

# ***BWImplement Co.***

---

288 W. FRONT STREET  
P.O. BOX 758  
BUTTONWILLOW, CA 93206  
PHONE 661-764-5254  
FAX 661-764-5253  
[www.bwimp.com](http://www.bwimp.com)



## **RS84-2**

84" Flail Shredder  
Super Flails

Version: 11.10.11

---

# ***Operators Manual***

**Disk Information:**

Model #: RS84-2

Serial #: \_\_\_\_\_

Date Manufactured: \_\_\_\_\_

Width of Cut: 84"

Number of Flails: 24

Flail Size: 5/8" x 3" x 10"

Approx. Weight: 2,920 lbs.

Tractor Horsepower: 90 min / 120 max

## **BW IMPLEMENT COMPANY WARRANTY**

### **LIMITED WARRANTY STATEMENT**

BW Implement Company warrants to the original purchaser all new Culti-Mulch Equipment, along with attachments, to its authorized dealers and they in turn warrant the equipment to the original retail purchaser to be free from defects in material and workmanship under normal use and service for which intended for a period of one (1) season or one thousand (1000) acres of use from the warranty start date, whichever occurs first. BW Implement Company also warrants to the original purchaser all new Tillage Equipment, along with attachments, to its authorized dealers and they in turn warrant the equipment to the original retail purchaser to be free from defects in material and workmanship under normal use and service for which intended for a period of six (6) months from the warranty start date. Implements used in construction or land development are warranted for a period of ninety (90) days from the warranty start date. This warranty is valid only if the machinery is set up properly and operated in accordance with the recommendations set forth in the Operator's Manual.

Our obligation under this warranty shall be limited to repairing or replacing, free of charge to the original purchaser, any part, or defect in material and workmanship, that in our judgment shows evidence of such defect, provided further that such part shall be returned within thirty (30) days of failure to BW Implement Company, routed through the dealer from whom the purchase was made, transportation charges prepaid.

This warranty shall not be interpreted to render BW Implement liable for injury or damages of any kind or nature to persons or property. This warranty does not extend to the loss of crops, loss due to delay in planting or harvesting, or any expense or loss incurred for labor, substitute machinery, rental or for any other reason.

This warranty is subject to any existing conditions of supply that may directly affect our ability to obtain materials or manufacture replacement parts.

BW Implement reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligation to owners of units previously sold.

### **WARRANTY REGISTRATION REQUIRED**

BW Implement Company shall have no obligations under this warranty unless the completed Warranty Registration form is returned to BW Implement Company within thirty (30) days of the sale of the product.

### **SECURING WARRANTY SERVICE**

Warranty service will be performed by any authorized BW Implement Company dealer. At the time warranty service is requested, the purchaser must present evidence showing the equipment is eligible for warranty service

## UNAPPROVED MODIFICATIONS OR ATTACHMENTS

The warranty obligations of BW Implement Company shall be terminated if equipment is modified or altered and such modification or alteration has not been approved by BW Implement Company, or if the equipment has been equipped with an attachment not approved by BW Implement Company

## ACCIDENTS AND NORMAL MAINTENANCE

The provisions of this warranty do not apply to any equipment or components thereof, which in the judgment of the dealer or BW implement Company has been damaged by: (1) improper use; (2) accident; (3) lack of maintenance; (4) improper storage; (5) in the case of Mulchers and Power Cultivators, when used on an articulated tractor; (6) use when the tractor PTO horsepower rating exceeds the maximum horsepower rating established by BW Implement Company; (7) if repairs have been made with parts other than those obtained through BW Implement Company; (8) any other casualty or negligence. The following items are considered "Normal Wear" items and are **NOT** covered by this warranty: Mulcher Teeth, Bed Shaper Parts, all UHMW and plastic parts, Disc Blades, Disc Scraper Blades, Chisel and Ripper points and Wear Plates, Box and Drag Scraper Blades, Shredder Flails, Til-N-Pak Rings.

Except as stated above, no dealer, employee or representative of the dealer or BW Implement Company has any authority to bind BW Implement Company to any affirmation of fact, representation, or warranty concerning BW Implement Company manufactured equipment unless made in writing and executed by the General Manager and Chief Executive Officer of BW Implement Company. No one is authorized to alter, modify or enlarge this warranty nor the exclusion, limitations and reservations except the General Manager and Chief Executive Officer of BW Implement Company.

**This warranty is given in lieu of all other warranties, whether express or implied, and BW Implement Company makes no representations or warranties expressed or implied, including the implied warranties of merchantability and fitness for particular purpose, except as specifically described in the warranty.**

# **B.W. SHREDDER MANUAL**

## **TRACTOR ATTACHMENT (PULL TYPE)**

The B.W. Shredder can be attached to any tractor with a PTO conforming to ASAE-SAE standings. The hitch must be adjusted to permit the PTO shaft to run as straight as possible. The hitch must be connected to the drawbar and all jack stands must be lifted and locked. The jack stand should be locked in its highest position during operation and transport.

