



4895 RED BLUFF RD LORIS, SC 29569 (843) 756-2555 / WWW.EVHMFG.COM

OPERATOR'S AND MAINTENANCE MANUAL

TIGER SERIES CUTTERS

MODELS:	T-9210-PTW	T-9210-MPTW
	T-9215-PTW	T-9215-MPTW
	T-9310-PTW	T-9310-MPTW
	T-9315-PTW	T-9315-MPTW
	T-9510-PTW	
	T-9515-PTW	

OWNER'S RESPONSIBILITY

The manufacturer has no control over the ultimate use of the cutter and therefore assumes no responsibility of liability for any damage or injury resulting from the use thereof.

The upkeep of the rotary cutter is the responsibility of the user. This upkeep includes all shielding, guards, and safety decals (OSHA Regulation 1928.57). Replacement parts can be obtained from any authorized Hardee Dealer.

Read this Operator's Manual before operating the cutter. Failure to do so could result in injury to the operator or to others. Remember, most accidents occur due to neglect or carelessness. The operator is responsible for inspecting and making repairs as may be necessary. Cleaning after each use and storage under a shelter will extend the life of the cutter.

SPECIFICATIONS

Cutting Width: 10ft. T-9210
15ft. 3in. T-9215

Overall Width: 11ft. 2 in. T-9210
15ft. 7 in. T-9215

Overall Length: 14ft. 10 in. T-9210
14ft. 10 in. T-9215

Transportation Width: 7ft. 7 in. T-9210
8ft. 2 in. T-9215

Wheels: Five 15 in. automotive
(Tires not included)

Cutting Height: 1 1/4 to 12 in.

Blades: 1/2 x 3 1/2 in.
6 in. overlap

Deck: 7 gauge steel

Wing Fold: Up 90 deg.
Down 22 deg.

Gear Boxes: T-9210/ T-9215-PTW 540 rpm
T-9210/ T-9215-MPTW 1000 rpm

Blade Tip Speed:
T-9210/ T-9215-PTW 13,650 rpm
T-9210/ T-9215-MPTW 14,255 rpm

Safety Locks on Wing Section For
Transportation

Springs on all Wheels

Adjustable Wheel Tread

STANDARD FEATURES

Smooth top for easy cleaning

Blade bolt access hole in deck

Self leveling pull type hitch

Swivel clevis hitch

Skid shoes for center section

Replacement skid plates

Parking stands and jack

Sturdy piano hinged wing section

One 4 by 8 in. Hyd. cyl. on center section

One 3 by 17 in. Hyd. cyl. to left wing

Front chain guards (3/8 in. Coil)

Rear chain guards (3/8 in. Coil)

Shielded Drive Shafts

Self Leveling Tailwheel Assy.

200 HP rated transfer Box @ 1000 RPM,
T-9210, T-9310, T-9215, T-9315

135 HP rated transfer Box @ 540 RPM,
T-9210, T-9310, T-9215, T-9315

Rear Wing 5/16"

90 HP Rated Gearbox on Center section,
T-9210, T-9215

90 HP Rated Gearbox on Wing Section, T-9210,
T-9215

125 HP Rated Gear Box on Wing, T-9310,
T-9315

125 HP Rated Gearbox on Center Section,
T-9310, T-9315

2 in. Output shafts on all gear boxes

Slip Clutches on all Gear Boxes

Round Blade Holders

Free Swinging Blades

Counter weight box on center section(empty)

Stroke control blocks (for 4 by 8 in. Hyd. cyl.)

Drive shaft: ASAE 5 Front
ASAE 4 Wing

SAFETY PRECAUTIONS

**!!!!!!!!!!!!!!!!!!!!DANGER!!!!!!!!!!!!!!!!!!!!
INCORRECT OPERATION OF THE
CUTTER MAY PRODUCE
HAZARDOUS SITUATIONS THAT
CAN LEAD TO SERIOUS INJURY OR
DEATH. THE CUTTER HAS BEEN
DESIGNED TO MINIMIZE THE RISK
OF ACCIDENTS, BUT THERE IS NO
SUBSTITUTE FOR A CAREFUL
OPERATOR.**

- *All shielding, guards and safety decals must be in place at all times while the cutter in operation. Consult OSHA Regulation 1928.57 for further details.
- *NEVER allow an UNQUALIFIED or UNDERAGE person to operate the cutter.
- *NEVER allow any person under the influence of drugs or alcohol or who is otherwise impaired, to operate the cutter.
- *NEVER operate cutter when bystanders are in the immediate vicinity.
- *NEVER direct the discharge of the cutter in an area where objects can be thrown by the cutter. Clear areas to be cut of all foreign objects before cutting.
- *NEVER allow passengers to ride on the cutter or the tractor while the cutter or any other implement is operating.
- *NEVER allow HORSEPLAY in the vicinity of the tractor while the cutter is operating.
- *NEVER check the hydraulic system for leaks with bare hands.

NEVER attempt or have others attempt to remove wire, weeds, cuttings or any other foreign objects from the cutter while tractor engine is running or PTO is engaged.

- *ALWAYS disengage the PTO, set parking brake, turn off the tractor's engine, remove key and wait for all motion to stop BEFORE dismounting the tractor.
- *ALWAYS dismount the tractor from the side or designated exit.
- *ALWAYS keep blade holder and bolts tight.
- *ALWAYS keep hands and feet clear of rotating parts.
- *ALWAYS stay alert for signs of danger and possible hazards.
- *ALWAYS wear safety goggles when operating the cutter.

HYDRAULIC SYSTEM

**!!!!!!!!!!!!!!!!!!!!CAUTION!!!!!!!!!!!!!!!!!!!!
HYDRAULIC FLUID CAN LEAK
FROM THE HYDRAULIC SYSTEM
IN AN ALMOST INVISIBLE
STREAM WITH ENOUGH
PRESSURE TO PENETRATE THE
SKIN, CAUSING SERIOUS
PERSONAL INJURY. NEVER
CHECK HYDRAULIC SYSTEM
FOR LEAKS WITH BARE HANDS.
HOLD A PIECE OF CARDBOARD
OR LIGHT COLORED WOOD
NEXT TO THE FITTING OR HOSE
TO CHECK FOR HYDRAULIC
LEAKS.**

PAGE 2

SAFETY DECAL LOCATIONS

3
"DANGER"
KEEP CLEAR
WHEN CUTTER IS IN MOTION
HW-C-0004

6
CAUTION
DO NOT EXCEED
540 RPM
HW-C-0004

4
SAFETY INSTRUCTIONS

ALL UNIVERSAL JOINT DRIVES MUST BE SHIELDED, AND ALL GUARDS, AND SHIELDS, MUST BE KEPT IN PLACE, AND IN GOOD CONDITION, TO COMPLY WITH OSHA AS GUARDING STANDARDS.

