



75-70681
TR270 TERRA RAKE
(S/N 0000 and higher)



MAN 4177521
Rev. A 04-2019



OPERATOR'S & PARTS MANUAL

CALIFORNIA PROPOSITION 65



WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.



ADVERTENCIA: Cáncer y Daño Reproductivo - www.65Warnings.ca.gov.

IMPORTANT MESSAGE

Thank you for purchasing this Schiller Grounds Care, Inc. product. You have purchased a world class product, one of the best designed and built anywhere.

This product comes with an Operator's/Parts Manual. The useful life and good service you receive from this product depends to a large extent on how well you read and understand this manual. Treat this product properly and adjust it as instructed, and it will give you many years of reliable service.

See a Schiller Grounds Care, Inc. dealer for any service or parts needed. Schiller Grounds Care, Inc. service ensures that you continue to receive the best results possible from Schiller Grounds Care, Inc. products. You can trust Schiller Grounds Care, Inc. replacement parts because they are manufactured with the same high precision and quality as the original parts.

Schiller Grounds Care, Inc. designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this product only as directed in the manual, keep it in good repair and follow safety warnings and instructions. You'll always be glad you did.

Schiller Grounds Care, Inc.
One Bob Cat Lane
Johnson Creek, WI 53038-0469

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DESCRIPTION

The front mounted Steiner landscape rake, the TR270 Terra Rake, effectively rakes soil, landscape debris, aggregate and other materials. Applications include seed bed preparation, or landscape work such as leveling dirt or gravel in driveways and parking areas.

From the operator's seat, the accessory controls on the Steiner tractor are used to hydraulically angle the 70" wide rake left or right to direct raked material. A spring-tensioned leveling system in combination with the independently height adjustable caster wheels provides material leveling independent of the tractor. The Terra Rake tine angle and tine depth can be easily adjusted from aggressive, to move large amounts of material, to light, to finely finish the surface with a reduced potential of unwanted throwing of debris. The caster wheels can be mounted inward to the front when working near structures, outward for greater leveling control, or to the rear of the rake, giving operators maximum flexibility.

The TR270 Terra Rake comes with the Steiner Quick Hitch attachment system for easy installation or removal in minutes without any tools. The Terra Rake can also be mounted to the rear 3-point hitch with a Steiner 3-Point Quick Hitch.

SPECIFICATIONS

Specifications are subject to change without notice.

Overall Length with Wheels in front.....	65"
Overall Length with Wheels in rear.....	48"
Overall Height.....	30"
Maximum working width	70"
Minimum working width (angled).....	65"
Right and left maximum angle	20°
Number of tines	40
Tine adjustment range	4.25" below grade
.....	4.50" above grade
Rake angle adjustment.....	±5°
Caster wheel height adjustment	4.75"
Weight	382 lbs.

NOTICE !!!

Unauthorized modifications may present **extreme** safety hazards to operators and bystanders and could also result in product damage.

Schiller Grounds Care, Inc., strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Schiller Grounds Care, Inc. Engineering Department. Any Schiller Grounds Care, Inc. product that is altered, modified or changed in any manner not specifically authorized after original manufacture—including the addition of “aftermarket” accessories or component parts not specifically approved by Schiller Grounds Care, Inc.—will result in the Schiller Grounds Care, Inc. Warranty being voided.

Any and all liability for personal injury and/or property damage caused by any unauthorized modifications, add-on accessories or products not approved by Schiller Grounds Care, Inc. will be considered the responsibility of the individual(s) or company designing and/or making such changes. Schiller Grounds Care, Inc. will vigorously pursue full indemnification and costs from any party responsible for such unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.



This symbol means:
ATTENTION!
BECOME ALERT!

Your safety and the safety of others is involved.

Signal word definitions:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to Schiller Grounds Care, Inc. machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices or property damage.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage



Model

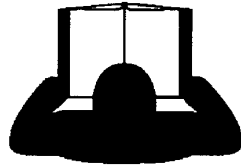
Serial Number

SCHILLER GROUNDS CARE, INC.
One Bob – Cat Lane
Johnson Creek, WI 53038

MODEL NUMBER: This number appears on sales literature, technical manuals and price lists.

SERIAL NUMBER: This number appears only on your tractor. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information.

GENERAL SAFETY



Read the Operation & Safety Manual

- The owner of this machine is solely responsible for properly training the operators.
- The owner/operator is solely responsible for the operation of this machine and prevention of accidents or injuries occurring to him/herself, other people, or property.
- Read and understand the operator's manual, before attempting to operate this machine.
- Operate all controls from the operator's seat.
- If the operator of the machine cannot understand this manual, then it is the responsibility of this machine's owner to fully explain the material within this manual to the operator.
- Learn and understand the use of all controls.
- Know how to stop the power unit and all attachments quickly in the event of an emergency.
- Do not leave machine unattended while it is running. STOP the engine and remove the key, set parking brake and lower attachment.
- Always park the machine on level ground.
- Do not allow minors, untrained personnel or the inexperienced to operate this machine.
- Children are attracted to machine activity. Be aware of children and do not allow them in the working area. Turn off the machine if a child enters the work area.
- Do not operate or repair machine if you are not in good physical and mental health, if you will be distracted by personal devices, or are under the influence of any substance which might impair decision, dexterity, or judgment.
- Keep people and pets a safe distance away while using this machine. Injury could result from flying debris. Stop machine if someone enters the work area.
- Wear protective clothing and personal safety devices to protect your head, eyes, ears, hands, and feet.
- Always be alert to what is happening around you, but do not lose focus on the task you are performing.
- Always look in the direction the machine is moving.
- Stop operation immediately at any sign of equipment failure. An unusual noise or vibration can be a warning of equipment failure or a sign that maintenance is required. Make all necessary repairs before operating machine again.
- Only operate in well-lit conditions.