## **OPERATION**

**NOTICE: DO NOT EXCEED RECOMMENDED CUTTING CAPACITY OF YOUR MACHINE.**

Standard models are designed to cut up to 1 ¼” brush. Heavy-duty models are designed to cut up to 2” brush.

Before starting the shredder, make sure it is properly greased, and the tire pressure is at the proper level. It is important that the oil level in the gearbox is checked and filled if needed.

During start-up and shutdown, always adjust the throttle down as far as possible before engaging or disengaging the PTO. This will help avoid damage or excessive wear.

## **CUTTING HEIGHT ADJUSTMENT**

Continually cutting below the recommended height of 2” or on uneven ground increases the likelihood of ground scalping. This frequent scalping can reduce the life of the shredder components, and is considered to be **MISUSE** not covered by the B.W. warranty. The cutting height can be adjusted by use of the hydraulic cylinder. Use of a pre-adjusted cutting height can result in more uniform crop shredding, as well as speeding up the operation by eliminating the need to adjust the height with every turn. This will also eliminate the possibility of the rotor striking the ground every time the machine is lowered to the cutting position.

Another important consideration is the PTO shaft angle. For minimum vibration and longest PTO shaft life, the stub shaft on the shredder and the tractor PTO shaft should be as parallel as possible after adjustment into the proper operating position. Removal of the PTO shaft from the shredder when adjusting the cutting height may provide a better viewpoint to accomplish this.

Once the operating position is acquired, the depth stop control can be set on the hydraulic cylinder. This is done by loosening the bolt on the depth stop then sliding the depth stop on the rod to the cylinder barrel and retightening the bolt. This will help to keep the cutting height position if the shredder is raised and then lowered.

## **RAKE MAINTENANCE (HEAVY-DUTY MODEL ONLY)**

Your B.W. Heavy Duty Shredder is designed with an individual rake lift bar and hydraulic cylinder. Always raise the rake off the ground when turning or when going backward. Failure to do so can damage the rakes. The rake tips are hard faced to help prevent wear. Check and replace any rake tips that are worn. Replace or straighten any rakes that are bent. Frequently check for bent rakes, as they can cause damage to the flails and rotor drums.

## **GENERAL SAFETY**

This manual is designed for the safe operation of the B.W. Shredder. Read it carefully and be familiar with all of the controls and proper use of this equipment. It is extremely important to know how to stop the unit and to disengage the controls quickly!

Children should never be allowed to operate this equipment, and adults should not be allowed to operate the equipment without proper instruction.

Keep all pets and young children clear of the area of operation.

Check the area of operation for all foreign objects that may get into the machine causing damage, or that may be thrown from it, striking other objects or people. Remove all such objects from the area.

Only attachments and accessories designed for the B.W. Shredder should be used.

No adjustments, cleaning, lubrication, or servicing should be done while the engine is running or when the tractor ignition key is in the "on" position. (**SEE SHUTDOWN PROCEDURE**)

Before starting the engine, disengage all power to the Shredder and shift into neutral or park.

## **SHUTDOWN PROCEDURE**

The shutdown procedure must be followed before making any adjustments, cleaning, lubricating, or servicing any part.

1. Throttle is to be moved to slow idle position.
2. Disengage all power to the shredder. (PTO, clutch, hydraulic valve, etc.)
3. Engine must be off and key should be removed from the ignition.
4. Do not inspect until the rotor has stopped completely.

## **OPERATING SPEED**

Shredding conditions will determine the required ground speed. Generally, the tractor can be driven between 2 and 5 MPH without undue wear to the shredder.

**!!! PLEASE NOTE !!!** Drum speed will be reduced; causing layback of the flails, which may break rotor shafts, and cause premature wear to flail bolts and bushings, as well as improper cutting if the B.W. Shredder is operated below the rated RPM. If conditions are difficult, downshift to reduce tractor speed while maintaining rated engine RPM. If conditions are too difficult, delay until conditions improve.

**Never operate above rated RPM.**

## **ROTOR BALANCE MAINTENANCE**

The rotor of the B.W. Shredder is factory balanced and must remain in balance at all times. Should any worn knives on the machine need replacing, be sure to replace to the complete set of knives to maintain the rotor balance. Should the rotor be bent or need to be rebalanced, see your dealer for the necessary repairs. The rotor must be returned to the factory for proper reconditioning.

**!!! CAUTION !!!** Should excessive vibration occur, the tractor PTO should be disengaged immediately and the tractor ignition turned off. Operation should not continue until the cause of the vibration has been determined and corrected.

Be sure the rotor has stopped turning completely before checking the knives.

Be sure to maintain recommended ground clearance at all times. Failure to do so may mean repeated impact to the knives on the ground or other objects, causing excessive wear and damage to the tractor or shredder.

## **BELT TENSION**

The rotor drive belts should be ½" maximum deflection at the midpoint between the pulleys.

## **LUBRICATION**

The operation and component life of the B.W. Shredder are dependent on proper and regular lubrication. The following recommended frequencies of lubrication are based on normal conditions. Adjustments in requirements may be needed under severe or unusual conditions.

