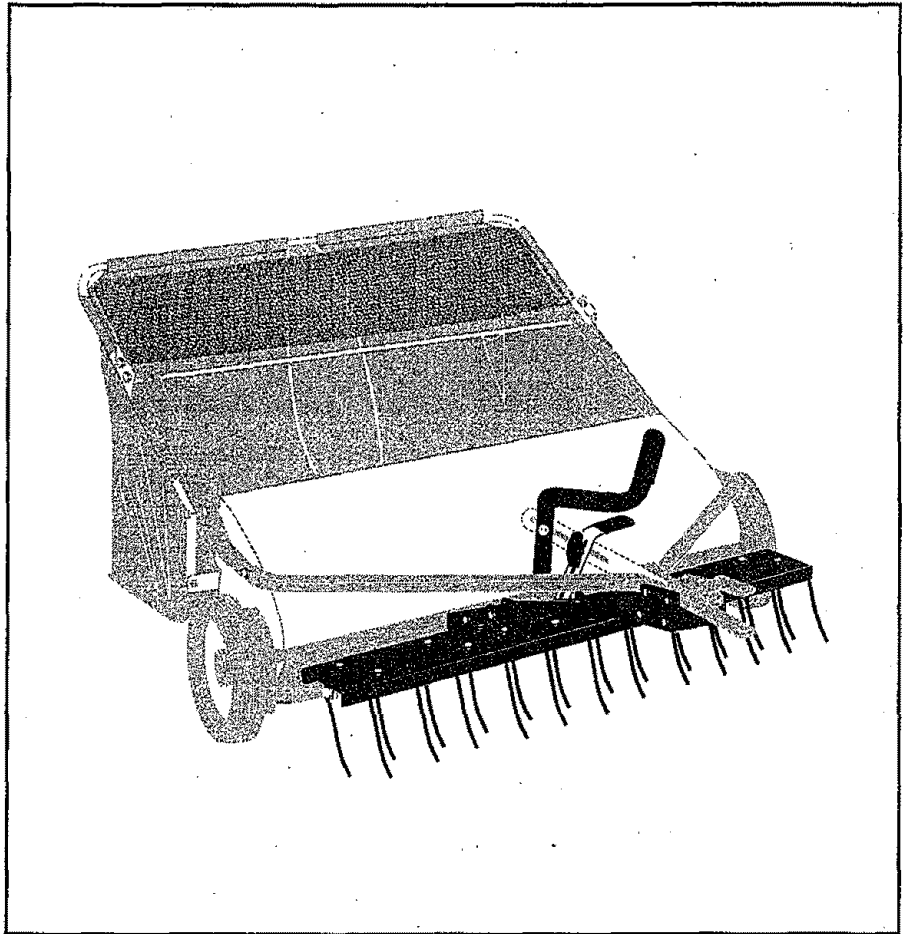


**SEARS**  
**OWNERS**  
**MANUAL**

**Model No.**  
**486.24311**



**CRAFTSMAN<sup>®</sup>**  
**TINE DE-THATCHER**  
**(For 42" Lawnsweepers)**

**CAUTION:**  
Read Rules for  
Safe Operation  
and Instructions  
Carefully

- Safety
- Assembly
- Operation
- Maintenance
- Parts

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Sears, Roebuck and Co., Hoffman Estates, IL. 60179 U.S.A.

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## SAFETY



Any power equipment can cause injury if operated improperly or if the user does not understand how to operate the equipment. Exercise caution at all times when using power equipment.

- Read this owners manual carefully for operating and service instructions before attempting to assemble or operate the de-thatcher. Be thoroughly familiar with the proper use of the de-thatcher.
- Read the vehicle owners manual and vehicle safety rules, and know how to operate the vehicle before using the de-thatcher.
- Read the lawnsweeper owners manual and safety rules, and know how to operate the lawnsweeper before using the de-thatcher.
- Never allow children to operate the tractor or de-thatcher attachment, and do not allow adults to operate without proper instructions.
- This de-thatcher attachment has sharp tine points. Always handle with care and wear substantial foot wear when operating this de-thatcher.
- Do not allow anyone to ride or sit on de-thatcher, the lawnsweeper or on the towing vehicle.
- Keep the area of operation clear of all persons, particularly small children, and also pets.
- Always begin with the transmission in first (low) gear and engine at low speed, and gradually increase speed as conditions permit.
- The vehicle braking and stability may be affected with the attachment of this equipment. Be aware of changing conditions on slopes. Refer to safety rules in the vehicle owner's manual concerning safe operation on slopes. **STAY OFF OF STEEP SLOPES.**
- Always operate up and down a slope, never across the face of a slope
- This equipment should be operated at reduced speed on rough terrain, along creeks and ditches and on hillsides, to prevent tipping and loss of control. Do not drive too close to a creek or a ditch.
- Do not tow this equipment on a highway or any other public thoroughfare.
- Follow the maintenance instructions as outlined in this owners manual.



LOOK FOR THIS SYMBOL TO POINT OUT IMPORTANT SAFETY PRECAUTIONS. IT MEANS--ATTENTION!! BECOME ALERT!! YOUR SAFETY IS INVOLVED.



## WARRANTY



### LIMITED ONE YEAR WARRANTY ON TINE DETHATCHER

For one year from the date of purchase, when this tine dethatcher is maintained and lubricated according to the operating and maintenance instructions in the owner's manual, Sears will repair any defect in material or workmanship free of charge. If this tine dethatcher is used for commercial or rental purposes, this warranty applies for only 90 days from the date of purchase.

