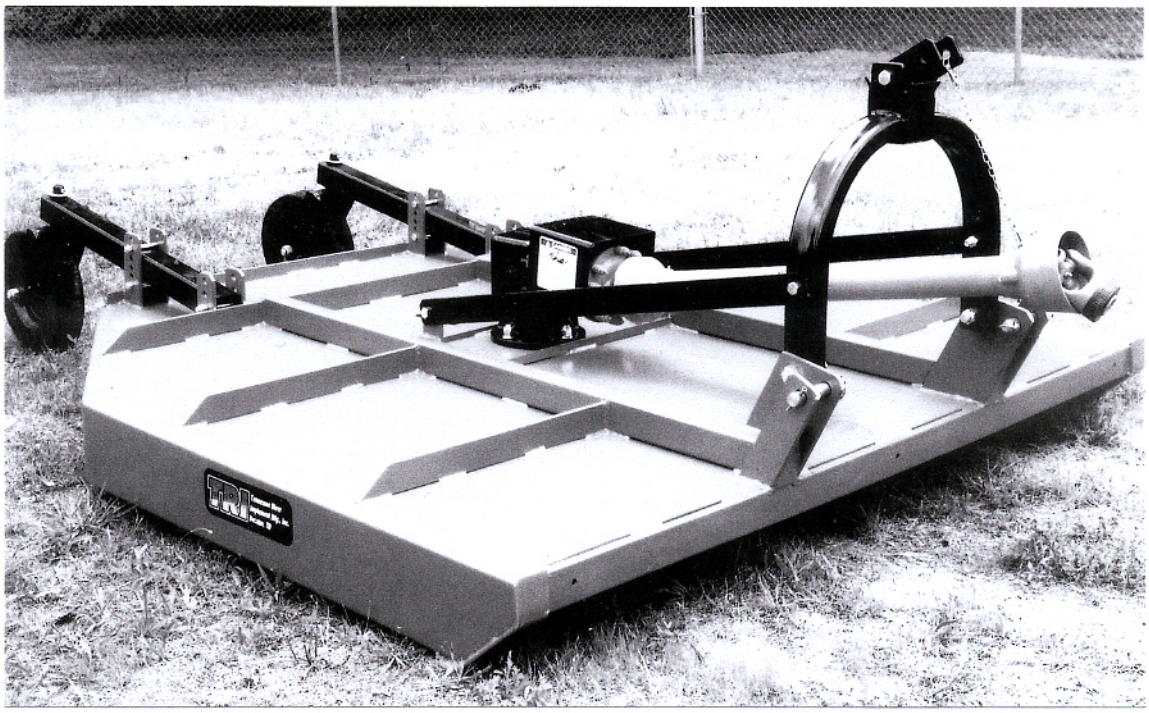
TRI



HEAVY DUTY ROTARY CUTTER
LIFT TYPE
6' & 7'

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 **Heavy Duty Rotary Cutter Lift Type 6' & 7'**

Table of Contents

For Additional Information

Customer Service 423.334.9669

Tennessee River Implement Mfg., Inc.
P.O. Box 739
Decatur, TN 37322
423-334-9669
423-334-9665 fax

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 bracket to level the rotary cutter or obtain desired cutting position.

C. Make sure gear boxes are 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. 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.

F. 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 your clutch, unless your tractor is equipped with live PTO or an over-runner. Therefore, approach obstacles with caution.

GENERAL MAINTENANCE

1. Check oil level in gear boxes 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. Lubricate tail wheel.

4. Keep blades sharp. When replacing worn blades, be sure to replace in pairs to maintain rotary balance.

5. Keep all bolts tightened properly.

6. 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.

7. Keep shields in place at all times.

8. **DO NOT** modify equipment in any way. Modification will void the manufacturer warranty.

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.

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 blades, thrown object or being entangled in 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 drive line 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.

Disengage the PTO, and turn off the tractor engine before leaving the tractor.

Check the drive line 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 drive line resulting in serious injury.

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

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 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 loose objects thrown by rotating blades. Thrown objects from rotating blades can strike with killing force.

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, especially on pull model machines. 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.

