JOHN DEERE 6600, SIDEHILL 6600 AND 7700 COMBINES

JOHN DEERE

OPERATORS MANUAL

JOHN DEERE 6600, SIDEHILL 6600
AND 7700 COMBINES

OMH92873 J5 English

JOHN DEERE HARVESTER WORKS
OMH92873 J5

LITHO IN THE U.S.A.
ENGLISH

To the Purchaser

This new combine was carefully designed and manufactured to give years of dependable service. To keep it running efficiently, read this operator's manual, which is divided into sections, for easy location of information. The Table of Contents explains where each section is located and the alphabetical index gives detailed listings.

This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

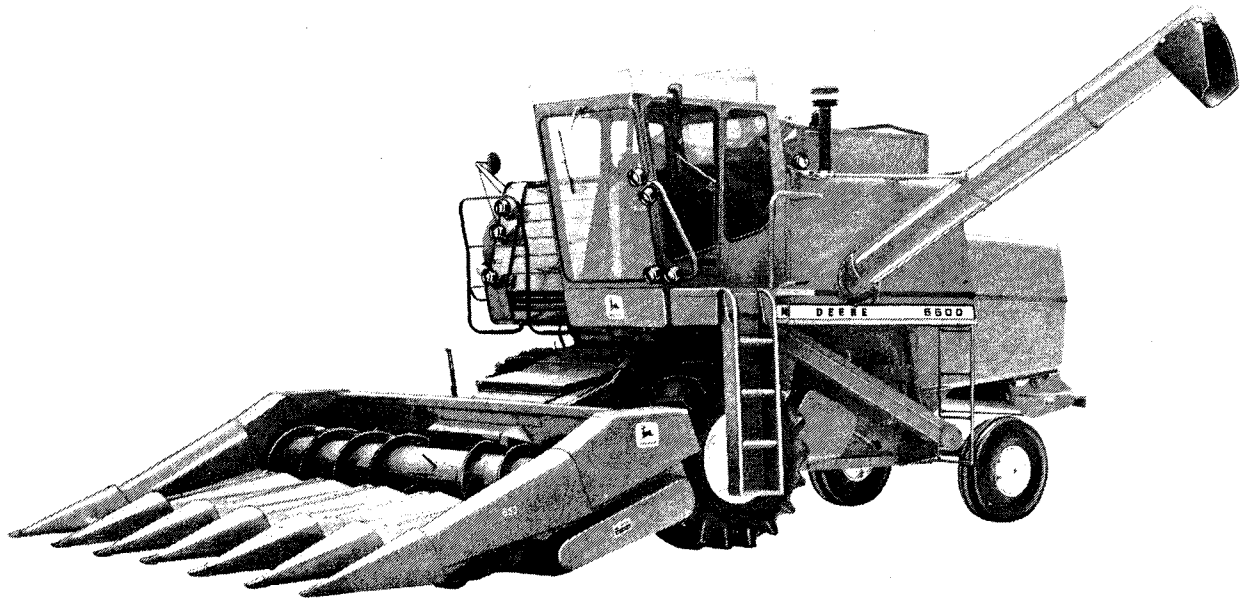
Your Operator's manual contains SI Metric equivalents which follow immediately after the U.S. customary units of measure.

This operator's manual covers the feeder house and separator areas of the combine. For header information, see the separate operator's manuals furnished with that equipment.

"Right-Hand" and "left-hand" sides are determined by facing in the direction the combine will travel when in use. The radiator end of the engine is referred to as the "front," the flywheel end as the "rear."

Record your combine serial numbers in the space provided on page 208. Your dealer needs this information to give you prompt, efficient service when you order parts or attachments. If your combine requires replacement parts, go to your John Deere dealer where you can obtain Genuine John Deere parts—accept no substitutes.

The warranty on this combine appears on your copy of the purchase order which you received from your dealer when you purchased the combine.



H26307

John Deere 6600 Combine with 653 Row-Crop Head

Contents

Safety Suggestions

Safety of the operator was one of the prime considerations in the minds of John Deere engineers when this combine was designed. Shielding, simple adjustments, and other safety features were built into the combine wherever possible.

All machinery should be operated only by responsible persons who have been properly instructed and delegated to do so.

No riders should be allowed on the operator's platform when combine is in operation.

Be sure shields and guards are in place and in good condition before starting in the field.

Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before disconnecting lines be sure to relieve all pressure. Before applying pressure to system, be sure all connections are tight and that lines, pipes and hoses are not damaged. 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.

Clothing worn by combine operator should be fairly tight and belted. Loose jackets, shirts, or sleeves should never be worn because of the danger of getting into moving parts.

Make certain everyone is clear of the combine before starting so they cannot be struck by moving parts or caught in a drive belt or chain.

Never clean, lubricate, or adjust the combine when it is running.

Be especially careful when operating on hillsides because combine may tip sideways if it strikes a hole, ditch, or other irregularity.

Never attempt to clear obstructions off the header unless the combine is stopped and the engine shut off.

Keep the operator's platform clean. Do not use it as a place to carry loose tools, lunch boxes, etc.

Maintain a fire extinguisher in an easily accessible location and be familiar with its' correct use.

Before leaving combine unattended, lower the header to the ground or support it with either the hydraulic cylinder safety stop or with blocks.

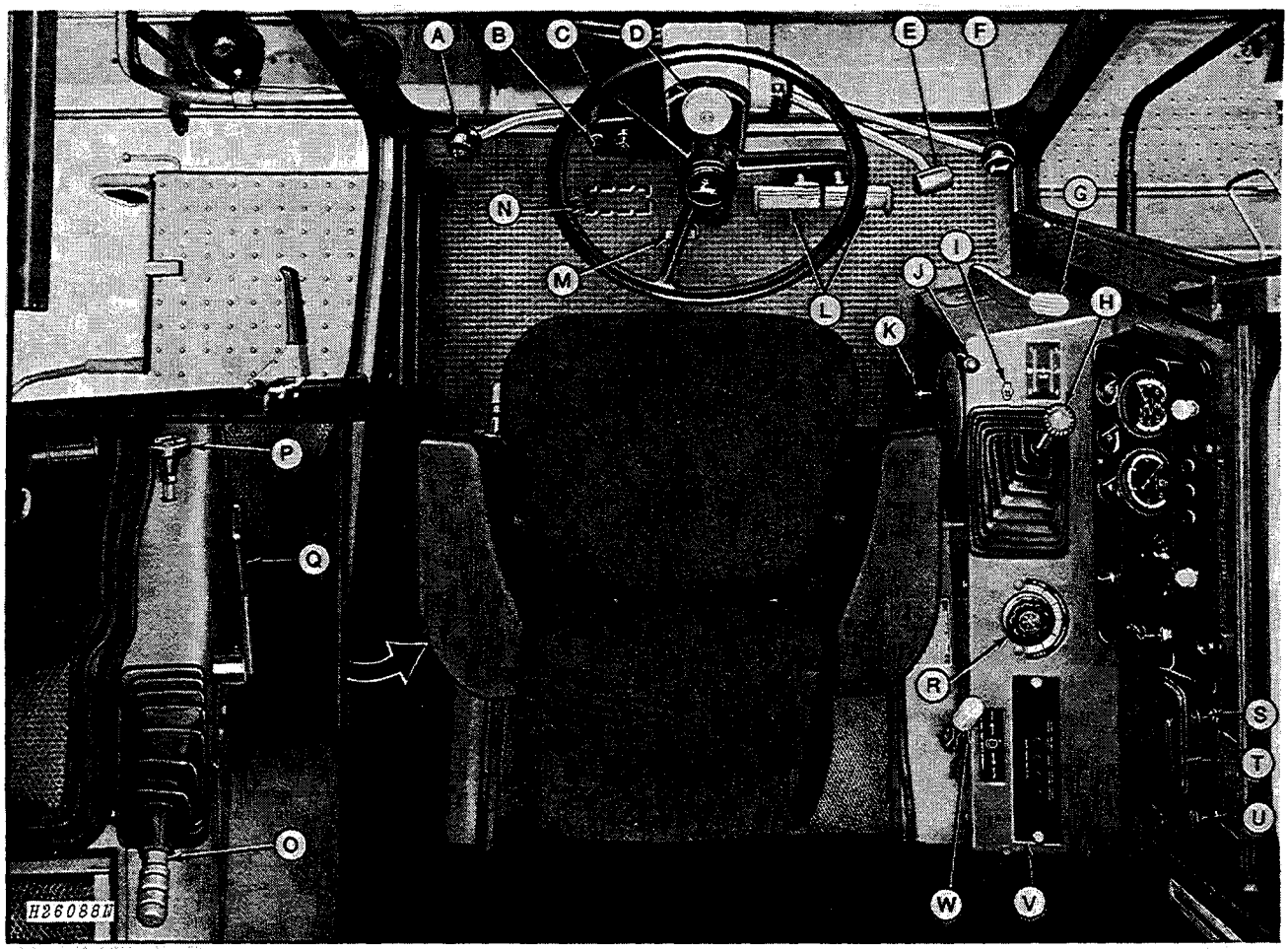
Controls and Instruments

Before attempting to operate your new combine, become familiar with the location and purpose of all controls and instruments. Study these pages carefully, regardless of your previous combine experience.

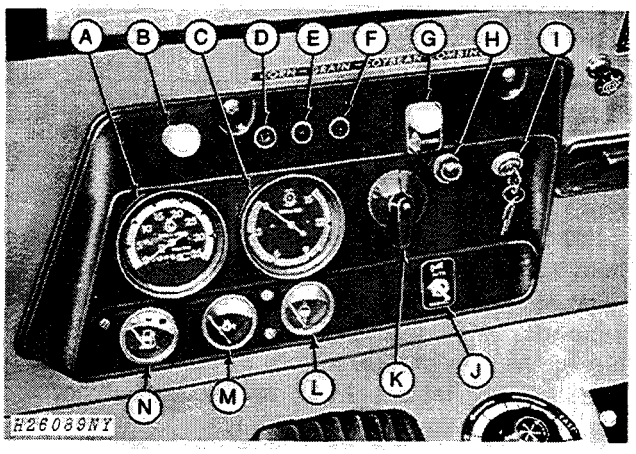
Control levers and knobs have different colors and shapes to help you quickly locate them while operating the combine. Colors on controls indicate:

RED—Combine movement controls (Throttle, Gearshift Lever, Selective Ground Speed Control)
YELLOW—Auxiliary Power Controls (Separator Control Lever, Cylinder Speed Control Ratchet, Header Electromagnetic Clutch Switch)
BLACK—Combine Function Controls Header Height Control, Hydraulic Lift Reel Control, etc.)

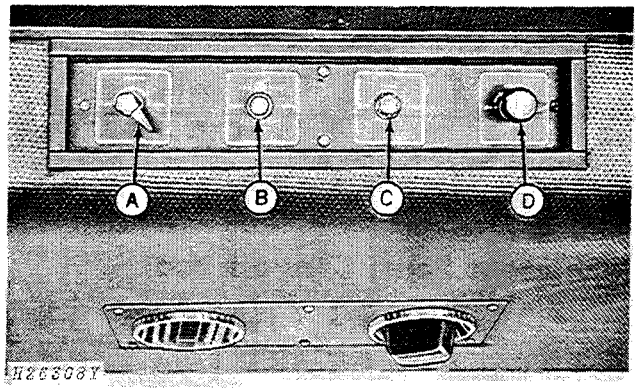
OPERATOR'S PLATFORM



Instrument Panel Controls and Instruments



Operator's Cab Controls



The operator's cab controls are located in the cab headliner. The radio is located in the rear right-hand corner of the cab.

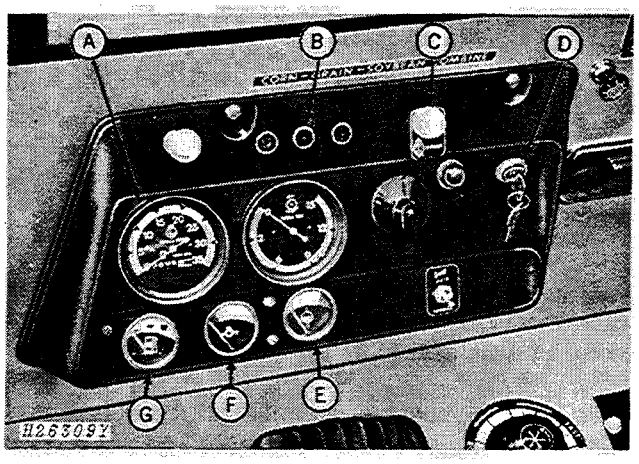
NOTE: For controls not located on the operator's platform (fan speed control, chaffer and sieve opening controls) see page 19.

