45 SERIES SELF-PROPELLED COMBINES

JOHN DEERE

OPERATORS MANUAL

45 SERIES SELF-PROPELLED COMBINES

OMH45957 (01SEP57) English

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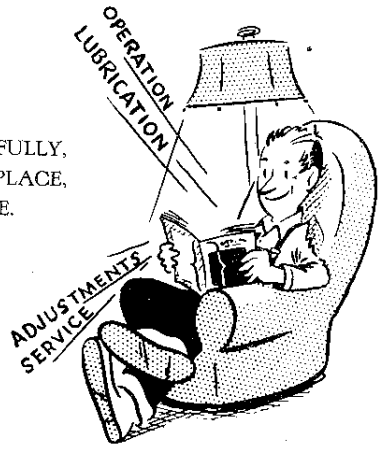
ENGLISH

TO THE PURCHASER

The combine you have just purchased was designed and manufactured to the traditionally high quality standards of all John Deere Farm Equipment. Your combine has been thoroughly inspected and tested not only at the factory but at your dealer's by a trained John Deere Serviceman. We are confident that you will receive years of dependable, economical service from your John Deere Combine.

STUDY THIS MANUAL CAREFULLY, KEEP IT HANDY, IN A SAFE PLACE, FOR FUTURE REFERENCE.



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If you should find that you require information not covered in this manual, consult your John Deere dealer. He will be glad to answer any questions that may arise regarding the operation and handling of the combine. He has trained mechanics who are kept informed on the best methods of John Deere Combine servicing and can give you prompt know-how service in the field or in his shop.

KEEP YOUR COMBINE A JOHN DEERE COMBINE

Genuine John Deere parts fit properly and insure satisfactory service because they are made from the original patterns and from the same materials as used in new machines. Should your combine require replacement parts, go to your John Deere dealer where you can obtain Genuine John Deere Parts—**accept no substitutes.**

LOCATION REFERENCE

"Right-hand" and "left-hand" sides are determined by facing in the direction the combine will travel when in use.

"Clockwise" refers to parts turning to the right like the hands of a clock. "Counter-clockwise" refers to parts turning to the left.

Engine Reference Only. Timing gear end of engine is referred to as the "front"; flywheel end as the "rear."

SERIAL NUMBERS

Your combine, engine, cutting platform and axle are provided with serial numbers.

When ordering parts, always bring with you the model and serial numbers as given on the serial number plates. By doing so, you will assist your John Deere dealer in giving you prompt, efficient service.

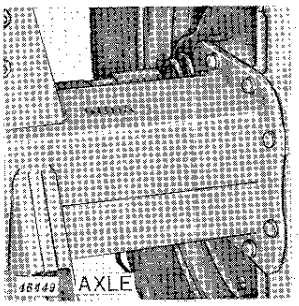
Record the serial numbers in the spaces provided below. It is a good plan to copy the serial numbers down on a card to be carried in your billfold for quick reference.

The combine serial number is stamped on a plate located on the support bracket at the rear end of the fuel tank.

The engine serial number is stamped on a plate located on top of the flywheel housing.

The cutting platform serial number is stamped on a plate located on the outside of the right-hand platform divider.

The axle serial number is stamped on the top, left-hand end of the axle tube.



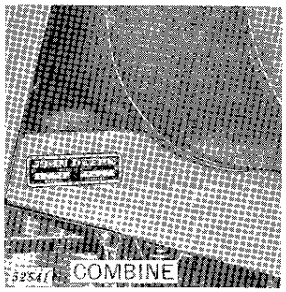
Axle Serial No......

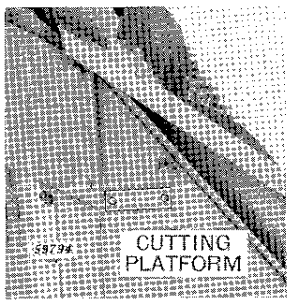
Combine Serial No......

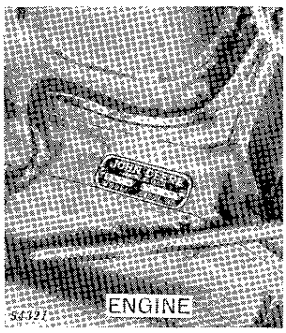
Platform Serial No......

Engine Serial No......

Date Purchased.....







