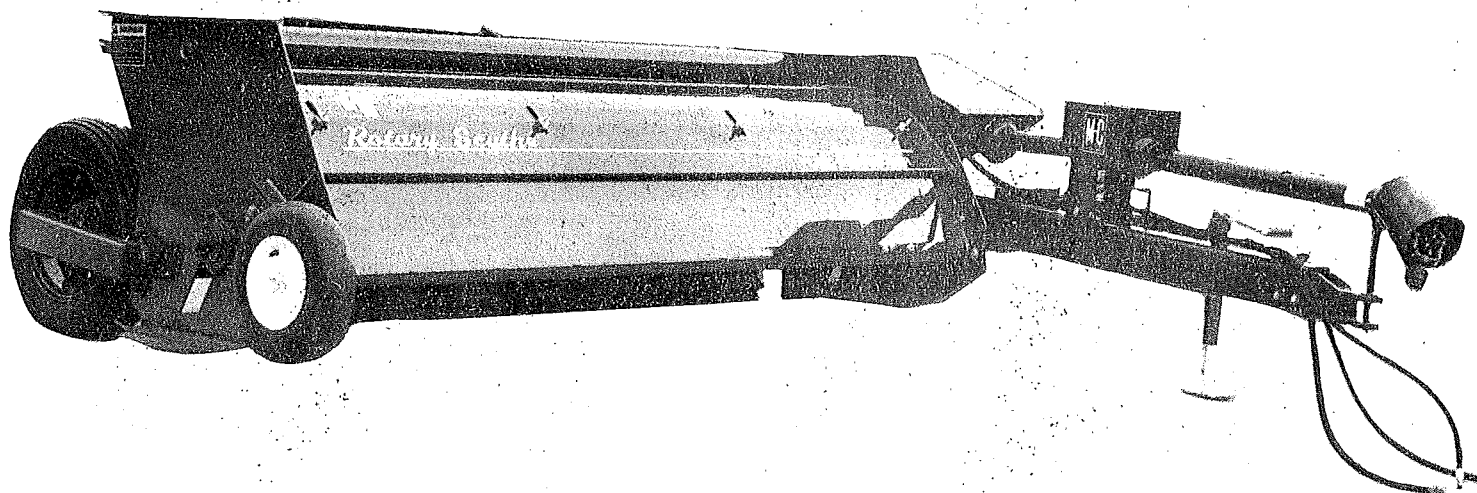


\$5.00



ROTARY SCYTHER

Starting w/Serial No. 57048



OPERATOR'S & PARTS MANUAL

MODEL 2109

MODEL 2112

Form No. RS 353 – March 2000

Revised June 2002

Mathews Company/

500 Industrial Avenue, P.O. Box 70,
Crystal Lake, Illinois 60039-0070 U.S.A.
Phone: 815/459-2210 ♦ Fax: 815/459-5889
www.mathewscompany.com

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INSTRUCTIONS FOR ORDERING PARTS:

1. ALL PARTS MUST BE ORDERED FROM YOUR DEALER.
2. GIVE MODEL NUMBER and SERIAL NUMBER that is stamped on the NAME PLATE of your machine.
3. Order from your PARTS LIST, found below each illustration, as this is the ONLY means we have of identifying the parts you need. Order by the QUANTITY DESIRED, the PART NUMBER and the DESCRIPTION OF THE PART. When necessary to determine left or right, stand behind the Rotary Scythe and look at the windrow baffles.
4. NOTE: The Company reserves the right to incorporate any changes in design without obligation to make these changes on units previously sold.

M-C FARM EQUIPMENT

MODEL NO.	SERIAL NO

MANUFACTURED BY

MATHEWS COMPANY

CRYSTAL LAKE, ILLINOIS, U.S.A.

OTHER PATENTS PENDING

2,999,346	3,159,957
3,035,393	3,159,959
3,831,359	3,831,357

DANGER

1. KEEP ALL SHIELDS IN PLACE.
2. STOP ENGINE BEFORE LEAVING OPERATOR'S POSITION TO ADJUST, LUBRICATE, CLEAN, OR UNCLOG MACHINES, UNLESS OTHERWISE SPECIFICALLY RECOMMENDED IN THE "OPERATOR'S MANUAL".
3. WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING THE MACHINE.
4. KEEP HANDS, FEET AND CLOTHING AWAY FROM POWER DRIVEN PARTS.
5. KEEP OFF EQUIPMENT UNLESS SEAT OR PLATFORM FOR OPERATION AND OBSERVATION IS PROVIDED.
6. KEEP ALL OTHERS OFF.
7. USE FLASHING WARNING LIGHTS WHEN OPERATING ON HIGHWAYS EXCEPT WHEN PROHIBITED BY LAW.
8. MAKE CERTAIN EVERYONE IS CLEAR OF MACHINE BEFORE STARTING ENGINE OR OPERATION.

Model and Serial Number Location

The model and serial number of your Rotary Scythe are stamped on a plate located at the top of the left side panel. For future reference, record the model and serial number in the blank spaces of the above plate.

IMPORTANT!

To facilitate shipment of your M-C Rotary Scythe, certain parts were shipped loose and must now be assembled to your machine.

ARRANGE LOOSE PARTS IN AN ORDERLY MANNER AND OPEN CARDBOARD CARTONS. CHECK TO MAKE SURE THAT YOU HAVE RECEIVED ALL PARTS LISTED ON YOUR SHIPPING DOCUMENTS. MAKE CLAIMS FOR ANY SHORTAGE IMMEDIATELY!

BEFORE ATTEMPTING TO ASSEMBLE OR OPERATE YOUR ROTARY SCYTHE, READ THE FOLLOWING ASSEMBLY AND ADJUSTMENT INSTRUCTIONS PLUS THE OPERATING TIPS AND MAINTENANCE REQUIREMENTS THOROUGHLY.

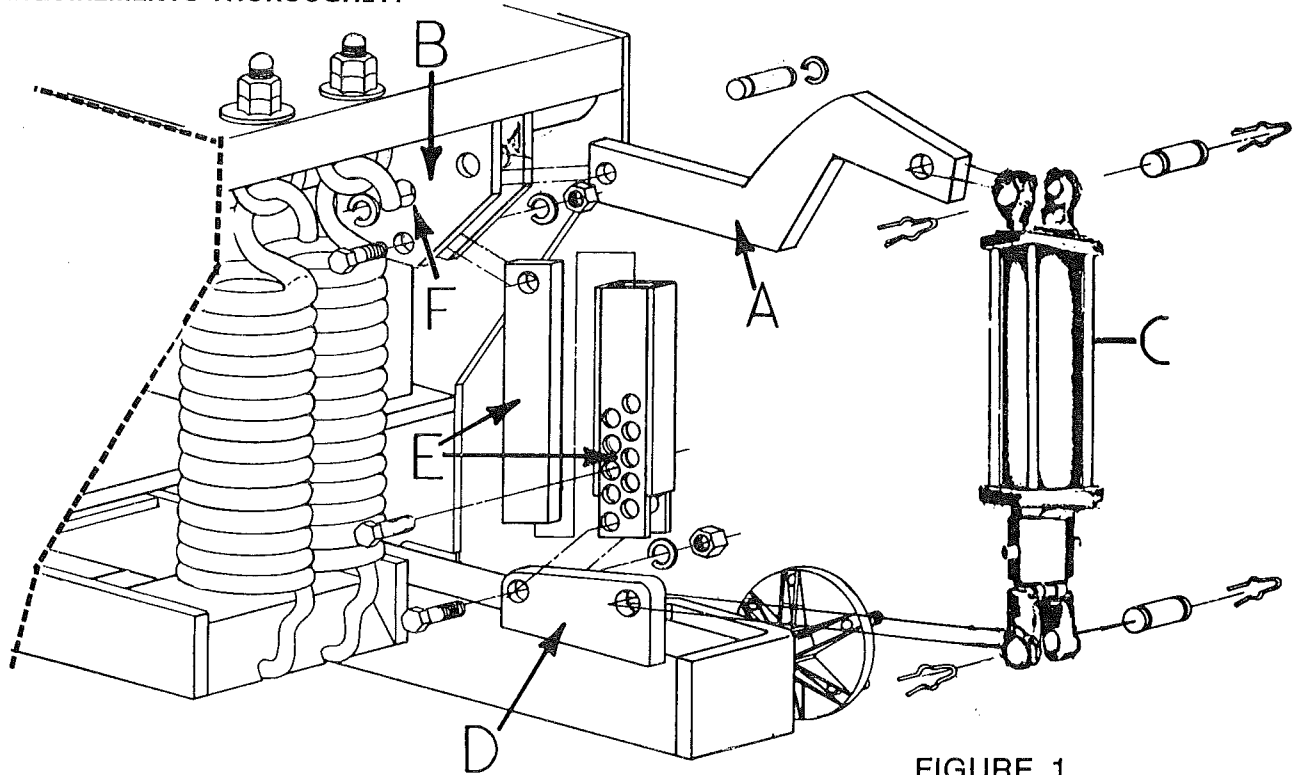


FIGURE 1

HYDRAULIC CYLINDER, AXLE MOUNT AND JACK ARM ASSEMBLY:

(See Figure 1)

Step No. 1 – Install the Jack Arm (A) to the End Frame (B) with 1 x 2 $\frac{5}{8}$ " (2.54 x 6.67cm.) Pin placed through hole (F). Secure pin with (2) Snap Rings.

Step No. 2 – Before attaching the 3 x 12" (7.6 x 30.5cm.) Hydraulic Cylinder (C) to the Axle Mount (D) and the Jack Arm (A), it will be necessary to install a Hose Adaptor into the top right port of the cylinder and a #0918700 Vent Plug into the bottom front port. Now attach the 3 x 12" (7.6 x 30.5cm.) Hydraulic Cylinder (C) to the Axle Mount (D) and the Jack Arm (A) with 1 x 3 $\frac{1}{2}$ " (2.54 x 8.9cm.) Pins and Pin Clips.

Connect the end of the $\frac{1}{2}$ x 165" (12.7mm. x 419cm.) hydraulic hose with the 90 degree fitting to the adaptor in the top right port of the cylinder. This hose must be pulled to the front where it will connect to (1) of the tractor hydraulic ports. There are hose brackets welded to the left side plate to hold the hose as it passes by the drive chain and down to the pole. There are rings welded to the pole that are also used to hold this hose in place.

Step No. 3 – Place the Top Ram Stop (E) into the Bottom Ram Stop (E). Bolt Bottom Ram Stop to the Axle Mount (D) and the Top Ram Stop to the End Frame (B) with $\frac{5}{8}$ -11 x 2 $\frac{1}{2}$ " (1.59 x 6.35cm.) hex bolts, lockwashers and nuts. Ram Stop Assembly must telescope at ALL times. A $\frac{5}{8}$ x 2 $\frac{1}{2}$ " (1.59 x 6.34cm.) clevis pin is placed into (1) of the Ram Stop Bottom Section holes to maintain the selected cutting height when the cylinder is lowered after it has been raised to avoid some obstacle in the mowing path.

Step No. 4 – Mount wheels with tires to hubs.