Operation

OPERATING THE ENGINE

ENGINE INSTRUMENTS AND CONTROLS

Instrument Panel Controls and Instruments



A—Engine Tach-Hour Meter
B—Alternator Indicator Light
C—Cold Weather Starting Aid Button
D—Ignition Switch
E—Coolant Temperature Gauge
F—Engine Oil Pressure Gauge
G—Fuel Gauge

Ignition Switch

Turn the key "D" clockwise to the first stop. Check that alternator indicator light glows red. If it does not, turn key off and see TROUBLE SHOOTING, page 188.

Turn the key further clockwise and hold until engine starts. Release the key immediately when the engine starts. The alternator indicator light should go out. If it does not go out after 10 seconds, shut off engine at once and determine cause.

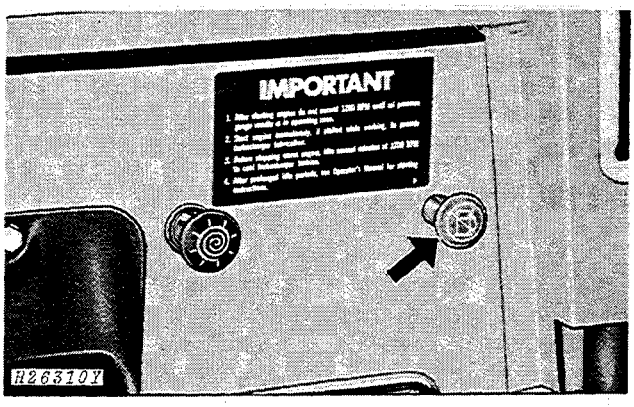
IMPORTANT: When starting the engine, never hold the key in start position for more than 30 seconds. If the engine does not start within 30 seconds, allow at least 2 minutes for proper cooling of the starter. Be certain to pause a few seconds after a false start to make certain that the starter has stopped completely.

If the engine fails to start, refer to the trouble shooting charts on page 188.

Throttle

Move throttle all the way forward for normal operation; move throttle all the way rearward for slow idle.

Fuel Shut-Off (404 Engines Only)



The fuel shut-off knob cuts off the fuel supply to the fuel injection pump. Push the knob all the way in before attempting to start engine.

To stop engine, turn key off and pull fuel shut-off knob all the way out until engine stops running.

Alternator Indicator Light

This light glows red when the alternator is not charging. If the light goes on while the engine is running, stop engine and determine cause.

Check the operation of this light by turning the key to the on position.

Coolant Temperature Gauge

This gauge indicates the coolant temperature in the cooling system—not the quantity. The white zone on the dial indicates normal operating temperature; the red-orange zone indicates above normal operating temperature.

If the pointer on the gauge goes into the red-orange zone, stop the engine immediately and determine the cause.

Coolant Temperature Warning Horn

A low note horn sounds when the coolant temperature gauge registers hot. This horn will also sound when the straw walker sensing unit (attachment) is activated.

If the horn sounds, stop engine and check the engine for overheating or straw walkers for plugging.

If the straw walkers are not plugged, determine the cause of engine overheating.

Engine Oil Pressure Gauge

This gauge "F" indicates pressure of the engine lubricating oil. Oil pressure will vary slightly with wear, but with recommended oil, it should read normal at full governed speed (indicated by white zone on the dial). If oil pressure drops (indicated by red zone on the dial), stop engine immediately and determine cause.

Fuel Gauge

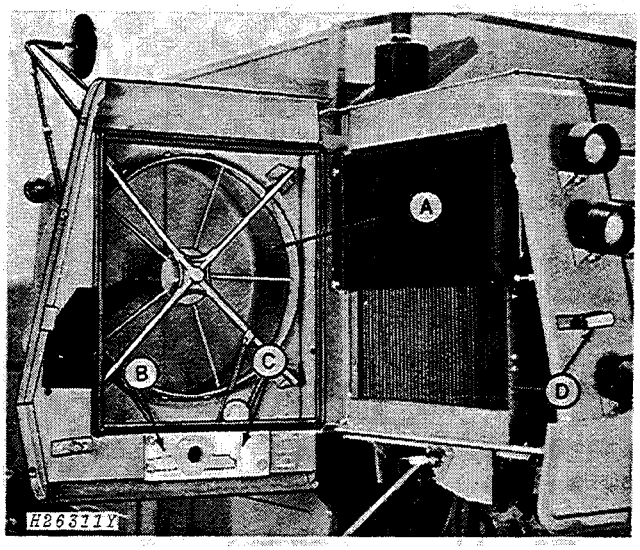
A full mark, a half-full mark, and an empty mark indicates fuel level. The red-orange zone indicates that the fuel tank is empty.

Engine Tach-Hour Meter

The tach-hour meter shows the engine speed in hundreds of rpm and accumulated engine service in hours and tenths of hours (based on an average engine operating speed of 2500 rpm, 2200 rpm on turbocharged diesel). Use this hour meter to determine when lubrication and periodic services are needed.

PRESTARTING CHECKS

1. Check engine crankcase oil level (Page 58).
2. Check radiator coolant level (Page 161).
3. Check fuel tank level.
4. Drain sediment from fuel filter(s) (Page 155).
5. Clean air cleaner dust cup and precleaner (Page 164).
6. Check and lubricate combine (Pages 54-71).



A—Rotary Cooling Screen
B—Drive Engaged
C—Drive Disengaged
D—Over-Center Latch

IMPORTANT: When preparing to operate the combine in below-freezing temperatures and before starting engine, be certain the rotary screen is free of snow or frozen moisture and will turn easily. Belt failure can occur if rotary screen will not turn.

7. The rotary screen drive must be engaged whenever the engine is running.

Disengage screen drive by moving lever rearward and up as shown at "C". Move lever down and forward to engage as shown at "B".

Pull out on screen door over-center latch "D" and swing door open.

Close screen door, fasten over-center latch "D" and engage screen drive "B".

IMPORTANT: Rotary screen drive must be fully disengaged before opening or closing screen door.

8. When starting the engine after the combine has been idle for an extended period, pull the fuel shut-off all the way out, and crank the engine with the starter until the engine oil pressure gauge registers pressure. Do not operate the starter more than 30 seconds at a time. After pressure is indicated, move the throttle to the slow idle position, make sure fuel shut-off is all the way in, and start the engine.

STARTING ENGINE

CAUTION: Before starting the combine engine, be sure there is plenty of ventilation. Never operate the combine in a closed building.

1. Disengage header electromagnetic clutch switch, separator control lever, and grain tank unloading auger lever.

2. Place gearshift lever in neutral.

3. Depress clutch pedal fully or place the hydrostatic speed range lever in neutral.

4. Move throttle lever to slow idle position.

5. Be certain fuel shut-off knob is pushed all the way in on 404 engines.

6. Turn key clockwise to the first stop. Check that alternator indicator light glows red.

7. Turn key further clockwise and hold until engine starts. Release key immediately when engine starts.

IMPORTANT: When starting engine, never hold key in start position for more than 30 seconds. If engine does not start within 30 seconds, allow at least 2 minutes for proper cooling of starter. Be certain to pause a few seconds after a false start to be certain starter has stopped completely.

NOTE: If the prevailing temperature is 40°F (4°C) or lower, it may be necessary to use the cold weather starting aid to start the engine.

To inject starting fluid, press starting aid button located on instrument panel (button marked with decal).

Stop injecting fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another "shot" of fluid.

IMPORTANT: Fluid can must be left in tray, even if empty, to prevent dirt from being drawn into the engine. To avoid damage, turn engine with starter one or two revolutions before injecting starting fluid. Inject starting fluid only while the engine is turning.

IMPORTANT: Do NOT tow hydrostatic drive combines to start engine.

8. Make certain the oil pressure gauge registers pressure and the alternator indicator light goes off. If not, stop engine and determine the cause.

9. Idle the engine for several minutes to warm up engine and to insure turbocharger lubrication before accelerating, applying a load, or transporting.

10. Engage the separator and operate at 1500-1800 engine rpm for 5 to 10 minutes. Monitor oil pressure and water temperature and check for oil leaks.

11. If engine has not been operated for a long period of time, bleed entire fuel system to remove air bubbles.

STOPPING ENGINE

1. Place the hydrostatic speed range lever in neutral.

2. Place the gearshift lever in neutral.

3. Move the throttle lever to the rear. Allow the engine to idle a few minutes to cool the engine and turbocharger. (Lubrication and cooling of the turbocharger and some engine parts is provided by the engine lubricating oil. Therefore, sudden stopping of a hot engine may allow some parts to overheat and cause possible damage.) Allow the temperature gauge needle to drop well into the white range on the dial.

4. Pull out the fuel shut-off, and then turn the key off.

IMPORTANT: On combines with turbocharged 404 engine, push fuel shut-off back in immediately after the engine has completely stopped, to prevent difficult restarting in cold weather.

IMPORTANT: Do not attempt to stop engine by turning off fuel supply at tank.

COLD WEATHER OPERATION

Fuel System

Use winter-grade fuel. Fill the fuel tank at the end of the day's run to prevent condensation.

Cooling System

Drain, flush, and fill cooling system with a recognized brand of radiator sealer and antifreeze solution. Use permanent-type (ethylene glycol) antifreeze solution containing rust inhibitors and without stop-leak additive. This type of antifreeze is resistant to evaporation when heated.

Quarts (litre) of Ethylene Glycol Required at Lowest Expected Temperature

	329 Engine		404 Engine	
+20°F (−7°C)	5	(4.73 l)	6	(5.68 l)
+10°F (−12°C)	8	(7.57 l)	9	(8.52 l)
0°F (−18°C)	10-1/2	(9.94 l)	12	(11.36 l)
−10°F (−23°C)	12	(11.36 l)	14	(13.25 l)
−20°F (−29°C)	14	(13.25 l)	16	(15.14 l)
−34°F (−37°C)	16	(15.14 l)	18-1/2	(17.51 l)

After filling, check system for leaks.

Batteries

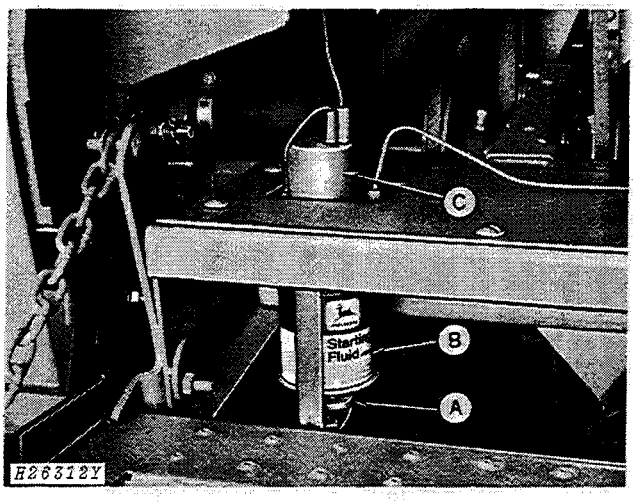
When the temperature drops below freezing, keep batteries fully charged. A badly discharged battery freezes more quickly than one that is well charged.

In freezing weather, do not add water to the batteries unless engine is going to be run. Water will freeze as it will not mix with the electrolyte until the alternator passes a charging current through the batteries.

IMPORTANT: If booster batteries are required, see instructions on page 144.

Cold Weather Starting Aid

Diesel engines are equipped with an ether starting fluid aid which injects atomized ether fluid into the engine air intake system. Normally, ether is used for starting at temperatures below 40°F. (4°C).



A—Screw **B—Tray** **C—Solenoid**

To use the starting fluid aid, remove safety cap and plastic spray button from can. Loosen screw "A" and place can in tray "B". Position can directly under electric solenoid "C". Tighten screw by hand until nozzle of can is securely seated in the solenoid.

IMPORTANT: To avoid damage, turn engine with starter one or two revolutions before injecting starting fluid. Inject starting fluid only while the engine is turning.

To inject starting fluid, press starting aid button (marked "ether") located on instrument panel.

Stop injecting fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another "shot" of fluid.