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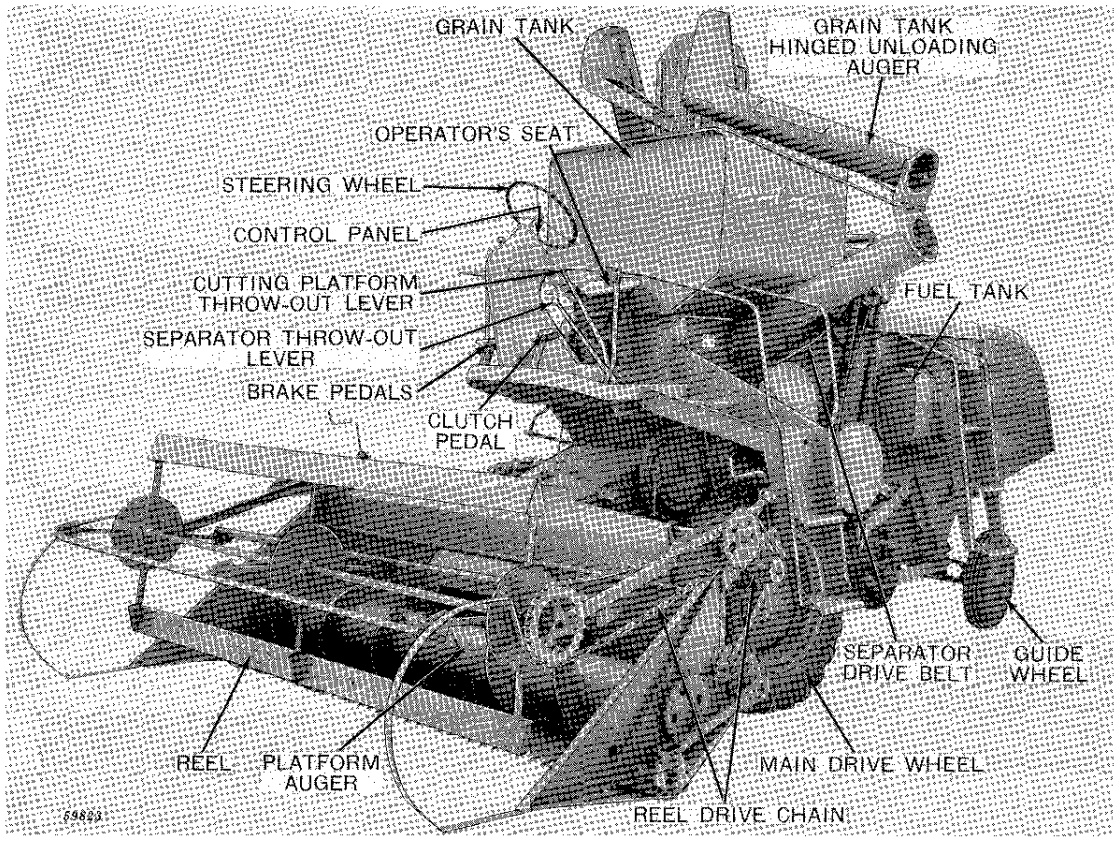
