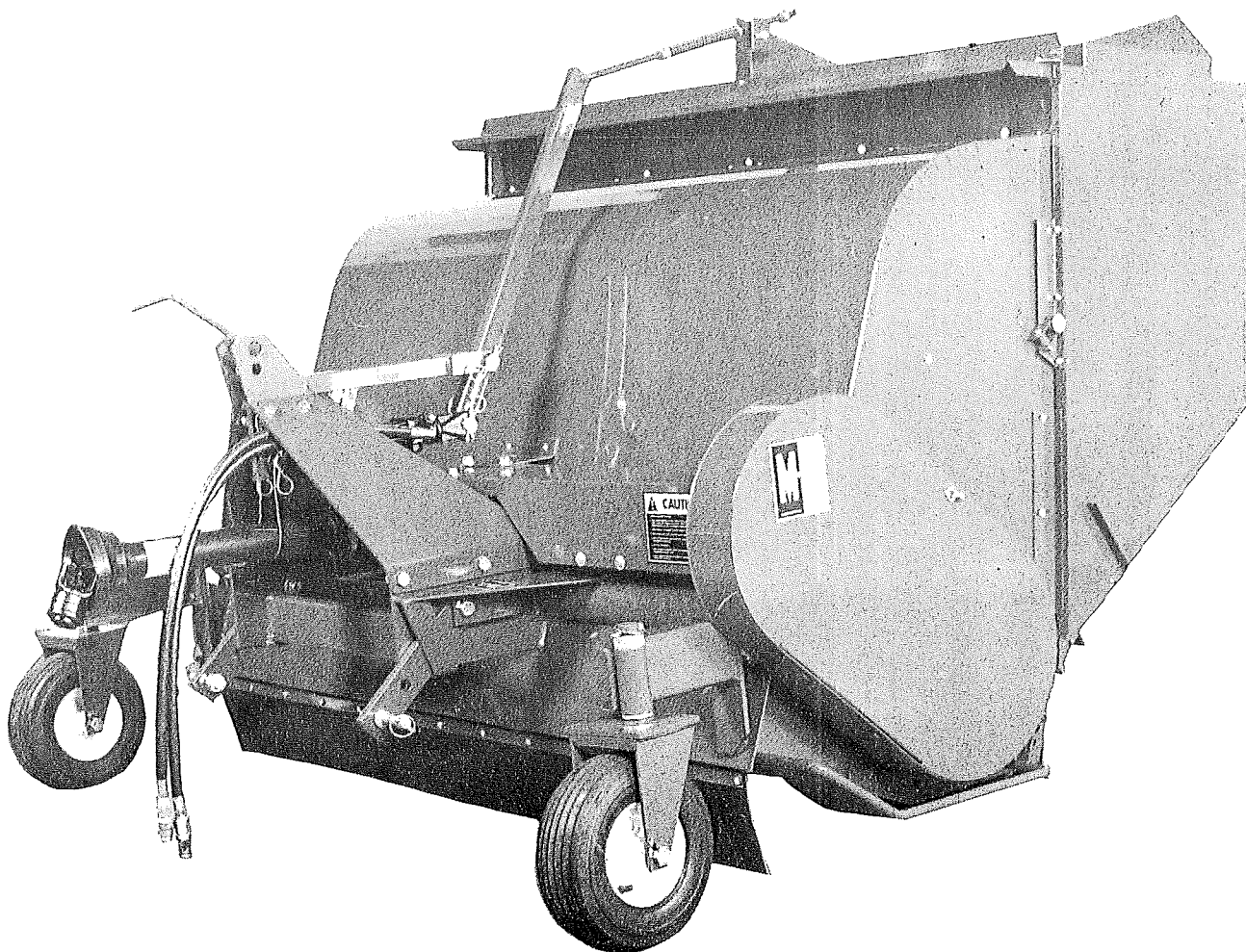


\$5.00



60" AND 72"  
**FLAIL PICK-UP  
MOWER**

(Starting w/Serial No. 54164)



**OPERATOR'S and PARTS MANUAL**

FORM NO. FP 312 – MAY 1994  
REVISED JUNE 2002

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# CONTENTS

	Page
<b>Introduction</b>	
To the Owner .....	3
Work Safely .....	3
Warranty Registration .....	3
Model and Serial Number Location .....	3
Parts Ordering Instructions .....	3
Capscrew Grade Identification .....	4
Hardware Identification .....	4
Metric (SI) Measurement Conversion Table .....	2
<b>Set-Up Instructions</b>	
General .....	5
Chute and Hopper .....	5
Caster Wheels .....	6
Power Take-Off Shaft .....	6
Hitch .....	6
Damper Control .....	6
Hopper Hydraulic Dump .....	6
Rub Rails .....	8
Leaf Mulching Screen (Optional) .....	8
Lubrication .....	8
<b>Operation</b>	
Safety Precautions .....	9
Connecting the pick up mower to the Tractor .....	9
Connecting the PTO Shaft to the Tractor .....	9
Cutting Height and Leveling .....	10
Adjust Weight on Caster Wheels .....	10
Damper Panel .....	10
Mowing .....	11
Cleaning .....	11
Thatching .....	11
Preparation for Overseeding .....	12
Verti-Cutting .....	12
<b>Maintenance</b>	
General .....	13
Lubrication .....	13
Knives, Thatching Blades and Vacuum Paddles .....	14
Drive Belt Adjustment .....	15
Drive Belt Replacement .....	15
Drive and Rotor Pulley Alignment .....	16
Idler Pulley Alignment .....	16
Drive and Rotor Pulley Replacement .....	16
Rotor Bearing Replacement .....	17
Gauge Roller Bearing Replacement .....	18
Output Shaft Bearing Replacement .....	19
Self-Locking Bearing Collar Installation .....	20
Winter Storage .....	20
Pre-Season Check .....	21
<b>Parts</b>	
Body and Gauge Roller .....	22 23
Drive Line and Guards .....	24 25
Chute .....	26 27

Continued on next page

<b>Parts</b>	<b>Page</b>
Hopper .....	<b>28 29</b>
Hopper Hydraulic Dump .....	<b>30</b>
Power Take-Off Shaft .....	<b>31</b>
Gear Box .....	<b>32</b>
Rotor .....	<b>33</b>
Drive Belt Idler .....	<b>33</b>
Caster Wheels .....	<b>34</b>
<b>Kits</b>	
Gauge Roller Scraper .....	<b>35</b>
Leaf Mulching Screen .....	<b>35</b>
Front Gauge Roller .....	<b>36</b>
Thatching Blade and Wide Vacuum Paddle .....	<b>37</b>

## **Metric (SI) Measurements**

### **(English Units & Metric (SI) Equivalents)**

#### **Area**

1 square inch = 6.4516 square centimeters  
 1 square foot = 0.0929 square meters  
 1 square yard = 0.8361 square meters  
 1 acre = 4047 square meters  
 1 acre = 0.4047 hectare

#### **Force**

1 pound (force) = 4.45 newtons

#### **Length**

1 inch = 25.4 millimeters  
 1 inch = 2.54 centimeters  
 1 foot = 304.8 millimeters  
 1 foot = 30.5 centimeters  
 1 foot = 0.305 meters  
 1 yard = 0.9144 meters  
 1 mile = 1.6093 kilometers

#### **Mass**

1 ounce = 28.35 grams  
 1 pound = 0.454 kilograms  
 1 ton = 907.1848 kilograms

#### **Power**

1 horsepower = 0.7457 kilowatts

#### **Pressure**

1 psi = 6.89 kilopascals  
 1 psi = 0.00689 megapascals  
 1 inch of mercury = 3.377 kilopascals

#### **Temperature**

1 degree Fahrenheit ( $^{\circ}\text{F} - 32$ )  $\div$  1.8 =  $^{\circ}\text{Celsius}$

#### **Torque**

1 inch pound = 0.113 newton meters  
 1 foot pound = 1.356 newton meters

#### **Velocity**

1 mile per hour = 1.61 kilometers per hour

#### **Volume**

1 bushel = 35.24 liters  
 1 bushel = 0.0352 cubic meters  
 1 pint = 0.4731 liters  
 1 quart = 0.9464 liters  
 1 gallon = 3.7854 liters  
 1 cubic inch = 16.387 cubic centimeters  
 1 cubic foot = 0.0283 cubic meters  
 1 cubic yard = 0.7646 cubic meters

# INTRODUCTION

## TO THE OWNER

The Model 60FP and 72FP are Flail Pick-Up Mowers. These models have the unique feature of picking up the material as it is cut.

Before operating your Pick-Up Mower, read the Operating, Adjustment and Maintenance Instructions in this manual. Check each item referred to and become familiar with the adjustments and/or settings required to obtain efficient operation and maximum trouble-free service.

## WORK SAFELY



This symbol is used to call your attention to instructions concerning your personal safety. Be sure to observe and follow these instructions.

## WARRANTY REGISTRATION

It is important to send in your warranty registration card as soon as your new Pick-Up Mower is delivered. Not only does the card validate your warranty, but it is also our way of knowing who has purchased M-C equipment so that we can keep in touch with you.

## MODEL AND SERIAL NUMBER LOCATION

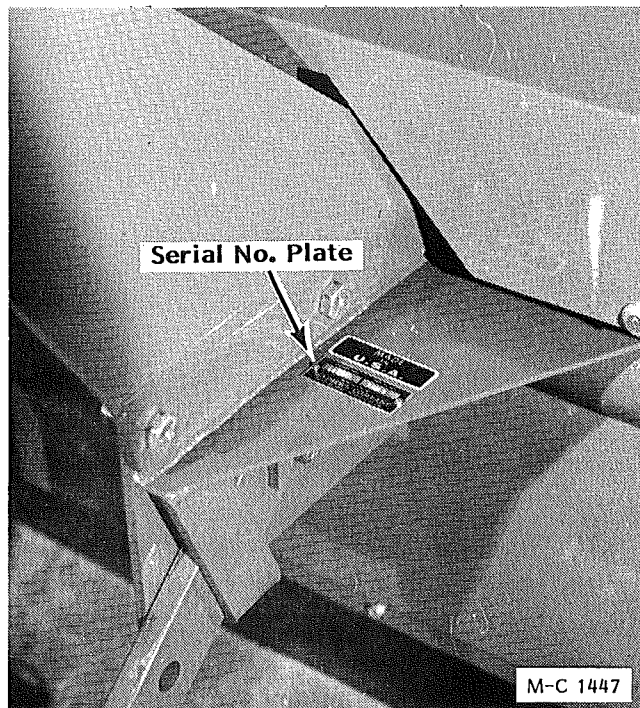


Figure 1

The model and serial number of your Pick-Up Mower are stamped on a plate located on the left side of the body in front of the output shaft guard, see Figure 1. For future reference, record the model and serial number in the blank spaces in Figure 2.



M-C 003

Figure 2

## PARTS ORDERING INSTRUCTIONS





1. Order parts from your local M-C dealer or distributor.
2. Always furnish the model and serial numbers. This information is stamped on the serial number plate.
3. Service parts for your Pick-Up Mower are listed in the "Parts" section of this manual. When ordering parts be sure to furnish the part number, description and quantity required.
4. Inspect all shipments upon receipt. If any packages and/or boxes are missing, or parts are damaged, file claim with the carrier immediately. Failure to do so may void a claim. Check the shipment against the packing list carefully. Report any shortages to the shipper immediately.
5. Do not return any parts to the Mathews Company without a "Return Goods Authorization" from the factory. All return parts shipments must be shipped prepaid (COD shipments will not be accepted). Shipments must also include the following:
  - A. A letter of explanation including the "Return Goods Authorization Number," your name and address.
  - B. A list of all parts being returned. List must include part number, description, quantity and original invoice number.

## Capscrew Grade Identification

There are four grades of hex-head capscrews. Grades 1 and 2 are common capscrews, grade 5 and grade 8 are used when greater strength is required. Each grade can be identified by the marking on the head of the capscrew, see chart.

When servicing the machine and/or replacing capscrews, be sure to use the correct size and grade. If in doubt, refer to the parts list. If a specific grade is not shown as part of the description, the capscrew is a grade 1 or 2.

### CAPSCREW GRADE IDENTIFICATION CHART

S.A.E. Grade	Description	Capscrew Head Marking*
1	WILL HAVE A PLAIN HEAD - NO RADIAL LINES	
2	Low or Medium Carbon Steel Not Heat Treated	
5	WILL HAVE 3 RADIAL LINES Quenched and Tempered Medium Carbon Steel	
8	WILL HAVE 6 RADIAL LINES Quenched and Tempered Special Carbon or Alloy Steel	

\*The center marking identifies the capscrew manufacturer.

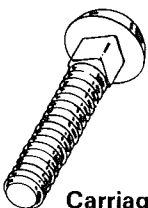
## Hardware Identification



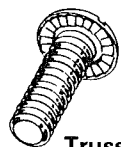
Knurled Point Set Screw



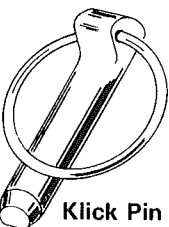
Cone Point Set Screw



Carriage Bolt



Truss Head Whiz Screw



Click Pin



Jam Nut



Jam Nut w/3 Distorts



Top Lock Flange Nut



Hex Nut w/NY Lock



Two Way Locknut



Truss Head Screw



Whiz Nut



Hex Washer Head Screw



Hex Head Capscrew w/NY Patch



Clip Nut



Cup Point Set Screw w/NYLK

M-C 197

**NOTE:** The Mathews Company reserves the right to incorporate any changes in design without obligation to make these changes on units previously sold.

# SET-UP INSTRUCTIONS

## GENERAL

Before beginning to set up your Flail Pick-Up Mower, read the set-up instructions carefully to become familiar with the machine.

Check to make sure that you have received all parts listed on your packing list. Make claims for any shortages immediately.

RIGHT or LEFT and FRONT or REAR is determined by standing behind the machine and looking toward the tractor PTO.

Assemble it on a solid flat level surface to insure safety and to aid in aligning parts during assembly.

## CHUTE AND HOPPER

1. The assembled hopper is on top of the chute for shipping purposes. Lift it off and place it on the ground.
2. Bolt each hopper pivot bushing, Figure 3, to the chute sides with  $\frac{1}{2}$ -13 x  $2\frac{1}{2}$ " hex-head capscrews, flatwasher (next to bolt head), lockwasher and hex-nut.
3. Install the hopper stop angles, Figure 3, to the chute sides and body side plates with  $\frac{5}{16}$ -18 x  $\frac{3}{4}$ " truss head screws, lockwashers and hex-nuts. Leave these screws loose until the hopper is lifted onto the chute assembly.
4. Install the chute flap to the angle at the top of the chute using  $\frac{1}{4}$  x  $1\frac{1}{4}$ " hex-head capscrew, bolt, flatwasher, lockwasher and nut. See Figure 4A.
5. Install the hopper lift brace on top of the hopper and four  $1\frac{1}{2}$ " diameter heavy retaining washers below the hopper top using the four  $\frac{3}{8}$  x 1" truss head bolts, flatwasher, lockwasher and nut.
6. Install hoods (2) over holes on hopper top with larger open end to rear using  $\frac{1}{4}$  x  $\frac{1}{2}$ " truss head bolt, lockwasher and nut.
7. Install hopper extension angle and rubber flap to bottom of hopper as shown in Figure 4. Extension angle is factory attached to the rubber flap.
8. Before the hopper is installed, check the

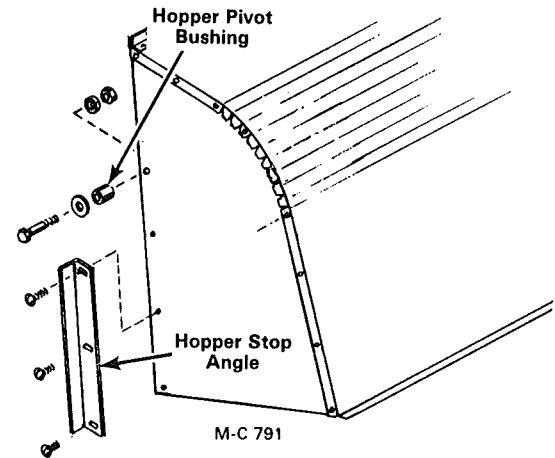


Figure 3

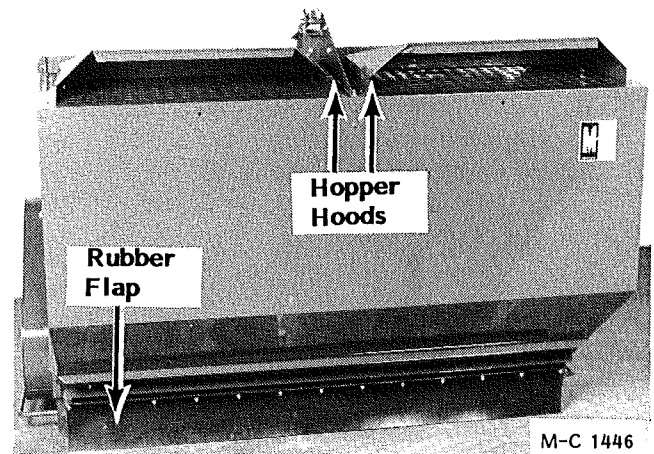


Figure 4

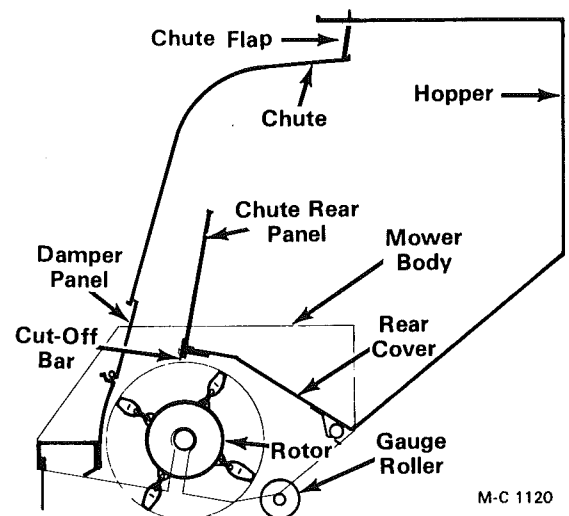


Figure 4A

clearance between the knives and cut-off bar at the bottom of the chute rear panel as follows, see Figure 4A and 4B.

