55, 95 and 105 Hydraulically Propelled Combines

JOHN DEERE

OPERATORS MANUAL

55, 95 and 105 Hydraulically Propelled Combines

OMH63965 K6 English

OMH63965 K6

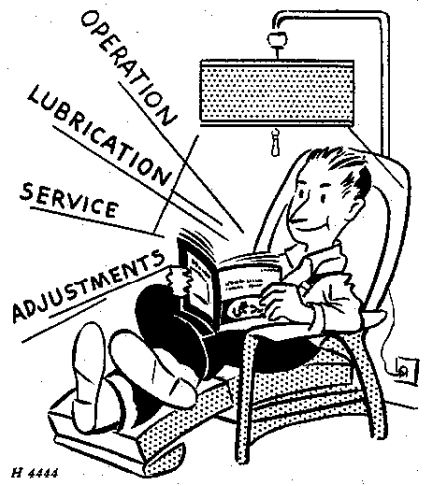
LITHO IN U.S.A.
ENGLISH

TO THE PURCHASER

Use this manual in conjunction with your regular combine operator's manual. It contains operating instructions for the hydraulically propelled combines which are different than those for the regular V-belt Propulsion Combines.

Should difficulties develop in the variable displacement pump or fixed displacement motor of your hydraulically propelled combine, consult your John Deere dealer. Under no circumstances try to service these units yourself. Only your John Deere dealer is authorized to make repairs or replacements on these units under the terms of the warranty.

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 specialized 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.



Study this manual carefully, keep it handy, in a safe place, for future reference.

LOCATION REFERENCE

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

Radiator end of the engine is referred to as the "front"; flywheel end as the "rear."

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. If your combine requires replacement parts, go to your John Deere dealer where you can obtain Genuine John Deere Parts—accept no substitutes.

SERIAL NUMBERS

This operator's manual covers the hydraulic propulsion system mounted on the following John Deere combines:

55 Combine	55-83001 and up.
95 Combine	95-35001 and up.
105 Combine	105-10001 and up.

CONTENTS

SPECIFICATIONS

HYDRAULIC PROPULSION SYSTEM SPECIFICATIONS FOR 55, 95 AND 105 COMBINES

Make of hydraulic drive units:	
Variable displacement pump	Sundstrand
Fixed displacement motor	Sundstrand
Speed range	(See Chart)
Type of oil filter	Full flow
Type of oil cooler	Air cooled—located in radiator air duct.
System capacity	27 U.S. quarts
Reservoir capacity	16 U.S. quarts
Type of oil	Type "A" Automatic Transmission fluid

GROUND SPEED CONTROL RANGE

55 COMBINE

14.9-26 Tires - Grain		
Gear	Forward	Reverse
1st	0 to 1.5 mph	0 to 1.0 mph
2nd	0 to 3.1 mph	0 to 2.1 mph
3rd	0 to 6.1 mph	0 to 4.1 mph
4th	0 to 12.3 mph	0 to 8.2 mph

16.9-26 Tires - Grain		
Gear	Forward	Reverse
1st	0 to 1.6 mph	0 to 1.1 mph
2nd	0 to 3.2 mph	0 to 2.1 mph
3rd	0 to 6.3 mph	0 to 4.2 mph
4th	0 to 12.6 mph	0 to 8.4 mph

18.4-26 Tires - Grain		
Gear	Forward	Reverse
1st	0 to 1.7 mph	0 to 1.1 mph
2nd	0 to 3.4 mph	0 to 2.3 mph
3rd	0 to 6.7 mph	0 to 4.5 mph
4th	0 to 13.5 mph	0 to 9.0 mph

23.1-26 Tires - Grain		
Gear	Forward	Reverse
1st	0 to 1.8 mph	0 to 1.2 mph
2nd	0 to 3.6 mph	0 to 2.4 mph
3rd	0 to 7.2 mph	0 to 4.8 mph
4th	0 to 14.5 mph	0 to 9.7 mph

18.4-26 Tires - Rice		
Gear	Forward	Reverse
1st	0 to 1.5 mph	0 to 1.0 mph
2nd	0 to 2.9 mph	0 to 2.0 mph
3rd	0 to 5.9 mph	0 to 4.0 mph
4th	0 to 11.8 mph	0 to 7.9 mph

23.1-26 Tires - Rice		
Gear	Forward	Reverse
1st	0 to 1.6 mph	0 to 1.1 mph
2nd	0 to 3.3 mph	0 to 2.2 mph
3rd	0 to 6.6 mph	0 to 4.4 mph
4th	0 to 13.2 mph	0 to 8.8 mph

(Specifications and design subject to change without notice.)

