

SCHMEISER MODEL '77 ORCHARD LEVELER



T. G. SCHMEISER Co., Inc.

OPERATION AND PARTS MANUAL

**Version 3.0
July 2020**

Read and understand the manual. This manual provides information and procedures to safely operate and maintain the MD77 Orchard Leveler.





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INTRODUCTION

Your Schmeiser Model '77 Orchard Leveler (implement) is designed to provide many years of dependable service. This manual has been prepared to instruct the user in the safe and efficient operation of this implement. Read and understand the manual thoroughly and follow all instructions carefully.

Engineered for Long Life

The Model '77 Orchard Leveler levels, smoothes, pulverizes the soil, fills depressions, and packs it all in one operation, helping save time and money. The Model 77 Leveler is extremely maneuverable in open field and orchard applications.

Serial Number Information

Record the serial number, model number, and date purchased in the space provided in the Serial Number Location section. Be sure to have this information whenever contacting the dealer to order parts or attachments for this implement.

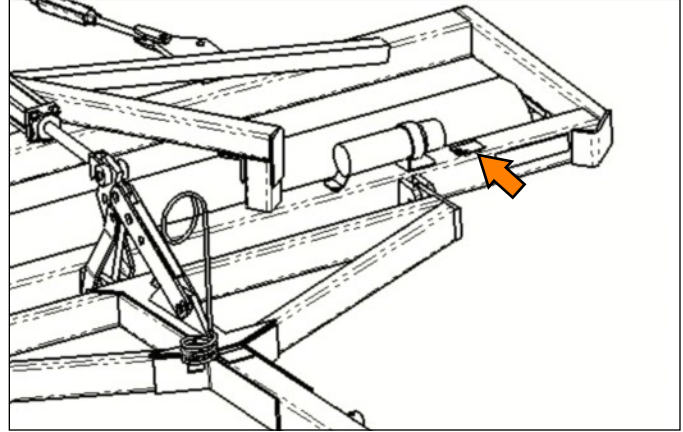
Replacement Parts

Should this implement require replacement parts, contact your local Schmeiser dealer. Always order genuine Schmeiser OEM replacement parts.

Warranty Information

It is important that the Warranty Card be completed and sent to Schmeiser. The warranty will not be valid until the information is on-file at Schmeiser. If information not contained in this manual is needed, contact your Schmeiser dealer.

Serial Number Location



Serial No. _____

Model No. _____

Date Purchased. _____

Dealer Name. _____

Factory Contact Information

For questions not answered in this manual, if additional copies are required, or the manual is damaged, please contact your local dealer or:

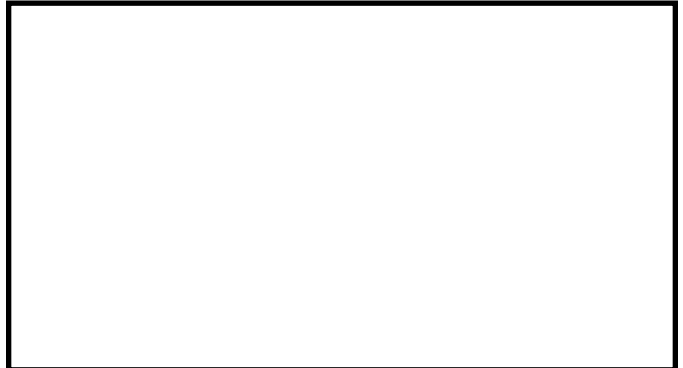
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Additional copies of this manual can also be downloaded at www.tgschmeiser.com.

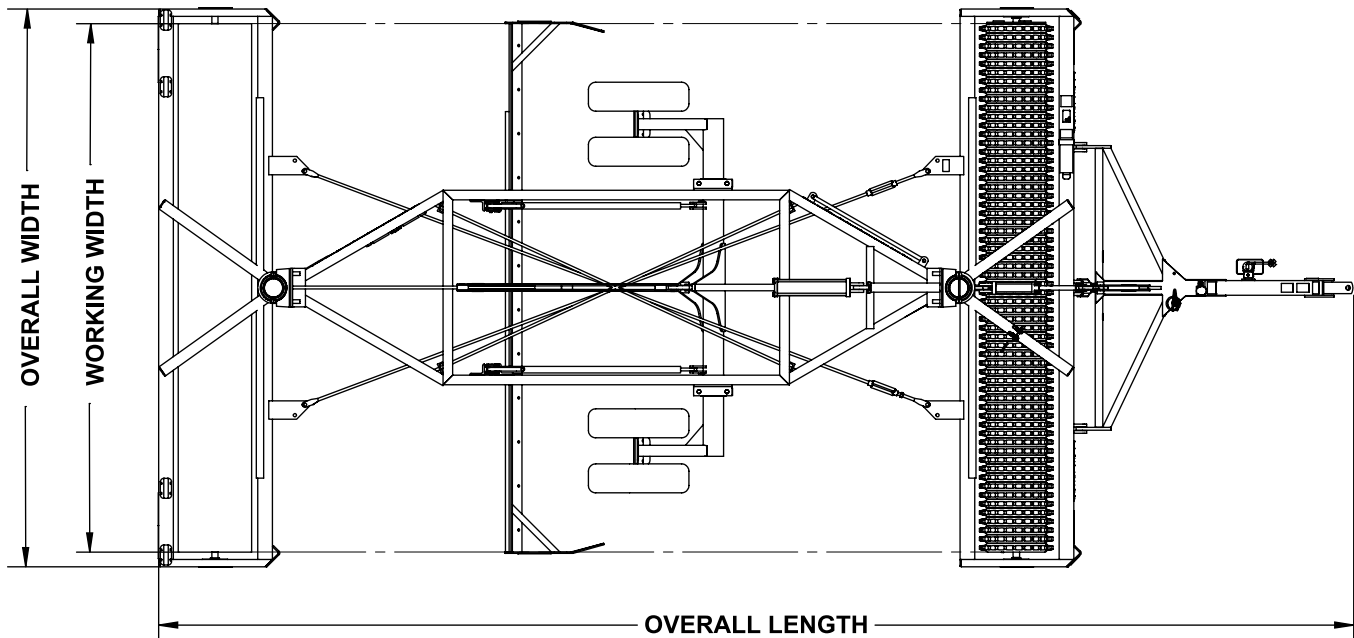
Dealer Contact Information

For replacement decals, questions, or to order parts, contact your dealer:



SPECIFICATIONS

Model	Model 77 Orchard Leveler
Working Width	Available in 6 working widths from 10' to 15'
Overall Width	Overall width is 8" greater than working
Overall Length	27' - 2"
Turning Radius	10' units - 16' 11' units - 17' 12' units - 18' 13' units - 19' 14' units - 20' 15' units - 22'
Rear Roller Tube Diameter	20"
Front Roller Tube Diameter	10" and 12" Available
Front Roller Ring Size	12 / 16 (ID / OD) 14 / 20 (ID / OD)
Lbs. per Foot of Working Width	~500 lbs/ft. — 10"-12 / 16 ~600 lbs/ft. — 12"-14 / 20
Tire Size	7.6 X 15, 8 Ply Tire with Wheel
HP Required	5-6 HP per foot of working width



SAFETY

Carefully read and follow all safety precautions before operation. There are obvious and hidden potential hazards involved in the operation of this implement. Serious injury or death may occur unless care is taken to ensure the safety of both the operator and any other persons in the area. Avoid potential danger by taking extra time for thought and a more careful approach to the use of this implement.

Most work related accidents are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. As you assemble, operate, or maintain the unit, you must be alert to potential hazards. You should also have the necessary training, skills, and tools to perform any assembly or maintenance procedures.

Improper operation and maintenance of this unit could result in a dangerous situation that could cause injury or death. T.G. Schmeiser cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and on the product are, therefore, not all-inclusive. If a method of operation not specifically recommended by us is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that the unit will not be damaged or be made unsafe by the methods that you choose.

The information, specifications, and illustrations in this manual are based on the information that was available at the time this material was written and are subject to change without notice.

Safety Alert Symbols



This is the safety alert symbol. It is used to alert you to potential personal injury hazards.

Obey all safety messages that follow this symbol to avoid possible injury or death.

This manual contains DANGERS, SAFETY INSTRUCTIONS, CAUTIONS, IMPORTANT NOTICES, and NOTES which must be followed to prevent the possibility of improper service, damage to the equipment, personal injury, or death. The following key words call the readers attention to potential hazards.

Hazards are identified by the "Safety Alert Symbol" and followed by a signal word such as "DANGER", "WARNING", or "CAUTION".

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

Indicates that equipment or property damage can result if instructions are not followed.

SAFETY INSTRUCTIONS

Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

Note: Contains additional information important to a procedure.

Safety Icons Nomenclature

This manual and the equipment has numerous safety icons.

These safety icons provide important operating instructions which alert you to potential personal injury hazards.

Personal Protection/Important Information

 READ THE MANUAL

 THINK SAFETY


 MAINTENANCE PROCEDURE

 WEIGHT RATING

 EYE PROTECTION

 HAND PROTECTION

 HEAD PROTECTION

 HEARING PROTECTION

 INSPECT EQUIPMENT

 OEM PARTS ONLY

 PLACE IN NEUTRAL

 PROTECTIVE SHOES


 REMOVE KEY

 DAMAGED HAZARD LABEL

 SLOW VEHICLE PLACARD

 SET PARKING BRAKE

 STOP ENGINE

 SUPPORT STAND USAGE

 USE PROPER TOOLS

 VISUALLY INSPECT


 USE ROPS

 USE CORRECT PARTS


Prohibited Actions

 DO NOT ALTER OR MODIFY


 DO NOT LEAVE OUT TOOLS


 DO NOT WELD

 NO ALCOHOL

 NO CHILDREN

 NO DRUGS

 NO PASSENGERS

 NO RIDERS

 NO BYSTANDERS


Hazard Avoidance

 BLOCK WHEELS


 CRUSHING HAZARD (body)

 CRUSHING HAZARD (foot)


 CRUSH HAZARD (rolling over)

 DEFECTIVE OR BROKEN PART


 FALLING HAZARD


 MAINTAIN SAFE DISTANCE


 OVERTURN HAZARD


 PINCH POINT HAZARD


 SAFETY ALERT SYMBOL


 SHARP OBJECT HAZARD

 ZERO PRESSURE


 COMPRESSED AIR HAZARD

 CRUSH HAZARD

 CRUSH HAZARD

 HIGH PRESSURE FLUID HAZARD

 HOT SURFACE HAZARD

 HEAVY OBJECT HAZARD

GENERAL SAFETY



WARNING



Read and Understand Manual

To prevent personal injury or even death, be sure you read and understand all of the instructions in this manual and other related OEM equipment manuals! This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. Do not allow persons to operate or maintain this unit until they have read this manual and have developed a thorough understanding of the safety precautions and how it works.

This unit was designed for a specific application;

DO NOT modify or use this unit for any application other than that for which it was designed.

Units operated improperly or by untrained personnel can be dangerous!



Fall Hazard

Do not use this implement as a work platform. Do not stand on top of the unit at any time. Do not ride on the tractor or the implement or allow others to ride.



Crush Hazard (Rolling Over)

To prevent serious injury or death, before disconnecting, leaving the operator's seat, servicing, adjusting, repairing, or performing other work on the implement, ALWAYS:

1. Stop the tractor or towing vehicle.
2. Shut off the engine and remove the ignition key.
3. Set the brakes.
4. Make sure wheel cylinder transport lock is attached.
5. Relieve hydraulic fluid pressure.



Injury Hazard

Do not permit children to play on or around the unit.



Impaired Operator Hazard

Do not attempt to operate this unit under the influence of drugs or alcohol. Review the safety instructions with all users annually.



Pinch Point /Sharp Object Hazard

Do not place any body parts between moving and / or stationary parts. The weight of the implement will easily cause serious bodily injury.



To prevent injury, use a tractor equipped with a Roll Over Protective System (ROPS).

Visually Inspect



Visually inspect the unit for any loose bolts, worn parts, or cracked welds, and make necessary repairs before using the unit.

Personal Protection Equipment

When working around or operating this unit, wear appropriate personal protective equipment. This list includes but is not limited to:



- A hard hat
- Protective shoes with slip resistant soles
- Protective goggles, glasses, or face shield
- Heavy gloves and protective clothing
- Ear muffs or plugs



Use Properly Rated Tools

To prevent serious injury: Use sufficient tools, jacks, and hoists that have the capacity for the job.



NO PASSENGERS ALLOWED

Do not carry passengers anywhere on or in the tractor or implement.



Rolling Hazard

To prevent serious injury, lock the wheels when performing assembly, maintenance, repairs, or when preparing for storage.

ASSEMBLY SAFETY



WARNING



Crush Hazard

Use support blocks or safety stands rated to support the load when assembling the unit or performing maintenance. Never work under equipment supported by hydraulics. Hydraulics can drop equipment instantly if controls are actuated even when power to the hydraulics is shut off.



Trapped Air Hazard

When installing, replacing, or repairing hydraulic system cylinders or parts, make sure that the entire system is charged and free of air before resuming operations. Failure to bleed the system of all air can result in improper machine operation, causing severe injury.

