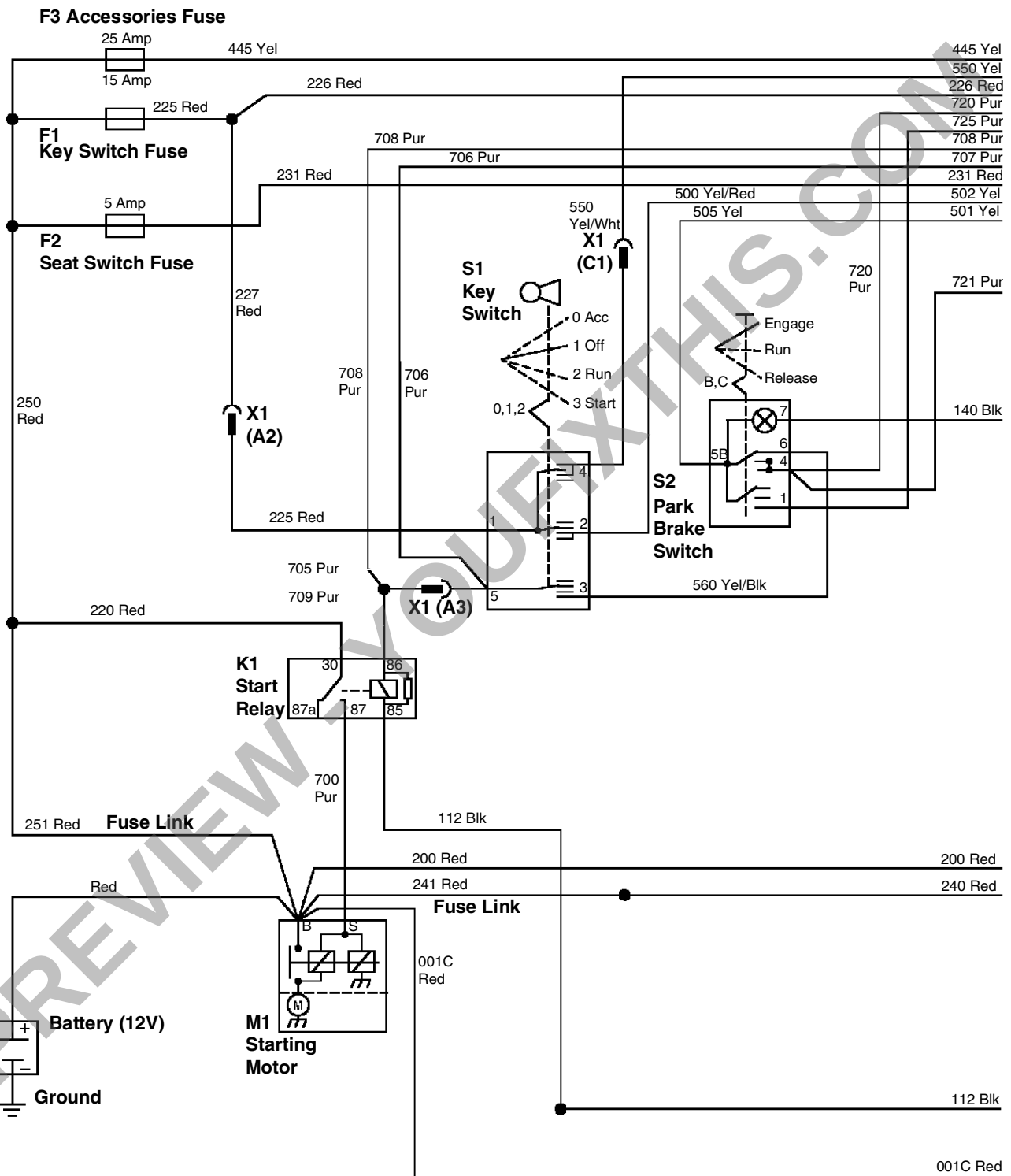


ELECTRICAL SCHEMATICS

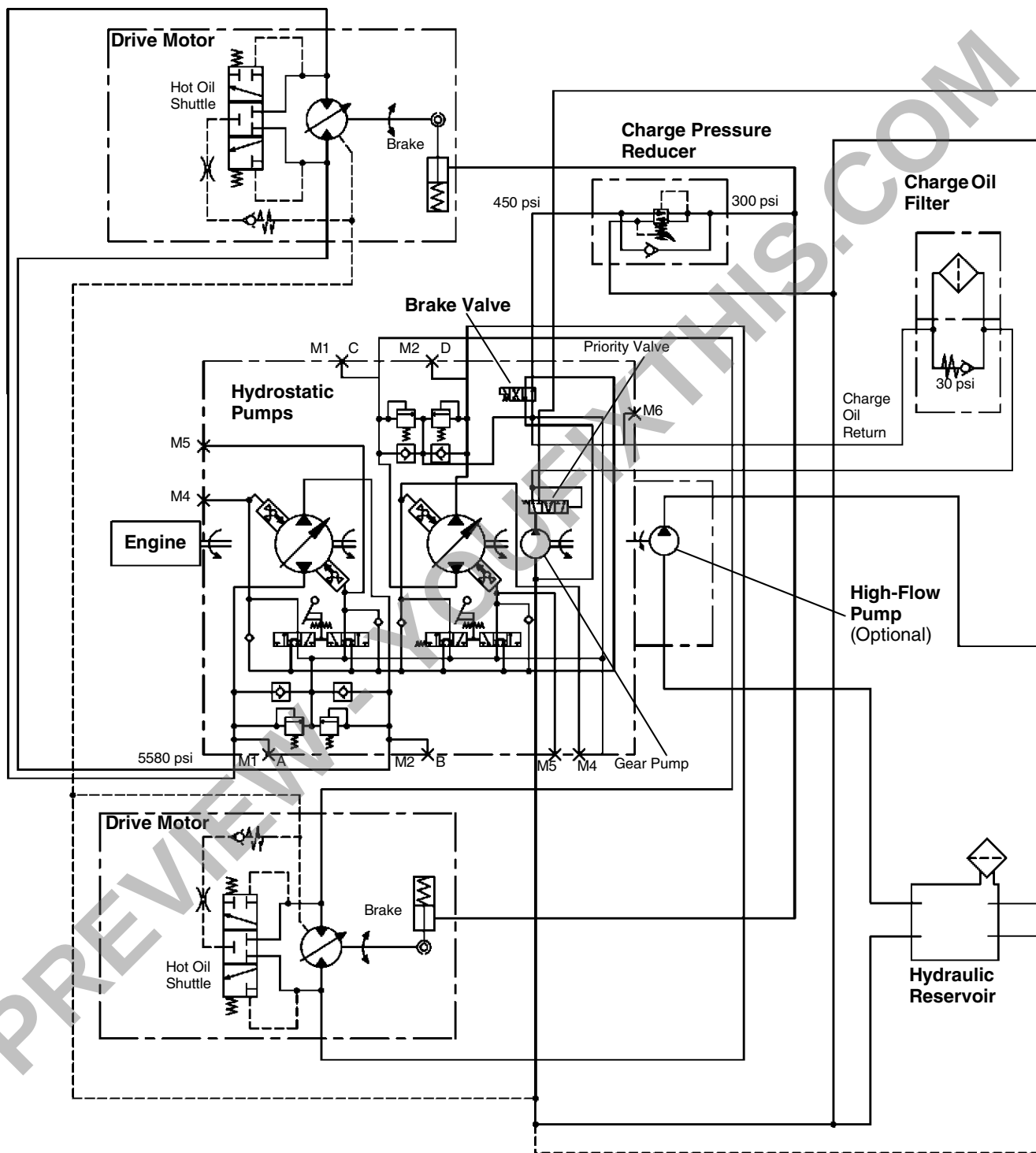
MAIN SCHEMATIC



SE1 - POWER AND CRANKING CIRCUIT

KV31895

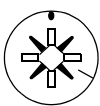
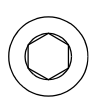
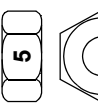
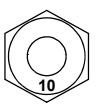
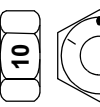
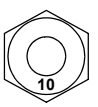
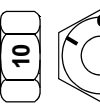
HYDROSTATIC SYSTEM SCHEMATIC—SINGLE SPEED



KV31811

KV31811

METRIC FASTENER TORQUE VALUES

Property Class and Head Markings	4.8		8.8 9.8		10.9		12.9	
								
Property Class and Nut Markings	5		10		10		12	
								

TS1163

SIZE	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	
	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 $\pm 10\%$ 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 class. 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.

