JOHN DEERE
WORLDWIDE COMMERCIAL & CONSUMER EQUIPMENT DIVISION

John Deere Select Series™ Tractors
Ultimate™ Series
X700, X720, X724 and X728

TM2349 SEPTEMBER 2005

TECHNICAL MANUAL



JOHN DEERE

North American Version
Litho In U.s.a.

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Manual Description

This technical manual is written for an experienced technician and contains sections that are specifically for this product. It is a part of a total product support program.

The manual is organized so that all the information on a particular system is kept together. The order of grouping is as follows:

- Table of Contents
- Specifications and Information
- Identification Numbers
- Tools and Materials
- Component Location
- Schematics and Harnesses
- Theory of Operation
- Operation and Diagnostics
- Diagnostics
- Tests and Adjustments
- Repair
- Other

Note: Depending on the particular section or system being covered, not all of the above groups may be used.

The bleed tabs for the pages of each section will align with the sections listed on this page. Page numbering is consecutive from the beginning of the Safety section through the last section.

We appreciate your input on this manual. If you find any errors or want to comment on the layout of the manual please contact us.

Safety
Specifications and Information
Engine (Liquid-Cooled)
Electrical
Power Train
Hydraulics
Steering
Brakes
Attachments
Miscellaneous

All information, illustrations and specifications in this manual are based on the latest information at the time of publication. The right is reserved to make changes at any time without notice.

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Safety

Recognize Safety Information



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This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

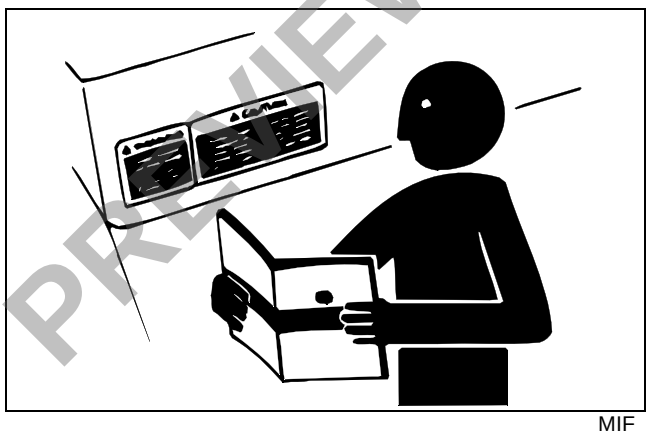
Follow recommended precautions and safe servicing practices.

Understand Signal Words

A signal word - DANGER, WARNING, or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

Replace Safety Signs

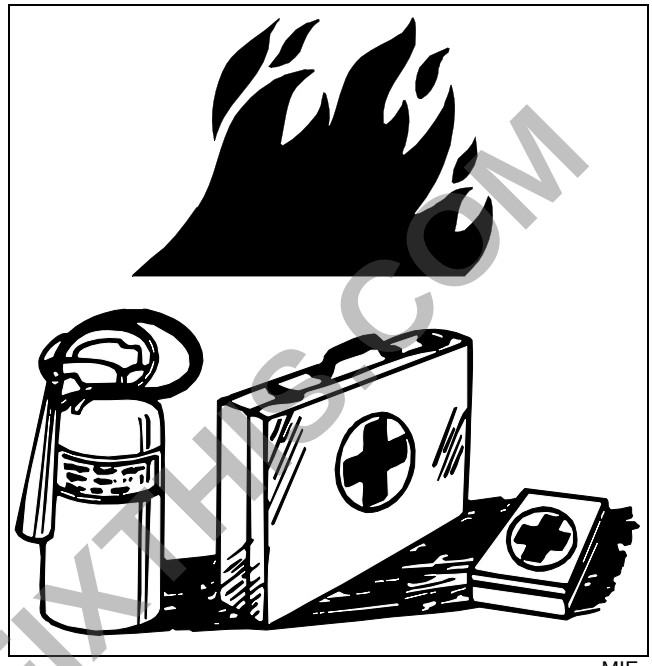


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Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.

Handle Fluids Safely - Avoid Fires

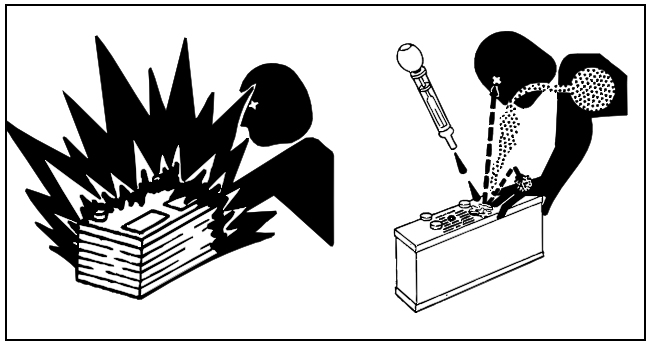
Be Prepared For Emergencies



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- When you work around fuel, do not smoke or work near heaters or other fire hazards.
- Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.
- Make sure machine is clean of trash, grease, and debris.
- Do not store oily rags; they can ignite and burn spontaneously.
- Be prepared if a fire starts.
- Keep a first aid kit and fire extinguisher handy.
- Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