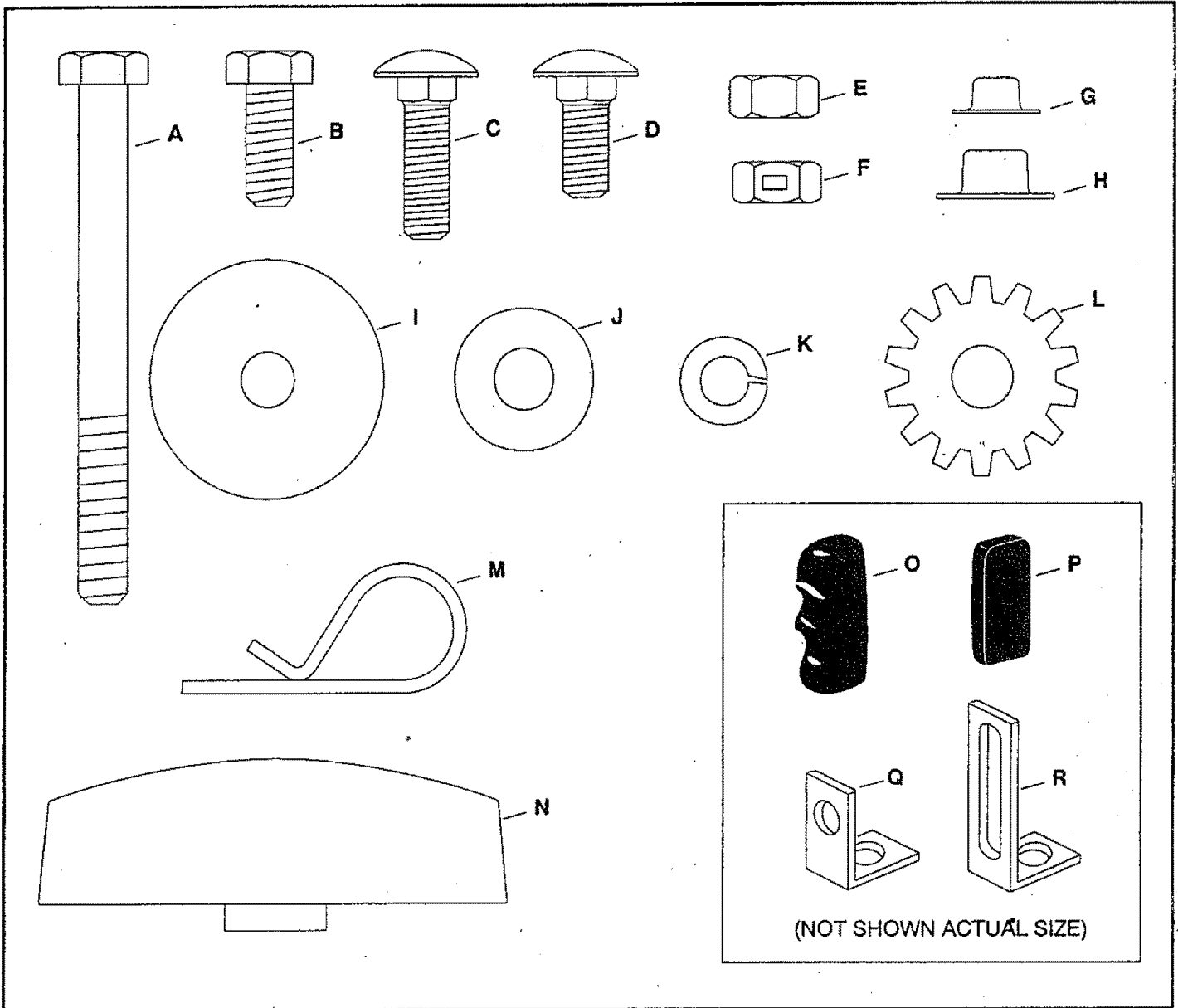
This warranty does not cover repairs necessary because of operator negligence or abuse, including the failure to maintain the equipment according to instructions contained in the owner's manual.

WARRANTY SERVICE IS AVAILABLE BY CONTACTING THE NEAREST SEARS SERVICE CENTER/ DEPARTMENT IN THE UNITED STATES.

This warranty applies only while this product is in the United States.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Sears, Roebuck and Co. D/817 WA. Hoffman Estates, Chicago, IL 60179

# HARDWARE PACKAGE CONTENTS

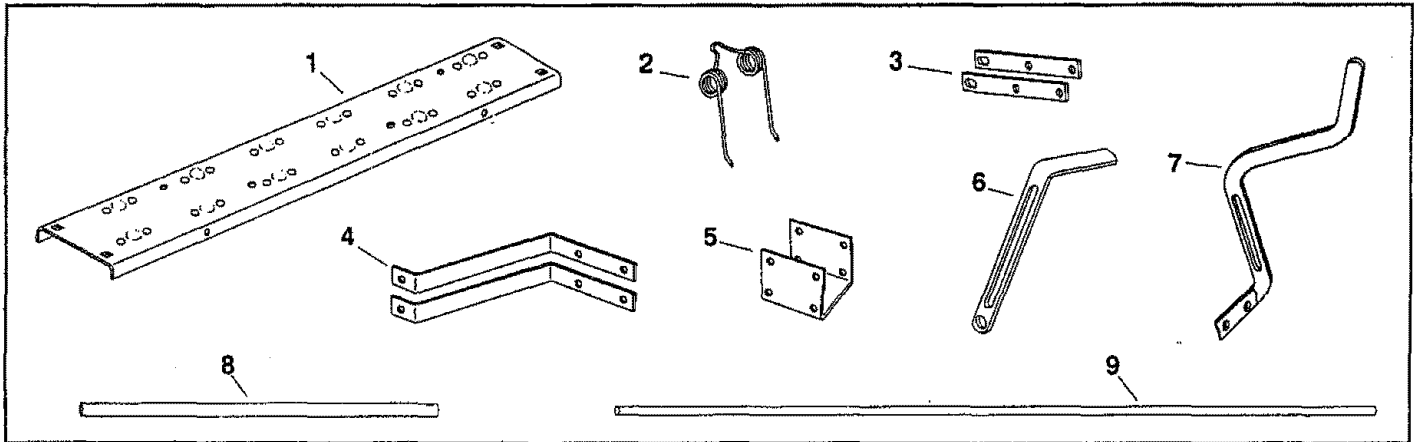


Key	Qty.	Description	Key	Qty.	Description
A	2	Hex Bolt, 5/16-18 x 3-1/4" Lg.	J	1	Flat Washer, 5/16" Std. Wrt.
B	12	Hex Bolt, 5/16-18 x 3/4" Lg.	K	23	Lock Washer, 5/16"
C	2	Carriage Bolt, 5/16-18 x 1" Lg.	L	15	Tooth Lock Washer
D	13	Carriage Bolt, 5/16-18 x 3/4" Lg.	M	1	Hairpin Cotter, 3/32"
E	23	Hex Nut, 5/16"	N	1	Knob
F	3	Hex Lock Nut, 5/16"	O	1	Grip, Height Adjustment Handle
G	2	Palnut, 1/4"	P	1	Grip, Height Adjustment Strap
H	1	Palnut, 3/8"	Q	3	Angle Bracket
I	2	Flat Washer, 1-1/2" O.D.	R	2	Hitch Arm Mount Bracket