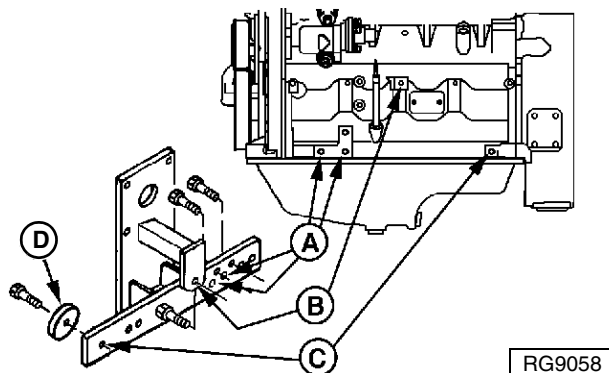
a. "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated (yellow dichromate - Specification JDS117) without any lubrication.

Reference: JDS—G200.

MOUNT ENGINE ON REPAIR STAND

CAUTION

DO NOT remove the overhead lifting equipment until the engine is securely mounted onto the repair stand and all mounting hardware is tightened to specified torque.



NOTE: Engine adapter, cap screws, and spacer are from JT07268 Engine Adapter Kit.

Mount the engine to 62835 Engine Adapter as described below.

NOTE: No. 221668 Spacer (D) is used on the outside of the engine adapter.

- Hole A—(2) No. 214490 (M12 x 1.75 x 35 mm)
- Hole B—(1) No. 221664 (M14 x 2.00 x 35 mm)
- Hole C—(1) No. 221665 (M14 x 2.00 x 60 mm) with No. 221668 Spacer

NOTE: Four threaded holes in engine mounting adapter are for storing mounting hardware.

Specifications:

Engine Repair Stand

- M12 Cap Screw Torque 140 N•m (105 lb-ft)
- M14 Cap Screw Torque 225 N•m (165 lb-ft)

ENGINE REMOVAL/INSTALLATION

NOTE: The hydrostatic pump does not need to be removed along with the engine. Be sure to place blocking under hydrostatic pump, or suspend it from a hoist, to support it while engine is removed.

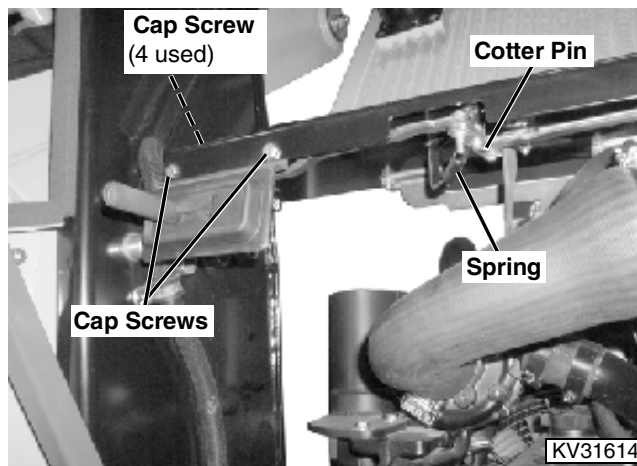
Engine weighs approximately 487 kg (1074 lb). Be sure engine repair stand and engine hoist have adequate capacity.