OPERATION SAFETY

WARNING

- Do not attempt to work on the Terra Rake while the power unit engine is running.
- Inspect machine before operation. Repair or replace any damaged, worn, or missing parts. Be sure guards and shields are in proper working condition and are secured in place. Make all necessary adjustments before operating machine.
- Alterations or modifications to this machine can reduce safety and could cause damage to the machine.
- Before each use, verify that all controls function properly and inspect all safety devices. Do not operate if controls or safety devices are not in proper working condition.

WARNING



- Make sure all hydraulic connections are tight and all hydraulic hoses and tubes are in good condition. Repair any leaks and replace any damaged or deteriorated hoses or tubes before starting the machine.
- Hydraulic leaks can occur under high pressure. Hydraulic leaks require special care and attention. Use a piece of cardboard and a magnifying glass to locate suspected hydraulic leaks. Keep body and hands away from pinhole leaks or nozzles that eject high pressure hydraulic fluid. Hydraulic fluid escaping under high pressure can penetrate the skin causing serious injury, leading to severe complications and/or secondary infections if left untreated. If hydraulic fluid is injected into the skin, seek immediate medical attention.
- The Terra Rake hydraulic system may contain stored energy. Before performing maintenance or repairs on the attachment, lower attachment to the ground, shut off power unit engine, put hydraulic accessory lever in float to relieve hydraulic pressure, and disconnect hydraulic hoses from the auxiliary quick connectors.
- Ensure the Terra Rake is fastened securely to the power unit before operating.
- Never leave the operator's seat without lowering the attachment to the ground, setting the parking brake, shutting off the engine, and removing the ignition key. Make sure all moving parts have come to a complete stop before dismounting.
- Do not attempt to straighten bent tines. Bending a tine may cause it to break.
- Do not use the TR270 for digging or moving large amounts of material. The TR270 is designed for finishing work. Overly aggressive contact with the ground, aggregate, rocks, and other debris can cause damage to the Terra Rank including bent or broken tines.
- Know the work area well before operation. Do not operate where traction or stability is questionable.



ASSEMBLY



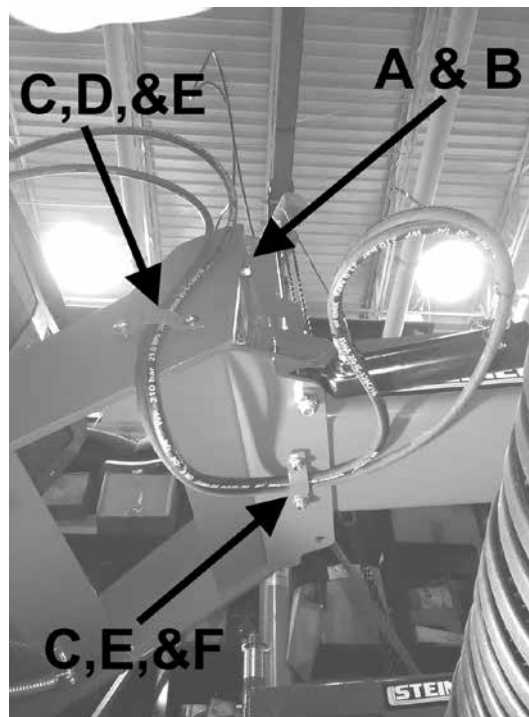
1. On level ground, remove rake and attaching parts from shipping crate.
2. Attach Hitch Frame to Main Frame with eight 3/8-16 X 1 bolts **A** and eight 3/8-16 nuts **B** as shown.
3. Lower kickstand. Adjust to desired height.
4. Attach caster arms to desired location. See Caster Arm Placement Section for information regarding caster arm location.
5. Route hoses and install hose clamp **C** to main frame using two 5/16-18x1-1/4 bolts **F** and two 5/16-18 nuts **E**. Install hose clamp **C** to hitch frame using two 5/16-18 x 1 bolts **D** and two 5/16-18 nuts **E**. Be sure to provide enough slack to allow full motion of hitch arms while not pulling hoses too tight.
6. Grease center ball joint and caster wheels.

Attaching to Tractor

7. Operate latch control lever on tractor to open hitch latches.
8. Drive tractor into position aligning the quick hitch.
9. Engage both latches and confirm they are in the locked position.
10. Lower, set parking brake, turn off tractor.
11. Wipe hose ends clean and attach hydraulic hoses to auxiliary quick connect ports on power unit.
12. Raise kickstand.
13. Check and tighten all bolts. Grease center ball joints and caster wheels.

Rear Weight Requirements

- The Steiner 450 tractors requires two 50# rear weights based upon average raking conditions and operator's weight of 150 lbs. The recommendations may vary with the weight of the operator, other accessories, and operating conditions. It is the operator's responsibility to determine the correct amount of weight needed to improve stability. All weights must be removed when the rake is removed.
- If equipped with a cab, no weights are required.



NOTE: Optional 3-point hitch installation is covered under its own section. See 3-Point Hitch Installation Section.

OPERATION

CAUTION

1. Set tine depth and angle for desired surface finish. See Angle Adjustment and Tine Depth Adjustment Sections.
2. Use hydraulic angle adjustment to rotate rake left or right.
3. Transport with the rake raised to prevent tines from catching on high spots, rocks, debris, or other obstacles.
4. Operate in "FLOAT" to allow the rake to follow terrain and level independently of tractor.
5. Remove large rocks before raking. DO NOT use the Terra Rake as a bulldozer. If large amounts of material needs to be leveled, start with a Steiner Slip Scoop or Steiner Power Angle Blade and smooth out first. Finish with the Terra Rake.