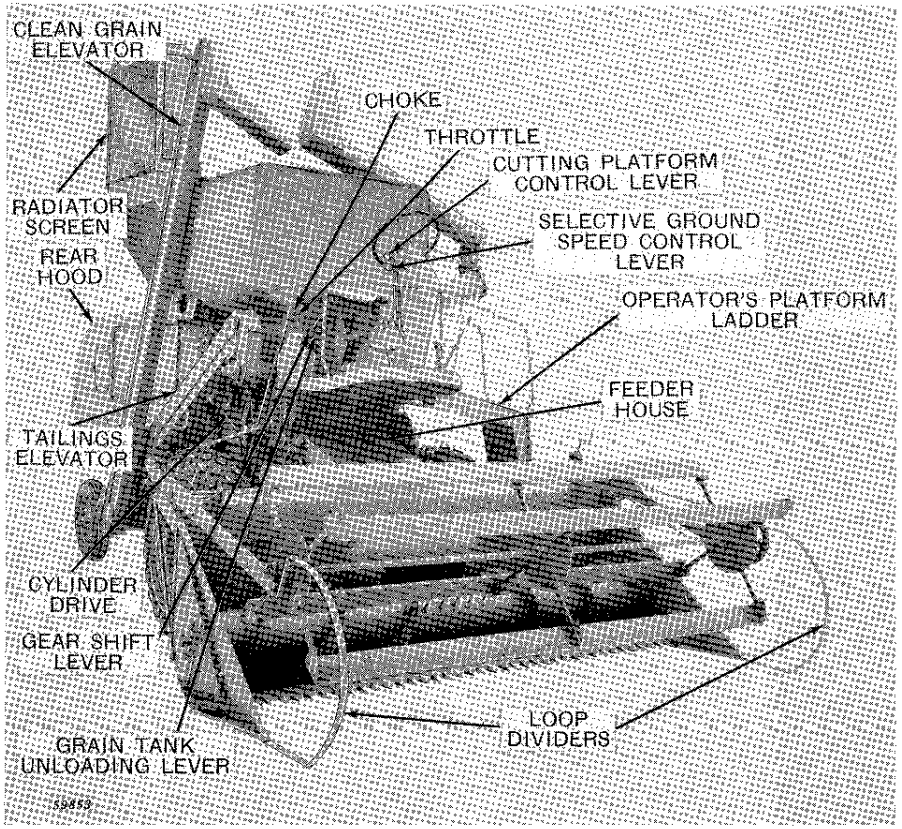
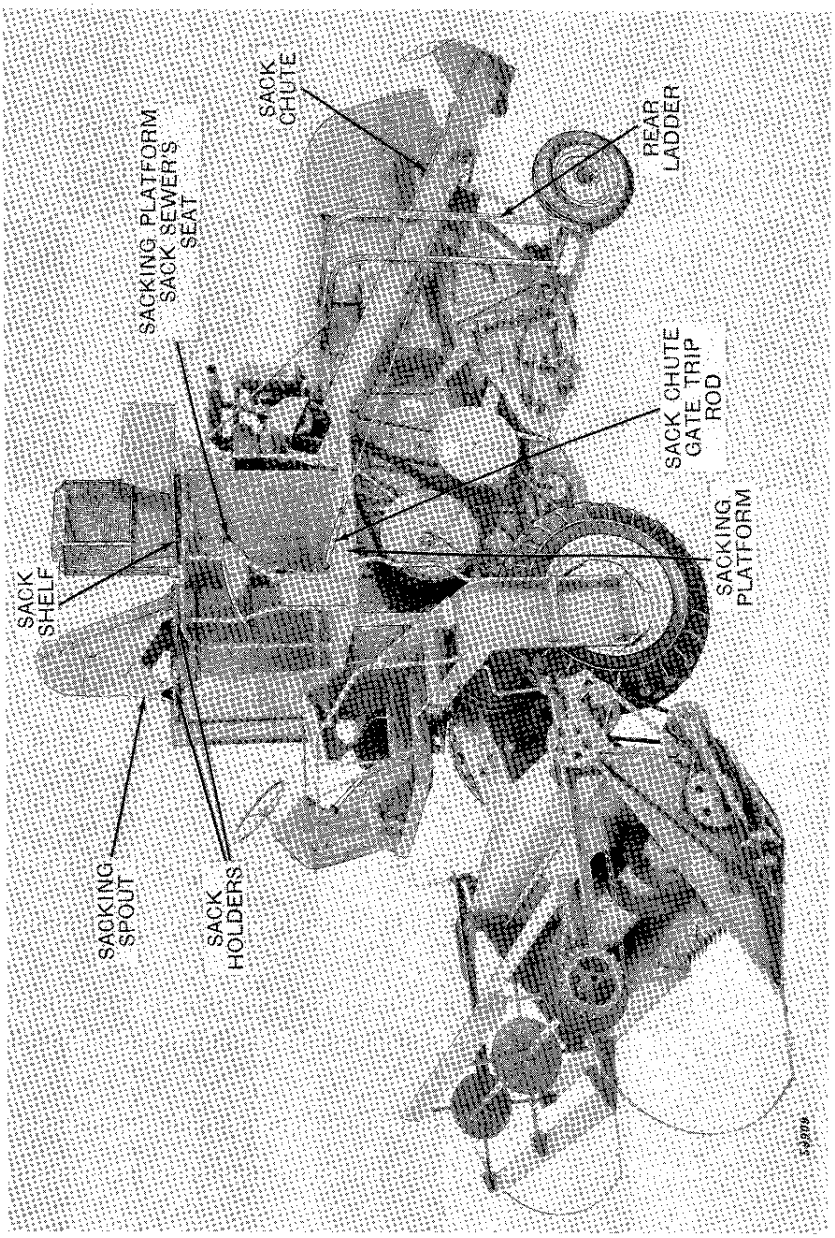