Replace any missing or broken grease fittings. Fittings should be cleaned before greasing.

### **ITEMS REQUIRING LUBRICATION AFTER 8 HOURS RUNNING TIME:**

- Outer rotor bearings, located on the outside ends of the shredder. (2)
- U-Joints on the CV shaft (3), and 2 additional fittings located under the bell housing.

### **ITEMS REQUIRING LUBRICATION AFTER 25 HOURS RUNNING TIME:**

- Telescoping PTO tube (1), located by lining up the hole in the PTO guard with the zerk.
- Line shaft U-Joints (2), located on the side of the gearbox.
- Drive pulley shaft bearing (2), located behind the drive pulley inside the belt compartment.

### **ITEMS REQUIRING LUBRICATION AFTER 100 HOURS RUNNING TIME:**

- Wheel bearings.
- Gearbox (Change oil with 80W90 wt.)

## **GENERAL SERVICE INFORMATION**

### **ROTOR REMOVAL**

**!!! CAUTION !!!** The rotor weighs are heavy. If this procedure is begun with the B.W. Shredder in operating position, proper lifting devices must be used to lift and remove the rotor.

1. Apply an appropriate supporting mechanism to the shredder.
2. Loosen the setscrews on the bearing lock collars. Support the weight of the rotor.
3. Loosen and remove the outer bearing from the rotor shaft.
4. Remove the rotor from the shredder.

### **PULLEY REMOVAL**

1. Remove all cap screws.
2. Install all cap screws into threaded holes.
3. Tighten all screws evenly, beginning with screw that is farthest from the bushing saw slot, until the bushing grip is released. Slide the pulley off of the shaft.

**!!! CAUTION !!!** Excessive or uneven pressure on the cap screws could damage the bushing flange. This could make its removal difficult without also damaging the sheave. Excessive screw torque may cause damage to the bushing or sheave. Do not use lubricants as their use can cause sheave breakage.

### **GEARBOX REMOVAL**

1. Remove bolts securing the line shaft bearing located behind the large pulley.
2. Remove belts
3. Remove the set bolts securing the U-Joint to the gearbox.
4. Slide the line-shaft outward until the U-Joint is free of the shaft.
5. Repeat lines 1-4 to remove opposite side line-shaft.
6. Remove PTO shaft.
7. Remove the 8 bolts securing the gearbox to the frame.



## **ROTOR REASSEMBLY**

Observe cautions under pulley removal.

1. Clean shaft, hub bore, tapered bushing surface, and bushing bore of oil, paint, dirt, etc.
2. Place bushing in hub and insert cap screws thru drilled holes in bushing flange. Tighten cap screws finger-tight into thread holes in hub.
3. With the key on the shaft, slide loosely assembled unit on to the shaft so that the cap screw heads are on the outside. As a guide for the positioning of the drive pulley, measure the distance from the end plate to the inside of the drive pulley hub. To allow for the distance the hub will travel during tightening, decrease this measurement by approximately 3/16".
4. Tighten the cap screws evenly to a torque of 30 ft lbs. Then tighten the set-screw over the key to 24 ft-lbs. The torque values for the drive pulley screws are 15 ft-lbs. for the cap screws, and 7.25 ft-lbs. for the set-screws.
5. Check pulley alignments. Repeat the above procedure if necessary.
6. Install belts by reversing the procedure under gearbox removal.