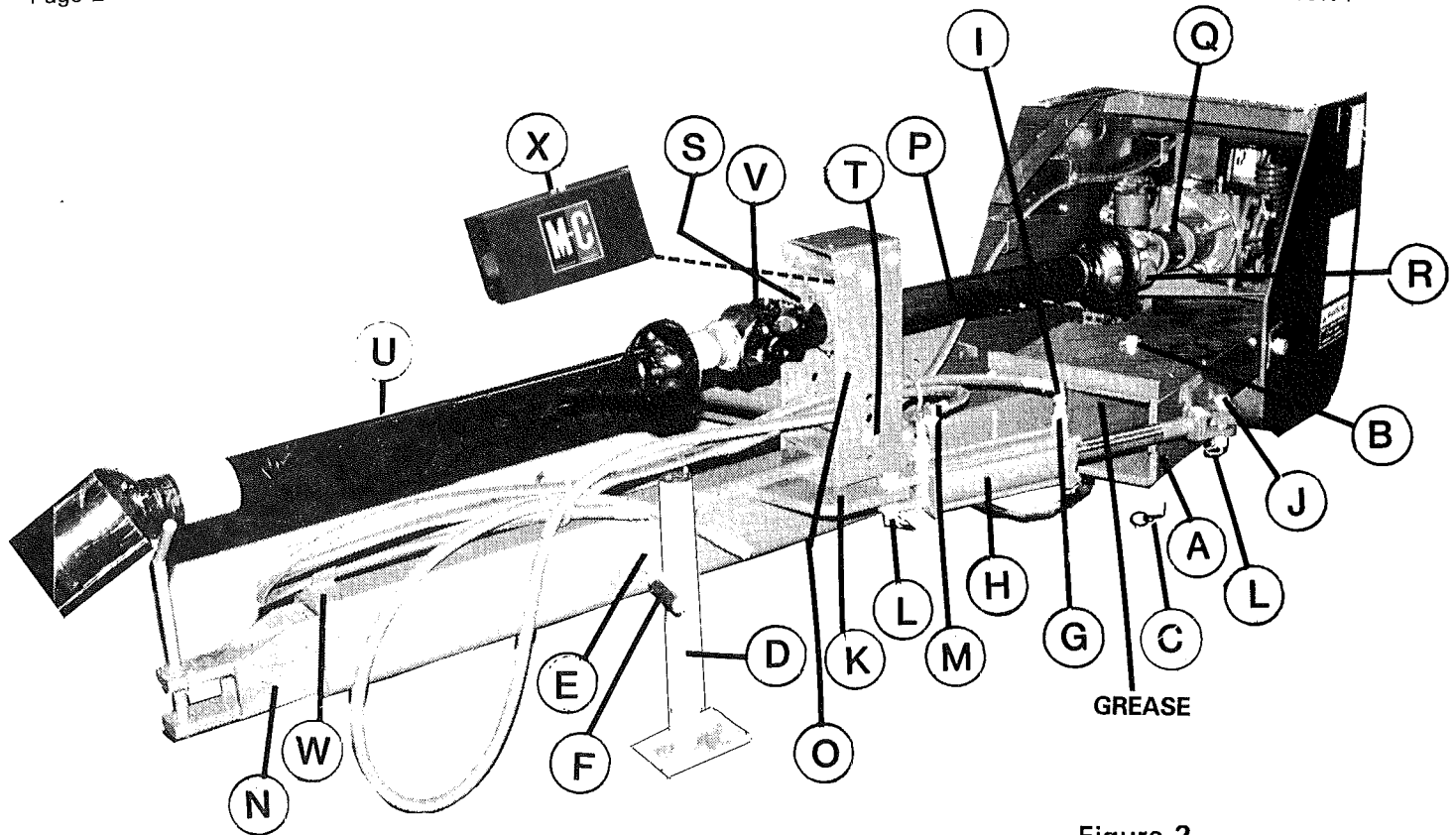


Figure 2

POLE, JACK & POSITIONING CYLINDER ASSEMBLY (See Figure 2)

Step No. 1 – Grease top of Pole where it enters Floating Frame and Slide Pole into Floating Frame (A). Align the hole in the Floating Frame with the one in the Pole and secure with 1 x 8-1/8" (2.54x20.64cm.) Pole Pin (B). Fasten with 1/4" (6.35mm.) Klick Pin (C). **NOTE:** The Pole Clevis (N) is normally bolted to the Pole for shipment, but if not, insert Clevis into front end of Pole and secure with (2) 5/8-11 x 5" (15.9mm.x12.7cm.) Grade 5 Hex Bolts and 2-way Locknuts.

Step No. 2 – Slip Jack (D) onto Mount Pipe (E) welded to pole. Insert Pin into Jack and rotate Jack until Pin enters hole in Mount Pipe that places Jack into vertical position. Push Pin into hole and make sure Pin locks. Now adjust height of pole by using Jack Handle (F).

Step No. 3 – Install the (2) Adaptors (G) into the top and bottom ports of the 3 x 8" (7.6x20.3cm.) Hydraulic Cylinder (H) used for positioning Pole. Once Adaptors are installed, place the (3) #1317001 Flow Restrictors (I) into Adaptors.

Step No. 4 – Now attach the cylinder (H) with the Adjustable Clevis End to the Floating Frame Pivot Arm (J) and the opposite end to the Pole Pivot Arm (K) with 1 x 3 1/2" (2.54x8.9cm.) Clevis Pins #0427000 and Locking Clips (L). **NOTE:** Some adjustment may have to be made with the Adjustable Clevis of the Cylinder to prevent excess pressure on the Floating Frame Pivot Arm (too long of a piston rod) when the cylinder is in the closed position.

POWER SHAFT AND UNIVERSAL JOINT AND TELESCOPING SHAFT ASSEMBLY

(See Figure 2)

Step No. 1 – Before installing the PTO Hanger Bearing Bracket Assembly (O) onto the top of the Pole, the Power Shaft (P) must be connected to the Yoke attached to the Slip Clutch (Q). Place the Power Shaft into Yoke (R), insert the 3/8 x 3/8 x 2" (9.5x9.5x51mm.) Key into keyway of Shaft and Yoke and install 3/8 x 3" (9.5x76.2mm.) Roll Pin into Yoke and Power Shaft. After Roll Pin is in place, install 1/2-13 x 3/8" (12.7x9.5mm.) Set Screw into Yoke and tighten down onto Key. Slide Power Shaft Drive Guard (Black) onto Power Shaft with Bell portion toward Slip Clutch

Step No. 2 – Install PTO Hanger Bearing Bracket Assembly (O) onto plate welded to top of Pole making sure that front end of Power Shaft goes through Hanger Bearing (S). Secure Bracket Assembly with 5/8-11 x 7" (15.9mm.x17.8cm.) Hex Bolt and Locknut (T). Install the 1/4 x 3/4" (6.35x19mm.) Grade 5 Hex Bolt

into the 9/32" (7.1mm.) hole that goes through both the Hanger Bearing Bracket Side Plate and the Hanger Bearing Bottom Plate welded to top of Pole and tighten with 1/4" (6.35mm.) whiz locknut. This bolt will be installed in the right Side Plate across from the Pole Pivot Arm (K). There are (4) large 21/32" (16.7mm.) and (4) small 9/32" (7.1mm.) holes on each Hanger Bearing Bracket Side Plate that allow for easy height adjustment of the drive line depending upon the height of the tractor PTO Shaft.

Step No. 3 – With the help of another person, lift C.V. Universal Joint Telescoping PTO Shaft (U) and install the rear Yoke (V) onto the Power Shaft (P) in front of Hanger Bearing (S). Insert 3/8 x 3/8 x 2" (9.5x9.5x51mm.) Key into keyway of Shaft and Yoke then install 3/8 x 3" (9.5x76.2mm.) Roll Pin into Yoke and Power Shaft. After Roll Pin is in place, install 1/2-13 x 3/8" (12.7x9.5mm.) Set Screw into Yoke and tighten down onto Key. Place front of C.V. PTO Shaft into "U" Bracket Holder (W) welded to right side of Pole next to Clevis (N).

Step No. 4 – Connect (1) of the 3/8 x 100" (9.5mm.x2.54m.) Hydraulic Hoses used on 2109 (M) with 90° fittings to each Restrictor on Pole Cylinder. Hand tighten hose fittings until hoses are placed through the lower section of the Hanger Bearing Bracket (O) and out to the front of the Pole. Once hoses are in place tighten 90° fittings! Now place Hanger Bearing Guard (X) over top of Hanger Bearing Bracket Assembly (O) and secure with (2) 5/16-18 x 3/4" (7.9x19mm.) HWH Grade 5 Bolts and Whiz Locknuts.

REAR DEFLECTOR ASSEMBLY (See Figure 3)

STEP No. 1 – Remove the Rear Deflector Adjusting Arm (A) from the shipping position. Bolt into position and tighten with lockwasher and nut. Raise the Rear Deflector (B) and line it up with the slot in the Rear Deflector Adjusting Arm. Fasten with 3/8-16 x 3/4" (9.5 x 19mm.) slotted truss head bolt, lockwasher, and deflector knob.

Step No. 2 – To adjust, see Rear Deflector Adjustment on page 5.

YOUR ROTARY SCYTHE IS NOW COMPLETELY ASSEMBLED. BEFORE OPERATING YOUR MACHINE, THERE ARE SOME ADJUSTMENTS TO BE MADE ON IT. READ YOUR ADJUSTMENT INSTRUCTIONS AND OPERATING TIPS CAREFULLY.

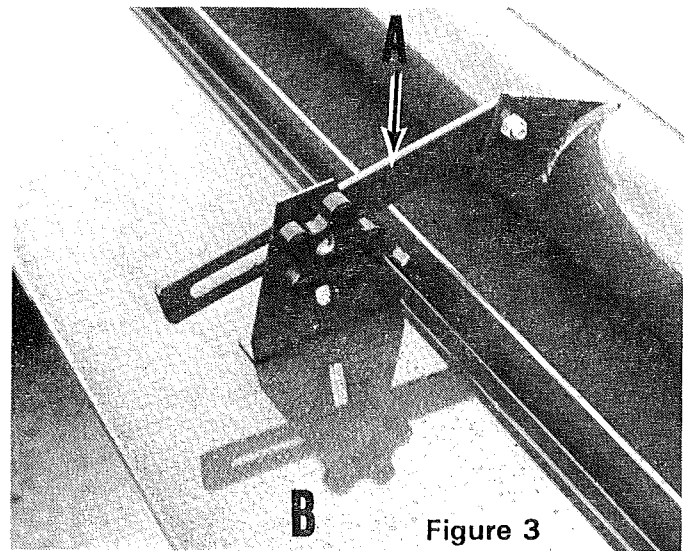


Figure 3

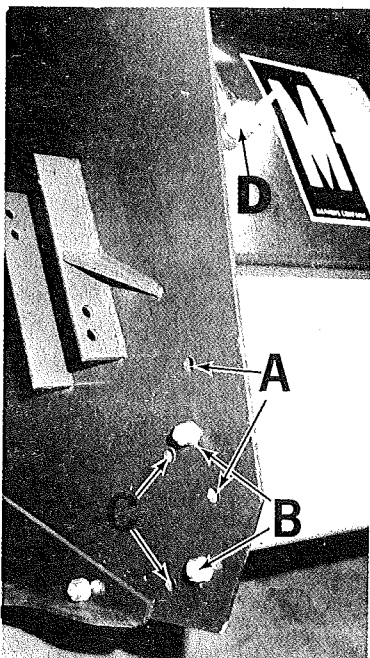


Figure 4

Adjustment Instructions

Do Not Make Any Adjustments While Machine Is Operating Or While Tractor Is Running.

FRONT COVER ADJUSTMENT:

(See Figure 4)

There are three Front Cover positions (A) (B) (C) on your Scythe. It is shipped in the center position (B). This position will usually accommodate average crops. For heavier crops, loosen, but do NOT remove, the Special Clamping Nuts (D). Remove the Bolts (B) and raise the Cover to the upper-most position (A). Replace the two nuts and bolts. Retighten the Special Clamping Nuts. For lighter crops, follow the same procedure, moving the Cover to the lowest position (C).

LEVELING, FLOTATION AND CUTTING HEIGHT ADJUSTMENT:

(See Figure 6)

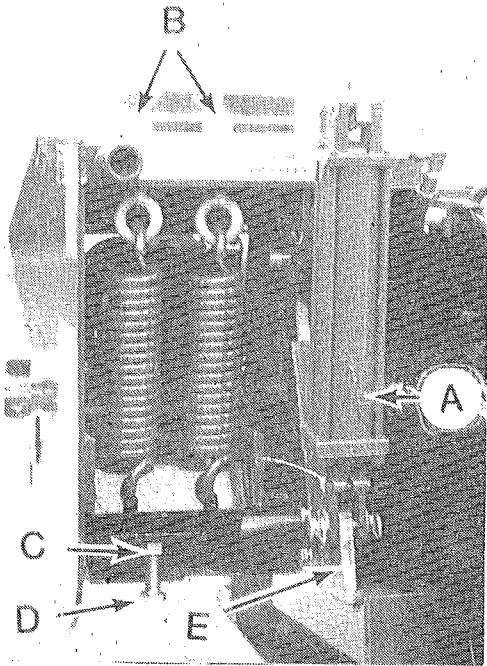


Figure 6

1. On a level area, hitch the Rotary Scythe to the tractor that will operate the Scythe. The following adjustments must be made each time the Rotary Scythe is hooked up to a tractor that has a different drawbar height. **THIS IS IMPORTANT!**
2. Adjust the height of the Rotary Scythe with the hydraulic ram, until the anti-scalp roller is 1" (25.4mm.) above the ground. This roller must be free to turn, and when making this adjustment, do not have any objects under it, such as a 1" (25.4mm.) board.
3. Adjust tension on the large springs by turning the nuts (B) on the eye bolts until the following approximate measurements are on both springs. For ease of adjusting, we advise putting oil on the eye bolt threads, and between the nuts and flatwashers.