Detaching from Tractor

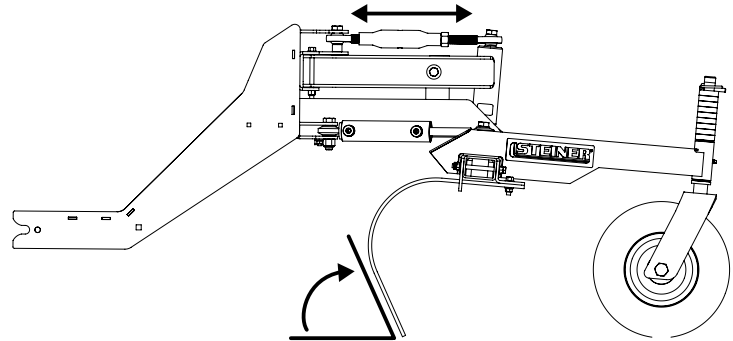
1. Park power unit on level surface and set the parking brake.
2. Lower kickstand and lower rake to the ground. Shut off the tractor.
3. Disconnect the hydraulic hoses from the tractor and store with the hose ends on rake. Do not allow hose ends to lay on the ground.
4. Disengage the front hitch latches.
5. Restart unit, release the parking brake and slowly back away from the rake.

TINE DEPTH AND TINE ANGLE ADJUSTMENT

The TR270 tine depth and tine angle can be set to desired depths and angles by adjusting the caster spacer positions and the top link length. See typical configurations below.

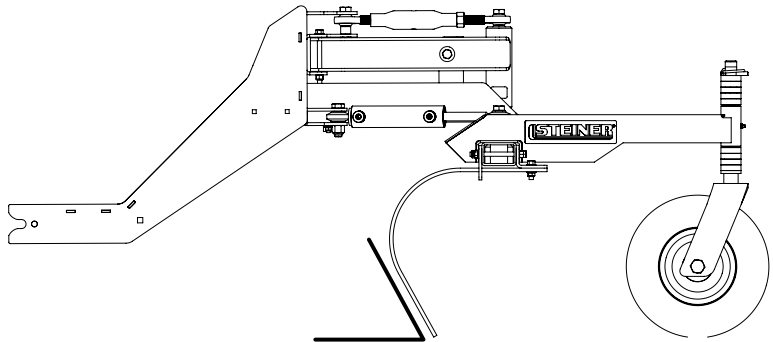
Light Tine Angle

- Light tine angles are useful for lightly combing loose material to finish, clean or prep a work site.
- Increasing the length of the top link will lighten the effectiveness of the tine angle and also decreases the tine depth.
- To maintain desired tine depth, caster spacers need to be repositioned from below the caster arm to above the caster arm.



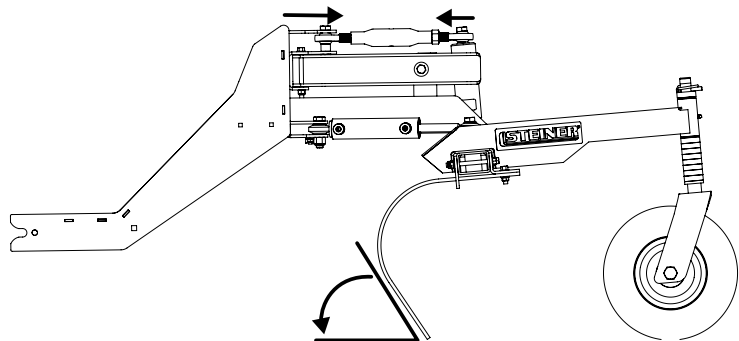
Neutral Tine Angle

- Neutral tine angle produces the most satisfactory results across most working conditions.
- Neutral tine angle position is achieved by adjusting the top link until the top of the caster arms are running parallel with the ground.
- Caster spacer positions may also need to be adjusted to achieve a neutral tine angle at desired depth.



Aggressive Tine Angle

- Aggressive tine angles are useful for moving large amounts of material and working heavily compacted materials.
- Decreasing the length of the top link will increase the aggressiveness of the tine angle and also increase the tine depth.
- To maintain desired tine depth, caster spacers need to be repositioned from above the caster arm to below the caster arm.



