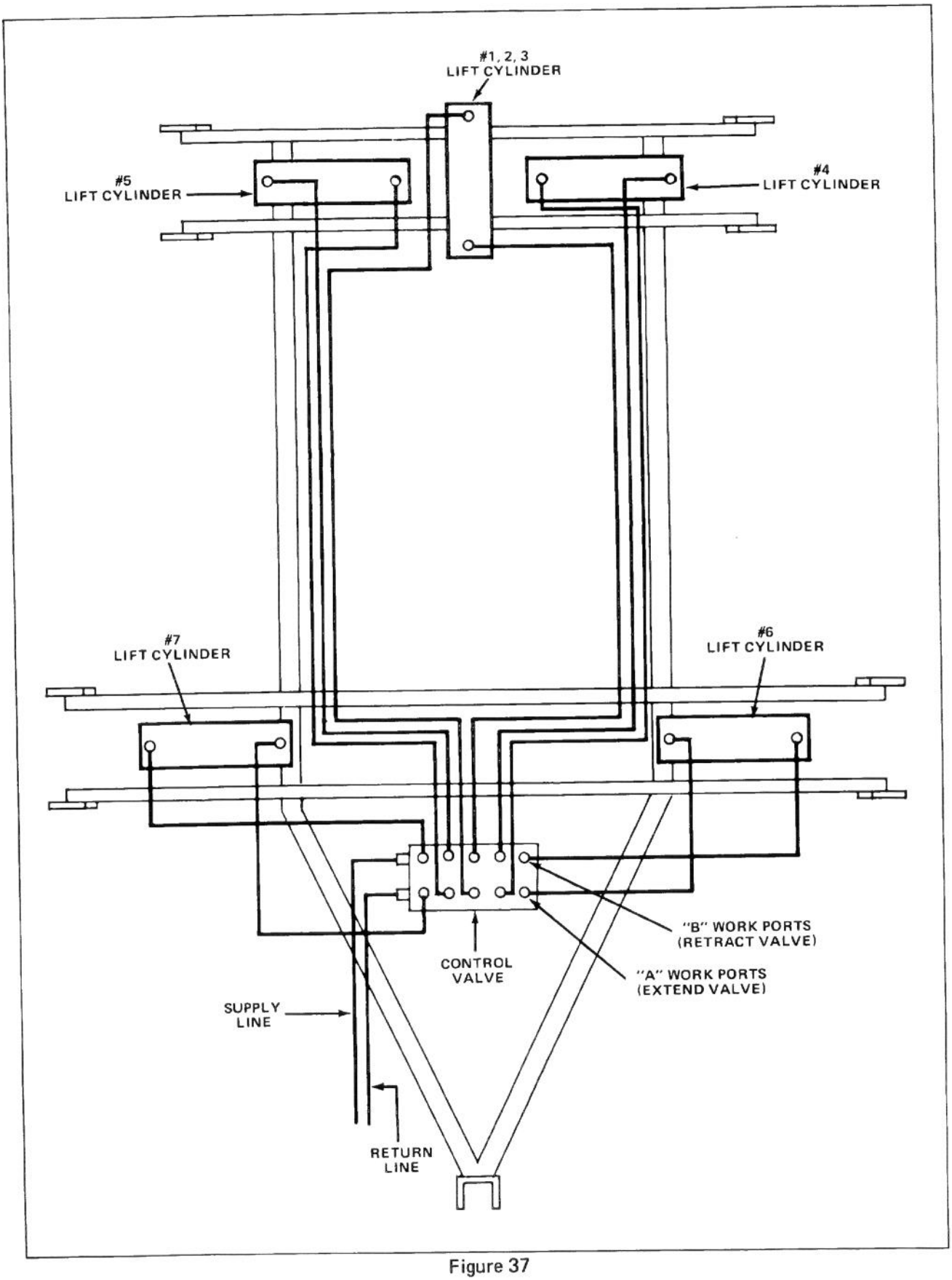


Figure 37

PRODUCT CHANGES

In an effort to make improvements available to TORO owners as quickly as possible, minor changes are incorporated into Toro's products from time to time that do not become immediately shown in the Operators Manual. If such a change apparently has been made in your unit, which is not reflected in your manual, see your TORO Distributor for information.

IDENTIFICATION AND ORDERING

Model and Serial Numbers:

The Transport Frame has two identification numbers: a model number and a serial number. The two numbers are stamped on a decal which is located on the left frame channel. In any correspondence concerning the Transport Frame supply model and serial numbers to assure that correct information and replacement parts are obtained.

To order replacement parts from an Authorized TORO Distributor, supply the following information:

1. Model and serial number of the Transport Frame.
2. Part number, description, and quantity of part(s) desired.

NOTE: Do not order by reference number if a parts catalog is being used; use the PART NUMBER.

The Toro Promise

A ONE YEAR LIMITED WARRANTY ON COMMERCIAL PRODUCTS OTHER THAN TRIMMERS AND BLOWERS.

The Toro Company promises to repair your TORO Product if defective in materials or workmanship. The following time periods from the date of purchase apply:

Commercial Products	1 Year
Trimmers and Blowers	90 Days

The costs of parts and labor are included, but the customer pays the transportation costs on walk rotary mowers, trimmers and blowers.

If you feel your TORO product is defective and wish to rely on The Toro Promise, the following procedure is recommended:

1. Contact your Authorized TORO Distributor or Commercial Dealer (the Yellow Pages of your telephone directory is a good reference source).
2. The TORO Distributor or Commercial Dealer will advise you on the arrangements that can be made to inspect and repair your product.
3. The TORO Distributor or Commercial Dealer will inspect the product and advise you whether the product is defective and, if so, make all repairs necessary to correct the defect without an extra charge to you.

If for any reason you are dissatisfied with the distributor's analysis of the defect or the service performed, you may contact us.

Write:

TORO Commercial Products Service Department
8111 Lyndale Avenue South
Minneapolis, Minnesota 55420

The above remedy of product defects through repair by an Authorized TORO Distributor or Commercial Dealer is the purchaser's sole remedy for any defect.

THERE IS NO OTHER EXPRESS WARRANTY. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This Warranty applies only to parts or components which are defective and does not cover repairs necessary due to normal wear, misuse, accidents, or lack of proper maintenance. Regular, routine maintenance of the unit to keep it in proper condition is the responsibility of the owner.

All warranty repairs reimbursable under the Toro Promise must be performed by an Authorized TORO Commercial Dealer or Distributor using Toro approved replacement parts.

Repairs or attempted repairs by anyone other than an Authorized TORO Distributor or Commercial Dealer are not reimbursable under the Toro Promise. In addition, these unauthorized repair attempts may result in additional malfunctions, the correction of which is not covered by warranty.

THE TORO COMPANY IS NOT LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE PRODUCT INCLUDING ANY COST OR EXPENSE OF PROVIDING SUBSTITUTE EQUIPMENT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion 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.

Compliance with Radio Interference Regulations Certified.
Certifie Conforme au Reglement sur le Brouillage Radioelectrique.

Litho in U.S.A.