SCHMEISER

SMART-TILL ORCHARD MAX

T. G. SCHMEISER Co., Inc.

OPERATION AND PARTS MANUAL

Version 1.0
June 2019

Read and understand the manual. This manual provides information and procedures to safely operate and maintain the Mid Row Ripper.

CONTENTS

INTRODUCTION

Your **Schmeiser Smart-Till Orchard Max** (implement) is the ideal root zone management system with impressive results and tremendous acceptance for use in orchard applications.

The success of the Schmeiser Smart-Till Orchard Max is attributed to the patented chrome tines design that helps fracture soil with little surface disturbance. The tines penetrate 8” deep and reduce soil compaction. That means deeper water penetration and better soil aeration. Fast operating speed also means reduced cost per acre.

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 Schmeiser Smart-Till Orchard Max is designed to provide many years of dependable service when used and maintained properly.

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.

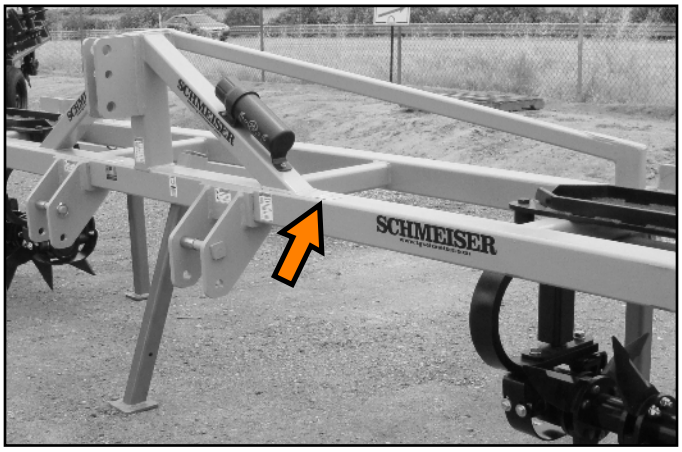
Replacement Parts

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



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:

T. G. Schmeiser Co., Inc.
P.O. Box 1392
Selma, CA 93662

Phone: (559) 268-8128
Fax: (559) 268-3279
E-mail: sales@tgschmeiser.com
Web: www.tgschmeiser.com

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:

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.

OPERATION SAFETY

Highway and Transport Operations

SAFETY INSTRUCTIONS

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 transporting 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.

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.

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.

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 runover, 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.

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.

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.

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 (3 Radial Lines)		Grade 8 (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

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.

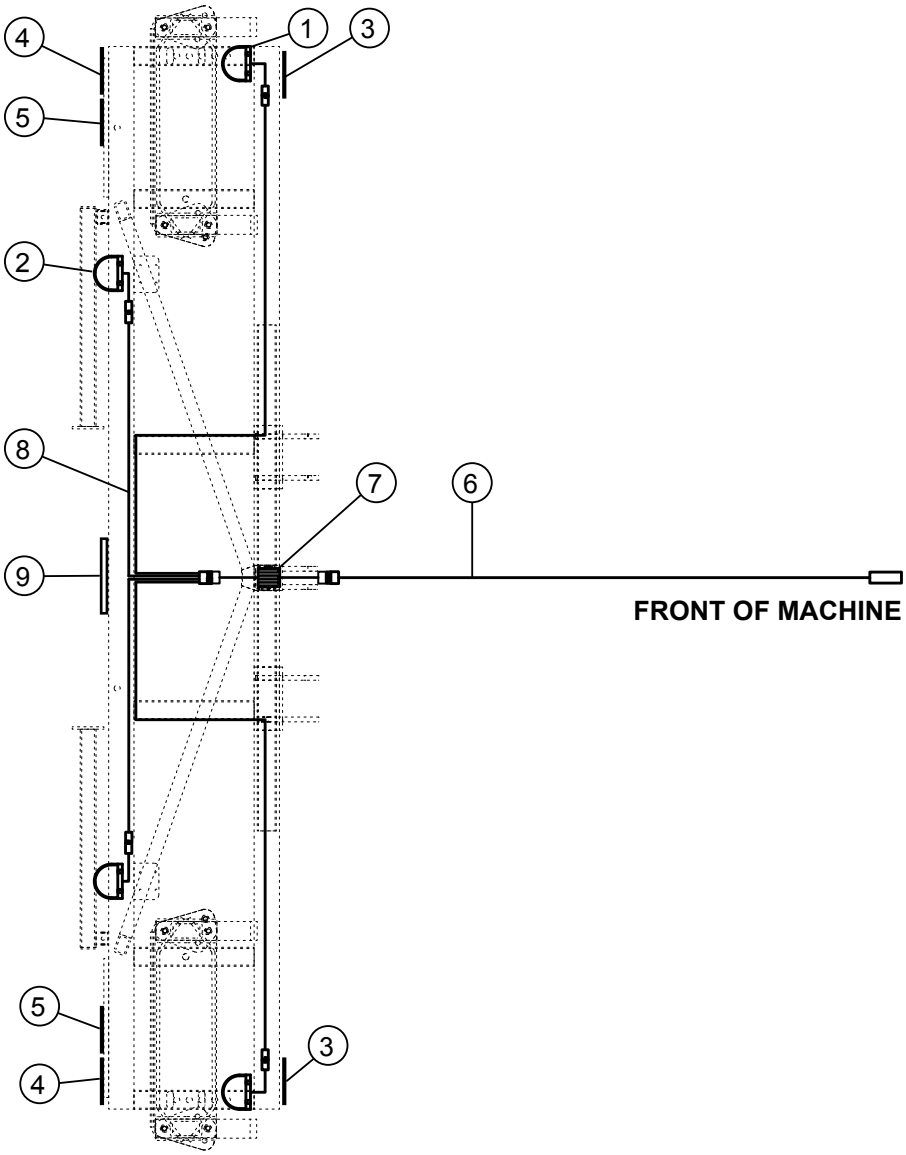
When using compressed air to clean implement, wear safety glasses.

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

WIRING DIAGRAM



Item	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	4
4	D-2X9RR	Reflective Tape, Red	2 or 4
5	D-2X9FL	Fluorescent Tape, Orange	2 or 4
6	GLT-FH07	Front Harness, 7 Ft. Long	1
7	GLT-FCM	Flasher Control Module	1
8	GLT-HW1024	Rear Wishbone Harness 10 Ft.-24 Ft.	1
9	GLT-FCM	Slow Moving Vehicle Sign	1