IMPORTANT: Fluid can must be left in tray, even if empty, to prevent dirt from being drawn into the engine.

CAUTION: Ether starting fluid is highly flammable. Store starting fluid cans where they will not be subject to extreme cold or warm temperatures. For best results, store fluid at room temperature.

HOT WEATHER OPERATION

The combine has a 7 psi (0.50 bar) pressure radiator cap. This pressurizes the cooling system so all components must be tight and in good condition for proper operation. Loss of pressure will result in overheating and loss of coolant.

The combine is shipped from the factory with permanent-type antifreeze in the cooling system.

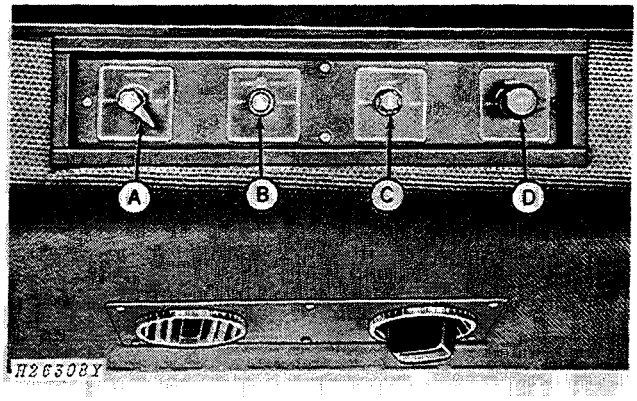
This antifreeze should be left in the cooling system during hot weather operation. If coolant is lost or drained out and freezing temperatures are not anticipated, the cooling system can be protected against corrosive action by using summer Engine Coolant Conditioner.

To install the Summer Engine Coolant Conditioner, drain and flush cooling system and add two 32-oz. (0.9463 l) cans of Summer Engine Coolant Conditioner (John Deere Part No. T19566) to the cooling system following directions on the container.

IMPORTANT: Summer Engine Coolant Conditioner is NOT AN ANTIFREEZE or a cooling system sealer. Drain system and fill with recommended antifreeze solution as required for winter protection. When antifreeze solution is in system, it is not necessary to use the Conditioner; however, if severely corrosive water conditions are present, the Conditioner is compatible with antifreeze solutions.

OPERATOR'S PLATFORM COMPONENTS

OPERATOR'S CAB CONTROLS



A—Heater Temperature Control Switch
B—Pressurizer Fans Switch
C—Air Conditioner Temperature Control Switch
D—Windshield Wiper Switch

The operator's cab controls are located in the cab headliner. The radio is located in the rear right-hand corner of the cab.

The air outlets are adjustable by rotating to control air flow into the cab. An air deflector on one outlet will further control air flow.

PRESSURIZER SYSTEM

The switch "B" controls the fans which pressurize the cab. This is a three-speed switch with the highest speed obtained by turning the switch clockwise as far as it will go.

IMPORTANT: Pressurizer fans must be operating whenever the heater or air conditioner is in use.

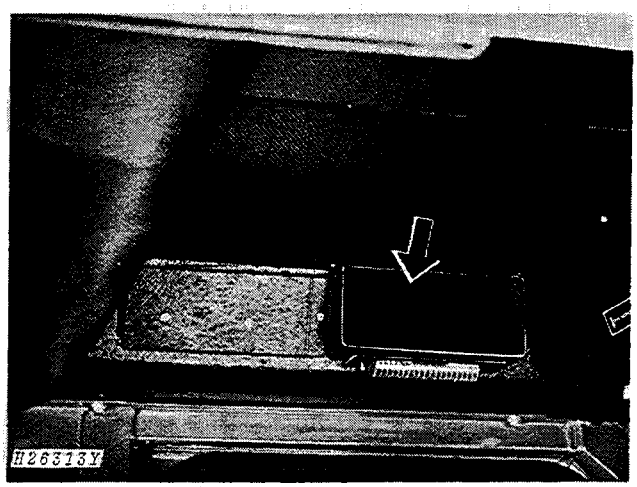
AIR CONDITIONER SYSTEM

⚠ CAUTION: The air conditioner system should only be serviced by a qualified serviceman.

This switch "C" is a thermostatic-type switch which maintains the desired temperature.

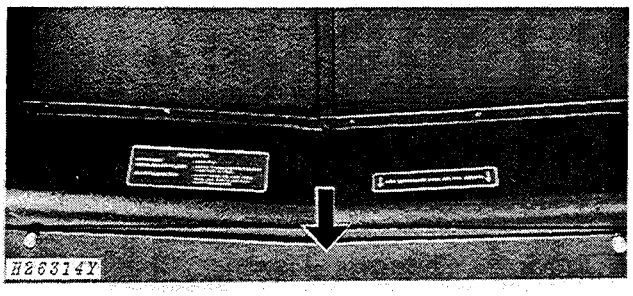
Cool air is controlled by turning the switch "C" clockwise toward "COLD." Turning the switch all the way to the "COLD" position will provide maximum cooling.

Normal Air Recirculator



Under normal operating conditions, the normal air recirculator, which is located above the dome light, will provide sufficient cooling.

Maximum Air Recirculator



Under normal operating conditions, the normal air recirculator will provide sufficient cooling.

If increased cooling is desired, open the door on the maximum air recirculator in the rear of cab headliner.

Air Intake (Attachment)

The air intake, which is mounted on the rear of the cab roof, provides additional air intake to the cab.

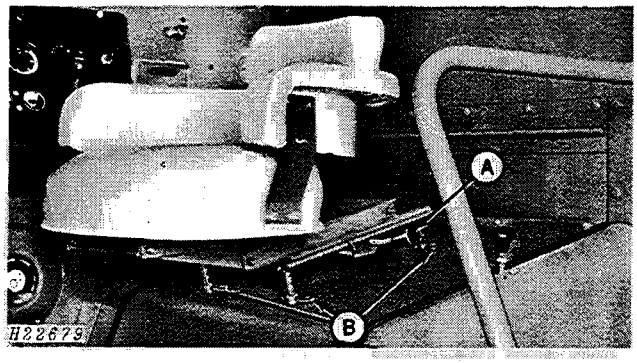
HEATER SYSTEM

Heat is controlled by turning the heater control switch "A" clockwise. Turning the switch all the way to the "HOT" position will provide maximum heating.

IMPORTANT: The pressurizer system must be in operation when the heater is in use.

OPERATOR' SEAT

Standard Operator's Seat



The operator's seat moves forward and rearward or up and down to accommodate individual height and to allow greater accessibility to all controls.

Use only warm water and mild soap to clean the seat cushions. NEVER USE SOLVENTS.

Adjusting Seat Forward or Rearward

While sitting in the seat, push lever "A" forward as far as possible and by using your weight, adjust seat to desired position and then release lever "A".

Adjusting Seat Up or Down

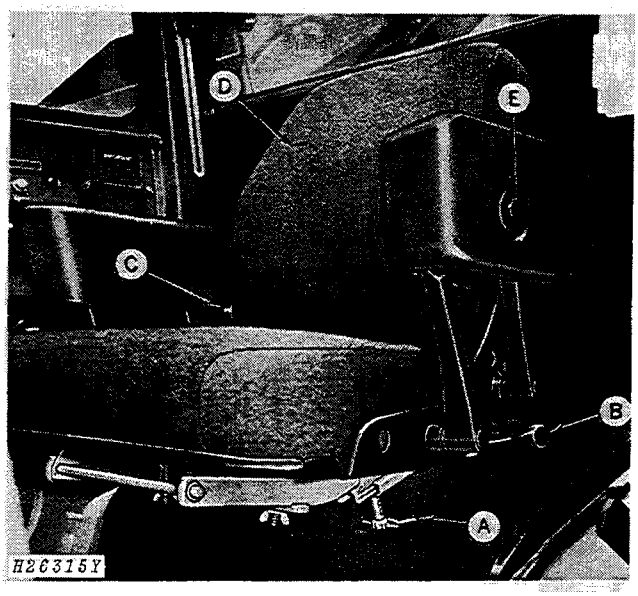
Remove four spring locking pins "B", raise or lower the seat to the desired height then reinsert spring locking pins "B".

(Optional) Personal-Posture Seat

The Personal-Posture seat is adjustable in five different respects and is upholstered in durable cloth fabric for operator comfort.

Seat fabric should be frequently vacuum cleaned or brushed with a soft bristle brush to remove loose dirt and dust. Fabric cleaners may be used to clean normal soilage on fabric. Grease and oil stains on fabric may be cleaned with commercially available solvent-type spot removers. Follow solvent label directions carefully.

Use only warm water and mild soap to clean the arm rests. Never use solvents.



A—Spring Locking Pins
B—Lever
C—Backrest Angle Control Knob
D—Lumbar Support Knob
E—Armrest Release Button

Adjusting Seat Up or Down

Remove the four spring locking pins "A". Raise or lower the seat to the desired height. Replace spring locking pins "A".

Adjusting Seat Forward or Rearward

Sit in the seat, push lever "B" forward as far as possible and by using your weight, adjust seat to the desired position, and release lever "B".

Adjusting Backrest Angle

The backrest is adjustable through a 10° angle. To change the angle to the desired position, raise or lower the backrest angle control knob "C."

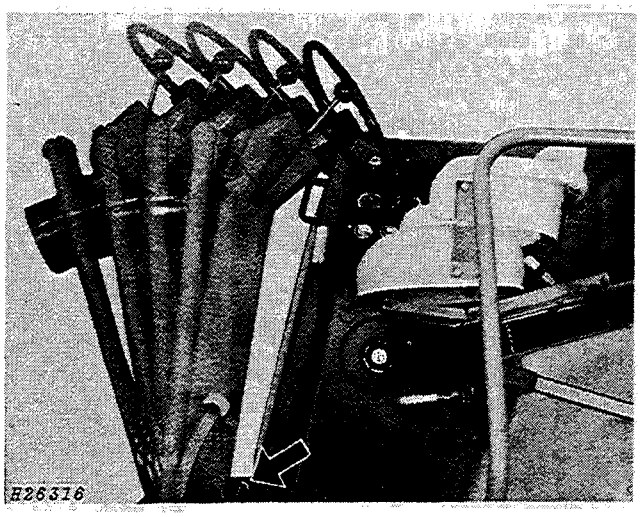
Adjusting Lumbar Support

A lumbar support mechanism is built into the backrest. This support is adjustable to five different pressures against the lower portion of the back. Move knob "D" up or down to adjust lumbar support to the desired position.

Adjusting Armrest Height

Armrest height is adjustable to five different positions. To adjust the height, press the armrest release button "E", move armrest up or down to the desired position, and release button.

STEERING COLUMN



The steering column is adjustable to one of four positions for individual arm lengths.

To adjust steering column, push pedal (arrow) down, position column to desired setting, and release pedal.

PIVOTING LADDER

A—Lever **B—Lock** **C—Lever**

Move the pivoting ladder up out of the way of uncut grain.

Pull lever "A" up and to the right to release lock "B", then pull lever "C" forward until ladder is parallel to the ground. Push lever "A" to the left to lock ladder in place.

PROPULSION CONTROLS

GEARSHIFT LEVER

Posi-Torq Drive Combines

Depress the clutch pedal fully; then shift lever to desired position.

⚠ CAUTION: Make certain that the gearshift lever is in the neutral position and the clutch pedal is fully depressed before starting the engine.

When towing combine, place gearshift lever in tow position (page 15).

Hydrostatic Drive Combines

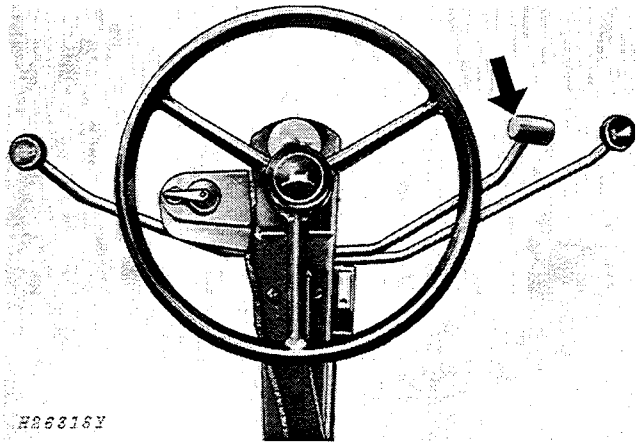
Move hydrostatic drive lever to (N) neutral, then shift lever to desired position. There is no reverse position as all forward gears are also reverse gears.