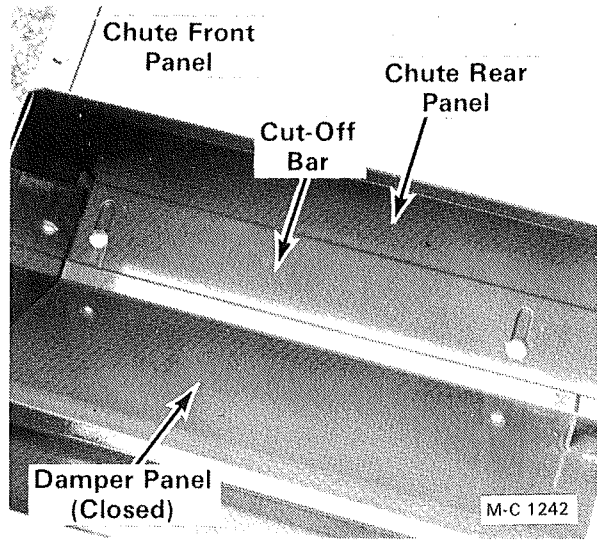


Figure 4B

- A. The knives must be as close to the cut-off bar as possible without hitting it.
- B. To adjust the cut-off bar, loosen the capscrews securing it to the chute rear panel and move it up or down in the slots as necessary, then tighten the capscrews.

**IMPORTANT:** When thatching blades are installed, the cut-off bar will have to be readjusted so they do not hit it. Thatching blades are 3/8" longer than the knives.

9. Lift the hopper assembly onto the pivot bushings on the chute and lock in place with a 5/16 x 2" bolt, lockwasher and 1" spacer in each hopper pivot.
10. Push the hopper stop angles on the chute up against the hopper side post angles and tighten the 5/16" truss head screws.

### CASTER WHEELS

1. Place three 1-7/16" ID x 3" OD caster spacers on each caster yoke spindle. Lift the front of the machine just high enough to install the caster yoke and wheel assemblies into the caster brackets. Lower the machine.
2. Place one 1-7/16" ID x 2" OD caster spacer on each caster yoke spindle and secure the caster yokes with 5/16" klick pins, see Figure 5.

**IMPORTANT:** With the caster wheels turned to the position they are in when traveling

forward, install the klick pins from front to rear as shown in Figure 6. If they are installed from rear to front, a branch from a tree or shrub could catch the ring of the klick pin and pull it out of the spindle allowing the caster wheel to drop out of the caster bracket.

3. Inflate the tires to 40 lbs.

### POWER TAKE-OFF SHAFT

1. Apply a small amount of grease to the gearbox input shaft and both PTO shaft yokes.
2. Install the power take-off shaft onto the gearbox input shaft.

### HITCH

1. Remove the hitch floating links from their shipping position and install them as shown in Figure 5. The cut off corner is to be up and to the rear. The head of the capscrew goes to the outside.
2. Install the hitch brackets on the body, see Figure 5. Secure with 5/8-11 x 1 1/2" hex-head capscrews (grade 5), lockwashers and hex-nuts (three each side).
3. Install the ram mount between the hitch brackets with 1/2-13 x 1 1/2" capscrews (grade 5), lockwashers and hex-nuts, see Figure 5.

### DAMPER CONTROL

1. Install the damper control rod through the guide hole in the ram mount, see Figure 5. Attach the damper control rod to the damper panel and secure with a 1/8 x 3/4" cotter pin.

### HYDRAULIC DUMP

1. Install ram lever arm to ram mount weldment using a 1 x 3-5/8" pivot pin and two click pins.
2. Attach actuator rod assembly to hopper left brace using 5/8" bolt and locknut, see Figure 5.
3. Set lock collar approximately 1 1/2" from end of actuator rod and lock in place with set screw. Install 3/16 x 1 1/2" cotter pin in end of rod.
4. Attach hydraulic hoses to ram (long hose to rod end) and install hydraulic

ram to ram mount and ram lever arm. Install oil restrictors (included) to tractor end of hoses. Hydraulic hose ends to connect to tractor (not included) will

attach to restrictors.

**NOTE:** Use hydraulic fitting sealant on all fittings.

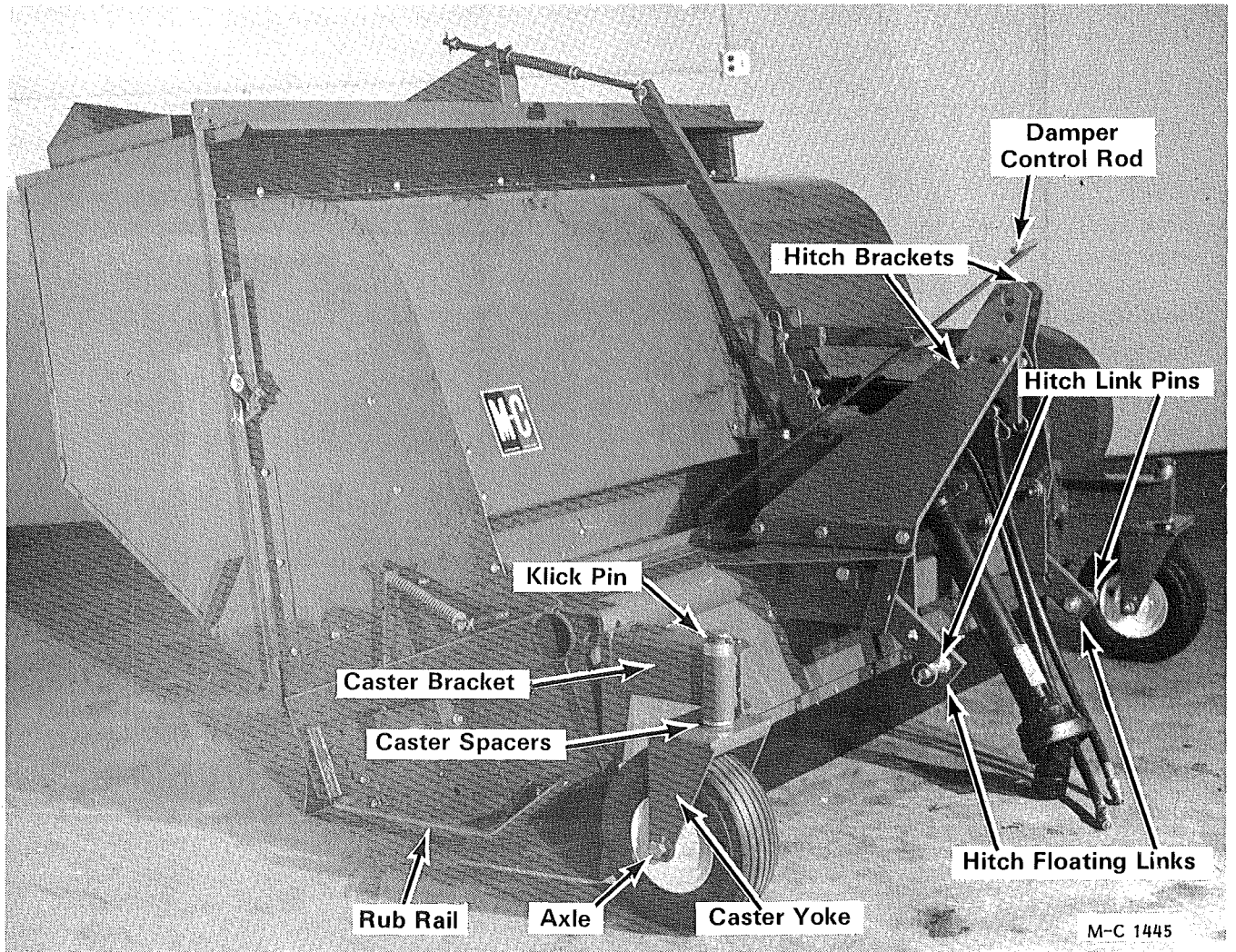


Figure 5

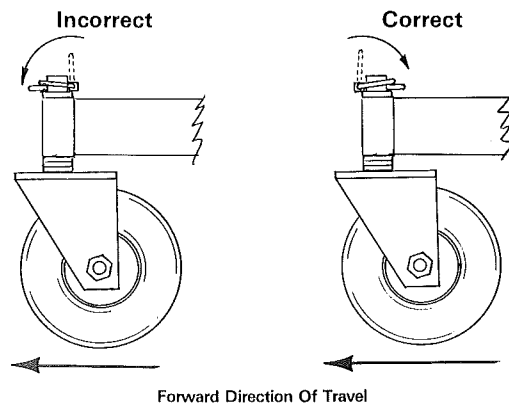


Figure 6



## RUB RAILS

**NOTE:** The rub rails are factory installed on the Model 60FP.

1. Install the right and left rub rails to the sides of the Model 72FP body with 3/8-16 x 3/4" truss head screws, lock-washers and hex-nuts. Right rub rail is shown in Figure 7.

## LEAF MULCHING SCREEN (OPTIONAL)

**IMPORTANT:** Do not use the leaf mulching screen when thatching blades are to be used. The thatching blades will contact the screen during operation.

1. The rear cover must be removed. The rear cover is located at the rear of the machine above the gauge roller. The hopper must be opened to gain access to the rear cover.



**CAUTION:** Block the hopper so that it cannot accidentally fall on you.

2. Remove the five capscrews across the top of the rear cover. Loosen the three capscrews at the bottom of the rear cover. Remove the rear cover by tipping the top edge up and sliding the bottom edge off of the cross tube.
3. Place the leaf mulching screen in place as shown in Figure 8. Bolt both bottom ends in place with 3/8-16 x 3/4" hex-head capscrews, lockwashers and hex-nuts, see 1 in Figure 8.
4. Install the rear cover over the leaf mulching screen by reversing the procedure in step 2. The five capscrews, lockwashers and flatwashers removed from the top of the rear cover go through the rear cover and the holes at the top of the leaf mulching screen, see 2 in Figure 8.

## LUBRICATION

1. Remove the oil level plug on the right side of the gearbox and check the oil level, see Figure 9. The oil should be up to the bottom of the level plug hole.

If the level is too low, remove the bushing, with vent, on top of the gearbox and add Mobilfluid 423 multipurpose

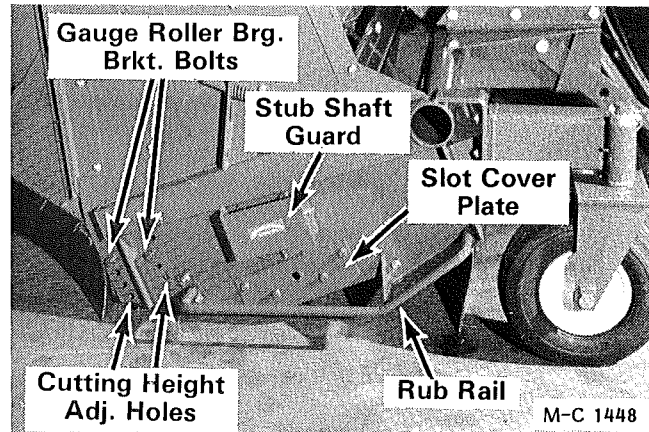


Figure 7

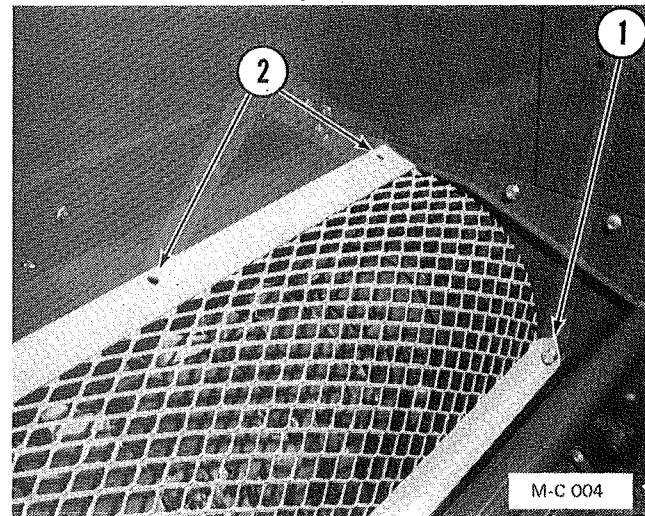


Figure 8

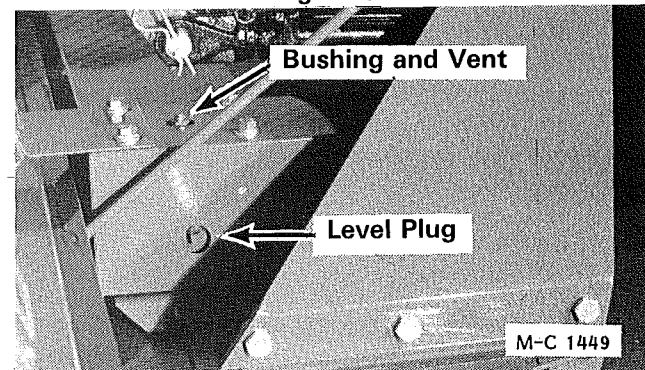


Figure 9

transmission lubricant or equivalent until it runs out of the level plug.

Mobilfluid 423 is available from M-C in one pint containers. Order M-C part number 000 8991.

Install the level plug. Check to be sure the vent is not plugged with paint or dirt. Install the bushing with vent.

2. There are thirteen (13) lubrication points. For locations refer to "Lubrication" page 8. Lubricate with a hand grease gun. Do not over lubricate. Too much grease may damage the bearing seals.

# OPERATION

## SAFETY PRECAUTIONS



A safe operator is the best insurance against accidents. The precautions listed below must be observed at all times.

- Do not allow children or bystanders near the machine while it is operating.
- Do not operate the machine above 540 RPM power take-off speed. To do so will overspeed the rotor and possibly cause personal injury.
- Do not operate without all safety shields in place and secure.
- Do not operate without the rubber stone guard. Operating without the stone guard could cause personal injury.
- Do not make any inspections or adjustments while the machine is operating or while the tractor is running.

**NOTE:** After the first two hours of operation, make sure all capscrews and nuts are tight.

## CONNECTING THE PICK-UP MOWER TO THE TRACTOR

1. Attach the hitch floating links to the two lower links of the tractor hitch. Insert the klick pins through the hitch link pins from the top. Be sure the klick pin ring is snapped down into the locking position.

**IMPORTANT:** The hitch link pins are for a category 1 tractor hitch. If the tractor is equipped with a category 2 hitch, adapter bushings or category 2 hitch link pins must be used.

2. Connect the tractor hitch top (3rd) link to the mower hitch bracket. The top hole in hitch bracket is for tractors with a category 2 hitch and the bottom hole is for tractors with a category 1 hitch, see Figure 10.
3. Connect hydraulic dump hoses to tractor.

**NOTE:** If a balance problem occurs when the machine is lifted, the hitch link pins can be moved to the second hole in the hitch floating links. This will bring the machine

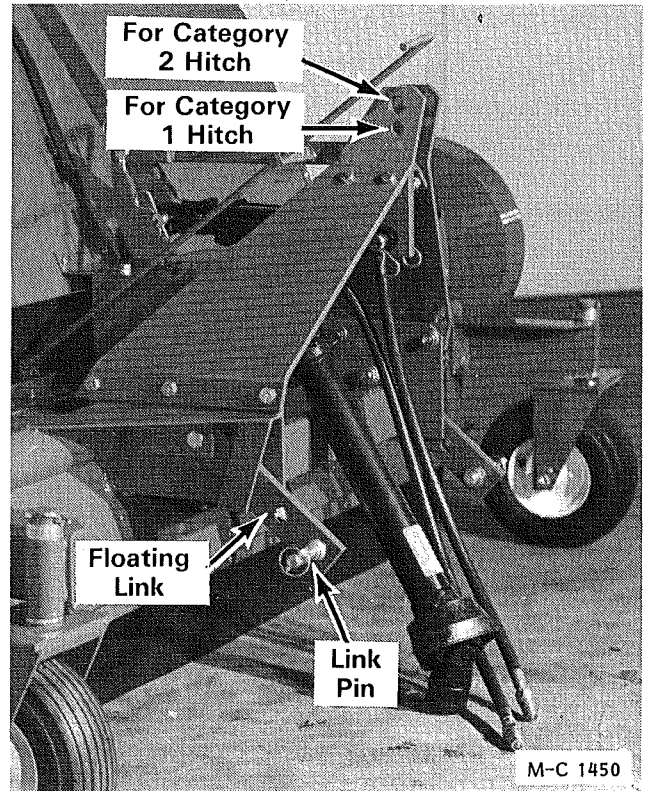


Figure 10

closer to the tractor. If the second hole is used, be sure the caster wheels do not hit the tractor and/or the power take-off shaft does not bottom out.

## CONNECTING THE PTO SHAFT TO THE TRACTOR

1. Turn the collar on the "Quik-Lok" yoke to release the spring tension on the locking system.
2. With the collar in the released position, push the yoke onto the tractor PTO shaft until it bottoms.

