NORMAL ENGINE STARTING PROCEDURE

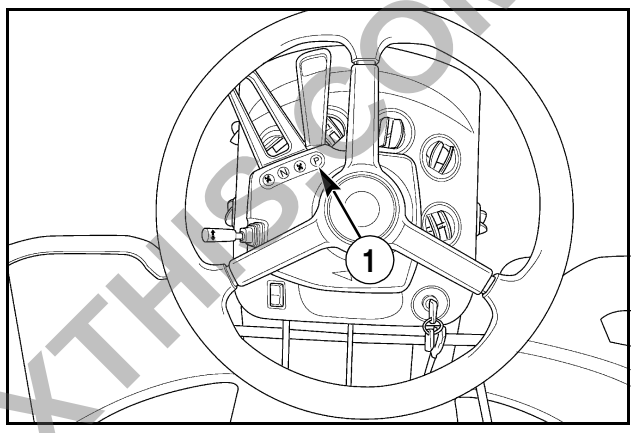
WARNING: *Operate controls only when seated in the operators seat.*

R137A

NOTE: *After the engine starts, operate the engine at slow speed for a few minutes to be sure that enough lubricant reaches the turbo charger bearings and engine parts before operating the engine at rated speed.*

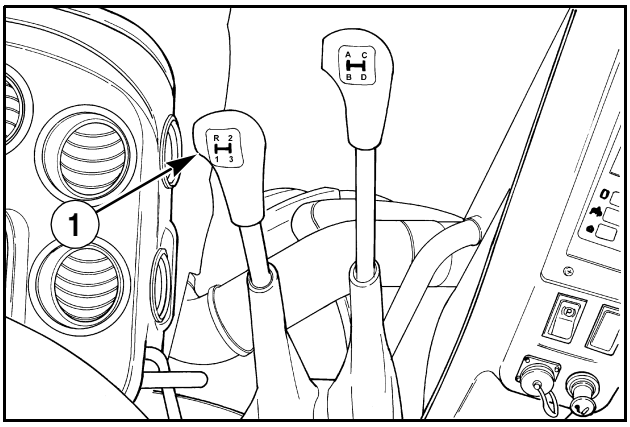
STEP 1

Powershift (If Equipped)
Be sure the transmission control lever (1) is in the PARK position.