WARNING

LOOK AND LISTEN FOR EVIDENCE OF ROTATION AND DO NOT REMOVE THE GUARD OR ACCESS DOOR UNTIL ALL COMPONENTS HAVE STOPPED. REFER TO OSHA AS GUARDING STANDARDS...1929.57.
HW-C-0004



7
WARNING
IMPLEMENTS CAN FALL FROM HYDRAULIC SYSTEMS FAILURE TO AVOID SERIOUS INJURY OR DEATH!

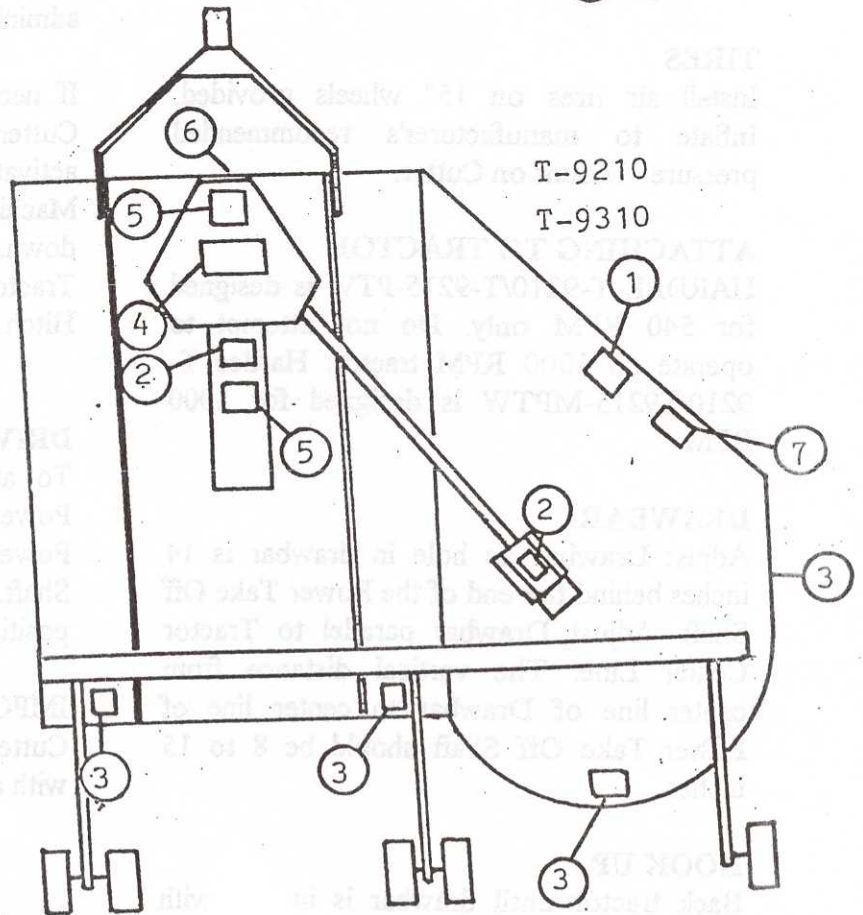
- ★ BLOCK UP OR SECURELY SUPPORT IMPLEMENT BEFORE WORKING UNDERNEATH.
- ★ PURGE ALL AIR FROM HYDRAULIC SYSTEM BEFORE ATTEMPTING TO RAISE OR LOWER THE IMPLEMENT.
- ★ STAND CLEAR IF LOWERING OR RAISING IMPLEMENT.
- ★ DO NOT USE HAND OR SHOULDER TO CHECK FOR HYDRAULIC LEAKS, USE CARDBOARD OR WOOD.
- ★ HIGH PRESSURE OIL LEAKS CAN PENETRATE SKIN CAUSING INJURY AND GARDENING—CONSULT A DOCTOR IMMEDIATELY.
- ★ LOWER THE IMPLEMENT AND RELEASE THE HYDRAULIC PRESSURE BEFORE LOOSENING HYDRAULIC FITTINGS.
- ★ REFER TO OPERATOR'S MANUAL.

1
DANGER

KEEP AWAY... ROTATING BLADES
SERIOUS INJURY OR DEATH CAN RESULT FROM THROWN OBJECTS OR BLADE CONTACT.
HW-C-0001

2
CAUTION

DO NOT REMOVE SHIELD OR COVER UNTIL DRIVE SHAFT HAS COMPLETELY STOPPED TURNING.
HW-C-0001



OPERATING INSTRUCTIONS

PREPARING ROTARY CUTTER

LUBRICATION

Be sure Rotary Cutter has been lubricated properly. See lubrication instruction on page 10.

NUTS AND BOLTS

Before using a new Rotary Cutter or one that has been stored, be sure all nuts and bolts are tight.

OPTIONAL CONTROL

If Cutter is ordered with optional three (3) Spool control Valve, install Control as per plumbing instructions on page 12.

TIRES

Install air tires on 15" wheels provided. Inflate to manufacturer's recommended pressure. Mount on Cutter.

ATTACHING TO TRACTOR

HARDEE T-9210/T-9215-PTW is designed for 540 RPM only. Do not attempt to operate on 1000 RPM tractor. Hardee T-9210/T9215-MPTW is designed for 1000 RPM.

DRAWBAR

Adjust Drawbar so hole in drawbar is 14 inches behind the end of the Power Take Off Shaft. Adjust Drawbar parallel to Tractor Center Line. The vertical distance from center line of Drawbar to center line of Power Take Off Shaft should be 8 to 15 inches.

HOOK UP

Back tractor until drawbar is in line with Rotary Cutter Hitch. Mount optional Control Valve if used. Hook up inlet and outlet lines to tractor.

CAUTION

Escaping Hydraulic Fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before applying pressure to the system, be sure all connections are tight and that Lines and Hoses are not damaged. Before disconnecting Lines, be sure to relieve all pressure. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a Doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

If necessary to facilitate hook up, Rotary Cutter Tongue can be raised or lowered by activating the Center Cylinder, provided that Machine was parked with Parking Stands down. Attach Rotary Cutter Tongue to Tractor Drawbar using 1-inch Diameter Hitch Pin.

