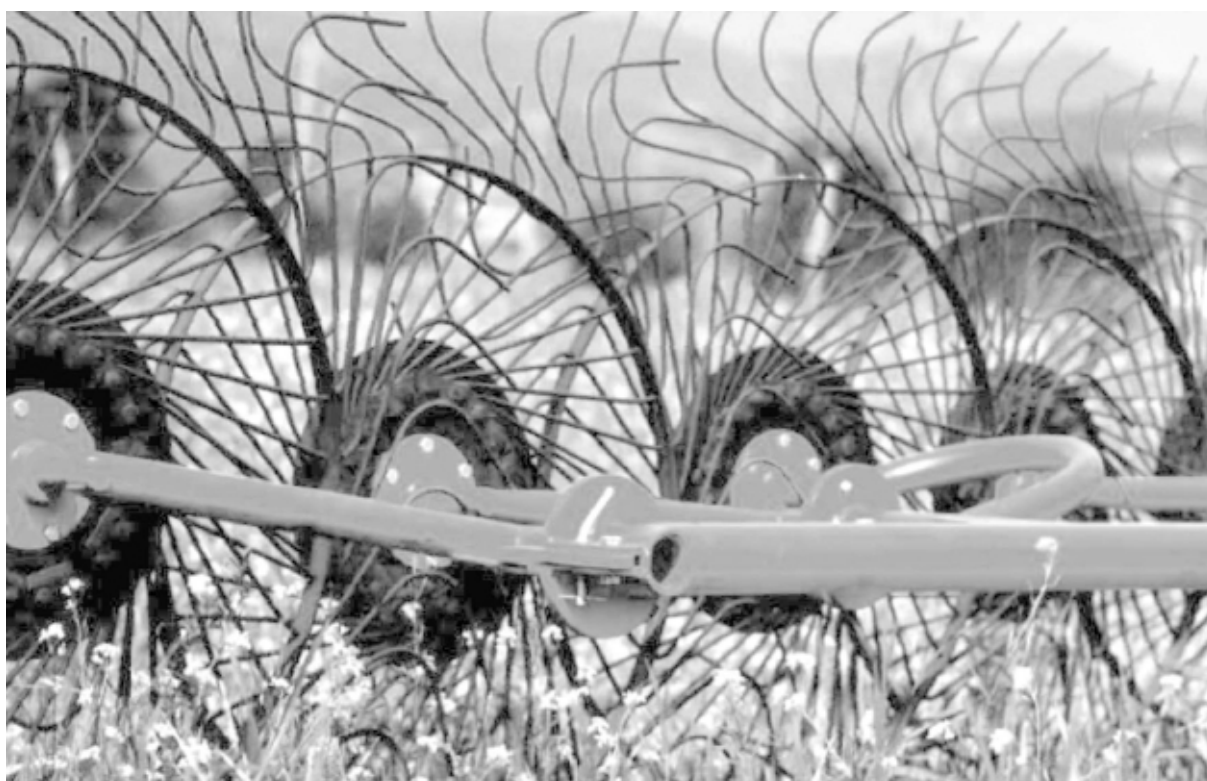




WHEEL RAKE

INSTRUCTION MANUAL



SPECIFICATIONS

Model	TX51 2 Wheel Rake	TS130 4 Wheel V-Rake	TM150 4 Wheel Rake
Approximate Weight (Lbs.)	188	260	400
Number of Wheels	2	4	4
Number of Tines per Wheel	40	40	40
Wheel Diameter	55"	55"	55"
Tooth Diameter	7mm	7mm	7mm
Working Width	4'3"	10'10"	9'6"
Operating Speed	Up to 14 MPH	Up to 14 MPH	Up to 14 MPH

SAFETY INSTRUCTIONS

When ordering parts, please specify the part number and the name of the part as shown in the parts section. Please give the serial number of the machine in all correspondence. Record the serial number and purchase date here for future reference.

