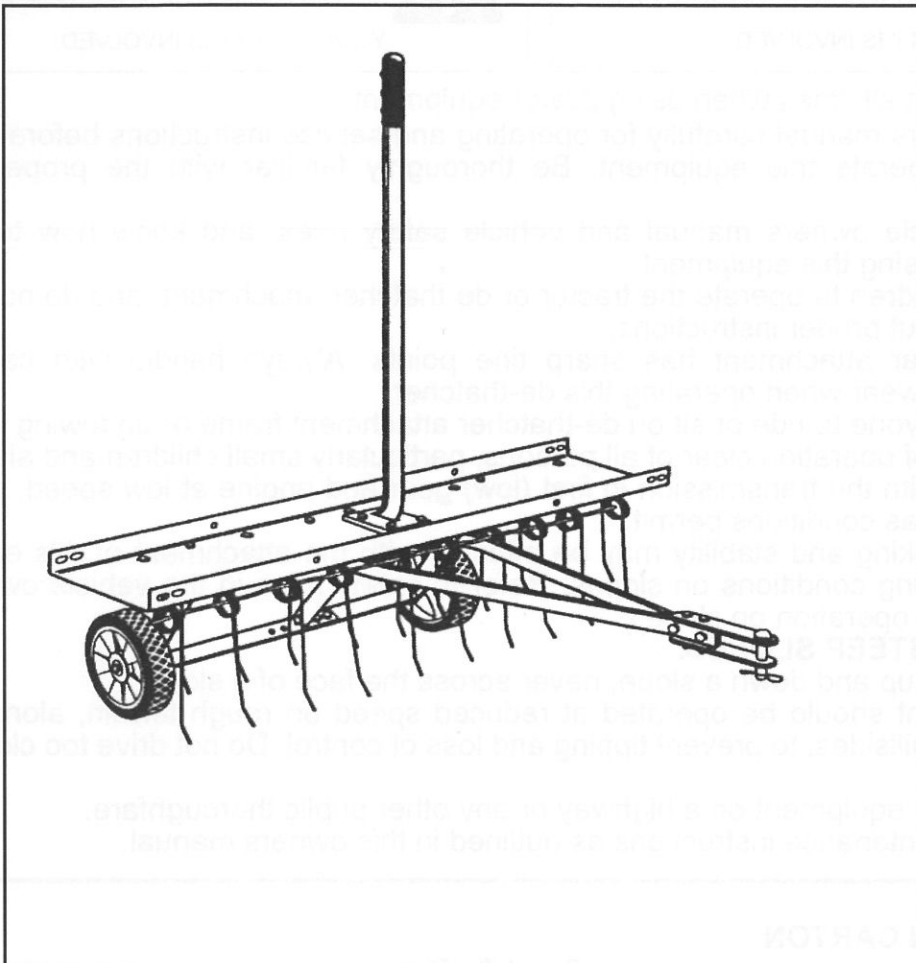


40" TINE DE-THATCHER



- Assembly
- Operation
- Maintenance
- Repair Parts

RULES FOR SAFE OPERATIONS

Remember, any power equipment can cause injury if operated improperly or if the user does not understand how to operate the equipment.