## **STORAGE**

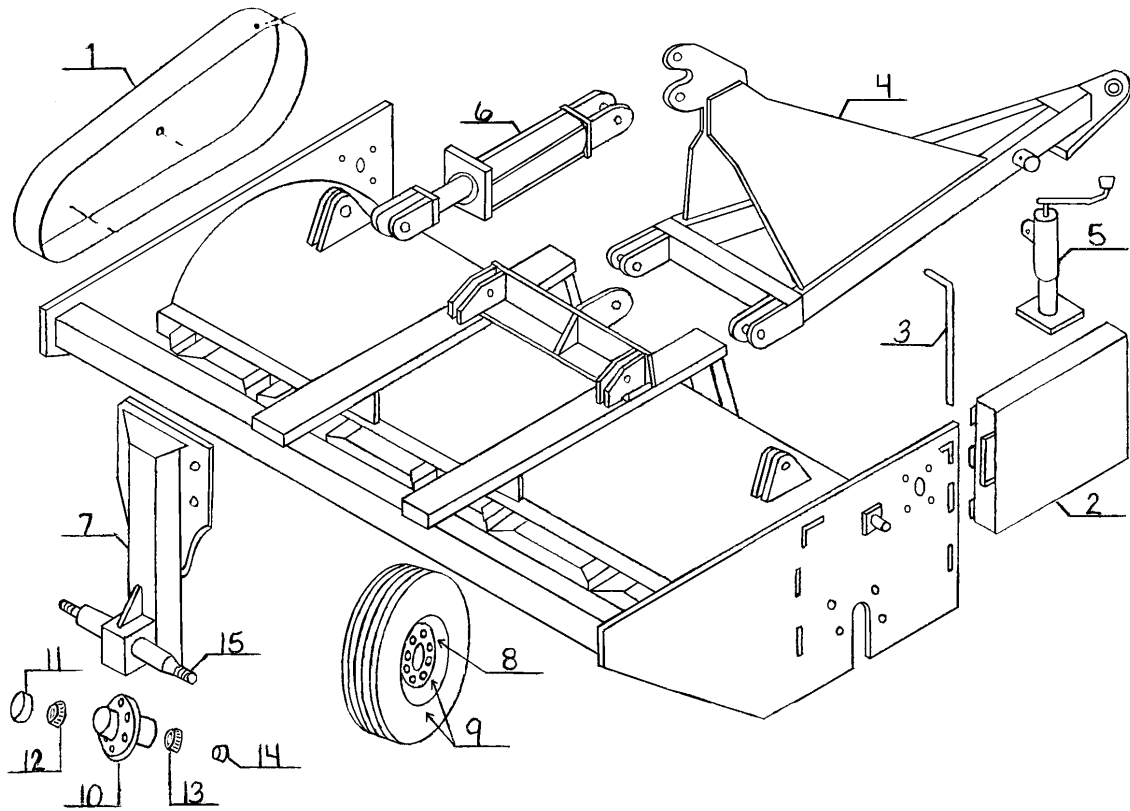
### **END SEASON**

1. Clean shredder thoroughly.
2. Lubricate shredder parts as described under the lubrication section.
3. Set shredder on blocks, but do not deflate tires.
4. Be sure to store shredder in a dry area.

### **BEGINNING OF SEASON**

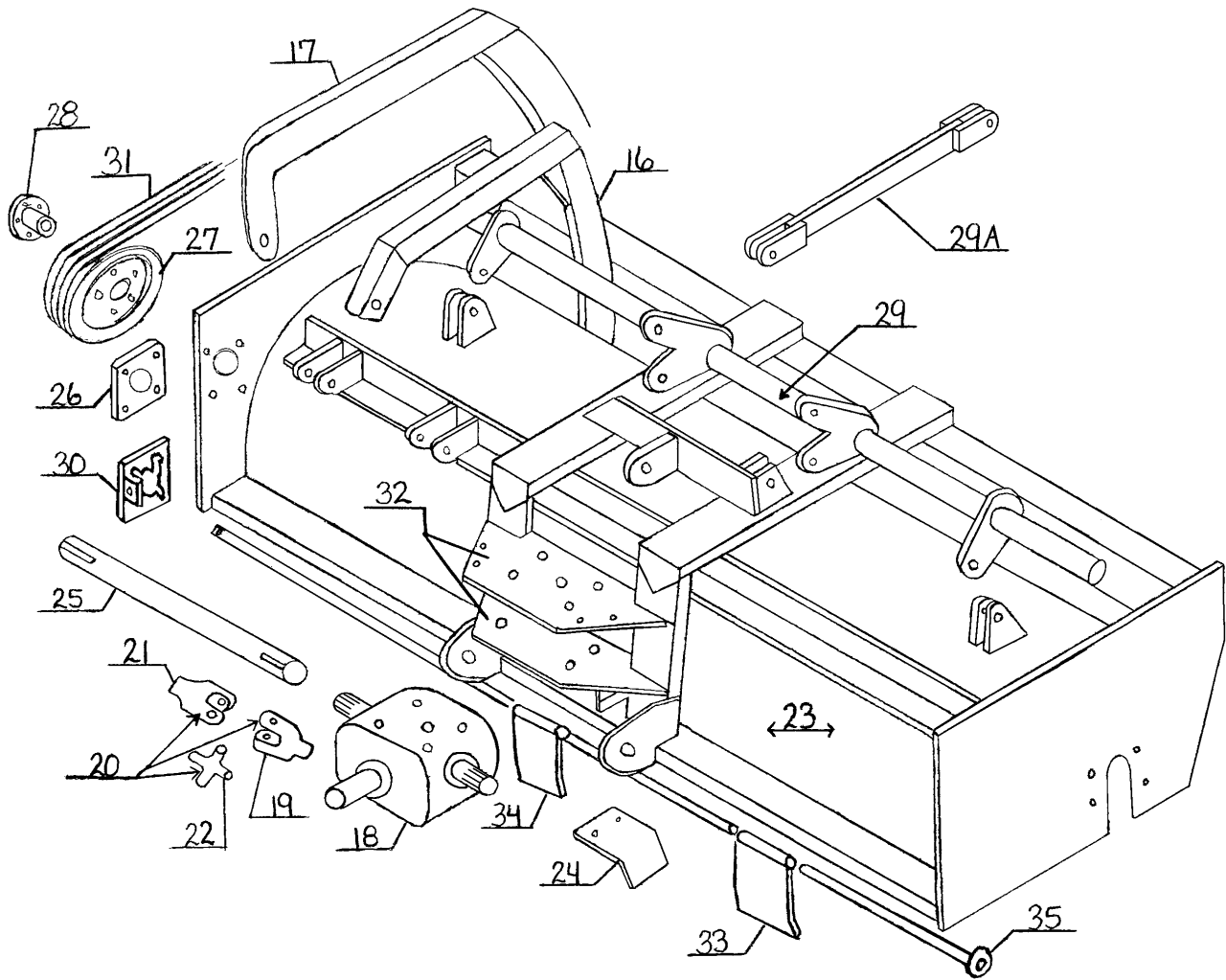
1. Check tire air pressure and inflate to 18 to 20 PSI.
2. Check gearbox and drain and refill to proper level.
3. Lubricate parts.
4. Tighten loose nuts, bolts, and setscrews.
5. Check and replace complete set of knives if any knives are worn. (This is necessary to help maintain rotor balance.)
6. Review B.W. Shredder Operator's Manual.