GROUND SPEED CONTROL RANGE—Continued

95 COMBINE

16.9-26 Tires - Grain		
Gear	Forward	Reverse
1st	0 to 1.8 mph	0 to 1.2 mph
2nd	0 to 3.6 mph	0 to 2.4 mph
3rd	0 to 7.2 mph	0 to 4.8 mph
4th	0 to 14.4 mph	0 to 9.6 mph

23.1-26 Tires - Grain		
Gear	Forward	Reverse
1st	0 to 2.0 mph	0 to 1.3 mph
2nd	0 to 4.0 mph	0 to 2.7 mph
3rd	0 to 8.0 mph	0 to 5.4 mph
4th	0 to 16.0 mph	0 to 11.7 mph

18.4-26 Tires - Grain		
Gear	Forward	Reverse
1st	0 to 1.9 mph	0 to 1.3 mph
2nd	0 to 3.8 mph	0 to 2.5 mph
3rd	0 to 7.6 mph	0 to 5.1 mph
4th	0 to 15.2 mph	0 to 10.1 mph

23.1-26 Tires - Rice 28.1-26 Tires - Rice		
Gear	Forward	Reverse
1st	0 to 1.8 mph	0 to 1.2 mph
2nd	0 to 3.7 mph	0 to 2.5 mph
3rd	0 to 7.4 mph	0 to 5.0 mph
4th	0 to 14.8 mph	0 to 9.9 mph

105 COMBINE

18.4-26 Tires - Grain		
Gear	Forward	Reverse
1st	0 to 1.7 mph	0 to 1.1 mph
2nd	0 to 3.7 mph	0 to 2.5 mph
3rd	0 to 6.1 mph	0 to 4.1 mph
4th	0 to 13.6 mph	0 to 9.1 mph

23.1-26 Tires - Rice 28.1-26 Tires - Rice		
Gear	Forward	Reverse
1st	0 to 1.7 mph	0 to 1.1 mph
2nd	0 to 3.8 mph	0 to 2.5 mph
3rd	0 to 6.2 mph	0 to 4.1 mph
4th	0 to 13.6 mph	0 to 9.2 mph

23.1-26 Tires - Grain		
Gear	Forward	Reverse
1st	0 to 1.8 mph	0 to 1.2 mph
2nd	0 to 4.0 mph	0 to 2.7 mph
3rd	0 to 6.6 mph	0 to 4.4 mph
4th	0 to 14.6 mph	0 to 9.8 mph

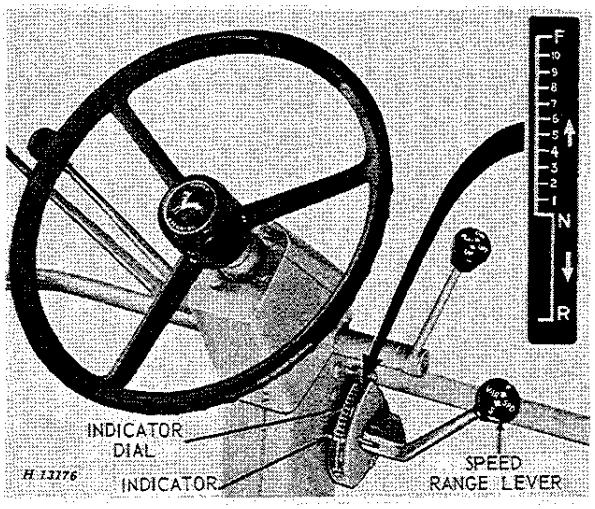
Crawler Tracks - Rice		
Gear	Forward	Reverse
1st	0 to 0.9 mph	0 to 0.6 mph
2nd	0 to 1.9 mph	0 to 1.3 mph
3rd	0 to 3.1 mph	0 to 2.1 mph
4th	0 to 6.8 mph	0 to 4.6 mph

CONTROLS

Operator's controls on the hydraulically propelled combine differ from the regular V-belt propulsion machine. These controls consist of a speed range control lever on the steering column and transmission gear shift lever in the instrument panel.