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



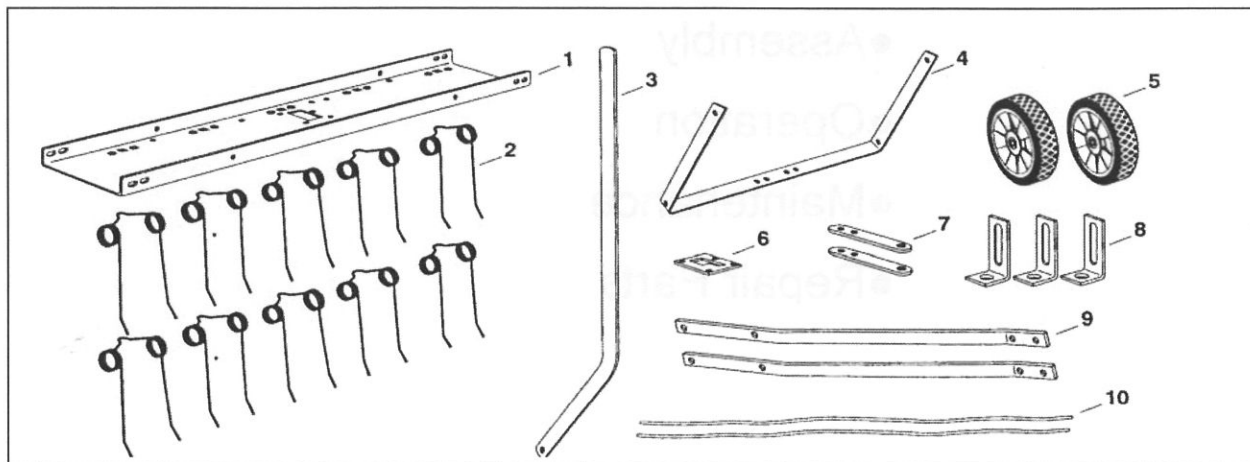
LOOK FOR THIS SYMBOL TO POINT OUT IMPORTANT SAFETY PRECAUTIONS. IT MEANS -- ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.

Exercise caution at all times when using power equipment.

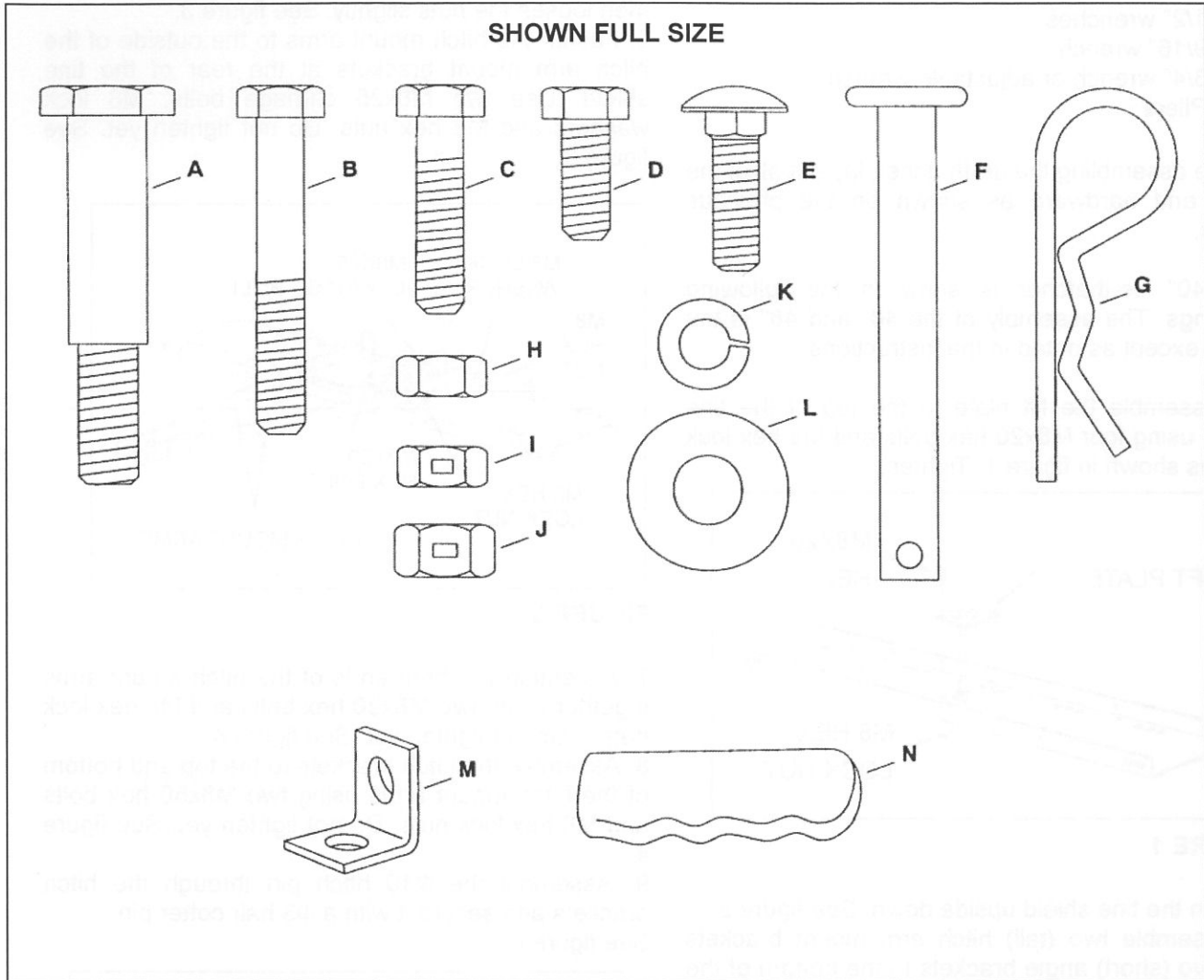
1. Read this owners manual carefully for operating and service instructions before attempting to assemble or operate this equipment. Be thoroughly familiar with the proper use of this equipment.
2. Read the vehicle owners manual and vehicle safety rules, and know how to operate the vehicle before using this equipment.
3. Never allow children to operate the tractor or de-thatcher attachment, and do not allow adults to operate without proper instructions.
4. This de-thatcher attachment has sharp tine points. Always handle with care and wear substantial foot wear when operating this de-thatcher.
5. Do not allow anyone to ride or sit on de-thatcher attachment frame or on towing vehicle.
6. Keep the area of operation clear of all persons, particularly small children and also pets.
7. Always begin with the transmission in first (low) gear and engine at low speed, and gradually increase speed as conditions permit.
8. 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.
9. Always operate up and down a slope, never across the face of a slope.
10. 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.
11. Do not tow this equipment on a highway or any other public thoroughfare.
12. Follow the maintenance instructions as outlined in this owners manual.