⚠ CAUTION: When operating combine and transmission is under load you cannot move gearshift from the gear it is in. It is necessary to move the hydrostatic drive lever to (N) neutral first before shifting.

When towing combine, place the speed range lever in neutral.

GROUND SPEED CONTROL

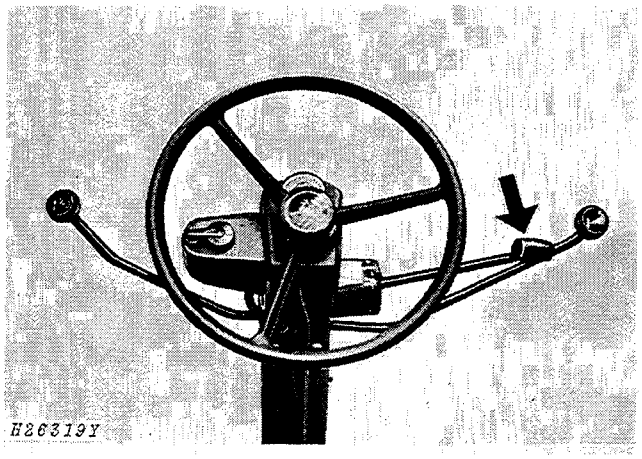
Selective Ground Speed Control (Posi-Torq)



To increase ground travel speed within a selected transmission gear, move lever forward. To decrease ground travel speed, move lever rearward.

Release the lever and it will return to its neutral position while the travel speed remains as selected.

Hydrostatic Drive Speed Range Lever



To move combine forward, place gearshift lever in desired transmission gear and push the speed range lever forward.

To stop combine, return the speed range lever to neutral against the stop. Place the gearshift lever in neutral.

To move combine in reverse, place the gearshift lever in desired transmission gear and move the speed range lever up and pull rearward.

Ground Speed Indicator (Posi-Torq)

This indicator, attached to the steering column, permits returning to the same ground travel speed after stopping or changing speed.

IMPORTANT: The indicator is not a speedometer. The numerals do not indicate the ground travel speed in miles per hour.

TRANSMISSION OIL PRESSURE INDICATOR LIGHT

X 2237

The indicator light glows red when the oil pump in the transmission is not functioning properly, when the oil pressure is too low, or when the hydrostatic drive is in reverse range.

To check operation of the light, turn the key switch on; the light should glow. If light does not glow, check wire connections on the switch at the transmission.

Posi-Torq Drive Combines

The light will go off when the engine is at full throttle and when the clutch is engaged. If the light stays on, stop combine immediately and check the transmission oil level; see page 70. If the oil level is correct, see your John Deere dealer.

When the clutch is disengaged, the light will glow because the oil pump is not engaged.

Hydrostatic Drive Combines

The light will go off when the engine is at full throttle and the speed range lever is positioned at mid-range or above.

When the hydrostatic speed range lever is in neutral, the light will glow because the oil pump is not engaged.

NEUTRAL STARTING SWITCH

This switch prevents the combine from being started when the transmission is in gear. Check the wires to the switch on the transmission periodically (page 133). If the switch fails, see your John Deere dealer.

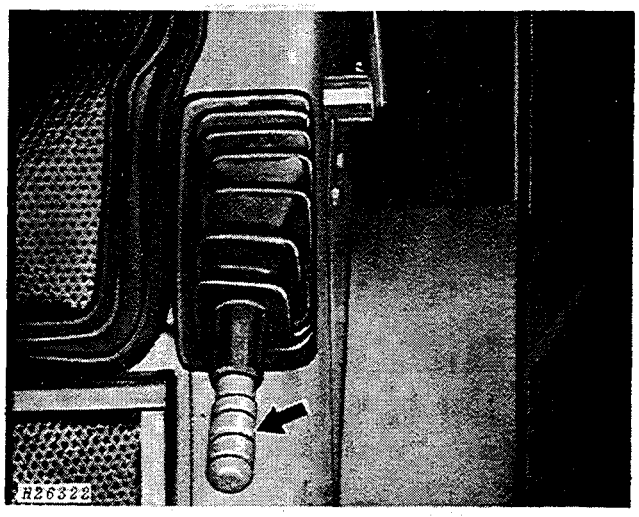
STEERING MECHANISM

The steering mechanism is operated by full-time power steering, sometimes referred to as hydrostatic steering. The steering control wheel activates the valve, located under the operator's platform, which in turn allows oil to flow through steel lines to the hydraulic steering cylinder, thus turning rear steering wheels to desired position.

PARKING BRAKE

The parking brake locks the wheel brakes so the combine cannot move if left unattended. Never attempt to move the combine with the parking brake lever engaged.

Parking Brake Lever



To engage, pull lever upward.

To disengage, push lever downward.

Parking Brake Indicator Light

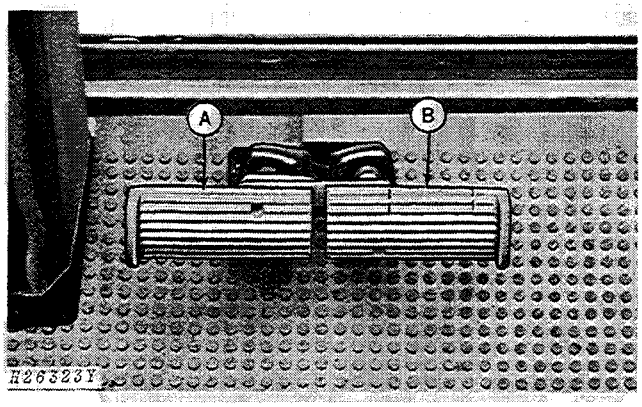
This light flashes red when the ignition is on and the lever is engaged. If the light is flashing, release the lever before moving the combine.

HYDRAULIC BRAKES

These are differential brakes and can be used to assist in turning to left and right. When pedals are used together, a quick stop is assured.

⚠ CAUTION: Reduce travel speed by moving ground speed lever before applying brakes.

When stopping the combine, press on both brake pedals. Uneven application of brakes will draw combine to one side. Apply brakes evenly at transport speeds.



A—Brake Lock Position for Both Brakes
B—Brake Lock Position for Single Brakes

When transporting the combine or traveling at high speeds, couple the pedals together with the brake lock.

Quick stops can result in combine nosing forward. Drive with the care necessary to allow controlled application of brakes at all times.

HYDRAULIC CLUTCH

When shifting gears, depress the clutch pedal fully. Never attempt to depress the clutch and shift into gear while the combine is moving. Damage will result in the shifting mechanism.

⚠ CAUTION: Do not depress the clutch pedal when driving downhill.

TIRES

Proper inflation is essential to the long life of a tire. Lack of air pressure allows the tire to slip on the rim and buckle the side walls. Overinflation causes uneven tread on tire structure and may result in ruptures due to impact with stones, roots, or ruts. It also causes excessive tread wear and allows tire to cut in more on wet ground.

IMPORTANT: Never operate combine with tires at shipping pressure.

Check air pressure in all tires every 50 hours. Inflate or deflate tires to obtain proper air pressure as given in tire inflation chart (page 127).

IMPORTANT: Your combine may be equipped with tubeless tires. It is important that the specified tire pressure be maintained. Underinflation can cause a tubeless tire to lose its mounting bead.

Keep valve caps screwed finger-tight onto valve stems. This will prevent dust, fine gravel, mud and other foreign material from accumulating in the valve core and permitting the compressed air to escape.

Correct toe-in (page 124 or 126) of the rear wheels must be maintained; otherwise the combine will be difficult to steer and the tires will be subject to excessive wear.

TRACKS

A new track assembly has a tendency to be very stiff. To loosen it properly, run the combine backward and forward several times. After tracks have loosened, check track tension (page 129).

Instances arise where, after working in muddy conditions, the combine is driven to higher ground and left overnight without removing mud from between track bushings. The mud dries and hardens and the sprocket is unable to grip the bushing firmly, which results in slipping and puts a tremendous strain on the transmission. To help prevent this condition, the combine should either be left sitting in water to keep the mud from hardening, or the combine should be run back and forth a number of times after it has reached dry ground to remove the mud before parking overnight.

The proper adjustment of tracks is important when operating under heavy mud conditions. If tracks are adjusted properly for operation on high ground, they may prove to be too tight when combine operates in muddy or underwater sections of the field.

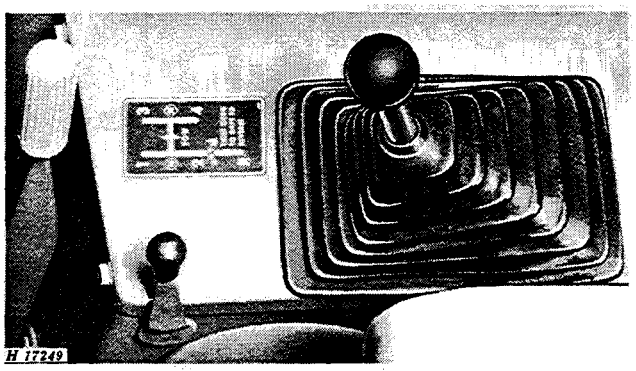
Hard wood blocks can be made and bolted to the track shoes for added traction and flotation in extremely muddy conditions.

NOTE: Blocks for tracks must not extend more than 3 inches (76 mm) past the tips of track shoes.

TRANSPORTING

The combine can be transported under its own power, hauled on a truck, or by towing. If combine is to be towed, place the gearshift lever in "TOW" position and tow up to a maximum speed of 20 mph. If the combine is equipped with hydrostatic drive, place the speed range lever in neutral.

⚠ CAUTION: If combine must be towed at higher speeds, remove the drive shafts and lock the brake drums in place by applying the parking brake. Higher speeds will cause oil to flow out of breather plugs in final drives. Check oil level before operating.



Gearshift in Tow Position

Couple the brake pedals together with the brake lock (page 14).

Reduce the width of the combine by folding the unloading auger back along the separator and removing the header. Over-all dimensions are given on pages 212 and 213.

The rotary cooling screen, fender, and vacuum duct may be removed to further reduce transport width.

An optional bracket is available for attaching the rotary screen to the separator body during transport and storage.

If the header and feeder house are removed, the hydraulic cylinders must be wired or supported by chains no closer to separator support channel than 14 inches (356 mm). Damage to hoses may result if carried too close.

If the header is left on, raise it to a position that will keep it off the ground but still allow good visibility.

Reduce the spread of noxious weed seeds by thoroughly cleaning the combine before leaving one field and going to the next.

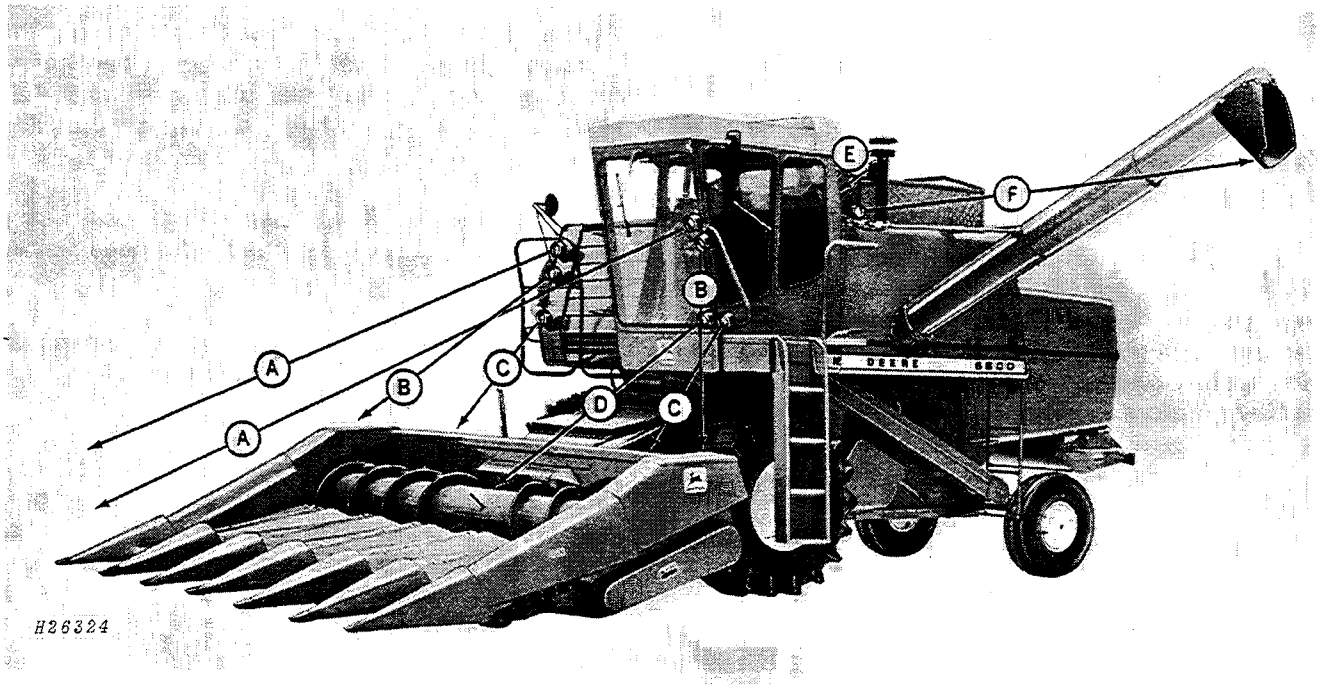
Sweep trash and straw from the outside of combine. Open doors at bottom of elevators, remove grain tank drain hole cover, and run combine until all straw, trash, and grain are removed from inside. Shut off combine engine. Clean out shoe grain supply augers (page 109).