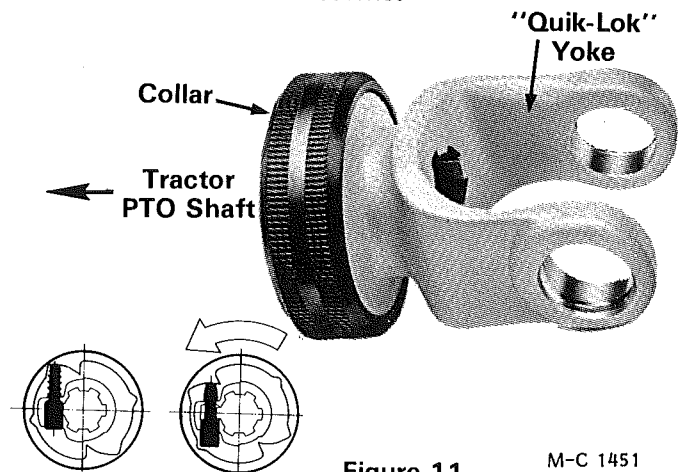


Figure 11

3. Pull the yoke back slightly until the locking system snaps into the groove in the tractor PTO shaft.
4. To disconnect the PTO shaft, turn the collar and pull the yoke off of the tractor PTO shaft.

### IMPORTANT

**RUN THE MACHINE AT A LOW RPM CHECKING TO MAKE SURE THAT ALL DRIVE LINE PARTS ARE MOVING FREELY.**

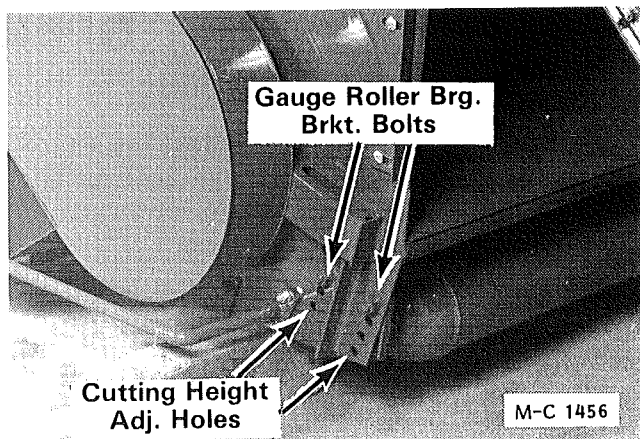


Figure 12

### CUTTING HEIGHT AND LEVELING

1. The cutting height is established by the caster wheels and the gauge roller. There are three bolt adjustments for the caster wheel brackets that correspond with three adjustments on the gauge roller, see Figure 12.
2. To obtain an even cut, the caster wheel brackets and the gauge roller must be in the same adjustment position. The machine should be level or just slightly higher in front (1" or so) for best operation.
3. The gauge roller is installed in the top position at the factory. This is the lowest cutting height position. To raise the cutting height, set machine on blocks or a stand as shown to hold machine up so there will be no weight on the rear roller and move the gauge roller to the middle or bottom position. Install the caster wheel brackets in the same position as the gauge roller -- bottom, middle or top.



**CAUTION:** When gauge roller bracket bolts are out, gauge roller is free to move and will want to fall to the ground.

4. Additional caster wheel adjustment can be obtained by repositioning the caster spacers on the caster yoke spindles.

**NOTE:** One caster spacer must remain between the caster bracket and the caster yoke spindle so that the caster bracket does not contact the caster yoke spindle.

5. Level the machine with the tractor hitch upper (3rd) link adjusting screw. Set the tractor hydraulic lever stop so that when the machine is lifted to the transport position the power take-off shaft universal joints do not lock.

### ADJUST WEIGHT ON CASTER WHEELS

The caster wheels are not designed to carry the full weight of the machine continuously. When in operation, the gauge roller contacts the ground and the front is supported off the ground by the tractor hitch top (3rd) link of the three point hitch. To adjust the weight on the caster wheels, proceed as follows:

1. Lower the machine so that the gauge roller contacts the ground.
2. Extend the tractor hitch top (3rd) link until most of the machine weight is off of the caster wheels (wheels are almost free to turn by hand).
3. Start mowing. If the caster wheels shimmy or turn in circles, stop and shorten the tractor hitch top (3rd) link a small amount to place more weight on the caster wheels or move another washer to the space below the caster bracket.

**IMPORTANT:** For best results the machine, when operating, should be level or slightly up in front (1" or so).

### DAMPER PANEL

1. To mow and load clippings, pull the damper panel control rod forward, see Figure 5. This opens the damper panel which allows clippings and/or leaves to travel up the chute and into the hopper.

2. To mow only, the damper panel must be closed. The clippings and/or leaves will return directly to the ground.

## MOWING

1. Never operate with missing or broken knives. If any knives are missing or broken, the rotor will be out of balance and the machine will vibrate. Replace missing or broken knives. See page 14 for procedure.



**CAUTION:** Before attempting to make any inspection, be sure to disengage the PTO and stop the tractor engine.

2. To obtain an even cut, the caster wheel tire pressure must be equal. Recommended pressure is 40 lbs.
3. When mowing heavy grass from 4 to 6 inches tall, your ground speed should be lower than if the grass were only 2 to 3 inches tall. Determine the type of mowing job you have and adjust your ground speed accordingly.

**IMPORTANT:** To insure maximum pick-up, it is necessary to maintain specified power take-off shaft speed to provide a constant rotor speed of 1900 RPM. If power take-off speed is correct and rotor speed cannot be maintained, check the drive belt adjustment. Refer to Drive Belt Adjustment on page 15.

4. An important feature is the ability to pick up leaves in the fall of the year. Mowing will cut up the leaves and decrease their volume for pick-up.
5. A leaf mulching screen attachment is available for all models. See "Leaf Mulching Screen" in the parts section of this manual. Order from your local M-C dealer. This mulching screen can easily be installed under the rear cover of all models, see page 8.
6. Leaves are mulched fine enough to be left on the ground to decompose and add nutrients into the soil. If you choose to pick up the mulched leaves, pull the damper control rod and go back over the lawn and load the mulched leaves into the hopper. It is not necessary to remove the leaf mulching screen for this part of the operation.

**IMPORTANT:** Do not use thatching blades with the leaf mulching screen because the tips of the blades will contact the screen.

7. After about the first ten (10) hours of use, the drive belt will break-in. Readjust drive belt tension at this time. Refer to "Drive Belt Adjustment" on page 15.

## CLEANING

1. When mowing in wet conditions, grass and mud may build up on the underside. It is recommended that you hose down the housing, chute and rotor after use. A clean chute provides a smooth flow of material to the hopper.

## THATCHING

**NOTE:** Thatching Blade Kits and Thatching Blade and Wide Vacuum Paddle Kits are available. See "Thatching Blade and Wide Vacuum Paddle Kits" in the parts section of this manual. Order from your local M-C dealer.

1. Much has been written about thatch; its causes, controls and effects. Perhaps it may be best, first of all, to define what thatch is. It is the accumulation of non-decomposed plant residue in turf between the soil level and greening area of the grass plant. It is principally composed of decomposing stems and rhizomes which are higher in cellulose than more quickly decomposing leaves.
2. A heavy layer of thatch effectively impedes the movement of water through to the roots, traps fertilizer and keeps it from feeding the growing plant. Many of the modern fungicides and insecticides rely on heavy watering to be efficient.
3. An even more serious problem is the increased probability of disease. Modern turf management is like walking a tight-rope. We need vigorous grass to resist the invasion of weeds and other undesirable plants, and yet vigorous grasses produce thatch.
4. The Mathews Company has given the professional turf manager his balancing pole in the form of the versatile Flail Pick-Up Mower. When the machine is used as a dethatching unit it not

only dethatches but picks up the thatch in the same operation.

This same machine can then be used as a pick-up mower and thus eliminates the clippings from becoming thatch.

5. For the greatest amount of thatching, install a thatching blade on every knife hanger on each row. For less thatching, install the thatching blades on every other or every third knife hanger on each row.

**IMPORTANT:** Thatching blades **MUST** be installed in equal amounts 180° apart to keep the rotor balanced.

Do not use the leaf mulching screen when thatching blades are used. The thatching blades are 3/8" longer than the knives and will contact the screen during operation.

Also, the cut-off bar will have to be readjusted so they do not hit it. See step 8 under "Chute and Hopper" on page 5.

#### PREPARATION FOR OVERSEEDING

1. The Flail Pick-Up Mower is an excellent machine for overseeding. With both the mowing knives and thatching blades installed on the rotor, it will do an excellent job of preparing an existing lawn for overseeding. The thatching blades hang down 3/8" lower than the mowing knives (See "C" in Figure 13) and will remove the mat of dead grass and give you a seed bed in the existing turf. You will be mowing your grass very short while you are preparing a seed bed.

**NOTE:** Some grasses will not withstand cutting at this short height, so knowledge of your particular strain of grass is necessary. If you do not want to cut your grass this short, then follow the steps listed under "Verti-Cutting" and you will have excellent results.

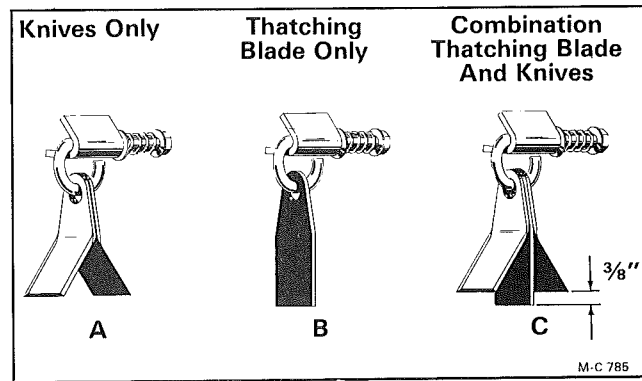


Figure 13

2. The depth and ground conditions will play a major role in determining ground speed for this operation. If the rotor starts to slow down, reduce your ground speed.

#### VERTI-CUTTING

1. To go along with the thatching operation, the same blade is used for verti-cutting. The operation is basically the same. The term verti-cut is used when you are working with different strains of grass such as Creeping Bent, Bermuda, St. Augustine, etc. These types of grass spread very rapidly in ideal conditions.

They grow horizontally and have a tendency to grow on the surface of the ground. By verti-cutting you cut the plant's horizontal growth and force the roots to grow downwards which makes for a healthier plant that is taking nutrients and moisture from the soil.

2. Only the thatching blades alone are used for this operation (See "B" in Figure 13).

# MAINTENANCE

## GENERAL



**CAUTION:** Do not allow children or bystanders near the machine while it is being adjusted and/or serviced.



**CAUTION:** Never do any maintenance on the machine with the tractor running.

### Periodically During the Season

1. Tighten all capscrews and locknuts.
2. Inspect all knives and knife hangers to be sure they are not damaged and are secure.
3. Check to be sure that all the guards and shields are in place and secure.
4. Inspect the rotor, gearbox, output drive shaft, belt drive assembly and PTO shaft for signs of unusual wear or lubrication leaks that could lead to part failure.

## LUBRICATION

**IMPORTANT:** Use a hand grease gun. Grease sparingly to avoid damage to the bearing seals by forcing grease out.

### Every 8 Hours

1. Power take-off shaft universal joints (2). One fitting in each yoke and one fitting in the telescoping PTO shaft, see Figure 14.

**NOTE:** To locate the fitting in the telescoping PTO shaft, disconnect the PTO from the tractor PTO. Lengthen the PTO shaft until the guards pull apart and grease collar and fitting are accessible.

2. Caster wheel spindles (2). One fitting in each caster wheel bracket.
3. Caster wheel bearings (2). One fitting on each wheel.
4. Rotor bearings (2). One fitting on each end of the rotor.

**NOTE:** The left rotor bearing fitting is between the belt guard and body. It is not necessary to remove the belt guard to reach this fitting.

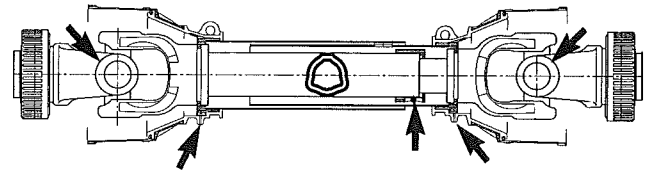


Figure 14

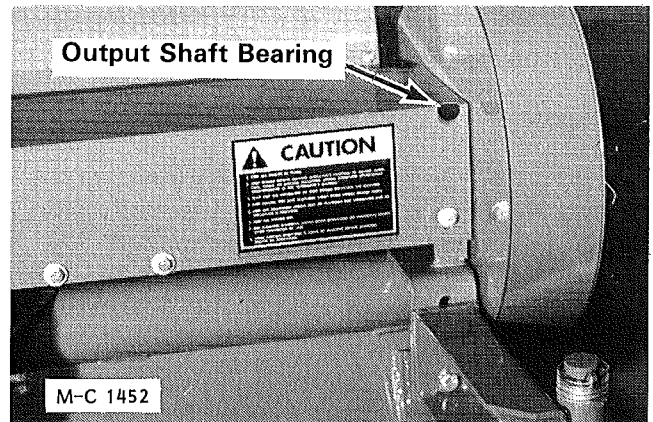


Figure 15

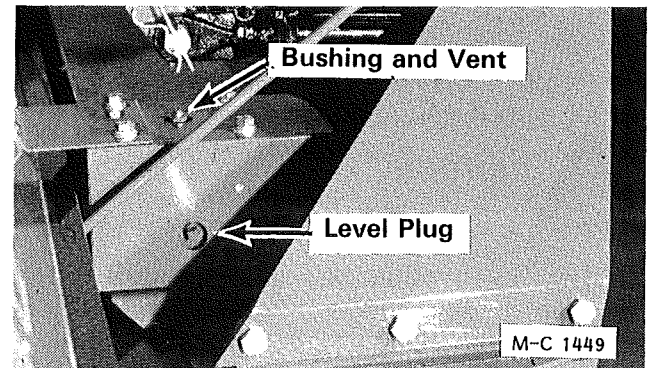


Figure 16

5. Gauge roller bearings (2). One fitting on each end of the gauge roller.
6. Output shaft bearing (1). Reach through hole in output shaft guard, see Figure 15.
7. Output shaft universal joint (1). Located under the output shaft guard.

### Periodically During the Season

1. Remove the oil level plug on the right side of the gearbox, see Figure 16. The oil level should be even with the bottom of the level plug hole. If not, remove the bushing and vent on the top of the gearbox and add Mobilfluid 423 multipurpose transmission lubricant

or equivalent until it just runs out of the level plug.

Mobilfluid 423 is available from M-C in one pint containers. Order M-C part number 000 8991.

2. Install the level plug and the bushing with vent. Check to be sure the vent is open.
3. Apply a few drops of oil to the following:
  - A. Damper panel pivot points.
  - B. Damper panel lever.
  - C. Hopper pivots.

## CLEANING

1. When mowing in wet conditions, grass and mud may build up on the underside of the body. It is recommended that you hose down the housing, chute and rotor after use. A clean chute provides a smooth flow of material to the hopper.

## KNIVES, THATCHING BLADES AND VACUUM PADDLES

### Knives

1. Remove the rear cover and leaf mulching screen (if equipped).



**CAUTION:** Never run the machine with the rear cover removed.

2. The knives can be reversed to expose a new cutting edge or replaced by pulling the knife hanger back until it clears the knife hanger support. A channel lock is the preferred tool for removal of knives and hangers.
3. The knives can be sharpened on an electric bench grinder if desired.

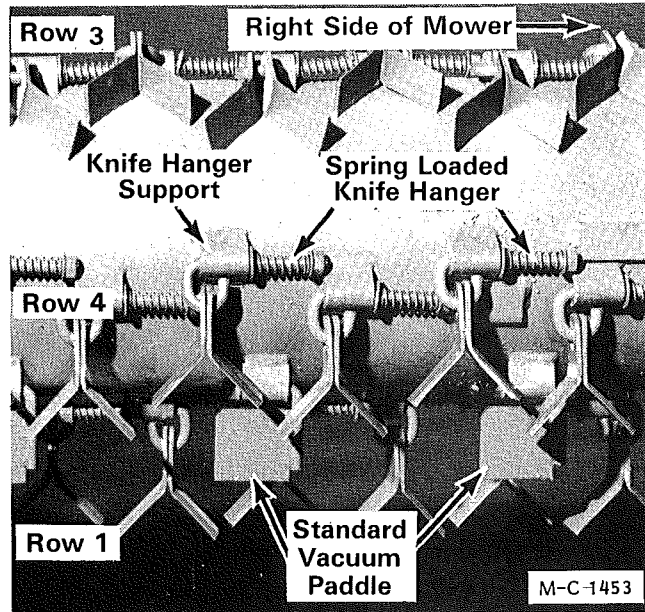


Figure 17



**CAUTION:** Always wear safety glasses when sharpening knives with a grinder.

**IMPORTANT:** To get the correct overlap of knives, the hangers must be installed as follows: (See Figure 17.)

- Row 1 - All hanger nuts to the left.
- Row 2 - All hanger nuts to the left. (Hidden)
- Row 3 - All hanger nuts to the right.
- Row 4 - All hanger nuts to the right.

One short knife hanger is installed at the extreme right of row 1 and one at the extreme left of row 3.

4. Install the leaf mulching screen (if equipped) and the rear cover.

**NOTE:** If thatching blades have been installed, do not install the leaf mulching screen because the tips of the thatching blades will contact the screen during operation.

### Thatching Blades

1. Thatching blades can be installed between the two knives on the knife hangers (see "C" in Figure 18) or the knives can be removed and thatching blades alone installed on the hangers (see "B" in Figure 18).
2. When thatching blades are installed, the cut-off bar must be adjusted so they do not hit it. See step 8 under "Chute and Hopper" on page 5.

**NOTE:** Do not install the optional leaf mulching screen because the tips of the thatching blades will contact the screen during operation.

### Vacuum Paddles

1. The standard vacuum paddles, Figure 17, can be removed by removing the locknut and sliding the vacuum paddle out of the support.
2. When the optional wide vacuum paddles are to be installed, remove all of the standard vacuum paddles. The wide vacuum paddles mount between the standard vacuum paddle supports and are held in place with pivot rods, flatwashers and cotter pins.

**NOTE:** Install the wide vacuum paddle pivot rods through the hole in the body slot cover plate on the right side of the machine. This plate is located just below the rotor stub shaft guard, see Figure 12.