Serial No:

Model:

Purchase Date:

Read through this manual completely, watching especially for safety symbols which alert you to possible hazards in assembly and operation. The word "NOTE" will alert you to special information such as specification, techniques, reference information and other supplementary information. The word "IMPORTANT" is used to point out a note which is of an immediate and urgent nature



Safety Symbol

It is the user's responsibility to read the operator's manual and comply with all instructions pertaining to operation and maintenance. It is also the user's responsibility to inspect the machine at regular intervals and repair or replace worn or damaged parts when continued use would cause damage or excessive wear to other parts. Delivery of the machine to the manufacturer's dealer for repairs under the warranty is also the user's responsibility.

Always drive the tractor at safe speeds, especially over rough ground and sloping ground and when making a turn.

Never attempt to clean, adjust or lubricate the machine while the machine is in motion.

REMEMBER: A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT.



Safety Symbol

CAUTION: ALWAYS FOLLOW ALL STATE, FEDERAL AND LOCAL LAWS WHEN TRANSPORTING. MAKE SURE SMV SYMBOL AND LIGHTS ARE IN PLACE BEFORE TRANSPORTING WHERE REQUIRED DO NOT EXCEED 15 MPH DURING TRANSPORTING.



Safety Symbol

CAUTION: This machine should never be operated by anyone who is not familiar with the product and has not read the instruction manual. Do not operate the rake where people or animals are in the immediate area.

IMPORTANT: When this machine is traded or sold, make sure this manual accompanies the machine so future operators will have complete operating instructions and safety warnings available to them.

NOTE: All reference numbers used in the assembly instructions correspond to the item numbers used in the parts breakdown section of this manual. When left or right-hand positions are mentioned, they refer to the position as viewed from the rear of the machine while facing the tractor.

ASSEMBLY

Note: The assembly steps below are for the in-line four (4) wheel model. Assembly of the two (2) wheel and four (4) wheel v-rake models is similar. The wheel arms and wheels attach in the same way. Note the wheel orientation in the picture on p.4.

1. Install the Pivot Support (8) on the 3-Point Base (1). Insert the 3-Point Cap (17) and secure in place with a cap screw and locknut through the cap and base. Lock the support plate in position on the 3-point base with a 3-Point Pin (10) secured with a Hairpin Cotter (9). See illustration 1.

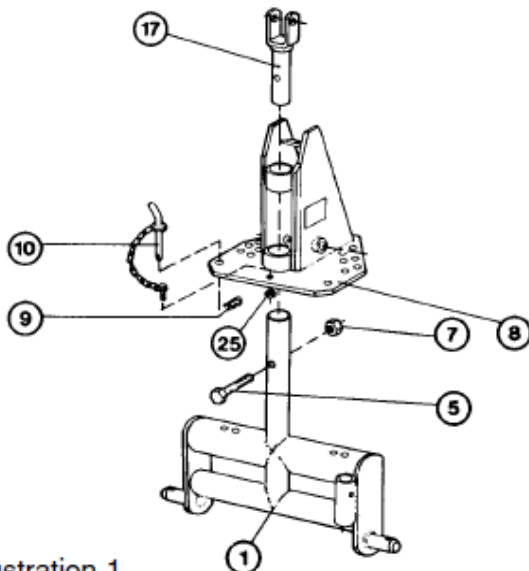


Illustration 1

2. Install the Stand (3) on the 3-point linkage and secure with a spring clip. See Illustration 2.
3. With the assembly laying on the ground so the sector plate's lower socket is facing up, insert the Floating Arm (26) into the socket and secure with a Sector Support Pin (15), two flat washers (32) and two Cotter Pins (14). Lock the floating arm in position by installing the Lock Plate (27) on the bottom of the arm and secure with a Hairpin Cotter (4). See Illustration 2.