Left-Hand Front View—John Deere 45 Combine—Grain Tank Machine



Right-Hand Front View—John Deere 45 Combine—Grain Tank Machine



Left-Hand View—John Deere 45 Combine—Equipped with Sacking Attachment

SPECIFICATIONS

COMBINE

Cutter Bar

Width of Cut	8-Ft. 6-In. or 10-Ft. 6-In.
Length of Cutter Bar	8-Ft. or 10-Ft.
Type of Knife Sections	Heavy-Duty Over-Serrated

Reel

Drive	V-Belt and Chain
No. of Bats	3, 4, 6, or 8
Dia. of Reel	32-In. or 40-In.

Cutting Platform

Type	Auger
Hinged or Rigid	Hinged
Range of Cutting Height (Grain)	2-In. Below Wheel Level to 30-3/8-In. Above
Range of Cutting Height (Rice)	3-In. Below Wheel Level to 30-3/8-In. Above
Control	Hydraulic

Platform Auger

Diameter	18-In.
Diameter of Auger Tube	10-In.
Type of Auger Fingers	Round Retracting
Bearings	Sealed Ball

Cylinder

Type	Rasp-Bar or Spike-Tooth
Width	26 Inches
Diameter	22 Inches
Drive	Roller Chain
Bearings	Sealed Ball

Concave

Type	12-Bar Open-Type Reversible or Spike-Tooth Type

Beater

Type	Wing
Width	26 Inches
Drive	Belt (Flat)

Separator

Type	3 Straw Walker
Width	26 Inches
Length	10-Ft. 10-In.

Grain Conveyor

Type	Slat
Drive	Chain

Fan

Type	Radial-Flow
Drive	V-Belt

Chaffer

Type	Adjustable
Width	22-3/4 Inches
Length	44 Inches

Sieve

Type	Adjustable
Width	22-3/4 Inches
Length	44 Inches

Straw Walkers

Number	Three
Width	7-7/8 Inches
Length	105 Inches
Drive	V-Belt
Bearings	Oil Soaked Maple
Extension Pans	One on Each Walker

Grain Tank

Capacity	40-Bushel
Type of Unloading	Hinged Auger

Brakes

Type	Individual, Mechanical Disk-Type

Weights

Grain Combine with 10-Ft. Cutting Platform	6100 Lbs. (Approx.)
Rice Combine with 10-Ft. Cutting Platform	6400 Lbs. (Approx.)

COMBINE—Continued

Tire Sizes

Drive Wheels (Grain)	12-26 (4-Ply) Low Profile
Drive Wheels (Rice)	15-26 (6-Ply) Lug
Drive Wheels (Optional)	12-26 (6-Ply) Lug or Low Profile
Drive Wheels (Optional)	13-26 (6-Ply) Lug or Low Profile
Drive Wheels (Optional)	14-26 (6-Ply) Low Profile—16″ Rims
Drive Wheels (Optional)	15-26 (6-Ply) Low Profile—16″ Rims
Steering Wheels (Grain and Sacker)	5.50-16 (4-Ply) Single or Grooved Rib
Steering Wheels (Rice)	6.00-16 (4-Ply) Skid Ring
Steering Wheels (Optional)	6.00-16 (4-Ply) Single Rib
Steering Wheels (Optional) (Standard Axle)	6.00-16 (4-Ply) Grooved
Steering Wheels (Optional) (Wide Tread Axle)	6.50-16 (6-Ply) Single or Grooved Rib

SPEED OF VARIOUS UNITS

Auger, Cutting Platform	163 rpm
Beater Behind Cylinder (Fast Idle—No Load)	650 rpm
Cleaning Fan:	
Normal Operating Speed	620 rpm
With Reg. 7-5/16″ Dia. Sheave:	
Extreme Low	593 rpm
Extreme High	810 rpm
With Special 10-3/4″ Dia. Sheave:	
Extreme Low	398 rpm
Extreme High	489 rpm
With Special 7-3/4″ Dia. Sheave:	
Extreme Low	540 rpm
Extreme High	720 rpm
Cylinder (Normal Operating Speed at Fast Idle—No Load)	1075 rpm Regular; 1056 rpm Edible Bean; 894 rpm Rice
Cylinder (Extreme Low) (3/4″ Pitch Drive Chain)	394 rpm
Cylinder (Extreme High) (3/4″ Pitch Drive Chain)	1075 rpm
Cylinder (Extreme Low) (1″ Pitch Drive Chain—with Special 59-Tooth Sprocket)	176 rpm
Cylinder (Extreme High) (1″ Pitch Drive Chain)	1056 rpm
Elevator, Tailings	288 rpm
Elevator, Clean Grain	309 rpm
Engine (Fast Idle)	2530 rpm
Feeder House Conveyor	230 rpm
Ground Travel Speeds	(See Page 35)
Knife	435 rpm
Reel	13 to 45 rpm
Shoe Crank	288 rpm
Straw Walker	208 rpm

Dimensions—Over-All

Length—with Cutting Platform, Reel and Rear Hood	23 Ft. 6 In.
Length—with Cutting Platform and Rear Hood, less Reel	22 Ft. 4-In.
Length—with Cutting Platform less Reel and Rear Hood	18 Ft. 6-In.
Length—less Cutting Platform with Rear Hood	17-Ft. 8-In.
Length—less Cutting Platform and Rear Hood	13-Ft. 10-In.
Width—with 10-Ft. Cutting Platform and Unloading Auger Extended	15-Ft. 4-In.
Width—with 10-Ft. Cutting Platform and Unloading Auger Folded Back	11-Ft. 2-In.
Width—less Cutting Platform and Unloading Auger Folded Back	8-Ft. 8-1/2-In.
Height—with Clean Grain Elevator in Operating Position and Radiator Screen Installed	12-Ft. 9-1/2-In.
Height—with Clean Grain Elevator in Transporting Position, Radiator Screen Removed, and Unloading Auger Folded Back	11-Ft. 1-1/2-In.
Height—with Clean Grain Elevator in Transporting Position, Radiator Screen Removed, and Upper Half of Unloading Auger Removed	9-Ft. 10-In.
Ground Clearance—Fan Housing (Grain)	10 Inches
Wheel Base (Grain)	10-Ft. 4-In.
Guide Wheel Tread (Grain—with Standard Rear Axle)	36-1/2 Inches
Guide Wheel Tread (Grain—with Wide Tread Rear Axle)	60 Inches
Main Wheel Tread (Grain—Dished In)	72 Inches
Main Wheel Tread (Grain—Dished Out)	84 Inches
Main Wheel Tread (Rice—Dished In)	76-1/2 Inches