## Tongue & Wheels



Ref.	Part No.	Description
1	-----	Belt Guard (Old Style)
2	143006A	Belt Guard (New Style)
3	143006B	Belt Guard Pin
4	143090	Tongue
5	151401	Tongue Jack
6	143024	Hydraulic Cylinder
7	143189	Dual Wheel Strut
8	143012	Wheel
9	143012A	Wheel & Tire
10	143013	Wheel Hub Complete
11	143014	Hub Seal
12	143015	Inner Bearing
13	143018	Outer Bearing
14	143019	Hub Dust Cover
15	143180	Dual Spindle – Q888

## Main Housing

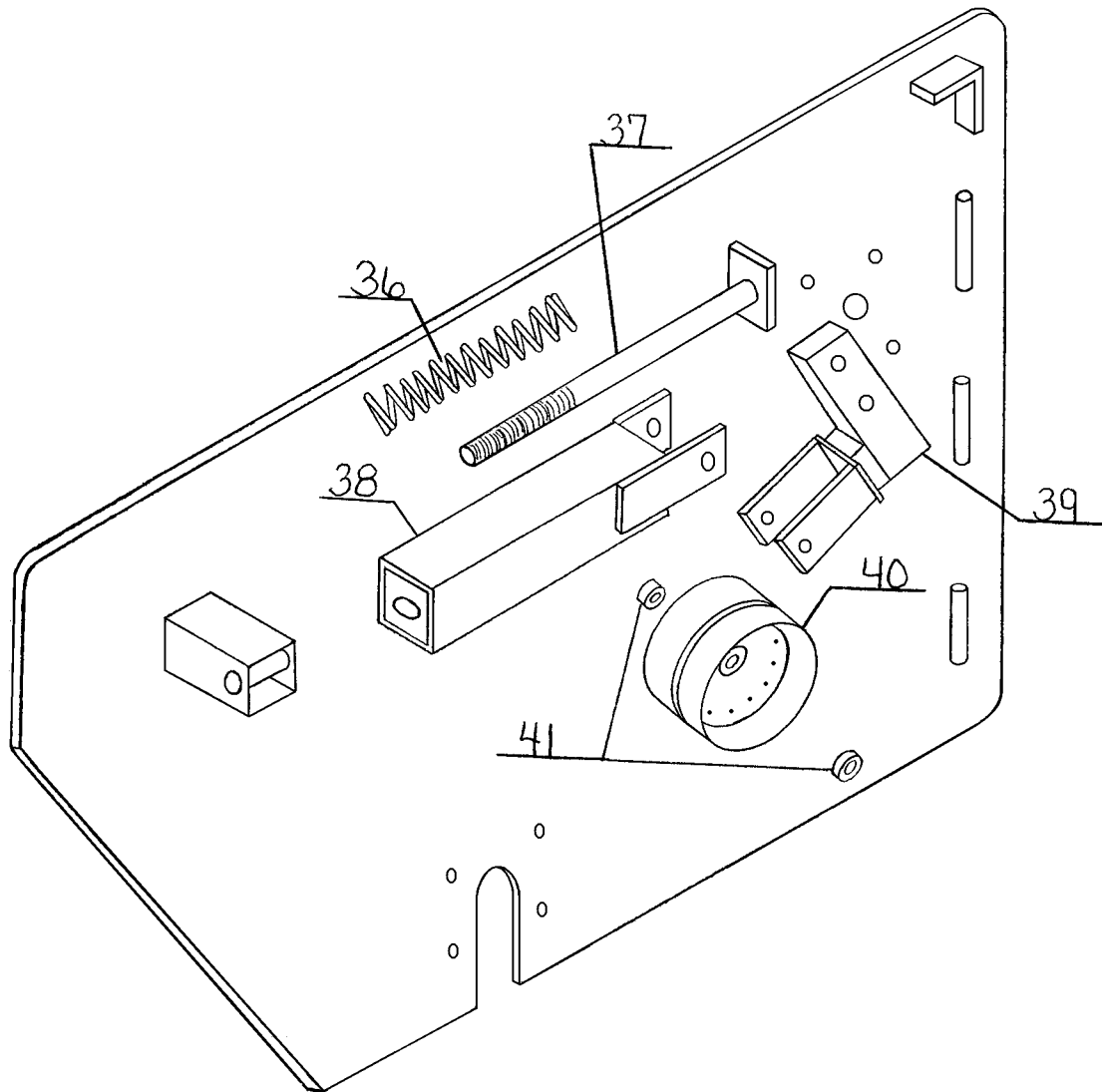


Ref.	Part No.	Description
16	143156	Rake Tooth (New Style)
17	-----	Rake Tooth (Old Style)
18	143097	Bondioli Gear Box
19	143085	Gear Box Yoke
20	143084	U-Joint Complete
21	143087	Line Shaft Yoke
22	143086	U-Joint Repair Kit
23	143001D	Main Housing – RS84
24	143076-84	Line Shaft U-Joint Guard – LH
	143077-84	Line Shaft U-Joint Guard – RH
25	14300984	Line Shaft – RS84