2109 RS	Eye bolt threads $\frac{1}{2}$ " (12.7mm.) above the top locknut.
2112 RS	Eye bolt threads $\frac{3}{4}$ " (19.0mm.) above the top locknut.
4. With the Rotary Scythe PTO shaft disconnected from the tractor, turn the rotor by hand until one row of knives is hanging straight down.
5. Loosen the locknut (C). Apply oil to the threads and end of bolt (D). If there is a space between the end of bolt (D) and the bumper pad, it indicates that there is still too much tension on the springs as specified in paragraph 3. Turn bolt (D) into the stationary nut to raise the knives, and out to lower the knives. For normal ground conditions the cutting edge of the knives should be 2" (51mm.) above the ground when the anti-scalp roller is 1" (25.4mm.) above the ground. For extremely uneven ground conditions, adjust the cutting edge of the knives up another 1" (25.4mm.). Tighten the locknut (C) after adjustments have been made.
6. To put the final adjustment on the spring tension, lift on the front cover across the front of the Rotary Scythe to determine how many pounds of lift are needed before the springs help carry the weight of the machine. It should require approximately 100 pounds (45.4kgs.) for the 2109 and 125 pounds (56.7kgs.) for the 2112. The tension of the springs should never be tight enough to cause the front of the Rotary Scythe to bounce. If at any time there is enough tension put on the springs to cause a space between the end of the bolt (D), and the bumper pad, this will cause the Rotary Scythe to bounce on rough ground, or rise up in heavy hay. This produces a shaggy, uneven cut. When the spring tension is close to ideal, as little as $\frac{1}{4}$ turn on both spring eye bolts will make a difference on the weight of the front cover. If you can push down on the front right skid with your foot and make the Rotary Scythe bounce, there is too much tension on the springs. **BE SURE TO LOCK THE TOP NUT (B) WHEN ALL ADJUSTMENTS ARE DONE.**
7. In the field, adjust the cutting height with the 3 x 12" (7.6 x 30.5cm.) hydraulic cylinder. When a satisfactory height is obtained, select a hole in the Bottom Ram Stop and place the 5/8 x 2 1/2" (1.59 x 6.34cm.) clevis pin into this hole and lock with clip so that Scythe cannot be accidentally lowered below this setting.
8. If you were in a rough, stony field with a sickle bar mower and you broke a sickle section or a guard, you would have to stop and repair it. After you did this once or twice, you would raise the cutter bar to try to avoid these breakdowns so you could keep mowing. Just because you can hit a stone or rough ground with the Rotary Scythe and keep on cutting, without stopping or plugging it, doesn't mean you should pound stones continually. Treat the Rotary Scythe as you would a sickle bar. Adjust the cutting height of the Rotary Scythe up a little and you will still get more hay and more non-stop mowing than you have ever experienced.

WINDROW BAFFLE ADJUSTMENT:

(See Figure 7)

The Windrow Baffles adjust vertically and horizontally. The vertical adjustment depends on field conditions and height of cut. The bottom edge of the Baffles should not be dragging on the ground. To change the height of Baffle, move Baffle Adjusting Bolts (A) forward or backward until Baffles are level. For rough fields, set Baffles higher. Horizontal adjustment determines the windrow width. To change width of windrow, loosen the (4) Clamping Bolts (B), (2) on each Baffle, that hold the Baffle Adjusting Rods (C) and move the Baffles in or out to the desired windrow width. Retighten the Clamping Bolts.

REAR DEFLECTOR ADJUSTMENT:

(See Section 1, Page 3, Figure 3 and Page 5, Figure 7)

The Rear Deflector (D) is designed to reduce leaf loss and provide a better windrow. The Rear Deflector will pivot from a horizontal position to a vertical position and should be adjusted according to your crop. The Deflector should be adjusted downward for the angle that produces the fluffiest swath or windrow. If at too much of a downward angle, the hay will start bunching. NOTE: When windrowing with the 2112, this Rear Deflector must be parallel to the ground so the windrow will start to form towards the discharge end of the Windrow Baffle.

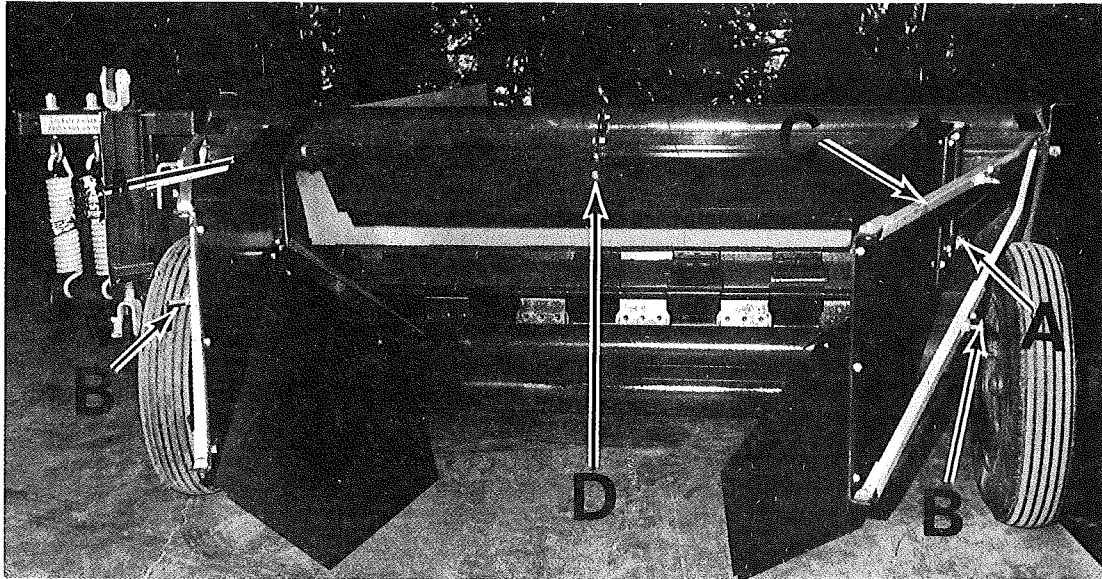


Figure 7

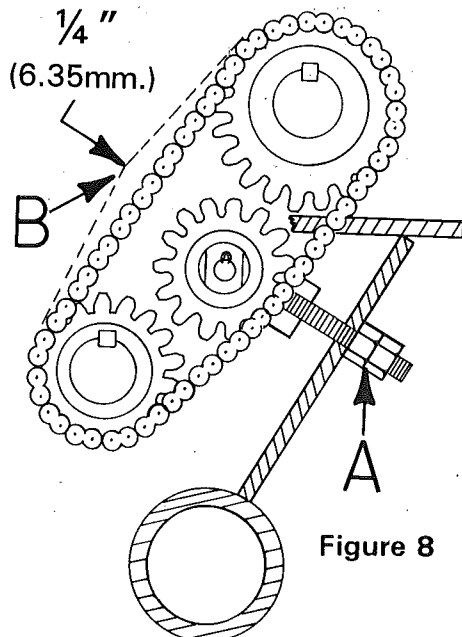


Figure 8

CHAIN ASSEMBLY:

(See Figure 8)

After the initial 1 to 2 hours of operation, the chain will require an adjustment.

STEP No. 1 – Make sure all sprockets are in proper alignment and set screws are tight.

STEP No. 2 – Loosen large nut in idler sprocket stub shaft. Adjust Chain with Adj. Nuts (A) until approximately $\frac{1}{4}$ " (6.35mm.) play is at point (B). Retighten large nut in idler sprocket stub shaft and locknuts (A).

CAUTION: At no time should Chain have less than $\frac{1}{4}$ " (6.35mm.) play.

Operating Tips

By following the suggestions in **OPERATING TIPS**, you will be able to **PROLONG** the **LIFE** of your Rotary Scythe and get the **MOST EFFICIENT** and **EFFECTIVE** results.

- BEFORE ATTEMPTING to make ANY INSPECTION, BE SURE to DISENGAGE the P.T.O. and STOP the tractor engine.
- AFTER MOWING approximately 10 to 15 acres (4 to 6 hectares), the inside of the machine and the blades will become polished and will give you the best performance.
- AFTER OPERATING Scythe for (1) to (2) hours, the Drive Chain Tension will need to be adjusted. DO NOT operate Scythe with the Drive Chain too loose as it will cause excessive wear to the chain and sprockets. While checking the chain tension, also make sure that all Knife Blades are secure and all nuts and bolts are tight.
- DO NOT attempt to adjust the cutting height with the Flotation Springs at the rear of the machine or with the 1" (25.4mm.) Leveling Bolt directly below.
- ADJUSTMENT of the cutting height should ONLY be made by ADJUSTING the 3 x 12" (7.6x30.5cm.) Hydraulic Cylinder with the tractor remote switch and placing the 5/8 x 2 1/2" (1.59x6.34cm.) Clevis Pin in correct hole of the Ram Stop Bottom Section to maintain selected cutting height when Cylinder is lowered.
- YOUR MACHINE IS EQUIPPED with a Gauge Roller to prevent the machine from scalping the ground. The Gauge Roller IS NOT designed to carry the WHOLE weight of the machine for a long period of time.
- WITH A ground speed of 3 to 6 m.p.h. (4.8kms. to 9.7kms./hr.) and 540 or 1000 RPM P.T.O. speeds, the 2109 requires a minimum of 60 horsepower (45Kw), and the 2112 requires a minimum of 75 horsepower (56Kw). The horsepower requirement is REDUCED by traveling at a lower ground speed. If you get too much LEAF LOSS, REDUCE P.T.O. speed and INCREASE ground speed. The proper variation of ground speed and P.T.O. speed will produce the best results. Horsepower requirements will vary with different crop conditions.
- TO RECONDITION or DRY hay FASTER during damp weather, the following procedure is recommended: Make a 2nd pass over the field using a reduced throttle speed and a high ground speed with machine height adjusted as high as possible and still pick up the swath or windrow. This will pick up and FLUFF the hay, drying it much FASTER than if turned over with a rake.
- NEVER TRANSPORT SCYTHE without having TRANSPORT RAM STOP #1110169 installed and locked over Pole Positioning Cylinder Rod with 1/2 x 4" (12.7mm. x 10cm.) Clevis Pin #1138171. This will prevent Pole from swinging out from transport position in case hydraulic pressure to cylinder is lost. A special holding bracket is welded to the Pole across from the Jack to store the Transport Ram Stop when it is not being used. Check Page 13, Ref. #7.
- DO NOT EXCEED the 540 RPM P.T.O. speed on 540 RPM models.
- DO NOT EXCEED the 1000 RPM P.T.O. speed on 1000 RPM models.
- ALTHOUGH the Rotary Scythe is a tough machine built to give many years of trouble free service, excessive ABUSE caused by ROCKS and other OBSTRUCTIONS will result in UNNECESSARY WEAR and costly REPAIRS to the ROTOR, KNIVES, and DRIVE LINE.

Maintenance

SHARPENING ROTOR BLADES:

STEP No. 1 – Secure the Rotor. Line up the bank of Knives with the slot below the Rotor Bearing.

STEP No. 2 – Remove the End Locator Bracket and slide the Knife Hanger Rod out allowing the Knives to drop off.

STEP No. 3 – Sharpen the Blades. DO NOT sharpen the front edge. BE SURE to retain the original angle (30°) of the cutting edge. REPLACE any damaged Blades. Operating with damaged Blades can cause Rotor imbalance.

STEP No. 4 – Replace the Knife Blades, Knife Hanger Rod, and End Locator Bracket. MAKE SURE the dished or concave side of the Blades, when hanging down, are facing the front of the machine and will swing freely.

SAFETY SHEAR PIN DEVICE:

The two Safety Shear Bolts #0018133 fasten the Drive Sprocket to the Shear Flange on the Gearbox Output Shaft. These Shear Bolts are designed to PROTECT the Gearbox Drive Chain and must be used. DO NOT USE HARDENED BOLTS FOR A SUBSTITUTE.

FOR WINTER STORAGE:

Before storing your Scythe, grease all of the Bearings to eliminate any cavities where condensation may occur. It is also advisable to coat all the exposed surfaces of the inside of the machine with oil or grease to prevent rusting and pitting during storage.

Lubrication

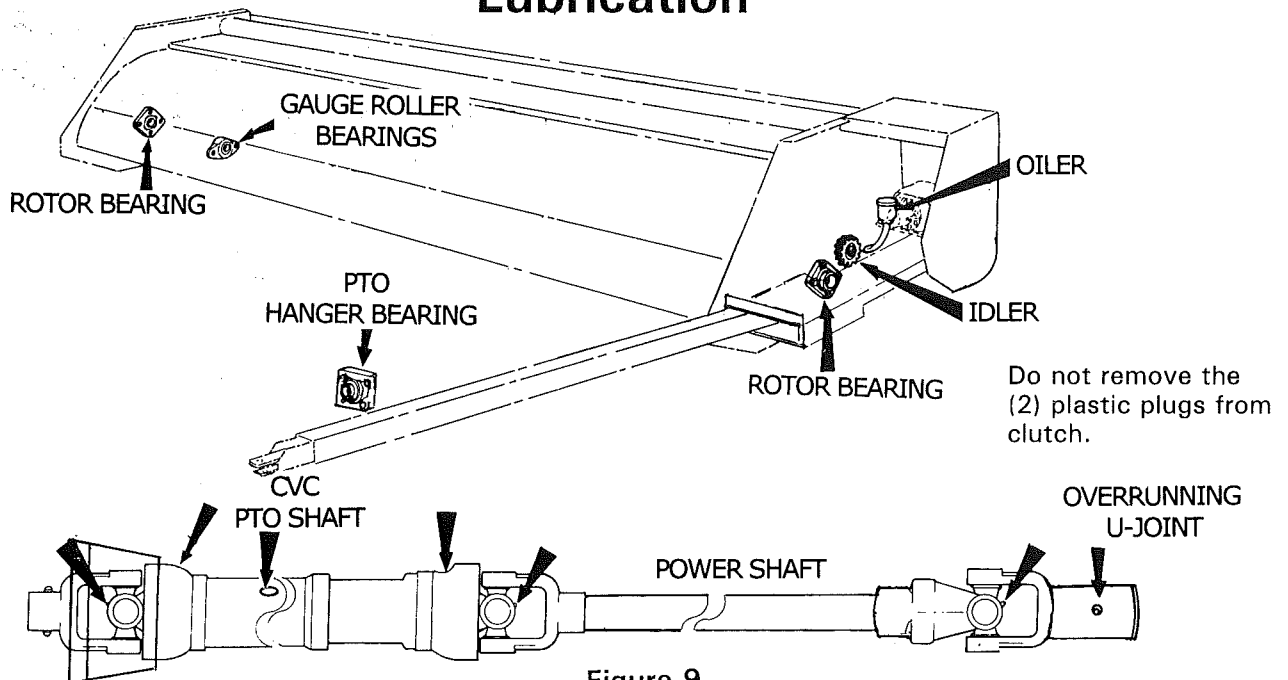


Figure 9

CHECK THE OIL LEVEL IN THE GEARBOX REGULARLY. To check it, remove the Oil Level Plug. If at the proper level, the oil will run out of this hole. If not at the proper level, remove the Filler Plug on the top of the Gearbox and bring up to oil level plug with Mobilfluid 424 multipurpose transmission lubricant or equivalent.