LOOSE PARTS IN CARTON

- | | |
|--------------------------|---------------------------------|
| 1. Tine Shield | 6. Lift Plate |
| 2. Spring Tines (10,40") | 7. Hitch Brackets (2) |
| 3. Lift Handle | 8. Hitch Arm Mount Brackets (3) |
| 4. Axle Bracket | 9. Hitch Mount Arms (2) |
| 5. Wheels (2) | 10. Spring Alignment Wires (2) |



Carton Contents



HARDWARE PACK

Key	Qty.	Description	Key	Qty.	Description
A	2	Shoulder Bolt	I	19	Hex Lock Nut M8
B	2	Hex Bolt M8x50	J	2	Hex Lock Nut M10
C	2	Hex Bolt M8x30	K	14	Lock Washer Ø 8
D	15	Hex Bolt M8x20	L	10	Flat Washer Ø 10
E	14	Carriage Bolt M8x25	M	4	Angle Bracket
F	1	Hitch Pin Ø 10	N	1	Grip
G	1	Hair Cotter Pin Ø3			
H	14	Hex Nut M8			

ASSEMBLY INSTRUCTIONS

TOOLS REQUIRED FOR ASSEMBLY

- (2) 1/2" wrenches
- (1) 9/16" wrench
- (1) 3/4" wrench or adjustable wrench
- (1) Pliers

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

The 40" de-thatcher is show in the following drawings. The assembly of the 40" and 48" is the same except as noted in the instructions.

1. Assemble the lift plate to the top of the tine shield using four M8x20 hex bolts and M8 hex lock nuts as shown in figure 1. Tighten.