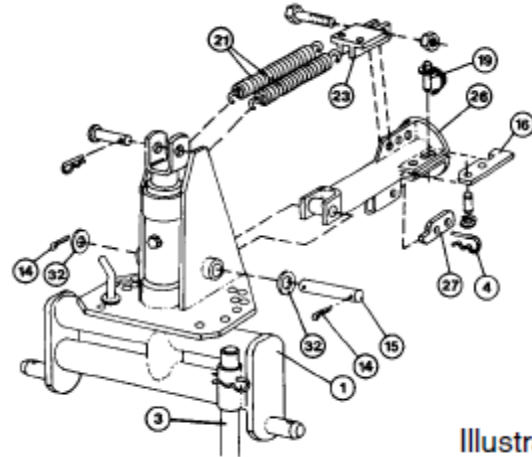


Illustration 2

4. Install the two Extension Springs (21) in the plate near the top of the pivot support and then connect the other ends of the springs to the Lower Spring Mount (23). Secure the lower spring mount to the floating arm using a cap screw and nut. Use the center hole for the time being. After final assembly, move the lower mount necessary to allow the rake to "float" in operation. See Illustration 2.
5. Insert the Main Frame (33) into the Floating Arm (26). Lock the arm in place by installing the Lever Plate (16) on the floating arm and secure with a pin and retaining rings. Insert a Snapper Safety Pin (19) to lock the stop plate and secure with a hairpin cotter. See Illustration 3.
6. Install the Wheel Arms (34) in the main frame and secure the Lever Plates (16) with a pin and retaining rings and a snapper safety pin. See Illustration 4.



Safety Symbol

CAUTION: Make sure the machine is supported as the main frame and wheel arms are installed to prevent the machine from falling.

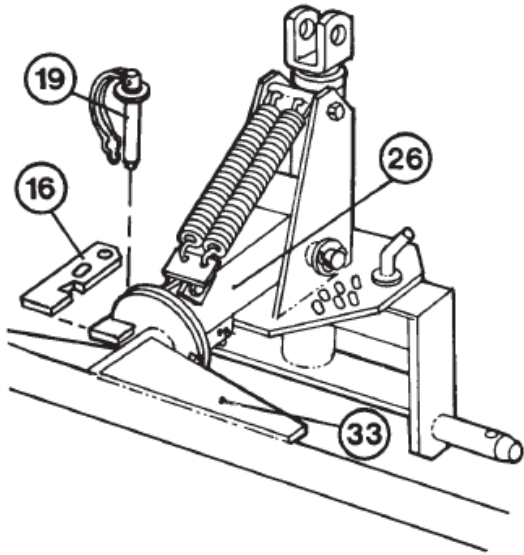
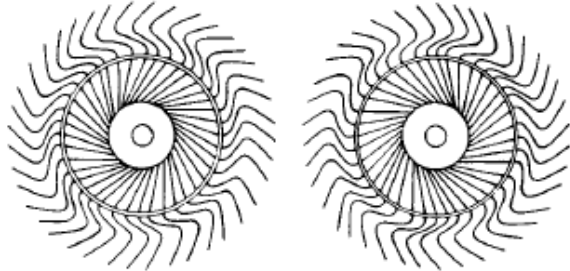


Illustration 3

- Using an overhead hoist or forklift, carefully tip the assembly over and support the assembly in the approximate position it will be in when installed on the tractor and high enough off the ground to install the wheels. Install the wheels on the hubs using the cap screws and nuts. Use medium strength thread locker to secure nuts to bolts. The position of the teeth is determined by the direction of operation (See Illustration 5 Below as well as the image on p. 4).



Left Rake

Right Rake

Rake wheels as viewed from the rear

Illustration 5

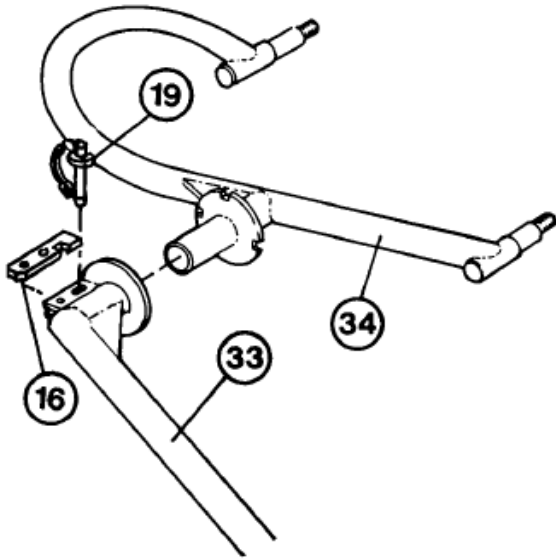


Illustration 4

When assembled, the rakes should be configured as shown in Illustration 6 below.