**NOTE:** Wide paddles should not be used except when operating with thatching blades only and the standard small paddles do not have the lift capacity needed. Using wide paddles with cutting knives and thatching blades will cause more turbulence. Air and material will follow the paddles around and begin to discharge material out the back of the machine.

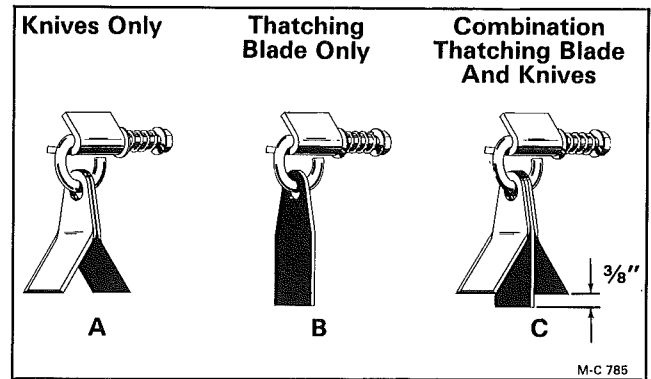


Figure 18

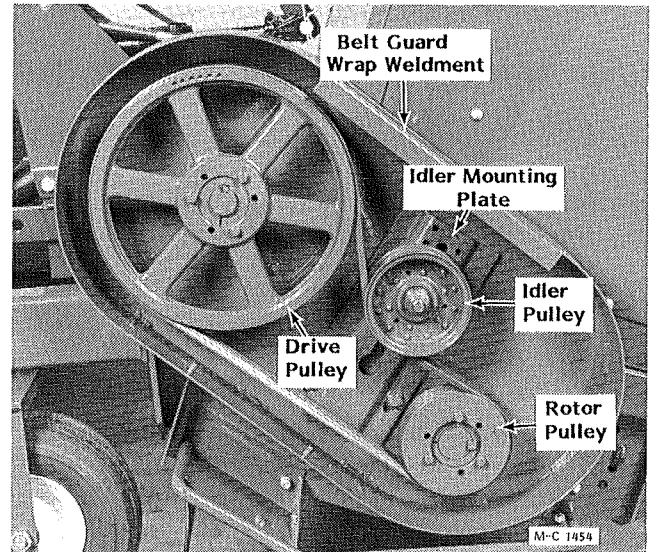


Figure 19

### DRIVE BELT ADJUSTMENT

1. Remove the belt guard.
2. Loosen the idler pulley carriage bolt. (See Figure 19)
3. Using a drift pin, insert it into the lowest hole above the idler pulley mounting plate and push the idler pulley downward to increase the tension.
4. Tighten the carriage bolt holding the idler pulley in place.

### DRIVE BELT REPLACEMENT

1. Remove the belt guard.
2. Before replacing the drive belt determine what caused the belt failure. Three common causes of belt failure are:
  - A. If the belt is broken, this indicates a severe shock load or engagement of the tractor PTO at high engine



RPM. Always engage and disengage the tractor PTO at low engine RPM.

- B. If the belt is burned in places, this indicates that the belt is slipping. Adjust the belt tension. See "Drive Belt Adjustment."
- C. If the belt has one segment turned over, is frayed or there is a great amount of powdered rubber in the belt guard, the drive and/or idler pulleys are misaligned. Refer to "Drive and Rotor Pulley Alignment" and "Idler Pulley Alignment".

### DRIVE AND ROTOR PULLEY ALIGNMENT

1. To check drive and rotor pulley alignment, remove the belt guard cover and place a straight edge across the face of the drive and rotor pulley, see Figure 20.
2. If the pulleys are not in alignment, remove the input and output shaft guards, relieve idler tension and adjust the output shaft bearing as follows:
  - A. **Pulleys are out of alignment vertically.** Raise or lower the output shaft and bearing as required by adding or removing shims under the bearing, see Figure 21.
  - B. **Pulleys are out of alignment horizontally.** Loosen the bearing mounting capscrews and move the output shaft and bearing forward or back as required. The bearing mounting holes are slotted for this purpose, see Figure 21.
3. Check idler pulley alignment, see "Idler Pulley Alignment" following.

### IDLER PULLEY ALIGNMENT

1. The belt idler pulley must run in line with the drive and rotor pulleys so that the belt tracks flat on the idler pulley.

**IMPORTANT:** The drive and rotor pulleys must be in alignment before checking idler pulley alignment.

2. To check idler pulley alignment, place a straight edge across the face of the idler pulley up to the drive pulley. Measure the distance from the face of the drive pulley to the straight edge at two places. If the measurements are equal, the idler pulley is aligned.

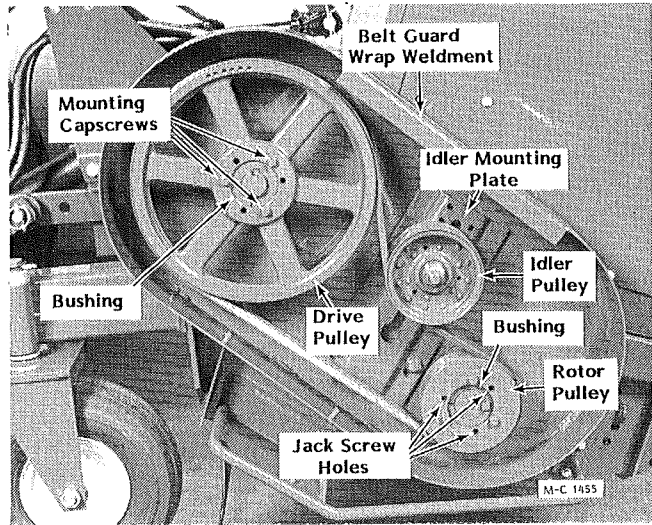


Figure 20

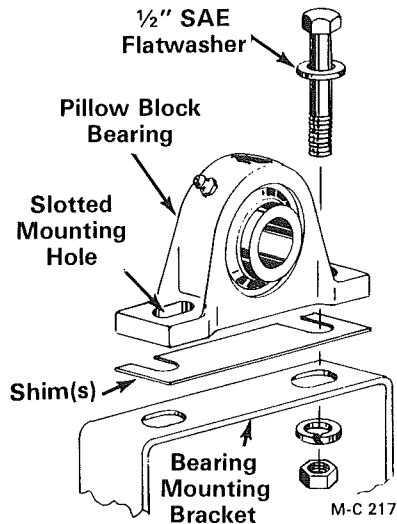


Figure 21

3. If the idler pulley is not aligned, add or remove washers between idler pulley and idler mounting plate. If more adjustment is needed, move drive and drive pulleys.

### DRIVE AND ROTOR PULLEY REPLACEMENT

**NOTE:** The drive and rotor pulleys are held on the shafts with tapered bushings. Use the jackscrew holes in the pulleys to separate the pulleys from the bushings. Do not attempt to remove the pulleys with a gear puller as this could result in damage to the pulleys.

1. Remove the belt guard. Remove the drive belt. Refer to "Drive Belt Replacement" page 15 for procedure.

2. Remove the three mounting capscrews in the pulley, see Figure 20. Thread the capscrews into the three jackscrew holes in the pulley. Tighten the three capscrews progressively and evenly until the pulley is loose on the bushing.
3. Remove the pulley and bushing from the shaft. If the bushing does not slip off of the shaft, wedge a screwdriver blade in the saw cut in the flange of the bushing (not the tapered surface) to spread the bushing.
4. Before installing the pulley and bushing, thoroughly inspect the tapered bore of the pulley and the tapered surface of the bushing. Any paint, dirt, oil or grease **must** be removed.
5. Place the bushing into the pulley from the rear so that the bushing flange is to the inside, see Figure 22. The bushing and the bore of the pulley are tapered. Be sure to install the bushing into the large ID of the pulley tapered bore. If the bushing is installed into the small ID of the pulley, the pulley hub will crack when the mounting capscrews are tightened.
6. Place the three capscrews through the open holes in the pulley and thread them into the bushing by hand. Do not tighten the capscrews.

**IMPORTANT:** The capscrew and pulley threads must be clean and dry. Do not lubricate.

7. Install the key in the output drive and/or rotor shaft. Slide the pulley and bushing assembly onto the shaft. If the bushing is too tight on the shaft, wedge a screwdriver blade into the saw cut in the flange (not tapered surface) to spread the bushing.
8. Install the belt and move the pulley and bushing in or out until the belt is in alignment on the pulleys. Tighten the three capscrews evenly and progressively. Torque the pulley capscrews to 15 ft. lbs.

**IMPORTANT:** The tightening force on the three capscrews is multiplied many times by the wedging action of the bushing tapered surface. Do not exceed the specified torque, or use a lubricant on the capscrew threads. To do so may create bursting pressures in the hub of the pulley.

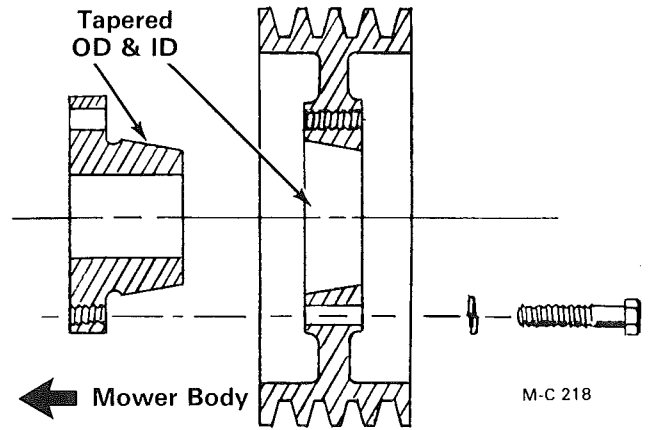


Figure 22

**NOTE:** There should be a 1/8 to 1/4 inch gap between the pulley hub and the flange of the bushing. If the gap is closed, the shaft is undersize.

9. Check "Drive and Rotor Pulley Alignment" page 16 and "Idler Pulley Alignment" page 16 and adjust if necessary. Adjust the drive belt tension. Refer to "Drive Belt Adjustment" page 15. Install the belt guard cover.

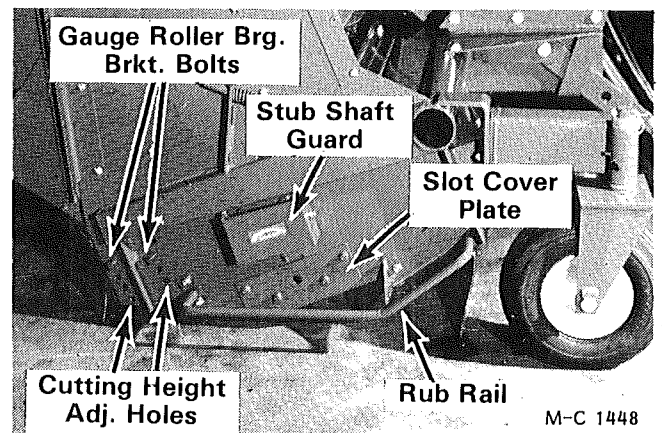
## ROTOR BEARING REPLACEMENT

### Right Bearing

1. Lift the right side of the machine and block up the rotor so it cannot fall when the bearing is removed. **Do not** lift the machine by the rotor.



**CAUTION:** Always use safety stands or blocking in conjunction with hydraulic jacks or hoists. Do not rely on the jack, hoist, or tractor 3 point hitch to carry the load, they could fail.



M-C 1448

Figure 23

2. Remove the stub shaft guard and the rotor slot cover plate, see Figure 23.
3. Clean the end of the rotor shaft with emery cloth. Remove the two set screws in the bearing collar.
4. Remove the four capscrews and lockwashers from the flangette and remove both flangettes and bearing from the rotor shaft.
5. Lightly polish the rotor shaft with emery cloth. Lubricate the rotor shaft with motor oil. Install both flangettes with new rotor bearing on the rotor shaft. Flangette with grease fitting goes to the outside. Install the four capscrews and lockwashers loosely.
6. Remove the blocking from under the rotor and turn the rotor by hand to align the bearing on the rotor shaft. Tighten the flangette capscrews and the two set screws in the bearing collar securely.
7. Install the rotor slot cover plate and stub shaft guard.
8. Lubricate the rotor bearing with a hand grease gun. Do not over lubricate. Too much grease may damage the bearing seal. Remove all blocking and lower the machine.
5. Clean the end of the rotor shaft with emery cloth. Remove the two set screws in the bearing collar.
6. Remove the four capscrews and lockwashers from the flangette and remove both flangettes and bearing from the rotor shaft.
7. Lightly polish the rotor shaft with emery cloth. Lubricate the rotor shaft with motor oil. Install both flangettes with new rotor bearing on the rotor shaft. Flangette with grease fitting goes to the outside. Install the four capscrews and lockwashers loosely.
8. Remove the blocking from under the rotor and turn the rotor by hand to align the bearing on the rotor shaft. Tighten the flangette capscrews and the two set screws in the bearing collar securely.
9. Install the belt guard back plate.
10. Install the drive and rotor pulleys. Refer to "Drive and Rotor Pulley Replacement" page 16. Check "Drive and Rotor Pulley Alignment" on page 16 and "Idler Pulley Alignment" on page 16 and adjust if necessary. Adjust the drive belt tension. Refer to "Drive Belt Adjustment" page 15. Install the belt guard.
11. Lubricate the rotor bearing with a hand grease gun. Do not over lubricate. Too much grease may damage the bearing seal. Remove all blocking and lower the machine.

### Left Bearing

1. Lift the left side and block up the rotor so it cannot fall when the bearing is removed. **Do not** lift the machine by the rotor.



**CAUTION:** Always use safety stands or blocking in conjunction with hydraulic jacks or hoists. Do not rely on the jack, hoist, or tractor 3 point hitch to carry the load, they could fail.

2. Remove the belt guard. Remove the drive belt. Refer to "Drive Belt Replacement" page 15 for procedure.
3. Remove the idler mounting plate capscrews.
4. Remove the drive and rotor pulleys. Refer to "Drive and Rotor Pulley Replacement" page 16 for procedure. Remove the belt guard back plate and rotor pulley key.

### GAUGE ROLLER BEARING REPLACEMENT

1. Lift the back of the machine just high enough to allow for removal of the gauge roller. **Do not** lift by the rotor.



**CAUTION:** Always use safety stands or blocking in conjunction with hydraulic jacks or hoists. Do not rely on the jack, hoist, or tractor 3 point hitch to carry the load, they could fail.

2. Support both ends of the gauge roller. Remove the two ½ inch capscrews, hex-nuts and lockwashers securing the bearing brackets to the body, see Figure 23. Lower the gauge roller.

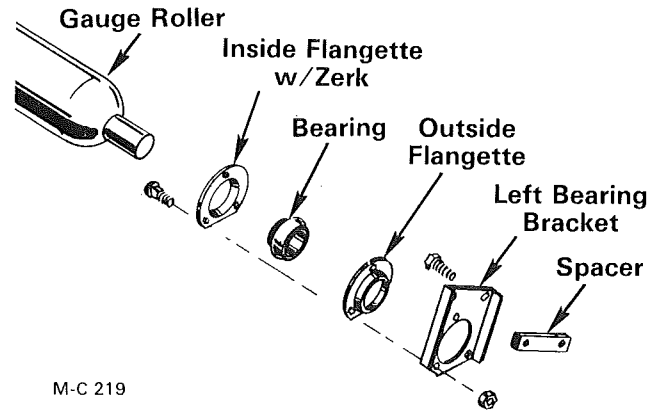
3. Clean the ends of the gauge roller shaft with emery cloth. Remove the set screw in the bearing collar. Place a drift pin in the hole in the bearing collar and strike the **right** bearing collar in a **counterclockwise** direction and/or the **left** bearing collar in a **clockwise** direction to unlock the collar. Slide the gauge roller bearing assembly off of the shaft.

**NOTE:** See "Self-Locking Bearing Collar" installation procedures on page 21. Removal is the reverse of this procedure. The rotation of the gauge roller is clockwise when viewed from the right side.

4. Remove the three 3/8 inch carriage bolts and locknuts securing the bearing flangettes to the bearing bracket.
5. Lightly polish the gauge roller shaft with emery cloth and lubricate the shaft with motor oil.
6. Place the locking side of the bearing into the flangette with the lubrication fitting. Mount the bearing with flangettes to the flat side of the bearing bracket with three 3/8 inch carriage bolts and new locknuts, see Figure 24. Do not fully tighten the locknuts.
7. Slide the gauge roller bearing assembly onto the gauge roller shaft with the bearing locking collar to the inside.
8. Lift the gauge roller into position. Place a bearing spacer between each bearing bracket and the body, see Figure 24. Bolt the bearing brackets to the body with 1/2 inch capscrews, lockwashers and hex-nuts.

**NOTE:** Be sure to install the gauge roller in the same adjustment position as the caster wheel brackets. Refer to "Cutting Height and Leveling" page 10. This will establish an even cutting height.

9. Turn the gauge roller by hand to align the bearings on the shaft. Tighten the flangette locknuts securely. Lock the bearing collars, see page 20 for detailed procedure. Remove the safety stands or blocking and lower the machine to the ground.
10. Lubricate the gauge roller bearings with a hand grease gun. Do not over lubricate. Too much grease may damage the bearing seal.