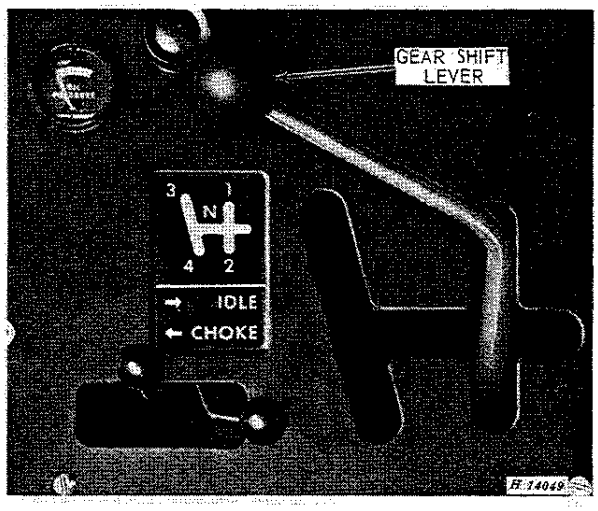
The speed range lever controls both the rate and direction of travel within one of the four transmission gears. The transmission gear shift lever is used to select the gear desired.

SPEED RANGE LEVER



The speed range lever controls the speed and direction of travel of the combine by changing the position of the control arm on the servo control valve on the variable displacement pump. In neutral, with the indicator at "N," the pump is at zero displacement and no oil will flow. If the transmission is in gear, moving the speed range lever from neutral will cause oil to flow and the combine to move. The direction the combine will move is shown on the indicator dial above. The speed of the combine within a selected gear is determined by the position of the lever. To stop the combine, bring the speed range lever back to neutral against a stop that is provided to assist in locating this position. To operate in reverse range, push the speed range control lever to the right before pulling down.

TRANSMISSION GEARSHIFT LEVER



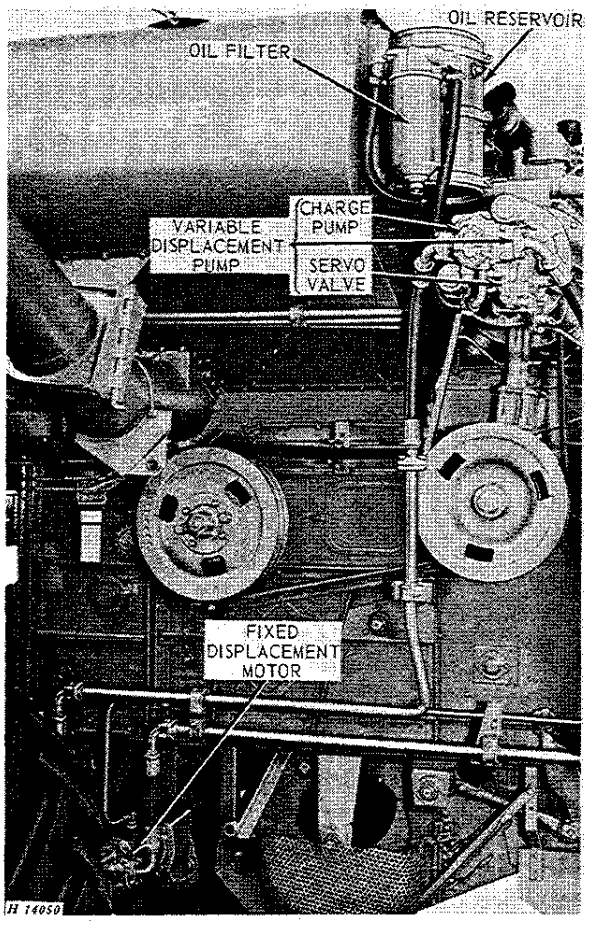
The transmission is composed of four forward gears and no reverse gear. The hydraulically driven system allows each forward gear to be used as a reverse gear. A neutral position for the gearshift lever disengages the transmission gears and prevents the machine from moving when the speed range lever is not in neutral. Shifting is accomplished by moving the speed range lever to neutral and shifting to the desired gear. (See Diagram above.)

When starting the combine, place both the speed range lever and gearshift lever in their neutral position.

NOTE: The hydraulic drive system provides inherent dynamic braking. The transmission must be in neutral before attempting to move the machine without the engine running. The engine cannot be started by towing the machine with the transmission in gear.