Equipment:

- Engine Hoist
- JT01748 Lifting Brackets
- JDG23 Engine Lifting Sling
- D01003AA Engine Repair Stand
- D05225ST Engine Repair Stand Adapter

Removal:

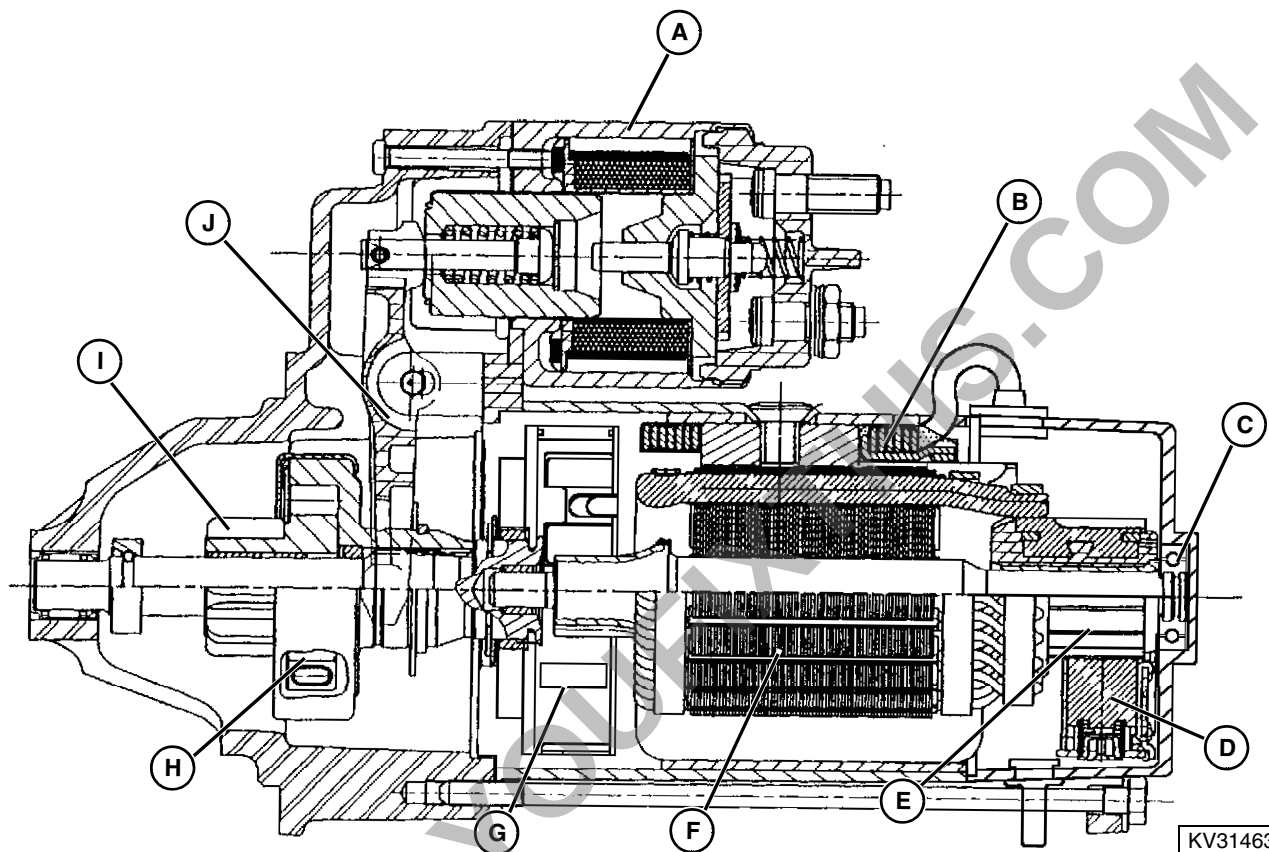
1. Remove any attachments.
2. Park skid steer safely. Place blocks in front of and behind tires.
3. Raise boom to the fully raised position and engage boom locks. Lower boom onto boom locks.
4. Disconnect battery negative (–) cable.
5. Raise ROPS and ensure that it is safely in the locked position. (See RAISING ROPS [ROLL OVER PROTECTION STRUCTURE] in the MISCELLANEOUS section.)
6. Remove cover plates. (See COVER PLATE REMOVAL/INSTALLATION in the MISCELLANEOUS section.)
7. Remove side engine panels.



8. Remove cotter pin, spring, and two cap screws and nuts holding boom lock linkage to support plate.
9. Remove two cap screws and nuts from each side of support and remove support with top engine access panel.