M-C 219

Figure 24

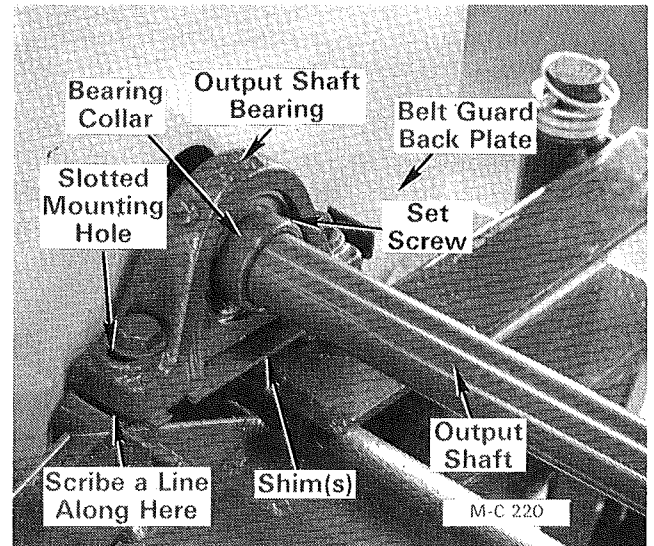


Figure 25

## OUTPUT SHAFT BEARING REPLACEMENT

1. Remove the input and output shaft guards.
2. Remove the belt guard. Remove the drive belt. Refer to "Drive Belt Replacement" page 15 for procedure.
3. Remove the idler mounting plate cap-screws.
4. Remove the drive and rotor pulleys. Refer to "Drive and Rotor Pulley Replacement" on page 16 for procedure. Remove the belt guard back plate.
5. Scribe a line on the output shaft bearing mounting bracket as shown in Figure 25 to establish the location of the new bearing when reassembling.
6. Remove the set screw in the bearing collar, two capscrews, lockwashers and hex-nuts securing the output shaft bearing. Lift up on the output shaft and

remove the shim(s) from under the output shaft bearing, see Figure 26.

7. Clean the output shaft with emery cloth and pull the output shaft bearing off of the output shaft.
8. Lightly polish the output shaft with emery cloth. Lubricate the output shaft with motor oil and slide the new bearing onto the shaft.

Be sure that the lubrication fitting faces the front of the mower.

9. Lift up on the output shaft and place the shim(s) on the output shaft bearing mounting bracket, see Figure 26. Install the capscrew, SAE flatwasher, lock-washer and hex-nut. Align the edge of the output shaft bearing with the mark scribed on the mounting bracket made in step 5, see Figure 25. Tighten the output shaft bearing capscrews and set screw in the bearing collar.
10. Install the belt guard back plate.
11. Install the drive and rotor pulleys. Refer to "Drive and Rotor Pulley Replacement" on page 16. Check "Drive and Rotor Pulley Alignment" page 16 and "Idler Pulley Alignment" page 16 and adjust if necessary. Adjust the drive belt tension. Refer to "Drive Belt Adjustment" page 15. Install the belt guard.
12. Lubricate the output shaft bearing with a hand grease gun. Do not over lubricate. Too much grease may damage the bearing seal. Install the output and input shaft guards.

### SELF-LOCKING BEARING COLLAR INSTALLATION

1. Be sure the shaft is free of rust, paint and nicks before installing the bearing.
2. Observe cam design of wide inner ring and self-locking collar, see Figure 27.
3. Mate the cam of the collar with the cam of the bearing inner ring, see Figure 28.
4. Flangettes must be tightened securely before tightening the locking collar.
5. Pressing the collar lightly against the inner ring, turn the collar in the direc-

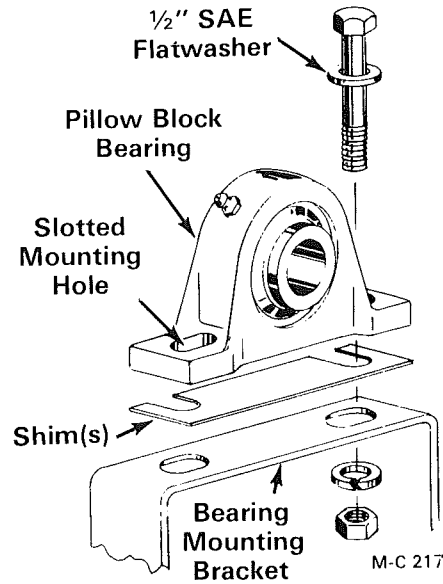


Figure 26

tion of shaft rotation until engaged.

6. With the drift pin in the collar hole, strike in the direction of shaft rotation to lock, see Figure 29.
7. Tighten the set screw in the collar, see Figure 30.

### WINTER STORAGE

1. When the machine is to be stored for an extended period of time or at the end of the season, lubricate all bearings with enough grease to eliminate any cavities where water condensation may occur and cause damage. Refer to "Lubrication" page 13 for location of all grease fittings. Be sure the vent on top of the gearbox is open.

**IMPORTANT:** Use a hand grease gun. Do not over lubricate. Too much grease may damage the bearing seals.

2. Clean dirt and debris from inside the guard and in the pulley grooves.

**NOTE:** Before next season's use, be sure to adjust the drive belt tension. Refer to "Drive Belt Adjustment" page 15 for procedure.

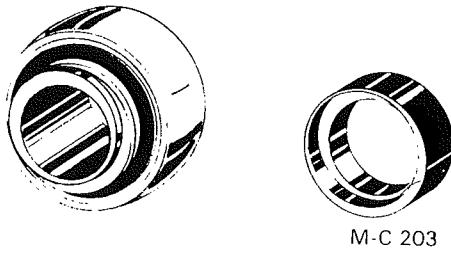


Figure 27

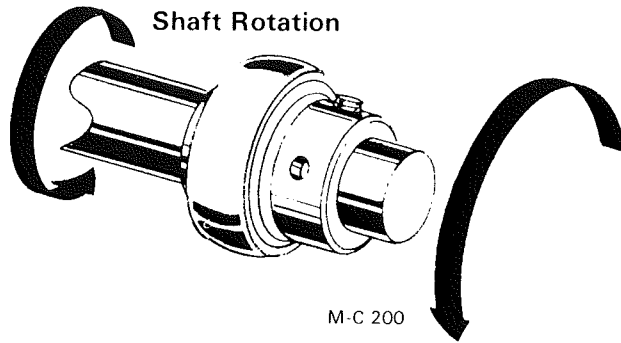


Figure 28

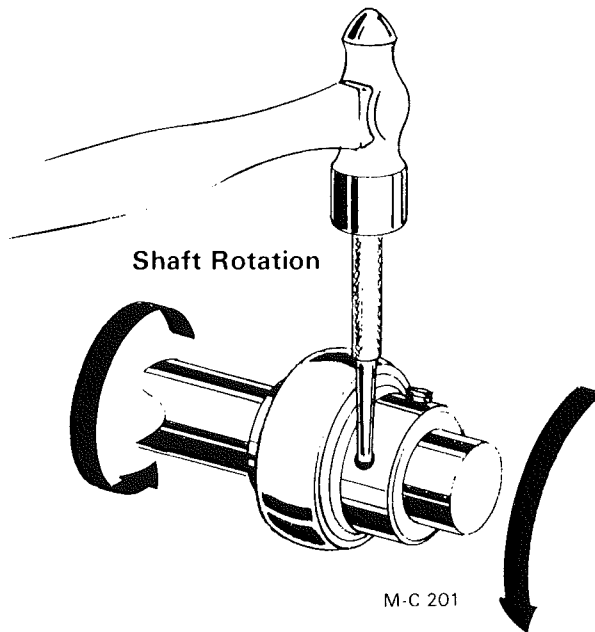


Figure 29

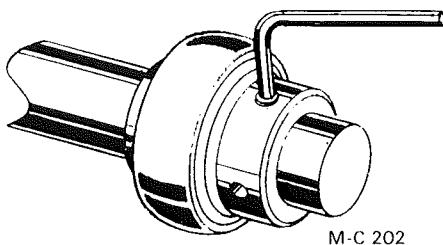


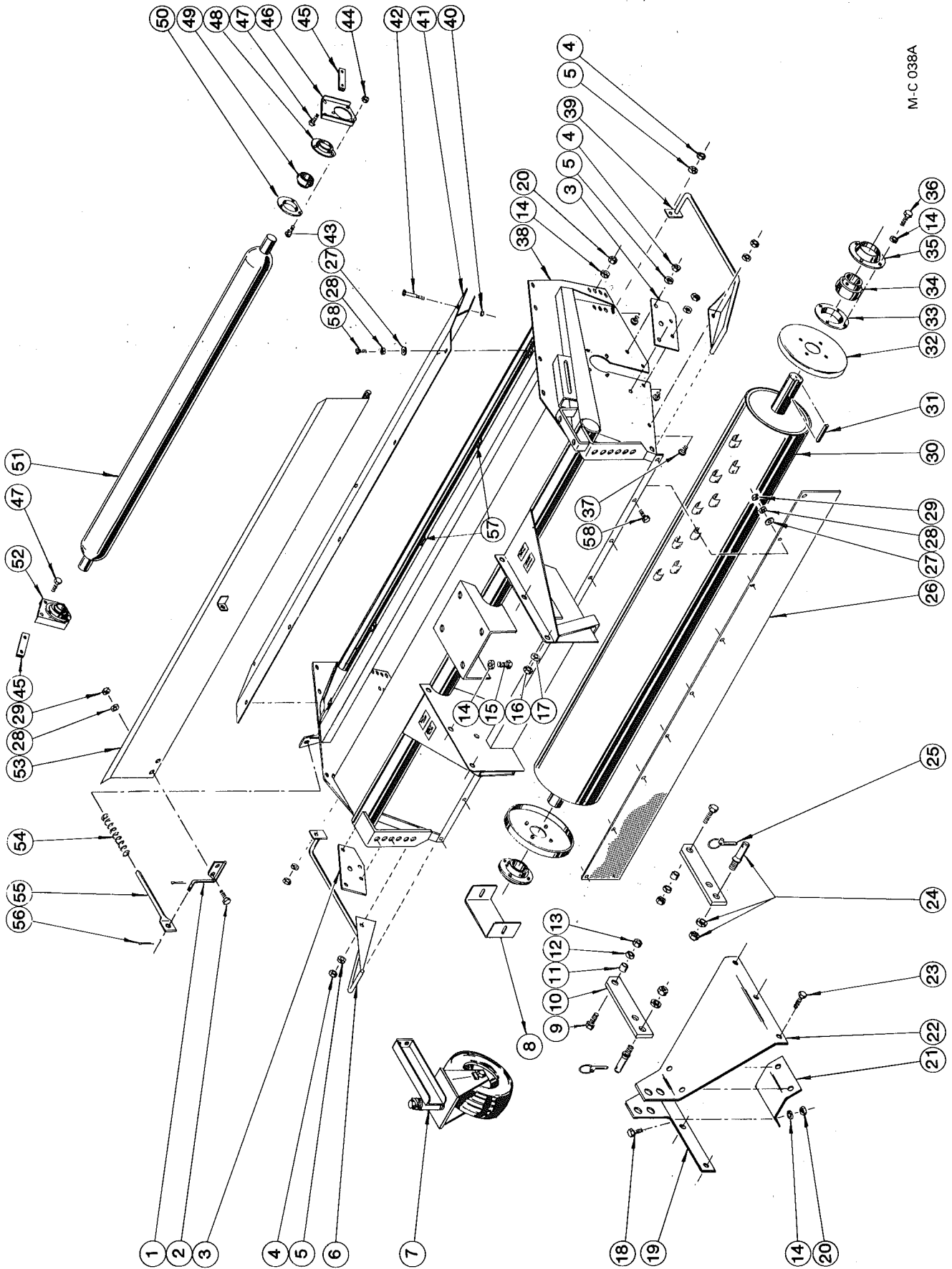
Figure 30

## PRE-SEASON CHECK

1. Inflate tires to 40 lbs.
2. Check the oil level in the gearbox and lubricate all bearings. See "Lubrication" page 13.
3. Adjust the drive belt tension, see "Drive Belt Adjustment" page 15.
4. Inspect for missing and/or broken knives. Replace as necessary. See "Knives, Thatching Blades and Vacuum Paddles" page 14.
5. Be sure all safety shields are in place and secure.
6. Run at a low RPM checking to make sure that all drive line parts are moving freely.

# PARTS

## Body and Gauge Roller



M-C 038A

# Body and Gauge Roller

## Damper Panel and Angle

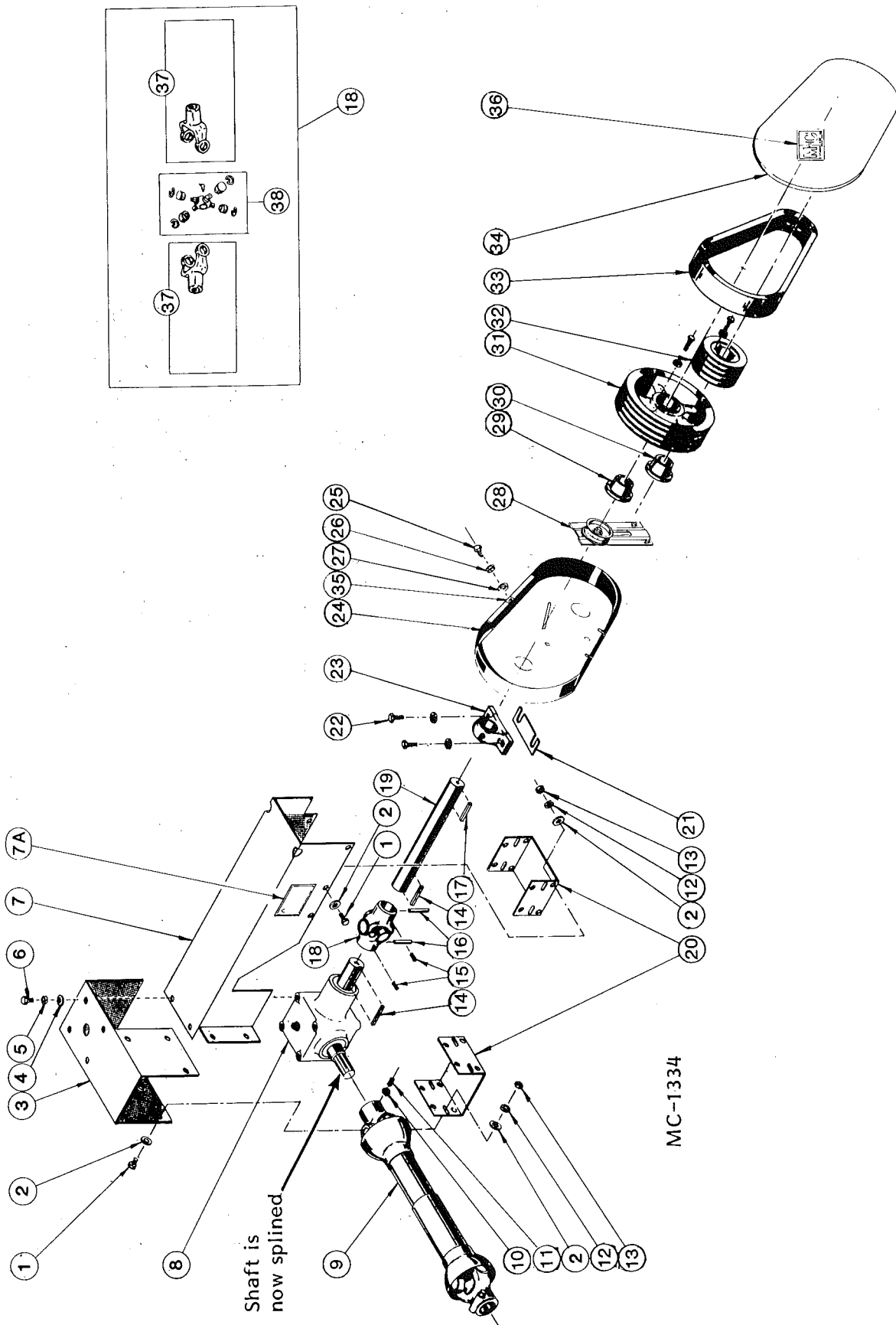
### MODEL 60FP & 72FP

Ref.	Part No.	Qty.	Description	Ref.	Part No.	Qty.	Description
1	131 0031	1	Damper Panel Lever	39	133 0062	1	Rub Rail-Left
2	000 8108	10	5/16-18 x 1" Capscrew - Grd. 5	40	000 8288	3	5/16-18 Two Way Locknut
3	131 4215	2	Slot Cover Plate	41	131 0086	1	<b>60FP</b> Rear Cover
4	000 8162	10	3/8-16 Hex Nut	42	131 0036	1	<b>72FP</b> Rear Cover
5	000 8179	10	3/8" Lockwasher	43	000 8114	3	5/16-18 x 2 1/2" Capscrew
6	133 0061	1	Rub Rail-Right	44	000 8122	6	3/8-16 x 1" Carriage Bolt - Grd. 5
7	---	2	Caster Wheel Ass'y. (See pg. 34)	45	000 8204	6	3/8-16 Hex Nut w/NY Lock
8	131 4676	1	Stub Shaft Guard	46	131 3640	2	Spacer
9	128 8196	2	3/4-10 x 2 1/2" Capscrew - Grd. 5	47	131 4237	1	Bearing Bracket-Left (Shown)
10	131 3670	2	Hitch Floating Link	48	131 4238	1	Bearing Bracket-Right (Not Shown)
11	131 5600	2	Floating Link Bushing	49	000 8278	4	1/2-13 x 1 3/4" Capscrew - Grd. 5
12	000 8182	4	3/4" Lockwasher	50	131 5798	2	1 1/4" Three Bolt Flange
13	000 8165	4	3/4-10 Hex Nut	49	131 6009	2	1 1/4" Relube. Bearing w/Collar
14	000 8180	20	1/2" Lockwasher	50	131 5797	1	1 1/4" Three Bolt Flange w/Zerk-Left
15	131 8164	4	1/2-13 x 1" Capscrew - Grd. 5 w/NY Patch	51	131 5799	1	1 1/4" Three Bolt Flange w/Zerk-Right
16	000 8164	6	5/8-11 Hex Nut	51	131 0143	1	<b>60FP</b> Gauge Roller
17	000 8181	6	5/8" Lockwasher	52	131 0142	1	<b>72FP</b> Gauge Roller
18	133 8161	4	1/2-13 x 1 1/2" Capscrew - Grd. 5	52	131 1102	1	Gauge Roller Bearing Ass'y-Right (Shown)
19	131 3532	1	Hitch Bracket-Right				Includes one ea. of Ref. 46 (131 4238), Ref. 48, 49 and 50 (131 5799).
20	000 8163	8	1/2-13 Hex Nut				Includes one ea. of Ref. 46 (131 4237), Ref. 48, 49 and 50 (131 5797).
21	131 3525	1	<b>60FP &amp; 72FP</b> Hitch Center Support	53	131 0087	1	<b>60FP</b> Damper Panel
22	131 3533	1	Hitch Bracket-Left	54	131 0030	1	<b>72FP</b> Damper Panel
23	000 8146	6	5/8-11 x 1 1/2" Capscrew - Grd. 5	55	131 8981	1	Damper Spring
24	131 8210	2	Cat. No. 1 Link Pin w/Nut & Lockwasher	56	131 5191	1	Spring Holder Rod
25	000 8993	2	7/16" Dia. Klick Pin	57	000 8199	2	1/8" x 1" Cotter Pin
26	130 8701	1	<b>60FP</b> Rubber Flap	58	001 8111	5	5/16-18 Clip Nut
27	131 8984	1	<b>72FP</b> Rubber Flap	59	001 8284	5	5/16-12 x 1/2" Tapping Bolt
28	000 8173	18	5/16" Flatwasher				Damper Angle 60"
29	000 8222	20	5/16" Lockwasher				Damper Angle 72"
30	000 8159	15	5/16-18 Hex Nut				5/16-18 x 3/4 Hex Head Capscrew
31	131 1090	1	<b>60FP</b> Rotor Ass'y. (See pg. 33)				5/16 Lockwasher
32	001 5154	1	1/2" x 1/2" x 2" Key				5/16-18 Hex Nut
33	131 0137	2	Anti-Wrap Flange				<b>Not Shown</b>
34	001 6022	2	1-15/16" Four Bolt Flangette				— 121 8310 1 Made in USA Decal
35	131 6008	2	1-15/16" Bearing w/Collar				
36	001 6023	2	1-15/16" Four Bolt Flangette w/Zerk 001 8970				
37	131 8163	8	1/2-13 x 1 1/4" Capscrew - Grd. 5 w/NY Patch				
38	000 8120	10	3/8-16 x 1" Truss Head Screw				
	---	---	Not Available				



