

HEAVY DUTY ROTARY CUTTER PULL TYPE

7', 8', & 10'

Owner's Manual

Safety – Assembly – Operation – Maintenance – Parts

Tennessee River Implement Mfg., Inc.

P.O. Box 739

Decatur, TN 37322

423-334-9669

423-334-9665 fax

Tennessee River Implement Mfg. Inc.

Owners Manual

Rotary Cutter

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| For Additional Information | |
| Customer Service | 423.334.9669 |

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ASSEMBLY AND SET-UP INSTRUCTIONS

- A. Check all bolts including gear box mounting bolts, blade bolts and blade carrier bolt.
- B. Adjust the tail wheel bar with cylinder to level the rotary cutter or obtain desired cutting position.
- C. Make sure gear box is filled to check plug with 140 weight oil. Lubricate tail wheel hub, tail wheel spindle, and PTO U-joints.
- D. Attach rotary cutter to the tractor.
- E. Make sure tail wheels are attached to tail wheel bar, with tubing extended from tail wheel attached behind the tail wheel bar.
- F. Remove the front tongue (1" x 3" – bolt) from the cutter. Flip over and re-attach 1" x 3" bolt in the upper holes on A-Frame of the cutter.
- G. Self-leveling bars; attach both bats to tail wheel tube ears.
 - 1) Then attach them to the holes provided in the tongue.
 - 2) Adjust leveling bars until tongue will attach to your tractor's pull bar.
 - 3) Attach hydraulic cylinder, working end, to tail wheel bar. Attach hose support arm to (left side) of the outside front A-Frame.
 - 4) Attach hydraulic hose to cylinder, run it through hose support and then attach to tractor hydraulics.
 - 5) Adjust height of cutter with tractor. Re-adjust self-leveling bars to level your cutter.
- H. Next attach PTO to tractor (constant velocity end goes to tractor.) Grease PTO at each connection and fitting. **It's very important that PTO shaft be straight from tractor to cutter when greasing the centering plate of the constant velocity U-joint.**
- I. If it is determined that the PTO shaft is either too long or too short for your tractor, see your dealer for correct shaft lengths. This is not a frequent problem, however the correct shaft length should be checked to avoid damage to the PTO shaft or other components.
- J. We suggest that you get the feel of your rotary cutter on open, familiar ground. Remember that the centrifugal force of the rotary blades and carrier can keep pushing you forward, even after you have disengaged the clutch, unless your tractor is equipped with live PTO or an over-runner. Therefore, approach obstacles with caution.
- K. **Final Inspection. Check to see that the cotter key is installed on nut holding each stump jumper.**

MOST IMPORTANT

Safety Information

Warning

Always read your operator's manual thoroughly before operating or performing any maintenance on your cutter.

Keep hands and feet clear of mower while tractor engine is running. Failure to do so could result in serious injury from rotating blades or PTO shaft.

Always keep the blade carrier and blade bolts tight. Loose blades can easily pierce a quarter inch steel plate and/or seriously injure personnel.

Cutter blades should be replaced in pairs to maintain balance and avoid vibration. Failure to do so could result in damage to machine.

Always keep all shields and guard chains furnished with machine in place and in good working order. Failure to do so could result in operator being struck by high speed rotating parts, resulting in injury to personnel.

Before operating the rotary cutter, carefully inspect the area on which the rotary cutter will be used. Be sure to remove all objects that might be thrown by the rotating blades. Also, note any gullies, ditches, or rough terrain when you are inspecting the area.

Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Failure to do so could result in serious injury.

Operator should always wear a hard hat, safety glasses, and ear noise protectors when operating cutter. Failure to do so could result in serious injury.

Always disengage driveline and block machine before performing any maintenance work on machine. Failure to do so could result in serious injury.

Only the operator should ride on the tractor and no one should ride on the mower. Persons riding on tractor or mower could easily fall into the path of the tractor or mower resulting in serious injury.

Check the driveline connections to cutter and tractor before operation. Be sure QD locks are operating and locked. Failure to do so could result in drive line becoming disconnected from the tractor and cutter. Personnel could be struck by fast rotating driveline resulting in serious injury.

Use extreme caution when operating on hillside. Cutters are more likely to throw objects when operating on hillside and tractors can easily tip over if dropped in a hole. Either could result in serious injury to operator.

Always disengage PTO before transporting cutter. Failure to do so could result in persons being struck by rotating blades. Thrown objects from rotating blades can strike with killing force.

When cutter is in roadway for whatever reason, high visibility safety devices should be used to give adequate warning to other motorists. Watch for traffic and give way when possible. Observe state local markings and lighting requirements.