MK01G198

24 Speed Manual Shift (If Equipped)
Place the gear shift lever (1) in the NEUTRAL position.

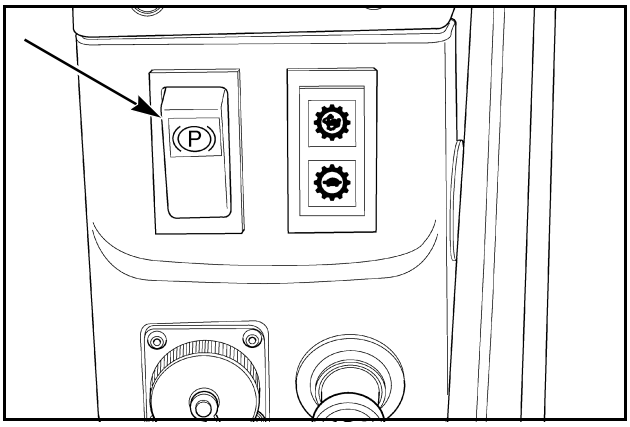


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STEP 2

24 Speed Only
Depress the park brake switch to the ON position.

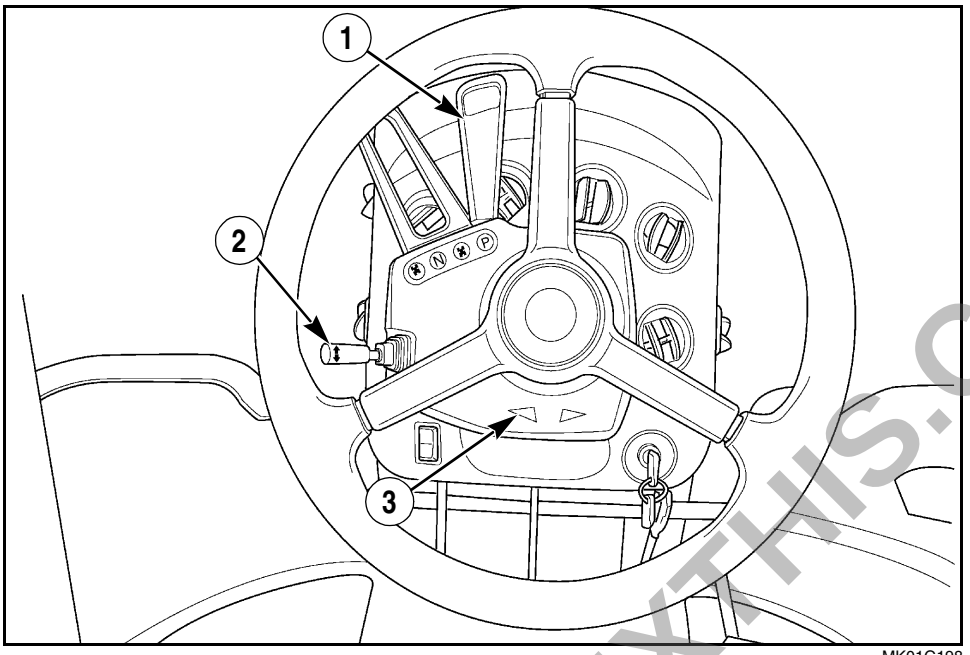
NOTE: *The PTO switch (if equipped) must be in the OFF position.*



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STEERING COLUMN CONTROLS



1. TRANSMISSION CONTROL LEVER (Powershift Only) - Lift the lever and move the lever from the upper PARK position to the left one indent to select FORWARD. One more indent to the left will select NEUTRAL, and all the way to the left will select REVERSE. See Powershift Transmission Control System for detailed information.

NOTE: *The control lever PARK position is NOT a mechanical function of the transmission. The PARK position activates the multiple disk park brake circuit. The control lever must be in PARK when starting the engine.*

2. DIRECTION TURN SIGNAL SWITCH - Move the turn signal lever UP to indicate a RIGHT turn. Move the turn signal lever DOWN to indicate a LEFT turn. The center position is OFF. When the Direction Turn Signal Switch (2) is used, the amber hazard lamps will be illuminated as follows:

   A. When the turn signal lever is pushed UP, the RH cab amber hazard lamps, RH wide transport lamp, RH tail lamp and steering column RH indicator (3) will flash ON and OFF. The LH cab amber hazard lamps, LH wide transport lamp, LH tail lamp and steering column turn indicator lamp (3) will be steady ON.

   B. When the turn signal switch lever is pushed DOWN, the LH cab amber hazard lamps, LH wide transport lamp, LH tail lamp and steering column LH indicator (3) will flash ON and OFF. The RH cab amber hazard lamps, RH wide transport lamp, RH tail lamp and steering column turn indicator lamp (3) will be steady ON.

   HORN BUTTON - The horn button is part of the direction turn signal lever. Push IN on the end of the lever to operate the horn.

   HIGH/LOW BEAM SWITCH - The high/low beam switch is part of the direction turn signal lever. The centered lever position is LOW beam. Move the switch away from the center position for HIGH beam. The high beam indicator lamp on the instrument cluster will illuminate when in high beam. Pull the lever toward you for MOMENTARY HIGH beam even when the lights are OFF to flash the lights.

NOTE: *This switch works whenever the front headlights are ON to turn the HIGH beam and CENTER lamp ON and OFF, even when only the work lamps are ON.*

3. TURN SIGNAL INDICATORS - Indicates which direction turn signal is activated or when front and rear amber warning lamps are flashing.

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LUBRICATION AND MAINTENANCE CHART