Use Care In Handling And Servicing Batteries



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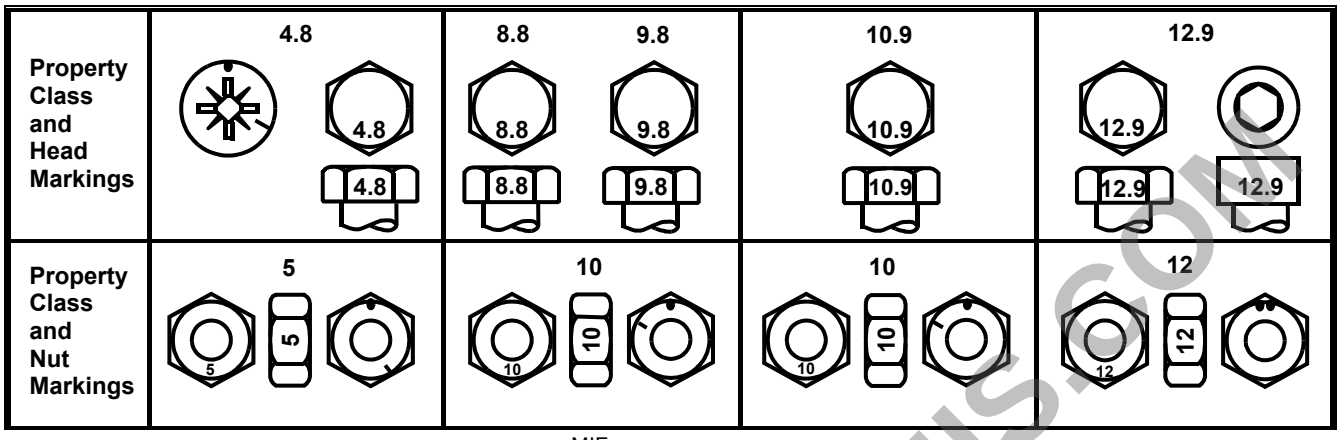
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Fastener Torques

Metric Fastener Torque Values



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	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated a		Dry a		Lubricated a		Dry a		Lubricated a		Dry a		Lubricated a		Dry a	
SIZE	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	109
M16	100	73	125	92	190	140	240	175	275	200	350	225	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

DO NOT use these hand torque values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only and include a ±10% variance factor. Check tightness of fasteners periodically. DO NOT use air powered wrenches.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same grade. Make sure fastener threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

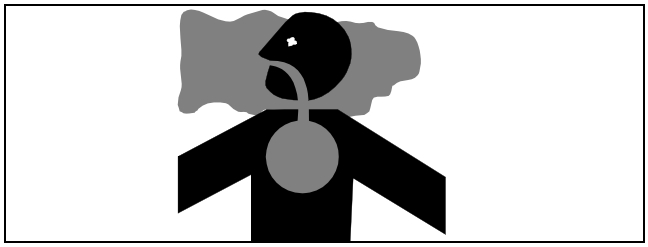
When bolt and nut combination fasteners are used, torque values should be applied to the NUT instead of the bolt head.

Tighten toothed or serrated-type lock nuts to the full torque value.

a *“Lubricated” means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. “Dry” means plain or zinc plated (yellow dichromate - Specification JDS117) without any lubrication*.

Reference: JDS - G200.

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Important: Avoid Damage! California Proposition 65 Warning: Gasoline engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Gasoline Storage

Important: Avoid Damage! Keep all dirt, scale, water or other foreign material out of gasoline.

Keep gasoline stored in a safe, protected area. Storage of gasoline in a clean, properly marked ("UNLEADED GASOLINE") POLYETHYLENE PLASTIC container WITHOUT any metal screen or filter is recommended. DO NOT use de-icers to attempt to remove water from gasoline or depend on fuel filters to remove water from gasoline. Use a water separator installed in the storage tank outlet. BE SURE to properly discard unstable or contaminated gasoline. When storing the machine or gasoline, it is recommended that you add **John Deere Gasoline Conditioner and Stabilizer (TY15977)** or an equivalent to the gasoline. BE SURE to follow directions on container and to properly discard empty container.

4 - Cycle Gasoline Engine Oil

Use the appropriate oil viscosity based on the expected air temperature range during the period between recommended oil changes. Operating outside of these recommended oil air temperature ranges may cause premature engine failure.

The following John Deere oils are PREFERRED:

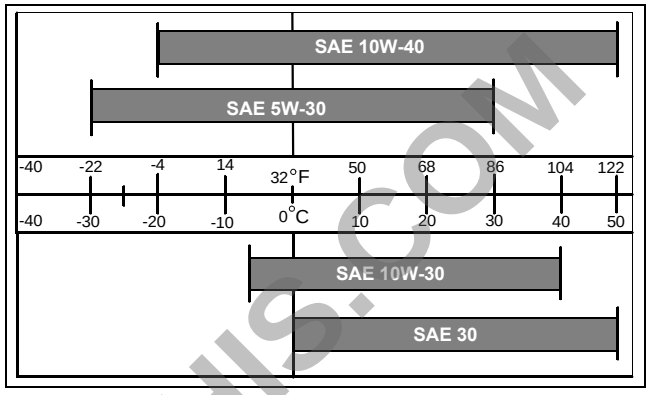
- **PLUS - 4 - SAE 10W-40**;
- **TORQ - GARD SUPREME - SAE 5W-30**.

The following John Deere oils are **also recommended**, based on their specified temperature range:

- **TURF - GARD - SAE 10W-30;**
- **PLUS - 4 - SAE 10W-30;**
- **TORQ - GARD SUPREME - SAE 30.**

Other oils may be used if above John Deere oils are not available, provided they meet one of the following specifications:

- SAE 10W-40 - API Service Classifications SG or higher;
- SAE 5W-30 - API Service Classification SG or higher;
- SAE 10W-30 - API Service Classifications SG or higher;
- SAE 30 - API Service Classification SC or higher.



Break-In Engine Oil - 4-Cycle Gasoline

Important: Avoid Damage! ONLY use a quality break-in oil in rebuilt or remanufactured engines for the first 5 hours (maximum) of operation. DO NOT use oils with heavier viscosity weights than SAE 5W-30 or oils meeting specifications API SG or SH, these oils will not allow rebuilt or remanufactured engines to break-in properly.