## Main Housing

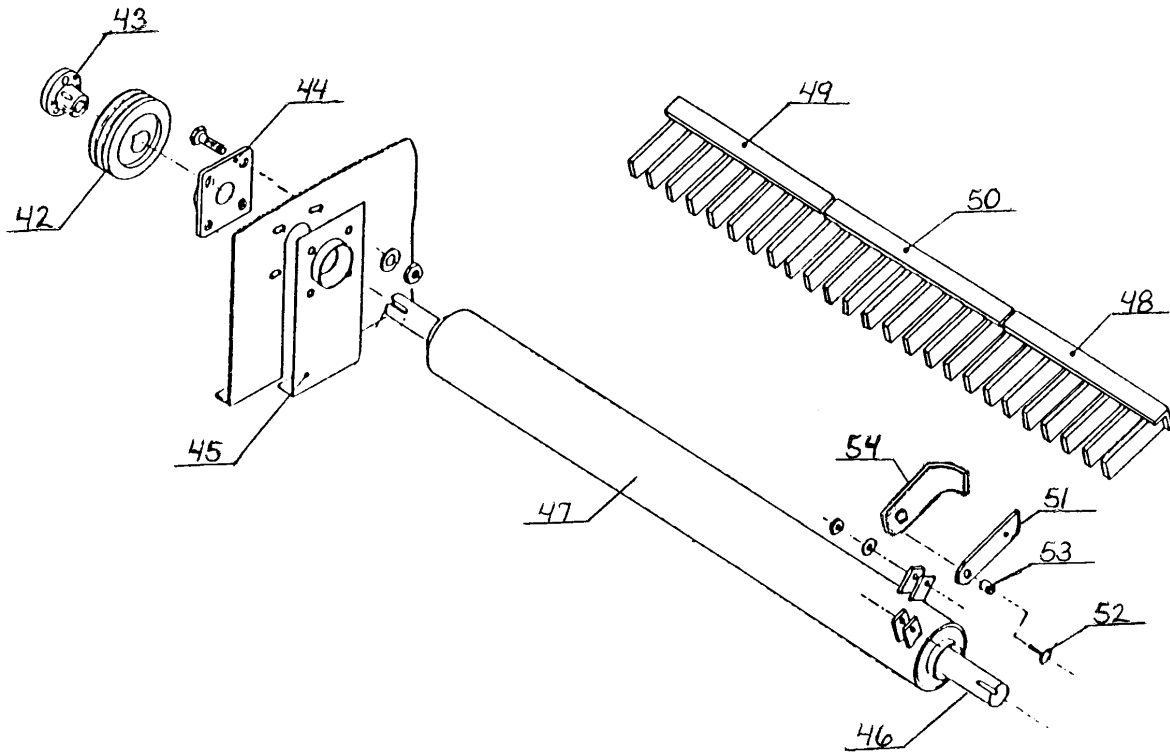
<b>Ref.</b>	<b>Part No.</b>	<b>Description</b>
26	143071	Line Shaft Bearing
27	143072	Line Shaft Pulley
28	143073	Line Shaft Pulley Bushing
29	14315384	Rake Lift Bar – RS84
29A	143244	Shredder Lift Bar
30	-----	Bearing Plate (Old Style)
31	143074B	Four-groove Banded Belt
32	143178	Gear Box Conversion Plate
33	143154	Brush Deflector Section
34	143155	Brush Deflector Center Section
	1431554	Brush Deflector Center Section – 4”
35	143152	Brush Deflector Rod – RS84