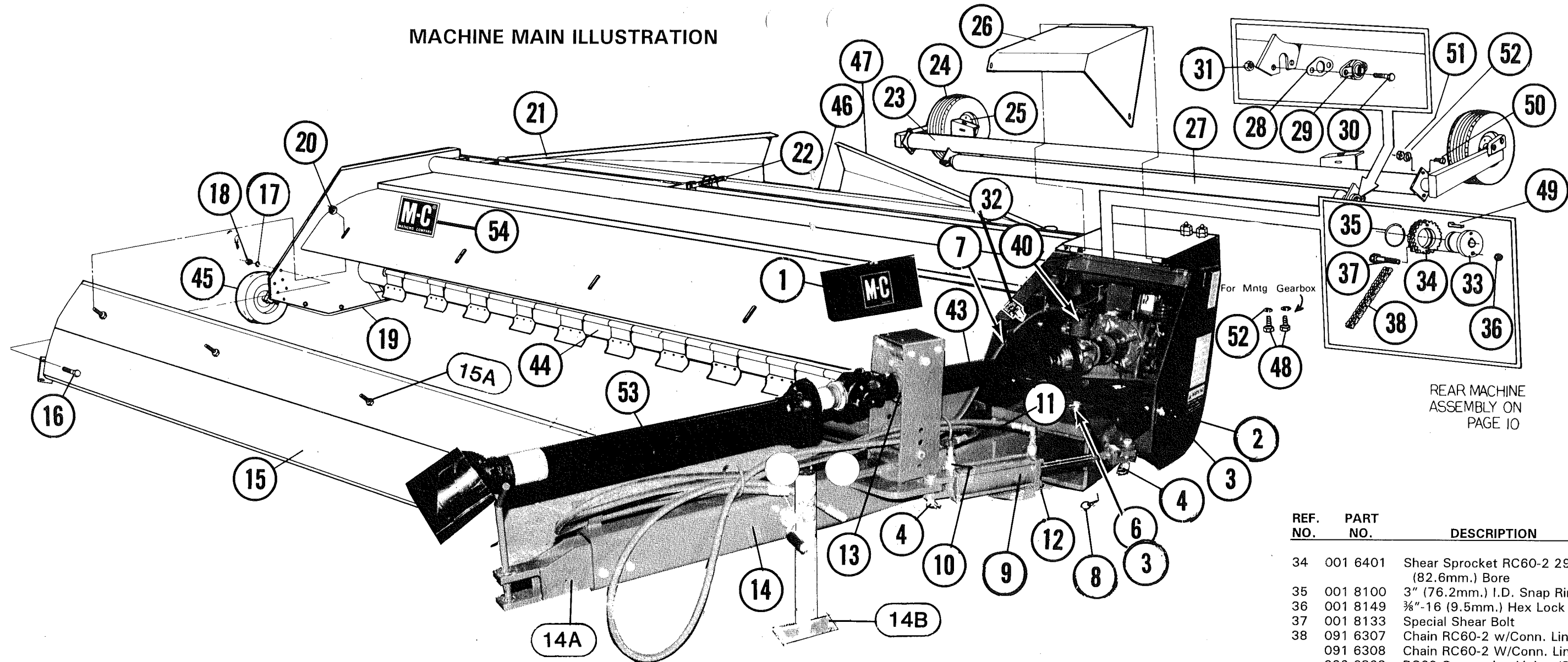
CHECK THE OIL LEVEL IN THE CHAIN OILER BEFORE EACH OPERATION. If not full, fill with light engine oil or an equivalent. BE SURE the Oiler is positioned so that the oil will drop between the double row of chain.

IF MACHINE IS IN CONSTANT USE, LUBRICATE ALL POINTS DESIGNATED BY ARROWS IN FIGURE 9 DAILY.

USE GREASE SPARINGLY TO AVOID DAMAGING BEARING SEALS.

PARTS LISTS

MACHINE MAIN ILLUSTRATION



REAR MACHINE ASSEMBLY ON PAGE 10

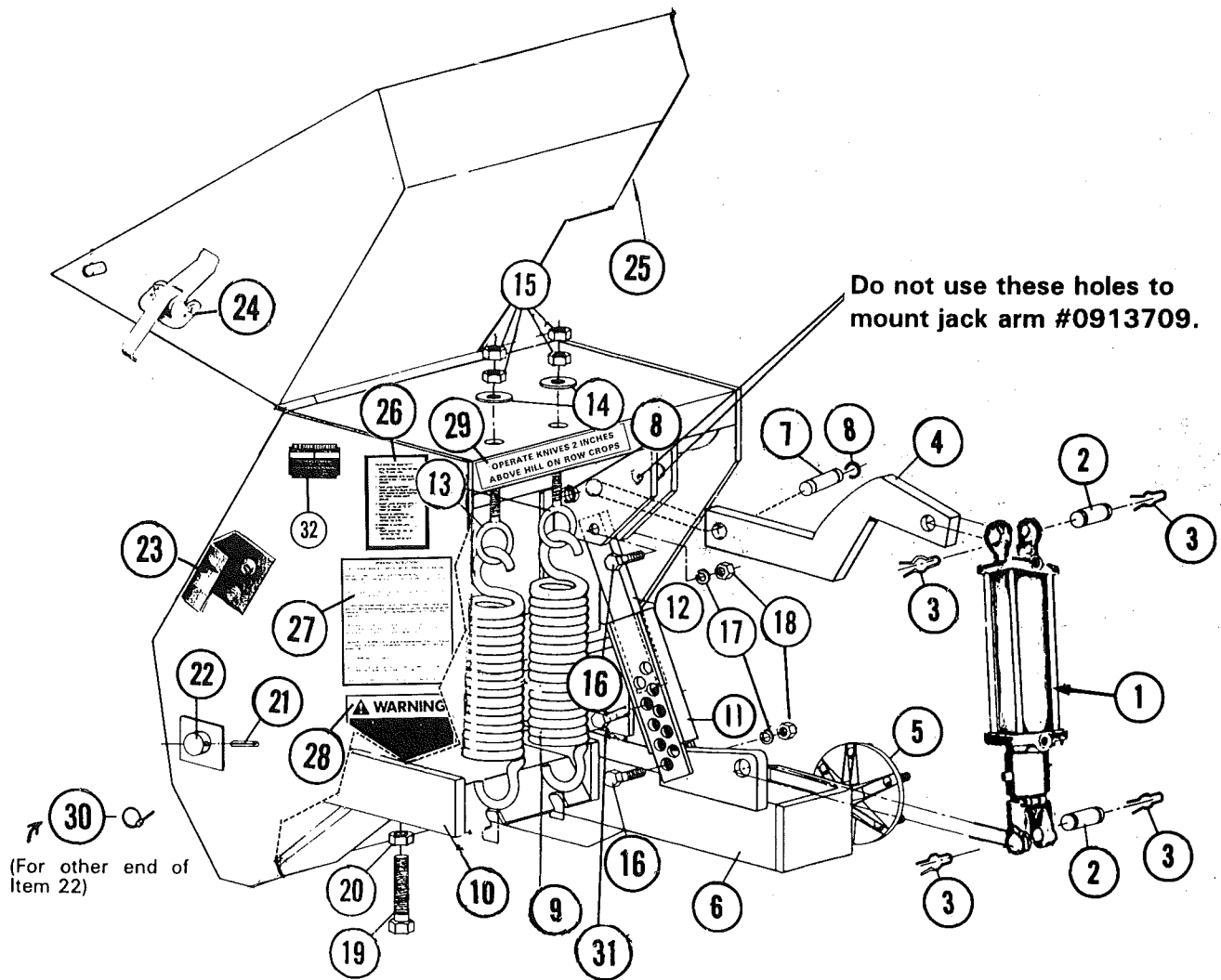
REF. NO.	PART NO.	DESCRIPTION
1	091 4662	Hanger Bearing Cover
2	091 5044	Floating Frame Pin
3	000 8259	5/16 x 1 3/4" (7.9x44.5mm.) Roll Pin
4	091 7001	5/8 x 2 1/2" (15x63.5mm.) Clevis Pin w/Clip
5	091 0280	Floating Frame
6	091 5707	Pole Pin
7	091 8400	Hydraulic Hose w/90° El 1/2 x 165" (12.7mm.x419cm.) 2109
	091 8403	Hydraulic Hose w/90° El 1/2 x 209" (12.7mm.x531cm.) 2112
8	000 8994	Klik Pin
9	091 7000	3 x 8" (7.6x20.3cm.) Hydraulic Cylinder
10	131 7001	Flow Restrictor
11	091 8401	Hydraulic Hose w/90° El 3/8 x 100" (9.5mm.x250cm.) 2109
	091 8402	Hydraulic Hose w/90° El 3/8 x 144" (9.5mm.x366cm.) 2112
12	091 0237	Skid Left

REF. NO.	PART NO.	DESCRIPTION
13	091 6007	Hanger Bearing 1 3/4" (44.5mm.) 4-Bolt
14	091 0286	Pole - 2109 RS
	091 0287	Pole - 2112 RS
14A	091 0284	Clevis
14B	001 8986	Jack
15	091 0194	Front Cover 2109
	091 0250	Front Cover 2112
15A	091 8132	3/8 x 2 1/4" (9.5x57.2mm.) Hex Bolt FT
	000 8162	3/8" (9.5mm.) Hex Nut
16	000 8137	1/2-13 x 1 1/4" (12.7x31.75mm.) Hex Head Capscrew
17	000 8180	1/2" (12.7mm.) Lockwasher
18	000 8163	1/2"-13 (12.7mm.) Hex Nut
19	091 0238	Skid Right
20	001 5700	Clamping Nut
21	091 1063	Windrow Baffle Assembly - Right - 2109 (see page 11)
	091 1072	Windrow Baffle Assembly - Right - 2112 (see page 11)

REF. NO.	PART NO.	DESCRIPTION
22	095 3457	Rear Deflector Adjusting Arm
	091 8192	Deflector Knob
23	091 0233	Axle Weldment - 2109
	091 0248	Axle Weldment - 2112
24	091 8997	7.50x15" (38cm.) Tubeless Tire - 6 ply
25	001 8993	15" (38cm.) 5 Bolt Rim
26	091 0292	Gearbox Cover - 2109/2112
27	091 0210	Gauge Roller Weldment - 2109
	091 0247	Gauge Roller Weldment - 2112
28	091 4454	Bearing Shim
29	000 6001	2 Bolt Flange Bearing 1 1/4" (31.8mm.)
30	000 8133	7/16-20 x 1 3/4" (11x44.5mm.) Hex Head Capscrew - Grade 5
31	001 8169	7/16"-20 (11mm.) Locknut
32	128 8969	Gearbox Cover Holddown
33	001 7651	Shear Flange