The following John Deere oil is PREFERRED:

- **BREAK - IN ENGINE OIL**.

John Deere BREAK - IN ENGINE OIL is formulated with special additives for aluminum and cast iron type engines to allow the power cylinder components (pistons, rings, and liners as well) to "wear-in" while protecting other engine components, valve train and gears, from abnormal wear. Engine rebuild instructions should be followed closely to determine if special requirements are necessary.

John Deere BREAK - IN ENGINE OIL is also recommended for non-John Deere engines, both aluminum and cast iron types.

The following John Deere oil is **also recommended**:

- **TORQ - GARD SUPREME® - SAE 5W-30.**

If the above recommended John Deere oils are not available, use a break-in engine oil meeting the following specification during the first **5 hours (maximum)** of operation:

- SAE 5W-30 - API Service Classification SE or higher.

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Specifications

General Specifications

Engine General Specifications:

Engine Use (FD671D)	X700
Engine Use (FD750D)	X720, X724, and X728
Model	Kawasaki
Model Number	FD671D
Model Number	FD750D
Displacement	745 cm^3 (45.5 cu-in.)
Cylinders	2
Stroke/Cycle	4
Valves	Overhead Valves
Bore	78 mm (3.07 in.)
Stroke	78 mm (3.07 in.)
Compression Ratio	8: 1
Compression Release	Automatic
Crankshaft Type	Horizontal (Counterbalanced)
Lubrication	Pressurized by Positive Displacement Pump
Oil Pressure	276 kPa (40 psi minimum)
Oil Filter	Cartridge Type, Full Flow, Spin-On Filter
Crankcase Capacity (With Filter)	1.8 L (1.9 qt)
Cooling System	Liquid Cooled
Cooling System Capacity	4.0 L (4.2 qt)
Air Cleaner	Dual Element replaceable paper
Muffler	Horizontal; discharge frame side
Maximum Angle of Operation (With Full Crankcase):	
Continuous (All Directions)	20°
Intermittent (All Directions)	35°
Fuel Filter	Replaceable (In-Line Type)
Fuel Pump	Electromagnetic Pump (In-Tank Type)
Fuel Shut-Off Solenoid	Replaceable (Below Carburetor Float Bowl)
Carburetor (FD671D)	Float type, fixed main jet, two barrel
Fuel Injection (FD750D)	Simultaneous port fuel injection
Spark Plug	NGK BPR4ES
Charging System	12V - 20 amps with regulator

Tests and Adjustments Specifications

Engine:

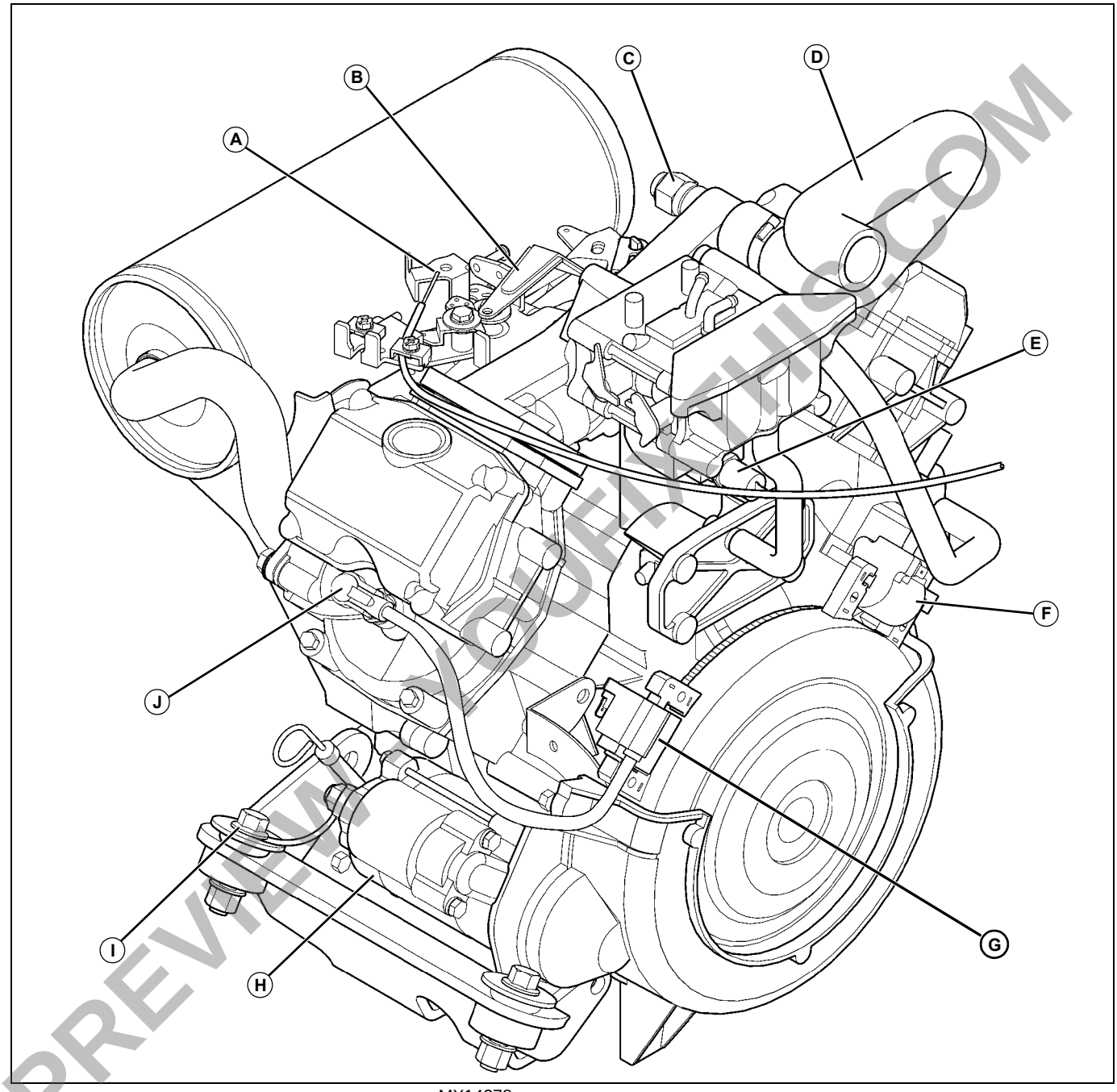
Spark Plug Gap	0.75 mm (0.030 in.)
Fan Belt Deflection	12 - 19 mm (0.48 - 0.75 in.)
Valve Adjustment	0.15 mm (0.006 in.)
Oil Pressure (Minimum at 1250 rpm)	276 kPa (40 psi)
Cylinder Compression (Minimum, with Engine Warm)	620 kPa (90 psi)