# ASSEMBLY

## CARTON CONTENTS (Loose Parts in Carton)

- |                         |                             |
|-------------------------|-----------------------------|
| 1. Tine Shield          | 5. Channel Hitch Bracket    |
| 2. Spring Tines (12)    | 6. Height Adjustment Lever  |
| 3. Hitch Mount Bars (2) | 7. Height Adjustment Handle |
| 4. Hitch Mount Arms (2) | 8. Pivot Rod                |
|                         | 9. Spring Alignment Rod     |



## TOOLS REQUIRED FOR ASSEMBLY

- (2) 1/2" Wrenches
- (1) Hammer

Before assembling the de-thatcher, lay out all of the parts and hardware as shown on the previous pages.

## ASSEMBLY OF DETHATCHER

- Assemble six spring tines to the front of the tine shield using six 5/16" x 3/4" carriage bolts, tooth lock washers, 5/16" lock washers and 5/16" hex nuts. **Tighten.** See figure 1.

**NOTE:** Tines must be seated between dimples and against front edge of tine shield.

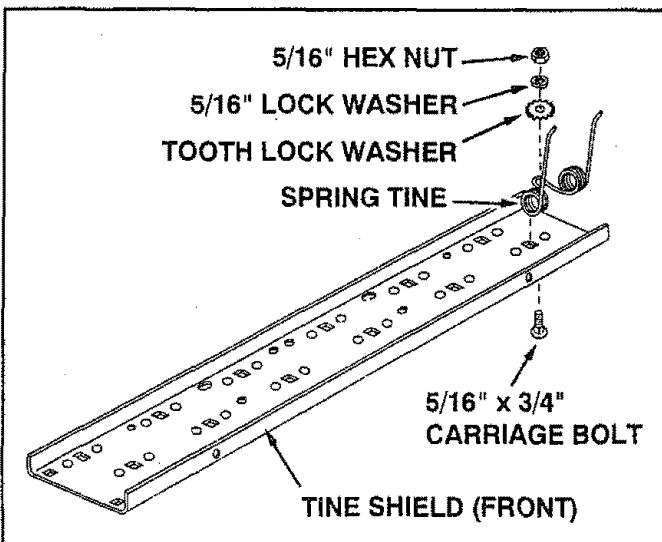


FIGURE 1

- Place one end of the spring alignment rod against a hard surface and use a hammer to tap a 1/4" palnut onto the rod. Assemble a 1-1/2" flat washer, six spring tines (all facing the same direction), and another 1-1/2" flat washer onto the rod. Finally, tap another 1/4" palnut onto the other end of the rod. See figure 2.

**NOTE:** The spring alignment rod prevents rear spring tines from pivoting and becoming loose.

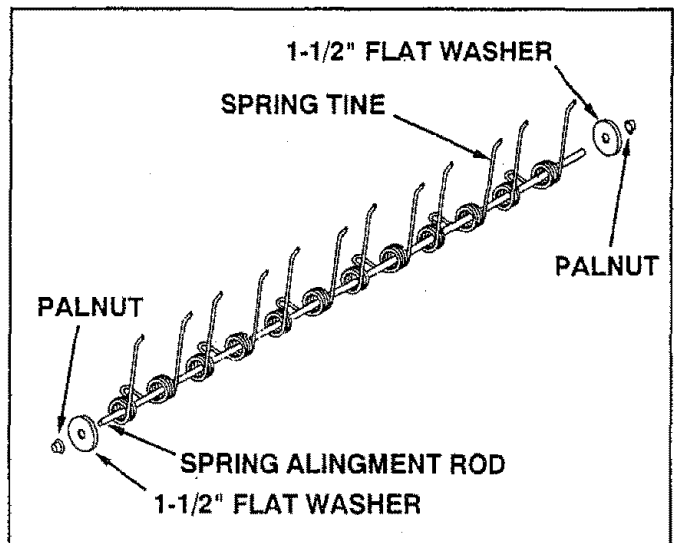
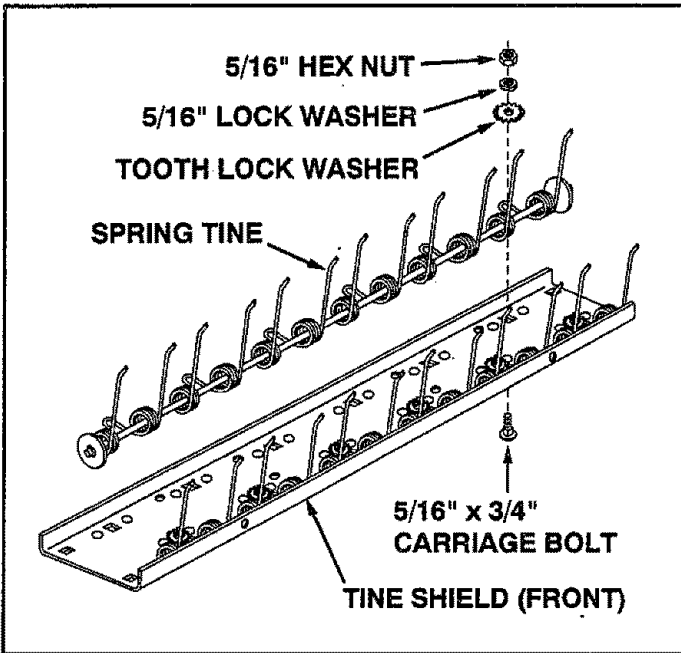


FIGURE 2

- Assemble the spring tines with rod to the rear of the tine shield using six 5/16" x 3/4" carriage bolts, tooth lock washers, 5/16" lock washers and 5/16" hex nuts. **Tighten.** See figure 3.