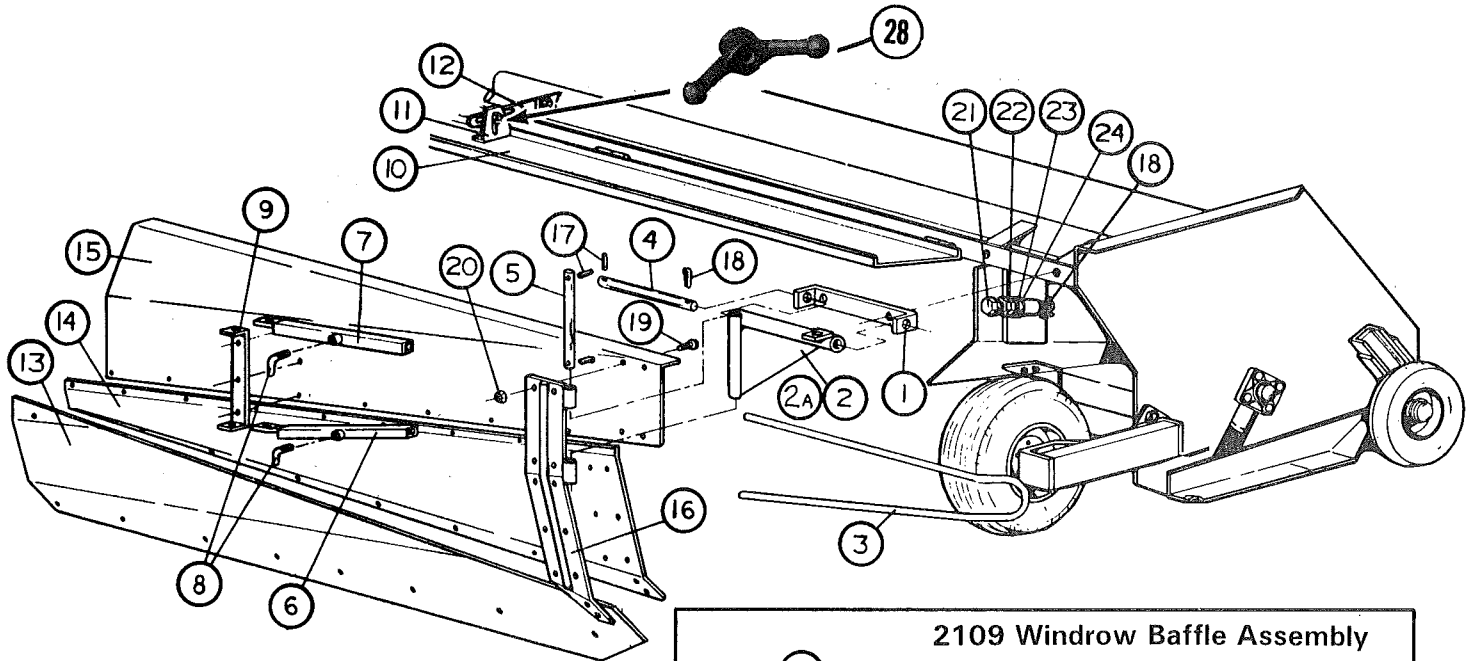
REF. NO.	PART NO.	DESCRIPTION
34	001 6401	Shear Sprocket RC60-2 29T x 3 1/4" (82.6mm.) Bore
35	001 8100	3" (76.2mm.) I.D. Snap Ring
36	001 8149	3/8"-16 (9.5mm.) Hex Lock Nut
37	001 8133	Special Shear Bolt
38	091 6307	Chain RC60-2 w/Conn. Link - 540 RPM
	091 6308	Chain RC60-2 W/Conn. Link - 1000RPM
	002 6303	RC60 Connecting Link w/Spring Clip
39	091 6608	Gearbox, see page 14
40		Oiler Illustration, see page 14
41		Idler Illustration, see page 13
42		Pole Illustration, see page 13
43		Power Shaft, see page 15
44		Rotor Assembly, see page 12
45	090 1001	Gauge Wheel Assembly, see page 18
46		Rear Deflector, see page 11
47	091 1064	Windrow Baffle Assembly - Left - 2109 (see page 11)
	091 1071	Windrow Baffle Assembly - Left - 2112 (see page 11)
48	091 8170	5/8-11-1 3/4" (15x44.5mm.) Hex Bolt w/Nylock - Grade 5
49	001 8266	3/8 Sq. x 3" (9.5x76.2mm.) Gib Key
50	000 8146	5/8-11 x 1 1/2" (15.9x38.1mm.) Hex Bolt - Grade 5
51	000 8164	5/8"-11 (15.9mm.) Hex Nut
52	000 8181	5/8" (15.9mm.) Lockwasher
53	091 6617	540 RPM C.V.U. Joint Tel. Assembly
	091 6618	1000 RPM C.V.U. Joint Tel. Assembly
54	128 8300	Decal - M-C B&B 5" x 4 1/2" (13x11cm.)

MACHINE LEFT REAR ILLUSTRATION

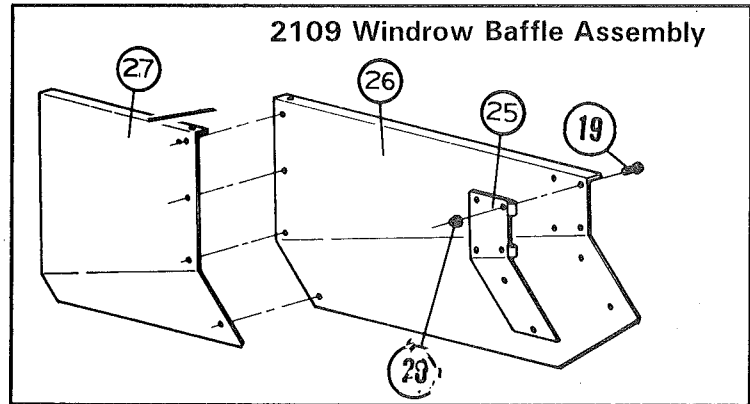


REF. NO.	PART NO.	DESCRIPTION
1	111 7005	3x12" (7.6x30.5cm.) Hydr. Cylinder
2	001 8248	1 x 3 1/2" (2.54x8.9cm.) Pin
3	002 8253	Pin Clip
4	091 3709	Jack Arm
5	001 8992	Hub Assembly
6	091 0233	Axle Weldment 2109
	091 0248	Axle Weldment 2112
7	000 8230	Ram Pin 1 x 2 5/8" (2.54x6.67cm.)
8	000 8250	Ram Pin Snap Ring
9	091 8255	Extension Spring 9/16 x 14" (1.43x35.6cm.)
10	091 0280	Floating Frame Weldment
11	091 0278	Ram Stop-Bottom
12	095 3472	Ram Stop-Top
13	091 8187	Eye Bolt 3/4"-10 x 4 1/2" (1.9x11.4cm.)
14	000 8177	3/4" (19mm.) Flatwasher
15	000 8165	3/4"-10 (19mm.) Hex Nut
16	128 8172	5/8"-11 x 2 1/2" (1.59x6.4cm.) Hex Capscrew

REF. NO.	PART NO.	DESCRIPTION
17	000 8181	5/8" (15.9mm.) Lockwasher
18	000 8164	5/8"-11 (15.9mm.) Hex Nut
19	091 8232	1"-8 x 6" (2.54x15.2cm.) Full Thread Hex Bolt
20	091 8231	1"-8 (2.54cm.) Hex Nut
21	000 8259	5/16 x 1 3/4" (7.9x44.4mm.) Roll Pin
22	091 1089	Floating Frame Pin Assembly
23	091 2600	Gearbox Cover Clip
24	128 5787	5 1/2" (14cm.) Over Center Latch
25	091 0292	Gearbox Cover 2109 & 2112
26	091 8305	Decal - Field Operating Instruction
27	091 8312	Decal - Operating Instruction
28	001 8315	Decal - Safety Warning
29	001 8311	Decal - Operate Knife 2" (5cm.)
30	091 8259	Klick Pin
31	091 7001	5/8 x 2 1/2" (1.59x6.4cm.) Pin w/Clip
32	001 8313	Serial Number Plate
33	001 8302	Decal M-C B&B



NOTE: Starting with Serial No. 50749 Lower Windrow Baffle Extensions (ref. 13) are not standard equipment.



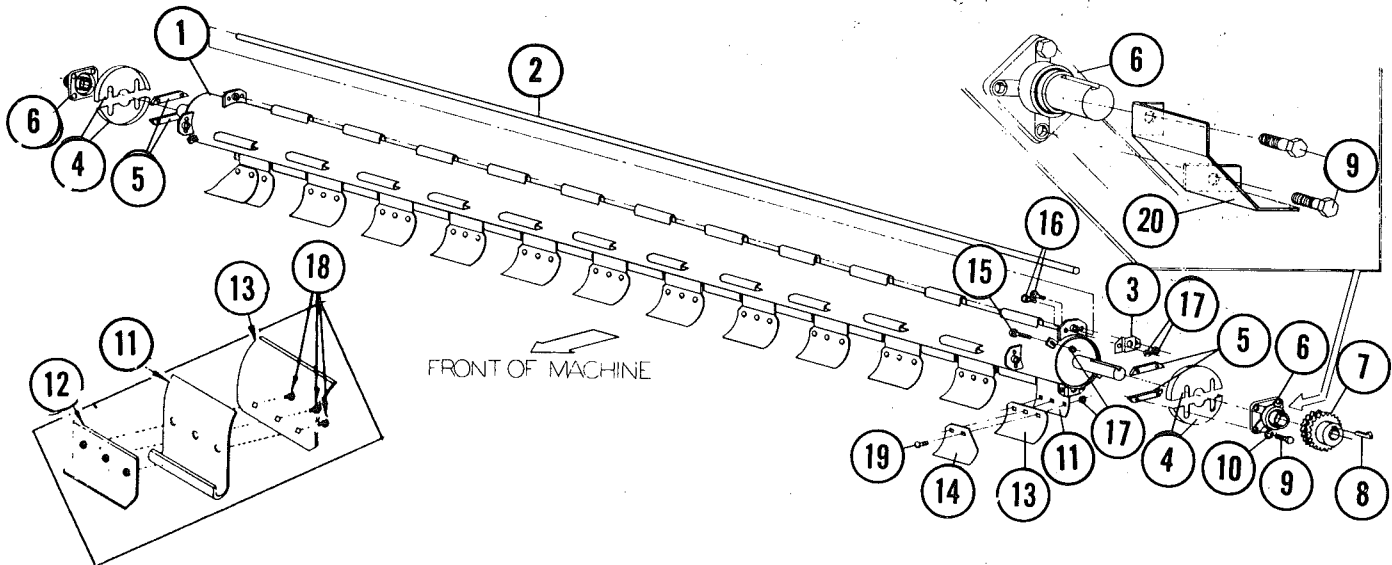
REF. NO.	PART NO.	DESCRIPTION
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1	091 3550	Mounting Bracket
	000 8137	½ x 1¼" (12.7 x 31.8mm.) Hex Bolt #5
	000 8180	½" (12.7mm.) Lockwasher
	000 8163	½" (12.7mm.) Hex Nut
2	091 0228	Windrow Baffle Spindle -Right - 2109
	091 0229	Windrow Baffle Spindle -Left - 2109
2A	091 0271	Windrow Baffle Spindle -Right - 2112
	091 0272	Windrow Baffle Spindle -Left - 2112
3	091 3782	Windrow Hinge Rod 2109/2112
4	091 1087	Windrow Baffle Hinge Pin Assy. 2109/12
5	091 1087	Windrow Baffle Hinge Pin Assy. 2109/12
6	091 0231	Adjusting Bar Weldment-Bottom 2109/12
7	091 0230	Adjusting Bar Weldment-Top 2109/12
	001 8209	¾ x 1" (9.5 x 25.4mm.) Hex Bolt #5
	001 8149	¾" (9.5mm.) 2-Way Locknut
8	001 8162	Clamping Bolt 2109/2112
9	095 3454	Adjusting Rod Bracket 2109/2112
	000 8134	¾ x ¾" (9.5x19mm.) Truss Head Screw
	000 8168	¾" (9.5mm.) Flanged Whiz Locknut
10	091 0131	Rear Deflector Weldment - 2109
	091 0249	Rear Deflector Weldment - 2112
11	091 4490	Rear Deflector Adjusting Bracket 2109/12
12	095 3457	Rear Deflector Adjusting Arm 2109/12
13	091 4796	Lower Windrow Baffle Extension - Left (Optional) 2112
	091 4797	Lower Windrow Baffle Extension - Right (Optional) 2112

REF. NO.	PART NO.	DESCRIPTION
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14	091 4792	Lower Windrow Baffle - Left - 2112
	091 4794	Lower Windrow Baffle - Right - 2112
15	091 4793	Upper Windrow Baffle - Left - 2112
	091 4795	Upper Windrow Baffle - Right - 2112
16	091 0269	Hinge Weldment - Right - 2112 (Use with 091 0271)
	091 0270	Hinge Weldment - Left - 2112 (Use with 091 0272)
17	000 8259	5/16" x 1¾" (7.9x44.5mm.) Roll Pin
18	000 8262	¼ x 1½" (6.35x38.1mm.) Cotter Pin
19	000 8134	¾-16 x ¾" (9.5x19mm.) Truss Head Screw
20	000 8168	¾"-16 (9.5mm) Flange Whiz Locknut
21	091 8230	1"-8 x 8" (2.54x20.3cm.) Hex Head Capscrew, Full Thread
22	091 8231	1"-8 (25.4mm.) Hex Nut
23	091 8229	½ x 2½" (12.7x63.5mm.) Rubber Washer
24	000 8264	1" (25.4mm.) Flat Washer
25	091 0226	Hinge Weldment - Right - 2109
	091 0227	Hinge Weldment - Left - 2109
26	091 4655	Windrow Baffle - Right - 2109
	091 4754	Windrow Baffle - Left - 2109
27	091 4789	Windrow Baffle Extension- Right - 2109
	091 4790	Windrow Baffle Extension- Left - 2109
28	091 8192	Deflector Knob