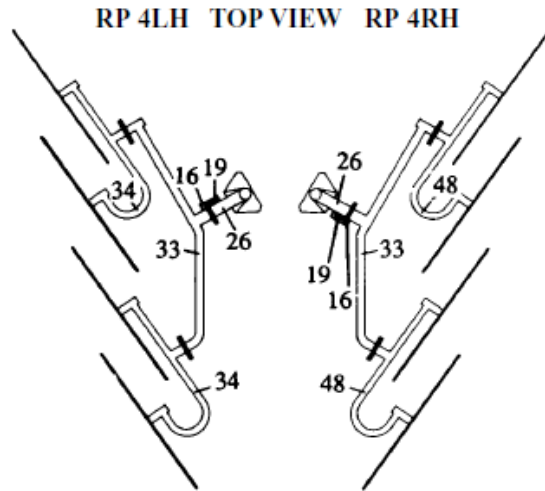
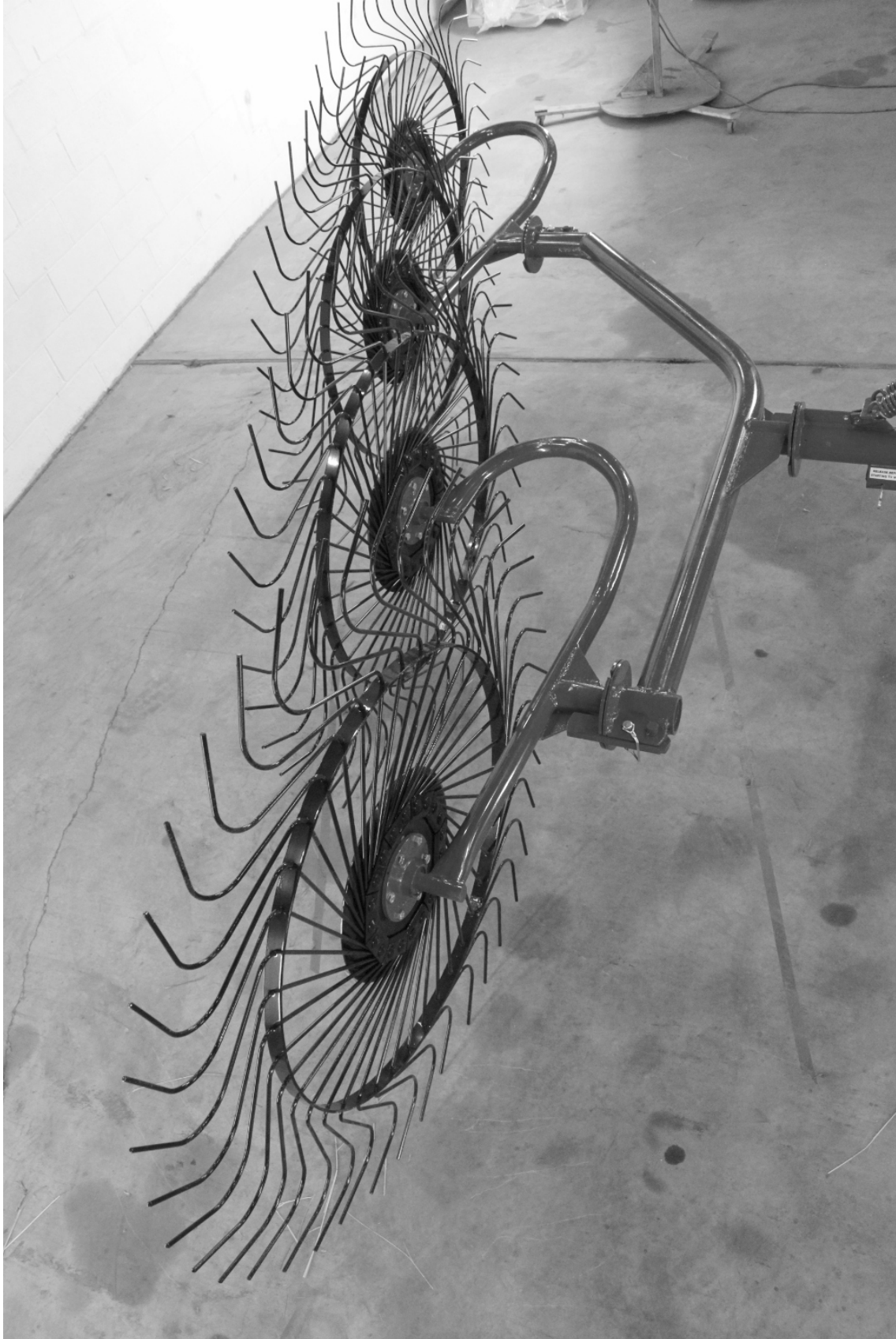