SPECIAL EQUIPMENT AVAILABLE

TRANSMISSION

Type	Automotive—3 Speeds Forward, 1 Reverse
Speeds Forward (Grain) (12-26 Tires) mph	0.68 to 9.05
Speeds Reverse (Grain) (12-26 Tires) mph	1.54 to 4.00

ENGINE

Make of Engine	John Deere HA-145
Bore	3-5/8-In.
Stroke	3-1/2-In.
Brake Horsepower	45
Number of Cylinders	4
Piston Displacement	145 Cu. In.
Speed at Full Load	2500 rpm
Firing Order	1-3-4-2
Crankcase	Cast Integral with Block
Type of Lubrication	Force Feed by Gear Pump to all Connecting Rods, Main Bearings, Camshaft Bearings, Governor and Oil Pump Drive. Oil Strainer in Bottom of Pan.
Valve Arrangement	Valve-in-Head
Valve Clearance Intake	.015-In. (When Cold)
Exhaust	.015-In. (When Cold)
Make of Governor	John Deere
Make of Carburetor	Marvel-Schebler
Spark Plug	Champion H-10 or Auto-Lite AL-7 or AC-45L Gap .025-In. Heat Range 1200° to 1500° F.
Type of Fuel	Gasoline (Regular Grade)

Capacities (Approx.)

Fuel Tank	25 U.S. Gallons
Cooling System (Radiator)	6 U.S. Gallons
Engine Crankcase	4 U.S. Quarts
Oil Filter	1 U.S. Quart
Air Cleaner	1 U.S. Quart
Hydraulic Unit (Including Hydraulic Oil Lines and Cylinders)	7 U.S. Quarts

(Specifications and design subject to change without notice)

LUBRICATION

The economical and efficient operation of any machine depends on regular and proper lubrication of all moving parts with a quality lubricant. This is especially true of farm equipment which must operate in hot, dusty conditions over rough ground. Neglected lubrication quickly leads to reduced efficiency, heavy draft, wear, breakdown and replacement of parts.

Use a clean container for storing and handling all lubricants. **See that only clean lubricants go into the working parts of your combine.**

LUBRICATING THE COMBINE.

This combine has been designed with a minimum of lubrication points.

There are 22 sealed-for-life bearings on the shoe hangers in addition to the 14 rubber bushings used; these bushings require no lubrication.

There are 6 places to grease every 300 hours of operation.

There are 25 places to grease every 40 hours of operation.

There are **only** 10 places to grease every 8 hours of operation.

There are 3 places to grease every 4 hours of operation.

The locations and intervals of lubricating all grease fittings are shown on pages 14 through 18. All other periodic lubrication and service is described on pages 19 through 25.

CAUTION: Never Attempt to Lubricate Combine or Engine While Engine Is Running.

Wipe dirt from grease fittings and grease gun nozzle before greasing.

Replace all missing or damaged grease fittings immediately.

BEARINGS.

Lubricate at all grease fittings thoroughly, with a good grade of gun grease, until grease oozes out of bearing. This assures that the bearing is full, and also flushes out dirt that may have accumulated in the bearing. However, avoid excessive lubrication. Excessive lubricant that has dropped onto belts should be wiped off immediately to avoid belt slippage.

Two types of sealed bearings are used on this combine. One type is a sealed-for-life bearing which requires no lubrication; the other type is prepacked at the factory and will require yearly lubrication.

To lubricate bearings where a pipe plug is provided in bearing housing, remove the pipe plug and insert a 1/8-inch diameter slotted grease fitting (JD7805); the slotted fitting allows the bearing housing to be filled to capacity without blowing out seals due to pressure building up. Then remove grease fitting and replace pipe plug.

Fourteen rubber bushings are used on the shoe hangers; these bushings require no lubrication.

LUBRICATION OF LINKAGES.

When lubricating the combine, make a practice of putting a few drops of oil on all clevises, linkages, and other moving parts. This will make them work easier and prolong their life.