STARTING MOTOR—GEAR REDUCTION TYPE

STARTING MOTOR OPERATION



A. Solenoid
B. Field Winding
C. Rear Bearing
D. Brush

E. Commutator
F. Armature
G. Gear Reduction Assembly

H. Overrunning Clutch
I. Pinion
J. Engaging Lever

When solenoid (A) engages, the plunger pulls engaging lever (J). The lever pushes the overrunning clutch drive (H) to engage pinion in starting motor gear on flywheel. At the same time, contact is made between the two large solenoid terminals, providing current to the field winding and brushes, causing the armature to turn. As armature (F) turns, it cranks engine.

When engine starts, the overrunning clutch spins freely on shaft. This prevents overspeeding of armature by flywheel.

When key switch is released, current to solenoid hold-in winding is shut off. Current can feed through both pull-in and hold-in windings from main contacts, but direction of current is reversed in pull-in winding.

The two windings cancel each other, and solenoid is released.

A spring pushes solenoid plunger back to disengaged position. This opens main contacts and shuts off current to field windings and brushes.

The engaging lever retracts the overrunning clutch, disengaging pinion from flywheel.

In this reduction-type starting motor, the speed of armature rotation is reduced by the planetary gear reduction assembly (G).

TROUBLESHOOTING

<div> <div>Problem or Symptom</div> <div>Check or Solution</div> </div>	Engine will not start.	Engine starts but does not continue to run.	Low engine output.	Exhaust smoke white when under load.	Exhaust smoke black when under load.	Engine surges at idle.	Engine surges under load.	High fuel consumption.	High oil consumption.	Coolant in oil/oil in coolant.	Fuel in oil.	Low oil pressure.	Air intake pressure drop.	Air intake pressure rise.
Improper intake/exhaust valve clearance	●	●	●		●									●
Intake/exhaust valve leaking			●		●			●						●
Intake/exhaust valve seized	●	●	●		●		●				●			
Cylinder head gasket leaking			●							●				
Broken or seized piston ring	●	●	●	●		●			●		●			●
Piston ring, piston, or cylinder worn	●	●	●	●		●			●		●			
Crankshaft pin or bearing seized	●	●				●	●							
Ring gaps not positioned properly		●	●						●					
Improper piston ring placement			●	●					●					
Crankshaft pin or bearing worn						●	●					●		
Connecting rod bolt loose												●		
Foreign matter trapped in combustion chamber	●								●					
Excessive timing gear backlash			●			●	●							
Intake/exhaust valve guide worn			●						●					
Governor not functioning properly		●	●			●	●							
Improper injection timing, intake/exhaust valves	●		●	●	●	●	●	●						
Engine running too cool				●				●						
Engine running too hot			●											
Coolant level low			●											
Cracked water jacket										●				
Fan belt loose			●											
Improper engine oil viscosity/type	●	●	●						●			●		