The combine is equipped for transporting protection with a slow moving vehicle emblem on the rear hood, lights, and grain tank reflectors. Keep the emblem, reflectors, and lights clean.

⚠ CAUTION: When driving the combine on a road or highway at night or during the day, use accessory lights provided for adequate warning to the operators of other vehicles.

When transporting the 7700 Combine at highway speeds with the engine inoperative, plug the engine exhaust to prevent damage to the turbocharger.

FIELD AND HIGHWAY LIGHTING



The combine is equipped with the following nine lights:

Two 80 watt, dual beam lamps for field and road operation "A."

Two 60 watt lamps for illuminating both ends of the header "B."

Two 18 watt lamps for illuminating the stubble areas in front of the combine drive tires "C."

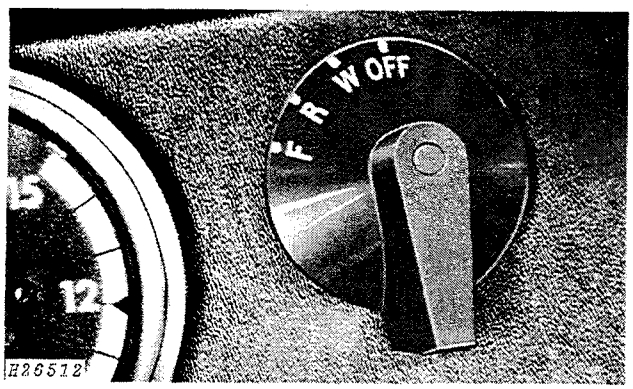
One 18 watt lamp for illuminating the center of the header auger "D."

One 18 watt lamp for illuminating the grain tank "E."

One 35 watt lamp for illuminating the unloading auger "F."

For maximum illumination from all nine lights, be certain lights are positioned correctly as illustrated.

Loosen bolt in light mounting clamp and position light in the desired position.



FIRST DETENT (OFF): All lights are off.

SECOND DETENT (W): Rear warning lights (amber lens) are lit.

THIRD DETENT (R): Low beam in both 80 watt lamps, both 60 watt lamps, and the flashing warning lights are lit.

FOURTH DETENT (F): Both high and low beams in the 80 watt lamps and all the other lamps are lit.

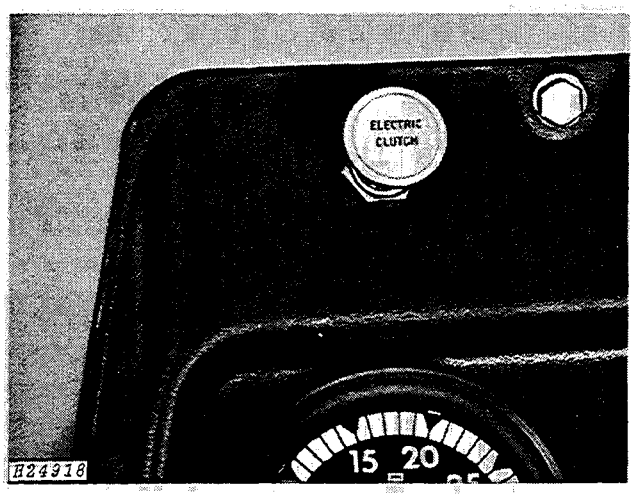
TURN SIGNALS: When operating combine with light switch on W or R detent, the flashers will operate at 60 flashes per minute. When turn signal is set for right-hand turn, the right-hand light will flash 90 flashes per minute while the left-hand light will burn continuously. The opposite will happen for left-hand turn.

⚠ CAUTION: When transporting on a road or highway, a flashing warning light on each side of the combine and one taillight on left-hand side provide a warning to operators of vehicles approaching from the rear. Be sure they are turned on when transporting.

COMBINE FUNCTION CONTROLS

HEADER CONTROLS

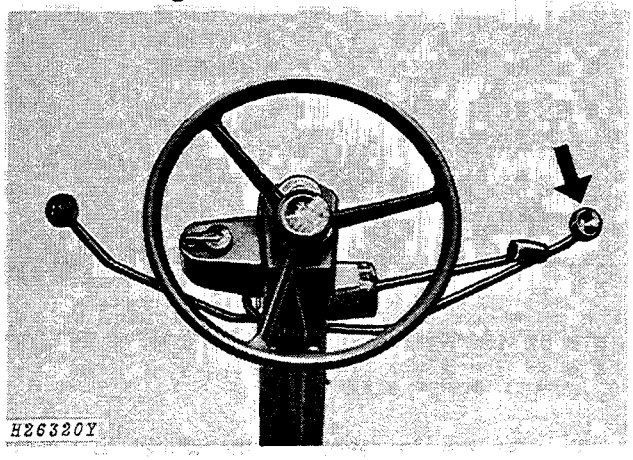
Header Electromagnetic Clutch Switch (Optional)



This switch engages or disengages an electromagnetic clutch for the header. Disengaging the clutch permits stopping the header and feeder house while the separator continues to run.

Push switch in to disengage clutch. Pull switch out to engage clutch.

Header Height Control Lever



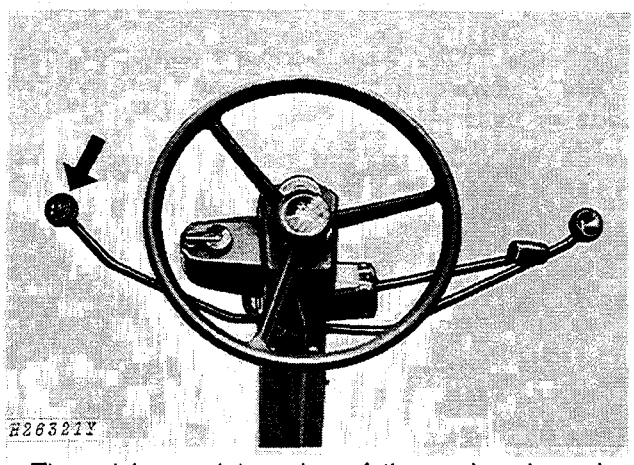
Height of the header can be changed by moving the height control lever located on the steering column. As a safety measure, the height cannot be changed unless the engine is running.

To lower the header, push the lever forward.

To raise the header, pull the lever rearward.

Speed of lowering can be regulated on the hydraulic control valve (page 135).

Hydraulic Lift Reel and Optional Variable Speed Feeder House Control Lever



The raising and lowering of the reel and varying the speed of the feeder house, is controlled by a lever located on the steering column.

To lower the reel, push the lever forward.

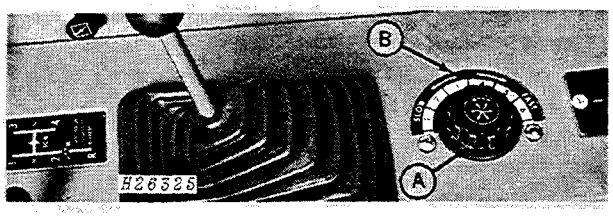
To raise the reel, pull the lever rearward.

When combining with the corn head or row-crop head, the speed of the feeder house and header can be changed by moving the control lever.

To increase speed, push the lever forward.

To decrease speed, pull the lever rearward.

Hydrostatic Drive Reel



A—Speed Control Knob **B—Speed Reference Indicator**

Reel speed may be varied from 5 to 40 rpm with a pickup reel and from 8 to 64 rpm with a bat reel, by turning the control "A" on the console.

To increase reel speed, turn knob toward "FAST."

To decrease reel speed, turn knob toward "SLOW."

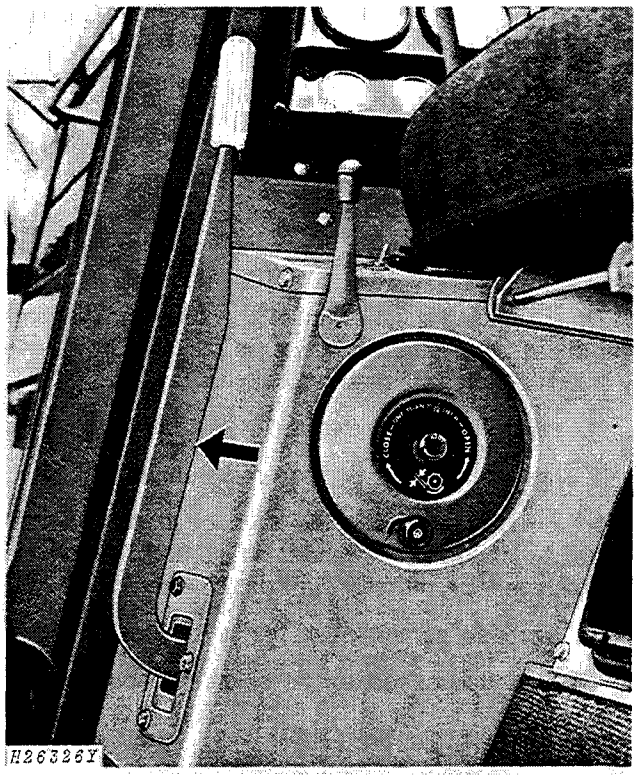
Use the reference indicator "B" as a guide to return to the speed previously found best suited for a particular crop or field condition.

SEPARATOR CONTROLS

Separator Control Lever

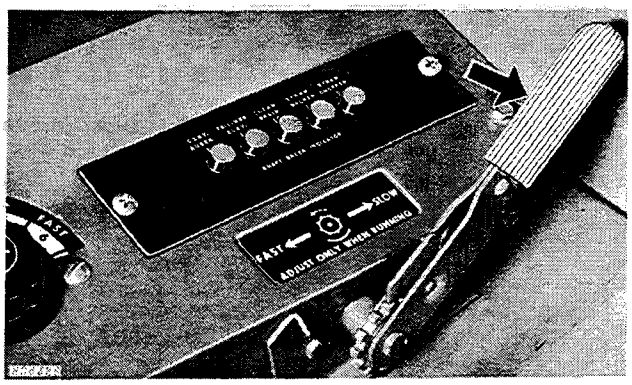
The separator is engaged or disengaged by moving the separator control lever on the operator's platform.

⚠ CAUTION: Do not engage separator until everyone is standing away from moving parts or belts.



To engage separator, push lever forward; to disengage separator, pull lever rearward.

Cylinder Speed Control Ratchet



Before changing cylinder speed, place ratchet pawl in the position of ratchet handle movement.