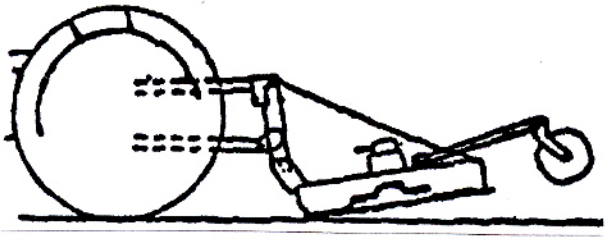
OPERATION

The TRI Rotary Cutter is designed to be used with tractors from 15 hp to 70 hp with 540 RPM PTO.

1. Check gear box for lubricant.
2. Check all lubrication points on PTO shaft and tail wheel.
3. Be sure all bolts are tight and snap rings are in place.
4. Be sure the rotary cutter is properly mounted on tractor.
5. Adjust and level rotary cutter for desired cutting height.

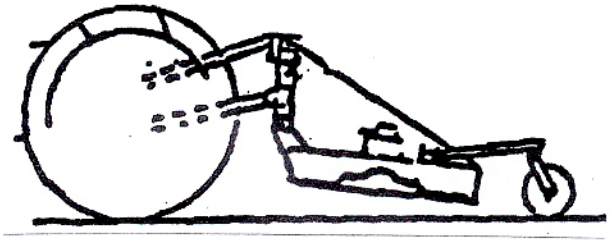
Adjusting Level of Cutter on Your Tractor

Cutter Too Low in Front



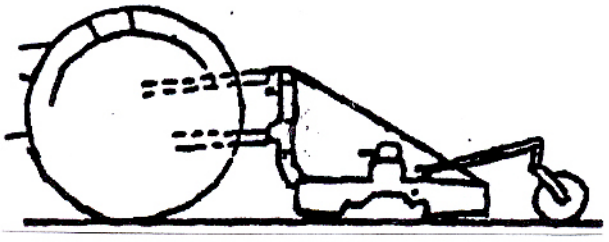
INCORRECT
Blade too high on sides causing skipping and uneven cutting; blades become worn.

Cutter Too Low in Rear



INCORRECT
Excessive wear and tear on tail wheel. Rear skirt dragging causing balling up problems.

Cutter Level



CORRECT
Blade cutting evenly with grass being spread evenly.

Your cutter may be properly leveled by extending or retracting the top link from your tractor to the mast of your cutter.

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.

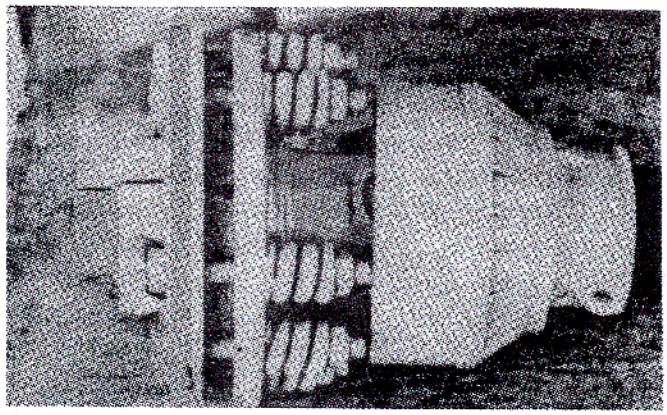
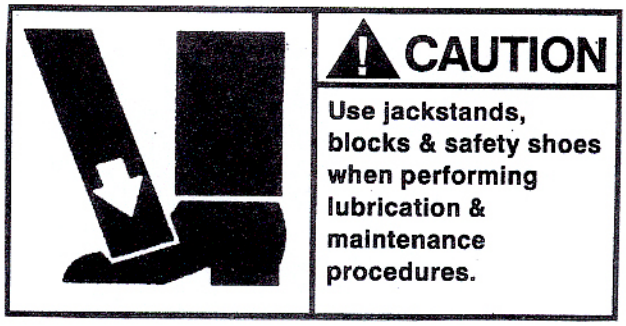


