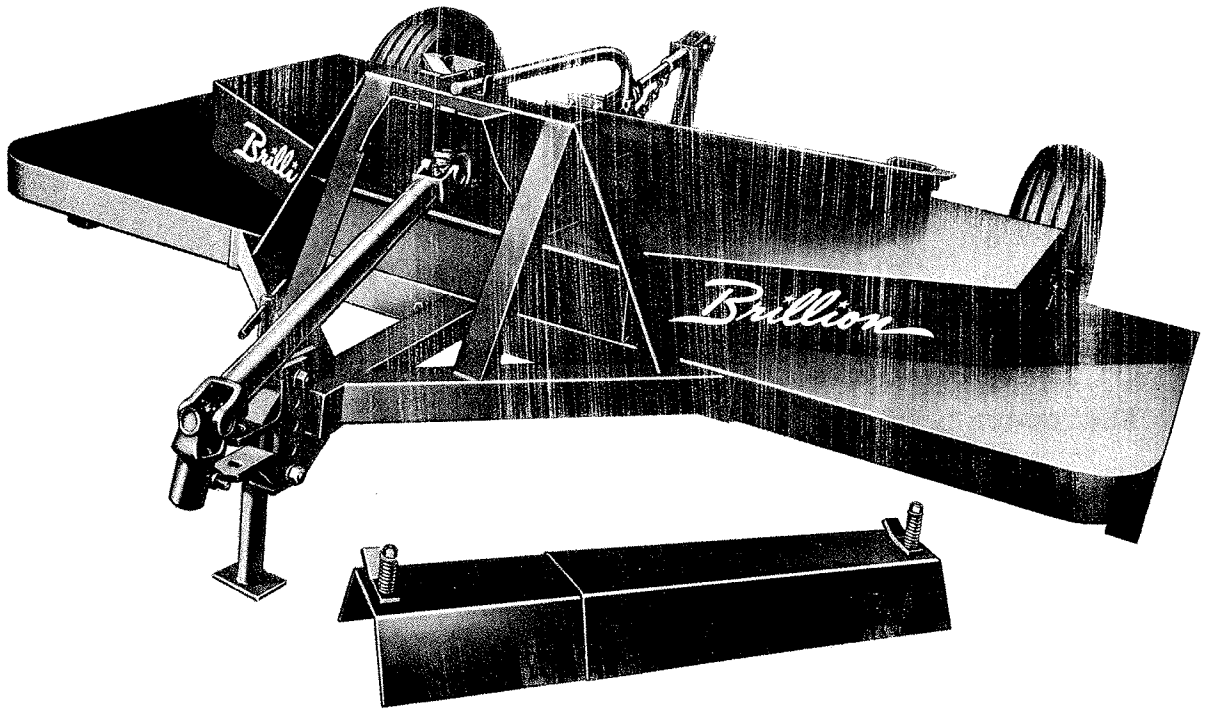


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# OPERATOR'S MANUAL

# *Brillion*

## 90" SHREDDER



**BRILLION IRON WORKS, INC.**  
BRILLION, WISCONSIN

# *Brillion*

## 90" CUT-ALL ROTARY SHREDDER

### MODELS

RM-90

RC-90

Your Brillion 90" Cut-All Rotary Shredder is built with the best materials and workmanship available. All machines are adjusted at the factory to assure proper mechanical operation. The gear box is protected by a 7/16" shear pin through the P.T.O. shaft.

You can avoid many future difficulties by following the operating and maintenance instructions and by correctly adjusting and lubricating the machine when necessary.

\* \* \* \* \*

#### LOCATION REFERENCE

"Right" and "Left", "Front" and "Rear", refer to the operator's "Right" and "Left", "Front" and "Rear" when he faces the same direction as the machine is traveling.