Observe minimum and maximum PTO RPM limits. Failure to do so could result in damage to equipment.

Perform preventive maintenance on a regular basis. Replace worn or damaged parts immediately. Keep all nuts and bolts tight at all times. Failure to do so could result in serious injury to personnel or machinery.

Avoid sharp turns while mowing. Failure to do so could result in bodily injury or damage to machine.

Make sure all onlookers and personnel are not in the area when machinery is in motion. Objects can be thrown with killing force by rotating blades.

Never operate the cutter in transport position.

OPERATION

BEFORE OPERATING:

Make sure there is nothing under the cutter (tools, feet, hands, etc.) that should not be there. Check to make sure all parts are assembled correctly.

Set tractor lift control stop at a position that will prevent the drive shaft from contacting the front edge of the cutter when cutter is at full lift. (On some tractors, this won't be necessary.)

The cutter should only be engaged with the tractor PTO shaft when the tractor engine is at idle speed. Engaging the cutter at higher engine speeds will shorten the life of the cutter drive line. This may also damage the tractor.

For most cutting, ground speed of 3 to 5 MPH and a PTO speed of 540 RPM is recommended. However, you may wish to adjust ground speeds for specific conditions.

After using the cutter for a full day, check the stump jumper to make sure it is tight on the output shaft. If loose, torque the nut holding it at 200 pounds (equivalent to 200 pounds of weight on a 12" wrench handle.)

Replace cotter key through output shaft to secure nut.

Check blade pivot bolts and blade carrier nuts frequently for looseness or wear. Loose blades can easily pierce a 1/4" steel plate, and cause serious injury or death.

Make sure safety chain shielding is in place at all times.

Check gear box for lubricant. Check all lubrication points on PTO shaft and tail wheel.

GENERAL MAINTENANCE

1. Check oil level in gear box periodically. Keep level up to the check plug. Use SAE 90 or SAE 140 transmission oil. Use caution not to over fill.
2. Lubricate universal joint on PTO shaft every few hours. Keep PTO shaft free of dirt and foreign materials so that it will telescope freely to avoid damage to your tractor or rotary cutter.
3. Inspect and Lubricate tail wheel hubs and repack with grease when needed.
4. Every 8 hours – Fill centering plate in the constant velocity U-Joint at the tractor end of the PTO. It will take about 35 – 40 pumps of grease to fill the centering plate. PTO must be straight to do this.
5. Keep blades sharp. When replacing worn blades, be sure to replace in pairs to maintain rotary balance.
6. Take care to reinstall blades and stump jumper on the same side where they were removed. Installing them on the wrong side will result in the cutting edge being on the wrong side.
7. When installing stump jumper, take care to time blades on each side 90 degrees apart to prevent contact at blade overlap point. Remember that, looking from the rear, the right stump jumper rotates counter-clockwise, while the left stump jumper rotates clockwise.
8. Keep all bolts tightened properly.
9. When working on the implement in the raised position. **BLOCK IT SECURELY.** Do not work under the implement when supported only by the tractor hydraulic system.
10. Keep shields in place at all times.
11. **DO NOT** modify equipment in any way. Modification will void the manufacturer warranty.

Slip Clutch: The slip clutch serves as overall protection for the tractor, drive line, and gear box. Even though new clutch assemblies are “run-in” and checked for torque prior to shipment, readjustment may be advisable if the clutch has been exposed to the weather for an extended period of time. The clutch facing and plates should be inspected for rust and/or corrosion.

Since proper adjustment is necessary for satisfactory performance, follow the steps listed below to obtain proper adjustment.

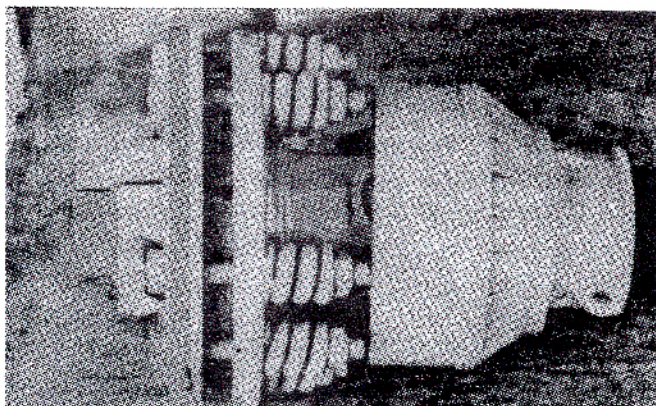
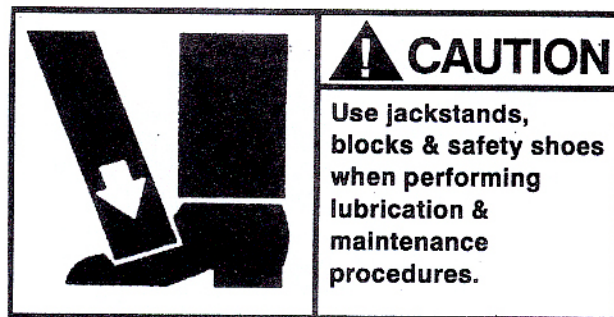