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Component Location

Engine (FD671D)



MX14278

A- Throttle Cable
B- Governor Arm
C- Coolant Temperature Sensor
D- Coolant Hose
E- Fuel Shutoff Solenoid
F- Ignition Module #1 Cylinder
G- Ignition Module #2 Cylinder
H- Starting Motor
I- Engine Frame Ground
J- Spark Plug #2 Cylinder

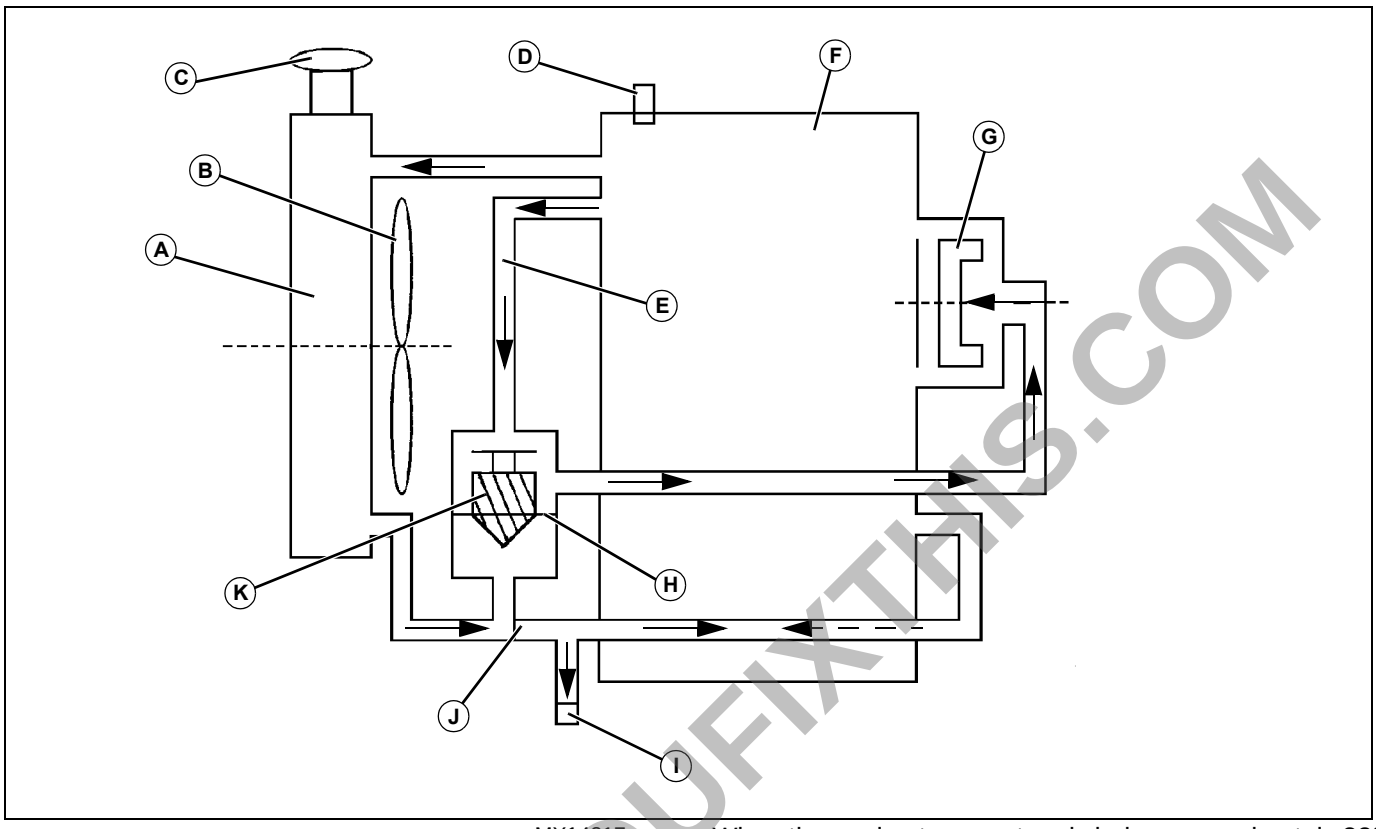
Note: Number 1 cylinder is on same side of engine as oil filter.

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Theory of Operation

Cooling System Operation



MX14217

A- Radiator
B- Cooling Fan
C- Radiator Cap, maintains radiator pressure at 78 - 98 kPa (11.3 - 14.2 psi)
D- Thermo Switch, detects at 111°C (232°F)
E- Bypass Tube
F- Engine Body
G- Water Pump (Impeller)
H- Jiggle Valve
I- Drain Plug
J- Valve, One Way
K- Thermostat, fully open at 95°C (203°F)

Function:

The coolant pump circulates coolant through the cooling system, drawing hot coolant from the engine block, and circulating it through the radiator for cooling.