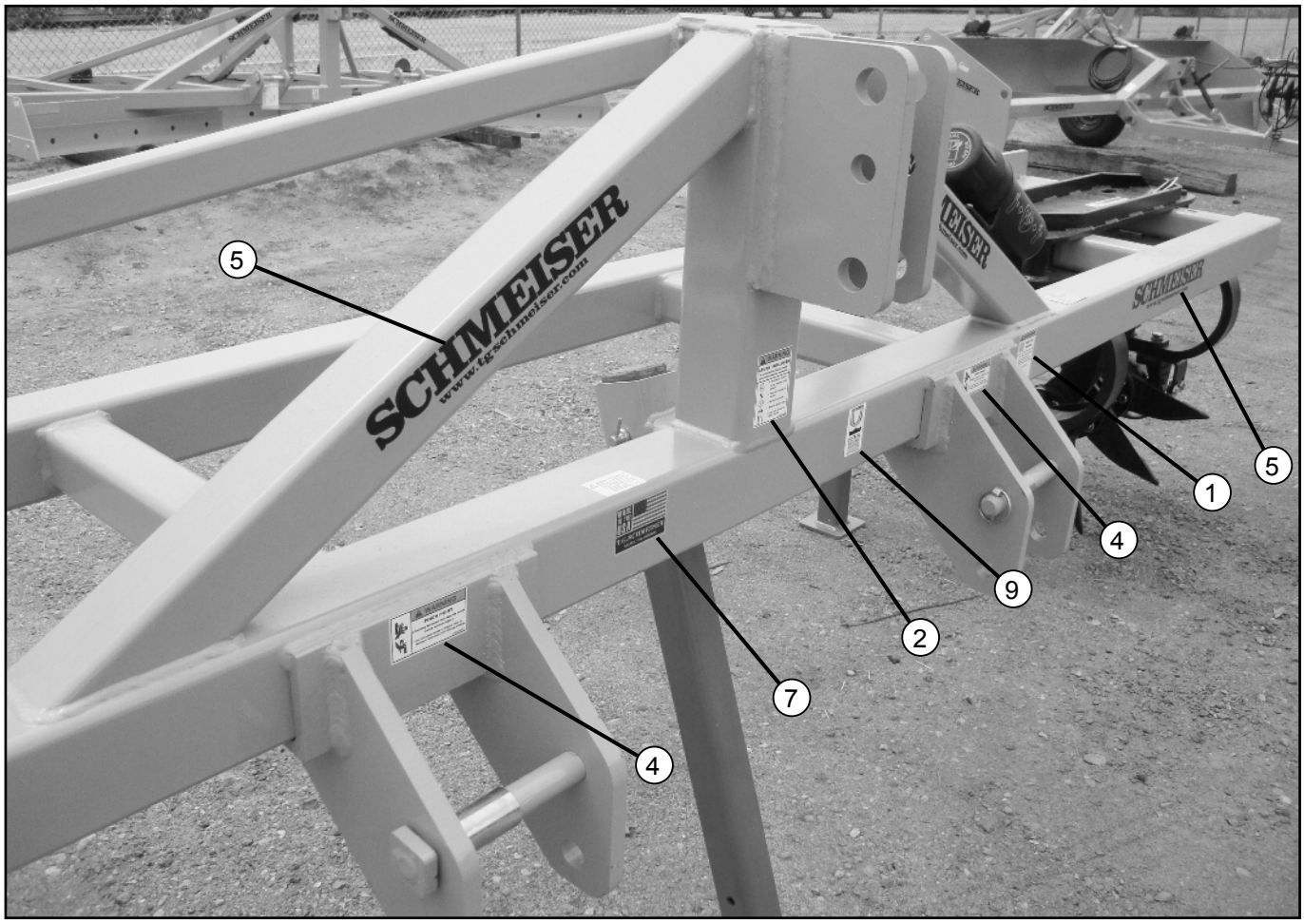
SAFETY SIGNS AND DECALS

SAFETY INSTRUCTIONS

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.

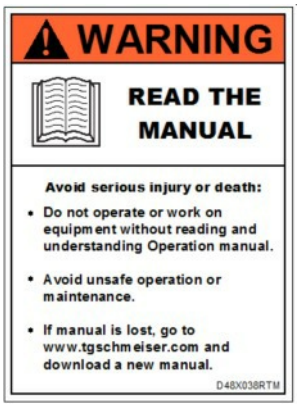
Safety Signs Placement



Safety Signs and Decals

Item	Part Number	Description	Qty.
1	D48X038RTM	Read the Manual	1
2	D48X038CRR	Crush / Rollover Hazard	1
3	D28X048SCE	Sharp Object Hazard	2
4	D28X048PPT	Pinch Point	2
5	D32X208TGS	Schmeiser 2” X 13”	4
6	D104608BLK	Schmeiser 6-1/2” X 38”	1
7	D32X048RBC	Made in the USA	1
8	D48X48QR	Scan to Access Online Manual	1
9	DFEMALOGO1	FEMA	1

1



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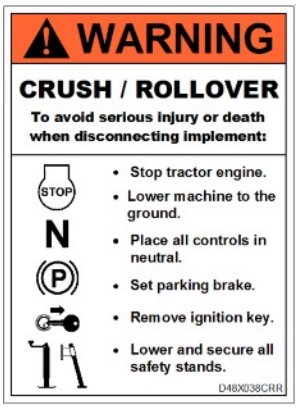

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5.

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8.

9.

5.

SPECIFICATIONS

Tractor Requirements

The tractor used to operate the Smart-Till Orchard Max must have sufficient distribution of weight and horsepower to operate the unit effectively at recommended ground speeds between 6 and 8 MPH.

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. Add front end weight as needed to maintain 20% weight on the front axle.

3-Point Hitch

The Orchard Aerators are designed to be mounted on the following tractor categories:

CAT II, CAT III N, CAT III 3-Point, CAT II Quick Hitch.

Refer to the tractor Operator's Manual for the category of the tractor being used. If the hitch does not conform to ASAE CAT II / lll dimensions, the Smart-Till Orchard Max may not fit or raise properly. Consult an authorized dealer for possible modification procedures to mount non-conforming hitches. Depending on the hitch category, certain size pins are used to attach the implement to the tractor. CAT II hitches require 1-1/8" dia. lower and 1" dia. upper hitch pins. CAT III hitches require 1-7/16" dia. lower and 1-1/4" dia. upper hitch pins.

Install the lift arm stabilizer or shorten the stop chains to place the arms into the non-sway configuration. Refer to the tractor manual for details.

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.

Attaching to Tractor

Make sure the unit is resting on the ground with safety stands securely installed before attaching the unit to the tractor.

1. Use caution when connecting the Smart-Till Orchard Max to the tractor. The Smart-Till Orchard Max should be securely resting on the ground with all Safety Stands lowered and secured. Keep hands and feet away from under the Smart-Till Orchard Max and clear of pinch points between the tractor drawbar and the implement hitch.

NOTE: Shorten or remove the tractor draw bar to avoid interference when raising and lowering the Smart-Till Orchard Max.

3. Remove the lynch pins and lift pins.
4. Board the tractor and start the engine. Position the tractor with the 3-point lift arms positioned at the same height and aligned with the Smart-Till Orchard Max hitch pin holes.

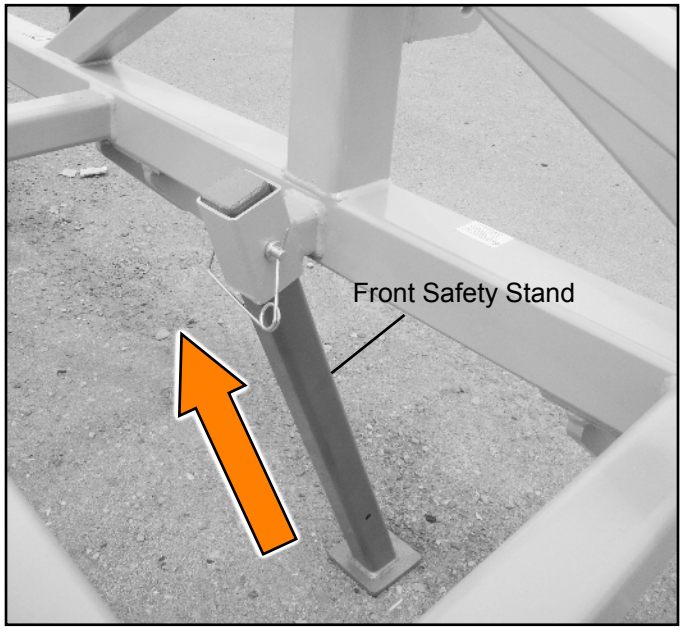
Note: Set the 3-point lift control to "Position Control" so that the lift arms maintain a constant height when attaching the Smart-Till Orchard Max. See the tractor Operator's Manual for correct settings when attaching 3-point equipment.