DRIVESHAFT

To attach Shielded Driveshaft to Tractor Power Take Off, press in Plunger on Powershaft Yoke and slip Yoke onto Splined Shaft. Make sure Plunger returns to full out position to ensure positive lock.

IMPORTANT: Never operate a Rotary Cutter with 540 RPM Gearbox on a Tractor with a 1000 RPM PTO.

DETACHING FROM TRACTOR

The Red Wing cutter should be stored with the Wings in the fully raised position with the Transport Safety Locks fastened in the Transport Position. Lower Parking Stands to full down position and fasten with Pins and Clip Pins. Lower Rotary Cutter until the full weight of the Machine is on Parking Stands and shut off tractor engine. Remove Hitch Pin from Tractor Drawbar and Cutter Floating Hitch.

Storage with Wings raised and Center Section lowered helps protect the finish of all hydraulic cylinders operating rods because they are all fully retracted.

Relieve pressure in hydraulic lines by moving control levers forward and backward several times. Disconnect hydraulic lines from Tractor Remote Outlet, remove optional Control Valve if installed. Detach shielded Drive shaft from tractor PTO.

LEVELING ROTARY CUTTER

(Diagram A, Page 5-A)

VERY IMPORTANT! To minimize the possibility of Thrown Objects being EJECTED into the air, Rotary Cutter **MUST BE OPERATED LEVEL.**

The Center Hydraulic Cylinder is fitted with an adjustable Two Position stop that controls minimum cutting height of the center section by limiting retraction of the Cylinder Operating rod. The Stop, C1117, is a short length of pipe with two sets of 1 1/16" holes drilled across it and has a washer like flange on the end toward the cylinder. The front set of holes is for use with Air Tires. The rear set of holes is for use with Solid Tires. A 1" x 5" Pin, C1118, fastens thru the Yoke in the center of the Tailwheel Tubing, thru a

spacer, thru the Stop, thru the Cylinder Operating Rod and outward thru the Yoke and a 1" Flat Washer. The 1" Pin is secured with a Clip Pin.

The height of the Cutter Clevis Hitch should be very close to the height of the Tractor Drawbar. Two adjustments are provided on the Red Wing Cutter, First the Clevis Hitch in the Yoke of the Pull Tongue, second the Leveling Rod Yoke on the Leveling Rods.

Place the Rotary Cutter flat on level ground, making sure that Wheels are touching ground but no supporting the Machine's weight. Parking Stands, C1135, should be in the fully raised position.

Back Tractor up to Cutter until Drawbar is in line with Rotary Cutter Hitch, C1297. Set the Brake and shut off the tractor engine.

Adjust the Tractor DrawBar so that the hole is 14 inches behind the end of the PTO shaft and parallel to the tractor centerline. The vertical distance from the drawbar centerline to the driveshaft centerline should be 8 to 15 inches.

Lower cutters front jack all the way down.

Back tractor until drawbar is in line with cutter hitch.

Connect cutter hydraulic system to tractor auxiliary hyd. system.

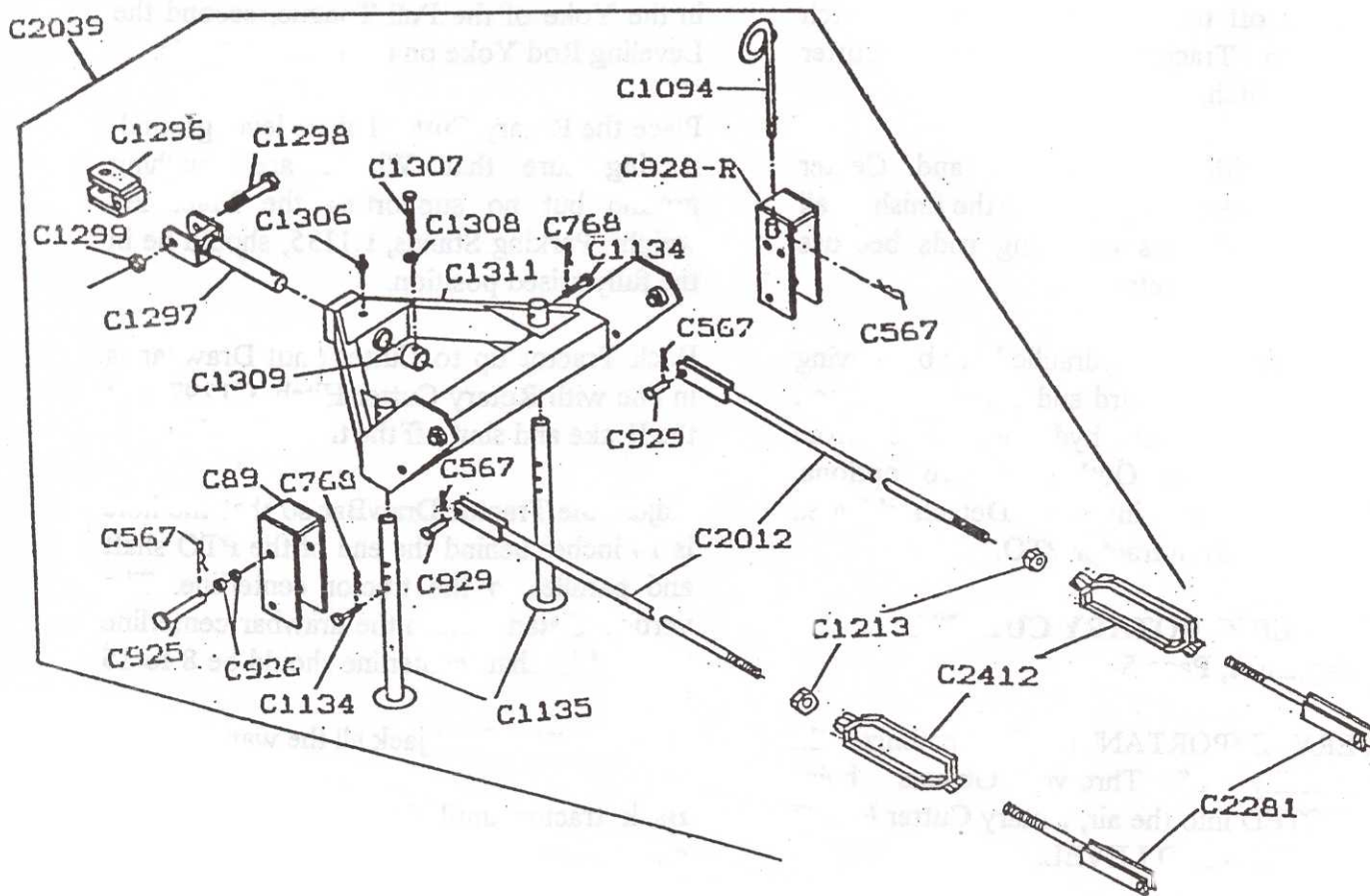
Position cutter tongue by turning elevation turnbuckle or operating hydraulic cylinder.