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## SPECIFICATIONS

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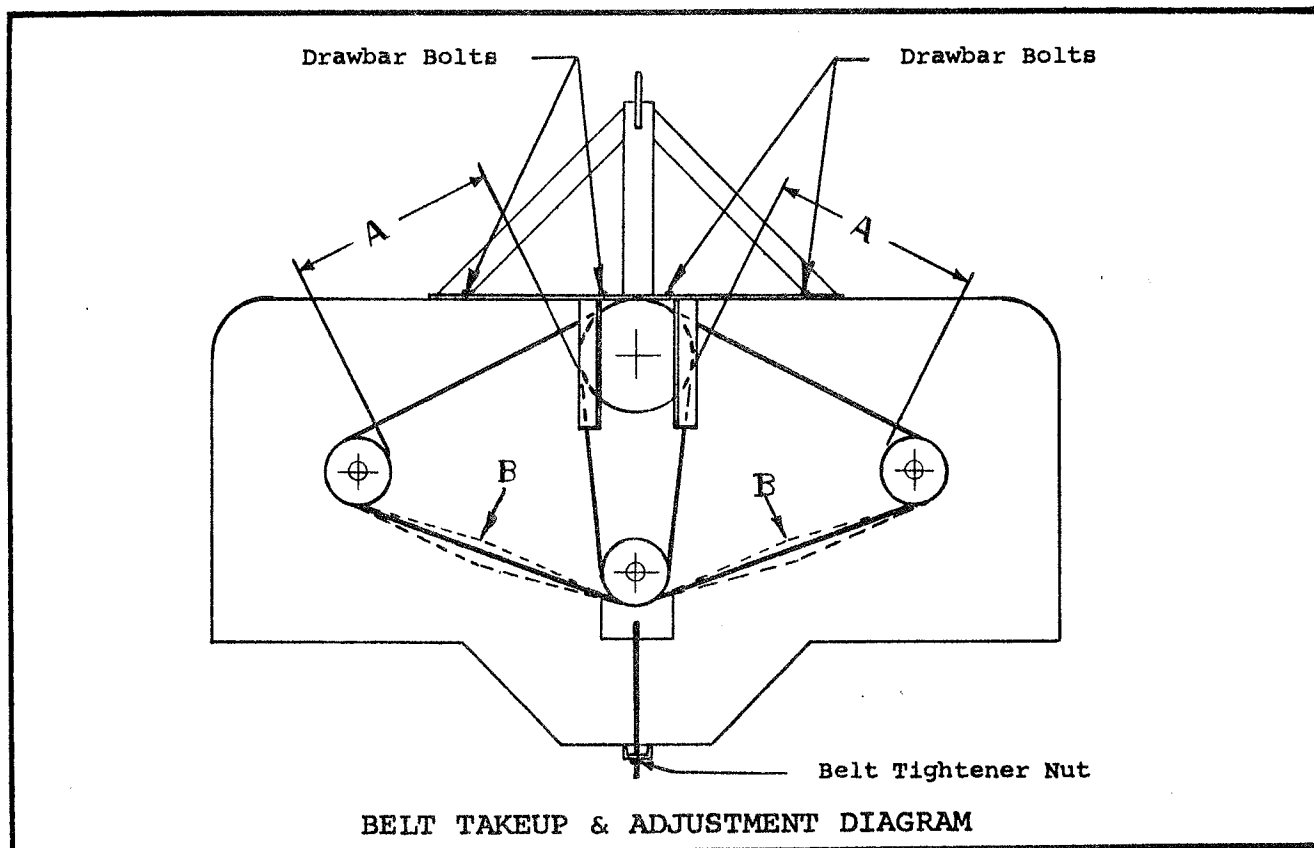
Width of Cut. . . . .	.90 inches
Height of Cut. . . . .	2-14 inches
Blades. . . . .	.Heat-Treated Alloy Steel
Hood. . . . .	.Heavy Gauge Steel Welded Assembly
Gears. . . . .	.Heat-Treated Alloy Steel Machine Cut-Run in Oil Bath Step-Up P.T.O. Speed 1.87-1 Gear Ratio
Blade Drive. . . . .	.Heavy Duty "V" Belt (B Section) Drive 1.7-1 Step Up Adjustable Belt Tightener
Bearings. . . . .	.Gear Housing Timken Tapered Roller Shim Adjusted Spindles - Blade Timken Tapered Roller Nut Adjusted Universal Joints Needle Bearings Wheel Hubs Timken Tapered Roller Nut Adjusted
P.T.O. Drive Shaft. . . . .	.Heavy Duty-2 Joint-Needle Bearing-Telescoping-To fit 1 3/8" Spline Tractor Power Take-Off Shaft (Shaft is available for 1 1/8" Spline)
Hitch. . . . .	.Adjusts to Drawbar Height of Tractor
Lift. . . . .	.Hand Hydraulic or Tractor Hydraulic
Wheel Size. . . . .	.6.70 x 15" Rim
Shredder Weight. . . . .	1040 Lbs.