System Operation:

The impeller-type coolant pump draws coolant from the bottom of the radiator when the thermostat is open, or from the bypass when the thermostat is closed. Coolant from the water pump flows to the water jackets in block, up through cylinder heads, intake manifold, past the coolant temperature sensor and thermostat.

When the engine temperature is below approximately 82°C (180°F), the thermostat is closed and coolant is directed back to the water pump through bypass hose to be recirculated. This allows the engine to warm up to operating temperature quickly.

When the engine temperature is approximately 82°C (180°F), the thermostat begins to open and is fully open at 95°C (203°F). Coolant from the water jackets and cylinder heads now flow through the thermostat to the radiator, which is cooled by the radiator fan. The fan is driven by a belt off the crankshaft pulley. If the engine coolant temperature raises to 111°C (232°F), a thermo switch detects this, and turns on a warning light on the dash, warning you of a potentially dangerous overheating situation.

The radiator cap maintains a pressure of 78 - 98 kPa (11.3 - 14.2 psi) inside the radiator, which actually raises the boiling point of the coolant. The radiator cap contains a pressure valve and a vacuum valve. When the coolant is hot and pressure is above 98 kPa (14.2 psi), the pressure valve opens, allowing some coolant to flow to the recovery tank. After the engine is stopped, the coolant cools and the pressure inside the radiator decreases. The pressure difference between the radiator and recovery tank forces the vacuum valve open and some coolant from the recovery tank flows back to the radiator.

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Diagnostics

Engine Diagnosis

Caution: Avoid Injury! Engine radiator fluid is extremely hot during operation. The engine may start to rotate at any time. Keep hands away from all moving parts when testing.

Symptom: Engine Starting Problems

Problem	Cause - Solution
1. Engine will not crank?	a. No: Go to next step. b. Yes: Battery weak or discharged. Fusible link defective. Check key switch or wiring. Starter solenoid defective. Starter motor defective.
2. Engine will not start; plug wet?	a. No: Go to next step. b. Yes: Mixture too rich. Clean under engine shrouding. Check spark plug gap and spark (see Electrical section). Inlet needle and seat sticking (FD671D engine). Clean carburetor (FD671D engine).
3. Engine is hard to start when cold?	a. No: For additional tests, see “Engine Tests” on page 38. b. Yes: Mixture too rich. Mixture too lean. Clean under engine shrouding. Choke is not completely shut, adjust choke (FD671D engine). Inlet needle and seat sticking (FD671D engine). Clean carburetor (FD671D engine).

Symptom: Engine Starting Problems

Problem	Cause - Solution
4. Engine cranks but will not start?	a. No: Go to next step. b. Yes: Battery weak or discharged. Fuel shut-off valve closed (in-line valve). Fuel shut-off solenoid not allowing fuel into main jet (FD671D engine). Fuel shut-off solenoid not allowing fuel into fuel injector (FD750D engine). Improper use of choke (FD671D engine). Float level too high (FD671D engine). Check spark (See Electrical section). Weak or faulty spark plug. Faulty high tension leads. Faulty ignition module (FD671D engine). Faulty fuel injection module (FD750D engine). Faulty ignition coil. Faulty pulsar coil. Contaminated fuel or faulty fuel supply system. Defective fuel pump. Air being drawn in through a hole in fuel line(s). Clogged fuel line or filter. Fuel tank vent line clogged. Air filter restricted. Defective head gasket. Cylinder head loose. Broken valve spring. Warped cylinder head. Poor compression. Worn piston/piston rings stuck or not seated. Worn cylinder bore. Worn or burned valves, or improper clearance.

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Tests and Adjustments

Throttle Lever Adjustment

Reason:

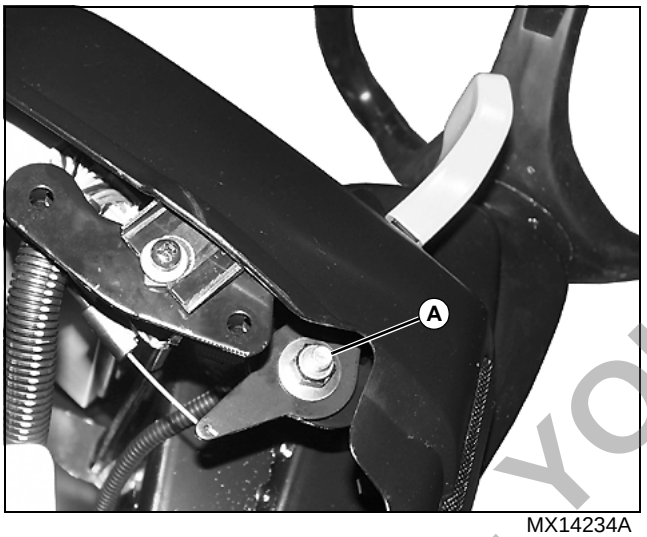
To achieve smooth throttle lever movement with enough tension to maintain throttle setting.

Test Equipment:

- Spring Scale

Procedure:

1. Connect a scale near the end of the throttle lever.
2. Move throttle lever to slow idle position.



MX14234A

3. Adjust friction disks by tightening or loosening lock nut (A) until throttle lever movement in forward direction is **18 - 35 N (4 - 8 lb force)**.