SERVICE POINTS	NO OF POINTS	FREQUENCY IN HOURS				
		CLEAN	CHANGE	CHECK	GREASE	DRAIN
Engine Oil Level	1			10		
Hydraulic/Axle Oil Level	1			10		
Transmission Oil Level	1			10		
Engine Coolant Level	1			10		
Fuel Level	1			10		
General Tractor Inspection (See Note 1)				10		
Articulation Hinge - Upper - Front	1				50	
Oscillation Hinge - Rear	1				50	
Articulation Hinge - Lower	1				50	
Articulation Cylinder - Front - LH and RH	2				50	
Articulation Cylinder - Rear - LH and RH	2				50	
Water Trap - Fuel Tank and Fuel Filter (See Note 7)	2					50
Hitch Cylinder Pin - Upper - LH and RH	2				50	
Hitch Cylinder Pin - Lower - LH and RH	2				50	
Hitch Rockshaft - LH and RH	4				50	
Hitch Lift Links and Top Link	12				50	
Air Filter Cab - Outside (See Note 2)	1	250				
Air Tubing Engine	1			500		
Alternator/Water Pump Belt	1			500		
Compressor Belt	1			500		
Battery Electrolyte Level	2			500		
Engine Oil (See Note 6)	1		500			
Engine Oil Filter	1		500			
Engine Fuel Filter (See Note 7)	1		500			
Driveshaft Carrier Bearing	1				500	
PTO Carrier Bearing	1				500	
PTO Slip Joint	2				500	
Radiator and Coolers	3	500				
Engine Coolant SCA Level	1			500		
Engine Air Filter - Primary (See Note 3)	1		1500			
Engine Air Filter - Secondary	1		1500			
Axle/Hydraulic Oil	1		1500			
Axle Lube Filter (See Note 7)	1		1500			
Hydraulic Oil Filter (See Note 7)	1		1500			
MegaFlow Oil Filter (Option)			1500			
Hydraulic Oil Vent	1	1500				
Transmission Oil	1		1500			
Transmission Oil Filter (See Note 7)	1		1500			

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The following section covers all engine specifications, power train specifications, travel speeds, weights and dimensions on the tractor.

DIESEL ENGINE

Tractor Model	TJ 275	TJ 325	TJ 375-425-450-500
Engine Manufacturer	CDC	CDC	Cummins
Engine Model	6TAA-8304	6TAA-9004	QSX 15
Type	In-Line, Six Cylinder, Four Stroke Cycle		
Aspiration	Turbo Charged, Air To Air After Cooled		
Firing Order	1-5-3-6-2-4		
Bore - inch (mm)	4.49 (114)	4.49 (114)	5.4 (137)
Stroke - inch (mm)	5.31 (135)	5.69 (144.5)	6.7 (168)
Displacement - inch^3 (L)	506 (8.3)	543 (9)	912 (15.0)
Compression Ratio	17.1:1	16.6:1	16.5:1
Cylinder Sleeves	Replaceable Wet Type		
High Engine Idle RPM	2125-2165 RPM	2125-2165 RPM	2125-2165 RPM **TJ500** 2230-2288 RPM
Rated Engine Speed	2000 RPM	2000 RPM	2000 RPM TJ500 2100 RPM
Engine Idle Speed	830-870 RPM	830-870 RPM	850-900 RPM
Engine Power Rating-HP (kw) at 2000 RPM	278 (205)	325 (242)	**TJ375** 375 (279) **TJ425** 425 (317) **TJ450** 450 (335) **TJ500** 500 (373)
Peak Torque - lb-ft (Nm) at 1400 RPM	1022 (1386)	1150 (1559)	**TJ375** 1380 (1871) **TJ425 PS** 1594 (2161) **TJ425 MS** 1500 (2034) **TJ450** 1669 (2263) **TJ500** 1743 (2363)
Torque Rise - %	40	35	**TJ375** 40% **TJ425 MS** 34% **TJ425 PS** 43% **TJ450** 41% **TJ500** 39%

Engine Lubrication System

Oil Pressure at Idle Speed (Minimum)
- TJ 275-325 ..... 10 PSI (69 kPa)
- TJ 375-425-450-500 ..... 20 PSI (138 kPa)

Oil Pressure at High Idle
- TJ 275-325 ..... 40 to 50 PSI (276 TO 344 kPa)
- TJ 375-425-450-500 ..... 35-40 PSI (240-276 kPa)