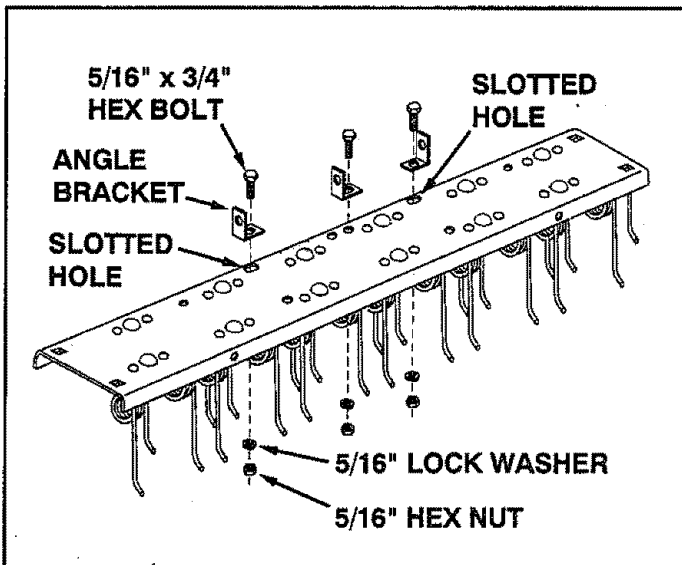
**NOTE:** Tines must be seated between dimples.



**FIGURE 3**

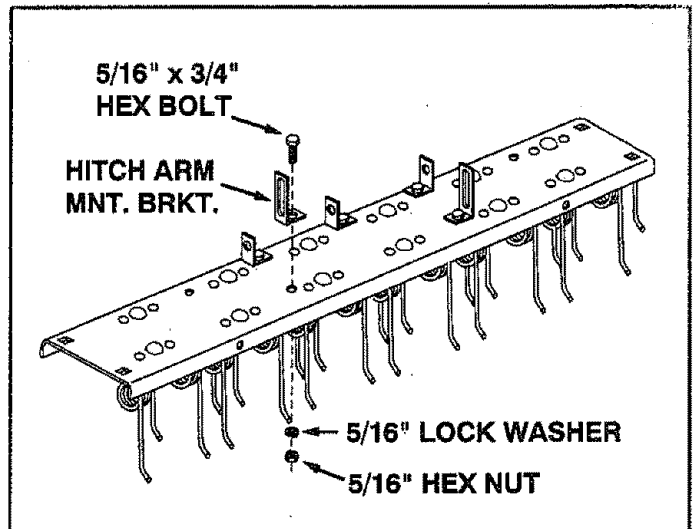
- Assemble the three angle brackets to the top of the tine shield as shown in figure 4, using a 5/16" x 3/4" hex bolt, a 5/16" lock washer and a 5/16" hex nut for each bracket.

**NOTE:** The slotted holes in the tine shield allow for adjustment when mounting the de-thatcher to the lawnsweeper.



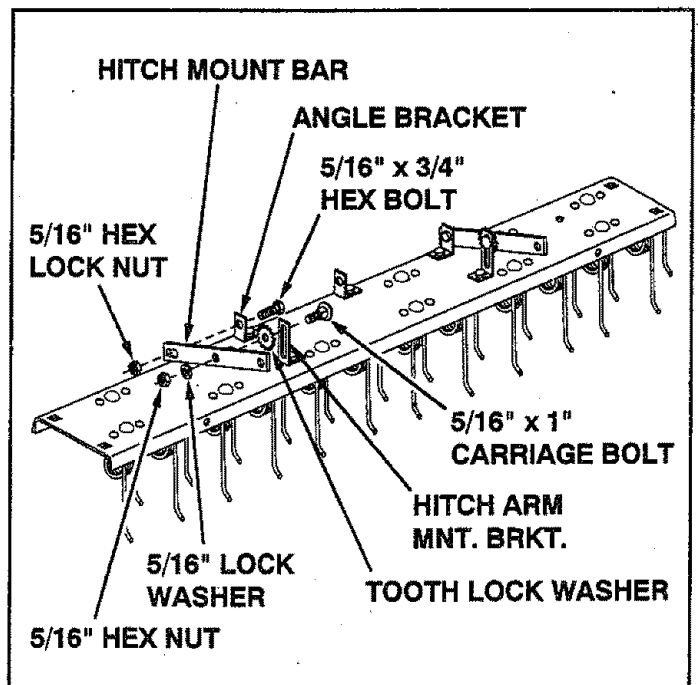
**FIGURE 4**

- Assemble the hitch arm mount brackets to the top of the tine shield using a 5/16" x 3/4" hex bolt, a 5/16" lock washer and a 5/16" hex nut for each bracket. See figure 5.