LUBRICATION OF CHAINS.

Chains should be lubricated at frequent intervals. A good grade of light cylinder oil should be used. A paint brush is a good instrument for applying oil to chains. **CAUTION: Do not oil chains when operating in sandy conditions. Sand will stick to the oiled chain and act as an abrasive.**

KNIFE LUBRICATION.

The amount of lubricant to use on a knife depends on the conditions in which the work is being done. When the grain is being topped and the cutter bar is carried some distance from the ground, liberal lubrication with engine oil is permissible. In many conditions where the cutter bar must operate close to the ground it is better not to use oil except for a small amount on the knife holders.

TRANSMISSION AND FINAL DRIVE LUBRICATION

Lubrication of transmission, differential, and final drives is entirely automatic. It starts and stops with combine operation. The transmission, differential and final drive gears are partially submerged in SAE 90 oil. When the gears revolve, oil is carried up to all moving parts, completely bathing gears, shafts, and bearings.

Changing seasons and temperatures, together with heating and cooling of the gear cases, cause condensation and eventually an accumulation of sludge in the main transmission case. This breaks down the lubricating qualities of the oil, therefore, the transmission oil should be changed regularly.

Each spring the transmission and final drives should be drained and cleaned out with a safe cleaning solvent.

Weight of Oil
(For Transmission, Differential, and Final Drive)

Unit	*Viscosity*	*Capacity*
Transmission-Differential	SAE 90	10 U.S. Pints
Final Drive	SAE 90	4-1/2 U.S. Pints (Each)

ENGINE LUBRICATION

QUALITY OF OIL.

The engine of your combine with its force-feed pressure lubricating system has one of the finest oiling systems it is possible to produce. Do not handicap it by trying to save money with inferior oil. High-grade oils withstand heat and wear for a longer time. Inferior oils soon become thin and lose their lubricating qualities. Some inferior oils contain traces of sulphur, which in itself is not harmful but in the presence of certain products of combustion will form acids which will attack metal surfaces.

ENGINE LUBRICATION—Continued

It is difficult to judge the true quality of a lubricating oil except by use of elaborate equipment and prolonged tests. Therefore, the best practice is to buy oil of some well known and established brand or from a company with a good reputation. The use of premium-grade detergent type oils is recommended.

WEIGHT OF OIL.

Your John Deere combine engine was made with the same precision as a fine automobile engine, with clearance between bearing surfaces as fine as a ten-thousandth part of an inch. If oil is expected to lubricate these surfaces, it first must get there. Therefore, weight or viscosity of the oil is very important.

As soon as oil of the correct weight and quality reaches bearing surfaces, it immediately begins functioning to relieve friction and carry off heat. It creates an oil seal between rings and cylinders, preventing blow-by and loss of power; it also carries away carbon, dirt, and other abrasive materials that are harmful if left between metal working surfaces. Using oil of the wrong weight can result in loss of power, excessive fuel consumption, and undue wear on moving parts.

The temperature in the crankcase varies with the outside temperature. Therefore, it is important to use oil of the proper viscosity in the new engine as recommended in the chart below. **IMPORTANT: Follow the engine break-in instructions given at bottom of this page.**

Season	Engine Crankcase, Air Cleaner, and Hydraulic System
Summer	SAE 20 or SAE 10W-30
Winter	SAE 10-10W or SAE 5W-20

Capacities of Engine Units

Crankcase Oil Capacity	4 U.S. Quarts
Oil Filter Capacity	1 U.S. Quart
Hydraulic Unit Oil Capacity*	7 U.S. Quarts
Air Cleaner	1 U.S. Quart