Type of System ..... Pressure and Spray

Fuel System

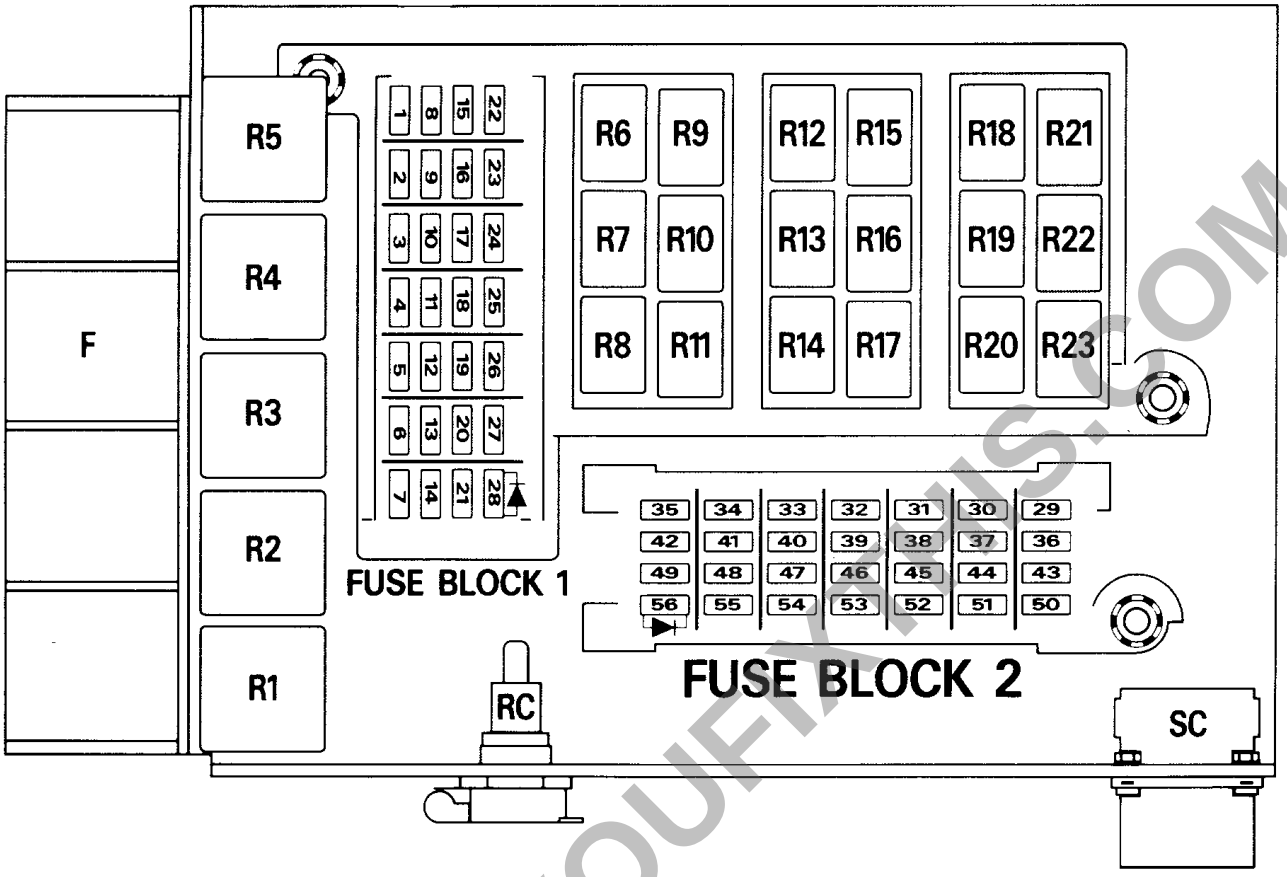
Fuel Injection Pump ..... CUMMINS
Fuel Injectors ..... CUMMINS
Tank Capacity
- TJ 275-325 ..... 200 Gallons (758 Liters)
- TJ 375-425-450-500 ..... 300 Gallons (1136 Liters)

Air Intake System

Type ..... Dry Type, Two Stage Aspirator System with Service Indicator in Instrument Cluster

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Fuse/Relay Identification - For Deluxe Cab And Powershift Transmission



FUSE BLOCK 1

FUSE NUMBER	AMPS/ SIZE	CIRCUIT IDENTIFICATION
1	15	IGNITION SWITCH
2	10	RADIO / DOME / MAP LIGHTS
3	30	IMPLEMENTS AUX POWER
4	20	ACCESSORY POWER PORTS
5	5	HORN
6	20	ELECTRONIC FLASHER
7	20	FNRP UNIVERSAL SWITCH
8	5	SERVICE TOOL
9	10	ICU / PMU DISPLAY
10	10	VT CDU
11	30	ELEC ENGINE GOVERNOR
12	10	CIGAR LIGHTER
13	10	AUXILLARY POWER PORT 1
14	10	AUXILLARY POWER PORT 2
15	30	WORKLIGHTS, REAR ROOF
16	30	WORKLIGHTS, FRONT ROOF
17	10	WORKLIGHT, INTERLOCK
18	5	STROBE LAMP
19	15	SEAT POWER
20	10	PTO/STARTER SOLENOIDS
21	7.5	FRONT/REAR DIFF LOCKS
22	10	ELECTRONIC ENG GOVERNOR
23	5	AXLE LUBE TEMP SWITCH
24	5	HVAC F°/C° CONVERSION
25	5	HVAC MICROPROCESSOR B+
26	30	HVAC MODULE B+ ATC
27	10	ETHER
28	1	DIODE, REAR DIFF LOCK