TOWING SAFETY

WARNING



Unexpected Separation Hazard

If the safety chain does not have a current certification tag, do not use the unit until properly certified chains are installed. Substandard safety chains could allow the unit to separate from the tow vehicle, resulting in equipment damage and personal injury.



Loss of Control

A minimum of 20% of the combined tractor and equipment weight should be on the front wheels to ensure adequate stability during transport and operation. To avoid serious injury or death from a loss of control accident, maintain 20% weight on the front wheels. Add front end weight if necessary.



Hitch and coupling on the towing vehicle must be rated equal to, or greater than, the unit's "gross vehicle weight rating" (GVWR).

SAFETY INSTRUCTIONS



Towing the implement requires care! Both the implement and tow vehicle must be in good working condition. Securely attach the unit to the tow vehicle using a high strength, appropriately sized hitch pin with a mechanical retainer and attach the safety chain.



Check the tires for tread wear, inflation pressure, and overall condition before towing the unit.



Inspect the hitch and coupling for wear or damage. **DO NOT** tow the unit using a defective hitch or coupling!



Make sure the lug nuts holding the wheels are tight (torque to specifications) and that none are missing.



Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the unit.

Operate the towing vehicle from the operator's seat only.



When transporting, remember the implement may be wider than your tractor and extreme care must be taken to allow for safe clearance.



Be aware of physical surroundings and especially bystanders, particularly children, before moving the unit! This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.

Never use independent braking with unit in tow as loss of control and/or upset of unit may result.

Always drive at a safe speed relative to local conditions, and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.

Reduce speed prior to turns to avoid the risk of overturning.

Avoid sudden uphill turns on steep slopes.

Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.

Watch for overhead obstructions and side clearances while transporting.

Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping, etc.

Safety Chain

SAFETY INSTRUCTIONS



Make sure the safety chain from the unit is securely fastened to the tow vehicle.

Always follow state and local regulations regarding a safety chain when towing farm equipment on a public highway.

Do not use any device other than an approved safety chain. Only a safety chain (not an elastic or nylon/plastic tow strap) should be used to retain the connection between the tow vehicle and the unit in the event of separation of the primary attaching system.

Highway and Transport Operations

SAFETY INSTRUCTIONS



Do not exceed a towing speed of more than 20 mph (32 KPH) on a public roadway.

Tires supplied by the manufacturer are designed to operate NO MORE THAN 20 mph. Do not exceed the maximum speed or tire failure may occur.



When transporting the implement on public roads, use approved accessory lighting, flags, or other necessary warning devices to protect operators of other vehicles on the highway during daytime and nighttime transport. Various safety lights and devices are available from your dealer.



When towing the unit on public roads, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.

Make sure the SMV placard is clearly visible to vehicles approaching from the rear.

Some localities prohibit the use of flashing amber lights. Local laws should be checked for all highway lighting and marking requirements.

Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Plan your route to avoid heavy traffic.

Be observant of bridge load restrictions. Do not cross bridges rated lower than the gross weight at which you are operating.

Make sure the wheel lift cylinder transport locks are installed, and the jack stand is in its storage position before transporting the unit.

When transporting the implement on rough or uneven surfaces, drive slowly to prevent bouncing and loss of contact of the front wheels and the ground.

OPERATION SAFETY



WARNING



Crush Hazard (Rolling Over)

Do not clean, lubricate, or make adjustments while the unit is moving.



Never allow inexperienced or untrained personnel to operate the implement or tractor without supervision.



Enter And Exit Tractor

To avoid being run over, do not enter or exit tractor when it is moving. Avoid serious injury or death, from contact with rotating tires, by entering or exiting tractor only when it is completely stopped.



Safe Distance

Keep all bystanders, especially children, away from the tractor and implement during operation.



Overturn Hazard

Pick the most level route possible when transporting across fields. Avoid the edges of ditches, gullies, or steep hillsides.

Be especially careful when turning on slopes with the wheels down. Never turn uphill with the wheels down except at slow speed and a low rate of turn. Never transport or operate this machine on steep slopes.

SAFETY INSTRUCTIONS



Periodically clear the unit of brush, twigs, or other materials to prevent buildup of dry, combustible materials.



Visually check all fasteners for tightness or damage before and after operation. Repair immediately if required.

Tractor Requirements



WARNING



Tractor Owner/Operator Manual

Always refer to the tractor Operator's Manual to ensure compatibility and maximum safety.

Be familiar with the location, settings, and function of the tractor controls before using this equipment.

SAFETY INSTRUCTIONS

Do not use a tractor of more than the recommended HP to prevent damaging implement components.

Tractor Safety Devices

If transporting or operating the tractor and implement near a public roadway, the tractor must be equipped with proper warning lighting and a Slow Moving Vehicle (SMV) emblem, which are clearly visible from the rear of the unit. Lights and a SMV emblem must be attached directly to the implement if the visibility of the tractor warning signals is obscured.



Never operate the tractor PTO with the PTO master shield missing or in the raised position.

ROPS and Seat Belt

The tractor must be equipped with a Roll Over Protective Structure (ROPS) (tractor cab or roll-bar) and seat belt to protect the operator from falling off the tractor, especially during a roll-over where the driver could be crushed and killed.

Only operate the tractor with the ROPS in the raised position and seat belt fastened.

WARNING

-   **Rollover Hazard**
To avoid serious injury or death from falling off tractor, equipment runaway, rollover, or crushing:
- 1) Use ROPS equipped tractor.
 - 2) Keep ROPS locked in the UP position.
 - 3) Only operate the equipment when seated in the tractor seat.
 - 4) Always fasten seat belt when operating the tractor and Implement.




Attaching to Tractor


Prior to Connecting Unit

Make sure the unit is resting on the ground or the transport lock is securely installed over the wheel cylinder rod before attaching the unit to the tractor.

Connecting to Tractor

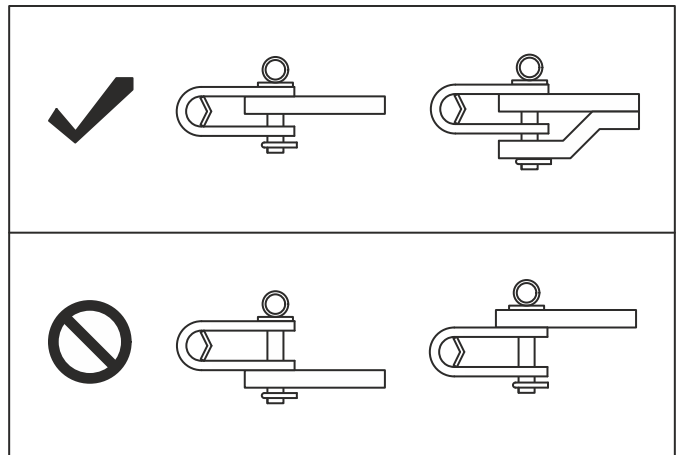
WARNING

-    **Crush Hazard**
Use care when attaching the unit to the tractor. Never place any part of your body under the tongue or hitch assembly. Do not allow anyone to stand between moving tractor and implement during hook-up operations.

-  **Unexpected Separation Hazard**
If towing the unit with a drawbar, use only a certified, hardened drawbar pin with a retainer clip. Do not use homemade pins, bolts, or any other type of retaining device. Always install the retainer clip, making sure the hitch and unit are securely fastened to the tow vehicle.
Using a pin not intended for this type of towing can result in unexpected separation of the unit from the tow vehicle, resulting in equipment damage and personal injury.


SAFETY INSTRUCTIONS


Connect implement hitch to the tractor properly.



Hydraulic Component Safety

WARNING

-  **High-Pressure Fluid Hazard**
Before applying pressure to the system, make sure all components are tight and that the hydraulic lines, hoses, fittings, and couplings are not damaged.

-  **Hydraulic Pressure**
This unit operates with hydraulic pressures of 2500 to 3000 psi (170 to 205 bars).

⚠️ WARNING

High-Pressure Fluids

1. Check or tighten all connections BEFORE pressurizing system.
2. Release all pressure before removing hoses and/or valves by:
 - a. Stopping engine.
 - b. Holding hydraulic control levers in float or neutral position.
3. DO NOT use your bare hand to check for potential leaks. Always use a board or cardboard when checking for a leak.

Escaping hydraulic fluid under pressure, even a pinhole size leak, can penetrate body tissue, causing serious injury and possible death. If fluid is injected into your skin, it must be treated immediately by a doctor familiar with this type of injury.



Wear proper hand and eye protection when searching for a high-pressure hydraulic leak.

Use a piece of wood or cardboard as a backstop instead of hands to identify and isolate a leak.

If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Without immediate medical treatment, serious infection or toxic reaction can develop if hydraulic fluid penetrates the surface of the skin.

Trapped Air Hazard

- When installing, replacing, or repairing hydraulic system cylinders or parts, make sure that the entire system is charged and free of air before resuming operations. Failure to bleed the system of all air can result in improper machine operation, causing severe injury.

High-Pressure Separation Hazard

- Replace any worn, cut, abraded, flattened, or crimped hoses.

Zero Pressure

- Relieve pressure from the hydraulic system before servicing or disconnecting from the tractor.

High-Pressure Hazard

- Do not make any temporary repairs to the hydraulic lines, fittings, or hoses using tape, clamps, or cement. The hydraulic system operates under extremely high pressure and temporary repairs may fail suddenly and create a hazardous/dangerous situation.

⚠️ CAUTION

Explosive Separation Hazard

- Be sure all hydraulic pressure is relieved before disconnecting hydraulic lines or fittings between implement and the tractor hydraulic system.

NOTICE

Make sure components in the hydraulic system are kept clean and in good working condition.

MAINTENANCE SAFETY

⚠️ WARNING

Use Properly Rated Tools

- Use sufficient tools, jacks, and hoists that have the capacity for the job.

Crush Hazard

- Use support blocks or safety stands rated to support the load when performing maintenance.

SAFETY INSTRUCTIONS

Follow all operating, maintenance, and safety instructions found in this manual.

- Understand the service procedure before performing the work. Keep area clean and dry.

- Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts.

- Do not leave tools lying on the unit.

- Do not modify unit or safety devices. Do not weld on the unit. Unauthorized modifications may impair its function and safety.

If equipment has been altered in any way from the original design, the manufacturer does not accept any liability for injury or warranty.

- Never replace hex bolts with less than Grade 5 bolts unless otherwise specified. In locations where Grade 8 bolts are used, Grade 8 replacements are required.



Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore the unit to original specifications.

The manufacturer will not accept responsibility for damages as a result of the use of unapproved parts.

Tires Safety

WARNING



Explosive Separation Hazard

Do not attempt to mount a tire onto a wheel unless you have the proper equipment and experience to do the job. Failure to follow proper procedures when mounting a tire on a wheel can produce an explosive separation, which may result in serious injury or death.



Explosive Hazard

Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure, resulting in a tire explosion. Welding can structurally weaken or deform the wheel.



Flying Objects Hazard

Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called to service and/or mount tires.

When inflating tires, use a clip-on chuck and extension hose. Always stand to the side of the tire when inflating, and NOT in front of or over the tire assembly. Make sure the tires are inflated evenly.

SAFETY INSTRUCTIONS



Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure.



Check tires for low pressure, cuts, bubbles, damaged rims, or missing lug bolts or nuts.



Keep wheel lug nuts or bolts tightened.



Always install replacement tires and wheels with appropriate capacity to meet or exceed the weight of the unit.

Bolt Torque Requirements

It is extremely important to apply and maintain proper torque on all bolts. Use a torque wrench to assure the proper amount of torque is being applied to the fastener.

Start all bolts or nuts by hand to prevent cross threading.

Torque figures indicated in the chart are used for non-greased or non-oiled threads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.



The chart gives correct torque values for various bolts and cap screws. Tighten all bolts to the torques specified in the chart unless otherwise noted. Check tightness of bolts periodically, using the bolt torque chart as a guide. Always replace hardware with the same Grade bolt.

WARNING



Equipment Failure

The torque value for bolts and cap screws are identified by their head markings. Replacing higher "Grade" bolts (Grade 5) with lower Grade bolts will lead to equipment failure and can result in injury or death. Always use replacement bolts with the same Grade markings as the removed bolt.

Bolt Diameter	Bolt Torque Specifications			
	Grade 5		Grade 8	
	 3 Radial Lines		 6 Radial Lines	
	N·m	ft.lbs.	N·m	ft.lbs.
1/4"	12	9	17	12
5/16"	25	19	36	27
3/8"	45	33	63	45
7/16"	72	53	100	75
1/2"	110	80	155	115
9/16"	155	115	220	165
5/8"	215	158	305	220
3/4"	390	290	540	398
7/8"	570	420	880	650
1"	850	630	1320	970

Tire and Lug Torque Specifications

Tire Size	Ply Rating	Lug Size	Lug Torque (lb.ft.)
7.6 x 15	8 Ply	1/2"	80
9.5 x 15	8 Ply	1/2"	80
12.5 x 16	14 Ply	9/16"	70

Welding Repairs



Before performing any type of welding repair to the implement, contact T.G. Schmeiser Co., Inc. for approval. Repair welding must be done with care and with procedures that may be beyond the capabilities of the ordinary welder.



WARNING



Personal Injury Hazard

Repairs or modifications to the implement can result in serious injury or death should these repairs fail.