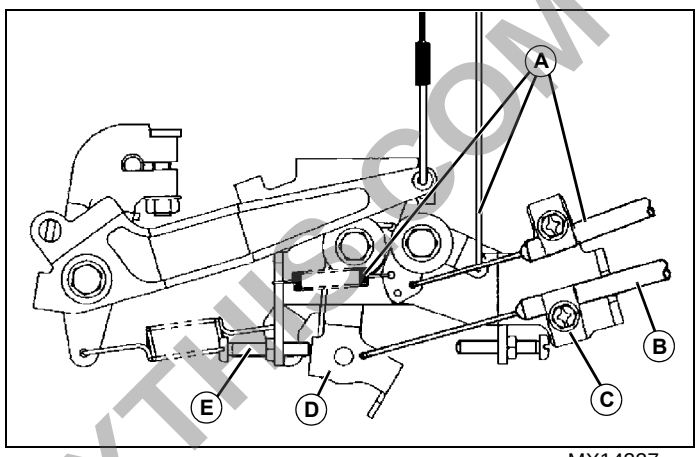
Note: Make sure throttle cable is not binding or stuck.

Throttle Cable Adjustment

Reason:

To insure that the throttle lever cable moves the governor linkage from slow to fast idle position.

Procedure:



MX14227

Picture Note: FD671D engine shown; FD750D engine does not have choke assembly parts (A).

1. Set the throttle lever in the slow idle position. Check that the throttle control lever (D) contacts the idle speed adjustment screw (E) at the slowest throttle lever setting.

2. If the throttle control lever (D) is not touching the screw (E) at the slowest setting, loosen the throttle cable clamp (C). Pull throttle cable (B) to left. When the control lever contacts the control plate idle adjustment screw, retighten the cable clamp.

3. Set the throttle lever to the fastest idle position and check that the throttle control lever is advancing to the full open position.

4. If the control lever is not advancing to the fully open position, loosen the cable clamp and readjust cable.

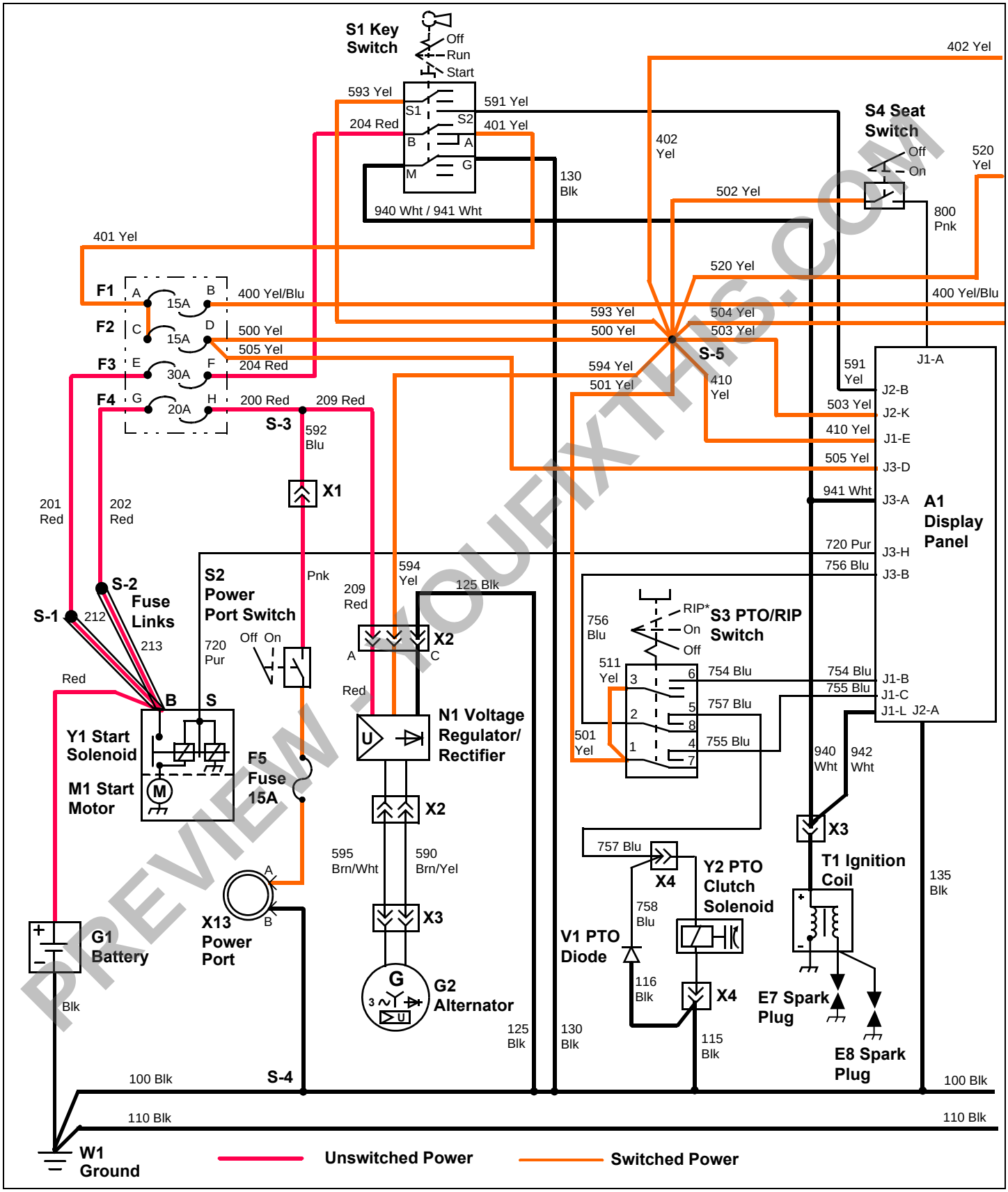
5. If the cable cannot be adjusted to obtain a fully open throttle lever position at fastest idle while maintaining contact with the adjustment screw at lowest idle position, it will be necessary to adjust the control plate idle speed adjustment screw.

6. Turn the idle adjustment screw (E) clockwise until it contacts the throttle control lever when set in the slow idle position. After completing the idle screw adjustment, check to make certain the motor is maintaining a 1550 RPM governed low idle setting. Follow the Low Idle Speed Adjustment sequence in this chapter if corrections are necessary.