SPECIFICATIONS

ENGINE



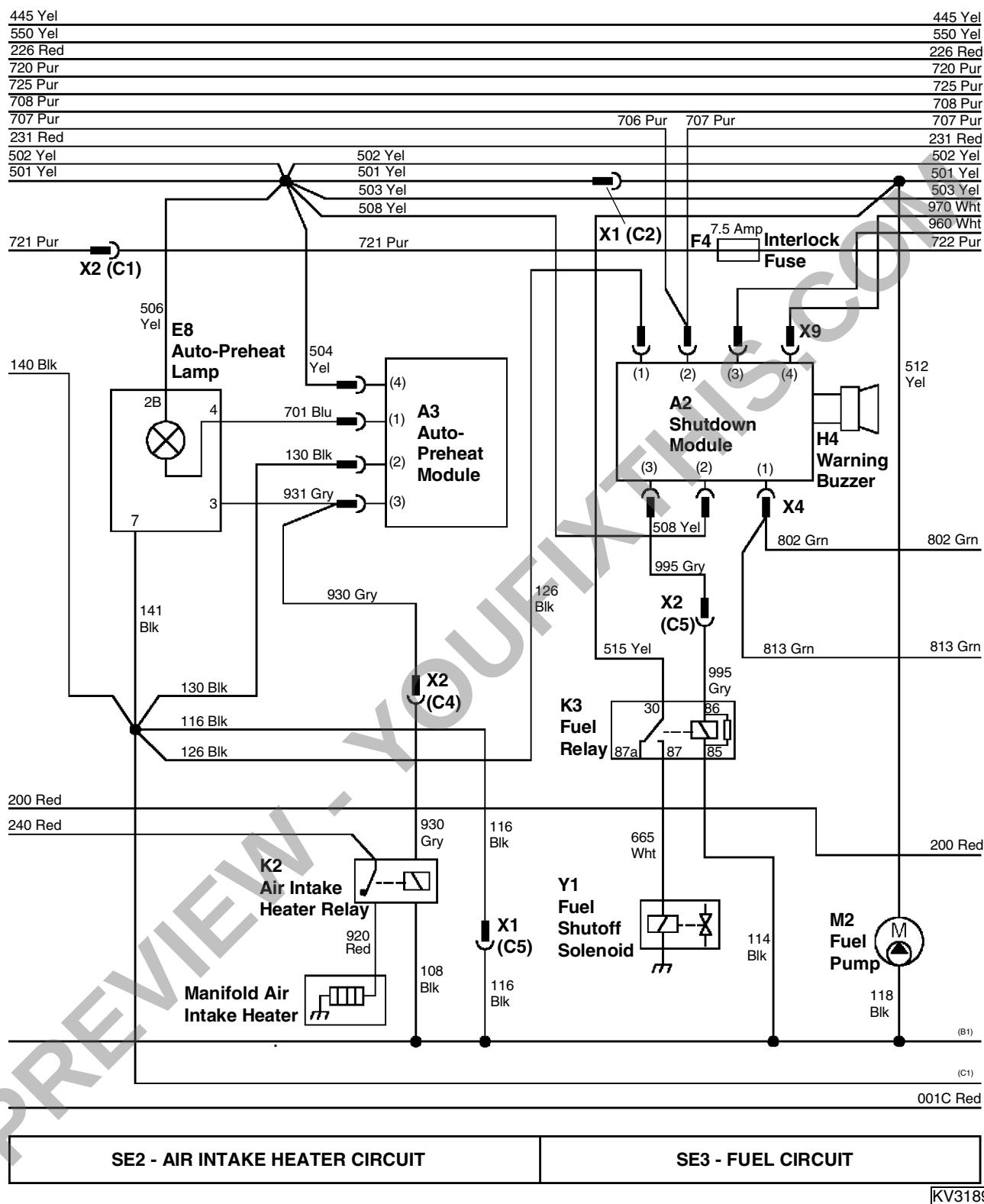
Make John Deere
Type..... Diesel
Engine Model Number: 4045T
Net Horsepower at Rated Engine RPM (2400 RPM) 63.4 kW (85 hp)
Cylinders 4
Bore..... 106 mm (4.17 in.)
Stroke 127 mm (5.00 in.)
Displacement 4.5 L (276 cu in.)
Compression Ratio 17.6:1
Engine Rated RPM 2400
Lubrication..... Full pressure
Oil Filter..... Full flow (replaceable)
Air Cleaner Dry paper with primary and secondary elements
Cooling System..... Liquid-cooled

FUEL SYSTEM

Fuel Diesel
Fuel Filter In-line replaceable filter
Fuel Pump..... Electric
Fuel Delivery Rotary injection

ELECTRICAL SYSTEM

Type..... 12-volt, electric start
Charging System..... Alternator, 55 amp
Battery..... 950 CCA (cold cranking amps)