NOTICE

Anyone performing a welding repair should be certified in accordance to the American Welding Society (AWS) standards.

STORAGE SAFETY



WARNING



Hazard And Information Signs

Replace any missing or hard-to-read safety signs. Safety sign placement and part numbers can be found in the Nomenclature section of this manual.



Damaged Parts Hazard

Do not use this unit if it is in need of repair. If you believe the unit has a defect which could cause damage, injury, or death, you should immediately stop using the unit.

SAFETY INSTRUCTIONS



Store the implement in an area away from human activity.



Do not permit children to play on or around the stored unit at any time.



Block the wheels to prevent the implement from rolling.

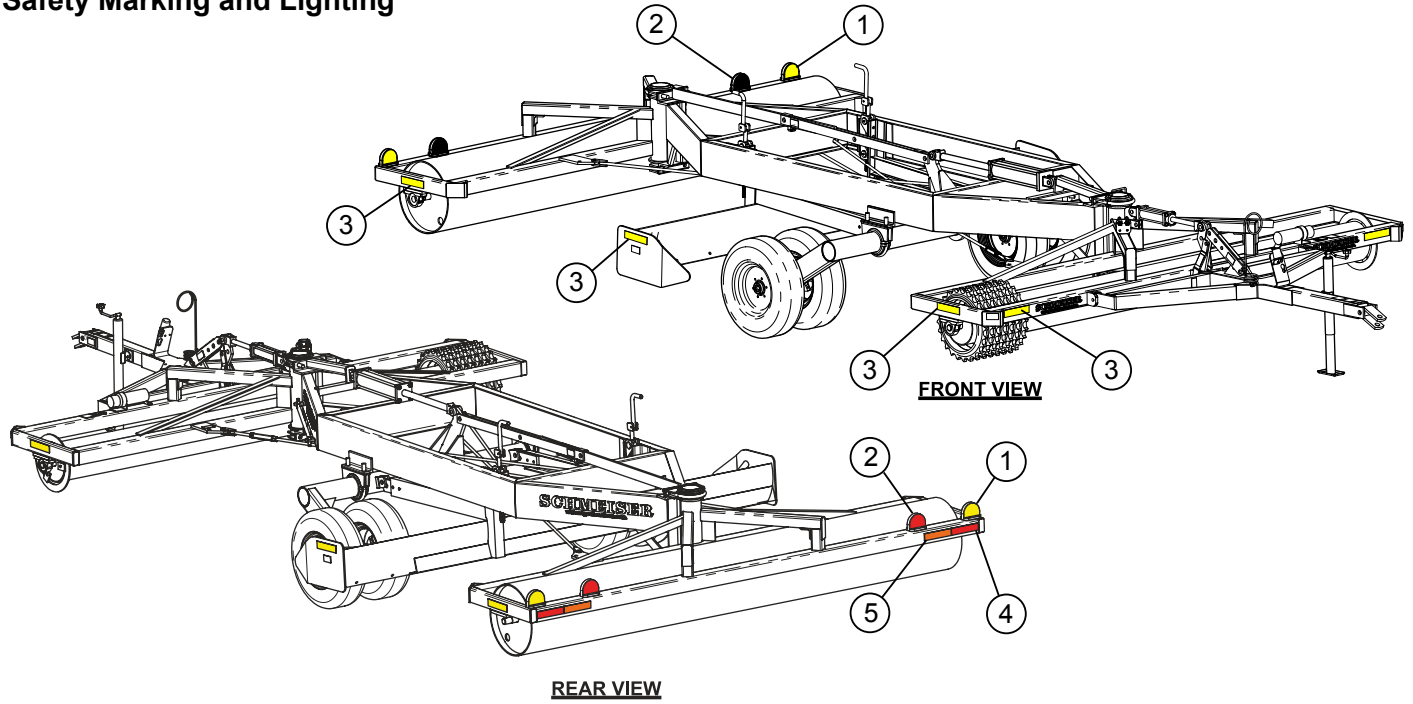


When using compressed air to clean implement, wear safety glasses.

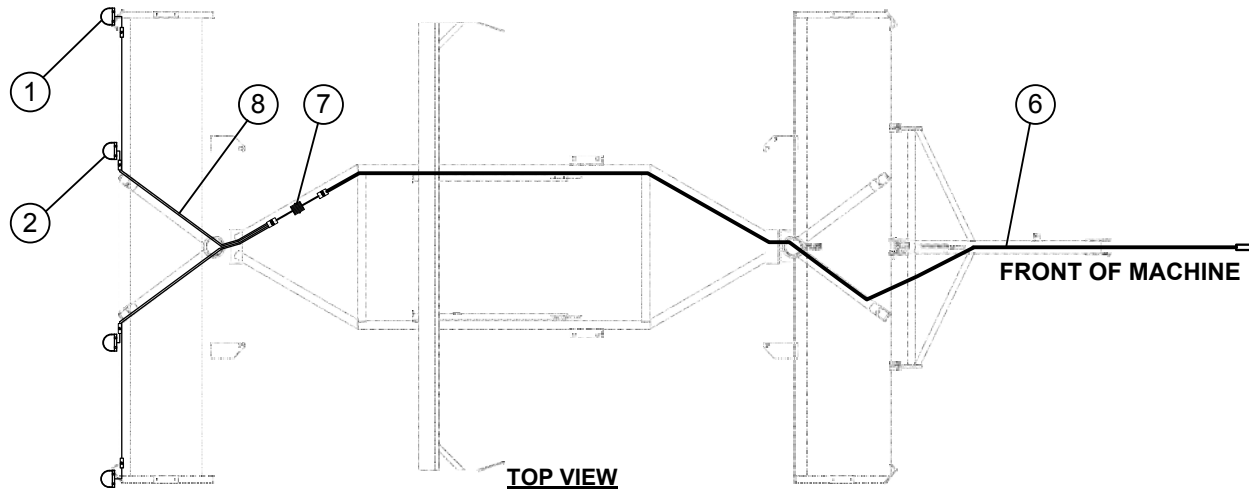
DISPOSAL OF EQUIPMENT AT END OF USEFUL LIFE

The T. G. Schmeiser implement has been designed for the specific purpose of conditioning the ground in agricultural applications. When this unit is no longer capable of doing its designed purpose, it should be dismantled and scrapped. Do not use any materials or components from this unit for any other purpose.

Safety Marking and Lighting



Safety Lights Wiring Diagram



##	Part Number	Description	Q'ty
1	GLT-LSDY	Lamp, Surface Mount Double Yellow	2
2	GLT-LSSR	Lamp, Surface Mount Single Red	2
3	D-2X9RY	Reflective Tape, Yellow	8
4	D-2X9RR	Reflective Tape, Red	2
5	D-2X9FL	Fluorescent Tape, Orange	2
6	GLT-HF30	Front Harness, 30 Ft. Long	1
7	GLT-FCM	Flasher Control Module	1
8	GLT-HW1024	Rear Wishbone Harness 10 Ft.-24 Ft.	1

SAFETY SIGNS AND DECALS

SAFETY INSTRUCTIONS

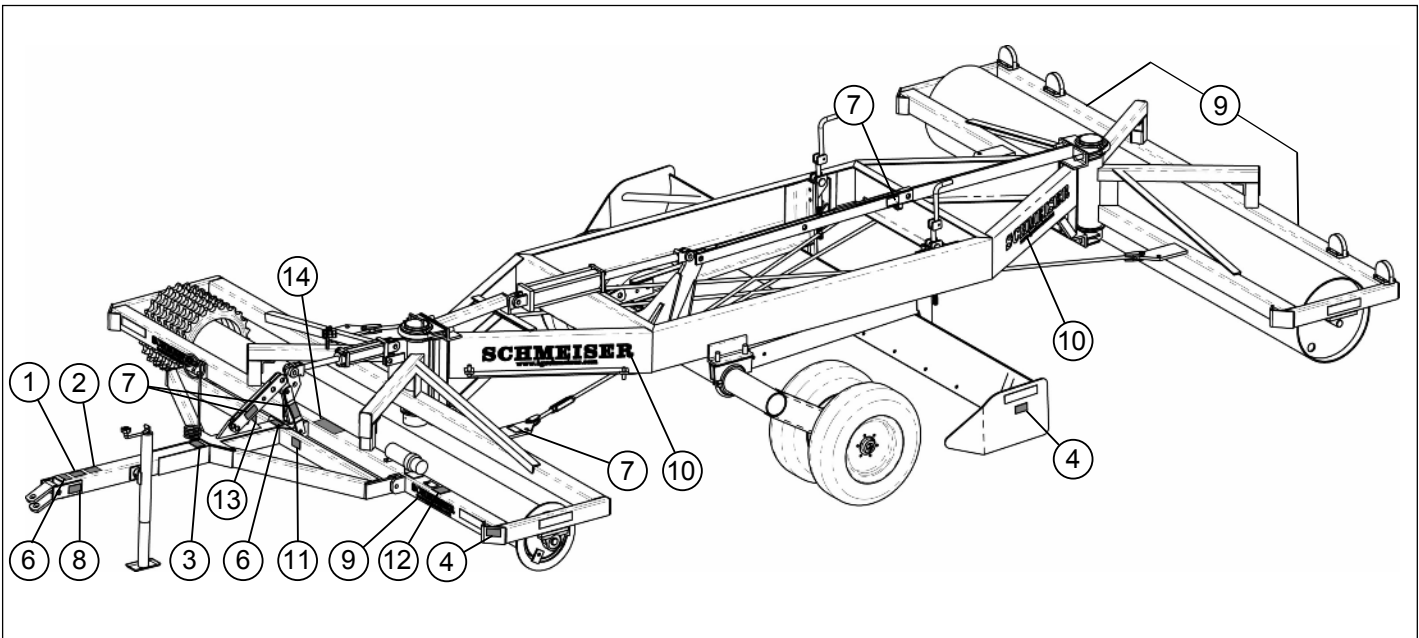
Follow all operating, maintenance, and safety instructions found in this manual.



Replace all worn or damaged safety and instruction decals.

- It is the responsibility of the customer to know the marking requirements of the local highway authorities and to comply with the regulations.
- Keep safety signs clean and legible at all times. Replace safety signs that are missing or have become illegible.
- Do not paint over, remove, or deface any safety signs or instructional decals on your equipment. Observe all safety signs and follow the instructions on them.
- When parts that display a safety sign are replaced, the replacement part should display the same sign.
- Make sure the safety signs and other instructional decals are legible and attached to the unit before use.
- Safety signs are available from your Distributor, Dealer Parts Department, or the factory.
- Use care when washing or cleaning the unit not to remove or damage the labels.
- Locations for the labels and replacement part numbers are shown in this section.

Safety Sign Placement

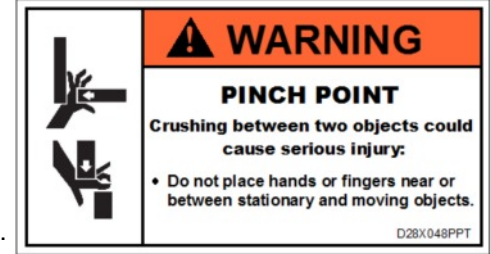


Safety Signs and Decals

Item	Part Number	Description	Qty.
1	D48X038RTM	Read the Manual	1
2	D48X038CRR	Crush / Rollover Hazard	1
3	D48X064HPF	High Pressure Fluids	1
4	D28X048SCE	Sharp Object Hazard	4
5	D16X026GRS	Grease Decal	16
6	D28X048PPT	Pinch Point	2
7	D28X048RBW	Transport Lockout	7
8	D76X040SGB	Transport Safety Chain	1
9	D32X208TGS	Schmeiser 2" X 13"	1
10	D104608BLK	Schmeiser 6-1/2" X 38"	4
11	D32X048RBC	Made in the USA	4
12	D48X48QR	Scan to Access Online Manual	1
13	DFEMALOGO1	FEMA	1
14	D48X144SOL	Orchard Leveler Instructions	1



5.



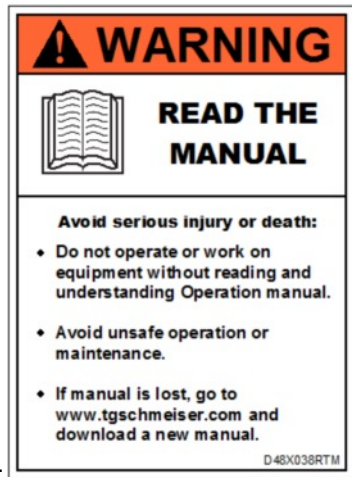
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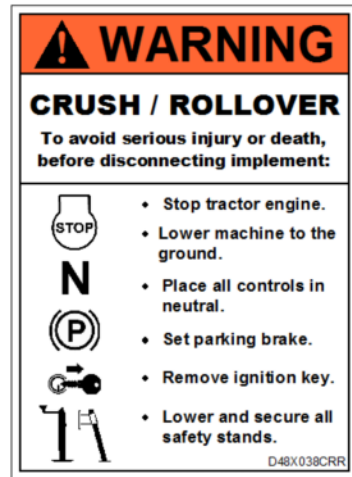
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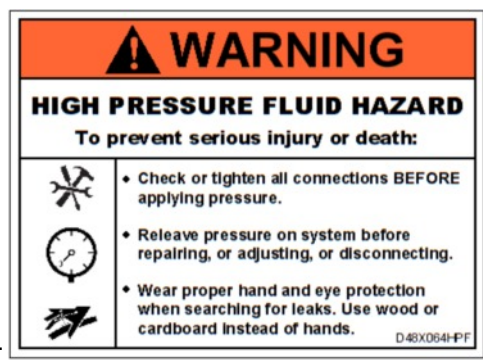
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11.