## ASSEMBLY INSTRUCTIONS

### BRILLION 90" ROTARY CUTTER

Remove all wires and crating from all of the bundles, then follow the assembly steps listed below:

1. To begin assembly, block up the Hood Assembly to a height of about 8"-10" above the floor.
2. Attach the Axle Assembly to the rear of the Shredder Housing using the Axle Bearings found in the bag assembly along with (4) of the  $\frac{1}{2}$ " x  $1\frac{1}{2}$ " long bolts.
3. Attach the 12" diameter Pulley to the Output Shaft of the Gear-box. The (4)  $\frac{7}{16}$ " x 1" long capscrews, and lockwashers needed for attaching will be found in the carton.
4. Bolt the Drawbar and Drive Assembly to the front of the Hood using the (4)  $\frac{5}{8}$ " x  $1\frac{1}{2}$ " long bolts. Now check the dimensions between the edge of the large pulley and the two outside pulleys. This dimension is shown at figure "A" in the drawing below. This distance should be exactly equal on both sides to insure proper tightening of the belts. If the two dimensions shown at "A" are not identical, loosen the four bolts holding the drawbar assembly to the front plate of the Shredder and move the drawbar assembly to the right or left until the dimensions "A" are equal.



5. Now attach the two Angle Iron Braces to the Axle Bearing Supports and to each side of the drive frame. Assemble all (4) of the  $\frac{1}{2}$ " x  $1\frac{1}{2}$ " long bolts with lockwashers and nuts. After all of the bolts are in place, draw them up tight.
6. Loosen the four bolts holding the rear Center Spindle Carrier and install the (4) V-Belts.
7. After all of the Belts have been positioned on the Pulleys, draw up on the Belt Tightener Screw. When tightening the belts, be certain that the blades underneath the Shredder can clear each other. A new belt is properly tightened when the blades will clear each other by as little as  $\frac{1}{16}$ ". Now tighten the (4) bolts holding the rear spindle.
8. After the initial adjustment of the belt as described above, the belt will stretch slightly as the service is increased. Proper belt takeup at all times is indicated when the belt can flex approximately  $\frac{7}{8}$ " when pressure is applied midway between any two spindles. This point is shown above at "B".
9. The drawbar Jack should now be bolted to the Drawbar, attaching it to the Channel Bracket. Use (4)  $\frac{3}{8}$ " x  $\frac{3}{4}$ " long bolts, nuts and lockwashers found in the small parts bag.
10. Mount the Hydraulic Cylinder with the base of the cylinder attached to the front Drawbar Frame Assembly and the Yoke on the rod end, pinned to the Lift Shaft Arm.
11. Attach Hydraulic Pump Handle Clip found in the small parts bag. Place Clip on top of Front Frame Angle directly above the Input Shaft. Place the  $\frac{3}{8}$ " round screw through the Handle Clip and bolt through the large hole, placing a  $\frac{3}{8}$ " washer inside the angle and follow this with the lockwasher and nut.
12. Check all nuts and bolts to be sure that they are drawn up tight.
13. Remove the pipe plug from the gear case cover and replace it with the breather plug wired to the drawbar frame assembly. Check the oil level in the Gear Case. The oil should come to the level of the breather plug. If an additional amount of oil is needed, use SAE #90 transmission oil. Grease cutter spindles according to the lubrication instructions.
14. Place left and right hand Belt Guards over the Belts and Pulley and lock in position with the (4) Fasteners.
15. Attach the P.T.O. Shaft to the shredder Gear Box. To do this, remove the spacer, washer, lockwasher, and screw from the Input Shaft. Then slide the joint yoke on the shaft and insert one of

the 7/16" diameter x 2 3/4" long Shear Pins through the yoke and shaft. Place (2) 1/8" x 1" long Cotter Pins through the ends of the shear pin. Now replace the spacer, making sure it extends through the 3/4" diameter hole in the yoke. Lock in place with the flat washer, lockwasher and hexagon nut.

## LUBRICATION

### INPUT DRIVE ASSEMBLY

Fill to level of filler plug opening with No. 90 transmission grease. Check level weekly unless leakage of oil appears. Check daily if this should occur. Replace worn oil seals if necessary.

### CUTTER SPINDLES

Grease daily with a good quality grease. Two grease fittings will be found just below each of the 7" diameter pulleys.

### UNIVERSAL JOINTS

Grease daily for free operation.

### WHEEL BEARINGS

Have been packed at the factory. Should be repacked yearly with a good grade of wheel bearing grease.

## OPERATING INSTRUCTIONS

### CUTTING RANGE

The height of cut is controlled by adjusting the hydraulic cylinder to the desired position. To level the machine for various operations, simply loosen and remove the two bolts found in the front hitch. Now adjust the hitch plate to the desired height and replace the bolts, nuts, and lockwashers.