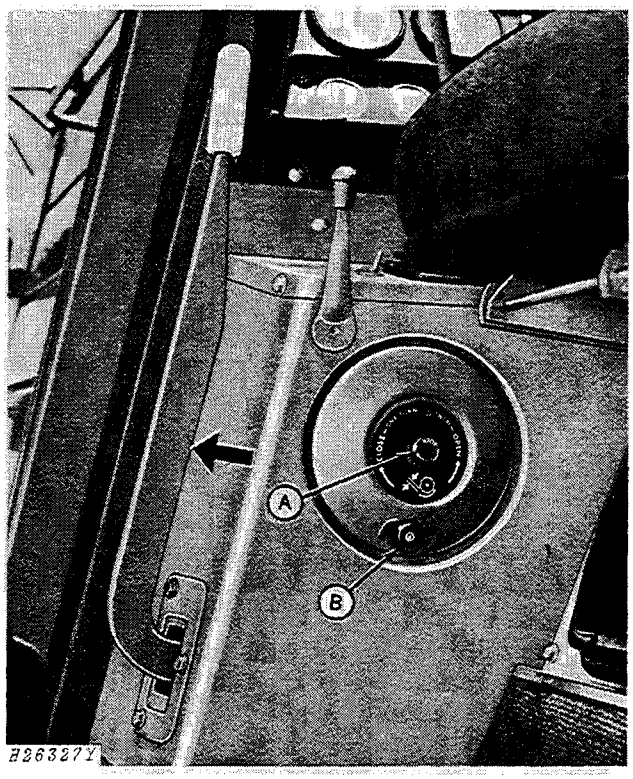
IMPORTANT: Adjust cylinder speed only when the separator is engaged and the engine is running at full rpm.

See Suggested Settings Chart, page 41.

To increase speed, move ratchet toward "FAST."

To decrease speed, move ratchet toward "SLOW."

Concave Opening Control Wheel (Rasp-Bar and Spike-Tooth)



A—Locking Knob **B—Wheel with Knob**

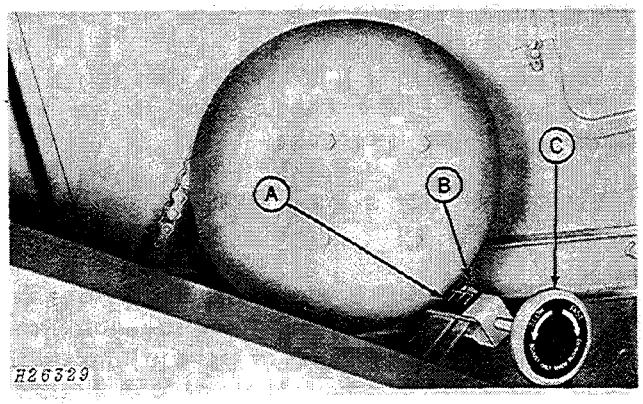
Loosen locking knob "A."

To open the concave, turn the wheel "B" toward "OPEN."

To close the concave, turn the wheel toward "CLOSE."

Tighten locking knob.

Fan Speed Control Wheel



A—Rpm Indicator
B—Pointer
C—Fan Speed Control Wheel

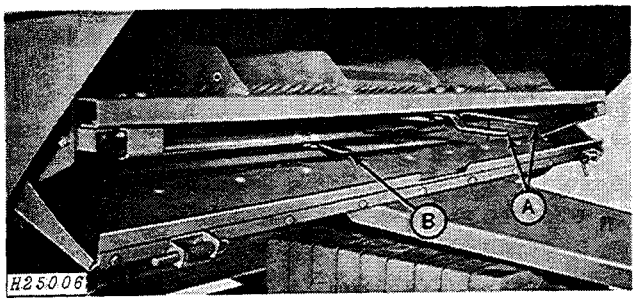
Adjust the fan speed control wheel until the indicator is positioned on the desired speed.

IMPORTANT: Adjust the fan only when the separator is running.

The rpm indicator is a guide so you can return to the fan speed previously found best for a particular crop or field condition.

See Suggested Settings Chart, page 41.

Chaffer Opening Control



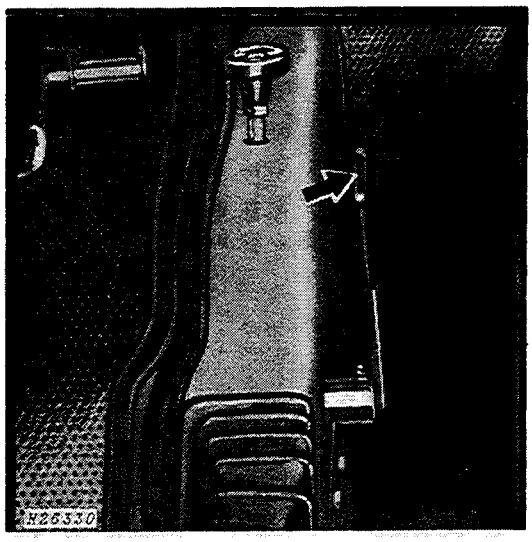
A—Chaffer Levers **B—Sieve Lever**

To open chaffer lips, push levers "A" to the left. To close lips, push levers "A" to the right. See Suggested Settings Chart, page 41.

Sieve Opening Control

To open sieve, push lever "B" to the right. To close sieve, push lever "B" to the left. See Suggested Settings Chart, page 41.

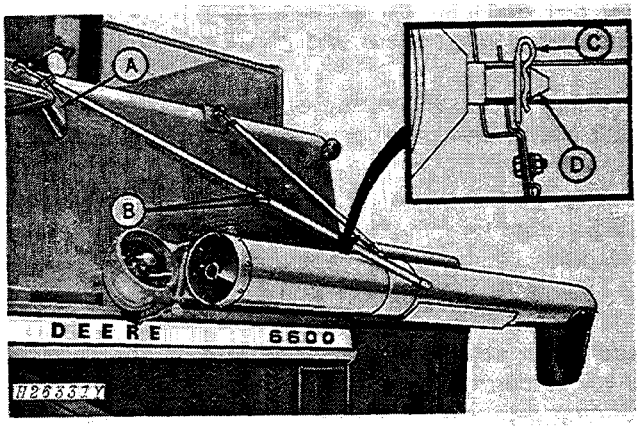
Grain Tank Unloading Auger Lever



To empty grain tank, pull lever rearward.

When grain tank is empty, push lever forward.

Positioning Grain Tank Unloading Auger

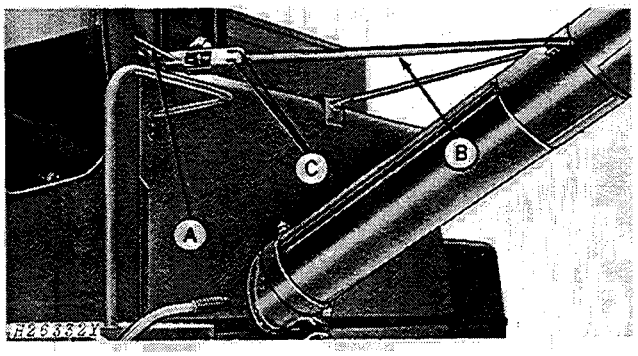


A—Over-Center Latch **C—Spring Pin**
B—Catches **D—Locking Stud**

To fold auger back, release over-center latch "A," lift latch off catches "B," and push down on hydraulic swing control.

When auger is folded back, release hydraulic swing control and insert spring pin "C" in locking stud "D."

Positioning Grain Tank Unloading Auger—Continued



A—Over-Center Latch
B—Telescoping Rod
C—Catches

To place auger in unloading position, remove spring pin from locking stud.

Position over-center latch "A" on telescoping rod "B" and pull up on hydraulic swing control until catches "C" slide under latch.

Release hydraulic swing control and fasten over-center latch.

IMPORTANT: Be certain not to let anyone sit on the auger hydraulic swing control knob. Prolonged downward pressure on the knob will cause excessive pressure and heat to build up in the hydraulic system.

ENGINE AND COMBINE BREAK-IN

Follow the lubrication instructions closely. See pages 52 to 71.

When starting the engine, operate at part throttle at least 5 minutes to warm up engine before engaging separator or transporting. Monitor oil pressure and water temperature and check for oil leaks.

If it is necessary to add engine oil during the first 100 hours, see recommendations on page 53.

Engage the separator and operate at 1500-1800 engine rpm for 5 to 10 minutes. Continue to monitor oil pressure and water temperature.

During the first 20 hours of field operation, reduce ground speed to prevent overloading the engine. Avoid excessive engine idling and no load operation during the first 100 hours.

After 1 Hour

Check torque on drive wheels and steering wheels.

Drive Wheels:
300 ft-lbs (405 Nm) torque.

Steering Wheels:
80 ft-lbs (110 Nm) torque-6 bolt wheel-6600-7700
120 ft-lbs (160 Nm) torque-8 bolt wheel-7700

After 5 Hours

Check all V-belts for initial stretch. Tighten as necessary. Continue to check V-belts every few hours for the first 50 hours.

After 20 Hours

Drain oil from main hydraulic unit reservoir. Replace the oil filter and fill the reservoir with correct oil as specified on page 68. Thereafter, drain and replace oil and oil filter element every 500 hours of operation or once a season, whichever occurs first.

After 100 Hours

After 100 hours of operation, drain oil from crankcase, replace oil filter, and fill crankcase to proper level with John Deere Torq-Gard Supreme engine oil or its equivalent as specified in lubricants chart on page 53.

Thereafter change oil and filter every 100 hours of operation or every season, whichever occurs first.

FUNDAMENTALS OF COMBINE HARVESTING

This new combine can be quickly and easily adjusted to harvest almost any crop under any condition. Before attempting to operate your new combine, become familiar with the following fundamentals of combine harvesting.

1. The crop must be in condition to thresh. Moisture content must not be too high and straw must not be too green. Grain containing 14% moisture or less and corn containing 17% moisture or less is usually considered dry enough for safe storage.

2. Adjust the combine to suit the particular crop being harvested and the particular field condition.

3. Select a ground speed that will not overload the combine. The engine should always be run at full throttle to keep the combine separator up to full speed. This will guard against slugging and clogging. Use the selective ground speed drive to obtain a slower travel speed or shift to a lower gear if necessary, but do not throttle down the engine. Driving too fast or crowding the combine may result in crop loss or combine damage. Excessive ground speed travel is one of the greatest causes of trouble in combining.

4. Keep the cylinder speed as low as possible and the concave clearance as wide as possible to separate the maximum amount of grain from the heads without breaking up the straw excessively. Such crops as edible beans and peas are easily cracked and require the use of a special slower speed cylinder drive sheave. When combining edible beans and peas, keep the combine reasonably full at times to provide sufficient straw and chaff to cushion the crop against cracking.

5. When using a cutting platform, cut the crop as high as possible without excessive loss of low heads. If the straw is down and tangled, it may be necessary to install lifting guards. A slower ground speed is important when combining under this condition. Adjust reel position and speed for even feeding. Keep the cutterbar in proper register and the guards in alignment to insure clean cutting.

6. When harvesting corn, keep the corn head low to get low ears. Keep the corn head centered in the rows to prevent stalks from bending and losing ears.

7. When using a belt pickup attachment, keep the windrow centered so that the material is fed evenly into the feeder house. The heads of grain should be lying in one general direction, therefore operate the combine so that the heads are picked up first. This insures better threshing and separation of the grain. Losses will increase if the windrows are picked up in the opposite direction.

8. When harvesting soybeans with the row-crop head, keep the header as low as possible to achieve a consistent cutting height. When harvesting crops such as maize with the row-crop head, operate the header just low enough to cut the pods from the stalks.

9. Adjust chaffer openings to pass the grain or seed to the lower sieve, before it has passed over two-thirds the length of the chaffer, without admitting too much coarse material.

10. Use as much air as possible without blowing over clean grain and seed. Heavy crops, such as edible beans and corn, require a large volume of air. Light seed crops, such as clover, require little air.

Combine harvesting can be profitable only if the operator knows how to adjust the combine properly and operate it efficiently with a minimum of losses.

FIELD AND CROP OPERATING ADJUSTMENTS

The majority of combine operating problems can be traced to improper adjustment. Make certain, when trying to solve a problem, that the source does not come from some place other than where the problem exists. For example, a plugged cylinder may be caused by improper feeding at the feeder house rather than an improperly adjusted cylinder.