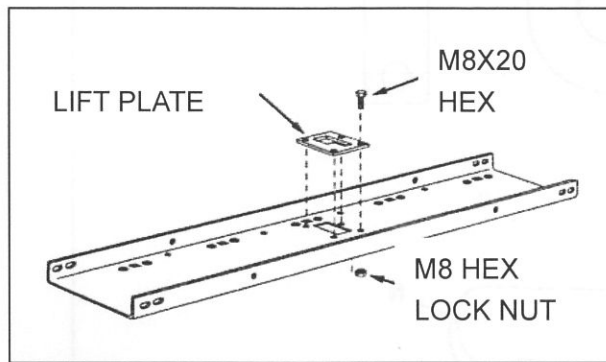


FIGURE 1

2. Turn the tine shield upside down. See figure 2.
3. Assemble two (tall) hitch arm mount brackets and two (short) angle brackets to the bottom of the tine shield. Fasten the brackets to the four round holes at the rear of the tine shield using four M8x20 hex bolts and M8 hex lock nuts. Do not tighten yet. See figure 2.
4. Assemble two angle brackets to the round holes in the bottom of the tine shield at the front. Use two M8x20 hex bolts and M8 hex lock nuts. Do not tighten yet. See figure 2.

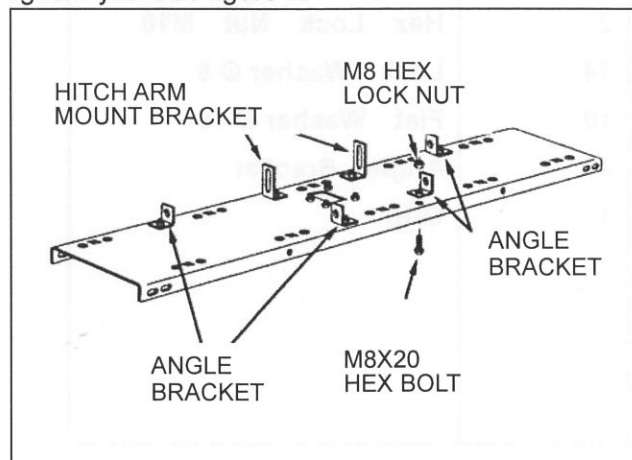


FIGURE 2

5. Fasten the hitch mount arms to the outside of the angle brackets at the front of the tine shield. Use two M8x20 hex bolts and M8 hex lock nuts. Tighten and then loosen the nuts slightly. See figure 3.
6. Fasten the hitch mount arms to the outside of the hitch arm mount brackets at the rear of the tine shield. Use two M8x25 carriage bolts, M8 lock washers and M8 hex nuts. Do not tighten yet. See figure 3.

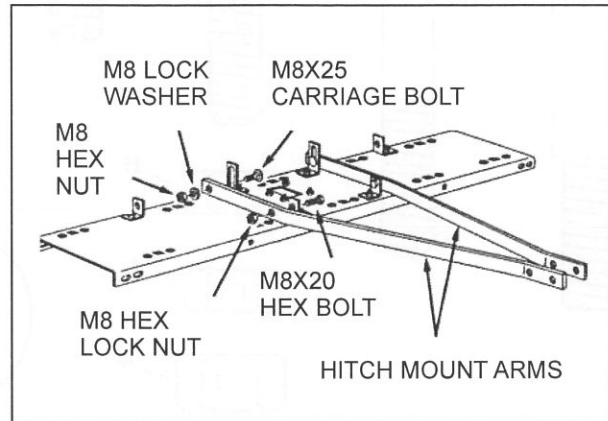


FIGURE 3

7. Assemble the front ends of the hitch mount arms together using two M8x30 hex bolts and M8 hex lock nuts. Do not tighten yet. See figure 4.
8. Assemble the hitch brackets to the top and bottom of the hitch mount arms using two M8x50 hex bolts and M8 hex lock nuts. Do not tighten yet. See figure 4.
9. Assemble the $\Phi 10$ hitch pin through the hitch brackets and secure it with a $\Phi 3$ hair cotter pin. See figure 4.