### DRAWBAR ADJUSTMENT

The drawbar jack should be used to raise or lower the front hitch to the tractor drawbar height. The jack is similar to an automotive jack and as such can be used to raise and lower the drawbar hitch by reversing of the small cam lever found on the left of the lever housing.

### TRACTOR SPEED

For most types of work, operate the tractor at full throttle to provide full P.T.O. speed with tractor forward speed of 3½ to 5 M.P.H. In heavy cutting, the forward speed should be reduced.

## TO REPLACE SHEAR BOLTS

Each of the six blades is equipped with a safety shear bolt to protect the drive when the machine encounters obstructions such as rocks, etc. When replacing the shear bolts, use  $\frac{1}{2}$  x 1  $\frac{3}{4}$ " long square head machine bolts. (See Parts List - Page 7).

## SHREDDING & CLIPPING

The shredder is equipped with suction blades especially designed for shredding stalks and mowing grass, weeds, etc.

When working in corn stalks, it is not advisable to shred more than two rows at a time. It is also advisable to set the front of the hood high by adjusting the drawbar hitch of the shredder. This will hold true when shredding any high stalks, weeds, or brush.

When mowing or clipping, keep the shredder hood level, and travel in a counterclockwise direction around the field, keeping the uncut material to the operator's left. This will eliminate the small amount of windrowing which might otherwise be noticed.

## SHREDDING STRAW OR WINDROWED MATERIAL

This can be best accomplished by traveling in a counter-clockwise direction around the field, traveling across the windrows, not down the windrow. This will produce a short evenly distributed cover of shredded material.

## AGRICULTURAL CYLINDER OPERATING INSTRUCTIONS

The cylinder assembly is built to exert force in the outward direction only. It can be used for the operation of any implement where the force required DOES NOT EXCEED  $1\frac{1}{2}$  TONS, or 3 TONS, depending on the size of cylinder used. Simply install the unit in the yokes provided on your machine.

When the cylinder is used in the semi-horizontal position, the base must be the lowest point.

The upper yoke assembly fits freely on the piston rod. This is done so that if there is a sudden hard pull on the shaft, the yoke can slide and return to its original position. In case of a pull beyond the stroke limit of the cylinder, the chain between the pins will prevent the yoke from coming off.

If the cylinder does not provide a full 8" stroke, it is likely that additional oil is needed.

TO RAISE-----Turn release valve in base firmly to right before pumping.

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TO LOWER----Turn release valve slowly to left

TO ADD OIL--Remove cylinder from implement and stand upright  
Fully collapse cylinder, and remove filler plug.  
Fill reservoir to height of filler plug hole.  
Use only HYDRAULIC JACK OIL.

DO NOT USE BRAKE FLUID, SHOCK ABSORBER FLUID, ALCOHOL  
OR GLYCERINE. THESE LIQUIDS WILL RUIN THE CYLINDER.

### CYLINDER REPAIR INSTRUCTIONS

The hydraulic cylinder assembly is manufactured for the Brillion Iron Works by the Blackhawk Manufacturing Company. The Blackhawk Service Stations on the enclosed list are equipped to furnish repairs, and to service these assemblies. Only parts listed on the attached repair sheet should be replaced. If any other repairs are needed, the complete 5C-144 or 6C-5 should be sent to the nearest Blackhawk Service Station or to the Brillion Iron Works.