Connect cutter to tractor drawbar with a 1 inch diameter hitch pin.

ADJUSTING CUTTING HEIGHT

Cutting height is adjusted hydraulically through the use of one 4" by 8" remote

DIAGRAM A



Hydraulic Cylinder located on the Center Section and a manually adjusted turnbuckle, on the Wing. To adjust, move Control Lever One until Center Section is at desired height. (Move control Lever to rear to lower Cutter, Forward to raise cutter.)

When Center Section is at desired height adjust Wing Section level with Center by adjusting the Turnbuckle to raise or lower the Wheels. Overall height of Cutter should be adjusted so that Skids are parallel to ground but not touching.

This will give best operating results while prolonging the life of skid plates. Bolt on Skid Plates are available on Red Wing Cutter after Serial No. T-8352844 BT.

LOWERING AND RAISING WING SECTIONS

Remove Transport Lock, if installed, attach Lock in operating position on Bracket provided. Push applicable control Handle away from operator, Wing should begin lowering. (CONTROL BANK TWO operates Left Wing, CONTROL BANK THREE operates Right Wing).

If you have plugged Return Line of optional Control Valve into Tractor Remote Outlet (see plumbing instruction on page 12) you may experience a back pressure problem preventing Wing from lowering. If so, stop the Tractor Engine, lower wings, then restart engine. This problem should be experienced only when Wings are folded up 90 Deg. and is a direct result of the Tractor Hydraulic System pumping more pressure than the Cutter weight can offset.

Once you lower the Wings you can then operate this machine in a normal manner. To raise Wings pull Control Handles toward you.

TRANSPORTING

For transporting Red Wing Cutter along Roads and Highways, Wings should be folded completely up and Transport Locks fastened. STOP BLADE ROTATION. If towing along Highways, Warning Lights and/or Slow Moving Vehicle Emblems should be installed.

The cutter should be raised to a height sufficient to clear all Obstructions.

OPERATING

For best results with your cutter operate PTO at 540 RPM. Ground speed should be adjusted to suit material being cut and terrain conditions. Care should be utilized whenever raising and lowering Wings to prevent damaging Cutter on unseen or hidden obstacles.

Watch out for Gates, Trees, and Poles. Remember, your Machine is in excess of 15 feet wide.

If operating along Roads or Highways, Warning lights and/or Slow Moving Vehicle Emblems should be used unless prohibited by law. If it becomes necessary to adjust or repair machine, stop engine, allow all moving parts to stop before attempting adjustments.

Do not attempt to work under Wing Sections Without transport/Safety Lock in place.

WARNING! If operating this cutter in or near areas where thrown objects might cause injury or damage, Safety Chain Guards must be installed. If Safety Chain Links become damaged or lost replace immediately.

BLADES AND BLADE BOLTS

Make sure Blades and bolts are in good condition before operating. A loose or excessively worn part may fracture unexpectedly when striking an obstruction. Replace when worn.

Inspect Blade Bolts and Blade Holder Bolt Frequently to ensure that they are properly tightened.

Re-tighten all Bolts periodically. Make sure Cotter Pins are in place and properly spread.

SHARP TURNS

When making sharp turns with a Pull Type Rotary Cutter, make sure the Rear Tractor Wheels do not strike any part of the machine. Extremely short turns should be avoided whenever possible to prevent excessive U-Joint wear.

SLIP CLUTCHES

The Red Wing Cutter is equipped with Slip Clutches that help PROTECT the Tractor Transmission and PTO Shaft from breakage due to sudden overloads. The Slip Clutches also help protect other parts in the drive train: Drive Shafts, Gear Boxes, and Blade Holders PROVIDED THAT THE CLUTCH SLIPS TO RELIEVE A SUDDEN OVERLOAD.

When PROPERLY ADJUSTED a Slip Clutch SLIPS to relieve excessive loads and automatically resets itself without interrupting the cutting operation.

VERY IMPORTANT: Slip Clutches have a tendency to "seize" if left idle for some time. Adjust the Slip Clutches at the beginning of each use period and when the Rotary Cutter has been idle for an extensive period.

SLIP CLUTCH INSPECTION AND ADJUSTMENT

Never Attempt any repairs or adjustments with Tractor Engine running. Disengage the Power Take Off, turn off the Tractor Engine, and make certain all motion has stopped before removing any Guards or Shielding.

The following procedures should be used at the beginning of each use period and when the Red Wing Cutter has been idle for an extensive period of time.

Both of the Wing Clutches should be inspected and field adjusted at the same time, then the Slip Clutch on the Center Gearbox should be inspected and field adjusted. Temporarily remove the Safety Shields over the Slip Clutches. REPLACE the Safety Shields before operating the cutter.

Hitch the Rotary Cutter to the Tractor that is to be used.

Loosen the Adjusting Nut on each of the Wing Slip Clutches. NOTE: Some Adjusting Nuts contain an Allen Set Screw, if these are encountered loosen the Set Screw before loosening the Adjusting Nut. (Nuts may be Hex Nuts or Octagonal Nuts or Spider Nuts.) Check the Clutch Plate Assembly. If necessary, free the Plates by lightly tapping on the flat edges of the Drive Plates.

After the Drive Plates have been freed from the composition material, tighten the Clutch Adjusting Nut until the Clutch Spring Washers are just free to turn by hand.

CAUTION: MAKE SURE NO ONE IS NEAR THE CUTTER WHEN IN OPERATION.

Engage the Power Take Off quickly at low RPM causing the Slip Clutches to operate briefly (1-2 seconds) thus removing any rust or other foreign material that has built up between the plates.