# Drive Line and Guards

MODEL 60FP & 72FP

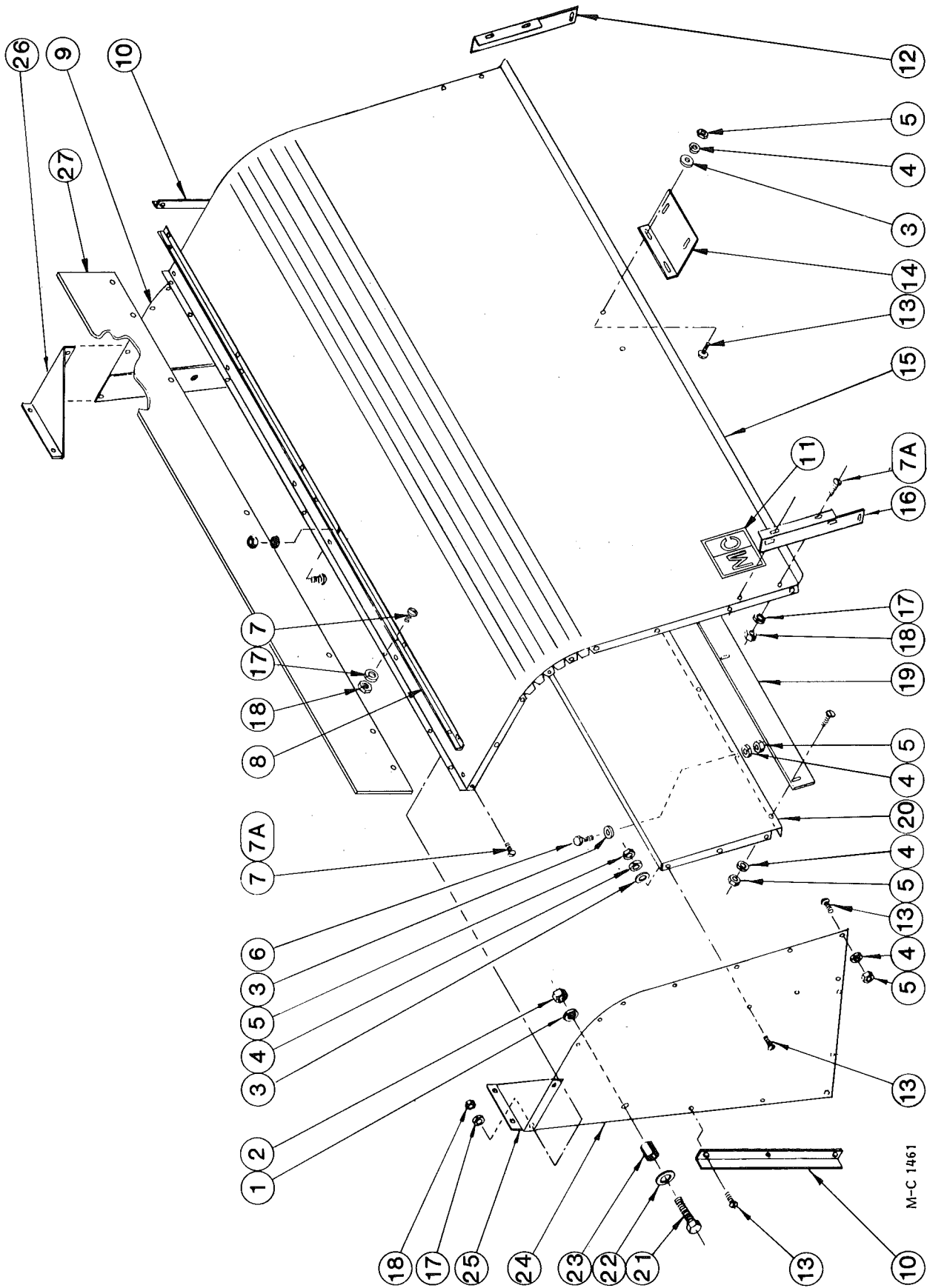


# Drive Line and Guards

## MODEL 60FP & 72FP

Ref.	Part No.	Qty.	Description	Ref.	Part No.	Qty.	Description
1	000 8121	10	3/8-16 x 1" Capscrew	23	001 6011	1	Pillow Block Bearing
2	000 8174	20	3/8" Flatwasher				1-7/16" w/Zerk Fitting
3	131 4807	1	Input Shaft Guard	24	131 0156	1	Belt Guard Wrap Weldment
4	000 8175	4	1/2" Flatwasher	25	000 8108	1	5/16-18 x 1" Capscrew - Grd. 5
5	000 8180	4	1/2" Lockwasher	26	000 8222	1	5/16" Lockwasher
6	000 8135	4	1/2-13 x 1" Capscrew - Grd. 5	27	000 8173	1	5/16" Flatwasher
7	131 4674	1	<b>60FP</b> Output Shaft Guard	28	131 6216	1	Idler Pulley 60" & 72" (See pg. 33)
7A	131 4673	1	<b>72FP</b> Output Shaft Guard		131 3431	1	Idler Bracket 60" & 72"
8	000 8301	1	Safety Shield Warning Decal		000 8135	4	1/2-13 x 1" Capscrew - Grd. 5
8	131 6619	1	Gearbox (See pg. 32)		000 8180	4	1/2" Lockwasher
9	-----	1	PTO Shaft (See pg. 31)		000 8163	4	1/2-13 Hex Nut
10	128 8133	1	3/8-16 Jam Nut		001 8960	1	5/8-11 x 3 1/2 Carriage Bolt
11	131 8134	1	3/8-16 x 1" Cup Pt.		131 5644	1	Idler Pulley Spacer
			Set Screw w/NYLK		000 8181	1	5/8" Lockwasher
12	001 8139	10	3/8" Lockwasher	29	000 8164	1	5/8-11 Hex Nut
13	000 8162	10	3/8-16 Hex Nut		001 6202	1	SK Bushing 1-7/16" Bore
14	001 5132	2	3/8" x 3/8" x 2" Key				(Incl. Capscrews & Lockwashers)
15	121 8130	2	3/8-16 x 3/8" Knurled Cup Pt.	30	121 6252	1	SK Bushing 1-15/16" Bore
			Set Screw				(Incl. Capscrews & Lockwashers)
16	131 8136	2	3/8 x 2 1/2" Roll Pin	31	131 6201	1	4/3V/14.0 SK Drive Pulley
17	131 5130	1	3/8" x 3/8" x 2 1/4" Key	32	001 6203	1	4/3V/6.0 SK Rotor Pulley
18	131 6620	1	Output Shaft Universal Joint	33	131 6101	1	4/3V/710 Belt
19	131 5068	1	<b>60FP</b> Output Drive Shaft	34	131 4481	1	Belt Guard Cover
			<b>72FP</b> Output Drive Shaft	35	001 8111	3	5/16-18 Clip Nut
20	131 5069	1	Undercover & Brace	36	128 8300	1	M-C Decal
21	131 4806	2	Bearing Shim	37			
21	001 4877	AR					
22	000 8141	2	1/2-13 x 2 1/2" Capscrew - Grd. 5	38	132 6644	1	Universal Joint Repair Kit
			1/2" Lockwasher				
			1/2" SAE Flatwasher				
			1/2-13 Hex Nut				

# Chute



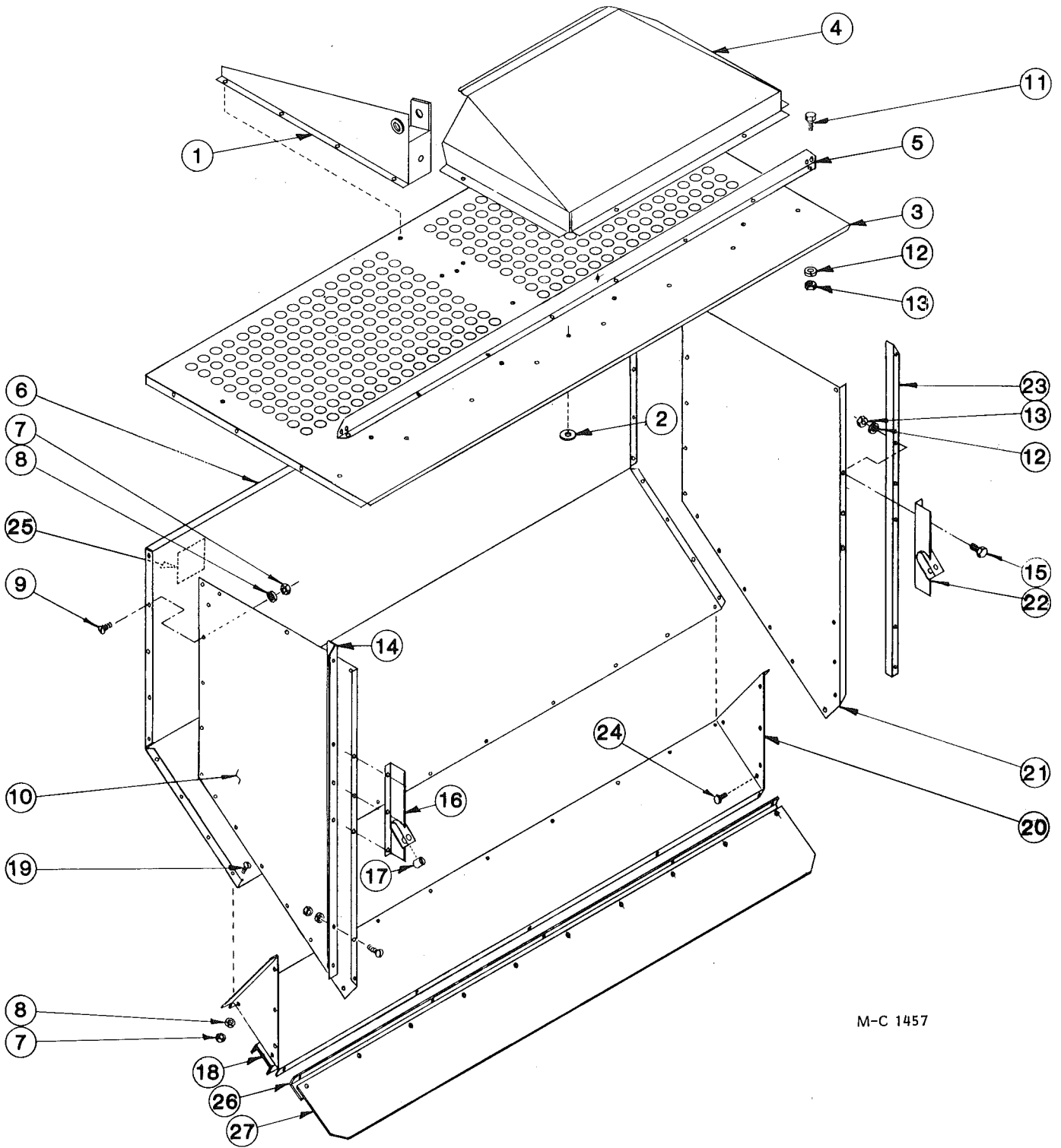
M-C 1461

## Chute

**NOTE:** If any rivets are to be replaced, purchase them locally or replace them with 1/4-20 x 1/2" Truss Head Screws, Lockwashers and Hex Nuts.

Ref.	Part No.	Qty.	Description	Ref.	Part No.	Qty.	Description
1	000 8180	2	1/2" Lockwasher	15	133 4887	1	<b>60FP</b> Chute Front Panel
2	000 8163	2	1/2-13 Hex Nut	16	133 4888	1	<b>72FP</b> Chute Front Panel
3	000 8173	15	5/16" Flatwasher	17	133 4655	1	Chute Brace - Right
4	000 8222	33	5/16" Lockwasher	18	000 8178	37	1/4" Lockwasher
5	000 8159	33	5/16-18 Hex Nut	19	000 8158	37	1/4-20 Hex Nut
6	000 8106	8	5/16-18 x 3/4" Capscrew	20	131 4456	1	<b>60FP</b> Cut-Off Bar
7	000 8212	31	1/4-20 x 1/2" Truss Hd. Screw	21	133 4431	1	<b>72FP</b> Cut-Off Bar
7A	000 8211	4	1/4-20 x 3/4" Truss Hd. Screw	22	133 4779	1	<b>60FP</b> Chute Rear Panel
8	133 2609	1	<b>60FP</b> Chute & Hopper Stiffening Angle	23	133 4767	1	<b>72FP</b> Chute Rear Panel
	133 2608	1	<b>72FP</b> Chute & Hopper Stiffening Angle	24	128 8166	2	1/2-13 x 2 1/2" Capscrew- Grd. 5
9	133 0039	1	Chute Side - Left	25	000 8175	2	1/2" Flatwasher
10	131 4431	2	Hopper Stop	26	133 5605	2	Hopper Pivot Bushing
11	128 8300	1	M-C Decal	27	133 0038	1	Chute Side - Right
12	133 4654	1	Chute Brace - Left	28	133 2835	1	Chute Corner Brace - Rt.
13	000 8104	25	5/16-18 x 3/4" Truss Hd. Screw	29	133 2836	1	Chute Corner Brace - Lt.
14	133 4440	1	Chute Front Panel Brace	30	131 8715	1	Seal Flap 60"
				31	131 8716	1	Seal Flap 72"
				32	000 8208	7	1/4-20 x 1 1/4" Slot Truss
				33	000 8173	7	5/16" Flatwasher
				34	000 8178	7	1/4" Lockwasher
				35	000 8158	7	1/4-20 Hex Nut

# Hopper



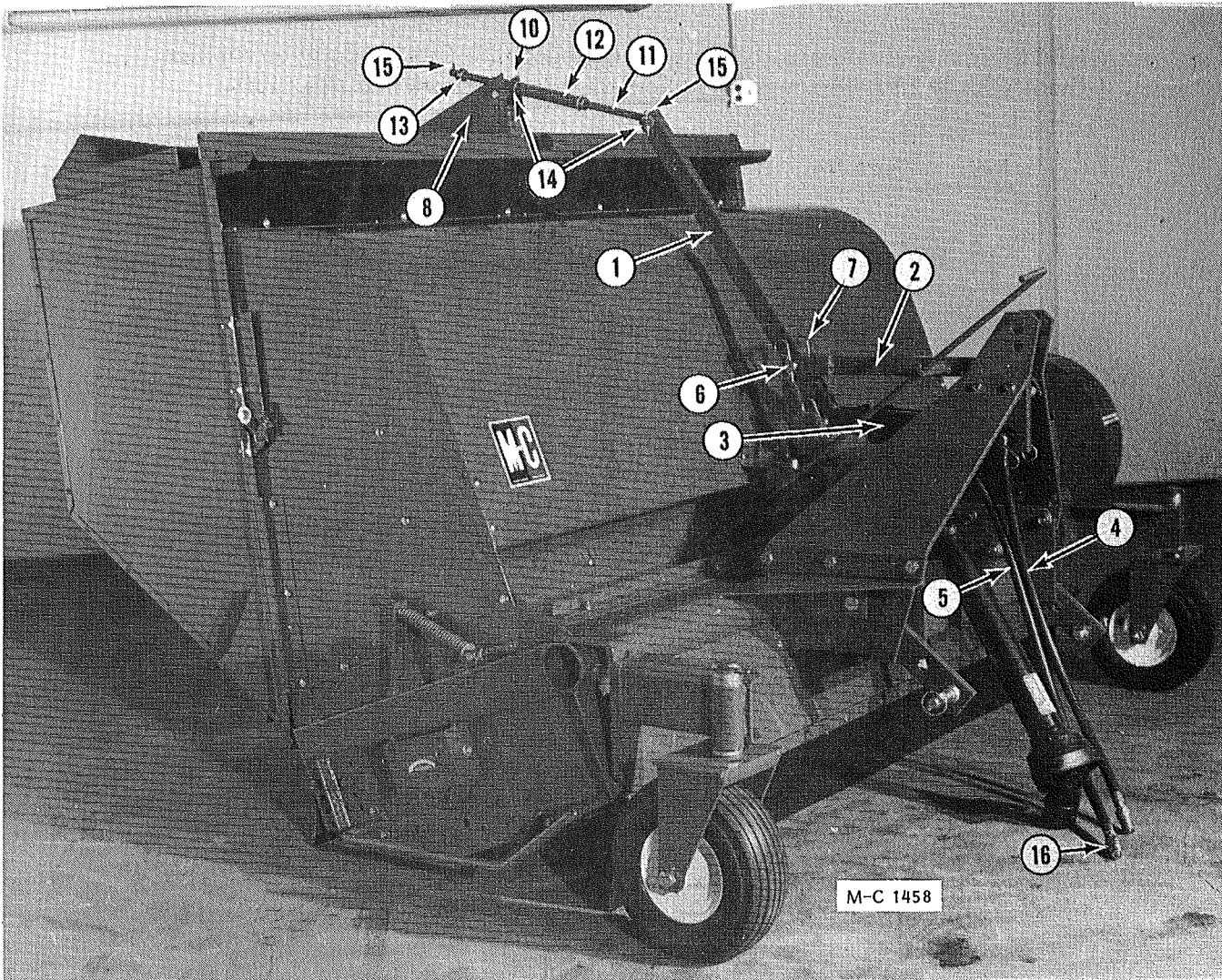
M-C 1457

## Hopper

**NOTE:** If any rivets are to be replaced, purchase them locally or replace them with ¼-20 x ½" Truss Head Screws, Lockwashers and Hex Nuts.