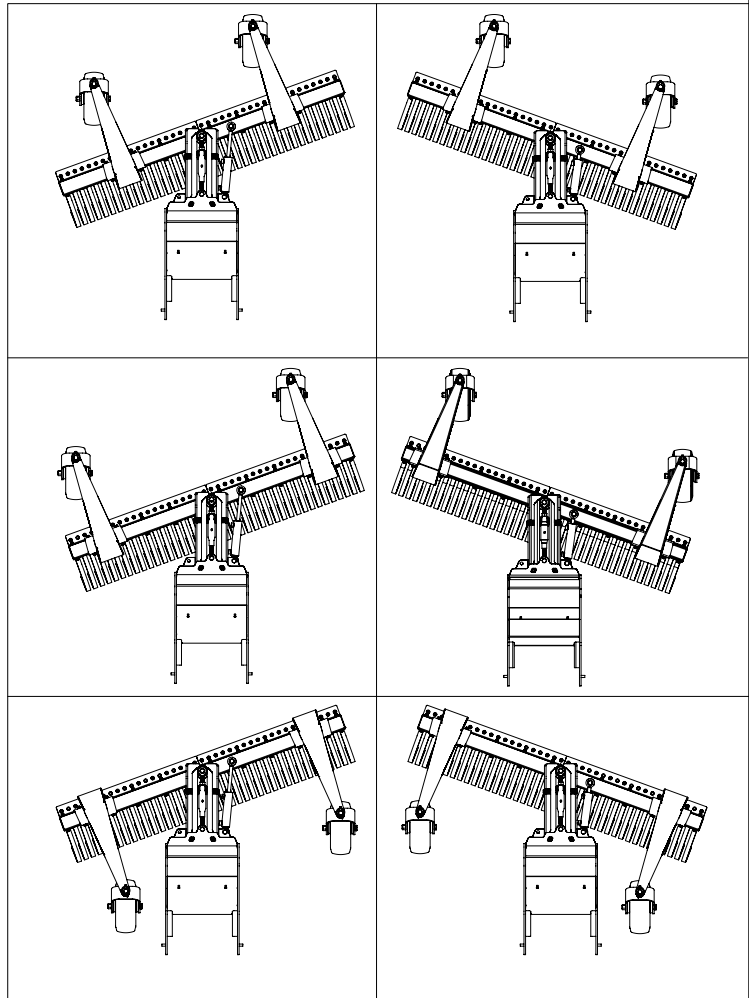
ROTATION ADJUSTMENT

- Rotate the rake to the right or left to direct material and create windrows of debris.
- If desired, reverse auxiliary hydraulic hoses to reverse control operation.



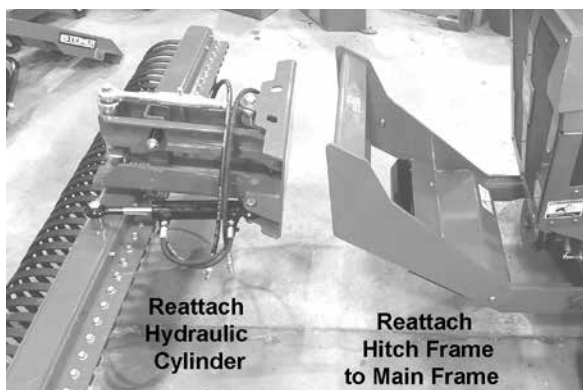
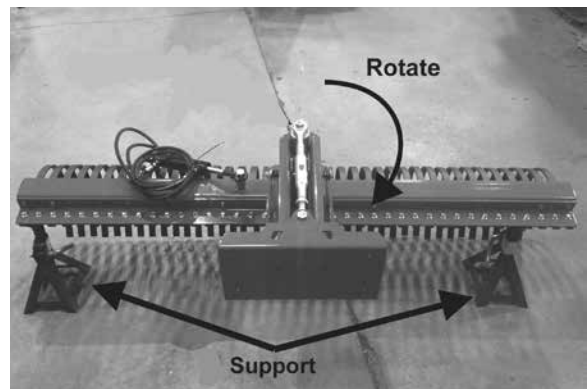
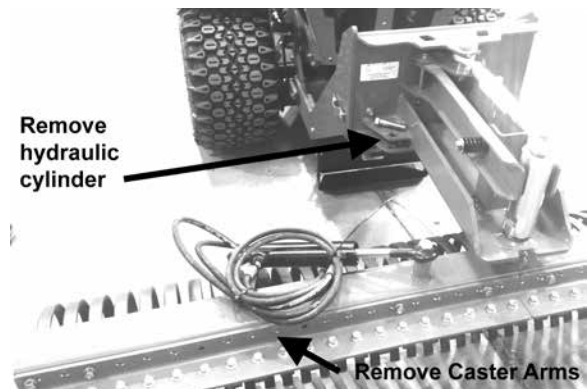
CASTER ARM PLACEMENT

- Mounting the caster arms to the inside will make maneuvering next to barriers easier. In this position, the footprint is narrower and the ends may dig in harder when operating around a mound or ridge.
- Mounting the caster arms to the outside will assist in creating a more level surface.
- Mounting the caster arms to the rear will allow the rake to set the grade and follow the raked surface. The rake will dig in as it approaches inclines. The caster arms must be mounted to the outside to prevent hitch frame contact.
- Removing the caster arms requires tine depth to be set using the auxiliary controls. Removing the caster arms may produce a more uneven surface. Removing caster arms may be useful for clearing large loose debris and working in rough areas where caster arms may be unsuitable.



OPTIONAL REAR MOUNT 3-POINT HITCH

1. To setup the TR270 Terra Rake for use on the 3-Point Quick Hitch QH202, it is recommended to first attach the rake to the front of the tractor for setup.
2. Remove hose clamps on the side of the quick hitch frame and main frame of the rake.
3. Remove the caster arms.
4. Remove hydraulic cylinder from the main frame, and secure the hydraulic hoses out of the way.
5. Support the rake so that it will not fall once unbolted. Unbolt the main frame from the quick hitch frame.
6. Rotate the main frame 180°.
7. Reattach hydraulic cylinder.
8. With the hitch frame still on tractor, reattach to the main frame.
9. Place kickstand down and unhook the hitch frame from the tractor.



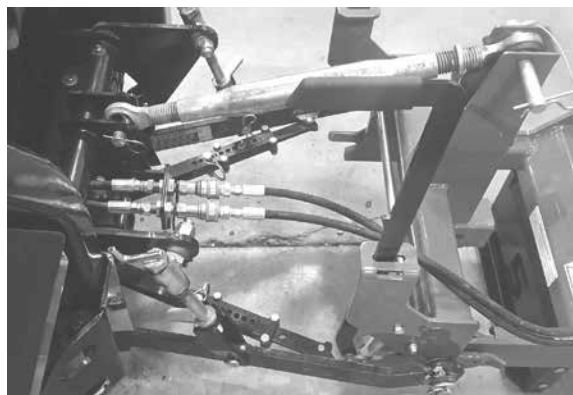
OPTIONAL 3-POINT HITCH MOUNTING

TERRA RAKE

10. For stability, the 75-71203 WB200 Front Weight Bar Kit and 75-71204 WB201 Weight Kit must be used if the TR270 is mounted to the 3-point hitch.