FIGURE 27 Slip Clutch

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.**



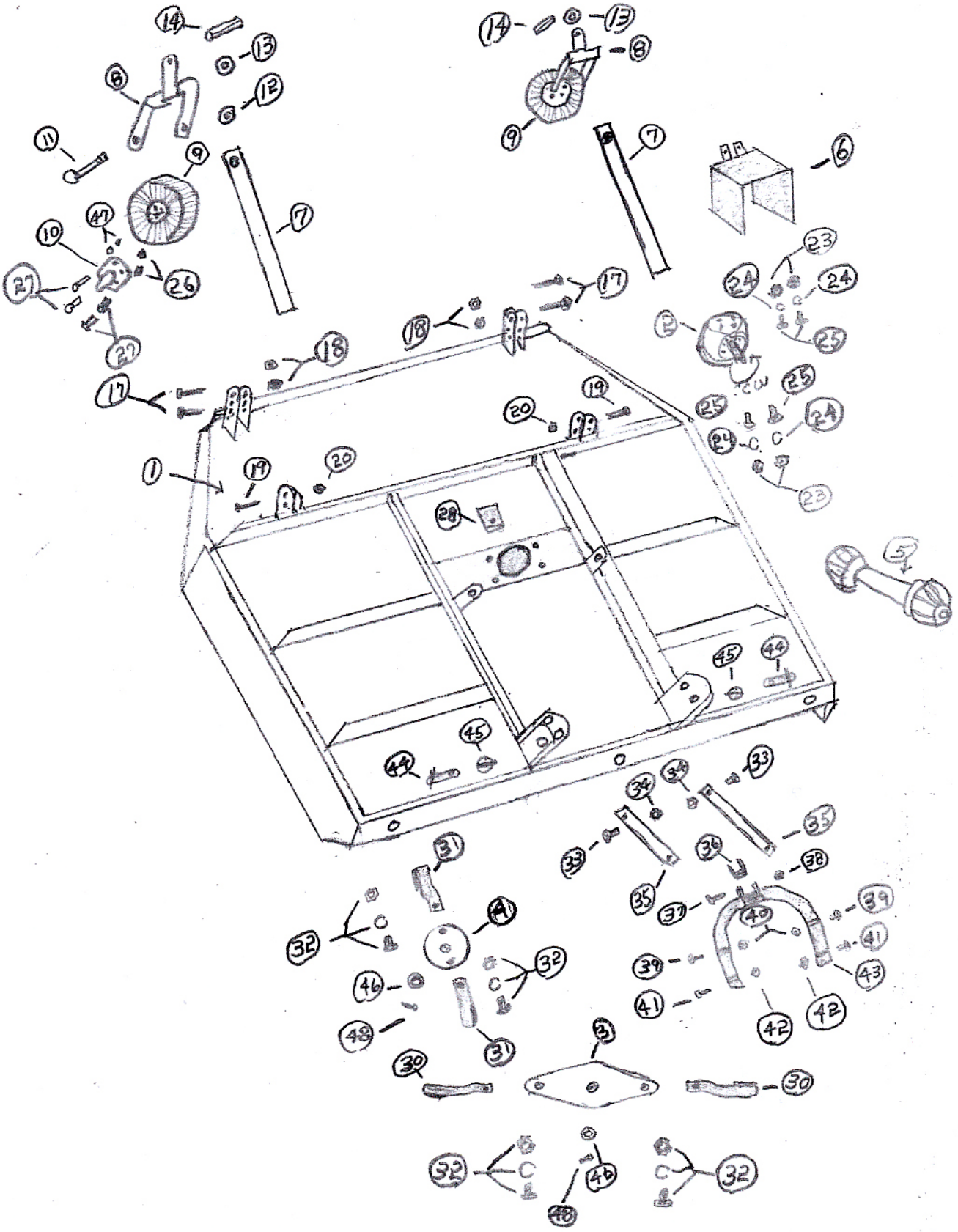
If the clutch is being rebuilt (new facing and/or plates), it is necessary to "run-in" these parts prior to final adjustment. The plates should be thoroughly cleaned and free of foreign material, as well as being checked with a straight edge for warping. Warped plates cannot be adjusted properly and 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	1. Blades are not free to swing	1. Check bushing and movement of blades
	2. Blades are out of balance	2. Check blades for damage or replace
Unusual noise	1. Loose blade bolts or worn bushings	1. Tighten blade bolts, check bushings for wear and change as needed
	2. Bent bar blade carrier, blades striking deck	2. Replace bar blade carrier
	3. Deck bent causing blades to hit	3. Straighten deck
	4. Gear box low of grease	4. Check seals in gear box and fill to proper level
Poor cutting	1. Not maintaining proper PTO speed	1. Check PTO with tachometer and operate at proper RPM
	2. Improperly adjusted	2. Adjust according to operators manual.
	3. Forward speed too fast	3. Coordinate forward speed with blade speed.
	4. Dull blades	4. Sharpen blades
	5. Improper clutch adjustment	5. Adjust according to manual
Machine streaking	1. Cutting too high, leaving wheel tracks	1. Cut lower and slow forward speed down
	2. Not maintaining proper RPM speed	2. Maintain proper RPM speed
	3. Forward speed too fast	3. Slow down
PTO will not telescope	1. Improper lubrication	1. Separate and fill female tube half full of grease.
	2. PTO twisted	2. Replace twisted portion. Caution operator not to ground out machine
	3. Bent PTO	3. PTO too long. Size to tractor according to manual
	4. Shields damaged	4. Replace
PTO twisted	1. Over torqued	1. Caution operator not to ground out Machine
	2. Not Maintaining correct PTO speed	2. Maintain proper PTO speed
Excessive clutch slippage	1. Improperly adjusted	1. Adjust according to manual
	2. Burnt or damaged facing	2. Rework clutch or replace according to manual