DISENGAGE THE POWER TAKE OFF, CUT OFF THE TRACTOR ENGINE, AND MAKE SURE ALL MOTION HAS STOPPED.

Re-tighten the Clutch Adjusting Nut on each Wing approximately one and one half turns.

SLIP CLUTCH FINAL ADJUSTMENT

Final adjustment must be made in the field. Scribe a chalk line across the drive plate(s) and the driven plates to mark their **RELATIVE POSITION TO EACH OTHER. (THE DRIVE PLATES HAVE "EARS" AND TWO OR MORE FLATS THAT EXTEND: THE DRIVEN PLATES ARE SMOOTH ON THE OUTSIDE EDGES.)**

Operate the Red Wing Rotary Cutter for three or four minutes under normal tractor load.

DISENGAGE THE POWER TAKE OFF, CUT OFF THE TRACTOR ENGINE, AND MAKE SURE ALL MOTION HAS STOPPED.

Observe the chalk line on each Wing Clutch to see if Clutch is **SLIPPING**. If Clutch is slipping as indicated by mis-alignment of chalk marks, check **CAREFULLY** for overheating by holding hand near but not touching the clutch.

IMPORTANT: IF OVERHEATING OCCURS, LET THE CLUTCH COOL BEFORE READJUSTING TO PREVENT COMPONENT DAMAGE.

Re-tighten the Adjusting Nut an additional one sixth to one third of a turn.

Repeat the above procedure, remarking with chalk to detect slippage, until excessive heating and slippage is eliminated on the Wing Clutches. Re-tighten the Allen Set

Screws if applicable.

Follow a procedure similar to the above to check and adjust the Slip Clutch for the Center Gearbox. Replace all Shields before beginning operation of the Cutter.

SLIP CLUTCH FACING WEAR

To compensate for facing wear and to maintain capacity during continuous use, the Adjusting Nut on each Slip Clutch must be tightened periodically. The frequency of adjustment will depend on tractor size and cutting conditions.

HYDRAULIC CYLINDERS

The Hydraulic Cylinders of the Hardee Red Wing Cutter are Single-Acting Cylinders. This means that Pressure activates their movement in only one direction. When the Pressure is relieved, the Force of Gravity causes movement in opposite direction.

OPTIONAL 3-SPOOL CONTROL VALVE

CONTROL BANK ONE is a 3-Position Valve that is spring loaded to return the **HANDLE** to **HANDLE MID-POSITION** from either the **HANDLE FORWARD** or **HANDLE REARWARD POSITION**.

Handle Forward Position (Toward Operator) Raises Center Section (raises Wing also if the Wing Controls, **CONTROL BANK TWO** and **THREE**, are in **HANDLE MID-POSITION**). This position permits hydraulic oil to flow at pressure to bottom end of the Center Cylinder, thus producing the Locking Effect.

Handle Rearward Position- Lowers Center Section. This position permits hydraulic oil to flow back from the Center Cylinder to the Hydraulic System Return Line.

PAGE 8

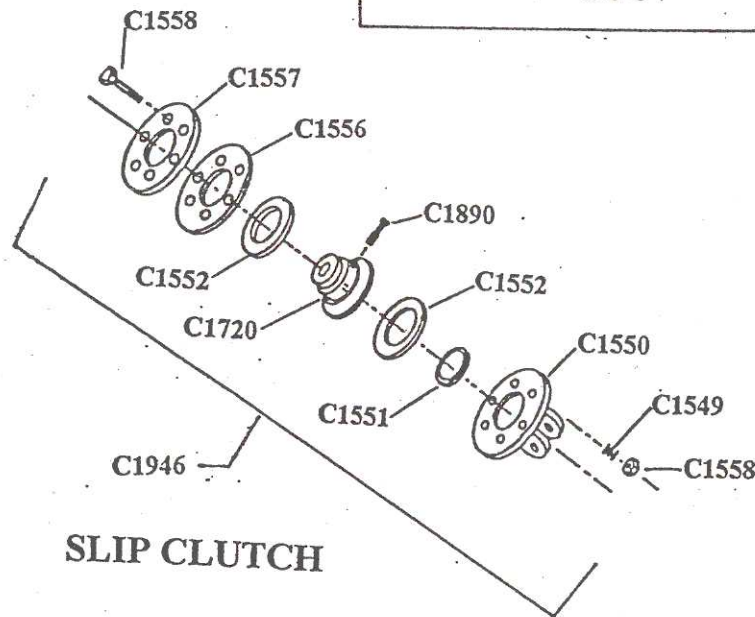
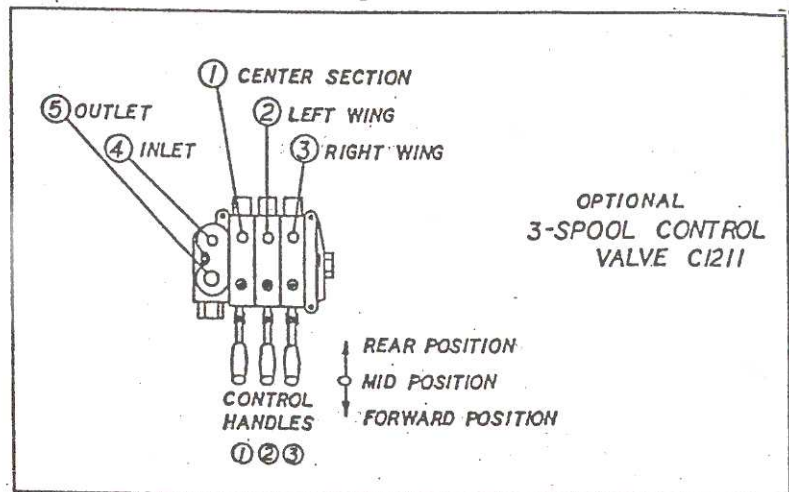
CONTROL BANK TWO and CONTROL BANK THREE each have 3-detent positions to produce specific effects:

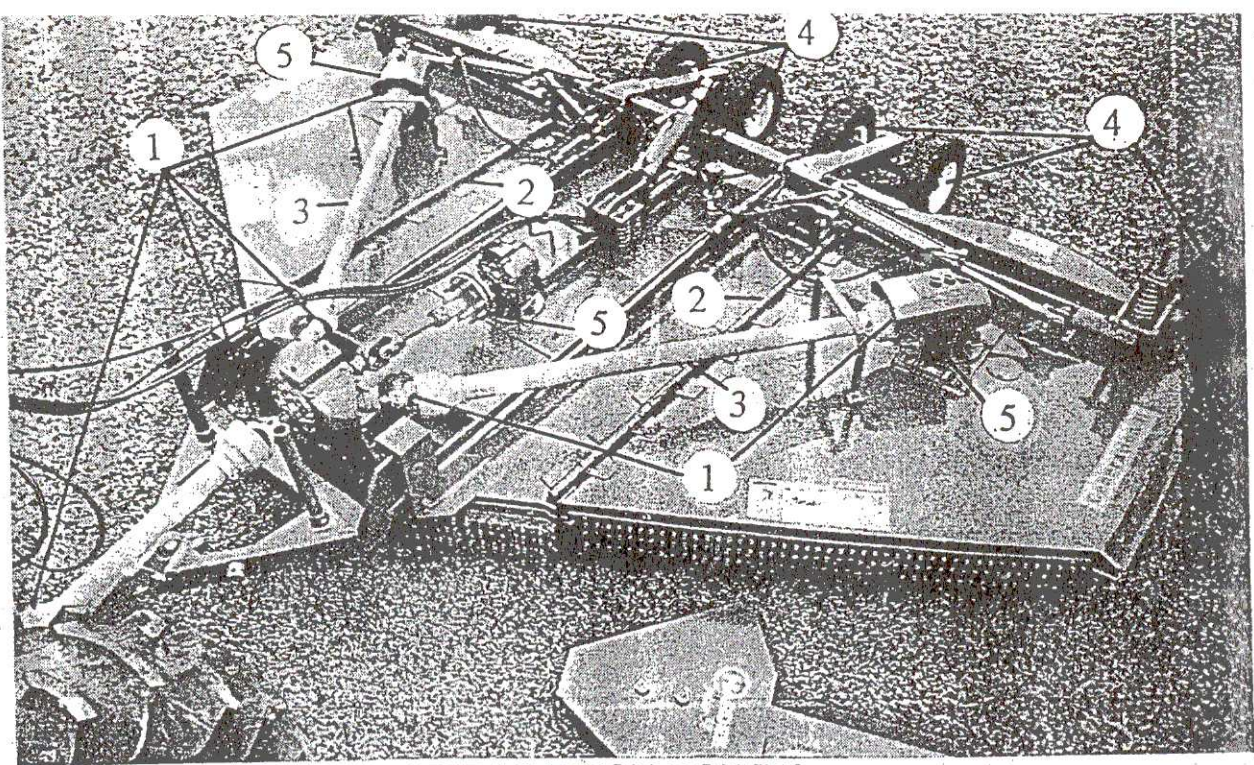
Handle Forward Position (Toward Operator) Raises Wing. This position permits hydraulic oil to flow at pressure to the top end of the wing cylinder, causing the Cylinder Rod to retract, thus raising the wing up to a maximum of 90 deg.

Handle Mid-Position Locks Wing, relative to Center Section. This position stops the flow of hydraulic oil to or from the Cylinder, thus producing the Locking Effect.

Handle Rearward Position Lowers Wing, FLOAT POSITION. This position permits hydraulic oil to flow back from the Cylinder to the Hydraulic System Return Line. As Gravity acts on the Wing to lower it the Flow Restrictor limits the flow so that the Wing does not lower too rapidly.

Oil may also be drawn to the Cylinder from the Hydraulic System if the Wing Wheels roll up a higher section of ground. Thus, on uneven terrain, the Wings may independently float up or down as required.





LUBRICATION POINTS

LUBRICATION AND MAINTENANCE

Thoroughly inspect the cutter before operation and lubricate as necessary. The cutter has been designed so that minimum time and effort is required which will insure dependable service to you.

Keep all lubricants and grease fittings free from dirt and other contaminants. Adjust slip clutch as described below.

Recommended Lubrication Points & Schedule (Diagram)

(1) Universal Joints	Every 4 hours of operation
(2) Hinges	Weekly or every 20 hours of operation
(3) Drive shafts	Every 10 hours of operation
(4) Wheel Bearings	Yearly or as necessary

(5) SLIP CLUTCH ADJUSTMENT-*Remove slip clutch safety shield by removing retaining clip and sliding shield back along drive shaft.

*Loosen Slip clutch adjusting nuts (Part C1558). Check clutch plate assembly. Free plates by lightly tapping on flat edges of drive plates if required.

*Note: Slip clutches have a tendency to seize if left idle for extended periods.

*Start tractor engine and engage power take-off at low RPM for one or two seconds to remove any rust or other foreign material between the clutch plates.

*Disengage PTO and turn off tractor engine. Be sure that all rotary motion has stopped and remove key before dismounting tractor.

*Remove clutch safety shield.

*Tighten clutch adjusting nuts alternately and evenly 1 1/2 turns at a time until springs (c1549) have compressed to between 1 1/4" to 1 3/16" in length. If plates still can be rotated by hand when springs are compressed to this limit, new plates must be installed.

*Note: Replace shield after adjustments are complete. Hitch rotary cutter to tractor.

ADDITIONAL SLIP CLUTCH INFORMATION ON PAGE 7, 9.

TRANSFER GEARBOX & GEARBOXES

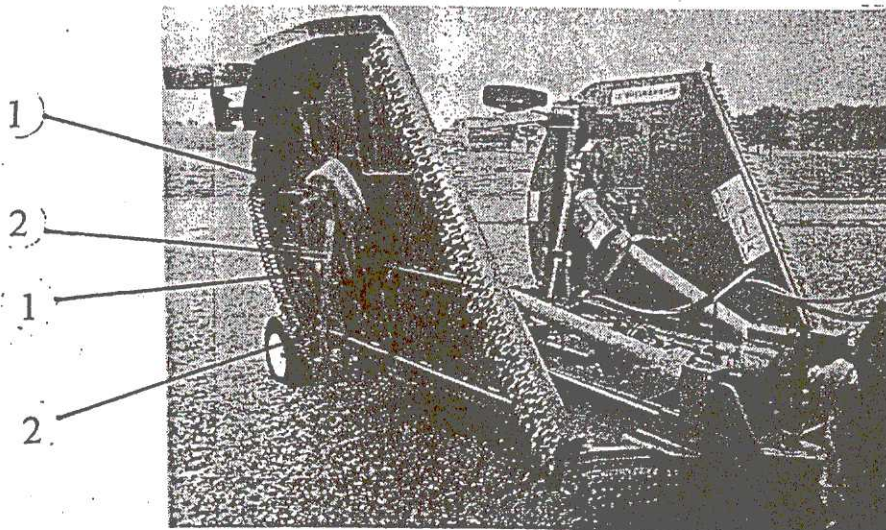
Prior to each operation, the cutter should be level and all lubricant levels should be checked.