11. Attach the terra rake to the 3-point quick hitch. Reattach hose clamps to main frame and hitch frame. Ensure hoses are not pinched or pulled too tight.



12. Plug in hydraulic hoses to rear accessory ports.

13. Reinstall caster arms.



14. When mounted to the 3-point Quick Hitch adapter and caster arms are mounted towards the tractor, the caster arms must be mounted to the outside to prevent contact.



MAINTENANCE

DAILY INSPECTION AND MAINTENANCE



WARNING



- Visual inspection for loose, missing or worn components and replace if needed.
- Inspect for bent rake tines and replace as needed.
- Check tire pressure.
- Inspect and grease pivot ball and caster bushings as needed.
- Inspect hydraulic hoses and fittings for leaks, deterioration, or damage.
- Inspect and lightly lube top link as needed.

ANNUAL INSPECTION AND MAINTENANCE

- Visual inspection for loose, missing or worn components and replace if needed.
- Inspect for bent rake tines and replace as needed.
- Check tire pressure.
- Inspect and grease pivot ball and caster bushings as needed.
- Inspect and lubricate rod ends on top link.
- Inspect and lubricate rod ends on hydraulic cylinder.
- Inspect caster wheel axles and bearings.
- Inspect hydraulic hoses and fittings for leaks, deterioration, or damage.

TIRE PRESSURE

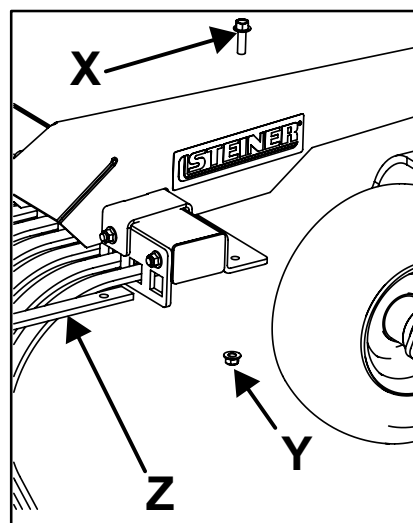
Tire pressure should be maintained at 40 psi.

LUBRICATION LOCATIONS

3 points-Centerlink and wheel casters

RAKE TINE REPLACEMENT

1. Park power unit on level surface and set the parking brake.
2. Lower kickstand and lower rake to the ground. Shut off the tractor.
3. Adjust top link so tines are off the ground.
4. Remove bolt **X** and nut **Y**. Slide out old tine.
5. Insert new rake tine and attach to rake with bolt **X** and nut **Y**.



STORAGE

PLACING RAKE IN STORAGE

1. Clean the rake.
2. Inspect for loose or missing hardware, damaged or worn parts. Repair or replace any damaged or worn parts.
3. Apply grease to grease points. Wipe off excess grease. Inspect and lightly lube top link as needed.

REMOVING RAKE FROM STORAGE

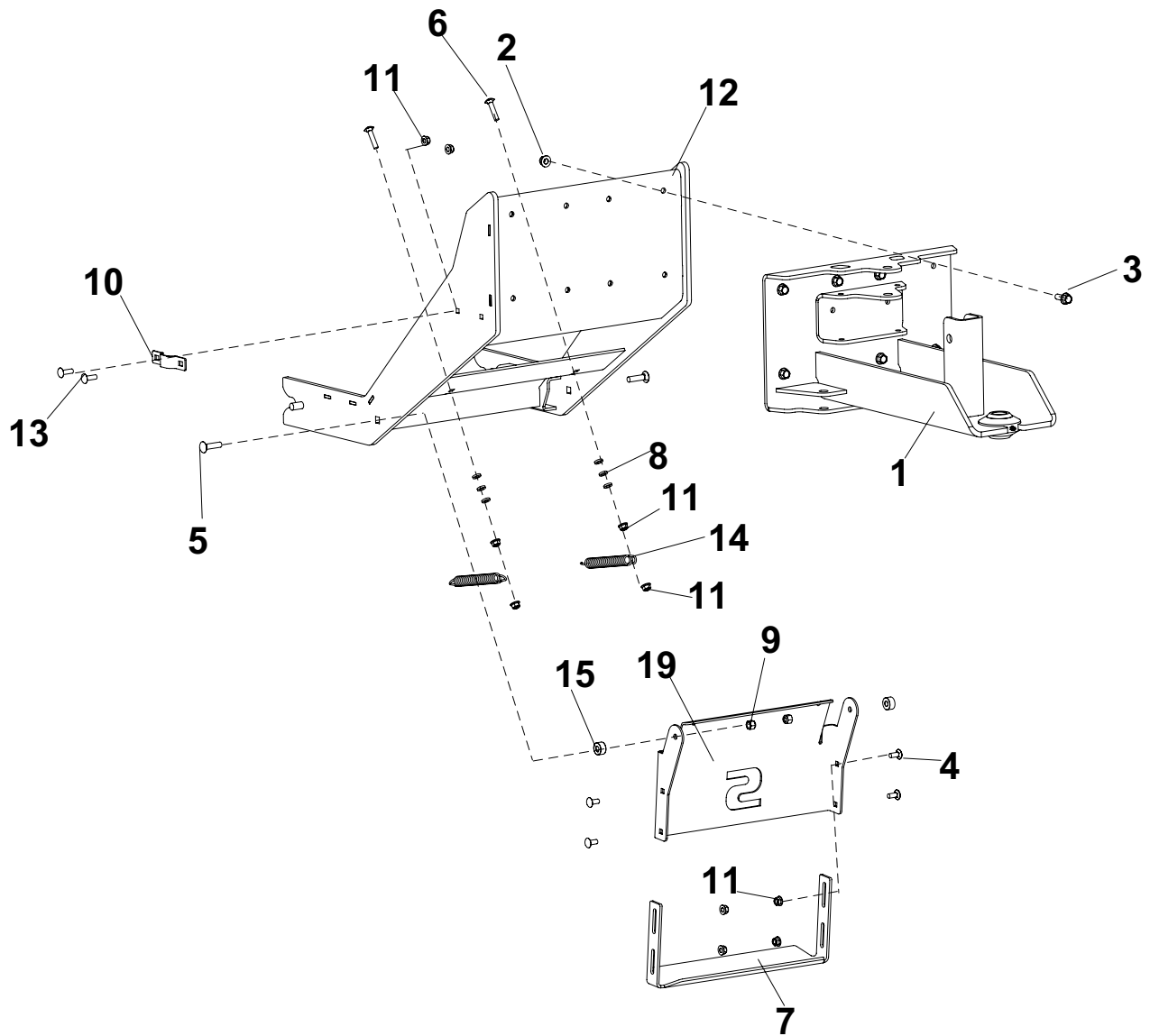
1. Clean and inspect rake for use.