Illustration 6

STANDARD WHEEL ORIENTATION (4 WHEEL, RIGHT HAND SHOWN)



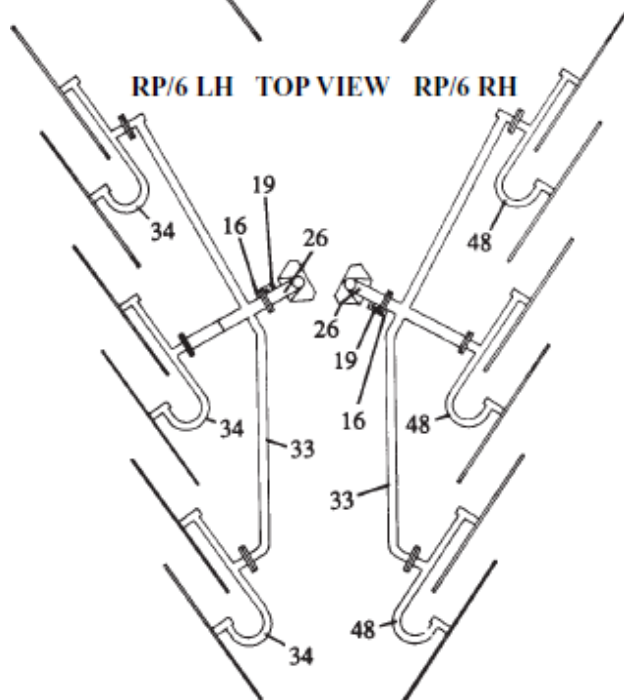
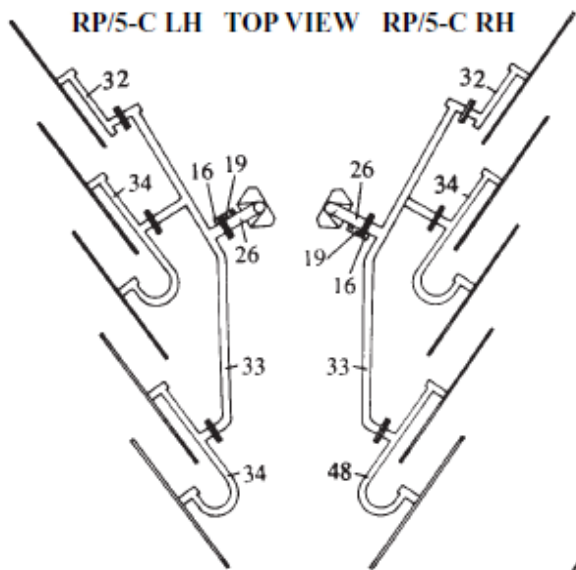


Illustration 6 (Continued)

CONNECTING THE RAKE TO THE TRACTOR

With the rake supported by the wheel tines and the stand, back the tractor to the rake and connect the tractor to the 3-point linkage. After connecting to the tractor, raise the machine and remove the stand from the 3-point linkage.