- (1) Remove lower plug in transfer gearbox. Oil level should be at or near hole.
- (2) Remove 1/8" allen plug in outer gearboxes. Oil level should be at or near hole.
- (3) If oil level is low, remove top plug and fill with 90-140 SAE oil until proper level is reached. (Be sure to replace all plugs).

NOTE: If oil is continuously needed, check for leaking seals or possible crack in housing.

BLADE MAINTENANCE

- (1) Make sure all blade bolts are tight. Replace when necessary. Access to bolts can be obtained through the top of the cutter.
- (2) Check blades. If they become dull, it will be necessary to sharpen both blades to maintain proper balance. If this is not done, there will be a vibration problem which could cause damage to the gearboxes or structural damage. New blades should always be installed in pairs on the same blade holder to avoid excessive vibration.



BLADE MAINTENANCE

PLUMBING INSTRUCTIONS (Diagram C, page 13)

OPTIONAL THREE (3) SPOOL CONTROL VALVE

Before operation of this control on your tractor you must determine whether your tractor has an open or closed hydraulic system. Your tractor operator's manual or your dealer will supply this information. Caution: Improper installation of this control will cause damage to tractor hydraulic system.

Control is shipped open center system. To convert to closed center system, remove the open center plug and install the closed system plug. Caution: When you convert this valve to closed center system you must screw the relief valve all the way in (see page 13)

Hardee Red Wing Cutters are shipped with flow restrictors to prevent wings from falling to ground and damaging machine. DO NOT remove these restrictors.

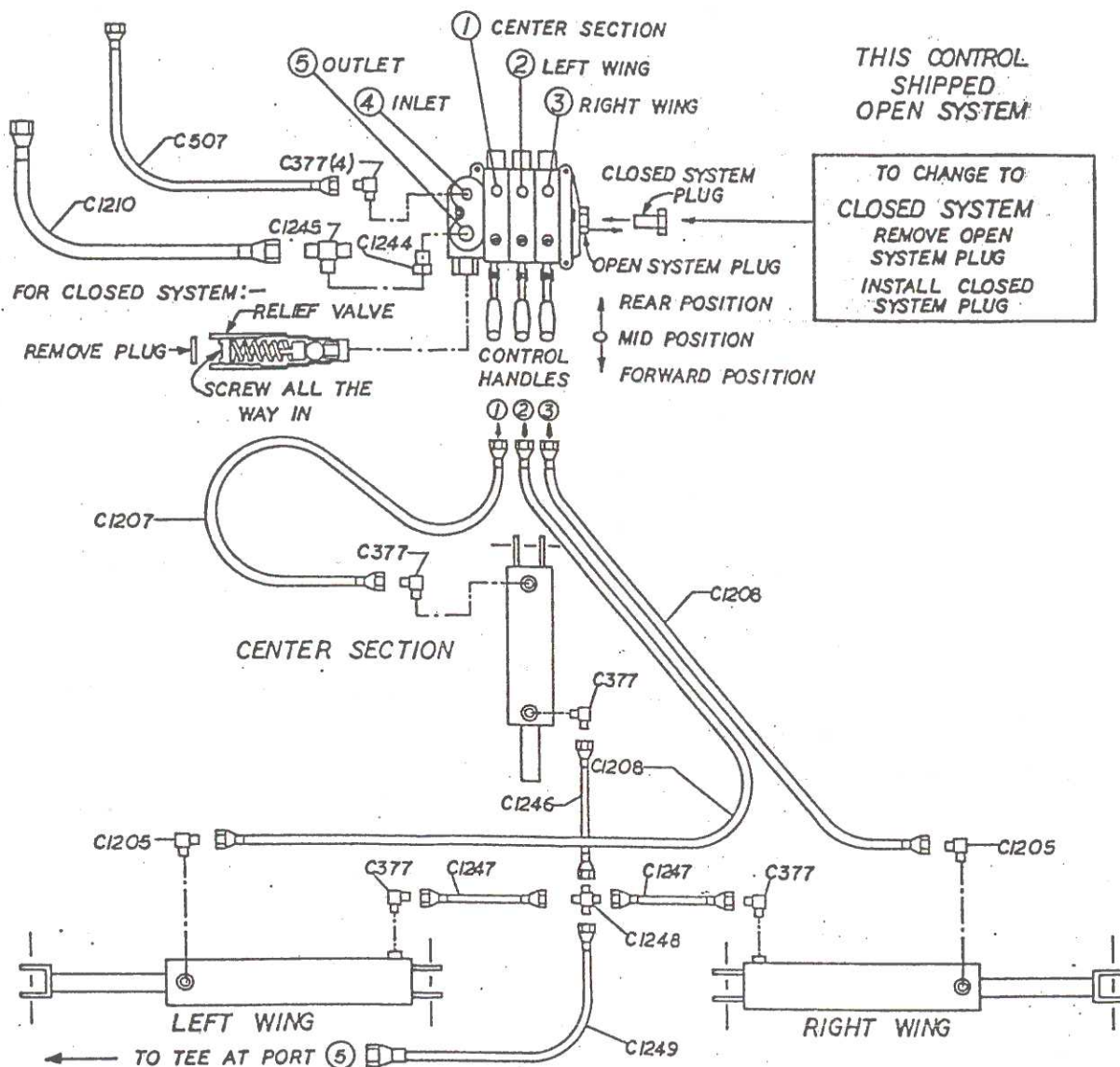
Control Valve, (C1211) should be installed to the operators right side facing operator. Install the four 1/2" 90 deg. elb., C377, in the Ports (1), (2), (3) and (4). Fit the center (1/2" NPT) of Tee, C1245, with the reducing Bushing, C1244, and install the Bushing in Port (5). Install the Hydraulic Hoses as follows:

1. Hydraulic Hose 3/8" x 18', C1207. Attach one end of El in Control Valve Bank (1) and other end to El in Bottom End of Center Cylinder. This section has a spring return which allows Cutter to be locked at desired height. Must be connected this way.
2. Hydraulic Hose 3/8" x 19', C1208. Attach one end of El in Control Valve Bank (2) other end to El. in Top End of Left Wing Cylinder, (as viewed when standing behind machine looking forward). This section has a detent that locks the handle into rear position allowing the Wing to float up or down with ground contour.
3. Hydraulic Hose 3/8" x 19', C1208. Attach one end to El. in Control Valve Bank (3) other end to El in Top End of Right Wing Cylinder. Operates same as (2) above.
4. Inlet Hose consists of one piece of 3/8" x 8' Hydraulic Hose, C507. Attach one end to El. in Control Valve Port (4), other end plugs into Tractor Remote Outlet. Quick coupler fittings are available at dealer.
5. Outlet hose consists of one piece of 1/2" x 7' Hydraulic Hose, C1210. Attach one end of the Outlet Hose to one end of the Tee, C1245. We recommend plumbing the other end of this line directly into Tractor Hydraulic Reservoir to eliminate back pressure. Fittings and adapters are available from dealer to accomplish this. However, if you so desire this hose can be fitted with a quick coupler and plugged into Remote Outlet. If plugged into Remote Outlet you will experience a problem with lowering cutter Wing Sections. Refer to operating instructions, Lowering and Raising Wing Sections on page 6 for full details.

The Top End of the Center Section Hydraulic Cylinder and the Bottom Ends of the Left and Right Wing Cylinders are all piped to a Four-way Cross, C1248, then via a Common Return Hose, C1249, to the Tee, C1245, that is installed in Port (5) of the Control Valve. See Diagram C, page 13 for schematic and fittings.

OPTIONAL 3-SPOOL CONTROL VALVE C1211

DIAGRAM C



THIS CONTROL
SHIPPED
OPEN SYSTEM

TO CHANGE TO
CLOSED SYSTEM
REMOVE OPEN
SYSTEM PLUG
INSTALL CLOSED
SYSTEM PLUG

FOR CLOSED SYSTEM:—

REMOVE PLUG → RELIEF VALVE
SCREW ALL THE WAY IN

CLOSED SYSTEM PLUG
OPEN SYSTEM PLUG

REAR POSITION
MID POSITION
FORWARD POSITION

CENTER SECTION

LEFT WING

RIGHT WING

KEY TO PLUMBING

FROM VALVE PORTS —

- ①②③④ - C377, 1/2 NPT X 3/8 JIC, 90° EL
- ⑤ - C1244, 1/2 NPT X 3/4 NPT, REDUCING BUSHING
C1245, 1/2 NPT X 1/2 JIC X 1/2 JIC, TEE
- ① - C1207, 3/8" X 18', HYDRAULIC HOSE
- ②③ - C1208, 3/8" X 19', HYDRAULIC HOSE
- ④ - C507, 3/8" X 8', HYDRAULIC HOSE
- ⑤ - C1210, 1/2" X 7', HYDRAULIC HOSE

CENTER SECTION HYDRAULIC CYLINDER —

- BOTTOM: C377, 1/2 NPT X 3/8 JIC, 90° EL
- TOP: C377, 1/2 NPT X 3/8 JIC, 90° EL
C1246, 3/8" X 31', HYDRAULIC HOSE
TO CROSS

LEFT WING CYLINDER —

- BOTTOM: C377, 1/2 NPT X 3/8 JIC, 90° EL
C1247, 3/8" X 47', HYDRAULIC HOSE
TO CROSS
- TOP: C1205, 1/2 NPT X 3/8 JIC, 90° EL,
WITH RESTRICTING ORIFICE

RIGHT WING CYLINDER —

- BOTTOM: C377, 1/2 NPT X 3/8 JIC, 90° EL
C1247, 3/8" X 47', HYDRAULIC HOSE
C1248, 3/8 JIC, CROSS
C1249, 3/8" X 15', HYDRAULIC HOSE,
WITH 1/2" JIC FITTING ON ONE END
(COMMON RETURN HOSE)
TO TEE AT PORT ⑤
- TOP: C1205, 1/2 NPT X 3/8 JIC, 90° EL,
WITH RESTRICTING ORIFICE

HARDEE LIMITED WARRANTY

Hardee warrants its **Equipment** (* Except Hydraulic Mowers) for one year to the original non-commercial, non-governmental, or non-municipal purchaser. And warrants for 90 days to the original commercial, industrial or municipal purchaser, that the goods are free from defects in material or workmanship.

Special OMNI Gearbox Warranty:

OMNI Gearboxes are warranted for a total of

3 years to the original non-commercial user and,

1 year to the commercial user.

This limited warranty does not apply to any part of the goods which has been subjected to improper or abnormal use, negligence, alteration, modification, or accident, damaged due to lack of maintenance, wrong oil or lubricants, or which has served its normal life.

The Warranty Card **must** be filled out and returned **within** 30 days of purchase. **NO** warranty will be allowed without a properly completed and returned warranty card.

“Our obligation under this warranty shall be limited to repair or replacement of any part or parts of this implement which in our judgement shows evidence of such defect and provided further that said parts shall be removed and returned by the owner at the owner’s expense to Hardee by EVH Manufacturing Co. LLC, Loris, SC, through an authorized dealer, transportation prepaid, free and clear of liens or encumbrances.

This warranty shall not include normal wear items.

Changes or alterations to the implement made without the **written** authorization of the manufacturer, will render this warranty void.

This warranty does not obligate this company to bear any labor costs in replacement of defective parts.

Hardee by EVH Manufacturing Co., LLC. reserves the right to make changes or improvements in its equipment at any time, with the express understanding that such changes or improvements do not impose any obligation of the company to install such changes or improvements on implements previously manufactured.

IMPLIED WARRANTIES: You may have some implied warranties. For example, you may have an implied warranty of merchantability (that the unit is reasonably fit for the general purpose for which it was sold) or an implied warranty of fitness for a particular purpose (that the unit is suitable for your special purposes). This special purpose must be specifically disclosed to Hardee itself, and not merely to the dealer before your purchase, and Hardee itself, not just the dealer must approve, in writing that the special purpose is warrantable.

These implied warranties do not apply at all if you use your equipment for business or commercial use.

*See separate Hydraulic Mower Limited Warranty for Hydraulics



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