ROTOR ASSEMBLY ILLUSTRATION



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	091 0140	Balanced Rotor (only) 2109	11	091 3378	Quick Change Hanger – Long
	001 0018	Balanced Rotor (only) 2112	12	091 4481	Hanger Back Stop – Long
2	091 8994	Knife Hanger Rod – 2109	13	001 5208	Heavy Duty Knife (Standard)
	091 8975	Knife Hanger Rod – 2112		003 5200	Special Hard Surface Knife (Optional) For Sandy Soils - Not for Rocky Areas
3	001 2000	End Locator Bracket	14	001 5211	Heavy Duty End Knife Left – 2109 & 2112
4	001 4652	Rotor Anti-Wrap Device		001 5212	Heavy Duty End Knife Right – 2109 & 2112
5	001 5175	Stud Anchor	15	000 8125	$\frac{3}{8}$ ”-16x1 $\frac{1}{2}$ ” (9.5x38.1mm.) Carriage Bolt
6	001 6010	4 Bolt Flange Bearing – 1-15/16” (49.2mm.) Bore	16	000 8134	$\frac{3}{8}$ ”-16x $\frac{3}{4}$ ” (9.5 x19mm.) Truss Round Head Bolt
7	091 6403	Sprocket RC60-2 17T x 1-15/16” (49.2mm.) Bore 540 RPM	17	001 8149	$\frac{3}{8}$ ”-16 (9.5mm.) Locknut
	003 6400	Sprocket RC60-2 29T x 1-15/16” (49.2mm.) Bore 1000 RPM	18	001 8131	$\frac{3}{8}$ ”-16x $\frac{3}{8}$ ” (9.5x22.2mm.) Carriage Bolt
8	001 8987	Gib Key $\frac{1}{2}$ ” x 2” (12.7x51mm.) Long	19	000 8124	$\frac{3}{8}$ ”-16 x 1 $\frac{1}{4}$ ” (9.5x31.75mm.) Carriage Bolt Grade 5 (End Knives)
9	001 8261	$\frac{1}{2}$ ” – 13 x 1 $\frac{1}{2}$ ” (12.7x38mm.) Hex Head Capscrew w/Nylon Patch – Grade 5	20	091 4531	Rotor Sprocket Shield
10	000 8180	$\frac{1}{2}$ ” (12.7mm.) Lockwasher			

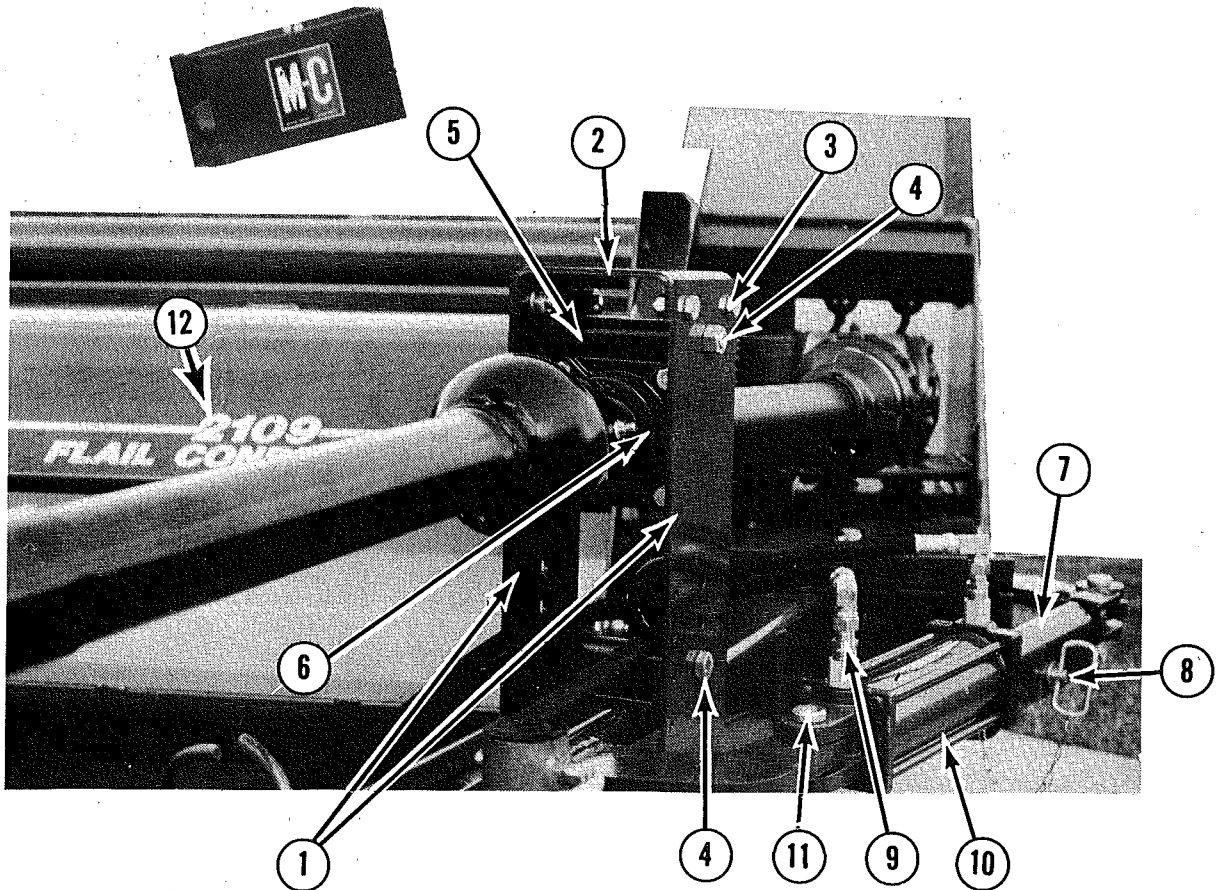
Complete Sets of Knives

Rotary Scythe knives may be ordered by the following kit numbers.
(Kits do not include bolts, nuts or knife hangers.)

092 9013 For Model 2109 - Kit consists of: 36 – 001 5208
2 – 001 5211
2 – 001 5212

092 9012 For Model 2112 - Kit consists of: 48 – 001 5208
2 – 001 5211
2 – 001 5212

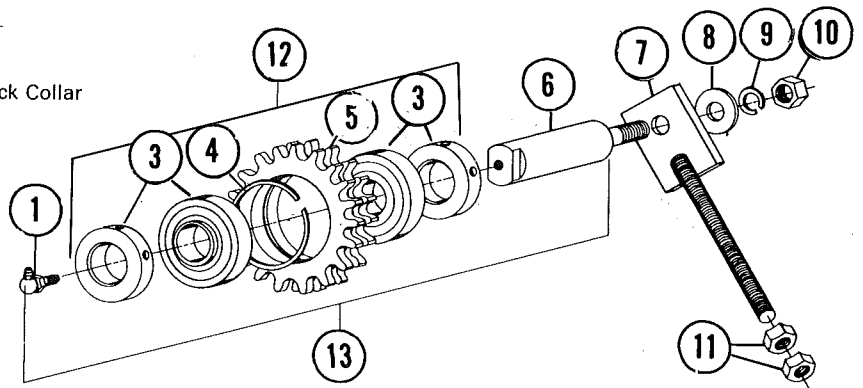
HANGER BEARING BRACKET ASSEMBLY



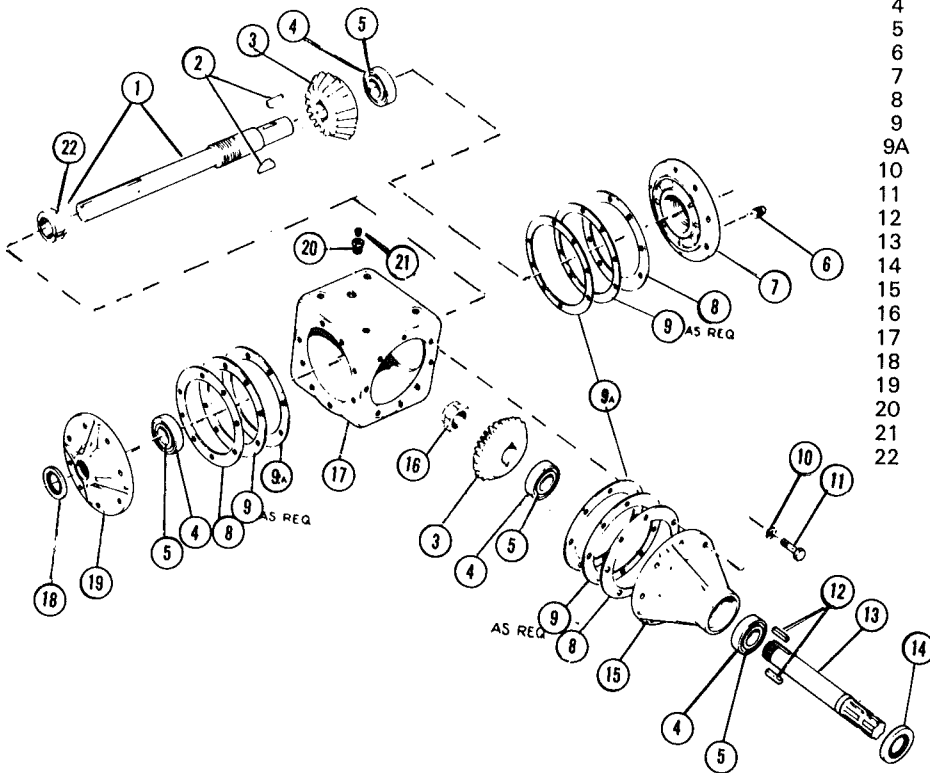
REF. NO.	PART NO.	QTY.	DESCRIPTION	REF. NO.	PART NO.	QTY.	DESCRIPTION
1	091 3427	2	Hanger Bearing Side	6	091 6007	1	Hanger Bearing 1 3/4" (44.5mm.) 4 Bolt
2	000 8163	1	Hanger Bearing Top	000 8278	4	1/2-13 x 1 3/4" (12.7x44.5mm.) Hex Bolt Grd 5	
3	000 8137	4	1/2-13 x 1 1/4" (12.7x31.8mm.) Hex Bolt - Grade 5	000 8180	4	1/2" (12.7mm.) Lockwasher	
	000 8180	4	1/2" (12.7mm.) Lockwasher	000 8163	4	1/2" (12.7mm.) Hex Nut	
	000 8163	4	1/2" (12.7mm.) Hex Nut	7	111 0169	1	Transport Ram Stop
4	000 8153	2	5/8-11 x 7" (15.9mm.x17.8cm.) Hex Bolt	8	113 8171	1	Clevis Pin 1/2 x 4" (12.7mm. x10cm.)
	091 8189	2	5/8" (15.9mm.) 2-Way Locknut	9	131 7001	2	Flow Restrictor
5	091 0283	1	Bearing Mount Bracket	10	091 7000	1	3 x 8" (7.6x20.3cm.) Hydr. Cylinder
				11	042 7000	2	1 x 3 1/2" (25.4x90mm.) Clevis Pin w/Clip
				12	091 8317	1	2109 RS Model Number
				091 8318	1	2112 RS Model Number	

IDLER ASSEMBLY

REF. NO.	PART NO.	DESCRIPTION
1	0016604	Grease Fitting - 90 Deg.
3	0016017	Idler Sprocket Bearing w/Lock Collar
4	0016602	Snap Ring
5	0016403	Sprocket
6	0915043	Idler Shaft
7	0910209	Idler Adjustment Weldment
8	0008177	3/4" Flat Washer
9	0008182	3/4" Lock Washer
10	0008165	3/4"-10 Hex Nut
11	0008163	1/2"-13 Hex Nut
12	0011002	Idler Sprocket Assembly
13	0911051	Idler Assembly



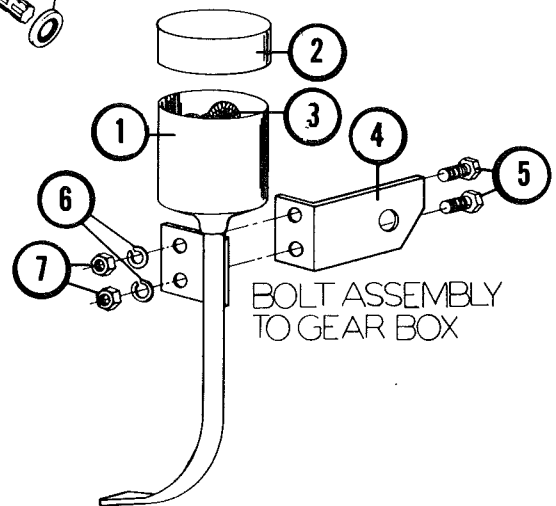
MODEL 2109 GEARBOX 0916608



REF. NO.	PART NO.	DESCRIPTION
1	0926621	Output Shaft, Gear Box w/Stake Nut
2	0018988	Woodruff Key 3/8" x 1-1/2" (Hard)
3	0026500	Bevel Gear
4	0026010	Bearing Cup
5	0026011	Bearing cone
6	0028000	Oil Level Plug
7	0027655	Cover, Solid Gear Box
8	0026636	Shim .005" Thick
9	0026637	Shim .010" Thick
9A	0926609	Gasket - 1/32" Thick
10	0008180	1/2" Lock Washer
11	0018261	1/2"-13 x 1-1/2" Hex Bolt
12	0018969	Key 3/8" x 3/8" x 1-3/8" (Hard)
13	0026638	Input Shaft
14	0026639	Grease Seal
15	0027656	Hub
16	0026668	Stake Nut
17	0027654	Gear Housing
18	0026667	Grease Seal
19	0027657	Cover Gear Box Output
20	0026678	Bushing - 3/8" to 1/8" - N.P.T.
21	0026677	Vent - 1/8" - N.P.T.
22	1128252	Stake Nut - Only