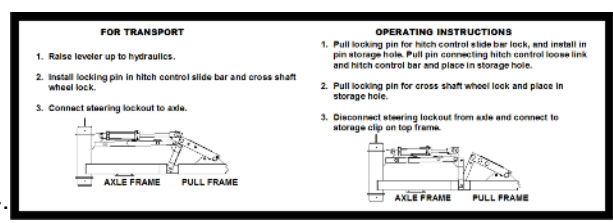
12.



13.



4.



14.

ASSEMBLY AND OPERATION



WARNING

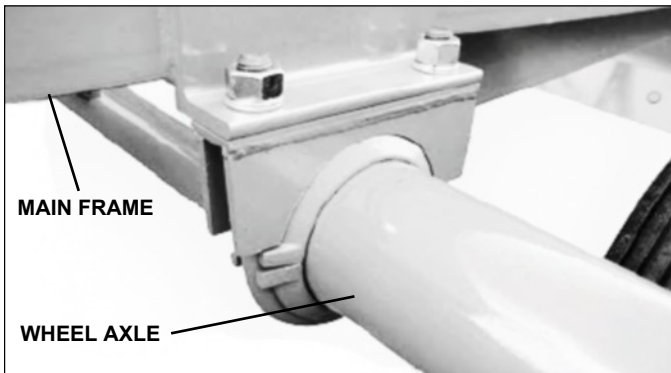


Understand Safety Procedures!

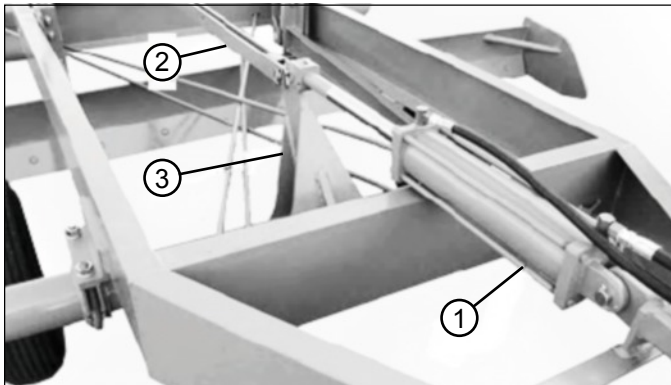
Read and understand all safety procedures described in this manual before performing any work on or around the implement.

Assembly Procedure

1. Place the bucket and wheel axle with front of bucket facing tires on wheel axle on the level ground. Place the main frame on top of both with hydraulic cylinder facing forward. Bolt wheel axle to main frame using two 1" axle bearing assemblies (see axle bearing assembly drawing on page 29 for details). Tighten all hex nuts.

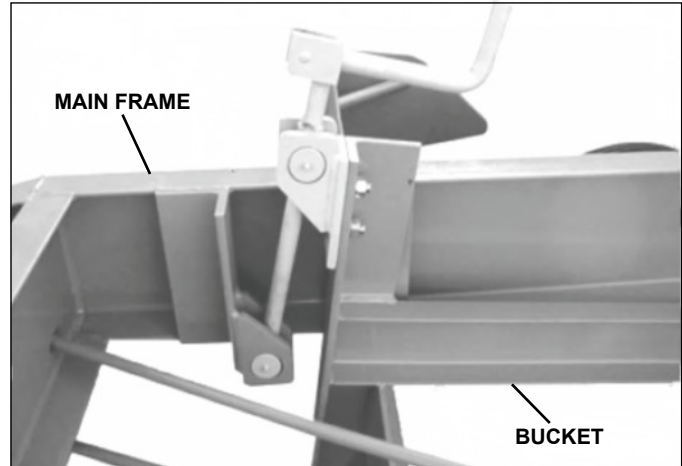


2. Connect 4" x 16" hydraulic cylinder (1) to wheel axle lever arm (3). Use smaller hole. Place main frame cylinder lockout bar (2) on top of the main frame and connect to wheel axle lever arm (3). Use 1-1/8" x 3" yellow clevis pin with 5/16" cotter pin. Connect other side of lockout bar to the main frame using 1-1/8" x 3" red clevis pin with 1/4" lynch pin.

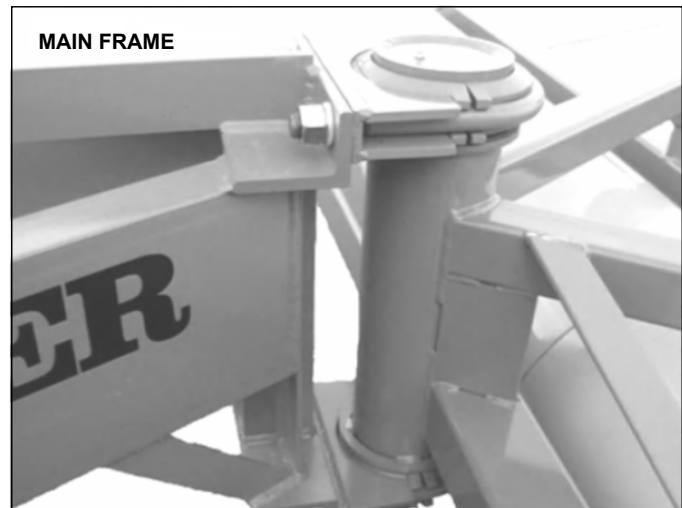


3. Install bucket pull arm pins through bucket arm and wheel axle clevis.

4. Install crank trunnions in main frame. Zerks should face inside of the main frame. Bolt bucket screw assembly to bucket. Screw crank into trunnion. Zerks should face inside of the main frame (see page 28 for crank assembly).



5. Locate front and rear roller frames. First, connect rear frame with smooth roller to main frame using (2) 1" axle bearing assemblies. Then, connect front frame with ring roller to main frame using (2) 1" axle bearing assemblies (refer to axle bearing assembly drawing on page 29 for details).



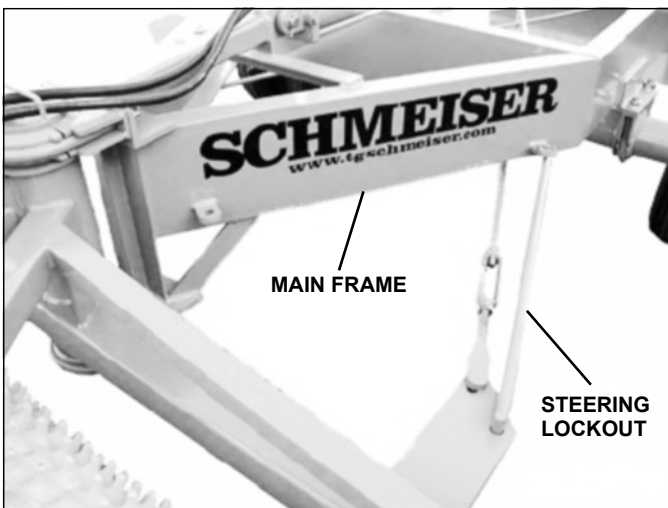
6. Mount pull frame with attached hitch control adjustment link to the front roller frame with 2-1/2" x 8" tie rod cylinder, hitch control pivot link, and wishbone link already attached (see drawing on page 26 for details).

7. Mount hydraulic cylinder manifold with attached hoses to the front roller frame. Connect short hoses to 2-1/2" x 8" cylinder, long hoses to 4" x 16" cylinder (refer to hydraulic diagram on page 32 for proper installation).



8. Mount tires and wheels to the wheel axle (refer to wheel axle assembly drawing on page 30 for details).

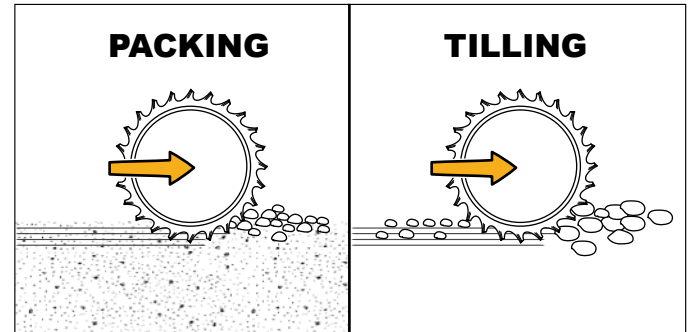
9. Square rear roller frame with bucket, and front roller frame with rear roller frame. Measure diagonally to the corners on the roller frames, adjust steering rod turnbuckles for square. Install steering lockout arm at left front corner.



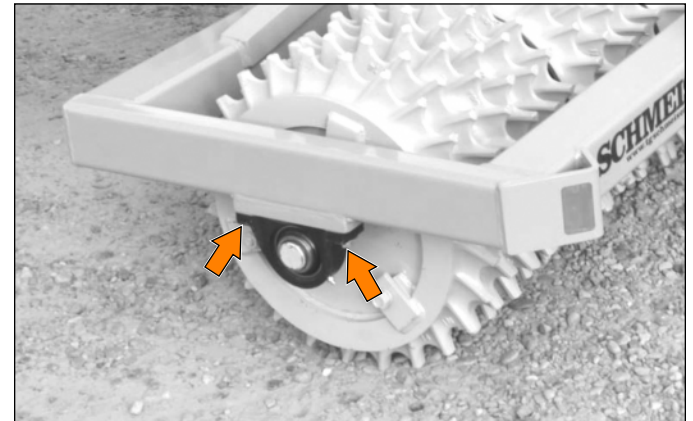
10. Connect long rear steering rods, then short front steering rods in slotted holes. Put (4) yellow 3/4" x 2-1/2" pins with 5/16" cotter pins. Adjust turnbuckles if necessary to keep both roller frames parallel.

Ring Roller Orientation

As shipped from the factory, the rollers are set up in a "packing" orientation. If it is desired to use the Model '77 Orchard Leveler's ring roller as a "tilling" tool, the ring roller must be reversed.



1. Remove the two 1/2" x 2-1/4" bolts, lock washers, and nuts from each pillow block bearing on the ring roller.







2. Turn the ring roller 180 degrees end-for-end to reverse its orientation.

3. Replace the bolts, lock washers, and nuts in the pillow block bearings.

Initial Setup Checklist

Efficient and safe operation of the implement requires that every user read and understand the operational instructions and all related safety instructions outlined in this manual.

This checklist is provided for the user/owner. It is important for both personal safety and to maintain the mechanical condition of the implement that this checklist is followed.

Initial Setup Checklist (prior to using for the first time)	
Location	Task
	Make sure the Implement is properly attached to the tractor. Refer to "Attaching to Tractor" on page 11.
	Make sure all hardware is properly installed and tightened. Refer to "Maintenance" on page 13.
	Check the condition of the rings and bearings for wear, hydraulic hoses for leaks. Replace if necessary.
	Lubricate all grease fittings. Refer to "Lubrication Points" on page 22.

Implement Break-In

Although there are no operational restrictions on the Implement when used for the first time, it is recommended that the following mechanical items be checked:

1. After 1/2 hour of operation:
 - a. Check all fasteners and tighten if necessary.
 - b. Make sure that the ring roller is in good condition.
2. After 10 hours of operation:
 - a. Go to the normal servicing and maintenance schedule, as defined in the Maintenance Section.

Connecting to the Tractor

1. Raise the jack stand until the tongue is at the height of the tractor drawbar.
2. Connect the hitch of the unit to the tractor. Attach the safety chain to the tractor's drawbar cage.

Note: *If a drawbar pin is used, it should be an OEM certified pin and retainer clip. On Category 3 pintle hitches use a 1-1/2" (38 mm) pin. On Category 3 clevis hitches use a 1-5/8" (40 mm) Pin.*

3. Raise the jack stand and rotate into its storage position.
4. Connect the hydraulic hoses to the proper ports on the tractor.

Note: *Hoses and quick disconnect hydraulic couplers are not supplied with the unit. These may be procured from a local equipment dealer.*

Detaching From Tractor

1. Park the tractor, place the transmission in park or neutral, and apply the parking brake. Shut down the engine, relieve all hydraulic pressure, and remove the key before exiting the tractor.
2. Block the wheels to prevent movement.
3. Remove the jack from its storage location and secure it to the hitch by fully inserting the locking pin through the jack and the hitch bracket. Use the jack to raise the hitch to the height needed to disconnect it from the drawbar.
4. Disconnect the hydraulic hoses from the tractor. Coil the hoses and store them on top of the implement.
5. Disconnect the hitch safety chain.
6. Remove the hitch pin and drive the tractor away from the implement.

MAINTENANCE

WARNING



Understand Safety Procedures!

Read and understand all safety procedures described in this manual before performing any work on or around the implement.

Lubrication Points

Add grease to the locations shown.