FUSE BLOCK 2

FUSE NUMBER	AMPS/ SIZE	CIRCUIT IDENTIFICATION
29	20	FRONT WIPER/WASHER
30	20	REAR WIPER/WASHER
31	30	FRONT LOWER WIPER
32	15	BLOWER, CAB PRESS
33	20	ACCESSORY POWER PORTS
34	15	ELECTRIC MIRRORS/RADIO
35	10	SEAT HEATER
36	5	CNH DATA BUS
37	10	ICU / PMU DISPLAY
38	10	ELECTRONIC ARU
39	20	PS TRANS
40	10	HYD AUX / RMT VALVES
41	10	TPH
42	10	VT / TGS RADAR
43	10	ROW CROP STEERING
44	20	SIDE WORKLIGHTS
45	15	CENTER HIGH BEAM
46	15	LEFT HIGH BEAM
47	15	RIGHT HIGH BEAM
48	15	LEFT LOW BEAM
49	15	RIGHT LOW BEAM
50	25	WORKLIGHTS, REAR FRAME
51	25	WORKLIGHTS, REAR FRAME
52	10	HEADLIGHT/TAIL/POS/HAZ
53	15	COMMUNICATIONS RADIO
54	5	BACK-UP ALARM
55	10	BRAKE LIGHTS
56	1	DIODE / FRONT DIFF LOCK

ITEM NUMBER	COMPONENT IDENTIFICATION
F	ELECTRONIC FLASHER
R1	HIGH BEAM RELAY
R2	REAR WORK LIGHT RELAY
R3	IGN SWITCH POWER RELAY
R4	ECU POWER RELAY
R5	ACCESSORY POWER RELAY
R6	REAR DIFF LOCK RELAY
R7	FRONT DIFF LOCK RELAY
R8	COLD START RELAY
R9	REAR ROOF WORKLIGHTS RELAY
R10	FRONT ROOF WORKLIGHT RELAY
R11	WORKLIGHT INTERLOCK RELAY
R12	PARK RELAY
R13	STEERING CONTROL RELAY
R14	BACK-UP ALARM RELAY
R15	BOTTOM OF CLUTCH
R16	NEUTRAL RELAY
R17	NEUTRAL LATCH
R18	CAB PRESSURIZATION RELAY
R19	AUX POWER PORT (IMPL) RELAY
R20	LOW BEAM RELAY
R21	PTO RELAY
R22	FNRP START RELAY
R23	TRANSMISSION POWER RELAY
RC	RADAR CONNECTOR
SC	SERVICE CONNECTOR

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500 HOUR MAINTENANCE

Engine Oil Change

Change the engine oil and filter every 500 hours or once a year or before storage, whichever occurs first. Your dealer has approved oil and filters. Do not use other types of oil or filters.

NOTE: *For best results change the oil and filter while the engine is still warm to the touch from operation. The tractor must be on a level surface.*

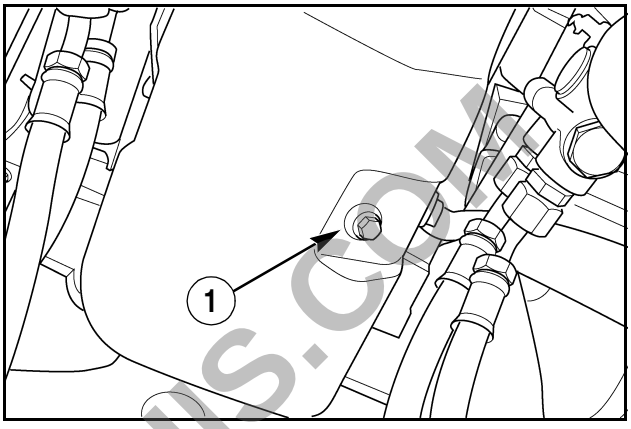
1. Remove the oil pan drain plug, (1) and drain the oil from the engine. Reinstall and tighten the drain plug.
2. Clean the area around the oil filter head. Use a filter strap wrench to remove the spin-on type filter.