## Drive Assembly



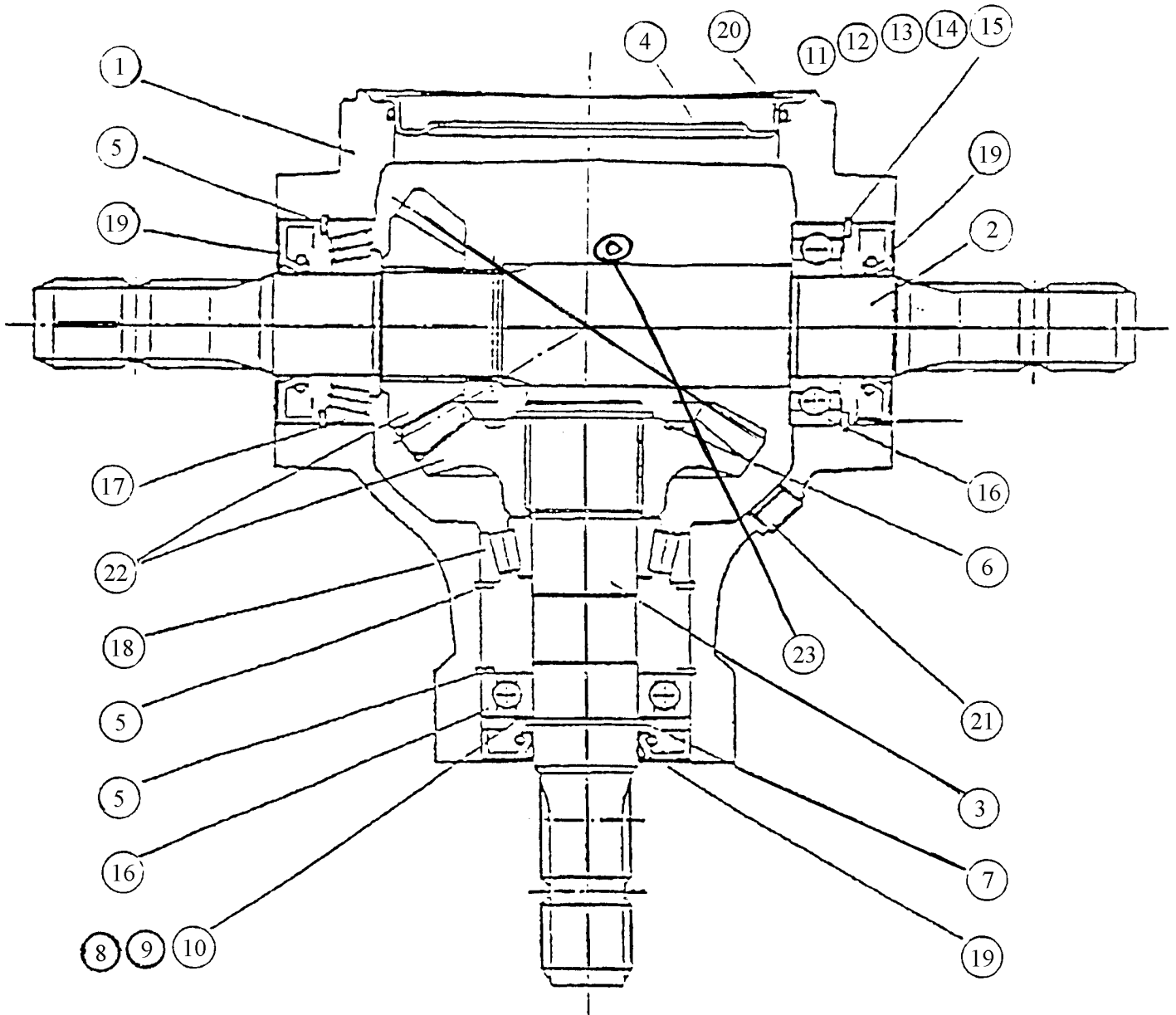
Ref.	Part No.	Description
36	143185	Spring
37	143186	Spring Tension Pin
38	143187S	Spring Tension Bracket
39	143171	Idler Mount Bracket
40	143170	Belt Idler
41	143188	Spacer

## Rotor Assembly



Ref.	Part No.	Description
42	143080	Rotor Pulley
43	143081	Rotor Pulley Bushing
44	143161	Rotor Bearing –2”
45	143079	Bearing Trash Guard
46	143197A	Stub Shaft – 2”
47	143123	84” Rotor, 2”
	143126	84” Rotor, 2” w/ Flails, Bolts, Bushing
48	143236	RS84 – Shredder Bar – LH/RH (Not used with grass flails)
49	143237	RS84 – Shredder Bar – Center (Not used with grass flails)
50	143236	RS84 – Shredder Bar – LH/RH (Not used with grass flails)
51	143095	Standard Flail – Hard Faced – 24 Req. (optional)
	143096	Super Flail – Chrome – 24 Req. <b>(installed)</b>
52	143091	Flail Bolt and Nut
53	143092	Flail Bushing
54	143157	Super Grass Flail (optional)