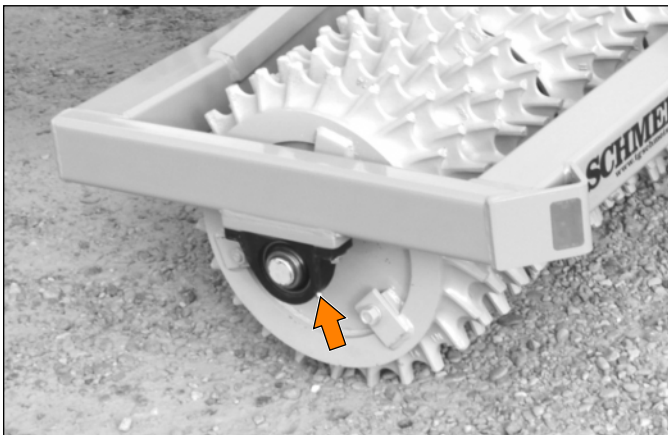
Wheel Hub Bearings

Re-pack with grease once a season – inspect bearings and races for wear and replace if necessary.



Roller Bearings

The ring roller bearings are greased at the factory. Prior to applying grease, allow 40 hours of operation time to break in seals. Then grease every 8 hours thereafter.

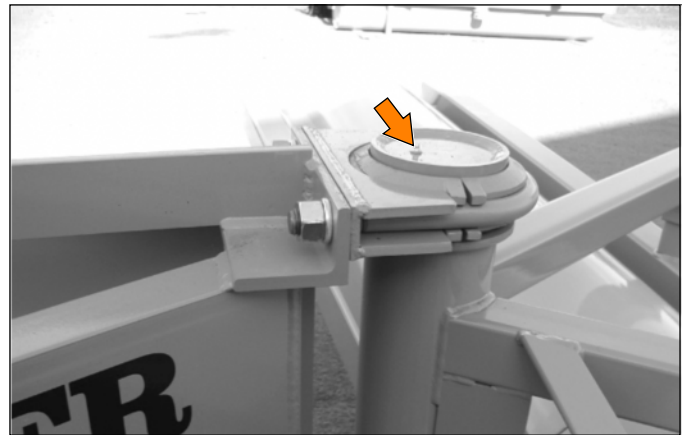


NOTICE

Roller bearings do not require lubrication during the initial assembly of the unit. Check for end play in the bearings prior to adding grease.

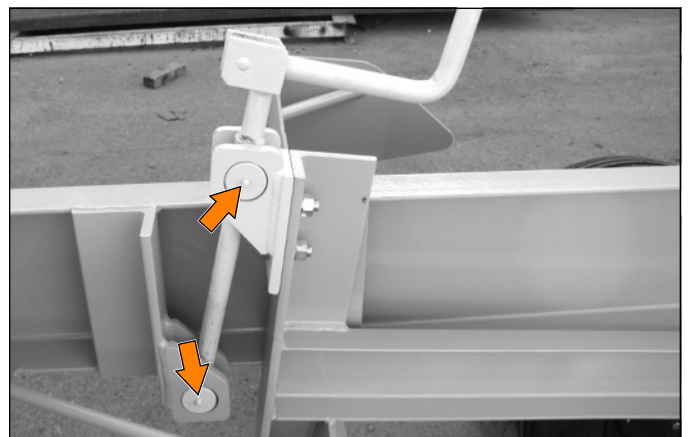
Pivot Mast Bearings

Lubricate the zerk fittings on the pivot masts with a good general purpose grease every 50 hours.



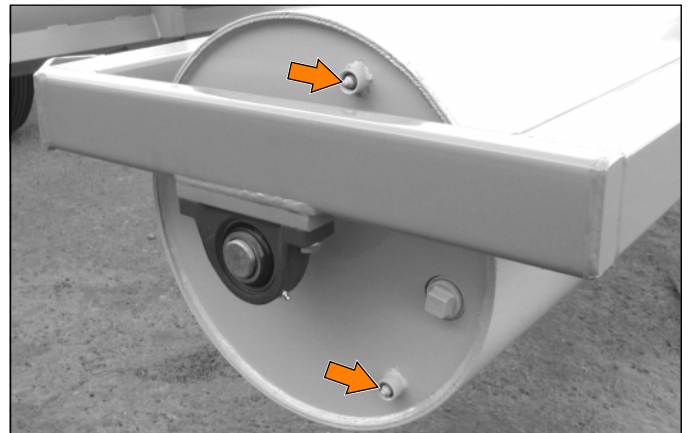
Bucket Cranks

Lubricate the zerk fittings on the bucket cranks with a good general purpose grease every 200 hours.



Differential Shaft

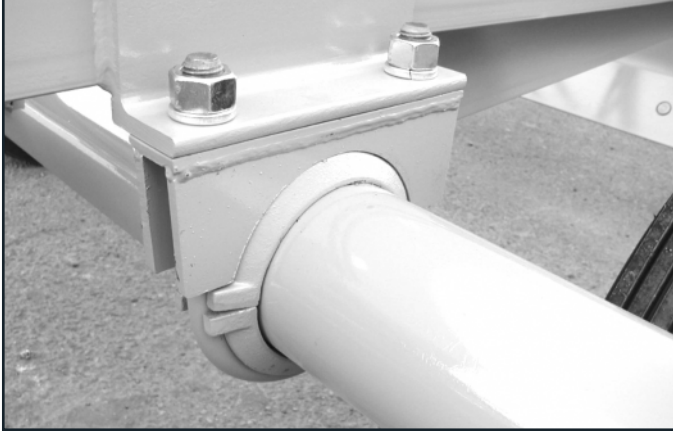
Rear split roller differential shaft should be greased daily.



Service Items

Wheel Axle Bearings

Visually inspect and replace when the castings are overly worn or broken.



Hydraulic Hoses

Inspect all hydraulic hoses and fittings for leaks or signs of wear. Replace any that are overly worn or damaged.



Pull Frame Linkage

Visually inspect and replace when worn or damaged or any pins are missing.



Tires

Check tire pressure and set to tire manufacturer's recommended specifications. Inspect the tires for wear and/or damage. Make sure the wheel lugs are tightened to the proper torque.

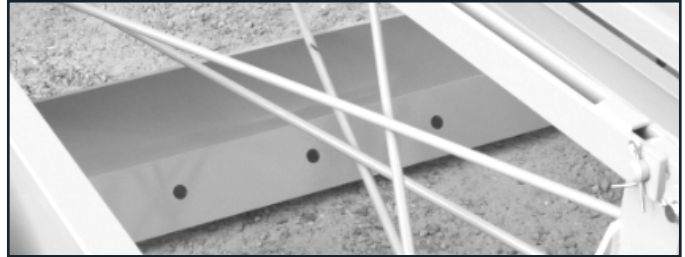


Ground Engaging Components

Bucket Blade

Ground engaging components are subject to abrasion and wear. Excessively worn components will require replacement.

Blades can be removed, turned over, and reattached to present a fresh edge. Replace the blades when both sides are worn out.



Ring Roller

Visually inspect Till An' Pak rings for wear and damage. Replace any excessively worn or damaged rings.





Maintenance Schedule

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent service.

Copy this page to continue the record.

Hours and Serviced By																				
Maintenance																				
Before Each Use																				
Ensure that all fasteners are tight, and all pins are secured in place.																				
Inspect the frame for structural fractures.																				
Make sure all warning decals are in place and legible.																				
Inspect all hydraulic hoses and fittings for leaks or signs of wear.																				
Check Till An' Pak rings for wear and damage. Replace if necessary.																				
Lubricate zerk fittings on ring roller bearings with a good general purpose grease.																				
Every 50 Hours or Weekly																				
Perform the Daily Maintenance schedule.																				
Lubricate zerk fittings on wing hinges and ring roller bearings with a good general purpose grease.																				
Check tire pressure and set to tire manufacturer's recommended specifications. Inspect the tires for wear and/or damage. Make sure the wheel lugs are tightened to the proper torque. Refer to "Tire and Lug Torque Specifications" on page 13.																				
Every 1000 Hours or Annually																				
Perform the Daily Maintenance schedule.																				
Perform the Weekly Maintenance schedule.																				
Lubricate zerk fittings on the transport wheel bearing hubs with a good quality wheel bearing grease. Fill each cavity just until resistance is felt. Do not force grease past the seals.																				
Remove debris and clean the entire implement with compressed air or a pressure washer.																				
Remove rust and apply a coat of paint to frame surfaces where the paint has been worn off or damaged.																				

STORAGE

Storage Preparation

After Model '77 Orchard Leveler field work is completed for a season, perform the following maintenance procedures before storing the implement.

1. Check all bolted connections. Ensure that the fasteners are tight, and all retaining pins are secured in place with appropriate retaining clips.
2. Check the tire pressure and set to the tire manufacturer's recommended specification. Inspect the tires for wear and/or damage. Make sure the wheel lugs are properly tightened. Refer to "Tire and Lug Torque Specifications" on page 13.
3. Inspect the frame for structure fractures and inspect the side wing pivot points for wear or damage.
4. Check all the bearings for signs of seal damage or excessive wear.
5. Inspect all the hydraulic hoses and fittings for leaks or signs of wear.
6. Check the ring rollers for wear and damage. If any roller teeth are excessively worn or damaged, they must be replaced.
7. Make sure all the warning decals are in place and legible. Replace any worn decals as needed.
8. Remove debris and clean the entire implement with compressed air or low pressure water.

NOTICE

To help prevent damage, avoid spraying air, water, steam, or cleaning solvents directly at the bearings and seals.

9. Lubricate all grease fittings on the frame members with a good general purpose lithium grease. Refer to "Lubrication Points" on page 26 for the location of the fittings.
10. Add grease to the fittings on the transport wheel bearing hubs with a good quality wheel bearing grease. Fill each cavity just until resistance is felt. Do not force grease past the seals.
11. Apply a thin layer of grease or rust preventative to all exposed metal surfaces of the cylinder rods.
12. To help prevent corrosion, remove rust and apply a coat of paint to frame surfaces where paint has been worn off or damaged.

Placing in storage

1. Raise the implement, place the side wings in the transport mode, and install the transport lock.

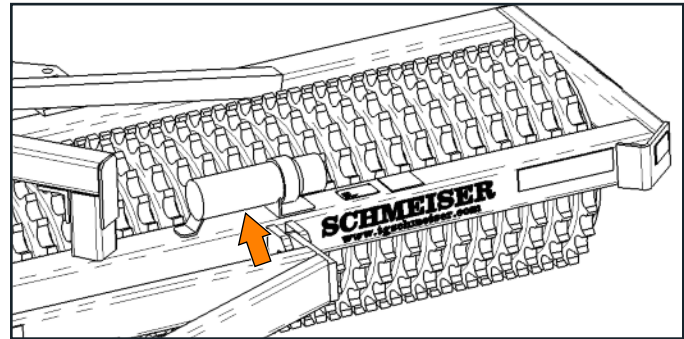
2. Move the Model '77 Orchard Leveler to a storage area with a firm and level base to prevent it from tipping or sinking into the ground. For best results, always store the Model '77 Orchard Leveler in a dry, protected location. Leaving this implement unprotected will shorten the service life.
3. Disconnect all hydraulic hoses, and unhitch the implement from the tractor. Refer to "Detaching From Tractor" on page 21.
4. Store the implement with the transport wheels extended in the transport mode and the wheel support lock installed over the cylinder rod. Do not leave the tractor attached to the implement while in storage.

Removing From Storage

Each season, perform the following inspection and maintenance before using the unit.

1. Read the operator's manual to review all safety, operational, and maintenance procedures.

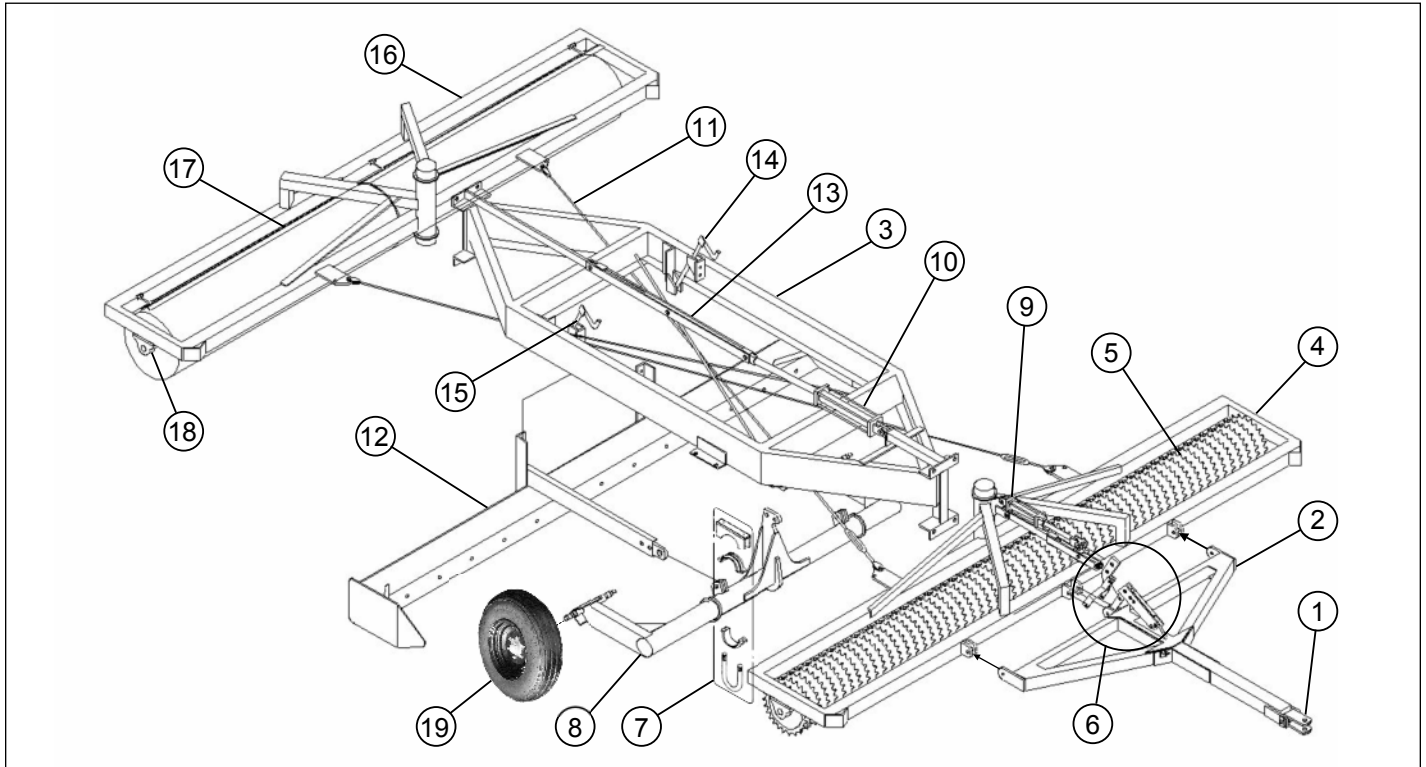
Note: Store the operator's manual in the document storage canister located on the front roller frame.