NOTE: *Be sure the seal did not remain on the filter head.*

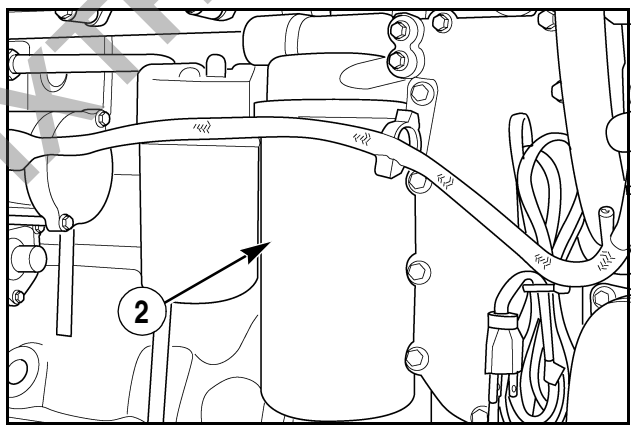
3. Fill the new filter with new oil of the specified type. Apply a light film of clean oil to the seal on the new filter.
4. Install the filter (2). Turn the filter clockwise until the seal contacts the filter head. Tighten the filter an additional 1/2 to 3/4 turn by hand.

IMPORTANT: *DO NOT use a filter wrench to install the filter. If the filter is too tight you can damage the seal and filter.*

NOTE: *All TJ Series tractors use one spin-on type filter mounted on the RH side of the engine.*



MK00B059



MK00B062

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PERSONAL SAFETY ALERT

THIS SAFETY ALERT SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ALERT TO THE POSSIBILITY OF DEATH OR SERIOUS INJURY.

M171C

Safety Decals on this machine use the words **Danger, Warning or Caution,** which are defined as follows:

- **DANGER:** Indicates an immediate hazardous situation which if not avoided, will result in death or serious injury. The color associated with Danger is RED.
- **WARNING:** Indicates an potentially hazardous situation which if not avoided, could result in death or serious injury. The color associated with Warning is ORANGE.
- **CAUTION:** Indicates an potentially hazardous situation which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

If Safety Decals on this machine are ISO two panel Pictorial, decals are defined as follows:

- **The first panel indicates the nature of the hazard.**
- **The second panel indicates the appropriate avoidance of the hazard.**
- **Background color is YELLOW.**
- **Prohibition symbols such as**  **and**  **if used are RED.**

WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE DEATH OR SERIOUS INJURY. BEFORE USING THIS MACHINE, MAKE CERTAIN THAT EVERY OPERATOR:

- Is instructed in safe and proper use of the machine.
- Reads and understands the Manual(s) pertaining to the machine.
- Reads and understands ALL Safety Decals on the machine.
- Clears the area of other persons.
- Learns and practices safe use of machine controls in a safe, clear area before operating this machine on a job site.

It is your responsibility to observe pertinent laws and regulations and follow New Holland instructions on machine operation and maintenance.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

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Instrument Panel Backlight Intensity

The programmable display may be used to adjust instrument panel backlight intensity by using the INCR and DECR buttons on the keypad.

When the light switch is turned ON the backlight intensity will dim. Pressing the INCR button will increase backlight intensity by 10% of maximum intensity each time the button is pushed. Pressing the DECR button will decrease the backlight by 10% each time the button is pushed.

Adjusting the backlight intensity is not possible when the controller is in the DIAGNOSTIC or SETUP mode, when the INCR and DECR keys have other uses.

NOTE: *The backlight intensity will be at 100% of maximum intensity when the working lights are off.*

Changing The Remote Valve Extend/Retract Values (If Equipped)

The tractor remote valves are programmed at the factory to provide equal remote hydraulic cylinder extend and retract movement. If it is desired to have different extend or retract times for special applications, do the following:

NOTE: *If possible connect the specific implement or machine to the tractor to verify the operation.*

1. Enter the PROGRAM MODE.
2. Press INCR or DECR button until AUX SET MENU is displayed.
3. Press PROG button to display AUX VIEW.
4. Press INCR or DECR button until AUX ADJUST is displayed.
5. Press PROG button to display EXT 1.
6. Press INCR or DECR button to display the desired remote (1 to 5, if equipped) and desired direction EXT - extend or RET - retract.
7. Press the PROG button to display the current factory set value for this remote direction. Record this value.