Ref.	Part No.	Qty.	Description
1	133 0069	1	Hopper Lift Brace Weldment
2	131 2607	4	Retaining Washer
3	131 4883	1	<b>60FP</b> Hopper Top Cover
	131 4884	1	<b>72FP</b> Hopper Top Cover
4	131 4942	1	<b>60FP</b> Hopper Top Scoop
	131 4943	1	<b>72FP</b> Hopper Top Scoop
5	131 4318	1	<b>60FP</b> Hopper Top Support
	131 4319	1	<b>72FP</b> Hopper Top Support
6	131 4810	1	<b>60FP</b> Rear Hopper Panel
	131 4811	1	<b>72FP</b> Rear Hopper Panel
7	000 8158	35	¼-20 Hex Nut
8	000 8178	35	¼" Lockwasher
9	000 8212	31	¼-20 x ½" Truss Hd. Screw
10	131 4881	1	Hopper Side Panel - Rt.
11	000 8104	24	5/16-18 x 3/4" Truss Hd. Screw
12	000 8222	47	5/16" Lockwasher
13	000 8159	47	5/16-18 Hex Nut
14	131 4315	1	Side Angle - Right
15	000 8106	10	5/16-18 x 3/4" Capscrew
16	133 0052	1	Hopper Pivot - Right
17	133 5406	2	Hopper Pivot Spacer Stop
	001 8115	2	5/16-18 x 2" Capscrew
	000 8222	2	5/16" Lockwasher
	000 8159	2	5/16-18 Hex Nut
18	131 4316	1	<b>60FP</b> Hopper Stiffener Channel
	131 4317	1	<b>72FP</b> Hopper Stiffener Channel
19	000 8211	21	¼-20 x 3/4" Truss Hd. Screw
20	131 4484	1	<b>60FP</b> Bottom Rail
	131 4485	1	<b>72FP</b> Bottom Rail
21	131 4882	1	Hopper Side Panel - Left
22	133 0053	1	Hopper Pivot - Left
23	131 4314	1	Side Angle - Left
24	001 8119	9	5/16-18 x 3/4" Capscrew - Grd. 5
25	128 8300	1	M-C Decal
26	131 4486	1	<b>60FP</b> Hopper Extension
	131 4487	1	<b>72FP</b> Hopper Extension
27	130 8701	1	<b>60FP</b> Rubber Flap
	131 8984	1	<b>72FP</b> Rubber Flap
	000 8104	13	5/16-18 x 3/4" Truss Hd. Screws
	000 8173	19	5/16 Flatwasher
	000 8169	19	5/16" Flange Whiz Locknut ZP
	000 8108	6	5/16-18 x 1" Capscrews

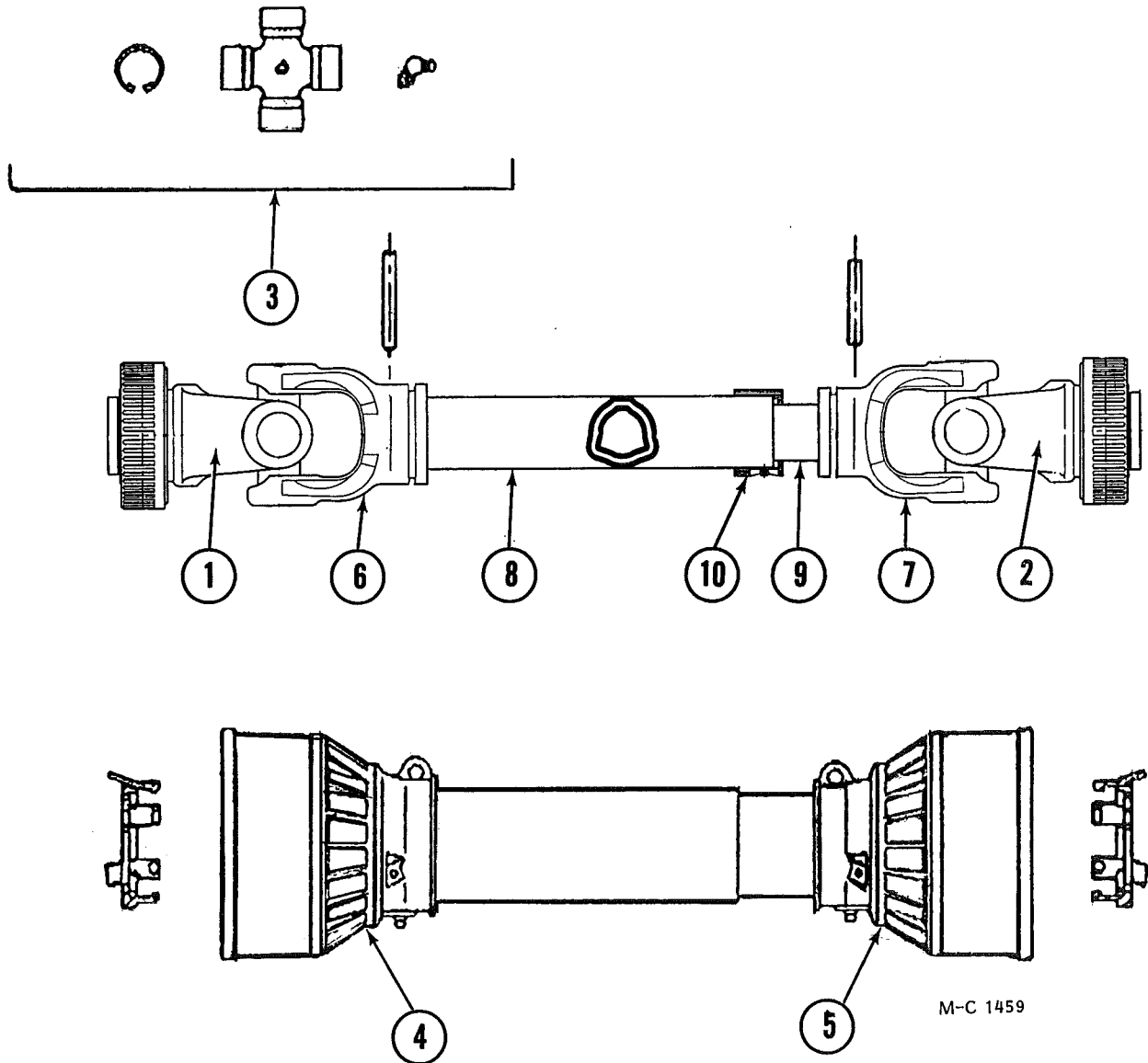
## Hopper Hydraulic Dump



Ref.	Part No.	Qty.	Description
1	133 0072	1	Ram Lever Arm
2	133 0064	1	Ram Mount Weldment
3	133 7000	1	Hydraulic Cylinder
4	133 8401	1	Hydraulic Hose 3/8 x 34"
5	133 8402	1	Hydraulic Hose 3/8 x 44"
6	133 8230	1	1" x 3-5/8" Pivot Pin
7	133 8231	2	C293 .177 Diameter Clip Pin
8	133 0069	1	Hopper Lift Brace Weldment
9	131 2607	4	Retaining Washer
10	133 0070	1	Pivoting Sleeve Weldment
	000 8247	1	5/8-11 x 3 1/4" HHCS
	091 8189	1	5/8-11 2-Way Locknut
11	133 0071	1	Actuator Rod
12	131 8981	1	Spring
13	133 5600	1	5/8" I.D. Set Collar
14	000 8299	2	5/8" SAE Flatwasher ZP
15	000 8200	2	3/16" x 1 1/2" Cotter Pin ZP
16	131 7001	2	1/2" x 3/8" Restrictor .030"

# Power Take-Off Shaft

(Complete Assembly - 101 6616)



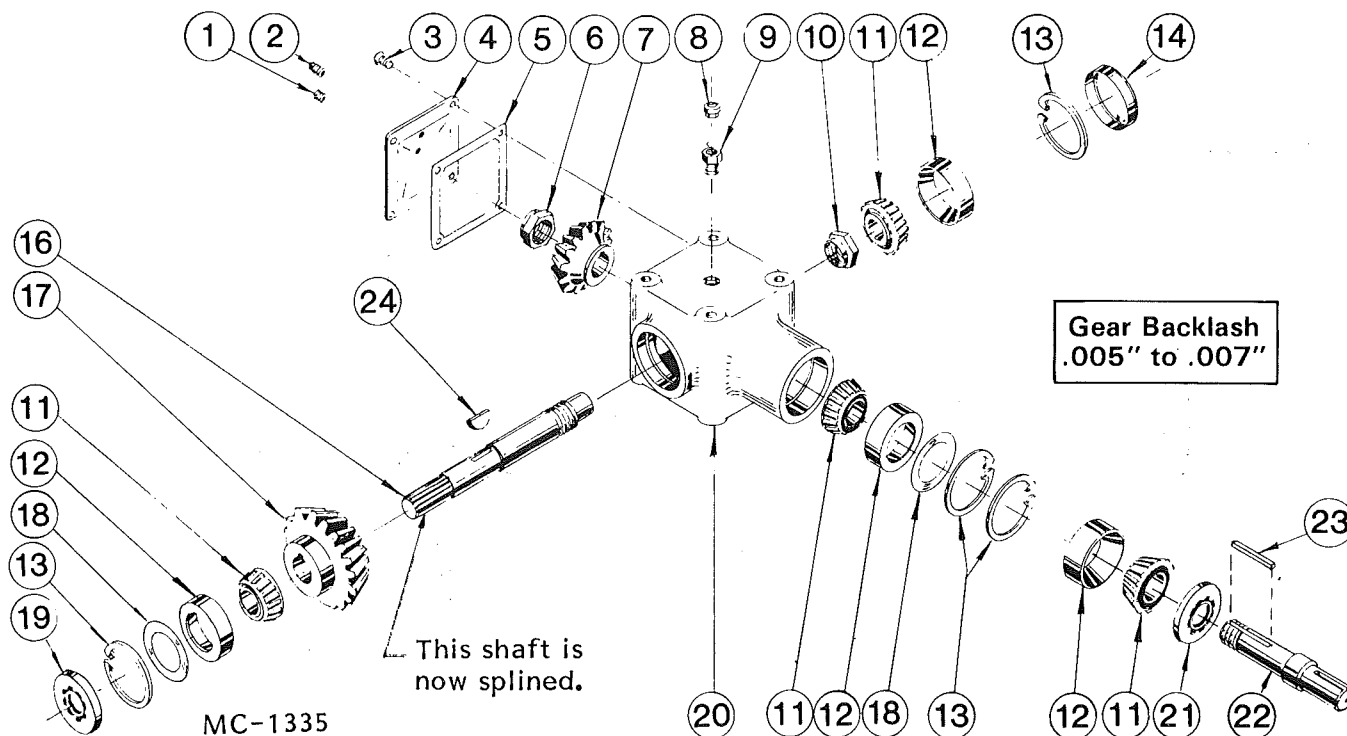
M-C 1459

Ref.	Part No.	Qty.	Description
1	102 6657	1	1-3/8-6B Yoke (Tractor End)
2	102 6658	1	1-3/8-6B Yoke (Machine End)
3	132 6644	2	Cross Journal Assembly
4	102 6661	1	Safety Shield Tractor End
5	102 6662	1	Safety Shield Machine End
6	102 6660	1	Yoke with Pin Tractor End
7	102 6659	1	Yoke with Pin Machine End
8	102 6664	1	Tube Tractor Half
9	102 6665	1	Shaft Machine Half
10	102 6663	1	Greasing Collar



# Gearbox

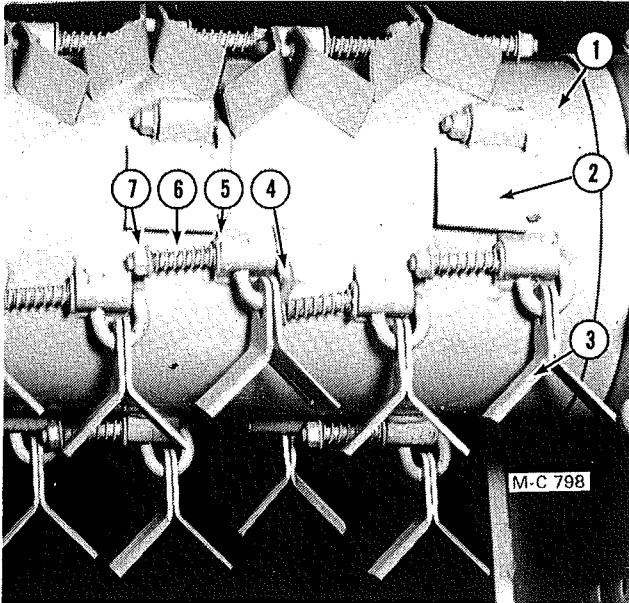
(Complete Assembly - 131 6619)



MC-1335

Ref.	Part No.	Qty.	Description
1	---	1	1/8" NPT Plug
2	002 7500	1	Level Plug
3	102 6640	4	5/16-18 x 5/8" Capscrew
4	002 6673	1	Gearbox Cover
5	002 6600	1	Gearbox Cover Gasket
6	002 8260	1	Output Stake Nut
7	002 6501	1	16T Output Bevel Gear
8	002 6677	1	Gearbox Vent
9	002 6678	1	3/8" to 1/8" Reducing Bushing
10	002 8259	1	Input Stake Nut
11	002 6012	4	Bearing Cone
12	002 6013	4	Bearing Cup
13	002 8258	4	Snap Ring
14	002 8601	1	Gearbox Cap Seal
16	002 6708	1	Input Shaft
17	002 6502	1	24T Input Bevel Gear
18	002 6679	AR	Shim .005"
	002 6692	AR	Shim .007"
	002 6681	AR	Shim .020"
19	002 8602	1	Grease Seal Input Shaft
20	002 7659	1	Gearbox Housing
21	002 6667	1	Grease Seal - Output Shaft
22	002 6685	1	Output Shaft
23	001 5130	1	3/8" x 3/8" x 1" Key
24	001 8998	1	3/8" x 1 1/4" Hard Woodruff Key
--	000 8991	-	Pint of Mobilfluid 423 Lubricant

## Rotor

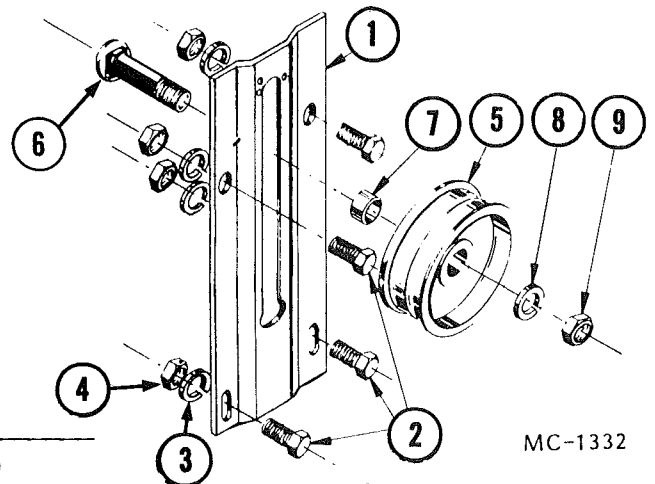


**Complete Assembly**  
**60FP - 131 1090**  
**72FP - 131 1091**

Ref.	Part No.	Quantity		Description
		FP 60"	FP 72"	
1	131 0139	1	0	Balanced Rotor Weldment
1	131 0140	0	1	Balanced Rotor Weldment
2	131 0017	16	20	Vacuum Paddle
3	131 4465	140	172	Knife-Square End
4	131 8717	68	84	Knife Hanger - Spring Loaded
	101 8701	2	2	Knife Hanger - Short (not shown)
5	001 8000	68	84	7/16" SAE Flatwasher
6	131 8718	68	84	Spring
7	000 8205	86	106	3/8-16 Top Lock Flange Nut