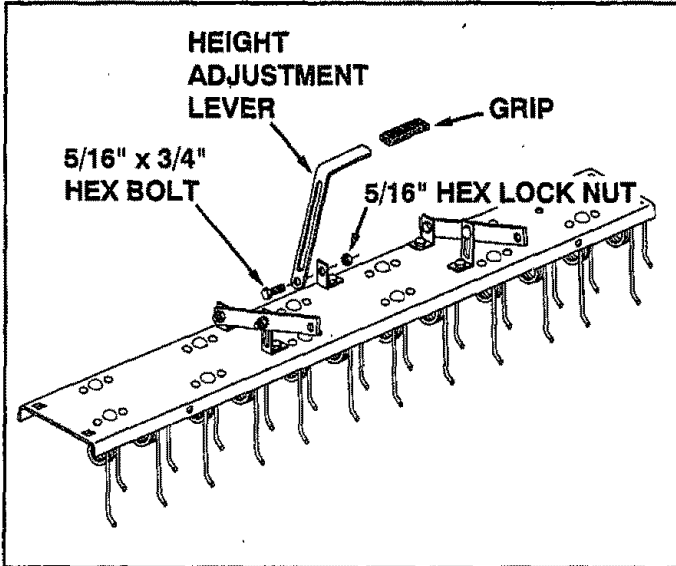
**FIGURE 5**

- Assemble the hitch mount bars to the outside of the angle brackets using two 5/16" x 3/4" hex bolts and two 5/16" hex lock nuts. Fasten through the slotted holes in the bars. Tighten so that the bars can pivot. See figure 6.
- Assemble the hitch mount bars to the hitch arm mount brackets using two 5/16" x 1" carriage bolts, tooth lock washers, 5/16" lock washers and 5/16" hex nuts. (Be sure to place the tooth lock washer between the hitch mount bar and the hitch arm mount bracket.) See figure 6.



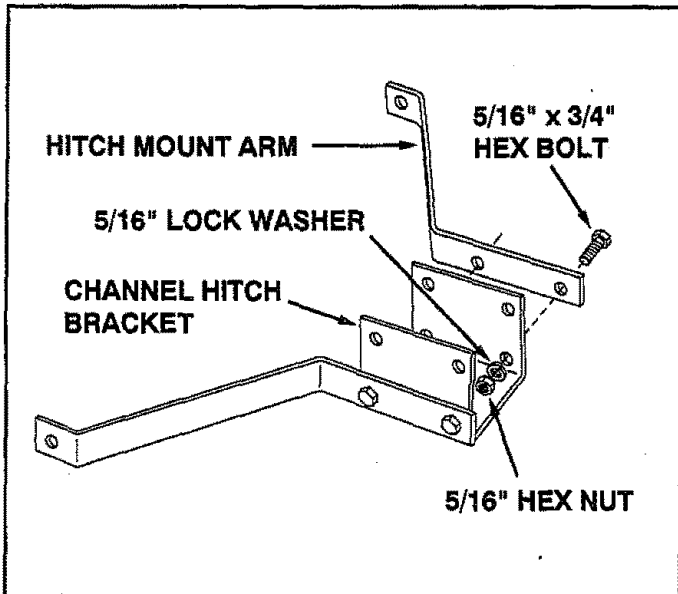
**FIGURE 6**

- Assemble the plastic grip onto the height adjustment lever. See figure 7.
- Assemble the height adjustment lever to the middle angle bracket using a 5/16" x 3/4" hex bolt and a 5/16" hex lock nut. Tighten so that the lever can pivot. See figure 7.



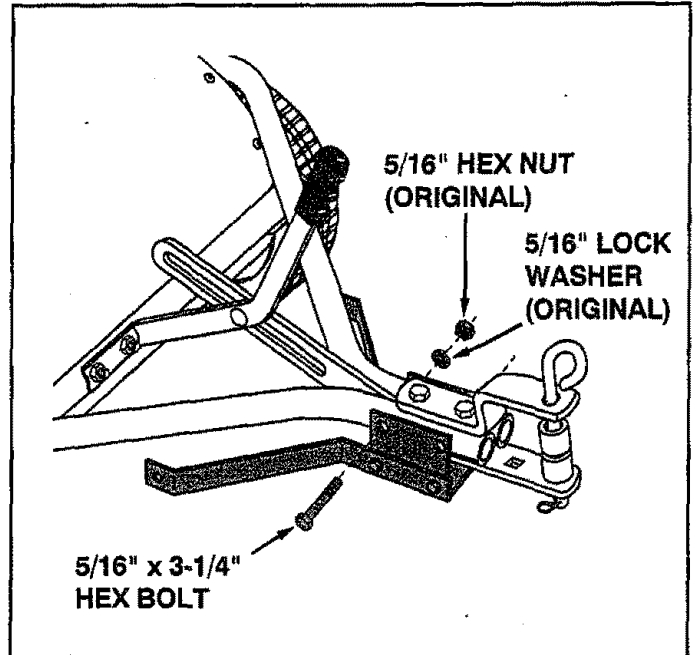
**FIGURE 7**

- Assemble the hitch mount arms to the channel hitch bracket using four 5/16" x 3/4" hex bolts, 5/16" lock washers and 5/16" hex nuts. See figure 8.



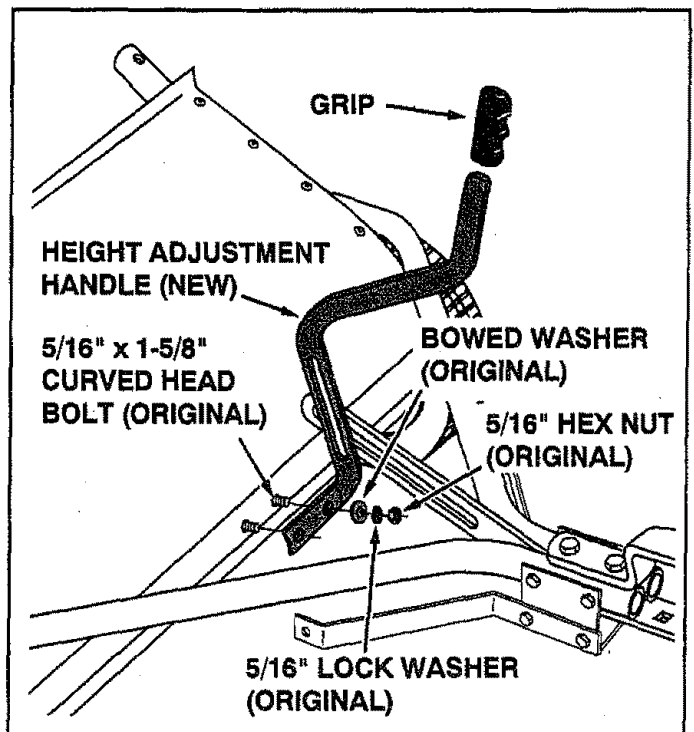
**FIGURE 8**

- Remove the bolts, lock washers and hex nuts which fasten the ends of the sweeper hitch tubes together. Assemble the channel hitch bracket to the hitch tubes, using two new 5/16" x 3-1/4" hex bolts and re-using the original 5/16" lock washers and 5/16" hex nuts. See figure 9.



