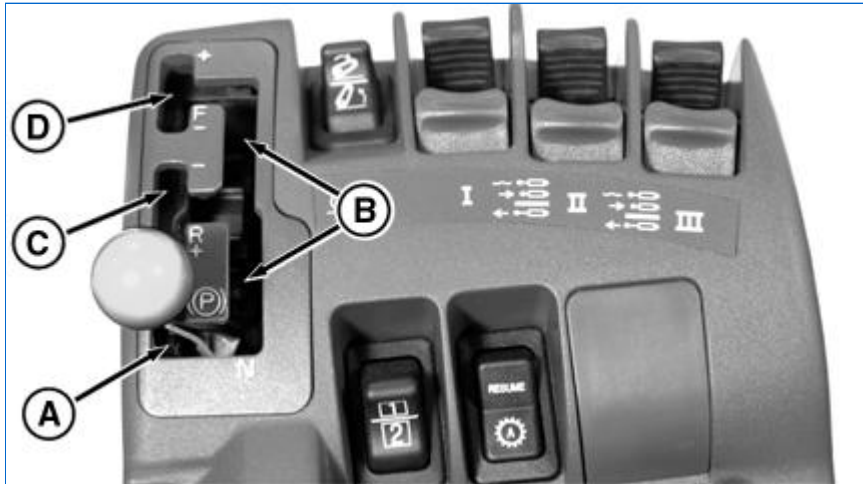


omar178071 - 8120T, 8220T, 8320T, 8420T and 8520T Tractors (902001 -)

Shifting the Transmission

Shifting the Transmission



RXA0056414-UN: Transmission Shifter

LEGEND:

- A - Rear Slot
- B - Right Slot
- C - Center Slot
- D - Front Slot

Shift Lever Positions

PARK - Rear slot (A)-Park brake applied when lever is fully forward in slot. No steering movement can occur.

NEUTRAL - Right slot (B)-Park brake is released when lever is moved to the right slot.

Reverse - Center slot (C)- Tractor will begin moving rearward when lever enters this slot. Push lever forward for downshifts and pull rearward for upshifts.

Forward - Front slot (D)-Tractor will begin moving forward when lever enters this slot. Push lever forward for upshifts and pull rearward for downshifts.

Commanded Gears

NOTE:

Use a higher gear and lower engine speed for light load operations to save fuel and reduce wear. Under full load conditions, use full throttle engine speed.

Transmission will start out in 7F and 2R after engine is started. These are the default gears. [Programmed forward gear can be changed from 7F to either 5F or 9F; reverse gear can be changed from 2R to 1R. See your John Deere Dealer.]

Once in forward or reverse, the commanded gear changes to the last gear of operation before shifting to NEUTRAL.

The initial commanded gear can also be changed prior to initiating motion to match the operation.

FORWARD gears (1 through 13) and REVERSE gears (1 through 3) may be preselected by depressing clutch pedal and pushing or pulling shift lever until the desired gear is displayed.

Cold Weather Starting

Transmission will not shift into 15F and 16F speeds until normal operating temperature has been reached. Delayed shifting may also be noticeable.

Shifting From Reverse

The highest forward gear the transmission will automatically shift to is 11F, when shifting from reverse. For example, if transmission is in 13F and is shifted to reverse, and then back to forward, transmission will automatically shift to 11F.

However, if transmission is in 13F or higher and tractor is stopped by using the clutch or shifting to NEUTRAL and not shifted through reverse, transmission will be in 13F when shifted forward again.

Shifting-WITHOUT Using Clutch Pedal

Hold lever to shift up or down to selected gear. Transmission will shift one gear at a time until lever is released.

“Bump” lever to quickly shift up or down to selected gear. Transmission will skip gears, if lever is moved faster than transmission can shift.

Shifting-Using Clutch Pedal

Hold lever to shift up or down until desired gear is displayed. Transmission will go into commanded gear when clutch pedal is released.

“Bump” lever to quickly shift up or down until desired gear is displayed. Transmission will go into commanded gear when clutch pedal is released.

Rapid Shift

To reach transport speed quickly, depress clutch pedal and rapidly “bump” shift lever to 13F. Transmission will shift directly to 13F when clutch is released. Once tractor is underway in 13F, “bump” shift lever to 16F.

Shuttle Shifting (Direction Change)

Moving shift lever between FORWARD and REVERSE slots causes transmission to modulate directly to opposite direction of travel without clutching or braking.

Shuttle shift occurs between last commanded forward and reverse gears.

Commanded gear will be 2R, regardless of previous reverse gear, when shifting from 14F-16F to reverse.

Load Starting-13F

Starting out in 13F with a heavy load may cause the clutch to slip excessively. A flashing transmission symbol and a Service

Alert warning light will display. Downshift to a lower gear.

Transmission will automatically shift from 13F to 11F if not downshifted and too much heat is detected.