Raise the rake using the tractor hydraulics until the tines are off of the ground. Slide the Lock Plate (27) to the rear "B" to allow the rake to "float" during operation (See Illustration 7). This will allow the rake to adapt to irregular ground and reduce wheel damage.

IMPORTANT: The lock plate must be in the forward position "A" whenever the rake is being transported or not in operation.

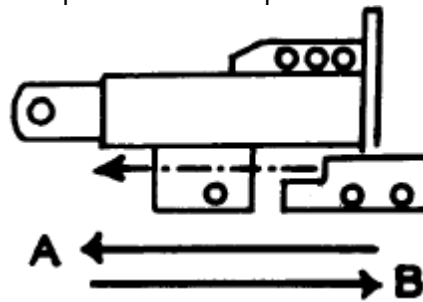


Illustration 7

OPERATION

The 3-Point Pin (10) is used to adjust the operating position of the rake. Position "A" (See Illustration 8) is used for raking position to the right. Position "B" is used for raking to the left.

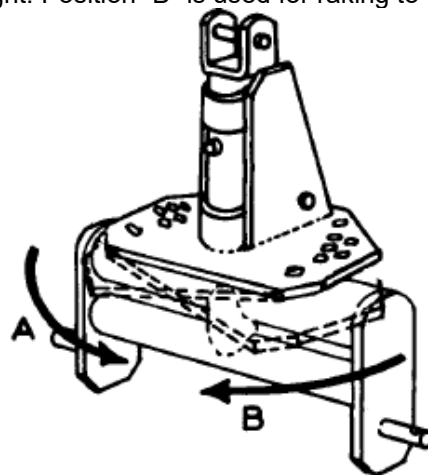


Illustration 8

By using adjustment holes 1 through 6 in the right or left position minor adjustments can be made when raking, spreading and turning the crop. When transporting the rake, the stop pin must be installed in position 7 (See Illustration 9).

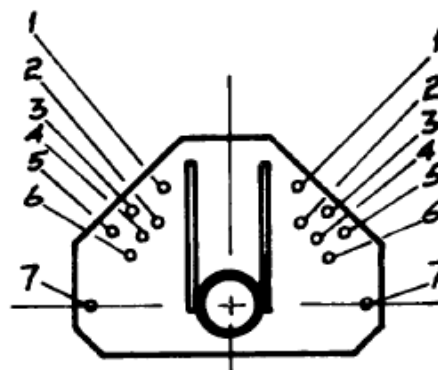


Illustration 9

WORKING POSITIONS

Pull the pin in the pivot support and turn the main frame to the right and rotate the arms so the wheels are positioned as shown below (See Illustration 10). During operation, the wide slots in the frame and arm flanges allow the arms to

oscillate slightly to prevent damage to tines by rough ground surfaces. The narrow slots used in the transport positioning hold the arms in a rigid position.