Understanding combine operation and adjustment comes easiest by becoming familiar with the five basic functions that a combine must perform:

1. Cutting and Feeding
2. Threshing
3. Separating
4. Cleaning
5. Crop Handling

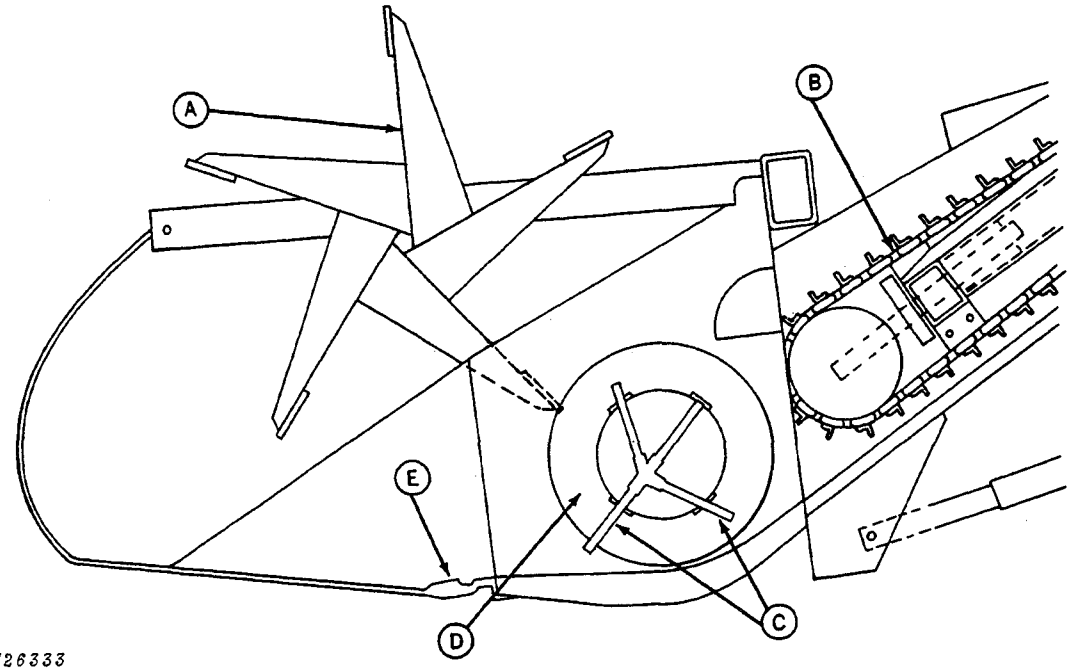
If a combine is to provide the most economical and efficient operation, each of these five basic functions must perform in proper relationship to each other.

The OPERATION section explains adjustments which are made due to crop or field conditions. Adjustments which are made to compensate for wear or misalignment are explained in the SERVICE section.

CUTTING AND FEEDING

Crop cutting or gathering is often one of the most neglected areas of the combine, yet it affects everything that happens in the other four functional areas.

HEADER



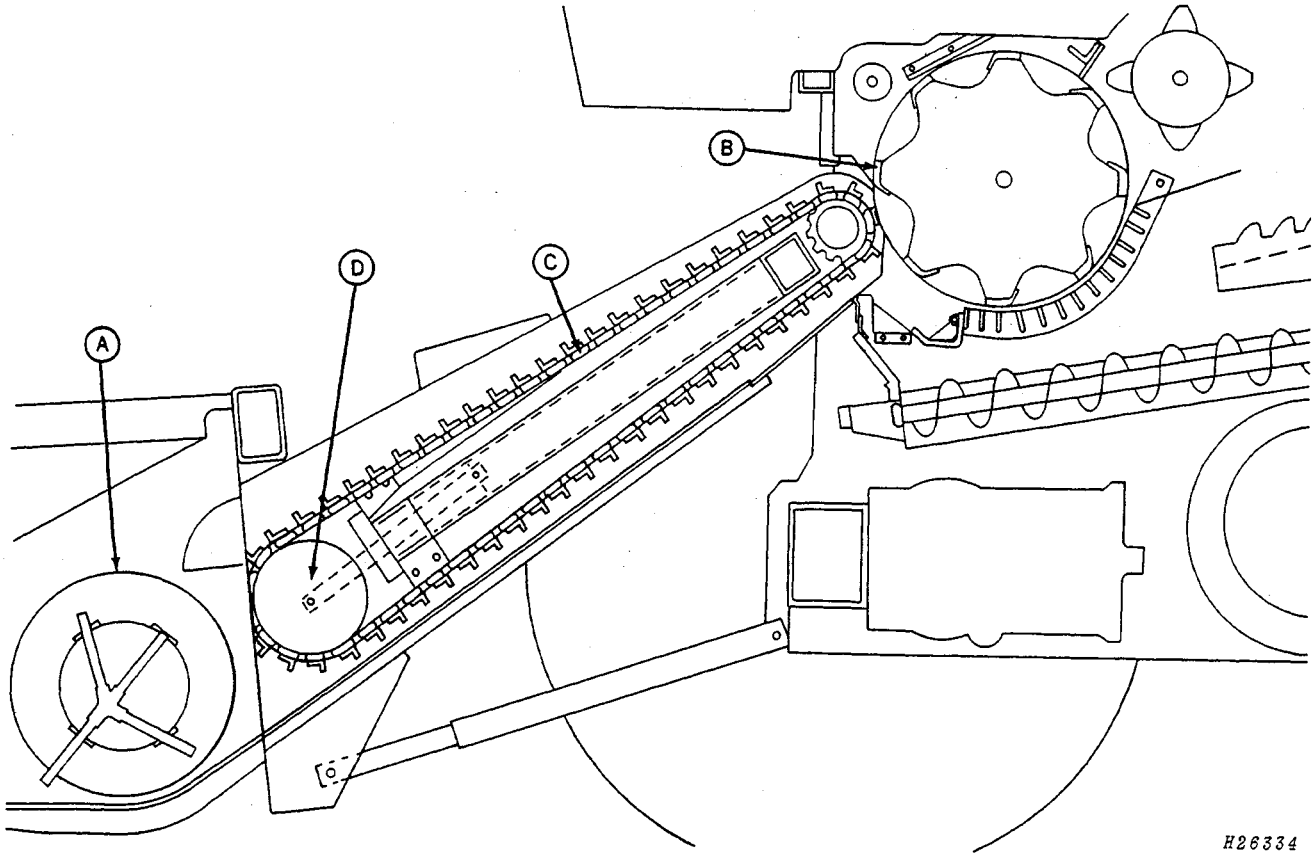
H26333

A—Reel **B—Feeder Conveyor** **C—Retracting Fingers** **D—Header Auger** **E—Cutterbar**

The cutting platform illustrated above is only one of the headers which can be attached to the front of the feeder house. For complete information on these headers (cutting platform, draper platform, pickup platform, belt pickup, corn head and row-crop head) see the operator's manuals supplied with them.

The header receives the crop and moves it to the front of the feeder house by means of an auger.

FEEDER HOUSE
6600 AND 7700 COMBINES



A—Header **B—Cylinder** **C—Feeder Conveyor Chain** **D—Feeder Conveyor Drum**

The movement of material from the header "A" to the cylinder "B", is accomplished by the feeder conveyor chain "C" and the feeder conveyor drum "D".

Floating action of the conveyor drum accommodates varying volumes of material. Adjust the conveyor "float" for either grain or corn (page 83).

The separator receives material from the feeder conveyor chain and separates the largest percentage of the grain from the straw at the cylinder and concave.

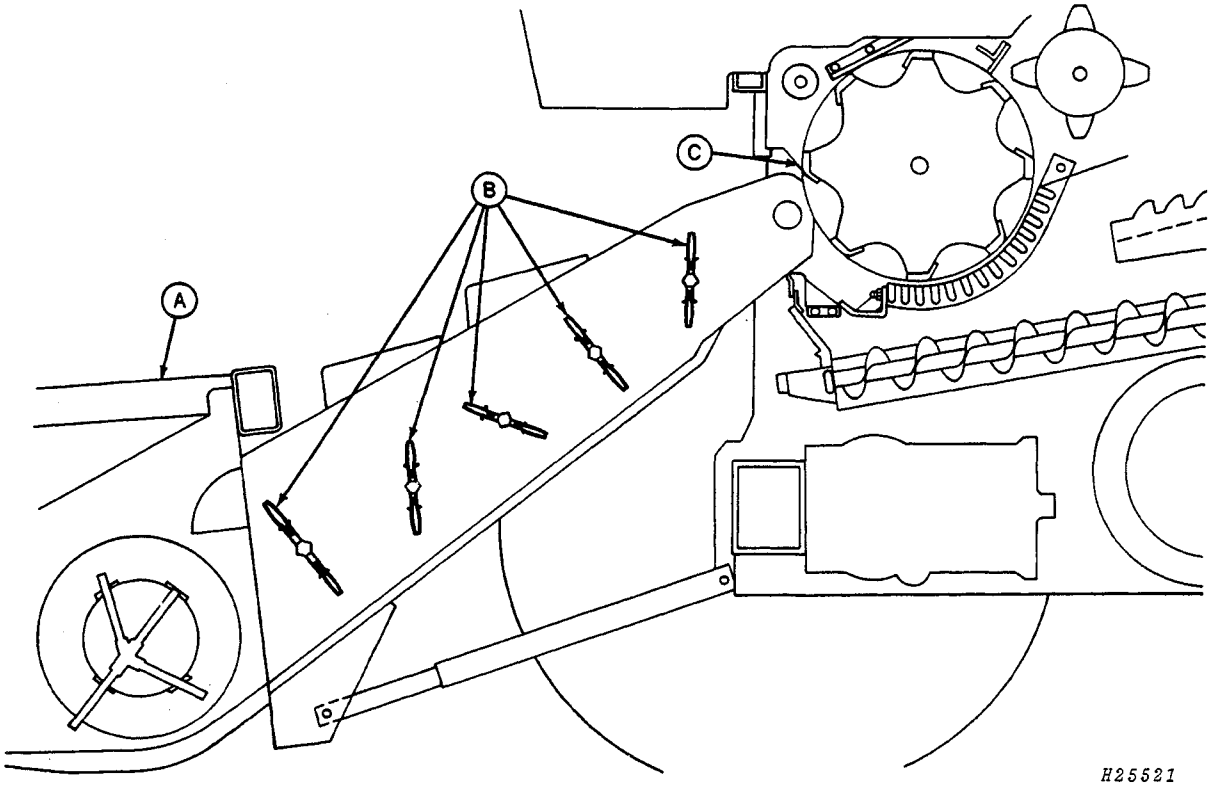
The speed of the feeder house determines the speed of the platform, corn head or row-crop head.

When combining grain, the feeder house speeds must be as specified (page 45) to maintain correct platform speeds.

IMPORTANT: When attaching a platform to the variable speed feeder house, adjust the feeder house speeds as shown on page 78. Never alter speeds from these specifications.

When combining with the corn head or row-crop head, change the feeder house speeds by moving the variable speed feeder house control lever. See the corn head or row-crop head operator's manual for correct speeds.

PADDLE FEEDER HOUSE
SIDEHILL 6600 COMBINE



A—Platform **B—Feeder House Paddles** **C—Cylinder**

The paddle feeder house receives material from the header "A" and force feeds it to the threshing cylinder "C".

The front feeder house paddle reaches out through the front of the feeder house and moves the material away from the header.

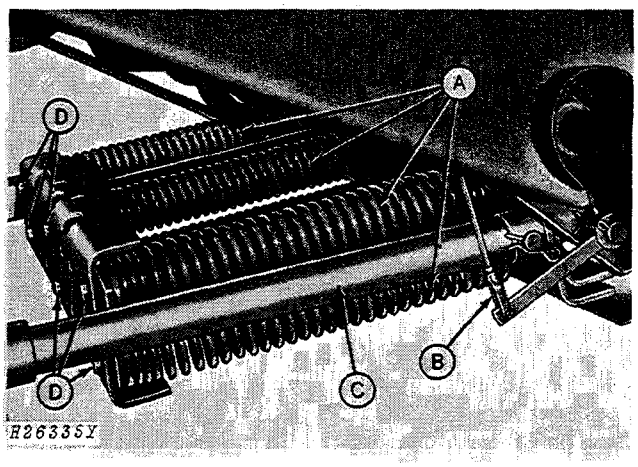
The feeder house paddles "B" are not timed in relation to each other. For maximum life of the feeder house drives, the paddles must be randomly positioned.

The speed of the feeder house paddles changes with the speed of the corn head or row-crop head.

IMPORTANT: The variable-belt-drive feeder house is designed for use in corn or row crops. Using the variable-belt-drive to combine grain crops at any speed other than low speed can cause excessive wear to cutterbar parts.

When combining corn or row crops, change the paddle feeder house speed by moving the variable speed feeder house control lever. See the corn head or row-crop head operator's manual for correct speeds.