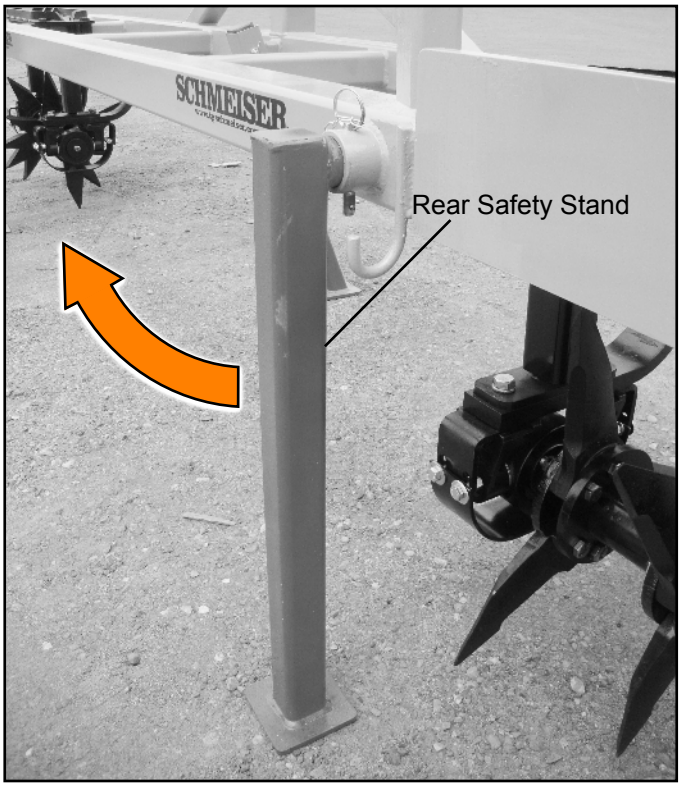
5. Turn off the tractor engine and dismount.
6. Insert the hitch pin through the lift arm and lug holes and install the lynch pin.
7. Walk around to the opposite side and repeat the procedure for the remaining lift arm and hitch pin.
8. Extend or retract the 3-point top link to align its end hole with the hole of the Smart-Till Orchard Max's top link. Insert the top link hitch pin and insert the lynch pin into the hitch pin.
9. Return to the tractor and slowly raise the 3-point lift arms fully up and down to make sure the Smart-Till Orchard Max does not make contact with the tractor tire, draw bar, or any other equipment on the tractor.

NOTE: Move or remove the draw bar if it interferes with

the implement.

10. Adjust any lower link check chains, guide blocks, or sway blocks to prevent the Smart-Till Orchard Max from swaying side-to-side.
11. Remove safety clips and securing pins on front and rear Safety Stands, lift front stand and rotate rear stands to storage position, and reinstall securing pins and safety clips. See below:





Initial Setup Checklist

It is important for both personal safety and to maintain the mechanical condition of the Smart-Till Orchard Max that this checklist is followed.

Location	Task
	Make sure the Smart-Till Orchard Max is properly mounted to the 3-point hitch. Refer to "Attaching to Tractor" on page 14.
	Make sure all hardware is properly installed and tightened. Always use proper tools. Refer to "Maintenance Schedule" on page 21.
	Check the condition of chrome tines. Refer to "Ground Engaging Components" on page 20.
	Check the Smart-Till Orchard Max setup. Adjust if needed. Refer to pages 15-16 for proper gangs setup and adjustment.

Setting the Smart-Till Orchard Max

Properly setting the Smart-Till Orchard Max is essential for efficient and safe operation. A properly set Smart-Till Orchard Max will consistently achieve the desired results.

NOTE: The Smart-Till Orchard Max must be hitched to the tractor and raised off the ground to make the following adjustments.

1. Use the adjustment on the tractor 3-point hitch lift arm to level the Smart-Till Orchard Max from side-to-side.
2. Adjust the top link to level the Smart-Till Orchard Max from front to back.

Tine Gang Setting / Speed Chart

For the best results, the Smart-Till Orchard Max must be operated at a speed appropriate to the soil conditions and the desired tillage.

1. At lower tine gang angles (0º to 5º), the implement will aerate the soil and perform light fracturing at speeds of 6 mph or less.

2. At higher tine gang angles (7.5º to 10º), the shattering action moves deeper to give better fractionation through the soil profile. The implement needs to be operated at a minimum speed of 7 mph or faster.

Adjusting the Smart-Till Orchard Max

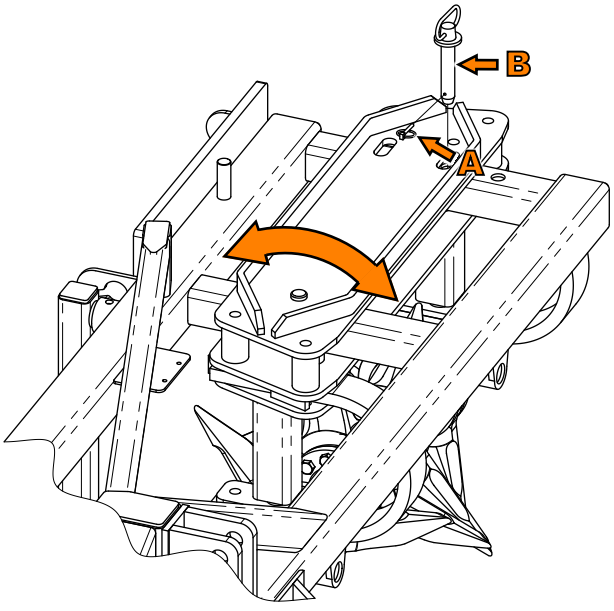
NOTICE

Operating the Smart-Till Orchard Max with tine gangs at different angles can adversely affect the way the implement tracks and puts extra strain on the implement and tractor. Make sure all gangs are set to the same angle.

Tine gang adjustments must be made with the implement properly hitched to a tractor, safety stands lowered to the ground with the lock pins installed.

1. Shut off the tractor, place the hydraulic levers in neutral, and set the parking brake.

2. Remove the hitch-clip (A) from the tine gang lock pin and remove the lock pin (B).



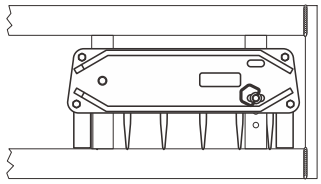
3. Carefully slide (pivot) the tine gang to the desired angle setting. Line up the appropriate (front or rear) pin slot with the desired main frame hole.

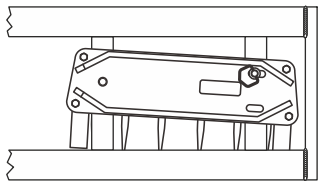
NOTE: *It may be necessary to use a pry bar to help move the tine gang to a new position.*

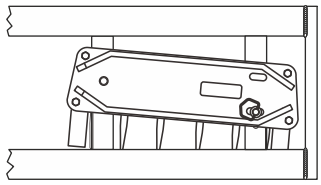
4. Reinstall the lock pin and secure with the hitch-clip.

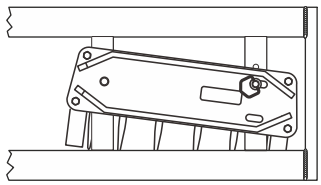
5. Repeat the adjustment procedure for each tine gang.

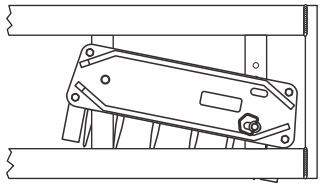
NOTE: *Make sure all tine gangs are set to the same angle.*


0° Front Slot


2.5° Rear Slot


5° Front Slot


7.5° Rear Slot


10° Front Slot

Implement Break-In

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

- After 1/2 hour of operation:
  a. Check all fasteners and tighten if necessary.
  b. Make sure that the tines, bearings wear guards, and C-flex tines are in good condition.
- After 10 hours of operation:
  a. Go to the normal servicing and maintenance schedule, as defined in the Maintenance Section.