FIGURE 27 Slip Clutch

- | Steps | Procedures |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Make a trial run in the heaviest operating conditions expected. If the clutch slips noticeably, tighten the 8 adjusting bolts no more than ½ turn between trial runs until clutch slippage is reduced. |
| 2 | Scribe a mark across the clutch facing (Fig. 27). When subjected to shock loads, a separation of the marks will assure that clutch setting is correct. NOTE: Check the clutch periodically during the first hour of operation for excessive heat build-up due to undetected slippage. |

If the clutch is being rebuilt (new facing and/or plates), it is necessary to “run-in” these parts prior to final adjustment. The plates should be thoroughly cleaned and free of foreign material, as well as being checked with a straight edge for warping. Warped plates cannot be adjusted properly and will not hold. To accomplish the “run-in” after assembly, follow the procedure below.



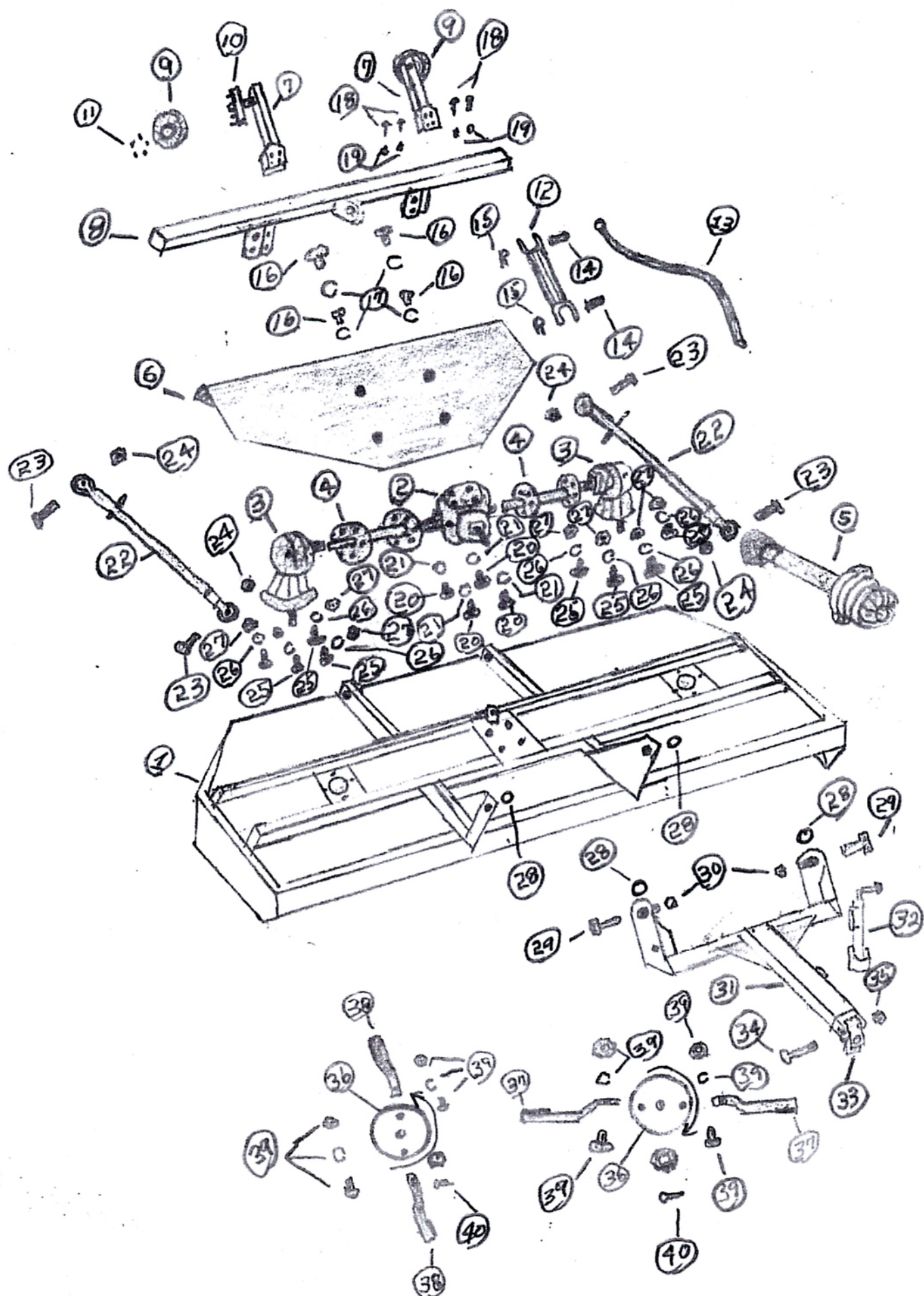
- | Steps | Procedures |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Tighten all adjusting bolts evenly until the clutch cannot be slipped by hand. |
| 2 | With the blade carrier locked in a stationary position, operate with PTO at idling speed (approximately 100 RPM) until evidence of heating is noted. |
| CAUTION: Do not allow the clutch to overheat. | |
| 3 | Discontinue operation and allow the clutch to cool completely. THIS IS VERY IMPORTANT!!! |
| 4 | After the clutch has cooled, tighten all the adjusting bolts down evenly and proceed with the regular clutch adjusting procedures as described previously. |