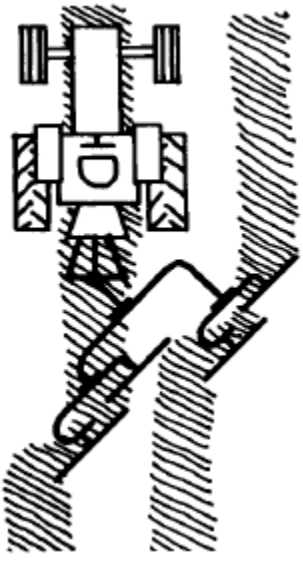
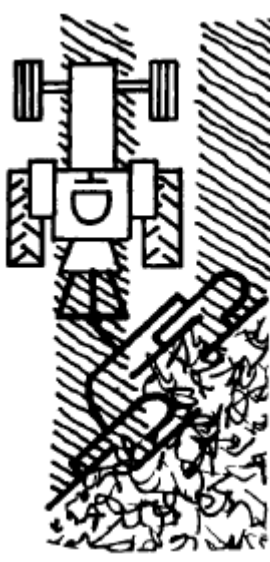
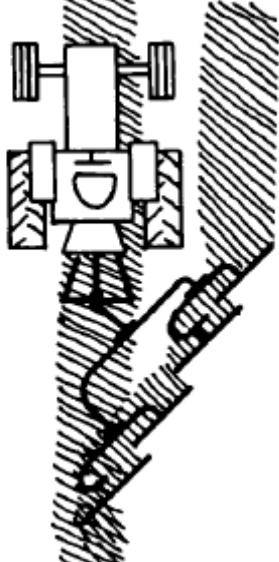
RIGH-HAND RAKE OPERATING POSITIONS		
TURNING	SPREADING	RAKING
<p>Rotate the main frame to the right and the arms to the left. Lock in place with pins.</p>	<p>Rotate the main frame and arms to the left. Lock in place with pins.</p>	<p>Rotate the main frame and arms to the left. Lock in place with pins.</p>
		

Illustration 10

TRANSPORTING

To reduce the width of the rake for transporting between fields, perform the following steps:

1. Raise the rake to the highest position.
2. Unlock the main frame at the Floating Arm (26) and rotate the frame so the forward wheel is at the top. Rotate the arms to the horizontal position. Center the rake behind the tractor.
3. Move the floating arm stop to the forward position to lock the frame in position during transporting.

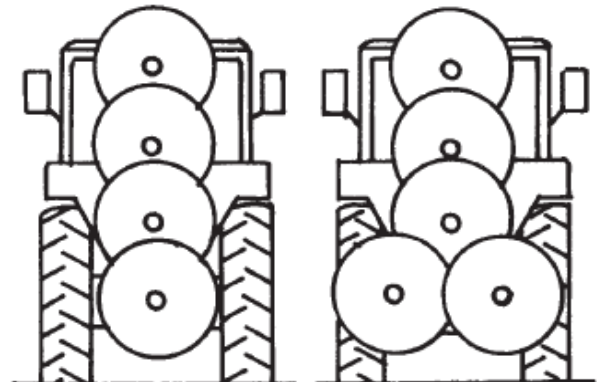


Illustration 11

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE		SOLUTION	
Hay carrying over on the wheel.	1.	Wheel tines are new; paint is gripping material.	1.	Operate rake on a rough surface, such as gravel, for a short distance.
	2.	Mud collected on tine ends.	2.	Dew on hay, wait until dry. Do not run in soft, wet ground.
Tine breakage.	1.	Backing with tines in contact with ground.	1.	Avoid backing with tines on ground.
	2.	Too much weight on wheels.	2.	Raise the 3-point hitch slightly.
	3.	Corrosion in storage.	3.	Coat teeth with grease or oil during storage.
Rake missing hay.	1.	Wheels running too flat.	1.	Adjust angle at sector plate.
	2.	Wheels not pitched back enough.	2.	Pitch wheels back by adjusting 3-point top link.
	3.	Teeth missing or worn.	3.	Replace teeth. It is best to replace all teeth at same time to maintain uniform tine height.
Rake wheels bounce excessively.	1.	Wheels have too little ground weight.	1.	Lower 3-point hitch.
Bent tines.	1.	Backing with wheels down.	1.	Avoid doing so.
	2.	Excessive speed on rough terrain	2.	Reduce speed.
	3.	Narrow or deep ditches or furrows, rocky ground.	3.	Avoid or cross slowly.
	4.	Too much weight on wheels.	4.	Raise 3-point slightly.

MAINTENANCE

This Wheel Rake requires no tools for operation and no lubrication is required except for occasional repacking of the hub bearings on the wheels with grease. A light coating of grease applied periodically to the frame and arm pivots and flanges will allow smoother operation and retard rusting which will hinder operation.