General Operating Instructions

1. Familiarize yourself with the Operation and Parts Manual, and make sure the Smart-Till Orchard Max is properly attached to the tractor before beginning work. Inspect the condition of the chrome tines, C-flex tines and the overall Smart-Till Orchard Max for potential problems or damage. Do not use the Smart-Till Orchard Max if it needs repairs of any type.
2. Clear the area of bystanders, especially small children. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, power lines, debris, and foreign objects. If you are unable to clearly see these type of items, discontinue operating the Smart-Till Orchard Max.
3. Know the location of all underground cables, pipelines, and other hazards in the area. Also make certain that all irrigation heads, utility outlets, and other obstacles are properly marked.
4. Watch for low hanging limbs, power lines, and other overhead obstacles while you are operating. Use care to avoid hitting these items.
5. Do not operate the Smart-Till Orchard Max, or drive the tractor into material that is burning, or areas that recently burnt and may contain hot spots. Tire damage can occur when driving over hot material. Oil and grease on the tractor and Smart-Till Orchard Max could ignite, resulting in equipment destruction.
6. Enter row to conduct operation and place Smart-Till Orchard Max chrome tines tips even with end posts.
7. Lower 3-Point control lever to depth setting and proceed forward at a speed of no less than 2.5 MPH and no more than 4.5 MPH (optimal speed is 3.5 MPH). The Smart-Till Orchard Max should immediately begin burying tines in the ground.
8. Exit row by lifting the Smart-Till Orchard Max prior to passing the end post, but not so early as to neglect the final row.
9. Lift the Smart-Till Orchard Max chrome tines completely out of the ground before turning. Failure to do so can result in equipment damage.
10. Slow the tractor when making turns. Remember that the Smart-Till Orchard Max will swing wide of the tractor when turning.
11. Always operate safely and follow all the instructions in this manual.

Detaching From Tractor

1. Move the Smart-Till Orchard Max to a level storage location. Park the tractor, place the transmission in park or neutral, and apply the parking brake. Lower the Smart-Till Orchard Max, shut down the engine, and remove the key before exiting the tractor.
2. Lower and secure all safety stands. Make sure the weight is distributed evenly between all supports.
3. Make sure the Smart-Till Orchard Max is resting securely on the ground before attempting to disconnect it from the tractor. Use extreme care to keep feet and hands from under the Smart-Till Orchard Max and clear of any pinch points caused by the tractor hitch arms and Smart-Till Orchard Max hitch pins.
4. Extend or retract the tractor 3-point hitch top link to remove tension on the top link hitch pin. When the pin is loose and easy to rotate, remove the pin from the Smart-Till Orchard Max.
5. Disconnect the lift arms and drive the tractor away from the Smart-Till Orchard Max.

MAINTENANCE AND SERVICE

WARNING

Understand Safety Procedures!

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

NOTE: *For service procedures Left-Hand and Right-Hand are referenced from the back of the implement looking towards the tractor.*

Tine Gang C-flex Bolt Torque Settings

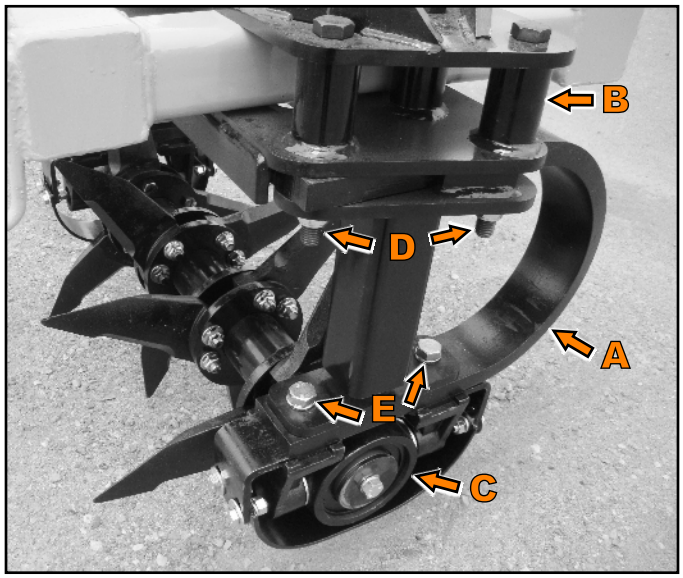
NOTICE

The recommended torque for the C-flex bolts is 250 ft lb (339 N·m). Operating the Smart-Till Orchard Max with improperly tightened bolts can cause bolt or C-flex failure.

1. Check all C-flex upper and lower mounting bolts after ten hours of field operation. Tighten bolts to 250 ft lb (339 N·m).

   d. Tighten upper C-flex bolts (D) to 250 ft lb (339 N·m) (six per tine gang).

   e. Tighten lower C-flex bolts (E) to 250 ft lb (339 N·m) (four per tine gang).



(A) C-flex Spring. (B) Carriage Plate Assembly.
(C) Tine Gang Bearing. (D) Upper C-flex Bolts.
(E) Lower C-flex Bolts.

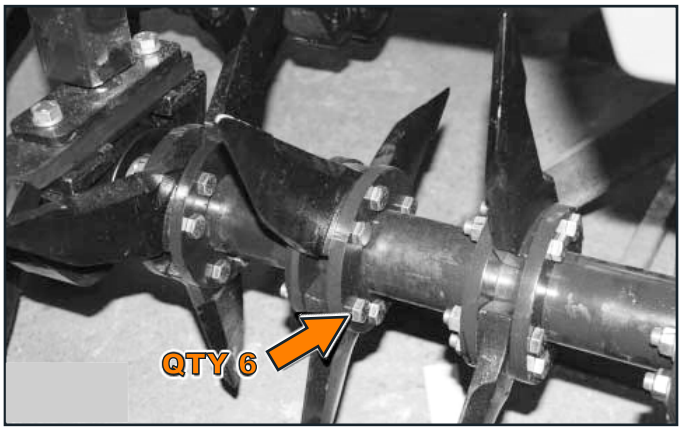
Replacing Tines

Tines should be replaced when damaged or when worn to approximately 5.5 inches (13.9 cm) in length. For best results when replacing worn tines, replace all three tines on each tine gang flange.

NOTICE

Tine gangs are directional and installed on the Smart-Till Orchard Max in a specific pattern. If tine gangs are removed or disassembled for any reason, always mark, reassemble, and reinstall in the same orientation as removed. Improperly oriented tine gangs can cause inferior performance and shortened service life.

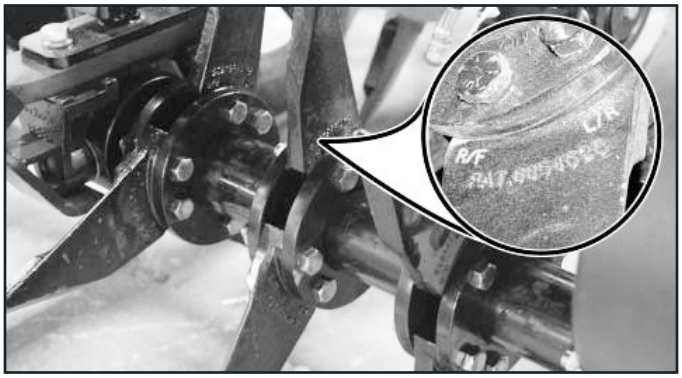
1. On the selected tine gang, loosen six bolts and flanged nuts securing each tine set.