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Electrical Schematic - X700 Carbureted (1 of 2)



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Display Code Chart:

Test Conditions

- Brake on
- PTO switch in RIO position (pulled out)
- Key switch on

Code	Action	Test Point	Fault Cause
brAHE	Depress brake pedal.	S8 brake switch, 765 Pur wire, 504 Yel wire, and switched power circuits.	S8 brake switch OK.
crAnH	Turn key switch to start.	S1 key switch, 720 Pur wire, 591 Yel wire, switched and unswitched power circuits.	S1 key switch OK.
SEAt	Operator on seat.	S4 seat switch, 800 Pnk wire, 502 Yel wire, and switched power circuits.	S4 seat switch OK.
Pto o	Pull up RIP switch.	S3 PTO/RIP switch, 754 Blu wire, 501 Yel wire, and switched power circuits.	S3 PTO/RIP switch OK (RIP position).
Pto	Activate PTO switch.	S3 PTO/RIP switch, 755 Blu wire, 501 Yel wire, and switched power circuits.	S3 PTO/RIP switch OK (PTO position).
rEu	Depress reverse pedal.	S7 RIO switch, 772 Blu wire, 402 Yel wire, and switched power circuits.	S7 RIO switch OK.
EoP	Remove oil pressure sensor wire.	B1 engine oil pressure switch and 620 Tan wire.	B1 engine oil pressure switch OK.
cool	Remove and ground coolant temperature switch wire.	B2 engine water temperature sensor and 310 Org wire.	B2 engine water temperature switch OK.
L 19HE	Turn on back up light switch.	S9 light switch, 400 Yel/Blu wire, and switched power circuits.	S9 light switch OK (back up lights position).
Pto 1	****	Rear PTO jumper (if installed)	
Pto r	Engage rear PTO.	S6 rear PTO switch, 740 Blu wire, 520 and 521 Yel wires, and switched power circuits.	S6 rear PTO switch OK.
------	No action	End of tests	End of tests

Special or Essential Tools

Note: Order tools according to information given in the

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Schematic And Wiring Harness Legend - X720/X724/X728

A1 -Display Panel

A2 - Electronic Fuel Injection Module (EFI)

B1 - Engine Oil Pressure Switch

B2 - Engine Coolant Temperature Sensor

B3 - Fuel Gauge Sender

B4 - EFI Engine Coolant Temperature Sensor

B5 - EFI Air Temperature Sensor

B6 - EFI Vacuum Pressure Sensor

E1 - RH Headlight

E2 - LH Headlight

E3 - RH Tail Light

E4 - LH Tail Light

E5 - RH Back Up Light

E6 - LH Back Up Light

E7 - Spark Plug

E8 - Spark Plug

F1 - Fuse 15A

F2 - Fuse 15A

F3 - Fuse 30A

F4 - Fuse 20A

F5 - Fuse 10A

F6 - Fuse 15A

G1 - Battery

G3 - Auxiliary Alternator (Option)

G2 - Alternator

K1 - Main Relay

K2 - Fuel Pump Relay

K3 - Safety Relay

M1 - Starting Motor

M2 - Fuel Pump

N1 - Voltage Regulator/Rectifier

S1 - Key Switch

S2 - Power Port Switch

S3 - PTO/RIP Switch

S4 - Seat Switch

S5 - Front PTO Switch

S6 - Rear PTO Switch (Option)

S7 - RIO Switch

S8 - Brake Switch

S9 - Light Switch

T1 - Ignition Coil

T2 - Ignition Coil

V1 - PTO Diode

W1 - Frame Ground

W2 - Frame Ground

Y1 - Starting Motor Solenoid

Y2 - PTO Clutch Solenoid

Y3 - #1 Cylinder Fuel Injection Solenoid

Y4 - #2 Cylinder Fuel Injection Solenoid

Connectors:

J1 - A1 Display Panel

J2 - A1 Display Panel

J3 - A1 Display Panel

X1 - W1 Main Wiring Harness to W4 Rear Wiring Harness

X2 - W1 Main Wiring Harness to N2 Voltage Regulator/ Rectifier

X3 - W1 Main Wiring Harness W2 Main Wiring Harness

X4 - W1 Main Wiring Harness to W5 PTO Solenoid Wiring Harness

X5 - Rear PTO Jumper

X6 - W1 Main Wiring Harness to M2 Fuel Pump

X7 - W1 Main Wiring Harness to W3 Headlight Wiring Harness

X8 - W1 Main Wiring Harness to X10 EFI Connector

X9 - W1 Main Wiring Harness to X10 EFI Connector

X10 - W1 Main Wiring Harness to A2 EFI Module

X11 - A2 EFI Module to X10 Connector

X12 - X10 Connector to T1 and T2 Ignition Coils

X13 - Power Port

X14 - W6 Auxiliary Alternator (Option) Wiring Harness to G3 Auxiliary Alternator

X15 - W6 Auxiliary Alternator (Option) Wiring Harness to N1 Voltage Regulator/Rectifier

X16 - W6 Auxiliary Alternator (Option) Wiring Harness to N2 Voltage Regulator/Rectifier

X17 - Auxiliary Alternator (Option) Wiring Harness to W2 Engine Wiring Harness

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Specifications

General Specifications

Transaxle Capacity:

Two-Wheel Steer	6.6 L (7.0 qt)
All-Wheel Steer	5.6 L (6.0 qt)
Four-Wheel Drive	6.6 L (7.0 qt)
Hydraulic Oil	J20D Low Viscosity HY-GARD

Front Axle:

Gear Oil	John Deere GL5 Gear Lubricant (80W-90
Capacity	2.4 L (2.5 qt)

Test And Adjustment Specifications

Hydrostatic Transmission:

Pump and Motor Displacement	18 mL (0.6 oz)/rev

Charge Pump:

Displacement (2-WD)	6 mL/rev (0.2 oz)/rev
Displacement (MFWD)	8 mL/rev (0.27 oz)/rev
Charge Pressure Control Valve (minimum)	1958 kPa (284 psi)
Charge Pressure Relief Valve (Implement Pressure) (minimum)	63710 kPa (924 psi)
Charge Pump Flow 2-WD)	17 L/m (4.5 gpm)
Minimum Flow	13 L/m (3.4 gpm)
Charge Pump Flow (MFWD)	22.7 L/m (6.0 gpm)
Minimum Flow	17 L/m (4.5 gpm)

PTO:

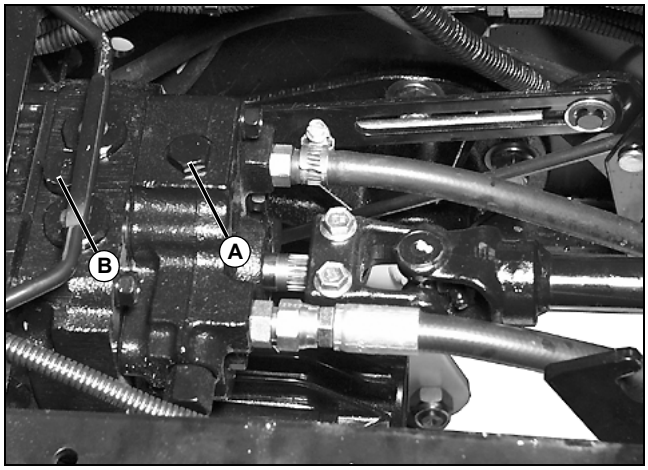
PTO Pressure Control Valve (minimum)	14698 kPa (213 psi)
PTO Circuit Flow	1.9 L/m (0.5 gpm)

Repair Specifications

Control Arm Cap Screw Torque	73 N•m (54 lb-ft)
PTO Solenoid Armature Torque	22 N•m (195 lb-in.)
PTO Solenoid Nut Torque	4.9 N•m (43 lb-in.)
Transaxle Cover Cap Screws: Used Transaxle Case Torque	25 N•m (221 lb-in.)
Transaxle Cover Cap Screws: New Transaxle Case Torque	30 N•m (22 lb-ft)
PTO Output Shaft Retaining Cap Screws Torque	27 N•m (20 lb-ft)
PTO Shifter Shaft Cap Screw Torque	25 N•m (221 lb-in.)
PTO Ball Switches Torque	34 N•m (25 lb-ft)
PTO Clutch Pack Wear Clearance Between Plate and Bottom of Gear/Hub Groove	2.7 mm (0.106 in.) maximum
Charge Pump Cap Screws: Short Cap Screws Torque	25 N•m (221 lb-in.)
Long Cap Screw Torque	39 N•m (29 lb-ft)
Hydrostatic Motor Seal Cap Depth below Housing	4 mm (5/32 in.)
Hydrostatic Center Valve Block: Directional Control Valves Torque	35 N•m (26 lb-ft)

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MX14307

4. Install connector, hose and pressure gauge to charge pressure test port (A).

5. Start engine and run at high idle. Do not operate steering or hydraulic control valves.

6. Observe gauge reading. This is charge pressure.

7. Move hydraulic control lever to raise or lower position. Hold until pump pressure is in relief.

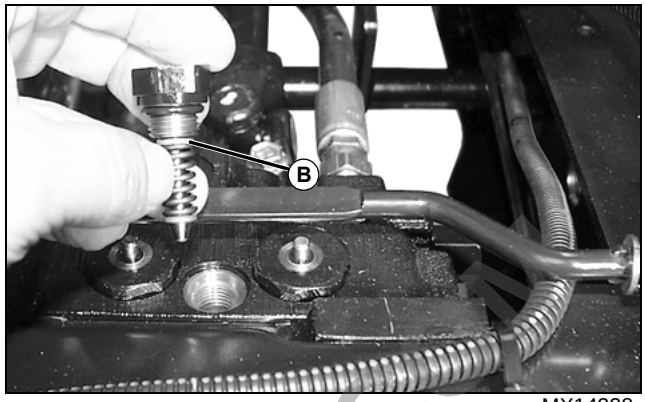
8. Observe gauge reading and release control. This is charge pressure relief pressure (implement operation pressure).

Specifications:

Charge Pressure (minimum) . . . . . 1958 kPa (284 psi)
Charge Relief (Implement) Pressure (minimum) . . . . . 6371 kPa (924 psi)

Results:

- If charge pressure is to specifications, **1958 kPa (284 psi) minimum**, in transaxle, charge pressure control valve is operating properly.
  - Note: Charge pressure gauge reading may be higher than specification due to cold oil temperature. Warm oil and retest.
- If charge pressure is too high, and oil is at operating temperature, there is a potential problem with the charge pressure control valve, or a restriction in the system. See “Charge Pump Flow and Pressure Test - At Charge Pump” in the Hydraulic Power Train section.”
- If relief pressure is to charge relief (implement) pressure specifications, **6371 kPa (924 psi)** minimum, pump and charge pressure relief valve are in good condition.



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- If relief pressure is below **5881 kPa (853 psi)**, check charge pressure relief valve (B), shim relief pressure spring. If pressure cannot be increased, check charge pump for damage.

Lift Cylinder Leakage Test

Reason:

To determine if lift cylinder is leaking.

Caution: Avoid Injury! Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable source. Such information is available from the Deere & Company Medical Department in Moline, Illinois, U.S.A. In the United States and Canada only, this information may be obtained by calling 1-800-822-8262.

First Procedure:

1. Remove any attachment that is mounted, including mower deck.

2. With deck lift arms in raised position, shut off engine.

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