OPERATION

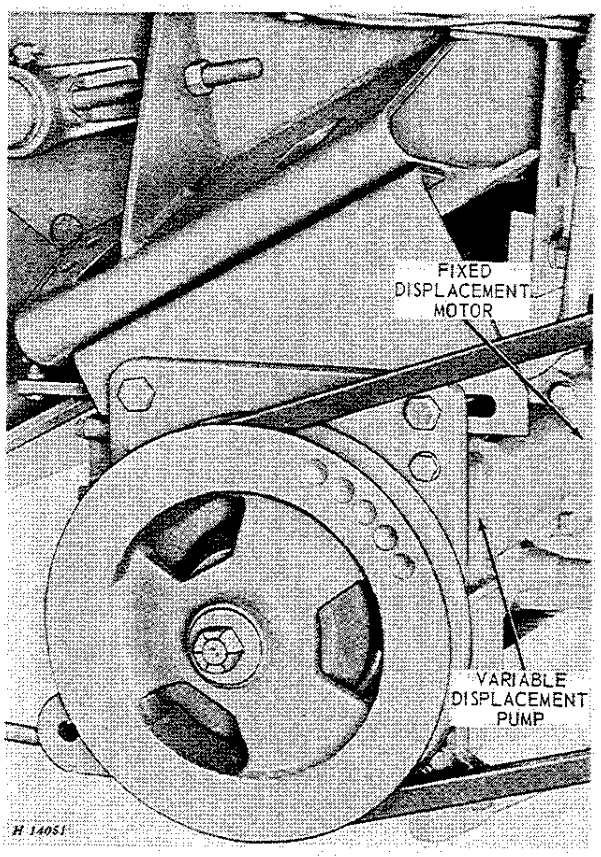
HYDRAULIC PROPULSION SYSTEM



Hydraulic Propulsion System on 55 and 95 Combine

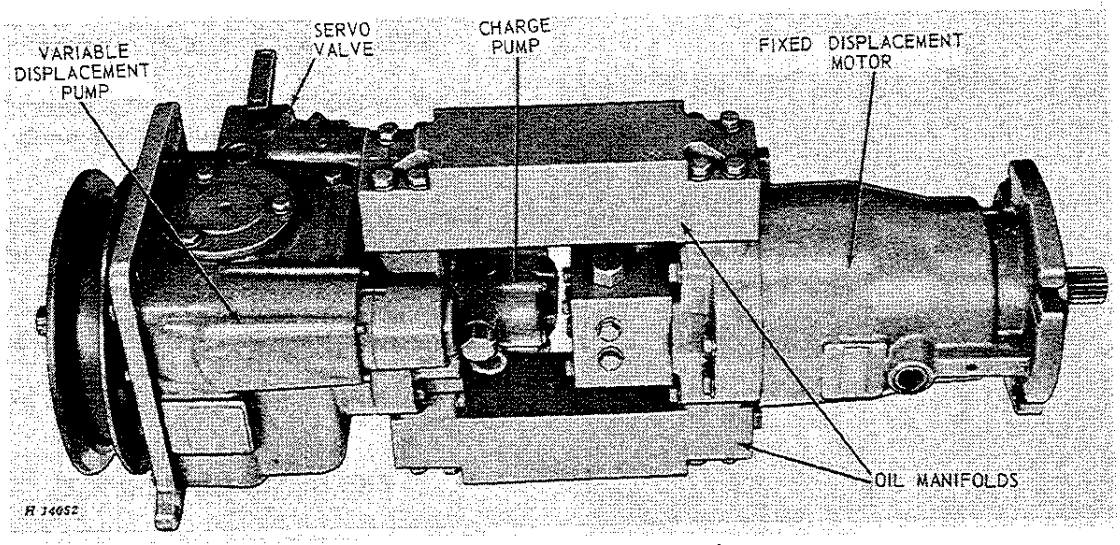
The hydraulic drive system's basic components are a variable displacement pump and a fixed displacement motor whose inlets and outlets are connected in a closed loop system.

The fixed displacement motor is mounted on the transmission and is coupled to the transmission input shaft. The motor's speed and direction of rotation are determined by the volume rate and flow direction of oil supplied to it by the variable displacement pump.



Hydraulic Propulsion Unit Mounted on 105 Combine

The variable displacement pump, attached to the rear of the engine on 55 and 95 Combines and to the fixed displacement motor on 105 Combines, receives its power from the engine. This pump is designed to pump oil in either direction around the closed loop system. The volume rate of oil flow this pump will provide can vary from nothing to the designed maximum.



Hydraulic Propulsion Unit for 105 Combine

The servo-control system located on the variable displacement pump, controls both the volume rate and direction of oil flow from the displacement pump determined by the position of the speed control lever.

A charge pump is also integral with the variable displacement pump. The charge pump provides pressure for the servo-control system and maintains a positive supply of oil to the rest of the system. A reservoir, filter, cooler, and connecting plumbing complete the system.