2. Remove two bolts, nuts, and the worn or damaged tine from the tine flanges.

NOTE: *The use of a cutting torch may be necessary to remove tine hardware.*

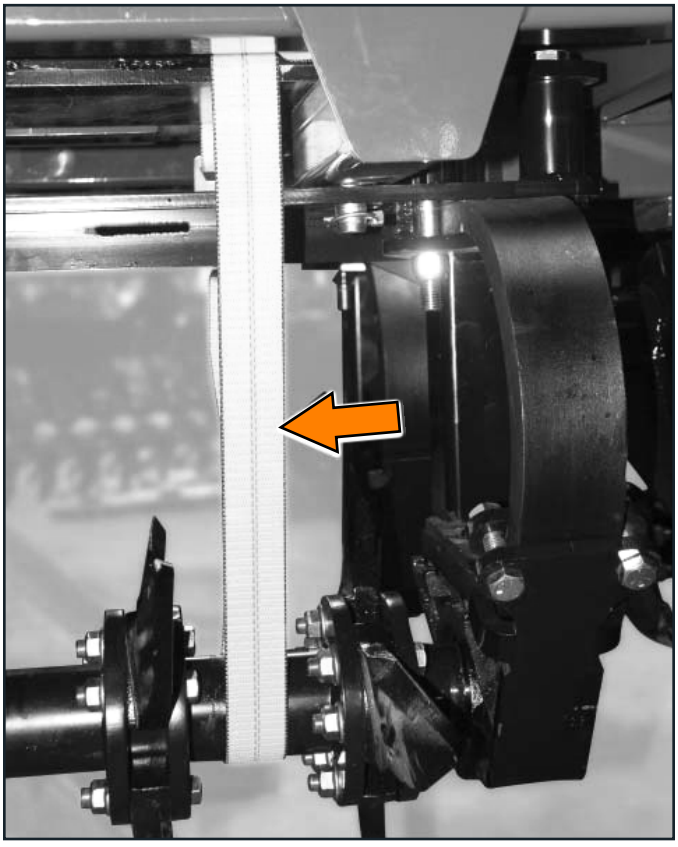
NOTE: *Tines are directional and are marked with the letters "LF/RR" or "RF/LR". Always replace worn tines with new tines having the same markings as those removed.*



3. Install the new tine between the tine flanges, making sure it is positioned correctly.
4. Reinstall two new bolts and flanged nuts. It is not recommended to reuse original tine hardware.
5. Follow the same steps to replace the other two tines in the set, then tighten all six bolts and flange nuts to 250 ft lb (339 N·m).
6. Repeat the procedure for all tines needing replacement.

Replacing Tine Gang Bearings

1. With the implement properly hitched to a tractor, raise the implement to the transport position. Install the safety stands and lock pins.
2. Install a ratchet strap or chain with a minimum 500 lb (227 kg) load rating securely around the tine gang shaft and upper carriage plate, as shown.



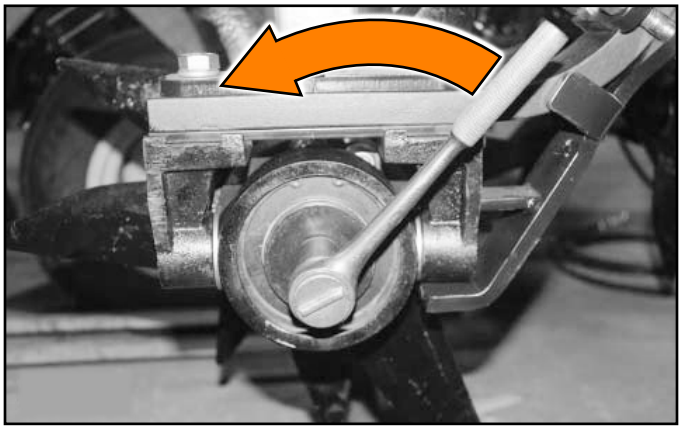
3. Adjust the tension so the tine gang shaft will be securely supported when the bearing and additional components are removed.

NOTICE

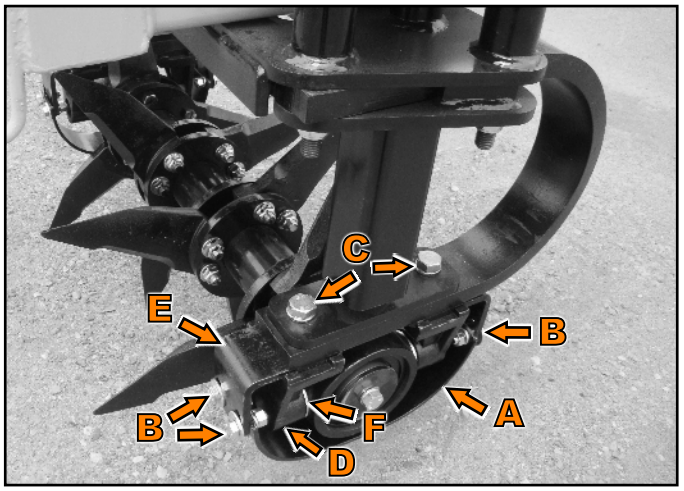
Tine gangs are directional and installed on the Smart-Till Orchard Max in a specific pattern. If tine gangs are removed or disassembled for any reason, always mark, reassemble, and reinstall in the same orientation as removed. Improperly oriented tine gangs can cause inferior performance and shortened service life.

4. Remove the shaft end-bolt and large thrust washer. Save the bolt and thrust washer for reuse.

***NOTE**: The end-bolt was installed with permanent grade threadlocker. Use caution when removing the bolt to avoid damage to the shaft threads.*



5. Remove the wear guard (A) by first removing two bolts and nuts (B). Next, remove the lower C-flex bolts and lock washers (C). Remove bearing hangers (D), wear guard mounts (E), and thrust washers (F). Inspect the bolts and self-locking nuts and replace if worn or damaged.



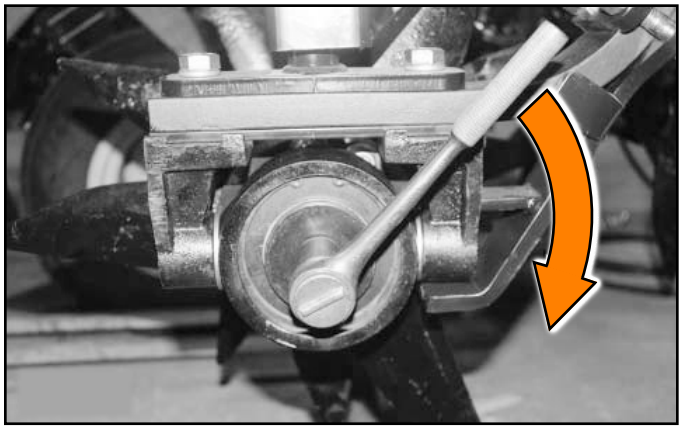
6. Slide the bearing off of the tine gang shaft. If the bearing is seized on the tine gang shaft, use a two jaw puller to carefully remove it.

7. Slide the new bearing onto the shaft until it is seated against the shoulder on the tine gang shaft. Install thrust washers (F), bearing hangers (D), and adapter plate (E). Apply anti-seize compound to lower C-flex bolts (C) and reinstall with lock washers.

8. Install the rock guard (A) and two bolts and self-locking nuts (B), Do not completely tighten the bolts at this time.

9. Clean the threads of the end-bolt and apply a small amount of permanent grade threadlocker on the threads.

10. Install the thrust washer and end-bolt on the tine gang shaft and tighten the bolt securely.



11. Torque the lower C-flex bolts (C) to 250 ft-lb (339 N·m). Completely tighten the front rock guard bolts and nuts (B).

NOTICE

For best service life, always replace tine gang roller bearings in pairs.

12. Remove the support strap or chain and reinstall it at the opposite end of the tine gang. Repeat the process to replace the other tine gang bearing assembly.

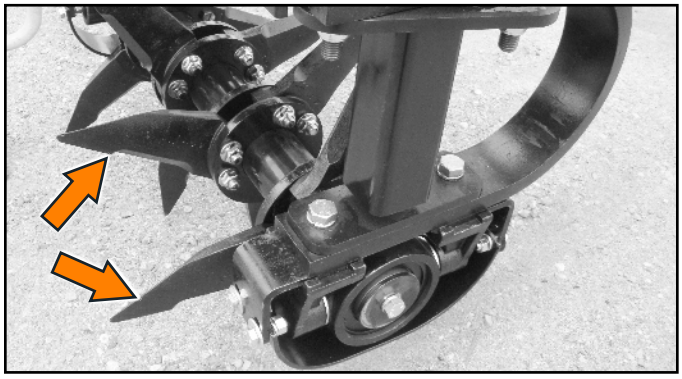
13. Make sure all hardware is tight, remove the tine gang support strap or chain, and verify that the tine gang rotates freely.