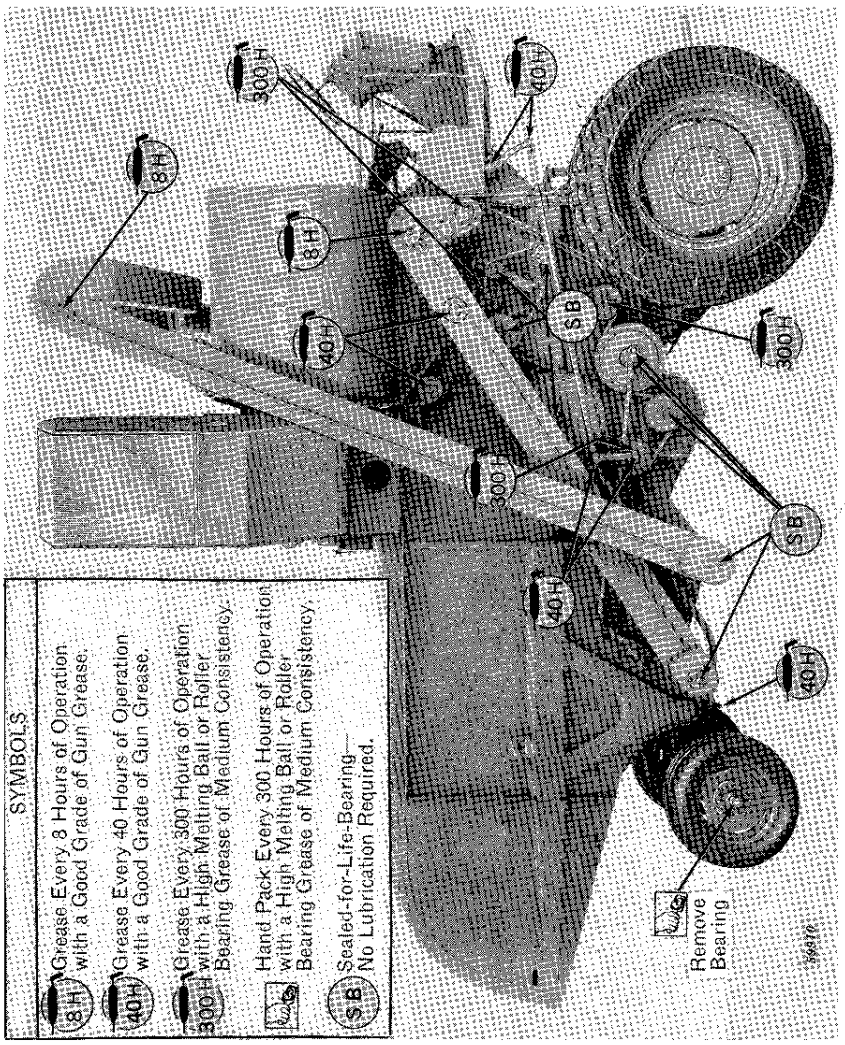
*This includes hydraulic oil lines and cylinders.

ENGINE BREAK-IN.

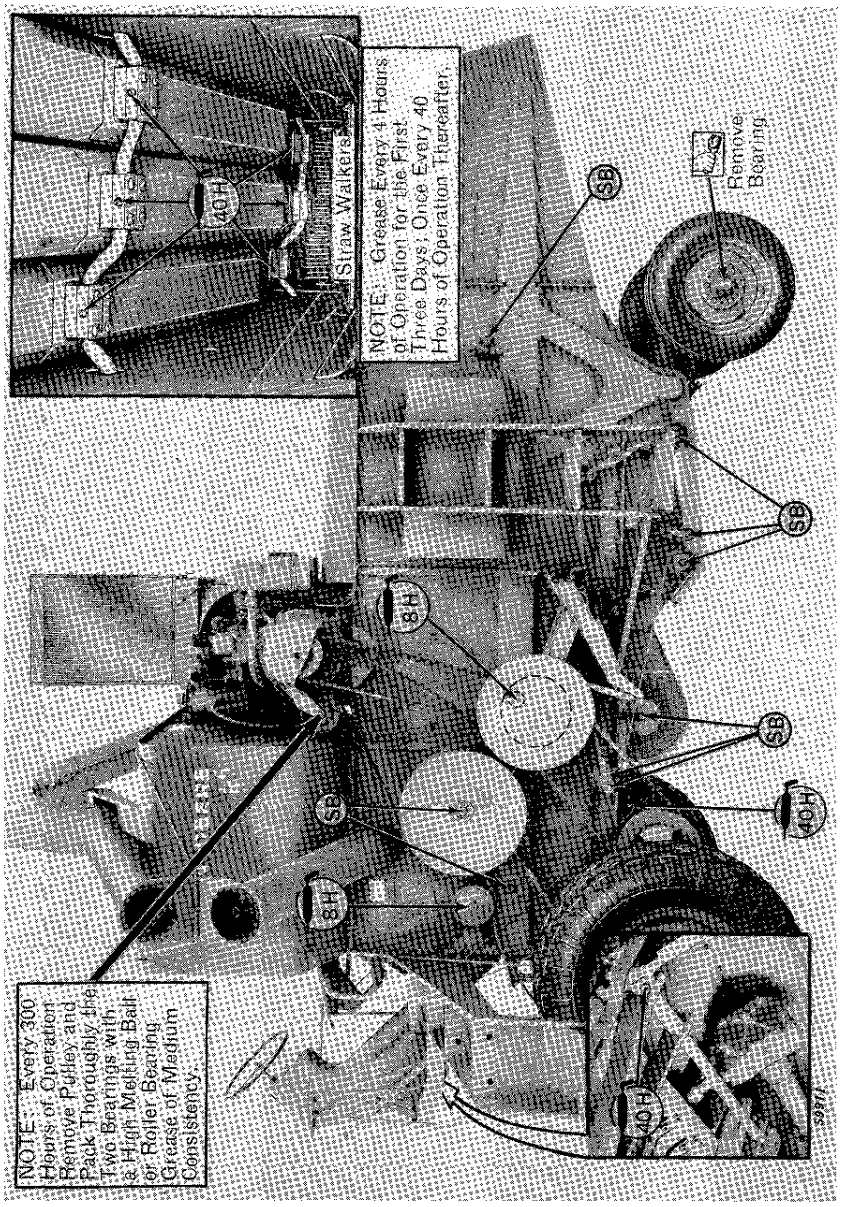
The engine on your new combine is shipped from the factory with a special break-in oil in the crankcase. After 150 hours of operation, this oil must be drained from the crankcase and oil filter and replaced with 5 quarts of oil no heavier than SAE 10W or SAE 5W-20.