2. Perform any recommended maintenance that was not completed when the implement was put into storage.
3. Visually inspect the implement for wear or damage.
4. Check the tire pressure and set to the tire manufacturer's recommended specification. Inspect the tires for wear and/or damage.
5. Inspect all the hydraulic hoses and fittings for leaks and signs of wear or damage.
6. Make sure all the warning decals are in place and legible. Replace any damaged or missing decals.
7. Hitch the implement to a tractor and connect all hydraulic hoses. Refer to "Attaching to Tractor" on page 17. Place the implement in an area clear of overhead obstructions or power lines. Cycle the hydraulic system circuits to phase (synchronize) the hydraulic cylinders, verify proper operation, and check for leaks.

COMPONENT NOMENCLATURE

Component Locations



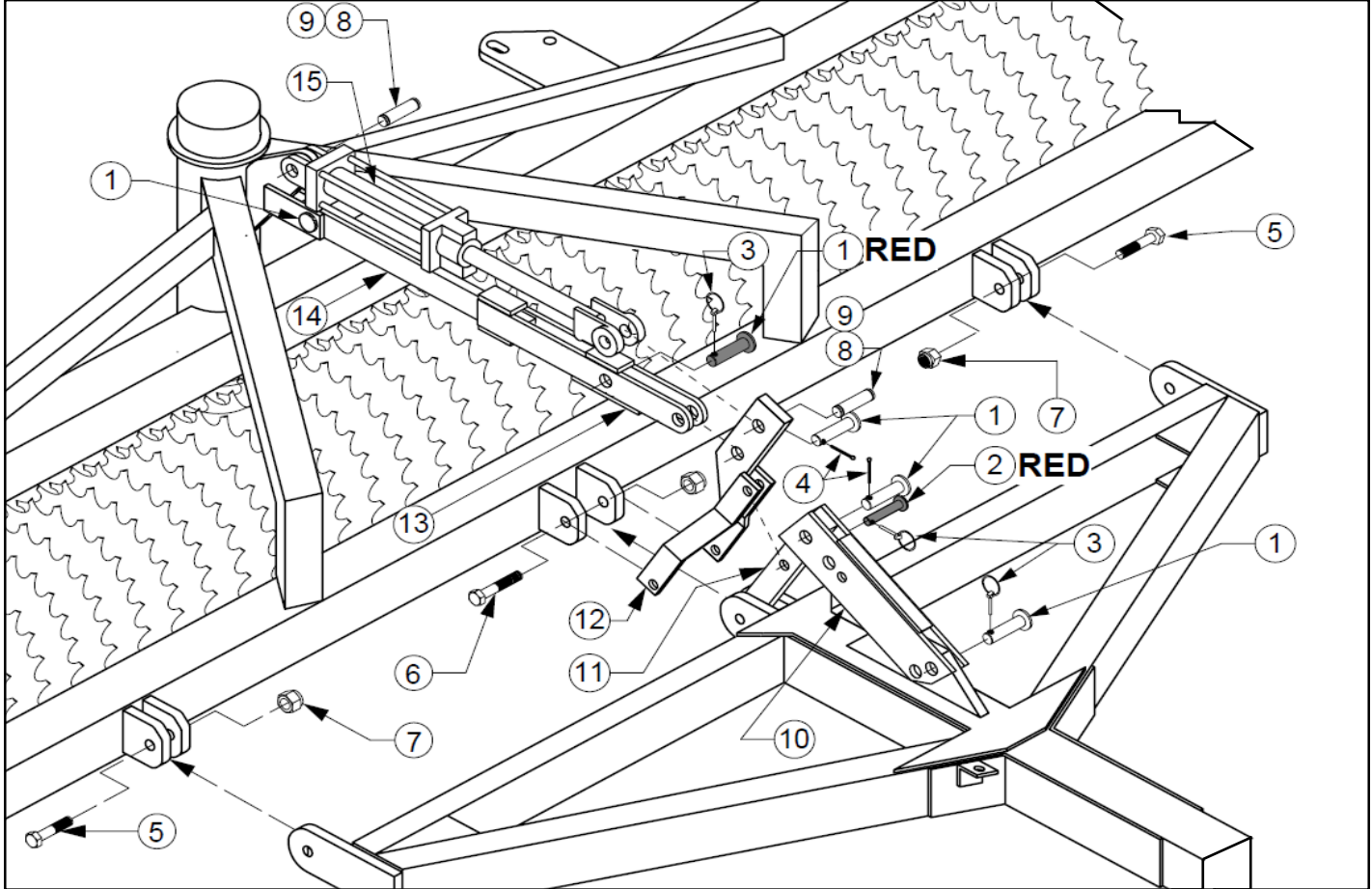
Item	Part Number	Description
1	TPP3021	Pull Frame Hitch
2	SOL-00A200	Pull Frame
3	SOL-00C100	Main Frame
4	-----	Front Roller Frame
5	-----	Ring Roller (see p.27 for details)
6	-----	Front Linkage (see p.26 for details)
7	SLL1353	Bearing Assembly (see p.29 for details)
8	SOL-00E200	Wheel Axle
9	GHC-25080T	Pull Frame Hydraulic Cylinder, 2-1/2 x 8
10	GHC-40160T	Wheel Axle Hydraulic Cylinder, 4 x 16
11	SOL-00D200	Steering Rods
12	-----	Bucket
13	SLL1475	Wheel Axle Cylinder Lockout Bar
14	SLL1525L	Bucket Screw LH (see p.28 for details)
15	SLL1525R	Bucket Screw RH (see p.28 for details)
16	-----	Rear Roller Frame
17	-----	Rear Roller w/ Mud Scraper (see p.31 for details)
18	TPP3150	Roller Bearings
19	GWT-761508	Tires

Ordering Parts

We manufacture a quality product that requires very little maintenance or repair. However, should a part break or become damaged, our knowledgeable staff can make sure you receive the part(s) to put your unit back into operation.

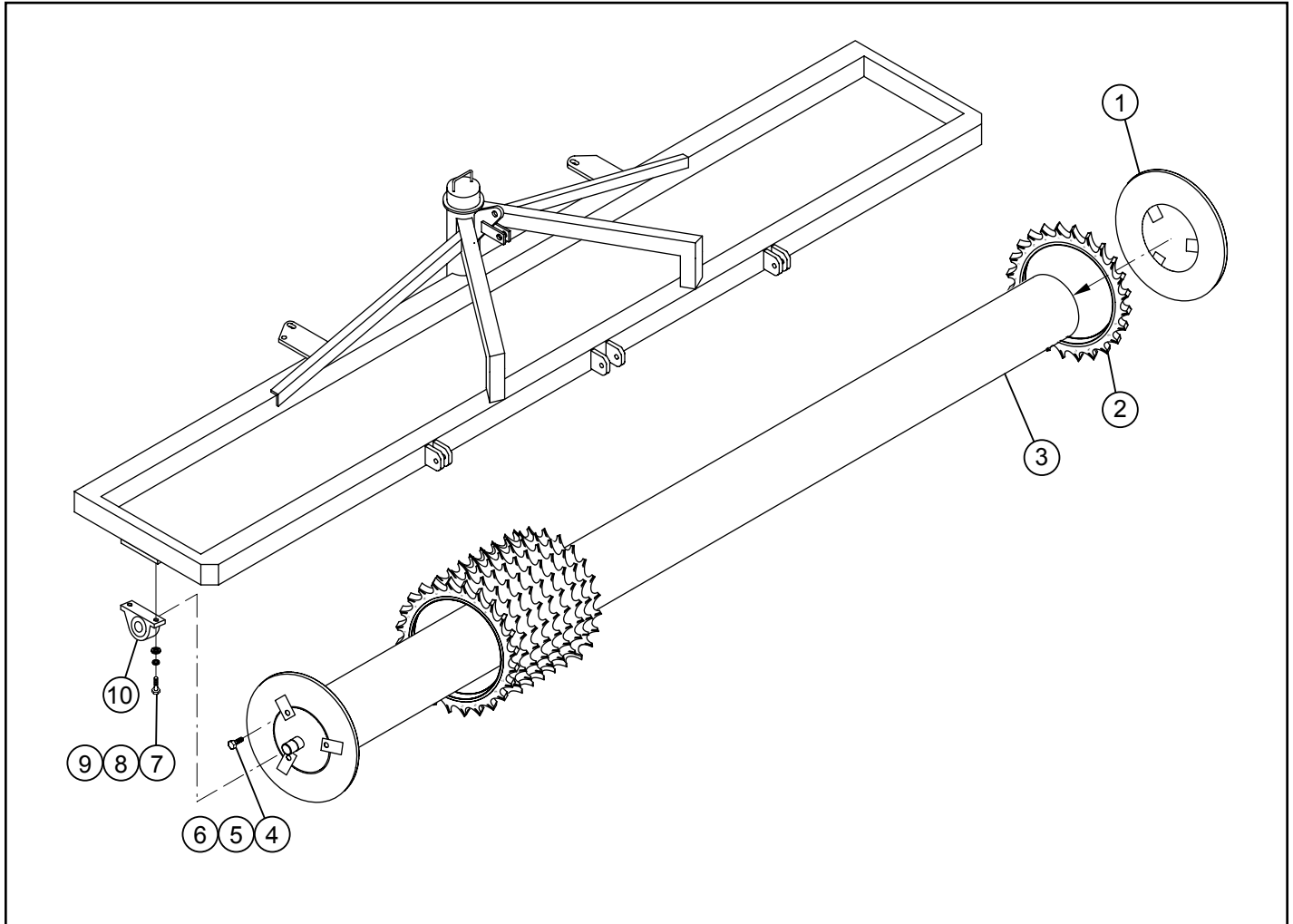
Parts Drawings

Model '77 Orchard Leveler Front Linkage Assembly



Item	Part Number	Description	Qty
1	GPN-12X040	3/4" X 2-1/2" Clevis Pin (lockout red pin)	5
2	GPN-16X040	1 X 2-1/2" Clevis Pin (4 yellow and 1 lockout red pin)	1
3	GPN-040LYN	1/4" Lynch Pin	3
4	GPN-05X40C	5/16" X 2-1/2" Cotter Pin	2
5	CSNC512064	3/4" X 4" NC Cap Screw Gr.5	2
6	CSNC512104	3/4" X 6-1/2" NC Cap Screw Gr.5	1
7	NYNUT-12NC	3/4" NC Nylon Lock Nut	3
8	GPN-1656HC	1" X 3-1/2" Cylinder Pin	2
9	GPN-03CLIP	5/32" X 3" Hair Pin Clip	4
10	SLL1201	Hitch Control Adjustment Link	1
11	SLL1203	Hitch Control Pivot Link	1
12	SLL1202	Hitch Control Wishbone Link	1
13	SLL1204	Hitch Control Sleeve	1
14	SOL-00B300	Hitch Control Slide Bar	1
15	GHC-25080T	2-1/2" X 8" Tie Rod Hydraulic Cylinder	1