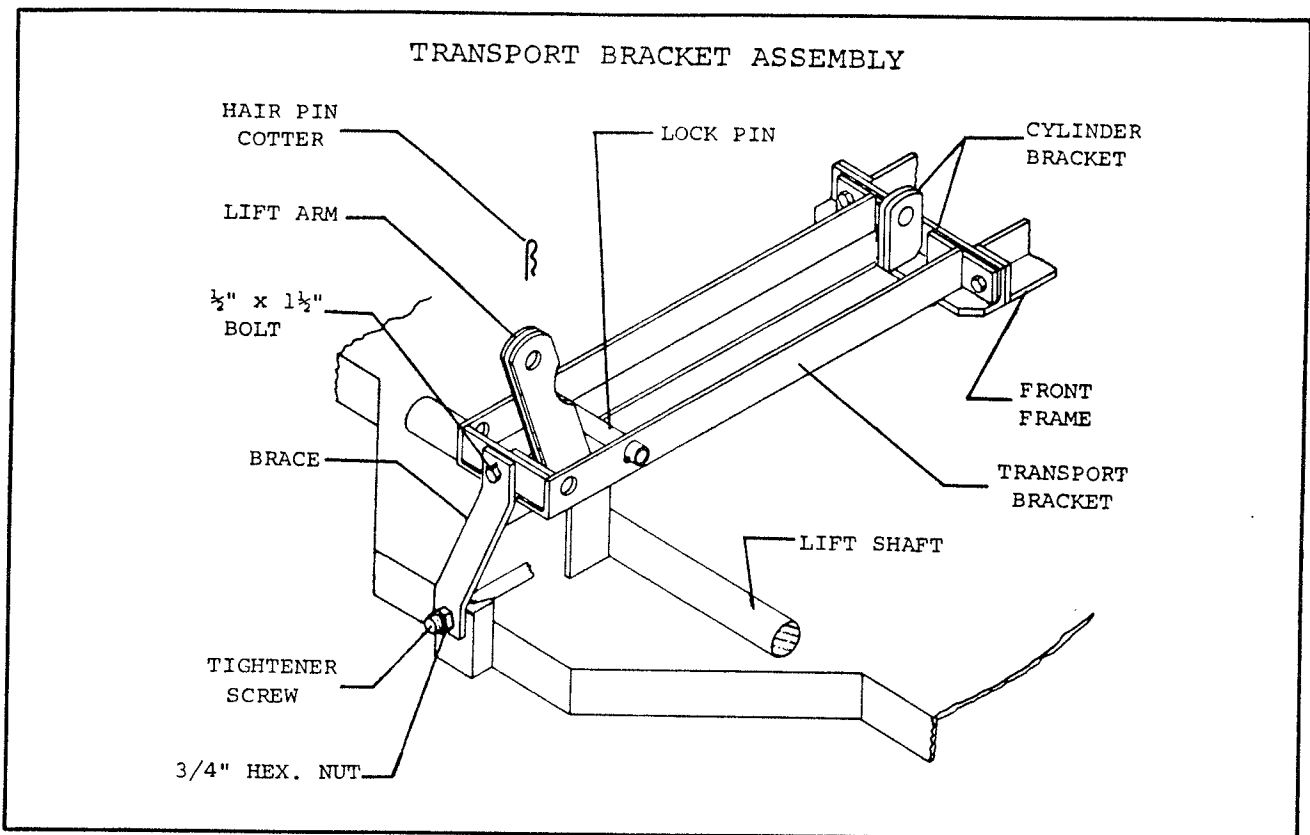
### **AGRICULTURAL V-BELT CARE**

When V-belts are replaced, a new matched set of belts should be installed. If only one new belt is installed, it will be shorter than the old belt. It will carry most of the load and require replacement sooner. The old belts can be saved and matched into sets with other old belts.

V-belts may be left on the equipment during the off season, but the tension should be removed by loosening the four belts holding the rear spindle carrier and backing off the tightener nut.

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#### ASSEMBLY INSTRUCTIONS

Remove the present lift cylinder from the shredder. To begin assembly, remove the (2)  $\frac{1}{2}$ " bolts that hold the cylinder bracket to the Front Frame of the shredder. These bolts can now be discarded. Now place the Transport Bracket over the Lift Arm (as shown in the above view). Then attach the Transport Bracket along with the Cylinder Bracket to the Front Frame Assembly, using the (2)  $\frac{1}{2}$ " x  $1\frac{3}{4}$ " long bolts furnished with the kit. Do not draw these bolts up tight until all parts of the kit have been assembled. The next step will be to remove the  $\frac{3}{4}$ " Hex. Nut from the Tightener Screw, and slide the Brace onto the screw and replace the Nut. Now attach the upper end of the Brace to the Transport Bracket using the  $\frac{1}{2}$ " x  $1\frac{1}{2}$ " long bolt from the kit.

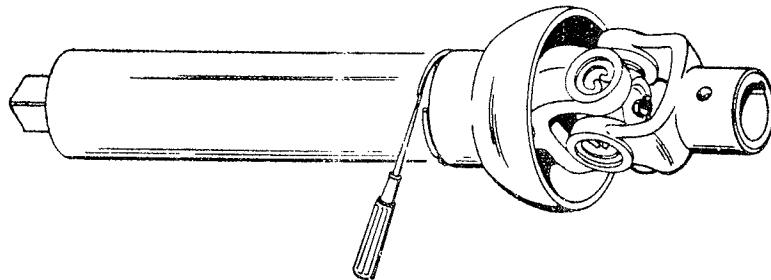
Now draw all bolts and nuts up tight. The hydraulic lift cylinder can now be replaced and the shredder raised to the transport position. When the cylinder rod is fully extended, insert the Pin through the forward set of holes in the Transport Bracket and secure with the Hair Pin Cotter. The shredder is now ready for transporting.