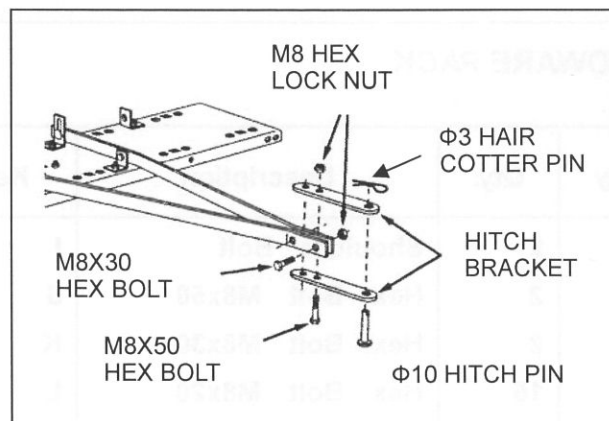


FIGURE 4

10. Tighten the bolts and nuts assembled in step 8. Tighten the bolts and nuts assembled in step 7. Tighten the bolts and nuts assembled in step 3. Tighten the bolts and nuts assembled in step 4. Tighten and then loosen slightly the bolts and nuts assembled in step 5. Tighten the bolts and nuts assembled in step 6.

11. Assemble the axle bracket on the outside of the angle brackets using two M8x20 hex bolts and M8 hex lock nuts. The ends of the axle bracket must point as shown in figure 5. Tighten and then loosen the bolts and nuts slightly.

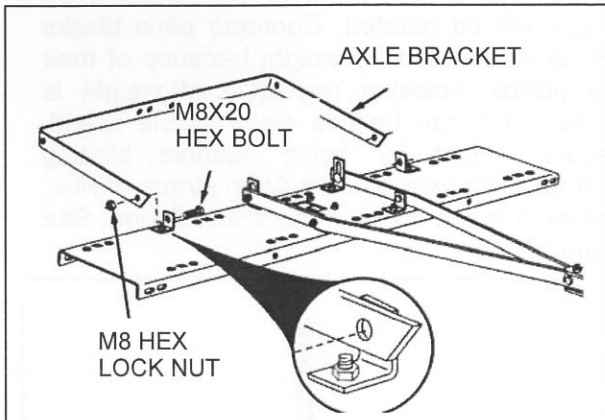


FIGURE 5

12. Assemble the wheels to the axle bracket using two shoulder bolts and two M10 hex lock nuts. Tighten. See figure 6.

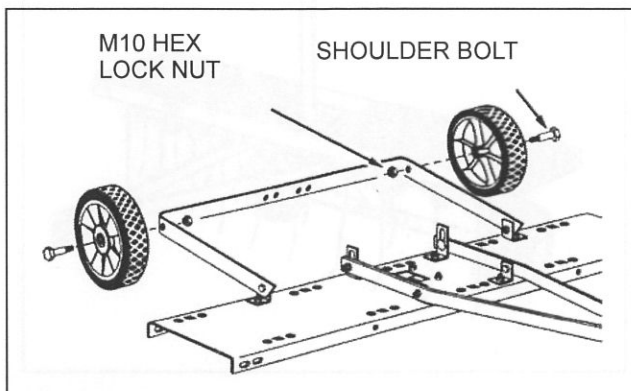


FIGURE 6

13. Fasten ten spring tines to the square holes in the bottom of the tine shield. Use a M8x30 carriage bolt, $\Phi 8$ flat washer M8 lock washer and M8 hex nut for each spring tine. Tighten. See figure 7.
NOTE: Spring tines must seat between dimples.

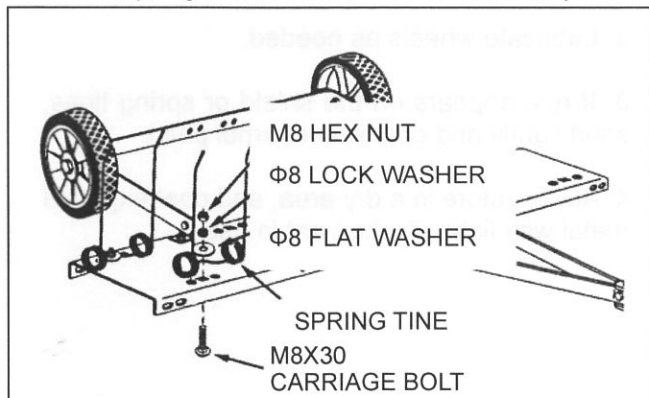


FIGURE 7

14. Assemble the spring align wires through the front and rear rows of spring tines, passing the wires in between the hitch mount arms and the tine shield. Bend the ends of the wires to secure them. See figure 8.