***NOTE**: After ten hours of operation, check and tighten the lower C-flex bolts (C) to 250ft-lb (339 N·m).*

Ground Engaging Components

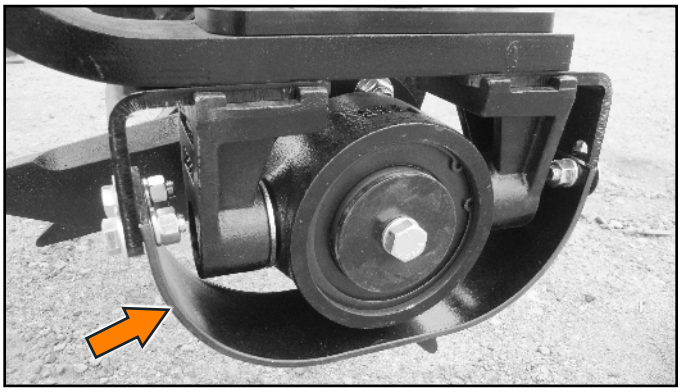
Chrome Tines

Inspect chrome tines and replace if overly worn or broken.



Bearing Wear Guards

Inspect wear guards and replace if overly worn or broken.



Maintenance Schedule

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

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Maintenance \ Hours and Serviced By													
Before Each Use or Daily													
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.													
Check all ground engaging components for wear and damage. Replace if necessary.													
Every 50 Hours or Weekly													
Perform the Daily Maintenance schedule.													
Carefully inspect chrome tines and bearings for wear or damage. Replace if necessary.													
Every 1000 Hours or Annually													
Perform the Daily Maintenance schedule.													
Perform the Weekly Maintenance schedule.													
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

WARNING

Understand Safety Procedures!

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

Storage Preparation

After work is completed for a season, perform the following maintenance procedures before storing the implement.

1. Apply a thin layer of grease or rust preventative to all exposed metal surfaces of the adjustable mechanisms (threaded rods, etc.).
2. Check all bolted connections. Ensure that the fasteners are tight, and all retaining pins are secured in place with appropriate retaining clips.
3. Inspect the frame for structural fractures.
4. Check the chrome tines and wear guards for wear and damage. If excessively worn or damaged, they must be replaced.
5. Make sure all the warning decals are in place and legible. Replace any worn decals as needed.
6. Thoroughly wash the Smart-Till Orchard Max with a pressure washer or water hose to remove all dirt, mud, or debris.
7. To help prevent corrosion, remove rust and apply a coat of paint to frame surfaces where paint has been worn off or damaged.
8. Make sure the implement is stored in an area with a firm and level base to prevent it from tipping or sinking into the ground. Safety stands must be extended / lowered and secured in place for storage. For best results, always store the Smart-Till Orchard Max in a dry, protected location. Leaving this implement unprotected will shorten the service life.

Placing In Storage

1. Select an area that is dry, level, and free of debris (inside a building is ideal). Move the Smart-Till Orchard Max to its storage area.
2. Lower the Smart-Till Orchard Max onto the ground. Extend / lower all safety stands and secure in place with locking pins.
3. Disconnect the Smart-Till Orchard Max from the 3-point hitch and drive the tractor away from the Smart-Till Orchard Max. Refer to “Detaching From Tractor” on page 18. Do not leave the tractor attached to the Smart-Till Orchard Max.

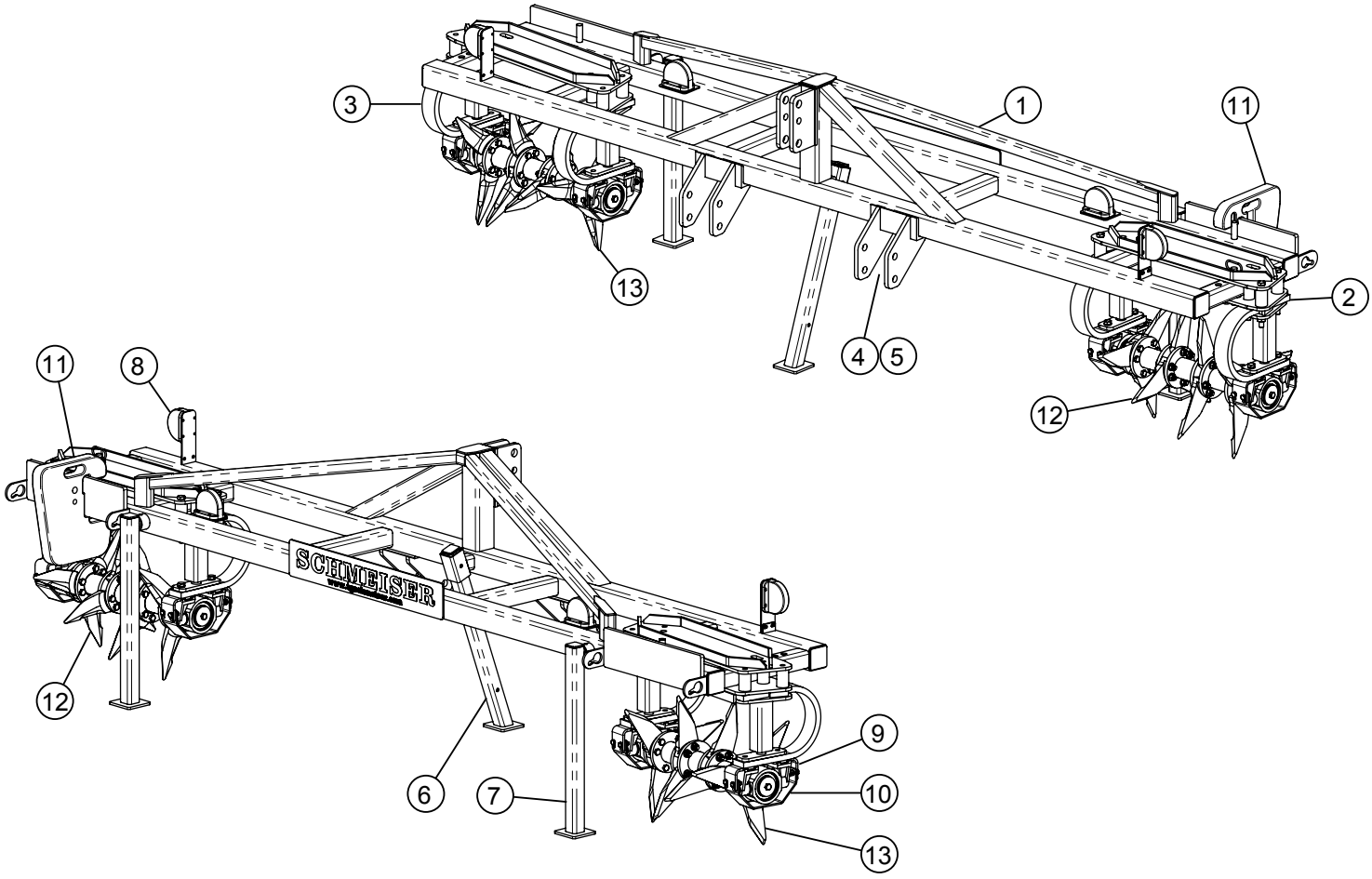
Removing From Storage

Prior to use each season, perform the following inspection and maintenance.