PARTS SECTION

HITCH ASSEMBLY

TERRA
RAKE

FIGURE 1



TERRA RAKE

HITCH ASSEMBLY

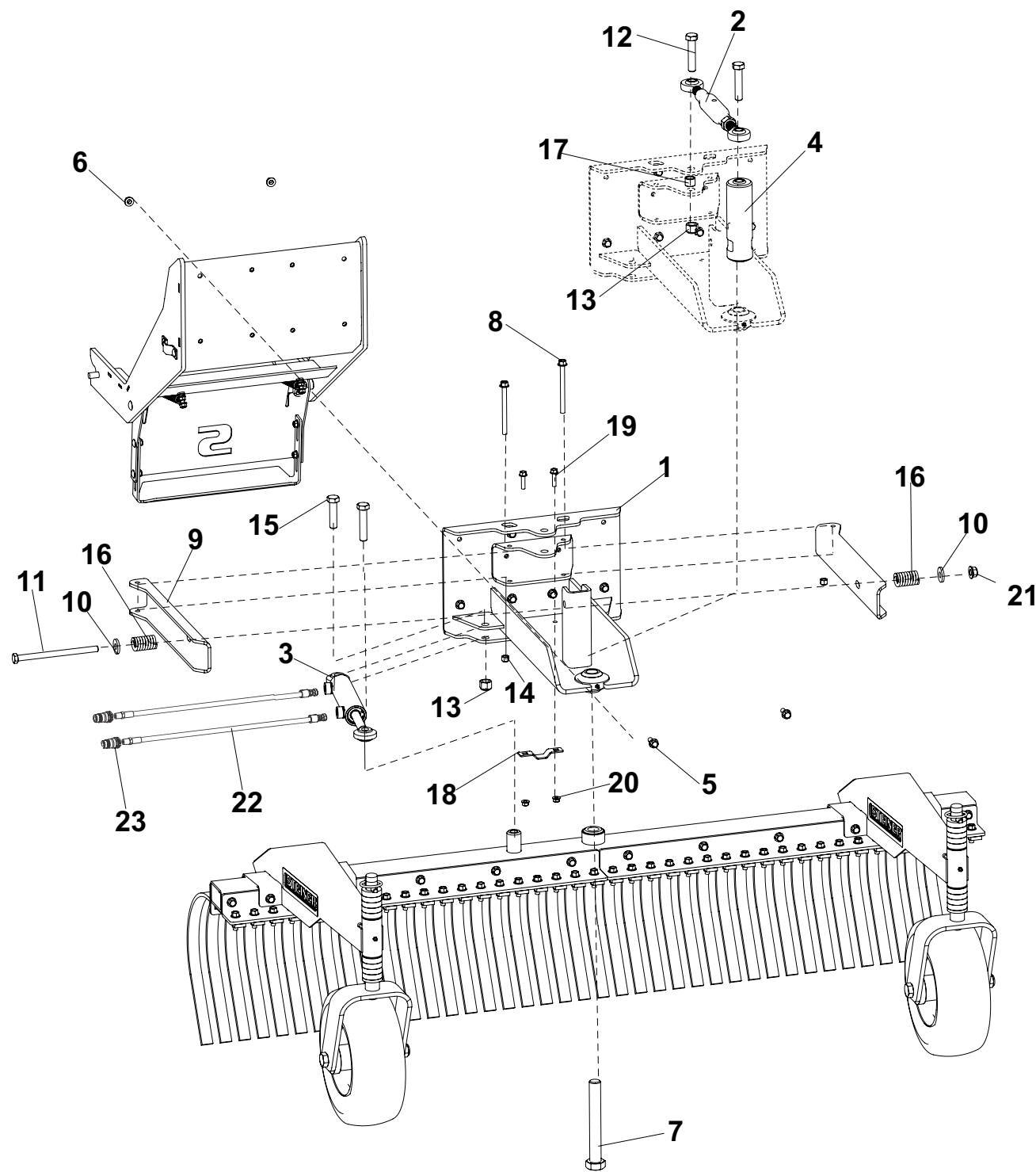
FIGURE 1

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4177225.17	WLDMT-FRAME, MAIN	1				
2	64268-03	NUT-FL NYLON LOCK 3/8-16	8				
3	64262-011	BLT-FLG HD 3/8-16 X 1	8				
4	64018-51	BLT-CRG 5/16-18 X 3/4 SN	4				
5	64018-49	BLT-CRG 3/8-16 X 1-1/2	2				
6	64018-34	BLT-CRG 5/16-18 X 1-1/2	2				
7	4177754.7	BRKT-KICKSTAND LOWER	1				
8	64163-02	WSHR .321X.593X11GA	6				
9	64229-03	NUT-NYLON LOCK 3/8-16	2				
10	4176763.17	CLAMP-HOSE	1				
11	64268-02	NUT-FL NYLON LOCK 5/16-18	10				
12	4177196.17	WLDMT-HITCH FRAME	1				
13	64018-15	BLT-CRG 5/16-18X1 SN	2				
14	4174797	SPRING, BBC	2				
15	33030-07	IDLER BUSHING	2				
16	4177753.7	BRKT-KICKSTAND UPPER	1				