NOTE: *Before changing any values, record the factory value settings so that factory settings can be reset if desired. The factory values can be restored by changing the extend/retract values to zero.*

8. Press the INCR or DECR button to increase or decrease the number.

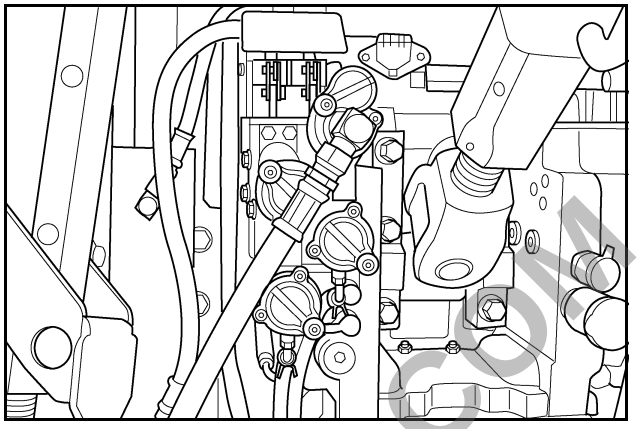
NOTE: *Each number change corresponds to approximately 0.75 to 2.3 L/min (0.2 to 0.6 GPM) hydraulic flow change.*

9. Press the PROG button.
10. Move the remote lever to verify operation of the remote function.
11. If additional change is required, repeat Steps 6 through 10.

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Manual Hitch Control Remote Connection (If Equipped)


MK01G293

Remote coupler No. 1 or No. 2 can be used for hitch control. Connect the hitch to the “B” (raise) port of the desired remote coupler.

NOTE: *When transporting, always place the remote function control in the lockout position.*

IMPORTANT: *If cylinder stops are used for position control, the cylinder stops must be the same diameter (or larger) as the barrel of the hitch cylinder. Stops that are too small in diameter will damage the cylinder gland nut.*

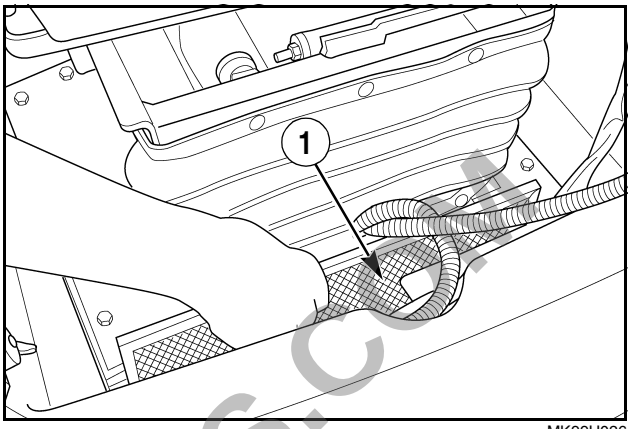
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Cab Recirculation Filter

The cab air recirculation filter (1) is located directly behind the operators seat. The recirculation filter element must be removed and cleaned each time the cab outside air filter is serviced.

To remove the screened mesh type filter, lift the filter element straight upwards far enough to remove the element out one side to clear the wire harnesses. Use a mild detergent and warm water to clean the filter. Rinse the element in clear water, dry and reinstall the element.

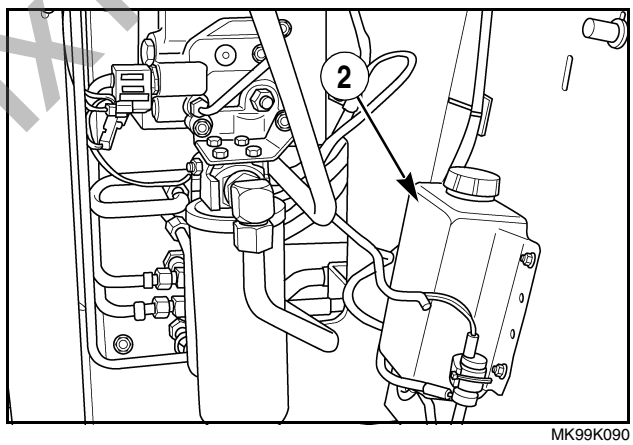


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Windshield Washer (If Equipped)

The windshield washer reservoir (2) is located in the battery compartment on the RH side of the tractor.

Fill the reservoir as needed with a good quality windshield washer solvent. In cold temperatures use a non-freezing type solvent to prevent damage to the windshield washer equipment.



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