OILER ILLUSTRATION

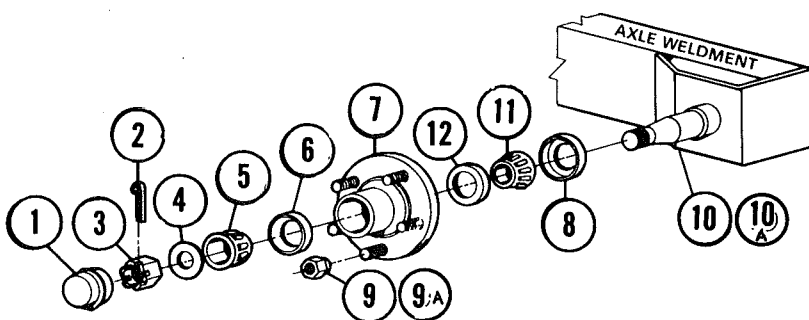
REF. NO.	PART NO.	QTY.	DESCRIPTION
1	0910197	1	Oiler Weldment
2	0017982	1	Oiler Cap
3	0915705	3	Felt Oiler Wicking
1, 2, 3	0911050	1	Complete Oiler Assembly
4	0953430	1	Oiler Mount Bracket
5	0008121	2	3/8-16 x 1 HHCS
6	0008179	2	3/8 Lockwasher
7	0008162	2	3/8-16 Hex Nut



BOLT ASSEMBLY TO GEAR BOX

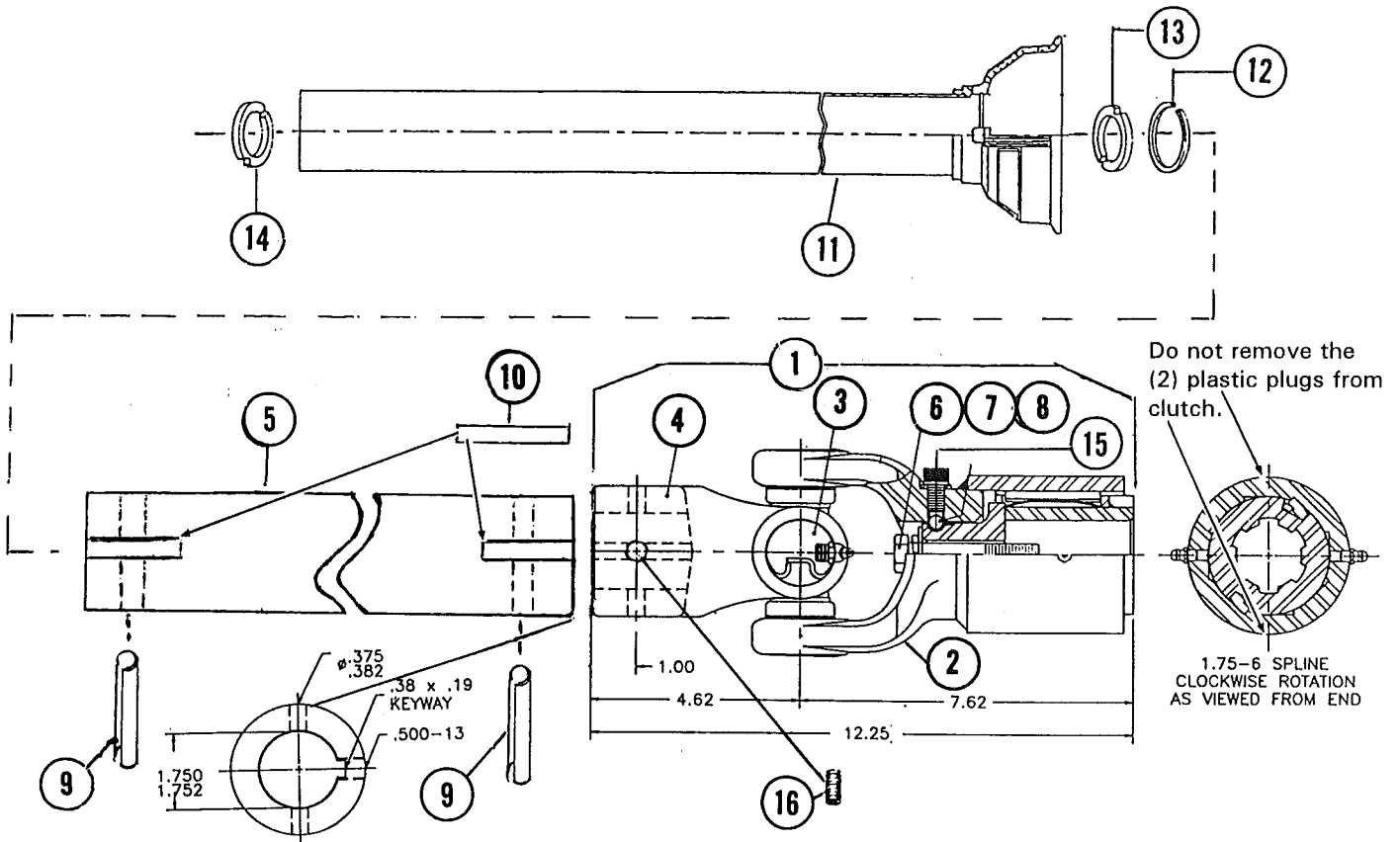
WHEEL HUB ILLUSTRATION

For Axle Weldment See Page 8



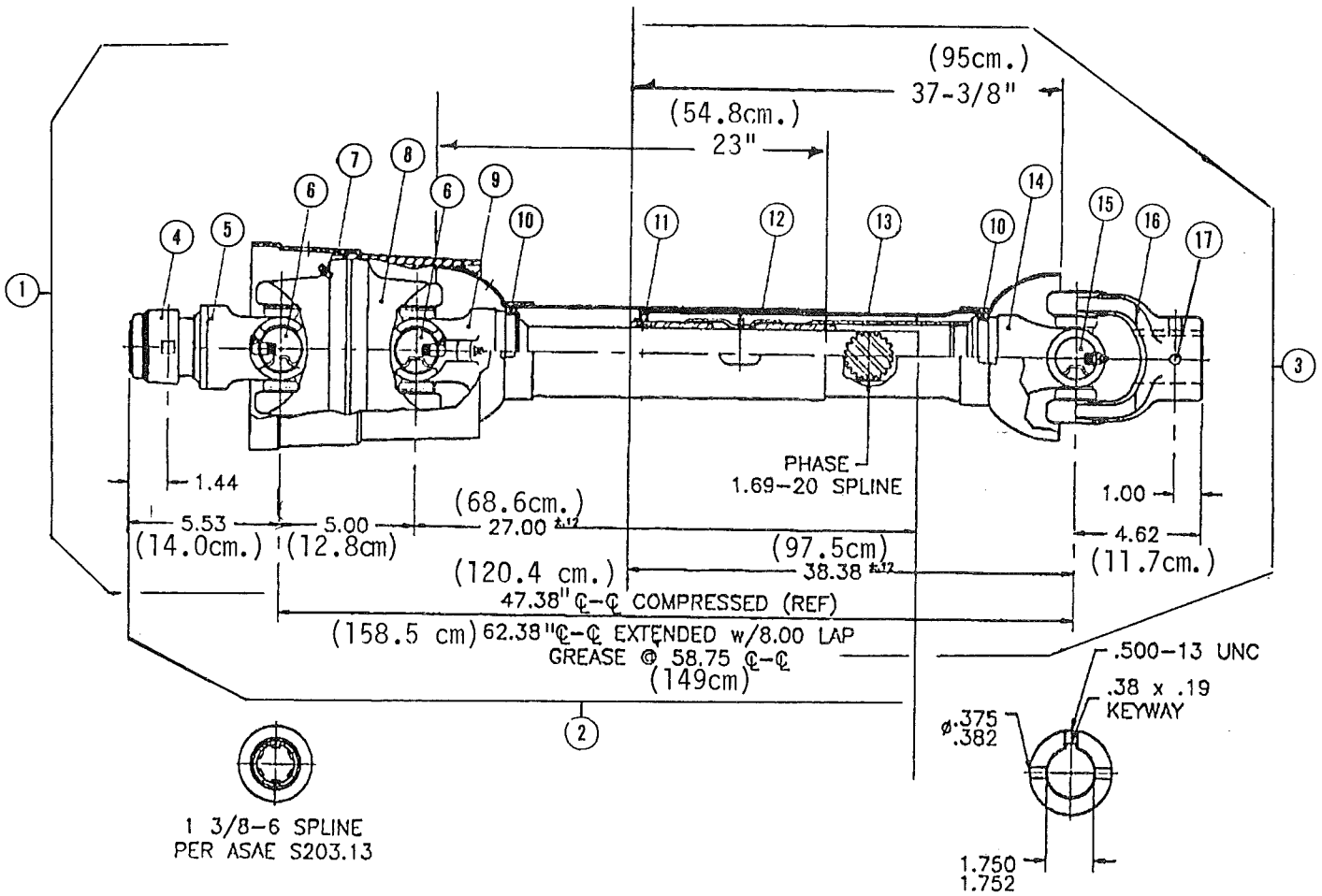
REF. NO.	PART NO.	DESCRIPTION
1	0018996	Hub Cap
2	0018252	1/8" x 1 Cotter Pin
3	0018253	Spindle Nut
4	0018254	Spindle Washer
5	0016000	Bearing Cone - Outer
6	0026000	Bearing Cup - Outer
7	0018992	Wheel Hub Assy. - 5 Bolt - Includes Cups, Hub & Stud Bolts
8	0018991	Seal
9	0018989	1/2"-20 NF Lug Nut (15" Rim) 45 deg.
9A	0908988	1/2"-20 NF Lug Nut (10" Rim) 60 deg.
10	0018972	Spindle Only - Left - 9-1/2" long
10A	0018990	Spindle Only - Right - 8" long
11	0016001	Bearing Cone - Inner
12	0026001	Bearing Cup - Inner

POWER SHAFT ILLUSTRATION



REF. NO.	QTY.	PART NO.	DESCRIPTION
1	1	091 6615	55-U-Joint w/Overrunning Clutch
2	1	002 7662	Overrunning Clutch Assembly
3	1	002 6633	55-Cross & Bearing Repair Kit
4	1	002 6687	Yoke
5	1	091 5060	Output Drive Shaft - 2109
			1 3/4 x 30 3/4" (44.5mm. x 78.1cm.)
		091 5061	Output Drive Shaft - 2112
			1 3/4 x 74 3/4" (44.5mm. x 189.9cm.)
6	1	002 8153	1/2-20 x 3" (12.7mm. x 7.62cm.) Hex Bolt Grade 5 Z.P.
7	1	000 8180	1/2" (12.7mm.) Lockwasher
8	1	000 8175	1/2" (12.7mm.) Flatwasher
9	2	001 8281	Roll Pin 3/8 x 3" (9.5mm. x 7.62cm.)
10	2	001 5132	Key 3/8 x 3/8 x 2" (9.5x9.5x51mm.)
11	1	091 1123	Drive Guard w/Bell Assembly - 2109
	1	091 1124	Drive Guard w/Bell Assembly - 2112
12	1	091 8133	Snap Ring
13	1	091 5713	Nylon Support Bearing 2 3/4"
14	1	091 5712	Nylon Support Bearing
15	1	002 7661	Overrunning Clutch Repair Kit
16	2	000 8234	Set Screw 1/2-13 x 3/8" (12.7x9.5mm.)