REF #	PART NUMBER	DESCRIPTION
1	TD	DECK
2	C446	GEAR BOX
3	SJ7-1	STUMP JUMPER 3/4" Oval-7'
4	SJ6-1	STUMP JUMPER 5/8" Disc-6'
5	60S	PTO SHAFT
6	GBS	GEAR BOX SHIELD
7	TWT-2	LIFT TYPE TAILWHEEL TUBE
8	TWF-2	LIFT TYPE TAILWHEEL FORK
9	STW-2	SEGMENTED TAILWHEEL
10	TWH-2	TAILWHEEL HUB
11	TWAX-2	TAILWHEEL AXLE
12	AXN-2	TAILWHEEL AXLE NUT
13	FW-2	TAILWHEEL FLAT WASHER
14	RP-2	ROLL PIN
17	HB-4	1/2 x 4 HEX HEAD BOLT
18	LN-4	1/2" LOCK NUT
19	HB-2	5/8 x 5 HEX HEAD BOLT
20	LN-2	5/8 LOCK NUT
23	HHN-8	3/4 LOCK NUT
24	LW-8	3/4 LOCK WASHER
25	HB-8	3/4 x 2 1/2 HEX HEAD BOLT
26	HHN-8	1/2" HEX HEAD NUT
27	HB-8	1/2 x 1 1/2 HEX HEAD BOLT
28	ISP	INSPECTION PLATE
30	CB7-2	CUTTER BLADE 7'
31	CB6-2	CUTTER BLADE 6'
32	BBC-4	BLADE BOLT COMPLETE
33	HHB-2	5/8 x 2 HEX HEAD BOLT
34	LN-2	5/8 LOCK NUT
35	AFB-2	A-FRAME BRACE - LEFT OR RIGHT
36	TLN-1	TOP LINK NUCKLE
37	HB-1	3/4 x 6 HEX HEAD BOLT
38	LN-1	3/4 LOCK NUT
39	HB-2	5/8 x 4 HEX HEAD BOLT
40	LN-2	5/8 LOCK NUT
41	HD-2	7/8 x 4 HEX HEAD BOLT
42	LN-2	7/8 LOCK NUT
43	AF-1	A-FRAME
44	DPIN-2	DRAW PIN
45	CPIN-2	CLIP PIN
46	CNUT-2	CASTLE NUT
47	LW-4	1/2" LOCK WASHER
48	CP	COTTER PIN


1
2
3
4
5
6
7
8
9
10
11
12
13
14
17
18
19
20
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
CW
CCW

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**_____