Drain and replace oil every 150 hours of operation thereafter. Use 10W or SAE 5W-20 weight oil for the first 600 hours of operation; then use "summer" or "winter" oil as specified above. For further break-in instructions on the engine, see page 32.

RIGHT-HAND SIDE OF SEPARATOR



LEFT-HAND SIDE OF SEPARATOR



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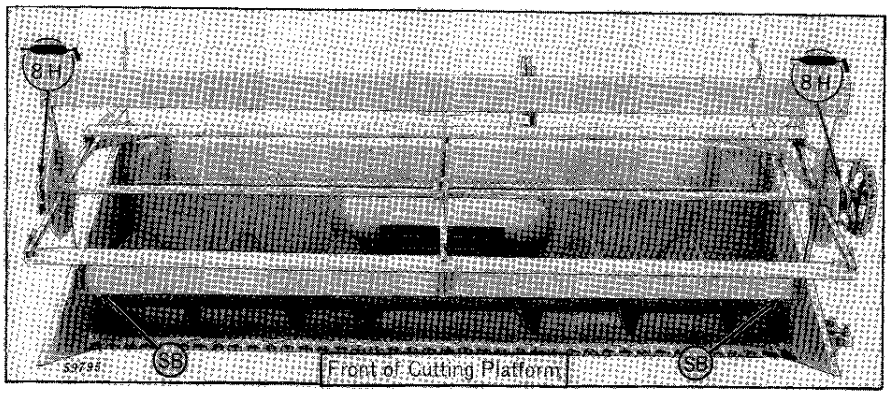
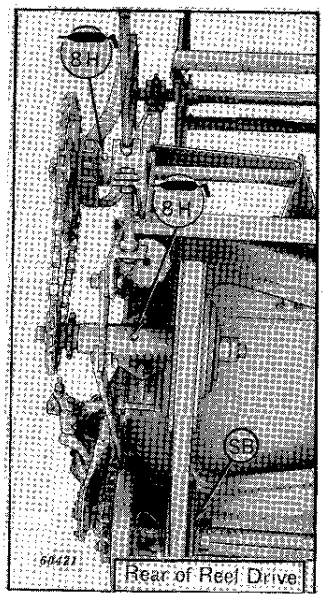
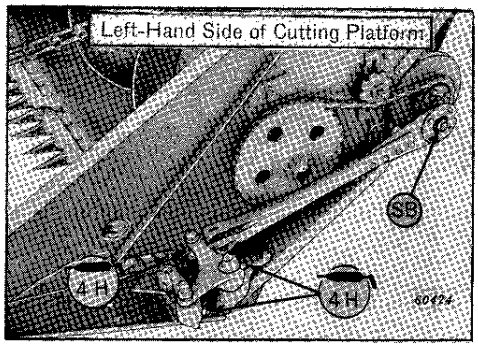
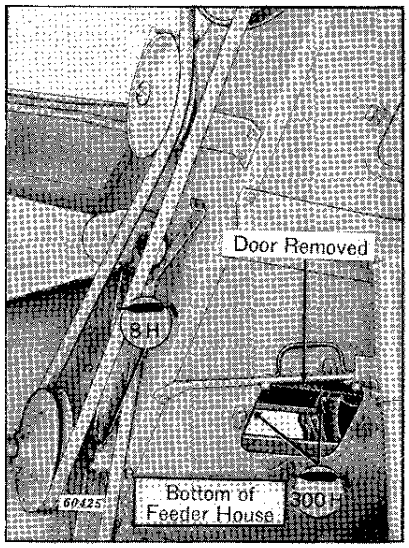
CUTTING PLATFORM









SYMBOLS	
4 H	Grease Every 4 Hours of Operation with a Good Grade of Gun Grease.
8 H	Grease Every 8 Hours of Operation with a Good Grade of Gun Grease.
40 H	Grease Every 40 Hours of Operation with a Good Grade of Gun Grease.
300 H	Grease Every 300 Hours of Operation with a High Melting Point Ball or Roller Bearing Grease of Medium Consistency.
SB	Sealed Bearing—No Lubrication Required.