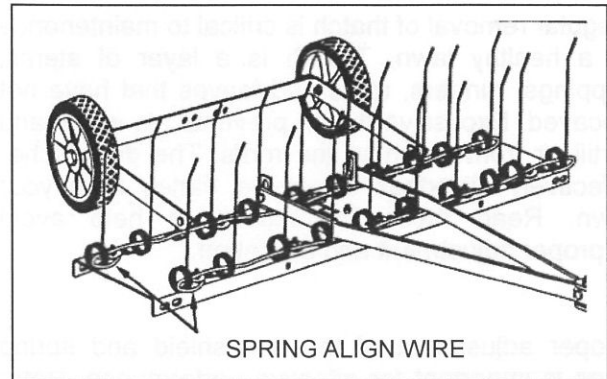


FIGURE 8

15. Assemble a hitch arm mount bracket to the axle bracket using two M8x25 carriage bolts, M8 lock washers and M8 hex nuts. Do not tighten yet. See figure 9.

16. Insert the lift handle down through the tine shield. Attach it to the just assembled hitch arm mount bracket using M8x20 hex bolt and a M8 hex lock nut. Tighten. See figure 9.

17. Position the hitch arm mount bracket so that there is side tension on the lift handle when it is locked in the up position. Tighten the nuts. See figure 9.

18. Assemble the grip onto the end of the lift handle. See figure 9.

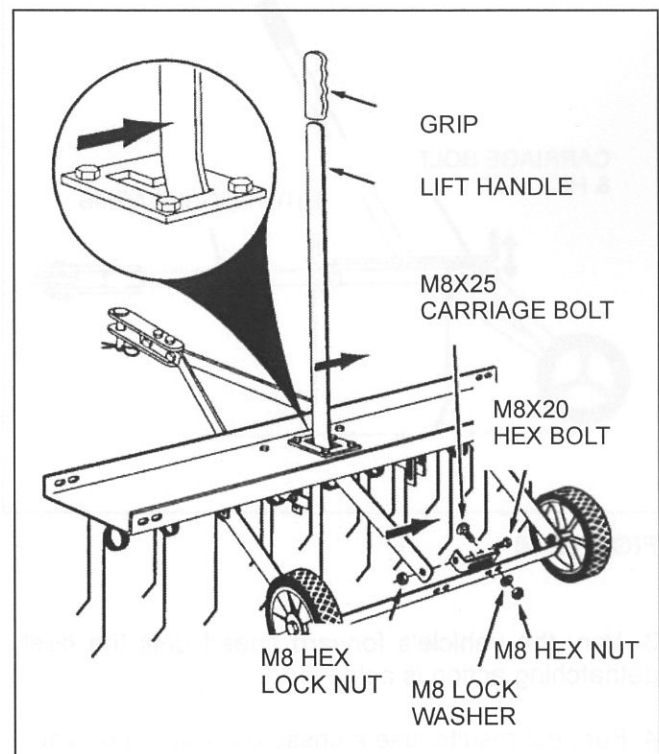


FIGURE 9

OPERATION / ADJUSTMENT

Regular removal of thatch is critical to maintenance of a healthy lawn. Thatch is a 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 effectively dislodges excessive thatch from your lawn. Read these instructions to help avoid improper adjustment and operation.

Proper adjustment of the tine shield and spring tines is important for effective performance. Refer to the following steps for the proper adjustment before operating the de-thatcher.

1. Move the towing vehicle onto a level surface, such as a driveway or garage floor and attach the tine de-thatcher to the vehicle hitch. See figure 10.
2. To adjust the spring tine shield, lower the de-thatcher into operating position using the lift handle. Loosen the two hex nuts and carriage bolts which fasten the rear of the hitch mount arm to the hitch arm mount brackets. Adjust the tin shield until it is level and both the front and rear spring tines are in contact with the ground. Re-tighten the hex nuts. See figure 10.