TROUBLESHOOTING

| PROBLEM | CAUSE | SOLUTION |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Excessive vibration | <ol style="list-style-type: none"> 1. Blades are not free to swing 2. Blades are out of balance | <ol style="list-style-type: none"> 1. Check bushing and movement of blades 2. Check blades for damage or replace |
| Unusual noise | <ol style="list-style-type: none"> 1. Loose blade bolts or worn bushings 2. Bent bar blade carrier, blades striking deck 3. Deck bent causing blades to hit 4. Gear box low of grease | <ol style="list-style-type: none"> 1. Tighten blade bolts, check bushings for wear and change as needed 2. Replace bar blade carrier 3. Straighten deck 4. Check seals in gear box and fill to proper level |
| Poor cutting | <ol style="list-style-type: none"> 1. Not maintaining proper PTO speed 2. Improperly adjusted 3. Forward speed too fast 4. Dull blades 5. Improper clutch adjustment | <ol style="list-style-type: none"> 1. Check PTO with tachometer and operate at proper RPM 2. Adjust according to operators manual. 3. Coordinate forward speed with blade speed. 4. Sharpen blades 5. Adjust according to manual |
| Machine streaking | <ol style="list-style-type: none"> 1. Cutting too high, leaving wheel tracks 2. Not maintaining proper RPM speed 3. Forward speed too fast | <ol style="list-style-type: none"> 1. Cut lower and slow forward speed down 2. Maintain proper RPM speed 3. Slow down |
| PTO will not telescope | <ol style="list-style-type: none"> 1. Improper lubrication 2. PTO twisted 3. Bent PTO 4. Shields damaged | <ol style="list-style-type: none"> 1. Separate and fill female tube half full of grease. 2. Replace twisted portion. Caution operator not to ground out machine 3. PTO too long. Size to tractor according to manual 4. Replace |
| PTO twisted | <ol style="list-style-type: none"> 1. Over torqued 2. Not Maintaining correct PTO speed | <ol style="list-style-type: none"> 1. Caution operator not to ground out Machine 2. Maintain proper PTO speed |
| Excessive clutch slippage | <ol style="list-style-type: none"> 1. Improperly adjusted 2. Burnt or damaged facing | <ol style="list-style-type: none"> 1. Adjust according to manual 2. Rework clutch or replace according to manual |