1. Read the operator’s manual to review all safety, operational, and maintenance procedures.
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. Make sure all the warning decals are in place and legible. Replace any damaged or missing decals.
5. Attach the Smart-Till Orchard Max to the tractor 3-point hitch. Refer to “Attaching to Tractor” on page 16.

COMPONENT NOMENCLATURE

Component Locations



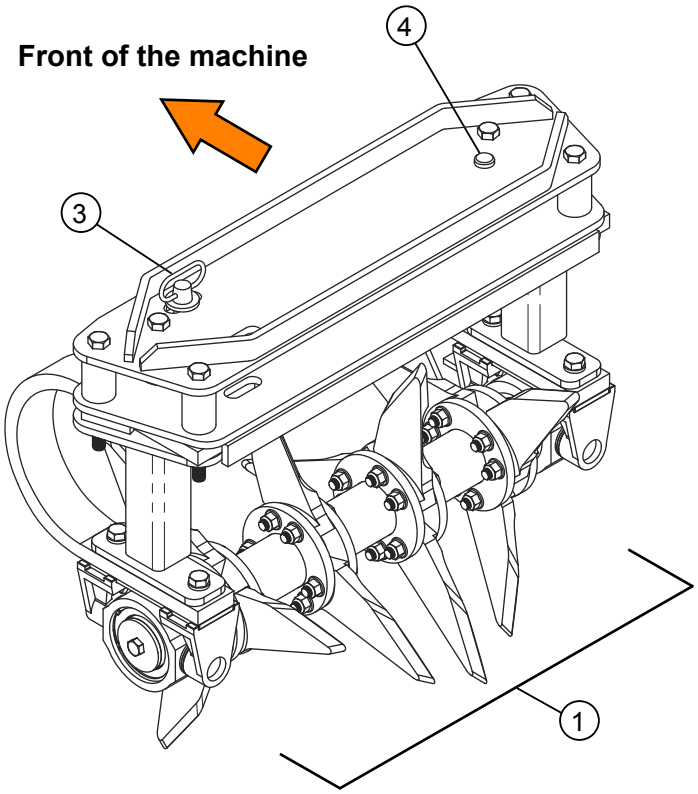
Item	Part Number	Description	Q'ty
1	STO-14A000	Main Frame, 14 Ft.	1
2	853160	Gang LH Chrome	1
3	853161	Gang RH Chrome	1
4	3VB-E	Clevis Pull Pin	2
5	GBH-C23L01	CA 2-3 Lift Arm Bushing	2
6	STO-00C000	Front Safety Stand	1
7	STO-00D000	Rear Safety Stand	2
8	—----------	Safety Light (see p. for details)	—--
9	STO-00B100	Bearing Wear Guard Mounting Bracket (Optional)	4
10	STO-00B200	Bearing Wear Guard (Optional)	2
11	GMB-WEIGHT	100 Lbs. Weight (Optional)	varies
12	853160	Gang LH Chrome (see p.25 for details)	1
13	853161	Gang RH Chrome (see p. 25 for details)	1

Ordering Parts

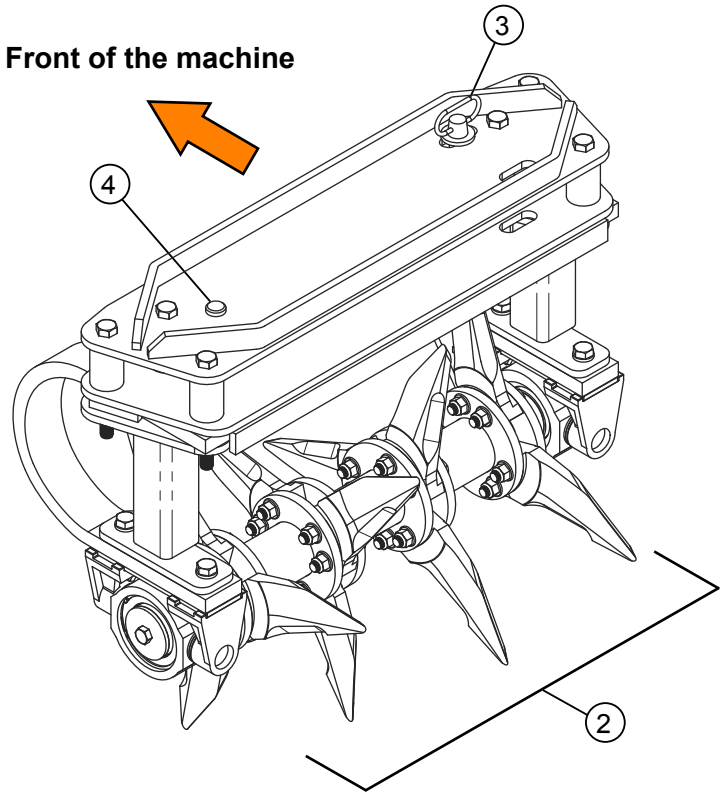
We manufacture a quality product that requires very little maintenance or repair. However, should a part break or become damaged, our knowledgeable staff can make sure you receive the part(s) to put your unit back into operation.