MAIN FRAME ASSEMBLY

TERRA
RAKE

FIGURE 2



TERRA RAKE

MAIN FRAME ASSEMBLY

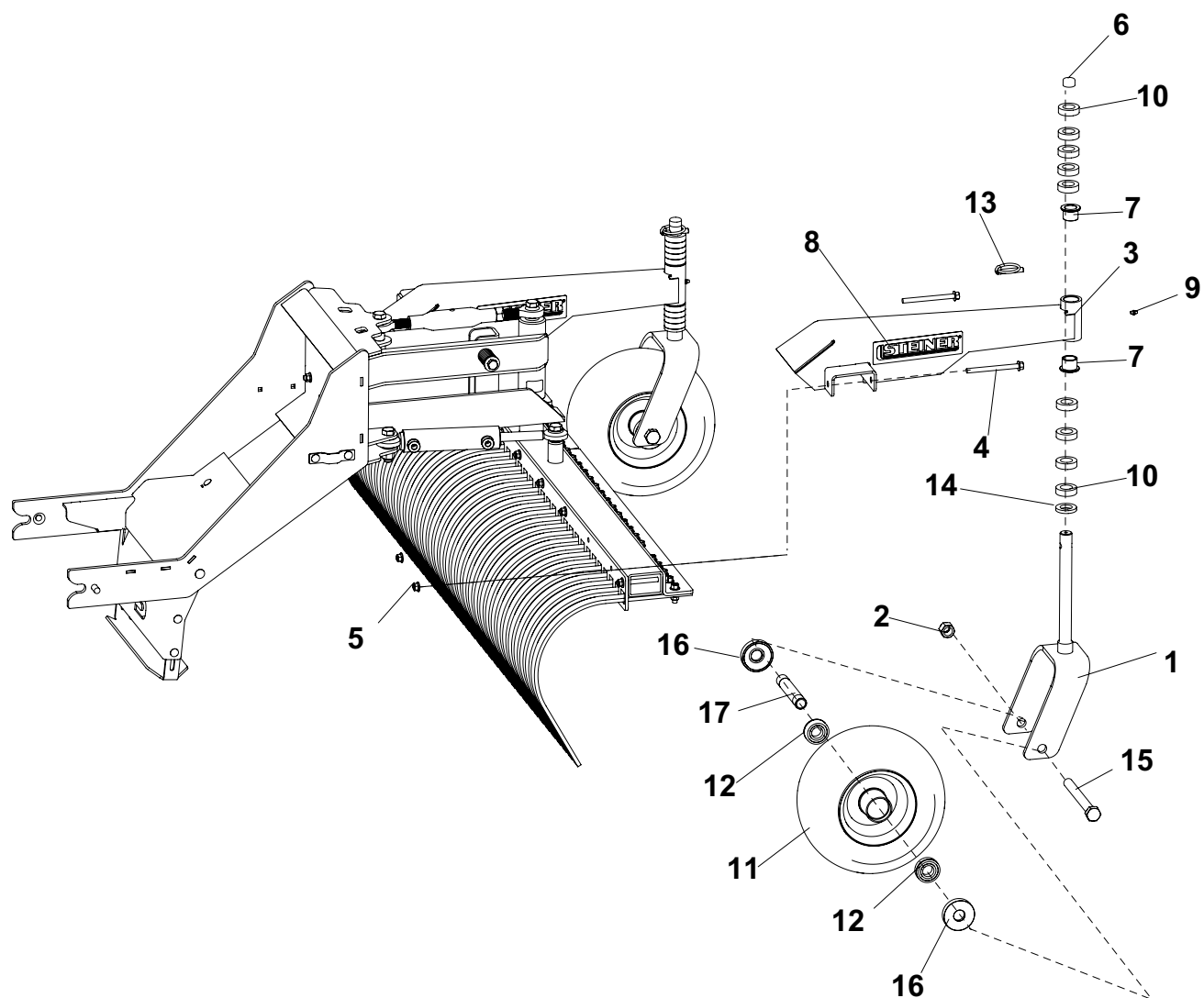
FIGURE 2

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4177225.17	WLDMT-MAIN FRAME	1				
2	4177210	TOP LINK	1				
3	23-058	CYLINDER 1-1/2 X 5 DUMP	1				
4	4176748	BAR-TINE FRAME CENTERING	1				
5	64262-011	BLT-FLG HD 3/8-16 X 1	8				
6	64268-03	NUT-FL NYLON LOCK 3/8-16	8				
7	64123-342	BLT-HEX 1-14X7-1/2	1				
8	64262-040	BLT-FLG HD 3/8-16 X 4-1/2 GR 8	2				
9	4176753.17	ARM-CENTERING	2				
10	64163-99	WSHR-.510X1.31X.179	2				
11	64123-210	BLT-HEX 1/2-13X7-1/2	1				
12	64123-325	BLT-HEX,5/8-11 X 3	3				
13	64229-06	NUT-NYLON LOCK 5/8-11	2				
14	64268-03	NUT-FL NYLON LOCK 3/8-16	2				
15	64123-168	BLT-HEX 5/8-11X2-1/2	1				
16	4177744	SPRING-COMPRESSION 1.25"X2"	2				
17	4130974-01	SPACER-.625/.635x.88x.688	1				
18	4176763	CLAMP-HOSE	1				
19	64262-008	BLT-FLG HD 5/16-18 X 1-1/4	2				
20	64268-02	NUT-FL NYLON LOCK 5/16-18	2				
21	64268-05	NUT-FL NYLON LOCK 1/2-13	1				
22	4177755-01	HOSE-M 1/4NPFT - M 1/4 NPFT X 75	2				
23	23-004	MALE QUICK COUPLER	2				