FLOAT SPRINGS (Attachment)

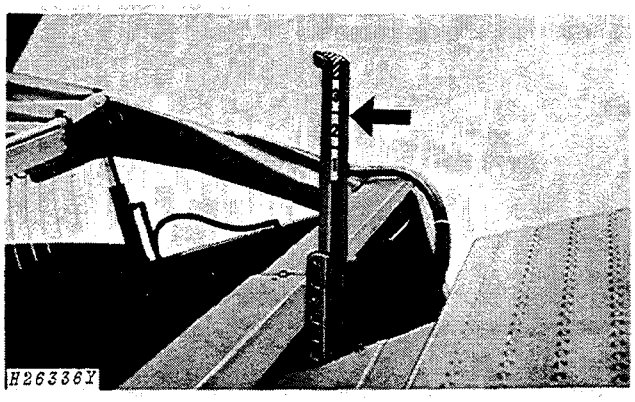


A—Float Springs
B—Float Spring Indicator
C—Header Lift Cylinders
D—Spring Adjusting Screws

The float spring assembly under the feeder house, when coupled with bottom protective wear plates, permits the header to skim the contour of the ground while floating up and over obstructions, such as rocks, irregular terrain, borders, and levees. This floating action permits harvesting of crops that are down and tangled and when a low cut is desirable.

When the combine is equipped with automatic header height control, the float springs help to protect the flex platform or row-crop head against severe ground force when the upward float range is exceeded. The tension on the float springs must then be reduced until the header lift cylinders extend and retract without the front channels opening.

Float Indicator



The float spring indicator is a guide for the operator to determine how much float is being used.

The indicator reads, in inches, the approximate space between the channel which secures the float spring attachment to the feeder house and the channel to which the springs are secured.

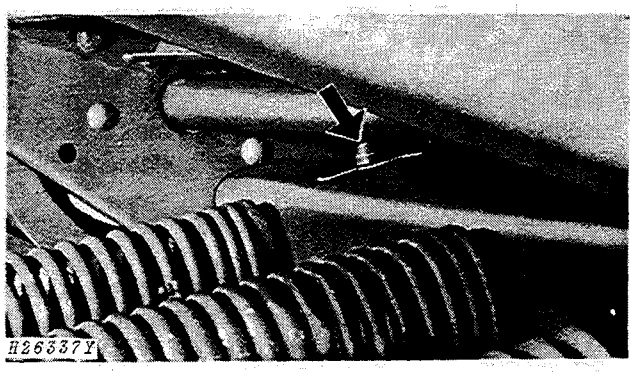
This space, which opens and closes with the up and down floating action of the platform is constantly measured by the indicator.

The higher the numerical reading on the indicator guide, the greater the platform pressure on the ground. The lower the numerical reading on the indicator guide, the less the platform ground pressure.

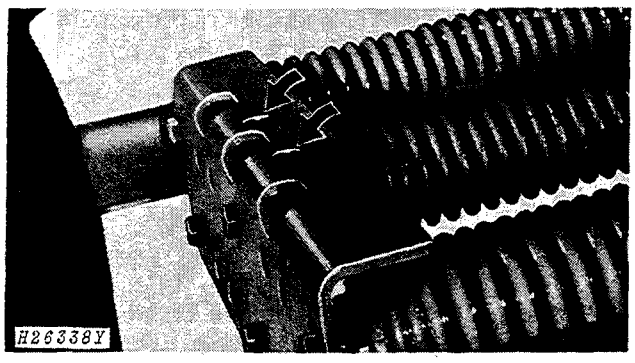
The indicator also permits raising the platform and returning it to a predetermined float setting position.

Locking Out Float Springs

The float springs may be locked out when the operator does not want the float springs to function at all.



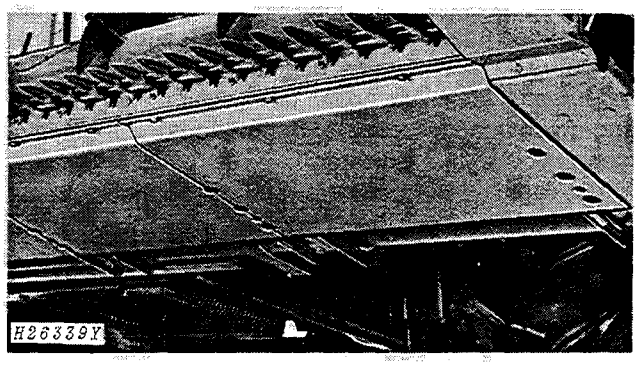
To lock out the float springs, insert the two lockout pins through the flanges in both channels when the channels are closed, and secure with spring pin.



When the float springs are operative, place the two lock-out pins in the storage holes in the rear float spring channel.

IMPORTANT: When transporting the combine or when removing the header, be certain the float springs are locked out.

Platform Bottom Protective Wear Plates



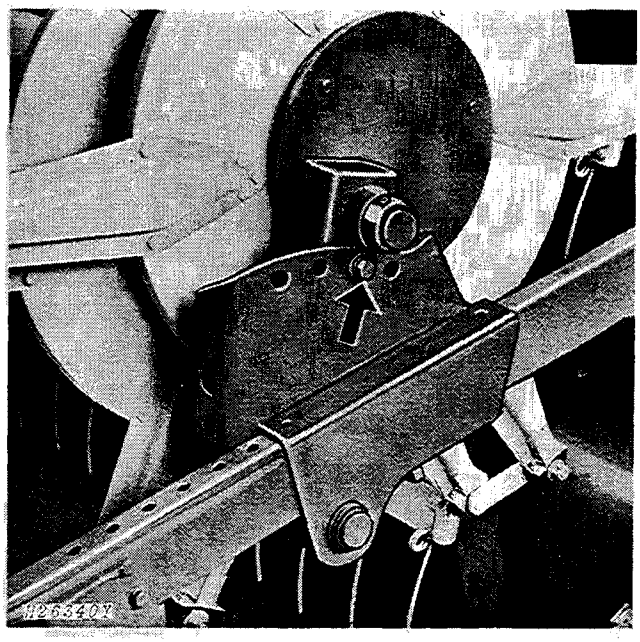
The protective wear plates must be installed on the platform for use with float springs.

Reel

For the float springs to operate efficiently, the reel speed should be 25 percent faster than the ground speed.

Position the slat reel close to the knife so the cut material is "swept" off the cutterbar and incoming material may enter the knife in an upright position.

On combines equipped with pickup reel, pitch the fingers toward the auger by repositioning the cap screw so the cut material is delivered directly to the underside of the auger and not pushed over the top of it. Too great a pitch causes the reel to wind with the crop because the fingers do not release the material after it is cut.



Feeder House

The feeder house must pivot freely at the separator attaching points to provide proper float spring action. If it does not pivot, freely, check for and remove any obstruction.

Tires

Tires must be inflated to correct operating pressure to enable the float springs to operate properly (page 127).

SPRING REQUIREMENTS

The following chart shows the required number of float springs to use with each size of rigid platform equipped with skid plates and a pickup reel or a flex platform with a pickup reel.

Platform Size						
13 Ft. (3962 mm)	15 Ft. (4572 mm)	16 Ft. (4877 mm)	18 Ft. (5486 mm)	20 Ft. (6096 mm)	22 Ft. (6706 mm)	24 Ft. (7315 mm)
7	8	8	9	10	10	10

When operating with the platform on the ground, platform protective wear plates must be used with the float springs.

Use one less spring with a flexible platform equipped by automatic header height control.

Use one less spring with platforms equipped with a slat reel.

Use one more spring with combines equipped with a long feeder house.

Use one additional spring with platforms equipped with heavy-duty skid plates.

AUTOMATIC HEADER HEIGHT CONTROL

GENERAL INFORMATION

The optional automatic header height control has been designed for use with the 50 Series Row-Crop Head and the 200 Series Cutting Platforms. The most desirable position of the header frame, is maintained by the automatic header height control, which senses the position of each individual row unit.

To achieve a low and consistent cutting height, with respect to the ground, the individual row units were designed to pivot independently about the common drive shaft. Each row unit has a 6-inch (152 mm) float range.

Adjustable skid shoes on each side of the row unit maintain the desired cutting height. Soil pressure on the skid shoes is kept at a minimum by the adjustable float spring on each row unit.

The center row units are equipped with two adjustable gatherer sheets. The two end row units are equipped with one adjustable gatherer sheet and one non-adjustable end shield. A minimum clearance between the adjustable gatherer sheets must be maintained to provide independent float of each row unit.

IMPORTANT: For the automatic header height control to perform satisfactorily, the row units must be in the floating position and correct row unit float spring tension and gatherer sheet clearance must be maintained. Row unit skid shoes should be adjusted for the desired height of cut.

How the Automatic Header Height Control Works

When one or more row units deflect up to follow ground contour, a height sensing actuating rod, located under the header, turns an actuator cam located on the header side sheet. The actuator cam then opens or closes either a raise switch or a lower switch, also located on the header side sheet. These switches activate the electrical circuit which sends electrical current to the solenoids on the auto header valve located under the operator's platform.

The auto header valve, directs hydraulic oil under pressure to the two header lift cylinders to raise the header and allows return oil to flow back to the hydraulic reservoir for lowering the header.

An actuating switch, located under the operator's platform shuts off the automatic header height control when the header is raised approximately 18 inches (457 mm) above the ground.

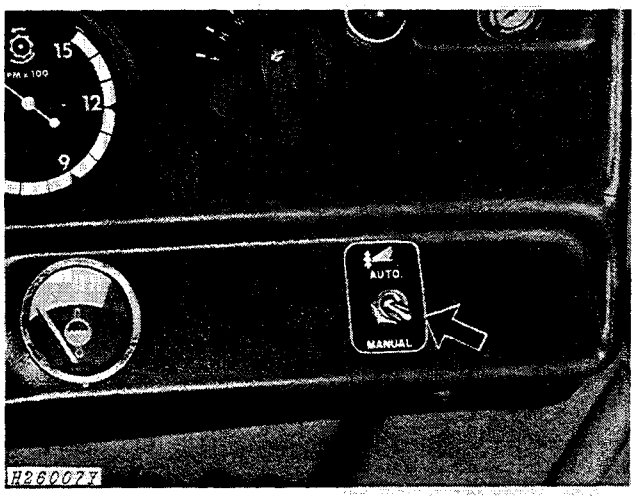
Following is an explanation of the components of the electrical and hydraulic systems of the automatic header height control.

ELECTRICAL SYSTEM

The electrical system consists of the control switch located on the instrument panel, actuating switch, raise switch, lower switch, "raise" solenoid, and "lower" solenoid. The electrical system actuates the hydraulic system.

The electrical system is protected from overload by a 7.5 amp fuse located in the engine compartment next to the firewall.

Control Switch



By operating this switch, the automatic header height control is engaged or disengaged.

IMPORTANT: Be certain to disengage the automatic header height control when transporting the combine.

Actuating Switch

The actuating switch located under the operator's platform shuts off the automatic header height control when the header is raised approximately 18 inches (457 mm) above the ground.

A chain, attached to the switch, holds the switch closed when the header is lowered.

Raise Switch and Lower Switch

The actuator cam opens or closes the raise or lower switch. These switches are located on left-hand header side sheet.

The raise switch is the uppermost of the two switches and closes for raising the header.

The lower switch closes for lowering the header.

The raise switch and the lower switch have slotted mounting holes to obtain proper switch contact with the actuator cam.

HYDRAULIC SYSTEM

The hydraulic system supplies the hydraulic oil to the header lift cylinders to raise or lower the header.

The system consists of the header lift cylinders, a drop rate valve, and a auto header valve. The hydraulic system is activated by the electrical system. Hydraulic oil is supplied from a pressure port in the main control valve.

Auto Header Valve

The auto header valve obtains oil from the unloading auger control valve. Oil flowing between the auto header valve and the header lift cylinders is directed through the drop rate valve. Return oil is directed back to the main hydraulic reservoir.

When the automatic header height control is not activated, a check valve in the auto header valve and a lockout poppet in the main hydraulic system control valve, trap oil to support the header.

Drop Rate Valve

The drop rate valve allows pressure oil to the header lift cylinders and controls the rate of drop of the header. Two small orifices in the drop rate valve poppet meter the oil returning to the reservoir. An adjusting screw varies the size of this orifice, permitting drop rate adjustment for varying ground conditions.