Front Ring Roller Assembly

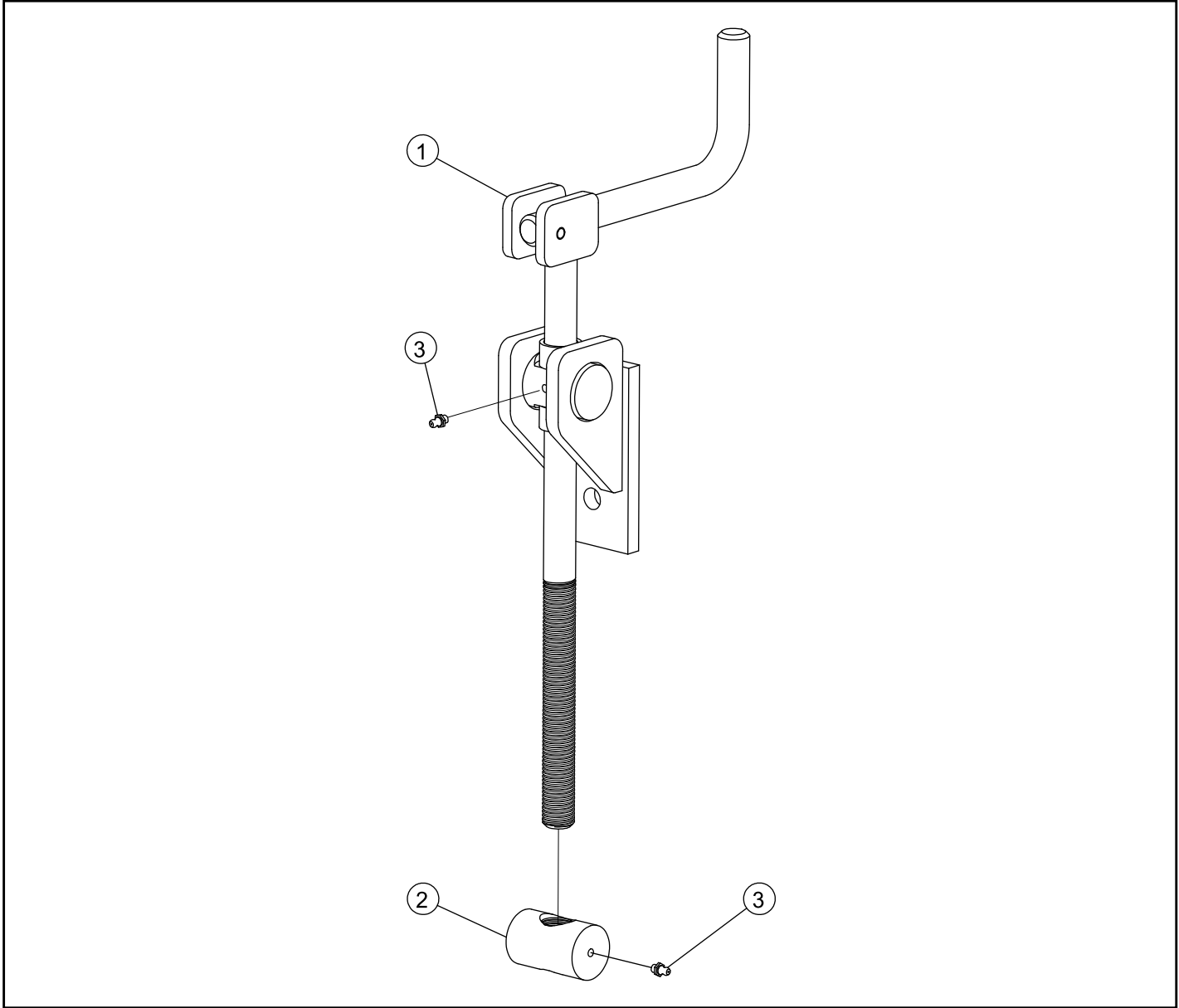


Item	Part Number	Description	Q'ty
1	-----	Ring Roller Retainer (see table below)	2
2	-----	Roller Ring (see table below)	Varies
3	-----	Roller Tube (see table below)	1
4	CBNC510020	5/8" X 1-1/4" NC Carriage Bolt	6
5	LWASHER-10	5/8" Lock Washer	6
6	HXNUT-10NC	5/8" NC Hex Nut	6
7	CSNC508036	1/2" X 2-1/4" NC Cap Screw	4
8	LWASHER-08	1/2" Lock Washer	4
9	HXNUT-08NC	1/2" NC Hex Nut	4
10	TPP3150	1-11/16" Pillow Block Bearing	2

Till An' Pak™ Tube, Ring, and Retainer Chart

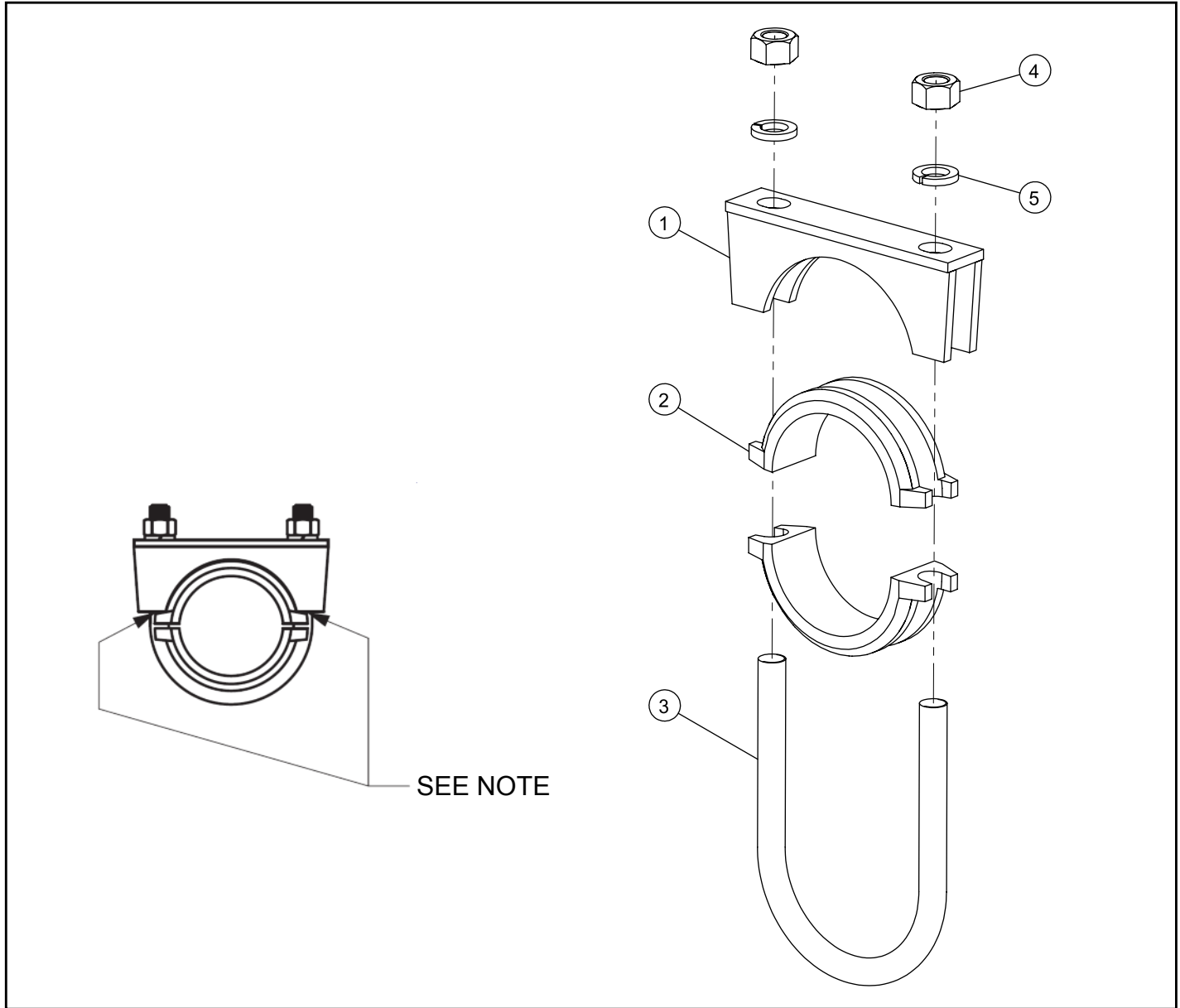
Tube Dia.	Ring Size (ID / OD)	Ring Part #	Retainer Size (ID - OD)	Retainer Part #
10"	12 / 16	TPP 3351	10 - 14	TPP 3206
10"	14 / 20	TPP 3353	10 - 18	TPP 3208
12"	14 / 20	TPP 3353	12 - 16	TPP 3210

Orchard Leveler Bucket Crank Assembly



Item	Part Number	Description	Q'ty
1	SLL1525R	Bucket Crank Assembly RH	1
	SLL1525L	Bucket Crank Assembly LH	1
2	SLL1526	Bucket Crank Rod Nut ACME Thread	2
3	GMB-ZERKDT	Drive Type Zerk Fitting	4

Model '77 Orchard Leveler Wheel Axle Bearing Assembly

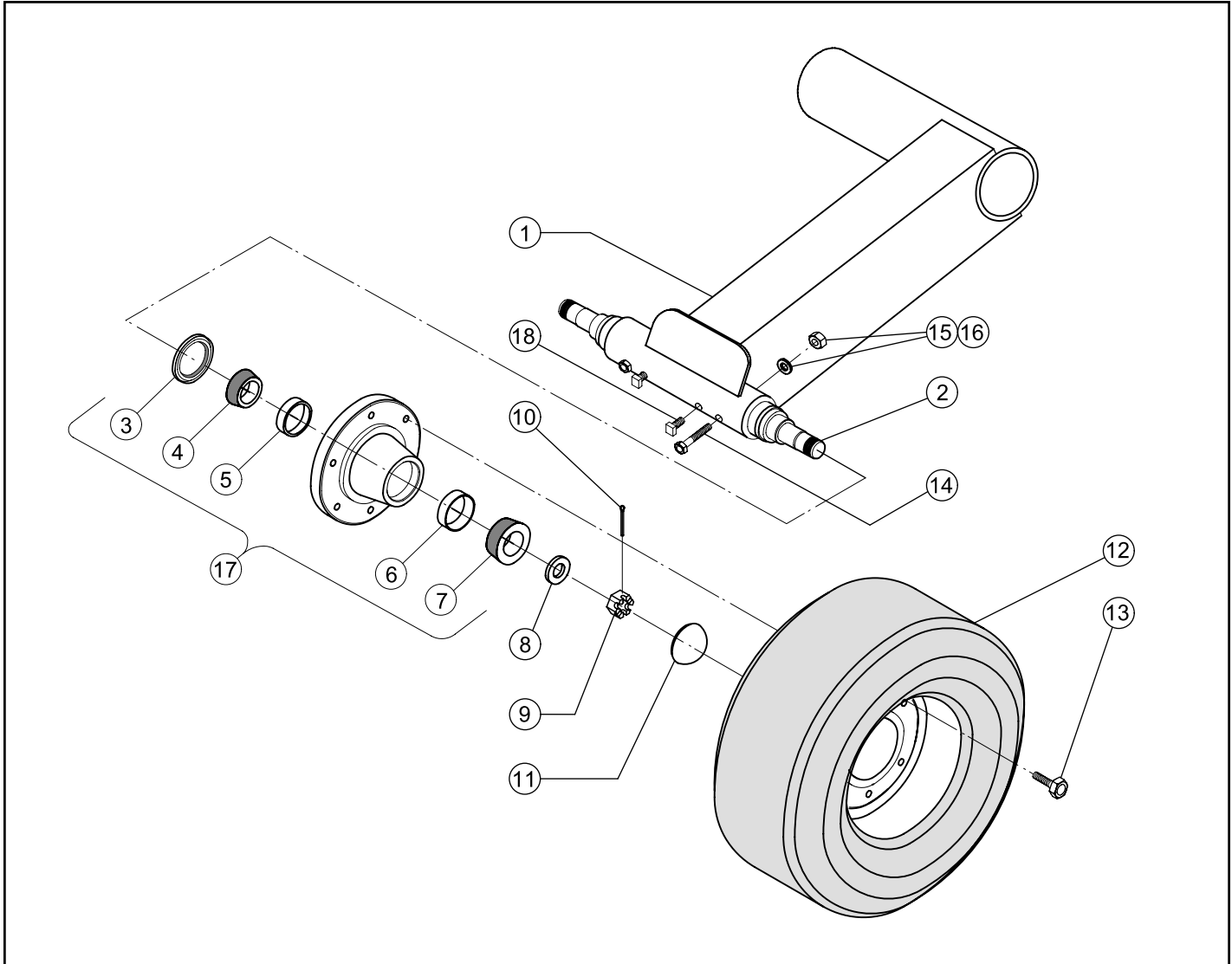


Item	Part Number	Description	Q'ty
1	SLL1351	Bearing Cradle Cap	4
2	SLL1350	1" Bearing Cap Casting	8
3	UBNC16122R	1" NC Bearing U-Bolt	4
4	HXNUT-16NC	1" NC Hex Nut	8
5	LWASHER-16	1" Lock Washer	8
	SLL1352	U-Bolt Assembly (includes items 3, 4, 5)	
	SLL1353	Wheel Bearing Assembly (includes items 1-5)	

Note: Ensure equal amount of space on each side before tightening U-bolts.

Ensure equal number of threads on each side of U-Bolt.