**FIGURE 9**

- Remove the height adjustment handle from the sweeper, keeping all of the hardware for use with the new handle.
- Assemble the new height adjustment handle to the sweeper, re-using the original 5/16" x 1-5/8" curved head bolts, bowed washers, 5/16" lock washers and 5/16" hex nuts as shown in figure 10.
- Assemble the plastic grip onto the new height adjustment handle. See figure 10.



**FIGURE 10**

- Fasten the sweeper height adjustment strap to the new height adjustment handle, re-using the original 5/16" x 3/4" carriage bolt, tooth lock washer, 5/16" flat washer and knob. Place the tooth lock washer between the handle and the strap. See figure 11.

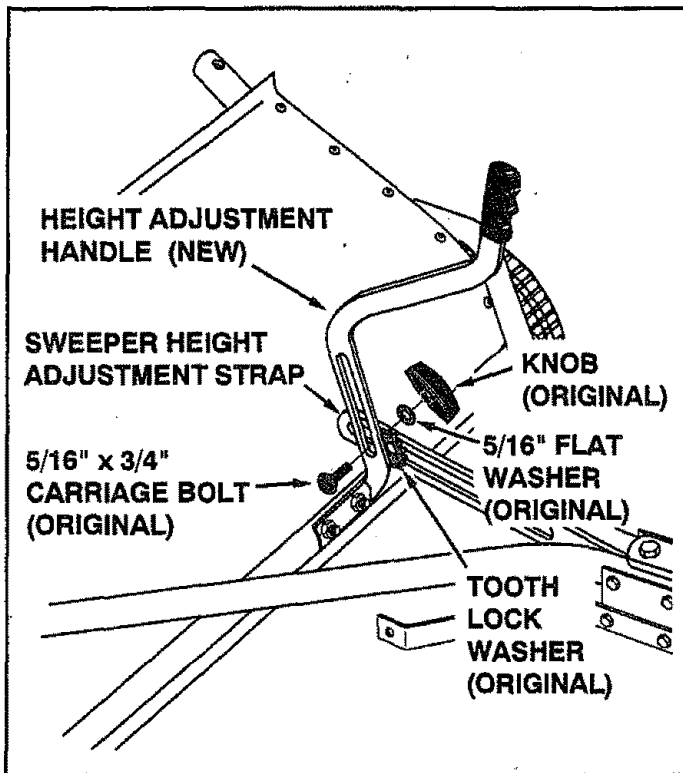


FIGURE 11

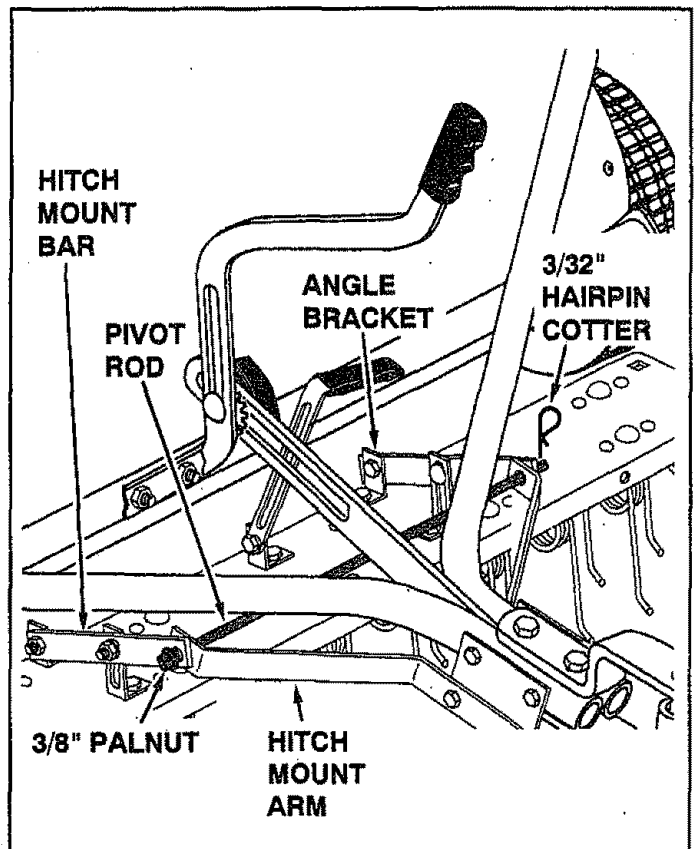


FIGURE 12

- To assemble the 3/8" palnut onto the pivot rod, place the end of the rod with the cross hole against a hard surface. Using a hammer, tap the palnut onto the solid end of the pivot rod.
- Place the de-thatcher underneath the hitch tubes in front of the sweeper. Connect the hitch mount bars to the hitch mount arms using the pivot rod and the 3/32" hairpin cotter as shown in figure 12.

**NOTE:** If the hitch mount bars do not line up as shown with the hitch mount arms, the angle brackets at the rear of the tine shield may be loosened and moved side to side. This will adjust the bars to align on the outside of the arms.

- Fasten the de-thatcher height adjustment lever to the sweeper height adjustment strap using a 5/16" x 3/4" carriage bolt, a tooth lock washer, a 5/16" flat washer and a knob. Place the tooth lock washer between the strap and the lever. See figure 13.