Ground Speed Matching



CAUTION:

Avoid possible accident and injury from loss of vehicle control. Never coast down hill.

Transmission will match ground speed as clutch is released after tractor slows when clutch pedal is depressed at speeds greater than 13F or 3R.

Transmission will not match ground speeds as clutch is released after tractor slows when clutch pedal is depressed at speeds below 13F or 3R. Transmission will remain in 13F or 3R even if tractor comes to complete stop.

Transmission will not up shift to match ground speed as clutch is released, if tractor speeds up while clutch pedal is depressed.

Steering and Maneuverability



CAUTION:

Avoid possible accident and injury from loss of vehicle control. Use care when steering tractor in reverse. Counter rotation of track direction is also reversed.

Counter rotation occurs with transmission in NEUTRAL or in gear and the clutch pedal fully depressed. This provides the ability to make small side to side adjustments when attaching implements.

Turning on end rows with an implement attached to the drawbar can cause interference between track and implement. Two 90 degree turns, leaving room between the track and implement is recommended when making headland turns.

omar178071 - 8120T, 8220T, 8320T, 8420T and 8520T Tractors (902001 -)

Operating Automatic Powershift (APS)

Operating Automatic Powershift (APS)



RW26312-UN: APS Monitor

LEGEND:

- A - Set Switch
- B - APS Indicator

Automatic PowerShift (APS) shifts the transmission to maintain engine speed. APS will not shift above the maximum gear selected. The controller determines shift points based on throttle setting, engine speed, and engine load.

The transmission will downshift as many gears as necessary under heavy load. A change in throttle position allows a maximum downshift or upshift of three gears.

Set throttle to full engine rpm.

Select the maximum forward gear.

Press the **SET** switch (A). APS indicator (B) will light. APS will automatically downshift and upshift as engine rpm or load changes.



RXA0056416-UN: Resume Switch

LEGEND:

A - Resume Switch

Any manual shift cancels APS. Pushing the **RESUME** switch (A) restores control of shifting to APS.

Depressing the clutch pedal suspends APS but will not cancel the APS function. APS will resume when clutch pedal is released.

NOTE:

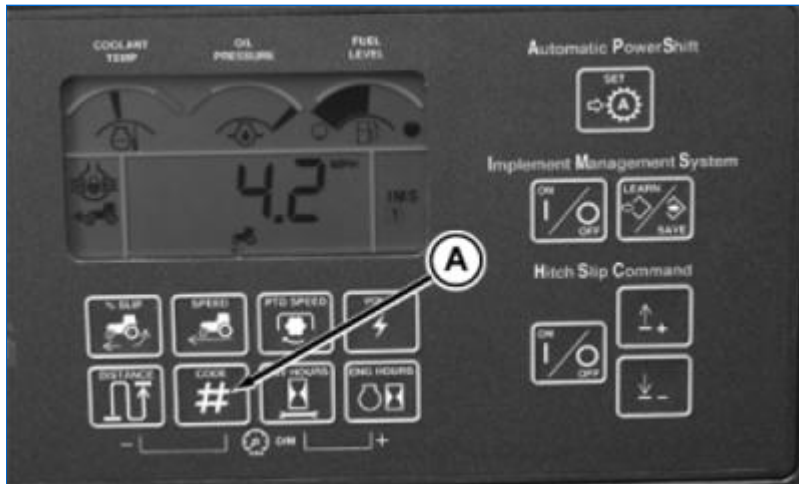
APS can be programmed into Implement Management System (IMS). (See IMS FUNCTIONS - AUTOMATIC POWERSHIFT, in Implement Management System Section).

APS is cancelled when:

- Operator shifts transmission
- Operator shifts to NEUTRAL or REVERSE

omar178071 - 8120T, 8220T, 8320T, 8420T and 8520T Tractors (902001 -) Transmission Service Codes

Transmission Service Codes



RW26244-UN: Digital Display Function Selector Switch

LEGEND:

A - Switch

If transmission indicator comes on and/or transmission shifts to NEUTRAL, there is a problem in transmission system. Push **CODE #** switch (A) and see Service Codes Section. Problems may be caused by:

- **Riding the clutch pedal**
- **Attempting to start engine with lever in gear**
- **Attempting to shift into gear without being in seat**
- **Leaving seat with transmission in NEUTRAL**