## Drive Line Idler Assembly

MODEL 60FP & 72FP

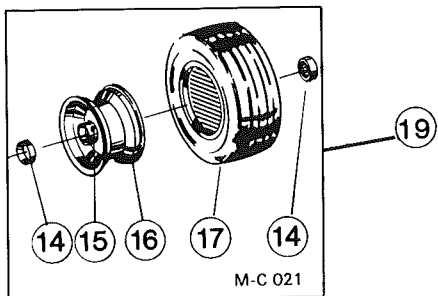
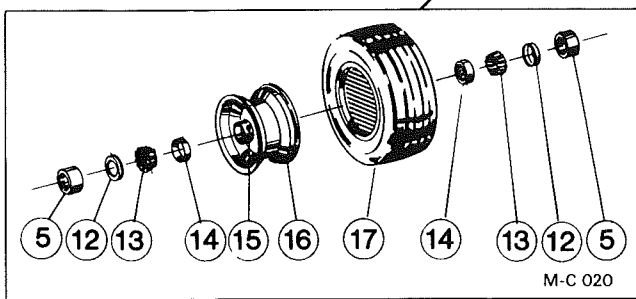
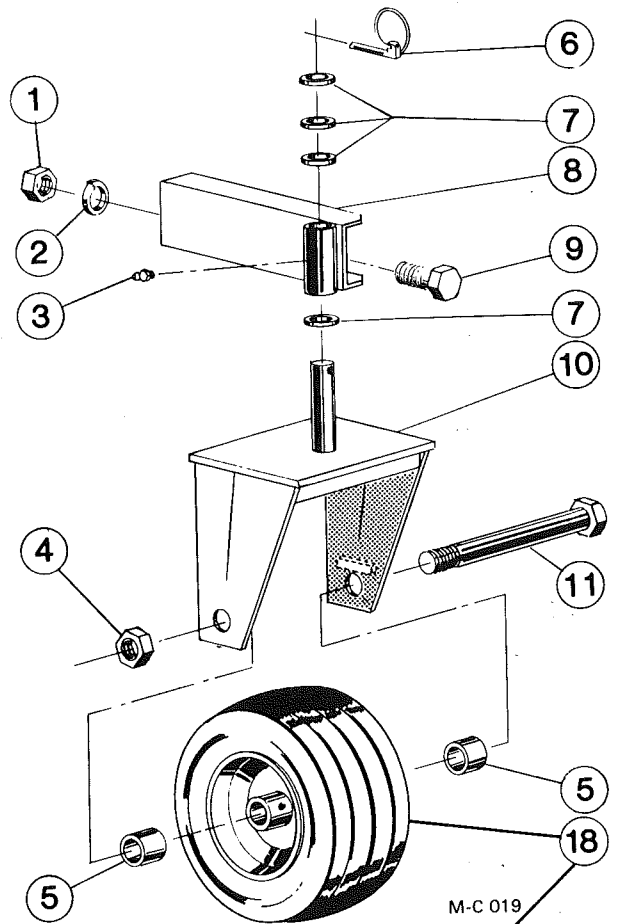


Ref.	Part No.	Qty.	Description
1	131 3431	1	Idler Bracket 60" & 72"
2	000 8135	4	½-13 x 1 Hex Head Capscrew Grade 5
3	000 8180	4	½" Lockwasher
4	000 8163	4	½-13 Hex Nut
5	131 6216	1	Idler Pulley 60" & 72" FP
6	001 8960	1	5/8-11 x 3½ Carriage Bolt
7	131 5644	1	Idler Pulley Spacer
8	000 8181	1	5/8" Lockwasher
9	000 8164	1	5/8-11 Hex Nut

# Pneumatic Caster Wheels

## 133 9001 - Pneumatic Caster Wheel Kit

This kit consists of two of ref. 1, 2, 3, 6 thru 10 and 18 to make up a set of two caster wheels.



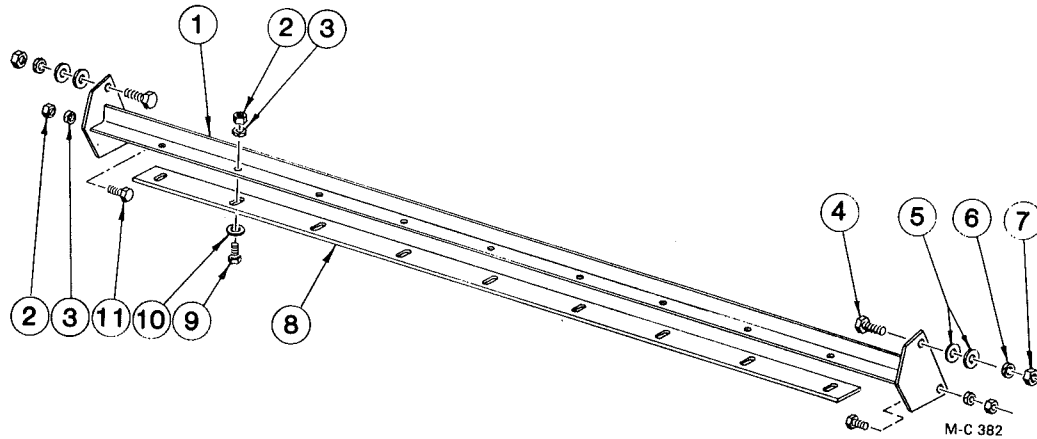
Ref.	Part No.	Qty.	Description
1	000 8163	2	1/2-13 Hex Nut
2	000 8180	2	1/2" Lockwasher
3	132 8990	1	Straight Drive-In Zerk
4	132 8994	1	3/4-16 Locknut
5	133 8986	2	Wheel Spacer 17/32" Long - Used with 6 1/2" Axle
	133 8984	2	Wheel Spacer 5/8" Long - Used with 7" Axle
6	000 8995	1	Klick Pin 5/16" Dia. x 2-11/32" Long
7	133 7852	4	Caster Spacer 1-7/16" ID x 2" OD, 1/4" Thick
8	133 1058	1	Caster Bracket (L.H. & R.H.) w/ref. 3
9	133 8161	2	1/2-13 x 1 1/2" Capscrew - Grd. 5
10	133 0032	1	Caster Yoke
11	001 8203	1	Axle 3/4-16 x 7" Capscrew - Grd. 5
12	132 6004	2	Seal
13	001 6000	2	Bearing Cone 3/4" ID
14	002 6000	2	Bearing Cup
15	000 8996	1	Straight Zerk 1/4-28NF
16	132 8966	1	Wheel w/Zerk (ref. 15) & Two Bearing Cups (ref. 14)
17	132 8998	1	Tire 13 x 5.00 - 6, 4 Ply
18	132 1001	1	Wheel w/Zerk (ref. 15) & Two Bearing Cups (ref. 14), Two Bearing Cones (ref. 13), Two Seals (ref. 12) Two 5/8" Spacers (ref. 5), Axle (ref. 11), Locknut (ref. 4) & Tire (ref. 17)
19	132 8965	1	Wheel w/Zerk (ref. 15), Two Bearing Cups (ref. 14), & Tire (ref. 17)
—	133 9077	1	Caster Wheel/Yoke Ass'y. Incl. one each of ref. 6, 10 & 18 and four of ref. 7.

## Gauge Roller Scraper Kit (Optional)

133 9090 - Model 60FP

133 9091 - Model 72FP

Kits consist of ref. 1 thru 11



Quantity

Quantity

Ref.	Part No.	60FP	72FP	Description
1	133 0067	1	—	Scraper Angle
	133 0068	—	1	Scraper Angle
2	000 8162	11	13	$\frac{3}{8}$ -16 Hex Nut
3	001 8139	11	13	$\frac{3}{8}$ " Lockwasher
4	041 8166	2	2	$\frac{1}{2}$ -13 x 2 $\frac{1}{4}$ " Full Thread Capscrew - Grd. 5
5	000 8175	4	4	$\frac{1}{2}$ " Flatwasher

Ref.	Part No.	60FP	72FP	Description
6	000 8180	2	2	$\frac{1}{2}$ " Lockwasher
7	000 8163	2	2	$\frac{1}{2}$ -13 Hex-Nut
8	133 3428	1	—	Scraper Bar
	133 3429	—	1	Scraper Bar
9	000 8121	9	11	$\frac{3}{8}$ -16 x 1" Capscrew
10	000 8174	9	11	$\frac{3}{8}$ " Flatwasher
11	001 8144	2	2	$\frac{3}{8}$ -16 x 1 $\frac{1}{4}$ " Capscrew - Grd. 5

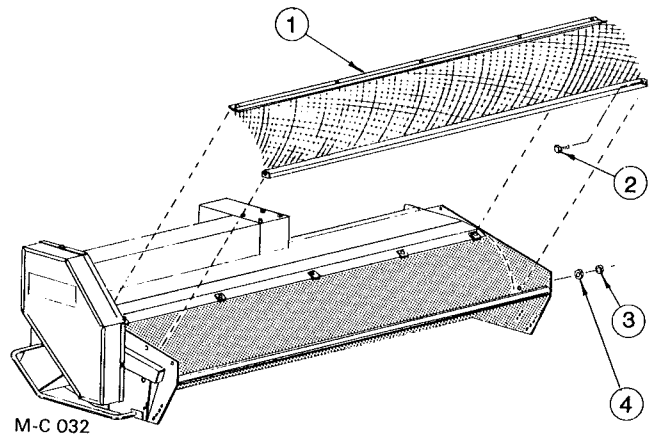
## Leaf Mulching Screen (Optional)

Leaf Mulching Screen Kits (Include Ref. 1 thru 4)

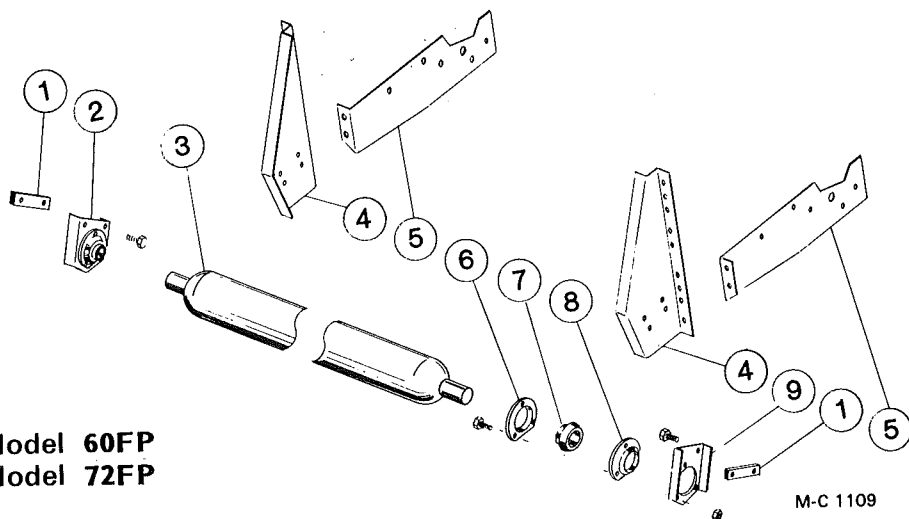
133 9020 for 60FP

133 9002 for 72FP

Ref.	Part No.	Qty.	Description
1	133 0037	1	<b>60FP</b> Leaf Mulching Screen
	133 0006	1	<b>72FP</b> Leaf Mulching Screen
2	000 8119	2	$\frac{3}{8}$ -16 x $\frac{3}{4}$ " Capscrew
3	000 8162	2	$\frac{3}{8}$ -16 Hex Nut
4	000 8179	2	$\frac{3}{8}$ Lockwasher



## Front Gauge Roller Kit (Optional)

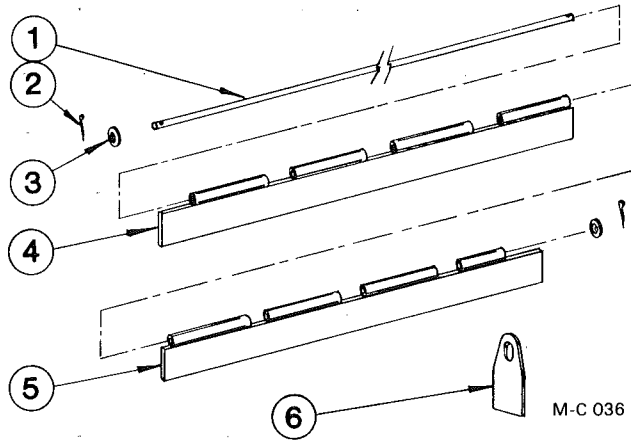


**133 9095 - Model 60FP**  
**133 9096 - Model 72FP**

Kits Consist of ref. 1 thru 9

Ref.	Part No.	Qty.	Description	Ref.	Part No.	Qty.	Description
1	131 3640	2	Spacer	5	133 3432	1	Side Brace - Right
2	131 1102	1	Gauge Roller Brg. Assy. - Right (Incl. one ea. of ref. 6 thru 9)		133 3433	1	Side Brace - Left
	131 1101	1	Gauge Roller Brg. Assy. - Left (Incl. one ea. of ref. 6 thru 9)		000 8120	14	3/8-16x1" Truss Hd. Screw
	000 8278	4	1/2-13x1 3/4" Capscrew - Grd. 5		001 8139	14	3/8" Lockwasher
	000 8180	4	1/2" Lockwasher		000 8162	14	3/8-16 Hex-Nut
	000 8163	4	1/2-13 Hex-Nut	6	131 5799	2	Three Bolt Flange w/Zerk-Right
3	131 0143	1	<b>60FP Gauge Roller</b>		131 5797	2	Three Bolt Flange w/Zerk-Left
	131 0142	1	<b>72FP Gauge Roller</b>		000 8122	6	3/8-16x1" Carriage Bolt - Grd. 5
4	133 3430	1	Carrier Brkt. - Right		000 8204	6	3/8-16 Hex-Nut w/NYLOK
	133 3431	1	Carrier Brkt. - Left	7	131 6009	2	1 1/4" Relube. Brg. w/Collar
	133 8161	4	1/2-13x1 1/2" Capscrew - Grd. 5	8	131 5798	2	Three Bolt Flange - w/o Zerk
	000 8180	4	1/2" Lockwasher	9	131 4238	1	Brg. Brkt. - Right
	000 8163	4	1/2-13 Hex-Nut		131 4237	1	Brg. Brkt. - Left
	000 8121	2	3/8-16x1" Capscrew				
	001 8139	2	3/8" Lockwasher				
	000 8162	2	3/8-16 Hex-Nut				

## Thatching Blade and Wide Vacuum Paddle Kits (Optional)



### MODEL 60FP

#### 133 9018 - Thatching Blade & Wide Vacuum Paddle Kit

Consists of one of each of the following:  
 133 9031 Wide Vacuum Paddle Kit  
 133 9035 Thatching Blade Kit

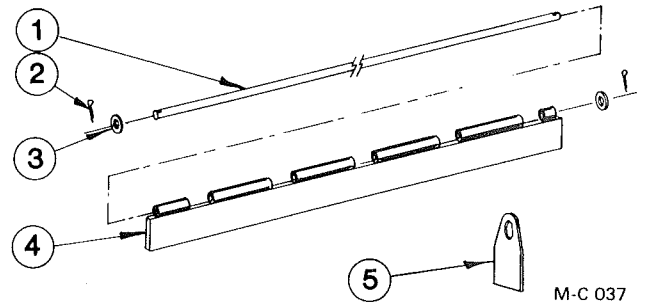
Ref.	Part No.	Qty.	Description
1	133 5738	2	Pivot Rod (57½")
2	000 8199	4	⅛" x 1" Cotter Pin
3	001 8134	4	⅜" SAE Flatwasher
4	133 0056	2	Vacuum Paddle (30¾")
5	133 0057	2	Vacuum Paddle (27½")
6	133 4468	70	Thatching Blade (Square end)

#### 133 9035 - Thatching Blade Kit

Consists of 70 of 133 4468  
 Thatching Blade (Square end)

#### 133 9031 - Wide Vacuum Paddle Kit

Consists of the following:  
 2 of 133 0056 Vacuum Paddle (30¾")  
 2 of 133 0057 Vacuum Paddle (27½")  
 2 of 133 5738 Pivot Rod (57½")  
 4 of 001 8134 ⅜" SAE Flatwasher  
 4 of 000 8199 ⅛" x 1" Cotter Pin



### MODEL 72FP

#### 133 9019 - Thatching Blade & Wide Vacuum Paddle Kit

Consists of one each of the following:  
 133 9032 Wide Vacuum Paddle Kit  
 133 9037 Thatching Blade Kit

Ref.	Part No.	Qty.	Description
1	133 5737	4	Pivot Rod (34-7/16")
2	000 8199	8	⅛" x 1" Cotter Pin
3	001 8134	8	⅜" SAE Flatwasher
4	133 0058	4	Vacuum Paddle (34¾")
5	133 4468	86	Thatching Blade (Square end)

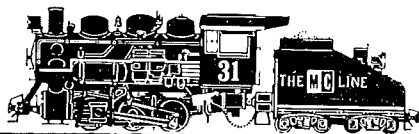
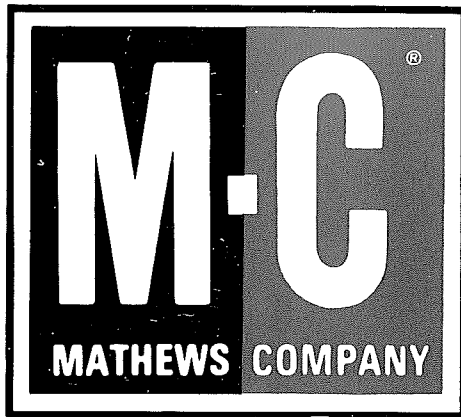
#### 133 9037 - Thatching Blade Kit

Consists of 86 of 133 4468  
 Thatching Blade (Square end)

#### 133 9032 - Wide Vacuum Paddle Kit

Consists of the following:  
 4 of 133 0058 Vacuum Paddle (34¾")  
 4 of 133 5737 Pivot Rod (34-7/16")  
 8 of 001 8134 ⅜" SAE Flatwasher  
 8 of 000 8199 ⅛" x 1" Cotter Pin





**Iron Horse Quality**