Parts Drawings

Chrome Tine Gangs



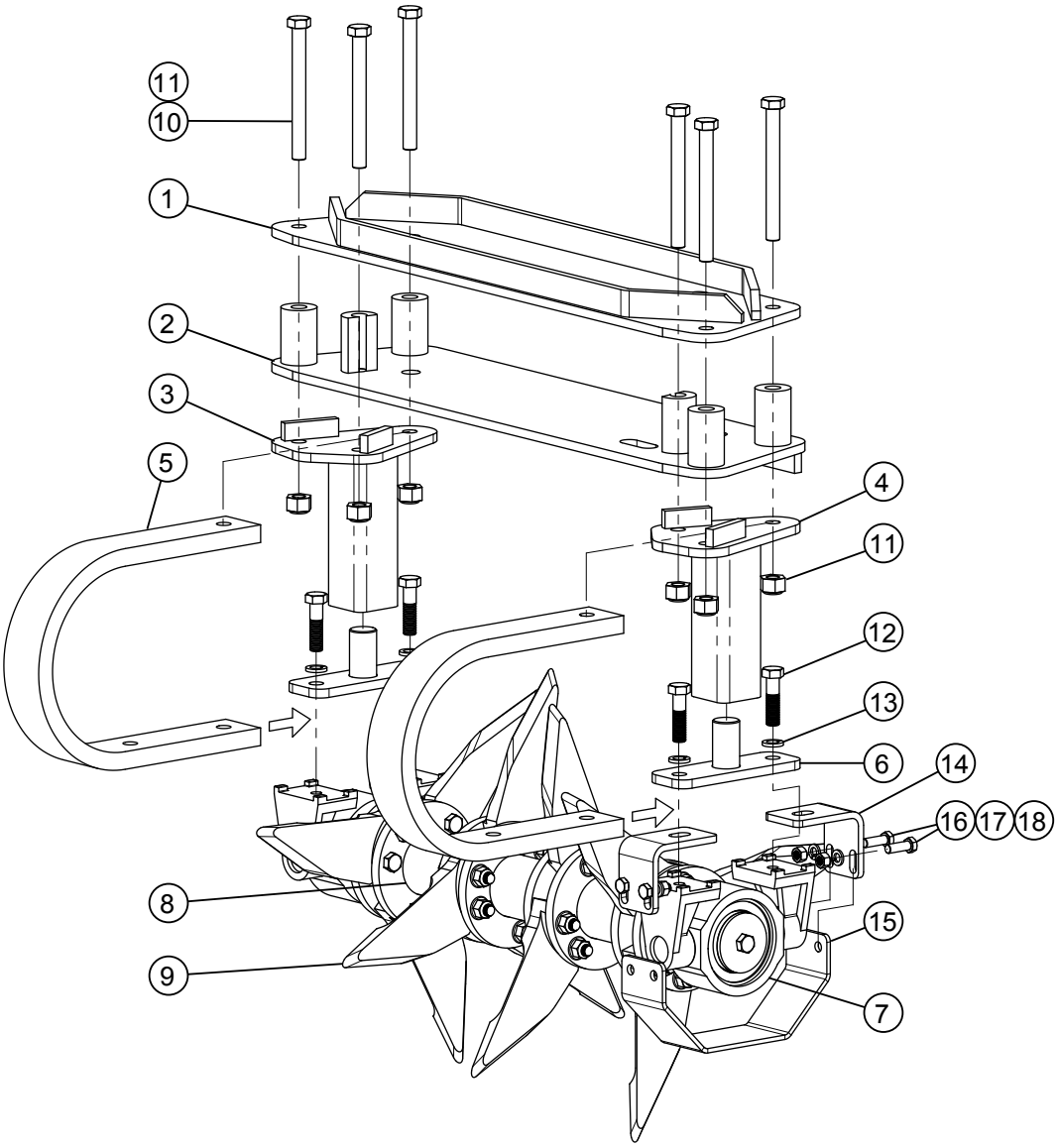
LH Tine Gang



RH Tine Gang

Item	Part Number	Description	Q'ty
1	853160	Gang LH Chrome (see p. 25 for details)	1
2	853161	Gang RH Chrome (see p. 25 for details)	1
3	216178	1" X 4-1/2" Clevis Pin	1/gang
4	216179	1" X 4-7/8" Hitch Pin with Handle	1/gang

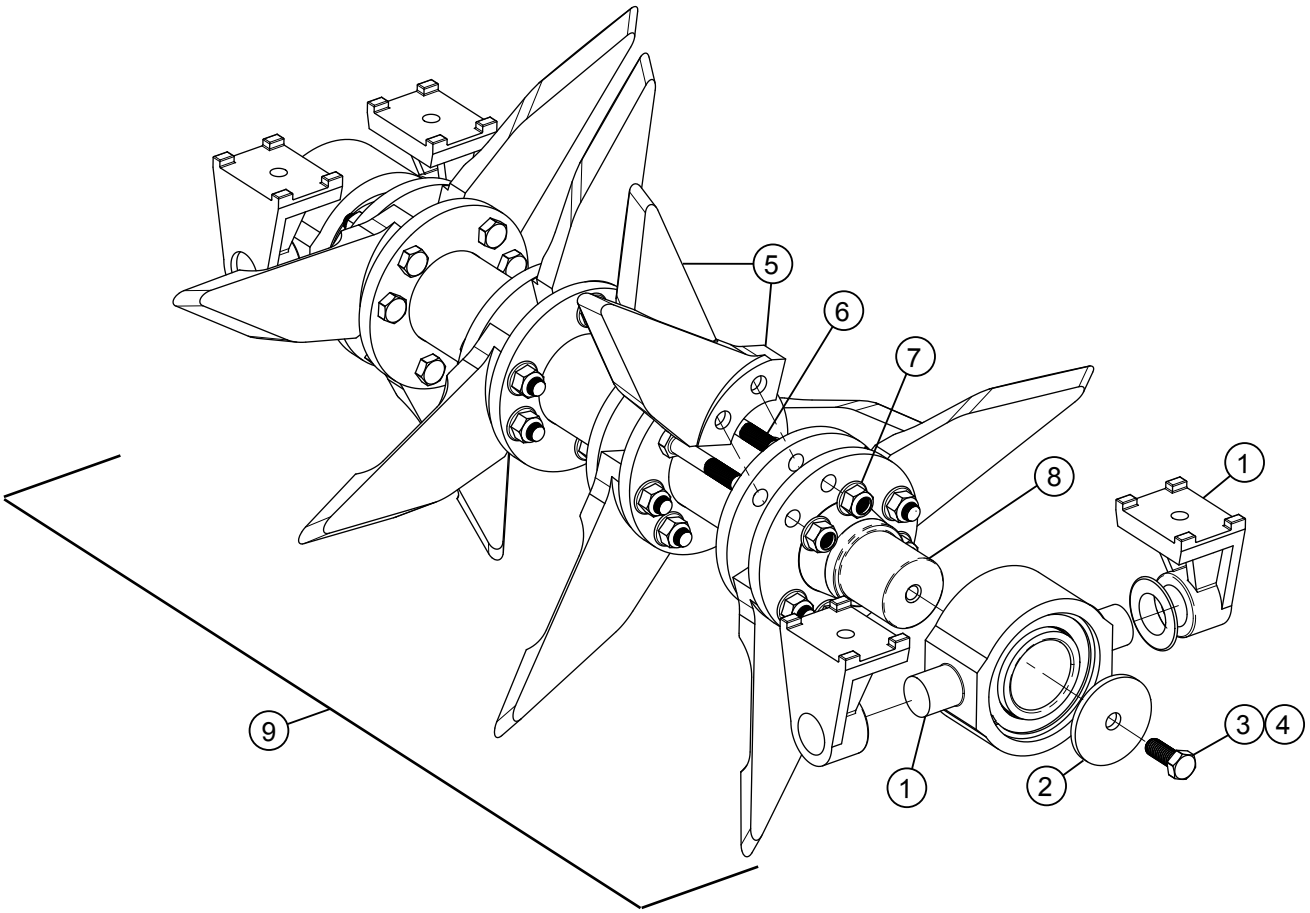
Chrome Tine Gang Assembly



Item	Part Number	Description	Q'ty/ Gang
1	853064	Left Top Carriage Plate (LH gang)	1
	853160	Right Top Carriage Plate (RH gang)	1
2	853145	Left Lower Carriage Plate (LH gang)	1
	853146	Right Lower Carriage Plate (RH gang)	1
3	853061	RH Tube Stop	1
4	853060	LH Tube Stop	1
5	553237	C-Flex, 1" X 3" (3) Holes	2
6	853010	C-Flex Pin Stop	2
7	553389	Trunnion Bearing Assembly	2
8	853148	Roller Weldment LH (LH gang)	1
	853149	Roller Weldment RH (RH gang)	1

Item	Part Number	Description	Q'ty/ Gang
9	231262	Aerator Tine, LH Chrome (LH gang)	12
	231263	Aerator Tine, RH Chrome (RH gang)	12
10	202929	3/4" X 7-1/2" Gr.8 NC Bolt	6
11	NYNUT-12NC	3/4" NC Nylon Lock Hex Nut	6
12	212508	HH Cap Screw M18-2.5x70 mm	4
13	LWASHER-12	3/4" Lock Washer	4
14	STO-00B100	Wear Guard Mount.Bracket (Option)	4
15	STO-00B200	Wear Guard (Option)	2
16	CSNC508024	1/2" X 1-1/2" Gr.5 NC Cap Screw	8
17	LWASHER-08	1/2" Lock Washer	8
18	HXNUT-08NC	1/2" NC Hex Nut	8

Chrome Tine Gang Assembly



Item	Part Number	Description	Q'ty/ Gang
1	553389	Trunnion Bearing Assembly (Includes bearing, hangers, and thrust washers)	2
2	553390	Roller Thrust Plate 2.7	2
3	202270	5/8" X 1-1/2" Gr.5 NC Bolt	2
4	LWASHER-10	5/8" Lock Washer	2
5	231262	Aerator Tine, LH Chrome (LH gang)	12
	231263	Aerator Tine, RH Chrome (RH gang)	12
6	202925	5/8" X 3-1/2" Gr.8 NF Bolts	24
7	212500	5/8" NF Flange Nut	24
8	853148	Roller Weldment LH 2.7 (LH gang)	1
	853149	Roller Weldment RH 2.7 (RH gang)	1
9	853150	Roller Ass'y LH (includes all items)	1
	853149	Roller Ass'y RH (includes all items)	1

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

SCHMEISER
FARM EQUIPMENT

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FEMA
FARM EQUIPMENT
MANUFACTURERS
ASSOCIATION

Version 1.0
June 2019