# Gear Box

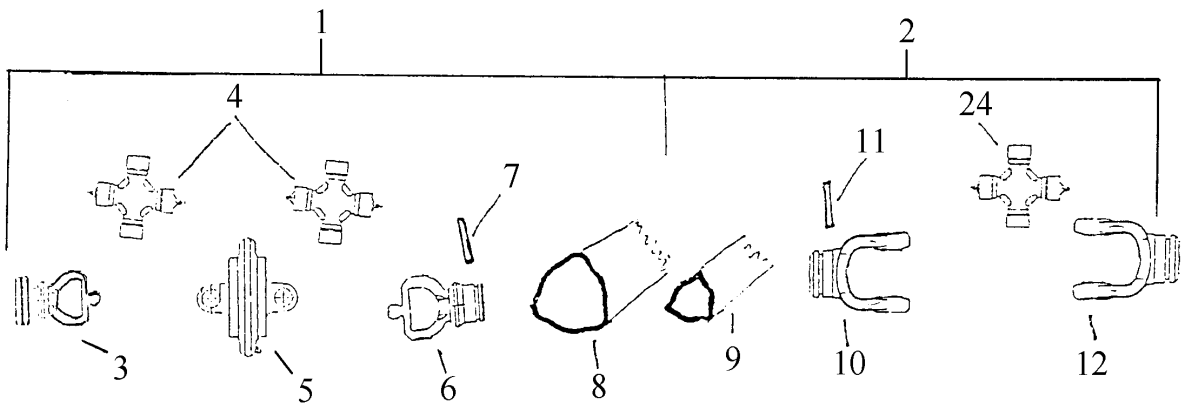
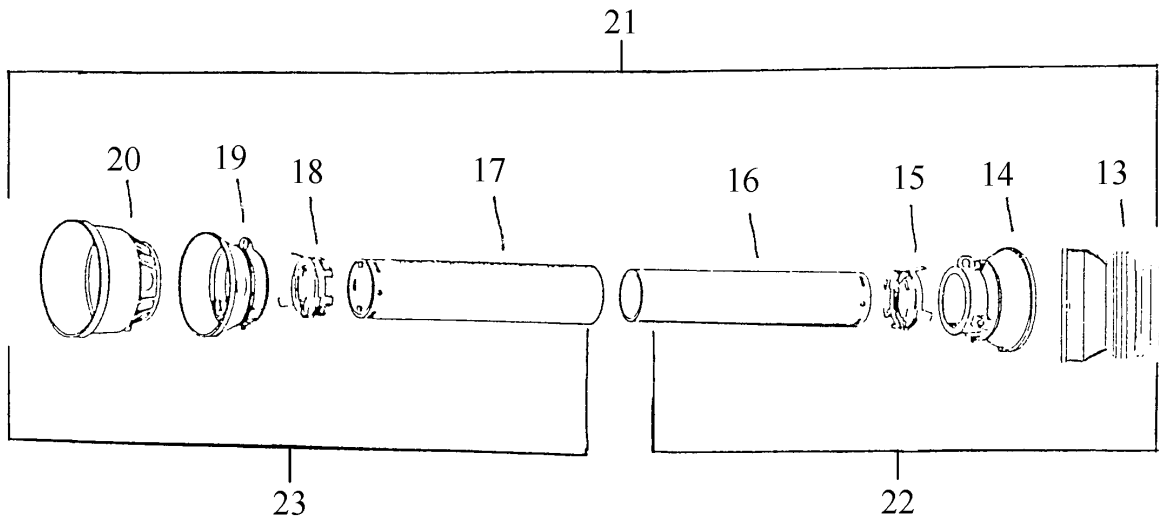


## Gear Box

<b>Ref.</b>	<b>Part No.</b>	<b>Description</b>
*	143097	Complete Gearbox
1	143099	Gearbox Housing
2	143100	Output Shaft
3	143102	Input Shaft
4	143103	Housing Cover
5	143104	Snap Ring Bearing Retainer
6	143105	Snap Ring – Input Gear
7	143106	Snap Ring – Input Shaft
8	143107	Shim, 6mm – Input Shaft
9	143108	Shim, 8mm – Input Shaft
10	143109	Shim, 1mm – Input Shaft
11	143110	Shim, 6mm – Output Shaft
12	143111	Shim, 8mm – Output Shaft
13	143112	Shim, 1mm – Output Shaft
14	143113	Shim, 3mm – Output Shaft
15	143114	Shim, 4mm – Output Shaft
16	143115	Bearing – Input Shaft
17	143116	Tapered Bearing – Output
18	143117	Tapered Bearing – Input
19	143118	Oil Seal – All Shafts
20	143119	Oil Seal – Back Cover
21	143120	Oil Plug
22	143121	Bevel Gear – Set Only
23	143101	Breather Plug



**Driveline**  
**CV 80 Deg. – Series 650**



## Driveline

<b>Ref.</b>	<b>Part No.</b>	<b>Description</b>
*	143064	Complete Driveline
1	143129	Tractor End Half Shaft with Shield
2	143130	Implement End Half Shaft with Shield
3	143131	C.V. Tractor End Yoke
4	143132	C.V. Cross & Bearing
5	143133	C.V. Central Body
6	143134	C.V. Outer Tube Yoke
7	143135	Pin
8	143136	Outer Tube
9	143137	Inner Tube
10	143138	Inner Tube Yoke
11	143139	Pin
12	143140	Implement Yoke
13	143141	Hard Shell with Bearing
14	143142	Cone
15	143143	Contact Bearing
16	143144	Outer Tube Shield
17	143145	Inner Tube Shield
18	143146	Contact Bearing
19	143147	Cone
20	143148	Bell
21	143149	Complete Shield
22	143150	Tractor End Half Shield
23	143151	Implement End Half Shield
24	143152	Cross & Bearing Kit