ROTARY CUTTER PARTS

| <u>ITEM #</u> | <u>PART #</u> | <u>DESCRIPTION</u> |
|---------------|---------------|---------------------------------|
| 1 | TD | DECK |
| 2 | C446 | T-BOX |
| 3 | OB114 | OUTBOARD BOX |
| 4 | SCS | SHOCK COUPLER SHAFT |
| 5 | PTO | PULL TYPE PTO SHAFT |
| 6 | GBS | GEAR BOX SHIELD |
| 7 | TWT | PULL TYPE TAIL WHEEL TUBE |
| 8 | PTTWCT | PULL TYPE TAIL WHEEL CROSS TUBE |
| 9 | STW-2 | SEGMENTED TAIL WHEEL |
| 10 | TWH-2 | TAIL WHEEL HUB |
| 11 | TWLG | TAIL WHEEL LUG NUTS |
| 12 | HDC | HYDRAULIC CYLINDER |
| 13 | HDH | HYDRAULIC HOSE |
| 14 | HDCP | HYDRAULIC CYLINDER PIN |
| 15 | RP | R-PIN |
| 16 | HB-4 | 5/8 X 1 1/2 HEX HEAD BOLT |
| 17 | LW-4 | 5/8 LOCK WASHER |
| 18 | HB-8 | 5/8 X 5 HEX HEAD BOLT |
| 19 | HLN | 5/8 LOCK NUT |
| 20 | HB-4 | 5/8 X 1 1/2 HEX HEAD BOLT |
| 21 | LW-4 | 5/8 LOCK WASHER |
| 22 | PTSLB | PULL TYPE SELF LEVELING BAR |
| 23 | HB-4 | 3/4 X 4 HEX HEAD BOLT |
| 24 | LN-4 | 3/4 LOCK NUT |
| 25 | HB-8 | 3/4 X 2 1/2 HEX HEAD BOLT |
| 26 | LW-8 | 3/4 LOCK WASHER |
| 27 | LN-8 | 3/4 LOCK NUT |
| 28 | PB | 1" BUSHING |
| 29 | HB-2 | 1 X 3 1/2 HEX HEAD BOLT |
| 30 | HLN-2 | 1" LOCK NUT |
| 31 | PTT | PULL TYPE TONGUE |
| 32 | PTTJ | PULL TYPE TONGUE JACK |
| 33 | PTN | PULL TYPE NUCKLE |
| 34 | HB-1 | 1 X 5 1/2 HEX HEAD BOLT |
| 35 | HLN-1 | 1" LOCK NUT |
| 36 | 8R10-2 | STUMP JUMPER 5/8 ROUND DISC |
| 37 | CB-2 | CUTTER BLADE |
| 38 | CBR-2 | CUTTER BLADE REVERSE |
| 39 | BBC-4 | BLADE BOLT COMPLETE |
| 40 | CP-2 | COTTER PIN |



TO OUR CUSTOMER:

THANK YOU FOR PURCHASING THIS PRODUCT, OUR GOAL IS TO MANUFACTURE THE BEST IMPLEMENT ON THE MARKET TODAY.

The care you give your new TRI Implement will greatly determine your satisfaction with its performance and its service life. We urge you to carefully study this manual to provide you with a thorough understanding of your new implement before operating, as well as suggestions for operation and maintenance.

Please take time to read the preceding assembly and operating instructions. Always keep in mind the safety precautions mentioned throughout this booklet.

LIMITED WARRANTY

The manufacturer warrants only to the Original Purchaser that this equipment, under normal use and service, will be free from defects in material and workmanship for 90 days from date of purchase providing this equipment is purchased for individual and not commercial use. This warranty does not apply to any equipment which has been damaged or which has been subjected to abuse, misuse, negligence, normal wear and tear, alterations, tampering, or failure to follow operating instructions. This warranty does not cover any product or parts not manufactured by Tennessee River Implement Mfg., Inc.

Expendable items such as blades, clutch facings, points, cross and bearings, etc. used in connection with normal service maintenance, are not covered by this warranty. Charges for pick up and delivery and/or shipment are also not covered by this warranty.

Warranty coverage and performance is expressly conditioned upon the return of the completed registration card to Tennessee River Implement Mfg., Inc., Decatur, TN. If a problem develops with the product during the warranty period, contact the dealer from whom you purchased this product. Any work performed prior to notification to Warranty Department will be VOID of warranty.

Purchaser's exclusive remedy for breach of warranty, other defect or conduct giving rise to liability shall be the repair or replacement of the product sold, and the manufacturer under no circumstances shall be liable for economic loss or incidental consequential damages.

This warranty is expressly in lieu of any other express or implied warranty, condition, guarantee, agreement or representation by any person with respect to any TRI product.

REGISTRATION

THE FOLLOWING REGISTRATION FORM MUST BE ON FILE AT TENNESSEE RIVER IMPLEMENT MFG., INC. - WARRANTY DIVISION, P.O. BOX 739, DECATUR, TN 37322, WITHIN 15 DAYS OF DELIVERY TO USER OR WARRANTY CLAIM WILL NOT BE HONORED.

Model _____ Date Delivered _____

Name of Owner _____

Address (Street, Route, P.O. Box) _____

City _____ State _____ Zip _____

Name of Selling Dealer _____

City _____ State _____ Zip _____