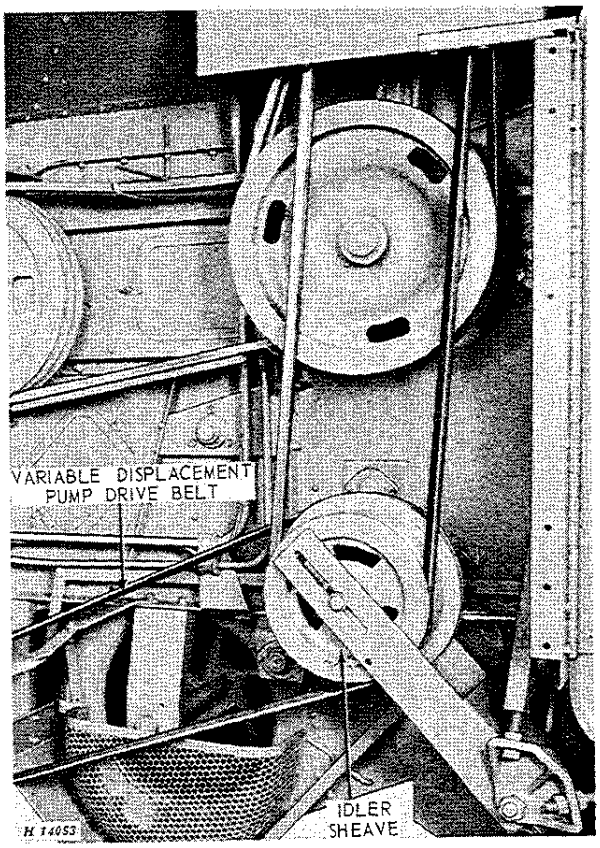
The hydraulic drive system is protected by relief valves. This protection will prevent damage to transmission and drive parts in the same way as a clutch.

Hydraulic oil pressure required to drive the combine will differ depending on the amount of torque required to turn the drive wheels. This torque load will differ with the gear selected, ground condition, and degree of acceleration.

The drive units will automatically deliver hydraulic oil pressure needed to furnish this torque. When torque requirements are too high, the relief valves will open and the combine will not move. As soon as the torque requirement drops (accomplished by shifting to a lower gear) the combine will again function normally.

IMPORTANT: Sustained operation at relief valve pressure will create excessive heating of oil which will damage or cause failure of the drive units.

Never allow relief valve pressure to be sustained more than 30 seconds with the combine not moving.



Hydraulic Propulsion Drive on 105 Combine

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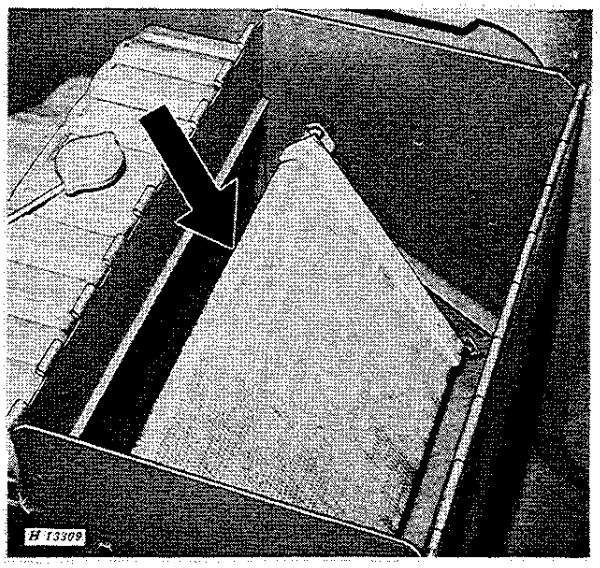
OIL COOLER



The oil cooler, mounted inside the radiator air duct, helps maintain oil in the hydraulic drive system at a safe operating temperature.

BEGINNING OF SEASON SERVICE

Check hydraulic connections for leaks. Tighten bolts in connections and replace faulty parts if necessary.

Check oil level and if necessary, fill to proper level with type "A" automatic transmission fluid.

Lubricate linkage ball joints and bearings.

Check linkages for proper function and adjustment.

END OF SEASON SERVICE

Drain reservoir and filter, add new filter element and fill reservoir to proper level with type "A" automatic transmission fluid. (See Lubrication and Periodic Service, next page.)

IMPORTANT: The system must not be left dry during storage.

Lubricate linkage ball joints and bearings.

Clean dirt and chaff from oil cooler core.