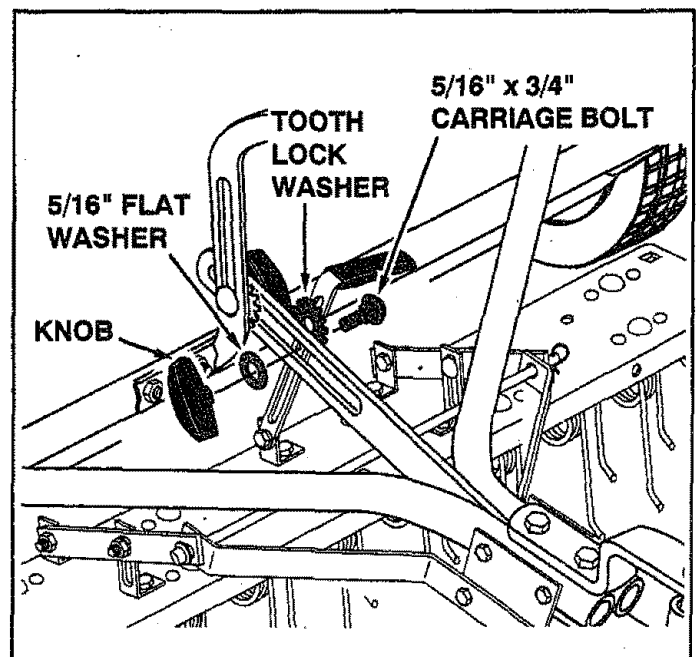
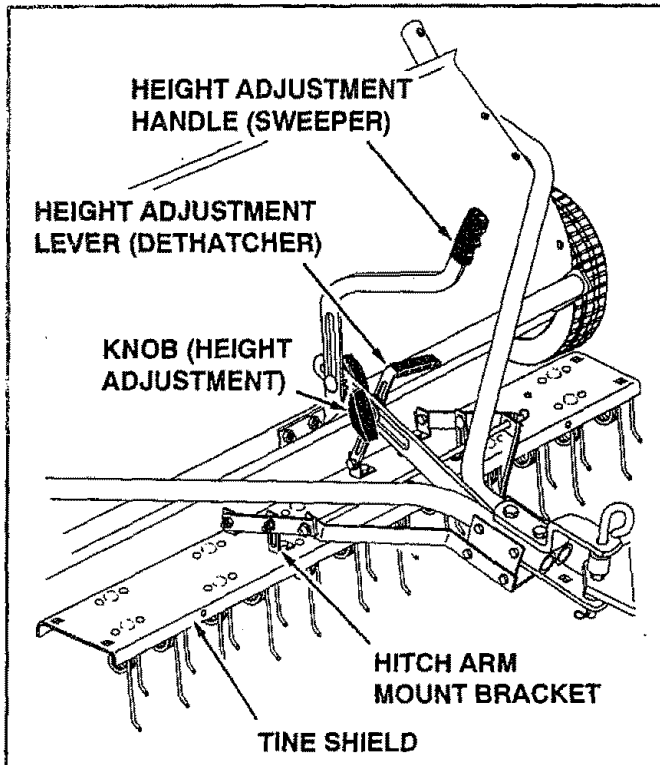


FIGURE 13

# OPERATION

## KNOW YOUR DETHATCHER



### Height Adjustment Handle (Sweeper)

Adjusts the height of the sweeper and also affects the height of the de-thatcher.

### Height Adjustment Lever (Dethatcher)

Raises and lowers the height of the de-thatcher independently of the sweeper.

### Knob (Height Adjustment)

Loosens to unlock the height adjustment lever for changing the height setting of the de-thatcher.

### Hitch Arm Mount Bracket

Adjusts to level the de-thatcher from side to side and front to back.

### Tine Shield

Supports the spring tines to allow flipping action.

## HOW TO USE YOUR DETHATCHER

### RAISING/LOWERING THE DE-THATCHER

- To independently raise or lower the de-thatcher, simply loosen the height adjustment knob which locks the de-thatcher height adjustment lever in place. Using the lever, lower the de-thatcher to the operating position or raise it to the transport position and then retighten the knob.

### SETTING THE OPERATING POSITION

There are adjustment slots to help achieve proper height and leveling of the de-thatcher during sweeping. **Proper adjustment of the tine shield and spring tines is important for effective performance.**

- Drive the towing vehicle and lawnsweeper/de-thatcher onto smooth, level ground or paved surface.
- Set the sweeper to the desired operating height. (The best height is usually with the brushes set about 1/2" down into the grass.) Refer to your sweeper owner's manual for sweeper hook up and operating instructions.
- Loosen the height adjustment knob and lower the de-thatcher so that the spring tines rest on the ground.
- Adjust the tine shield so that it is level with the surface by loosening the carriage bolts in the hitch arm mount brackets. Both the front and rear tines should contact the ground.
- Retighten the carriage bolts in the hitch arm mount brackets. The de-thatcher will maintain its adjustment for that particular sweeper height setting.
- Retighten the knob to lock the de-thatcher in either the operating or transport position.



## USING THE DE-THATCHER

Regular removal of thatch is critical to the maintenance of a healthy lawn. Thatch is layer of stems, clippings, runners, roots and leaves that have not decayed. Excessive thatch prevents air, water and fertilizer from reaching the roots. The de-thatcher will effectively dislodge excessive thatch from your lawn.

- Start with the tractor in low gear. Vary the forward speed to determine the best speed for maximum de-thatcher performance.
- Use a crisscross pattern to achieve the most even removal of thatch.
- On slopes, always operate in an up and down direction only.
- Avoid extremely sharp turns.

Depending on conditions, it may be necessary to make adjustments to the original height and level settings of the de-thatcher.

- If thatch is not being adequately removed, lower the height setting of the de-thatcher till the tines come more forcefully in contact with the ground.
- If the tines are digging excessively into the soil, raise the height setting of the de-thatcher.
- If the front tines pull back and don't achieve a flipping action, slightly raise the front end of the de-thatcher.

## MAINTENANCE / STORAGE

### CUSTOMER RESPONSIBILITIES

- Read and follow the maintenance schedule and the maintenance procedures listed in this section.