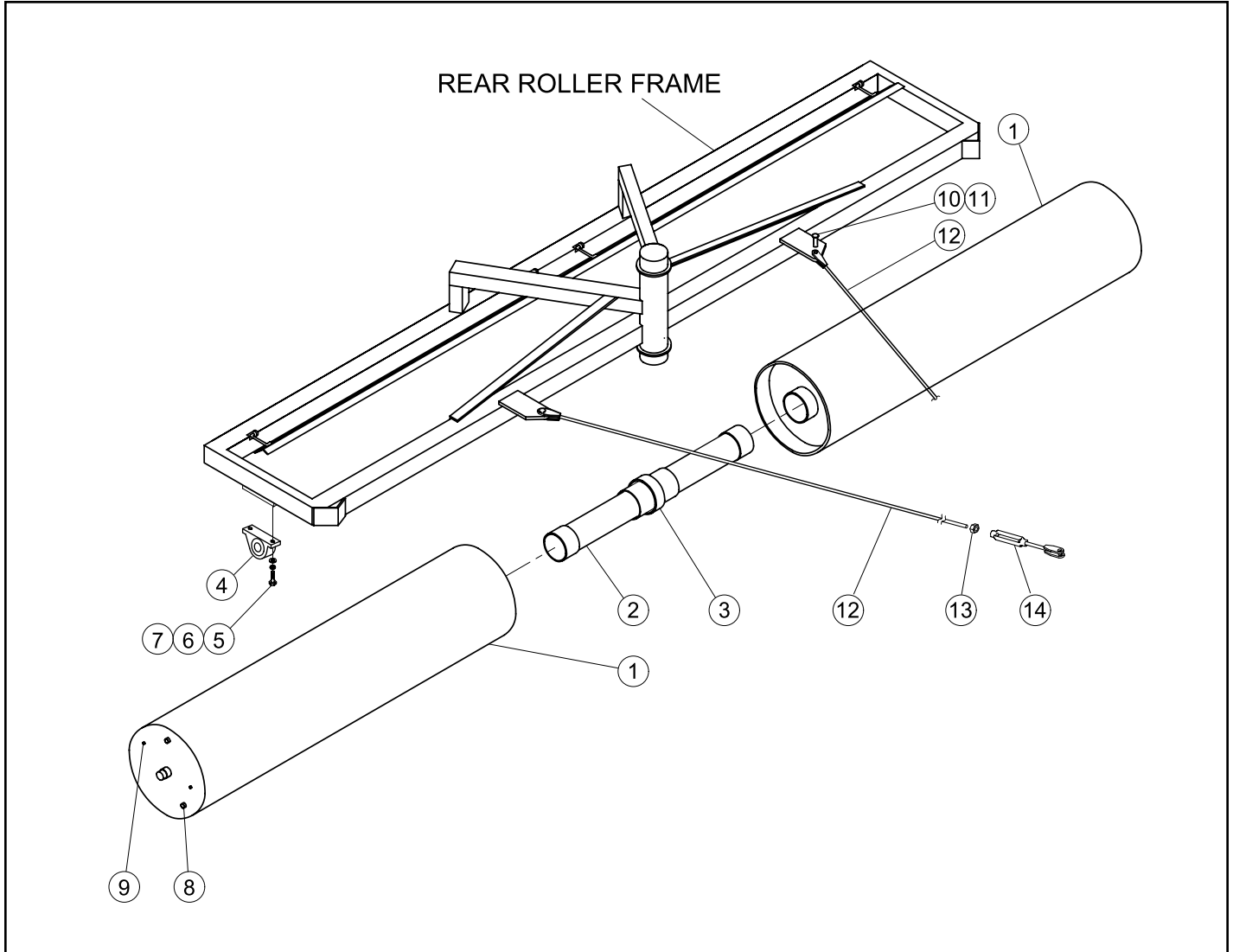
Model '77 Orchard Leveler Wheel Axle Hub Assembly



Item	Part Number	Description	Q'ty
1	SOL-00E100	Wheel Axle	1
2	TBU-01G016	2" x 20-1/4" Double Ended Removable Spindle (includes items 8, 9, 10)	2
3	GHB-6X6GSL	Grease Seal CR16289	4
4	GHB-6X6ICN	Inner Bearing Cone	4
5	GHB-6X6IRC	Inner Bearing Cup	4
6	GHB-6X6ORC	Outer Bearing Cup	4
7	GHB-6X6OCN	Outer Bearing Cone	4
8	FWASHER-14	Spindle Washer	4
9	GSP-14CANT	Spindle Castle Nut	4

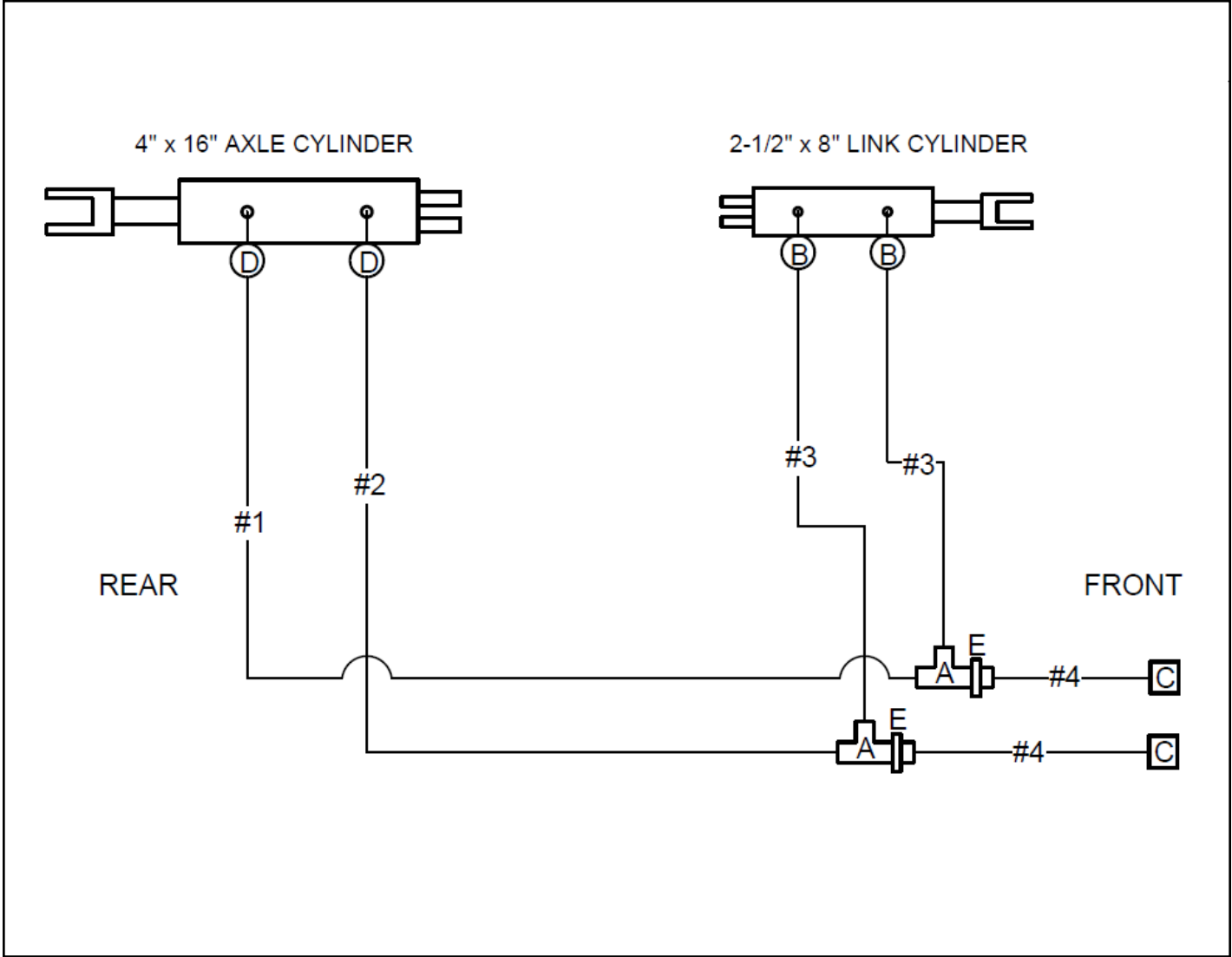
Item	Part Number	Description	Q'ty
10	GPN-03X32C	3/16" x 2" Cotter Pin	4
11	GHB-6X6CAP	Hub Cap	4
12	GWT-761508	7.60 X 15 8 Ply Tire with Wheel	4
13	WHB-08X016	Wheel Bolts for 6 on 6 Hub	24
14	CSNC507056	7/16" X 3-1/2" NC Cap Screw	4
15	LWASHER-07	7/16" Lock Washer	4
16	HXNUT-07NC	7/16" NC Hex Nut	4
17	GHB-6X6STD	Standard 6 x 6 Hub Assembly Complete (includes items 3, 4, 5, 6, 7, 11, and 13)	4
18	SSNCS08X16	1/2" X 1" Square Head Set Screw	4

Rear Split Roller Assembly



Item	Part Number	Description	Q'ty
1	—————	Rear Split Roller (specify size)	1
2	SOL-00J200	Orchard Leveler Differential Shaft	1
3	SOL-00J205	Differential Shaft Collar	1
4	TPP3150	1-11/16" Pillow Block Bearing	2
5	CSNC508036	1/2" X 2-1/4" NC Cap Screw Gr.5	4
6	LWASHER-08	1/2" Lock Washer	4
7	HXNUT-08NC	1/2" NC Hex Nut	4
8	PIPE08CPLG	1/2" Half Plug	4
9	GMB-ZERKTH	Threaded Grease Zerk	4
10	GPN-12X040	3/4" X 2-1/2" Pin	4
11	GPN-04X40C	1/4" X 2-1/2" Cotter Pin	4
12	SOL-00D200	Steering Rod	2
13	HXNUTL12NC	3/4" NC LH Thread Lock Hex Nut	2
14	GTB-12X96W	3/4" Turnbuckle Assembly	2

HYDRAULIC DIAGRAM



Item	Part Number	Description	Qty.
Hydraulic Cylinders			
	GHC-25080T	2-1/2" x 8" Tie Rod Cyl.	1
	GHC-40160T	4" x 16" Tie Rod Cyl.	1
Fittings			
A	FMJMJHMJT8	8MJ-MJH-MJ Bulkhead Tee	2
B	FMBMJ88C	8MB-8MJ Straight	2
C	FFP08000PT	1/2" Pioneer Tip	2
D	FMBMJ9088	8MB-8MJ 90° Elbow	2
E	FHN8	Bulkhead Lock Nut	2
Hoses			
#1	8MP-8FJX 70" Long		1
#2	8MP-8FJX 51" Long		1
#3	8MP-8FJX 27" Long		2
#4	8MP-8FJX 138" Long - Lead Hoses		2



LIMITED WARRANTY STATEMENT

T.G. Schmeiser Co., Inc.

P.O. Box 1392 – Selma, CA 93662

Phone (559) 268-8128 Fax (559) 268-3279

T. G. Schmeiser Co., Inc. warrants each new Schmeiser® product to be free from defects in material and workmanship. This warranty is applicable only for the normal service life expectancy of the product or components, not to exceed twelve (12) consecutive months from the date of delivery of the new Schmeiser product to the original purchaser.

Genuine T. G. Schmeiser Co., Inc. replacement parts and components will be warranted for 90 days from date of purchase, or the remainder of the original equipment warranty period, whichever is longer.

Under no circumstances will it cover any merchandise or components thereof, which, in the opinion of the company, has been subjected to misuse, unauthorized modifications, alteration, an accident or if repairs have been made with parts other than those obtainable through T. G. Schmeiser Co., Inc.

The Company in no way warrants engines, batteries, cylinders, tires or other trade accessories since these items are warranted separately by their respective manufacturer. Expendable components such as points, shanks, blades, rings, bearings, teeth, and the like are excluded from this warranty.

Our obligation under this warranty shall be limited to repairing or replacing, free of charge to the original purchaser, any part that, in our judgment, shall show evidence of such defect, provided further that such part shall be returned within thirty (30) days from date of failure to T. G. Schmeiser Co., Inc., routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.

This warranty shall not be interpreted to render T. G. Schmeiser Co., Inc. liable for injury or damages of any kind or nature to person or property. This warranty does not extend to the loss of crops, loss because of delay in harvesting, or any expense or loss incurred for labor, substitute machinery, rental or for any other reason.

Except as set forth above, **T. G. Schmeiser Co., Inc. shall have no obligation or liability of any kind on account of any of its equipment and shall not be liable for special or consequential damages. T. G. Schmeiser Co., Inc. makes no other warranty, expressed or implied, and, specifically, T. G. Schmeiser Co., Inc. disclaims any implied warranty or merchantability or fitness for a particular purpose. Some states or provinces do not permit limitations or exclusions of implied warranties or incidental or consequential damages, so the limitations or exclusion in this warranty may not apply.**

This warranty is subject to any existing conditions of supply, which may directly affect our ability to obtain materials or manufacture replacement parts.

T. G. Schmeiser Co., Inc. reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligation to owners of units previously sold.

No one is authorized to alter, modify or enlarge this warranty nor the exclusion, limitations and reservations.

**WARRANTY VOID IF NOT REGISTERED
WITHIN 30 DAYS OF PURCHASE DATE**



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Selma, CA 93662
(559) 268-8128
WEB: www.TGSchmeiser.com**