CASTER WHEEL ASSEMBLY

TERRA
RAKE

FIGURE 3



TERRA RAKE

CASTER WHEEL ASSEMBLY

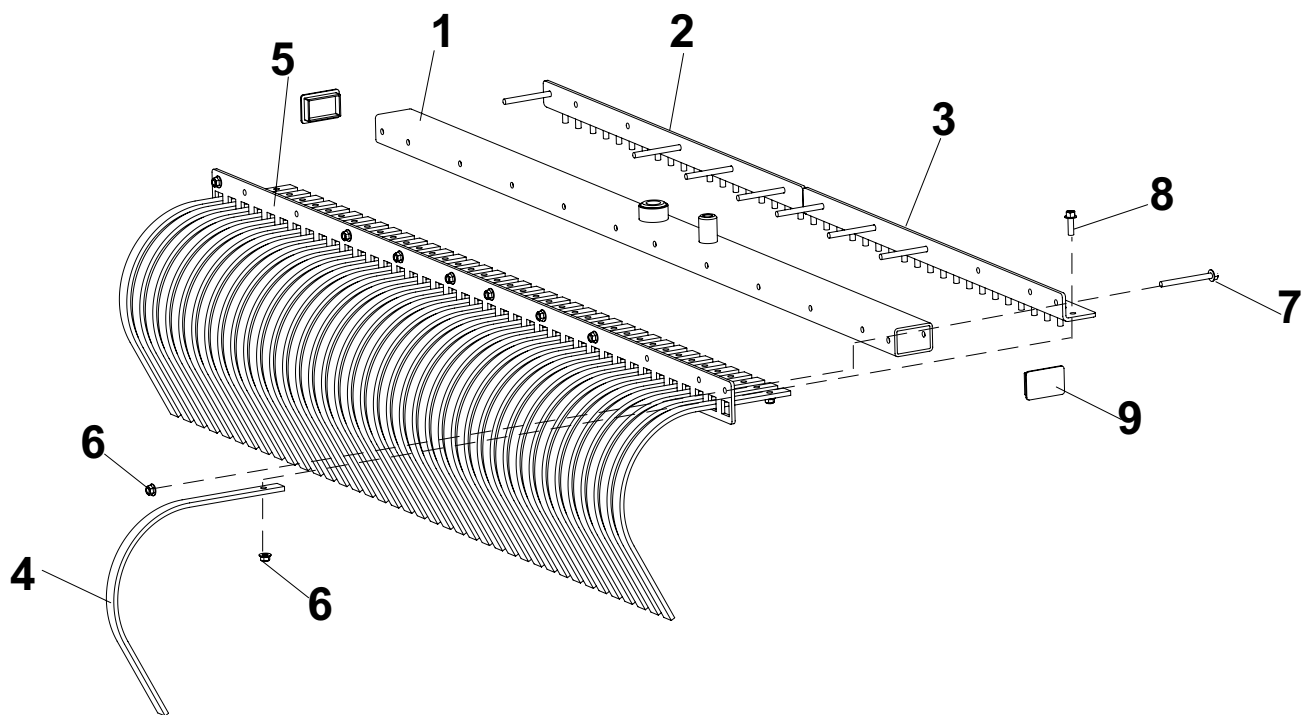
FIGURE 3

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4169133.7	YOKE-CASTER	2				
2	64229-07	NUT-NYLON LOCK 3/4-10	2				
3	4176898.17	WLDMT-CASTER, ARM	2				
4	64262-040	BLT-FLG HD 3/8-16 X 4-1/2 GR 8	4				
5	64268-03	NUT-FL NYLON LOCK 3/8-16	4				
6	4137004	CAP-VINYL	2				
7	4129801	BUSHING-FLANGED	4				
8	4167312	DECAL-STEINER	6				
9	85010N	ZERK 1/4-28 STR SELF THREAD	2				
10	64163-22	WSHR 1-1/32X1-3/4X1/2	18				
11	4176233	WHEEL-ASSY 13X5.00-6 BLK	2				
12	2722228-03	BEARING-205 W/SNAP RING	2				
13	64173-04	QUICK PIN 7/16 X 2	4				
14	64163-07	WSHR 1-1/32X1-3/4X1/4	2				
15	64123-215	BLT-HEX 3/4-10X7-1/2	2				
16	2722231	SPACER-END	4				
17	2722230-02	SPANNER	2				

TINE RAKE ASSEMBLY

TERRA
RAKE

FIGURE 4



TERRA RAKE

TINE RAKE ASSEMBLY

FIGURE 4

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4176899.17	WLDMT-TINE FRAME	1				
2	4176766.17	BRKT-TINE HOLDER, LEFT	1				
3	4176765.17	BRKT-TINE HOLDER, RIGHT	1				
4	4177203	TINE, TERRA RAKE	40				
5	4176745.17	PLT-TINE COMB	1				
6	64268-03	NUT-FL NYLON LOCK 3/8-16	48				
7	64262-039	BLT-FLG HD 3/8-16 X 4 GR 8	8				
8	64262-012	BLT-FLG HD 3/8-16 X 1-1/4	40				
9	4177614	PLUG-2X3 TUBE	2				

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