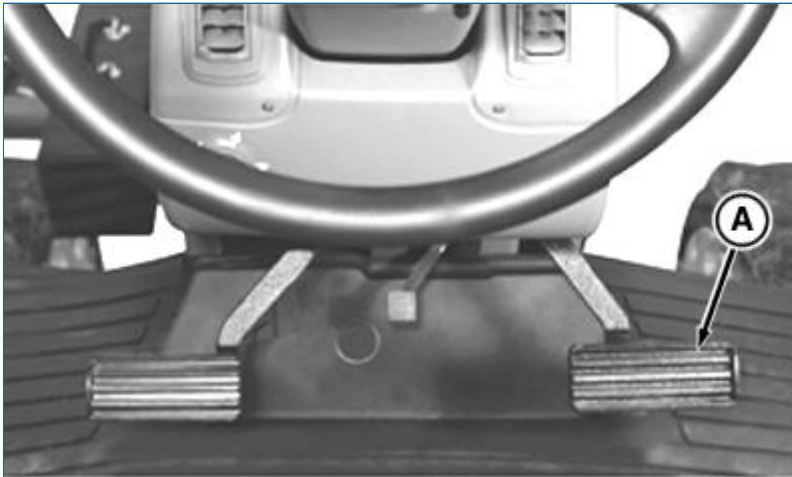
Reset transmission by fully engaging clutch pedal and/or moving shift lever to NEUTRAL position.

Record the information if a problem should require a service technician.

To clear the code, push and hold the code touch switch (A) for 7 seconds.

omar178071 - 8120T, 8220T, 8320T, 8420T and 8520T Tractors (902001 -) Using the Brakes

Using the Brakes



RXA0057291-UN: Test Brakes

LEGEND:

A - Pedal



CAUTION:

Avoid personal injury. Reduce speed if towed load weighs more than the tractor or transporting loads under adverse conditions. Avoid hard braking applications. (See implement manual and DRIVING TRACTOR ON ROADS, in Transport Section).

Test brakes with engine stopped to be sure manual brake system is functioning. (See CHECKING MANUAL BRAKES, in General Maintenance and Inspection Section).

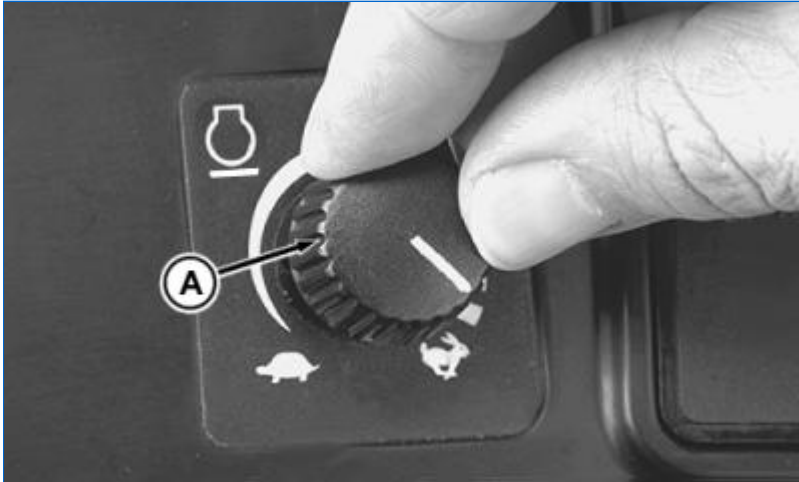
Press pedal (A) to stop tractor while disengaging the clutch.

IMPORTANT:

DO NOT rest foot on the brake pedal during tractor operation.

omar178071 - 8120T, 8220T, 8320T, 8420T and 8520T Tractors (902001 -) Using Field Cruise

Using Field Cruise



RXA0056423-UN: Field Cruise

LEGEND:

A - Knob

Push engine throttle all the way forward and turn knob (A) to set engine speed as follows:

OFF -Turn knob fully clockwise

- Use for heavy tillage field work, such as moldboard plowing, chisel plowing or ripping

ON -Turn knob counterclockwise out of detent

- Use when constant speed is required for a particular light load application, such as planting, fertilizing, or applying herbicide
- Engine speed can be adjusted from 1500-2200 rpm by rotating knob
- Engine speed remains constant at set speed

omar178071 - 8120T, 8220T, 8320T, 8420T and 8520T Tractors (902001 -) Implement Management System (IMS) - Description

Implement Management System (IMS) - Description



RW26310-UN: Monitor

Implement Management System (IMS) allows multiple tasks to be performed with the touch of one switch.

IMS has two sequences in which to store learned functions. A sequence is defined as the start of the first recorded function to the completion of the last recorded function.

NOTE:

Tractor must be moving to program or execute a sequence. Learned sequences will remain stored after engine stops.

A sequence is executed according to the **distance** required to perform a series of functions when the system is in the LEARN mode. A maximum of 12 functions can be learned for each sequence.

-: Learned Functions

LEARNED FUNCTIONS

Item	Function(s)
Hitch	RAISE/LOWER
Transmission Gear	Upshift or Downshift in Forward Gear
Auto Shift	CANCEL, RESUME
SCV	Detent EXTEND, Detent RETRACT, Float ON, and CANCEL
MFWD	ON/AUTO, OFF
PTO	ON/OFF
Differential Lock	ON/OFF

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