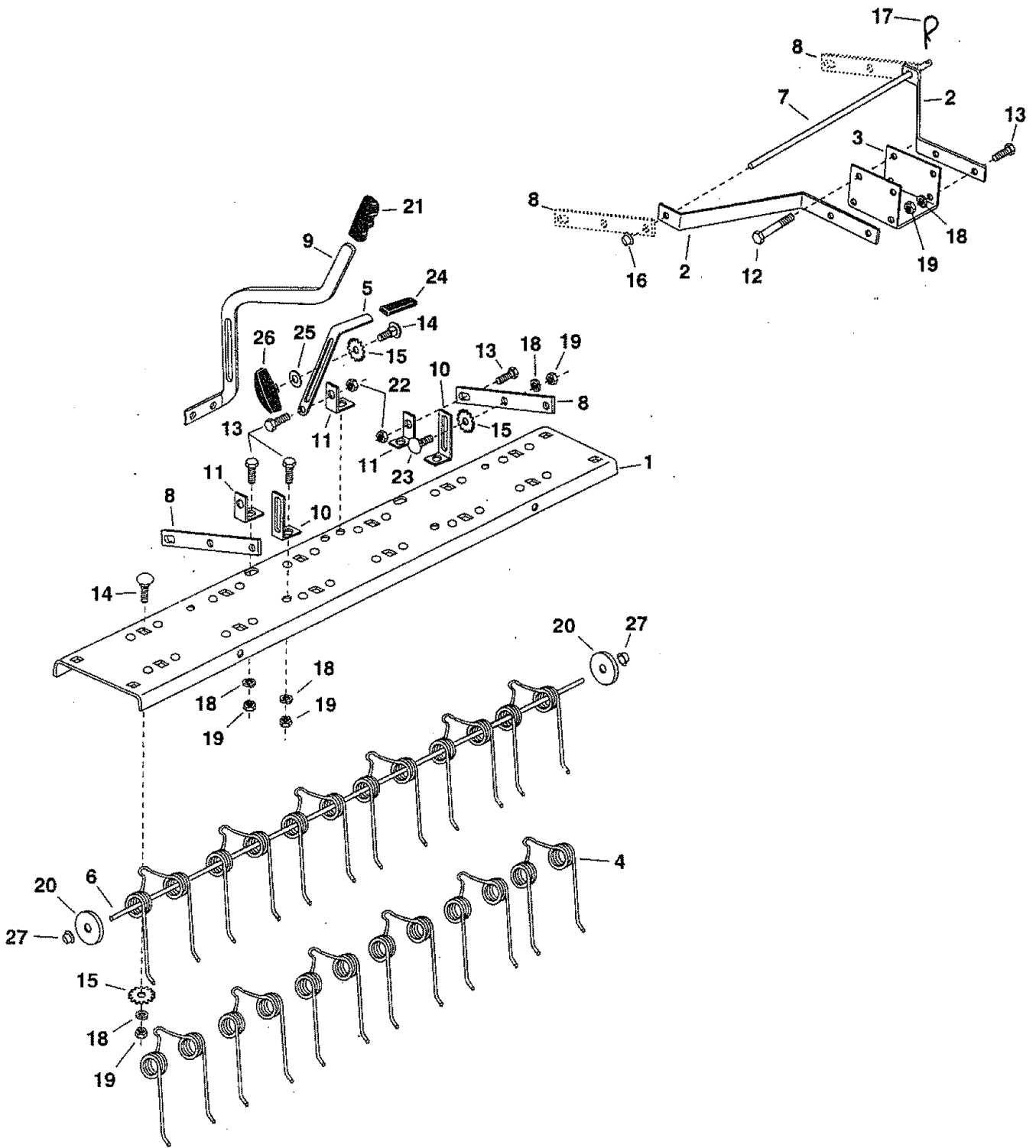
MAINTENANCE SCHEDULE Fill in dates as you complete regular service.	Service Dates											
	Before each use	After each use	Every season	Before storage								
Check for loose fasteners	X											
Check for worn or damaged parts	X			X								
Cleaning		X		X								
Lubricate Pivot Points			X									

- Before each use check all nuts and bolts for tightness.
- Clean after each use to help prevent rust.
- If rust appears on the shield or spring tines, sand lightly and coat with enamel paint.
- Always store in a dry area, and coat exposed metal with light oil when not in use.

## TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Tines not removing thatch	Dethatcher set too high	Lower dethatcher closer to ground
Tines digging excessively into soil	Dethatcher set too low	Raise dethatcher
Tines bend under, don't flip thatch forward	Dethatcher set too low Dethatcher angled down in front	Raise dethatcher Raise front end slightly

# PARTS



# REPAIR PARTS FOR TINE DE-THATCHER MODEL NO. 486.24311

REF. NO.	PART NO.	QTY.	DESCRIPTION	REF. NO.	PART NO.	QTY.	DESCRIPTION
1	24171	1	Tine Shield	16	44917	1	Palnut, 3/8"
2	24172	2	Hitch Mount Arm	17	43055	1	Hairpin Cotter, 3/32" #3
3	24173	1	Channel Hitch Bracket	18	43086	23	Lock Washer, 5/16"
4	46761	12	Spring Tine	19	43083	23	Hex Nut, 5/16-18 Thread
5	24217	1	Height Adjustment Lever	20	43572	2	Flat Washer, 1-1/2" O.D. x 11/32" I.D.
6	46762	1	Spring Alignment Rod				
7	24219	1	Pivot Rod	21	43943	1	Grip
8	24174	2	Hitch Mount Bar	22	43064	3	Hex Lock Nut, 5/16-18 Thread
9	24175	1	Height Adjustment Handle	23	44326	2	Carriage Bolt, 5/16-18 x 1" Lg.
10	23442	2	Hitch Arm Mount Bracket	24	46831	1	Grip
11	23869	3	Angle Bracket	25	43081	1	Flat Washer, 5/16" Std. Wrt.
12	46766	2	Hex Bolt, 5/16-18 x 3-1/4" Lg.	26	43720	1	Knob, Wing
13	43182	12	Hex Bolt, 5/16-18 x 3/4" Lg.	27	726-0106	2	Palnut, 1/4"
14	43080	13	Carriage Bolt, 5/16-18 x 3/4" Lg.		47306	1	Owner's Manual
15	44732	15	Tooth Lock Washer, 5/16" I.D.				

Purchase Common Hardware Locally