To lower the shredder to the operating position, simply check to see that the cylinder is fully extended, then remove the Hair Pin and Lock Pin. Relieve the cylinder pressure to lower the unit to the operating position. During operation, the Lock Pin should be placed in the rear set of holes in the Transport Bracket and held in place with the Hair Pin Cotter.

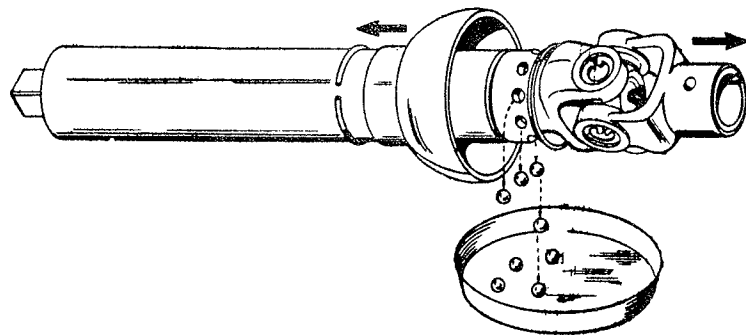


INSTRUCTIONS FOR REMOVING  
QUICK DETACHABLE FREE WHEELING GUARD

1. Use screw driver or sharp pointed tool to remove snap ring from groove at back of bell.

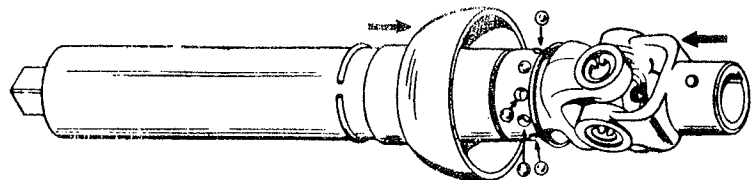
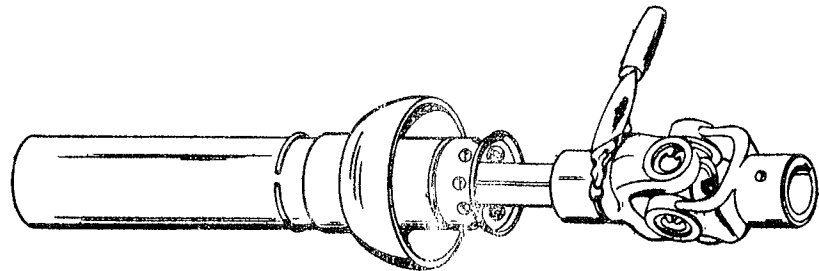


2. Hold assembly over container so that balls will not be lost and slide bell away from joint toward opposite end of tube. If balls do not drop out, slide tube away from joint, forcing balls from cage.



INSTRUCTIONS FOR ASSEMBLING  
QUICK DETACHABLE FREE WHEELING GUARD

3. Fill raceway in yoke with grease.
4. Slide tube with bell and snap ring over raceway. Insert balls through holes into raceway where grease will hold them in place. Slide bell over balls. Slide snap ring into groove.



Grease joints, telescoping shafts and guard regularly. This Quick Detachable Free Wheeling Guard is the finest guard built. It is provided for your protection.

BEARING ADJUSTMENT INSTRUCTIONS  
FOR  
90" SHREDDER SPINDLES

This spindle assembly is equipped with tapered roller bearings. Correct adjustment will assure trouble free operation.

To adjust the bearings, place the pulley or pulleys on the shaft along with the square key, flat washer and the 7/8" hex slotted nut. Draw up on the nut until all end play has been removed from the shaft. Then back the nut off sufficiently to line up the slotted nut with the nearest cross drilled hole in the shaft, and insert the cotter pin. Now place a hardwood block or brass punch on the threaded end of the shaft, and strike several blows with a hammer to insure proper seating of the bearings. The spindle should now turn quite freely. If it does not, remove the cotter pin and back the nut off to the next cross drilled hole, insert the cotter pin and again rap the shaft end.

When the bearings are adjusted correctly, a light drag will be noticed (caused mainly by the grease seals). To lock the adjustment, bend over the ends of the cotter pin.