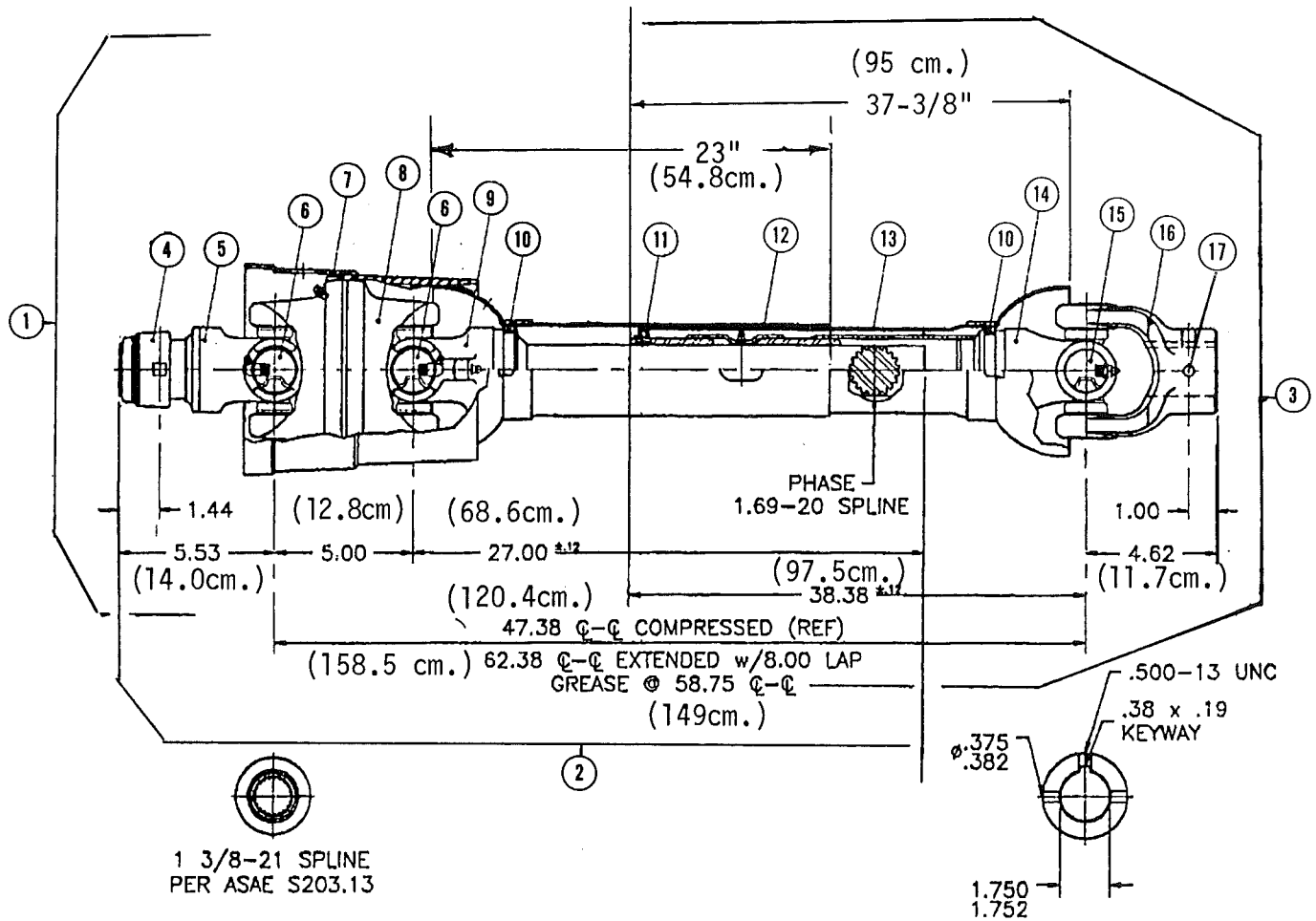
540 RPM Constant Velocity Universal Joint Telescoping Assembly



REF. NO.	QTY.	PART NO.	DESCRIPTION
1	1	091 6617	Universal Joint & Tel. Shaft Assembly 55R (Cat 6 80° CV)
2	1	002 7665	Joint & Shaft Half Assembly with Guard
3	1	002 7664	Joint & Tube Half Assembly with Guard
4	1	002 6704	Safety Slide Lock Repair Kit
5	1	002 6733	Safety Slide Lock Yoke Assembly
6	2	002 6705	Cat & Cross & Bearing Kit

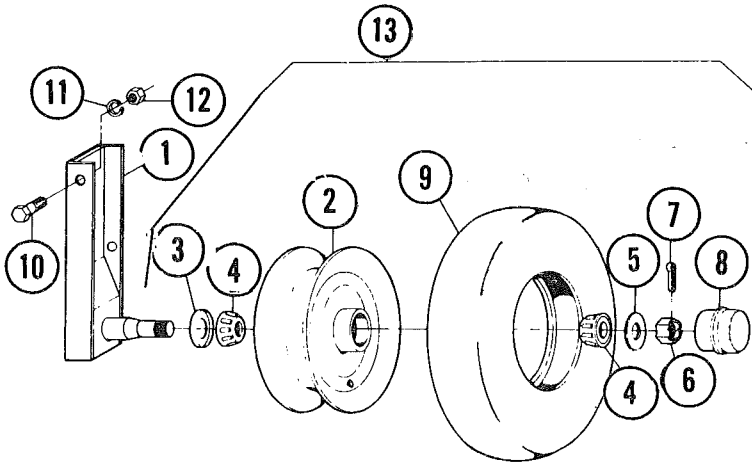
REF. NO.	QTY.	PART NO.	DESCRIPTION
7	1	112 6661	Bell Ext. w/Nylon Centralizer
8	1	002 6706	CV Center Housing Assembly
9	1	002 6702	Yoke & Shaft
10	2	002 6709	Nylon Repair Kit
11	1	002 7663	Centralizer
12	1	002 6707	Outer Guard
13	1	002 6699	Inner Guard
14	1	002 6695	Yoke, Tube & Slip Sleeve
15	1	002 6633	55R Cross & Bearing Kit
16	1	002 6687	Yoke 1 3/4" (44.5mm.) ID
17	1	000 8234	Set Screw 1/2-13 x 3/8" (12.7x9.5mm.)

1000 RPM Constant Velocity Universal Joint Telescoping Assembly



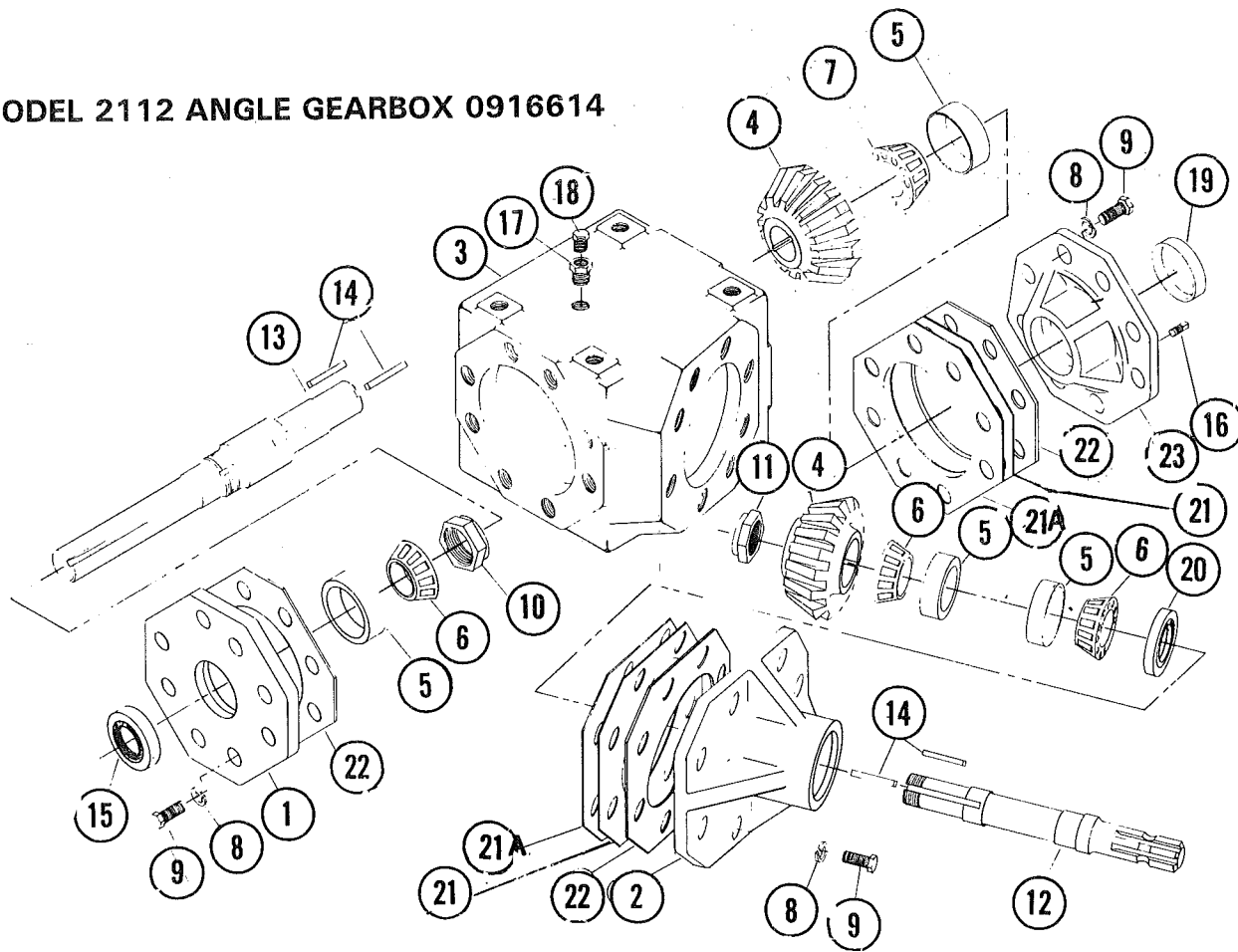
REF. NO.	QTY.	PART NO.	DESCRIPTION	REF. NO.	QTY.	PART NO.	DESCRIPTION
1	1	091 6618	Universal Joint & Tel. Shaft Assembly 55R (Cat 6 80° CV)	7	1	112 6661	Bell Ext. w/Nylon Centralizer
2	1	002 6700	Joint & Shaft Half Assembly with Guard	8	1	002 6706	CV Center Housing Assembly
3	1	002 7664	Joint & Tube Half Assembly with Guard	9	1	002 6702	Yoke & Shaft
4	1	002 6704	Safety Slide Lock Repair Kit	10	2	002 6709	Nylon Repair Kit
5	1	002 6703	Safety Slide Lock Yoke Assembly	11	1	002 7663	Centralizer
6	2	002 6705	Cat & Cross & Bearing Kit	12	1	002 6707	Outer Guard
				13	1	002 6699	Inner Guard
				14	1	002 6695	Yoke, Tube & Slip Sleeve
				15	1	002 6633	55R Cross & Bearing Kit
				16	1	002 6687	Yoke 1 3/4" (44.5mm.) ID
				17	1	000 8234	Set Screw 1/2-13 x 3/8" (12.7x9.5mm.)

GAUGE WHEEL ASSEMBLY



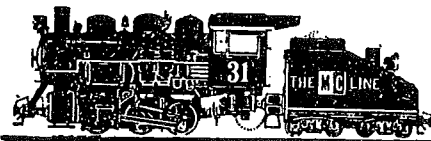
REF. NO.	PART NO.	DESCRIPTION
1	090 0018	Gauge Wheel Mount Weldment
2	092 8995	Wheel 8" w/non Demountable Hub
3	092 8991	Wheel Seal
4	092 8993	Bearing Cone Gauge Wheel
5	000 8177	3/4" Flat Washer (not used with 1" jam nut)
6	092 8987	3/4" Slotted Hex Nut
	091 8986	1" Slotted Jam Nut
7	000 8225	1/8" x 1 1/2" Cotter Pin
8	092 8992	Gauge Wheel Cap
9	092 8994	Tire - 4.00 x 8" Smooth Imp.
10	000 8137	1/2-13 x 1 1/4" Hex Head Capscrew
11	000 8180	1/2" Lockwasher
12	000 8163	1/2" Hex Nut
13	090 8996	Gauge Wheel Complete

MODEL 2112 ANGLE GEARBOX 0916614



REF. NO.	PART NO.	QTY.	DESCRIPTION
1	092 6709	1	Cover (output shaft)
2	092 6710	1	Hub
3	092 6711	1	Housing
4	092 6712	2	Gear (20T)
5	002 6010	4	Bearing Cup
6	092 6713	3	Bearing Cone
7	002 6011	1	Bearing Cone
8	000 8180	24	Lock Washer - 1/2"
9	131 8163	24	Cap Screw; 1/2" - 13 x 1 1/4"
10	112 8252	1	Stake Nut; 2" - 18 x 3/4"
11	002 6668	1	Stake Nut; 1 3/4" - 18 x 1/2"
12	092 6714	1	Input Shaft

REF. NO.	PART NO.	QTY.	DESCRIPTION
13	092 6715	1	Output Shaft
14	092 6716	4	Key - 3/8 Sq. x 2" Lg. (hard)
15	002 6667	1	Seal
16	002 8000	1	Plug - Level; 1/4" - 18 N.P.T.
17	002 6678	1	Vent Bushing
18	002 6677	1	Vent Plug
19	002 8601	1	Cap
20	092 6717	1	Seal
21	092 6718	As Req.	Shim .005 (bluc,
21A	092 6719	As Req.	Shim .010 (brown)
22	092 6720	3	Gasket - 1/32"
23	092 6721	1	Cover (end shaft)



Iron Horse Quality