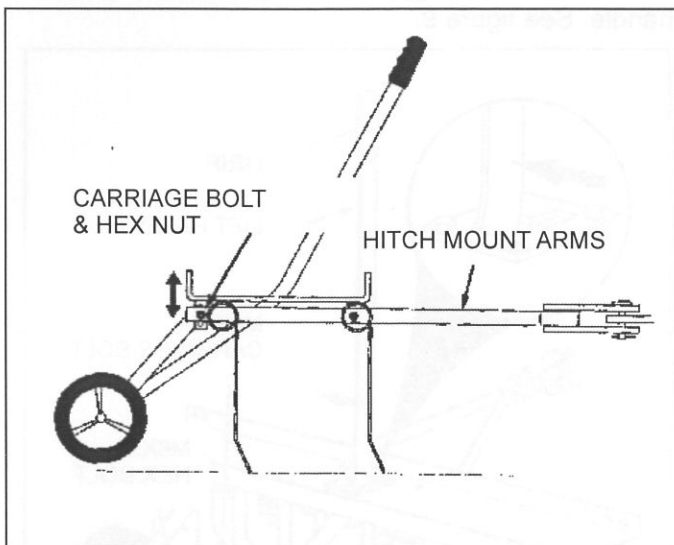


FIGURE 10

3. Vary the vehicle's forward speed until the best dethatching action is achieved.
4. For best results, use a crisscross pattern on your lawn.

5. If the de-thatcher appears to be "jumping" during use, then extra weight should be added to the tine shield. In most conditions extra weight will be needed. Concrete patio blocks are recommended for weight because of their low profile; however any type of weight is suitable if it can be tied down to the shield. Secure weight by using suitable binding material such as rubber tie down straps or wire, fastening to the holes in the shield flange. See figure 11.

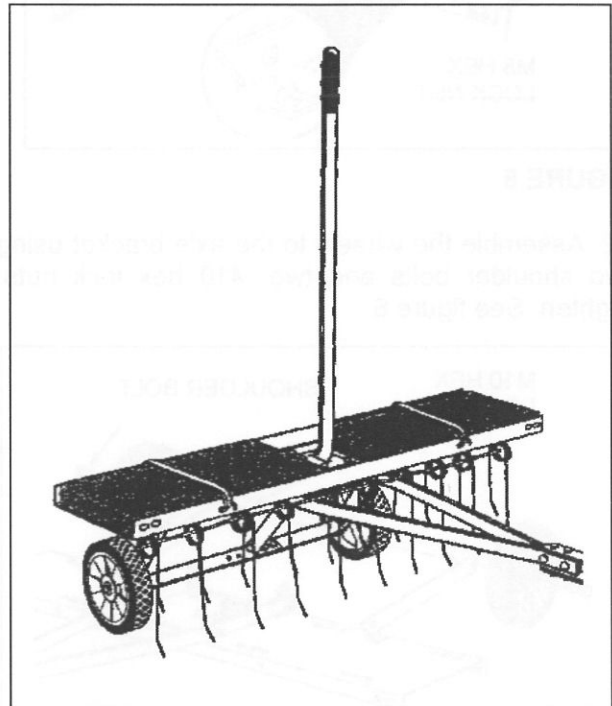
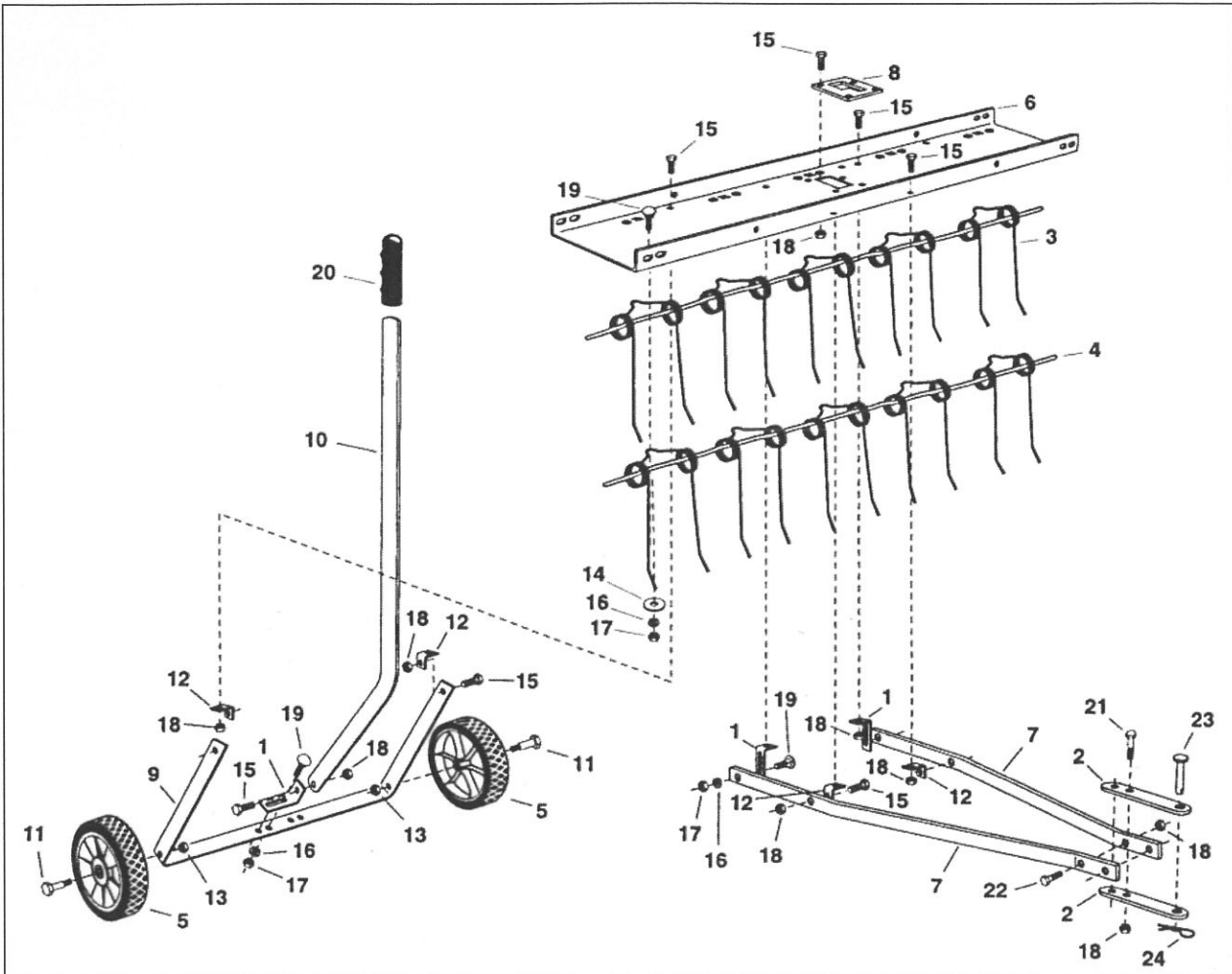


FIGURE 11

MAINTENANCE

1. Before each use check all nuts and bolts for tightness.
2. Lubricate wheels as needed.
3. If rust appears on the shield or spring tines, sand lightly and coat with enamel paint.
4. Always store in a dry area, and coat exposed metal with light oil when not in use.

TINE DE-THATCHER REPAIR PARTS



Part No	Desc	Qty	Part No	Desc	Qty
1	Hitch Arm Mount Bracket	3	13	Hex Lock Nut M10	2
2	Hitch Bracket	2	14	Flat Washer M8	10
3	Spring Tine	10	15	Hex Bolt M8x20	15
4	Spring Alignment Wire	2	16	Lock Washer M8	14
5	Wheel	2	17	Hex Nut M8	14
6	Tine Shield (40")	1	18	Hex Lock Nut M8	19
7	Hitch Mount Arm	2	19	Carriage Bolt M8x25	14
8	Lift Plat	1	20	Handle Grip	1
9	Axle Bracket	1	21	Hex Bolt M8x50	2
10	Lift Handle	1	22	Hex Bolt M8x30	2
11	Shoulder Bolt	2	23	Hitch Pin M8 (Flat Head)	1
12	Angle Bracket	4	24	Hair Cotter Pin Ø3	1