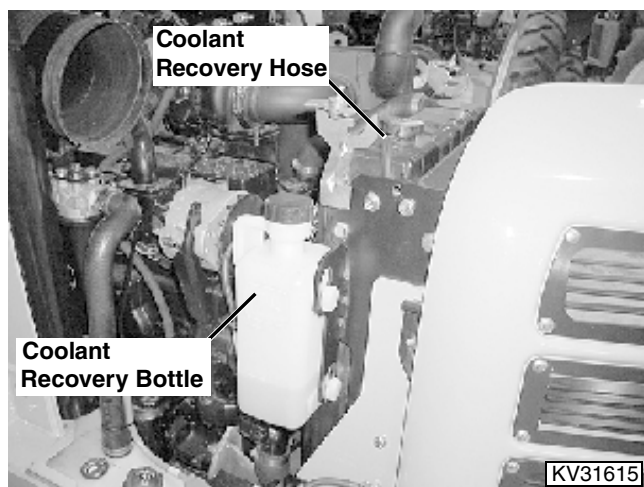
2-Speed Shift Valve



KV31812

**METRIC FASTENER TORQUE
VALUES—GRADE 7**

Size	Steel or Gray Iron Torque		Aluminum Torque	
	N•m	lb-ft	N•m	lb-ft
M6	11	8	8	6
M8	24	18	19	14
M10	52	38	41	30
M12	88	65	70	52
M14	138	102	111	82
M16	224	165	179	132



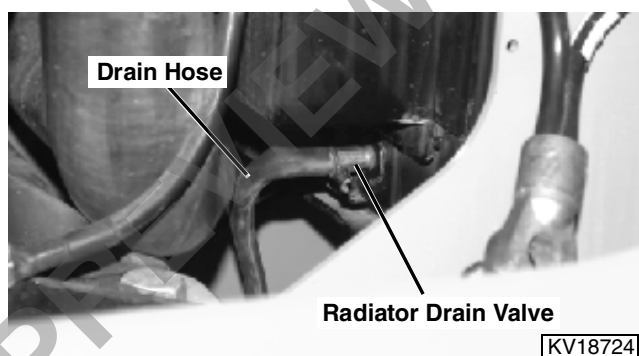
10. Disconnect coolant recovery hose from radiator filler neck and remove hose and coolant recovery bottle.

CAUTION

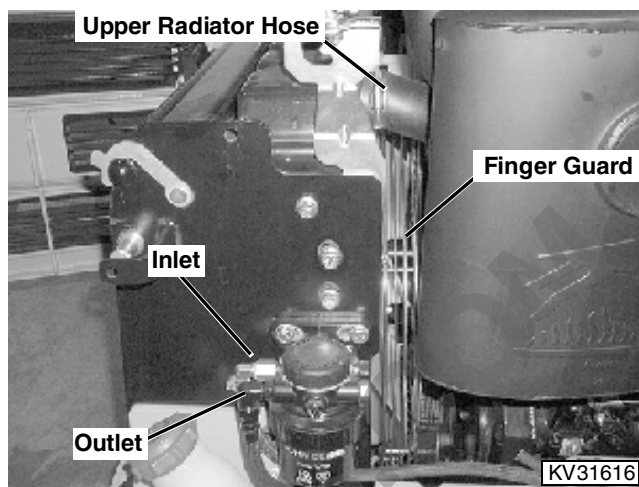
AVOID INJURY. Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Remove filler cap only when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

NOTE: Approximate cooling system capacity is **13.4 L (14 qt)**.

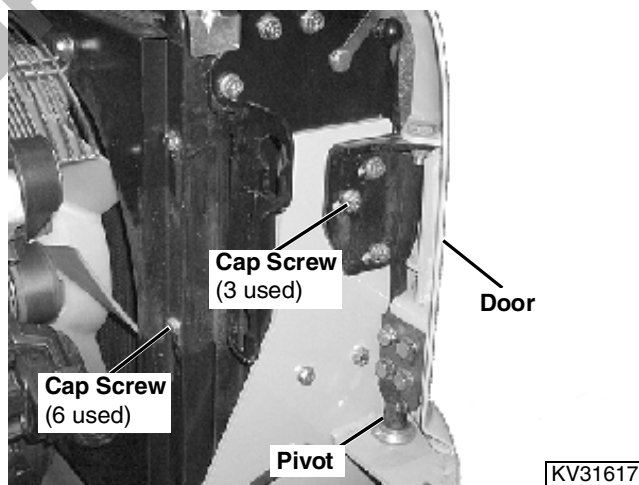


11. Loosen radiator cap to first stop to relieve pressure. Route radiator drain hose out access panel on left side of frame. Open radiator drain valve and drain coolant through drain hose into proper container.
12. Remove cab heater hoses (if equipped).



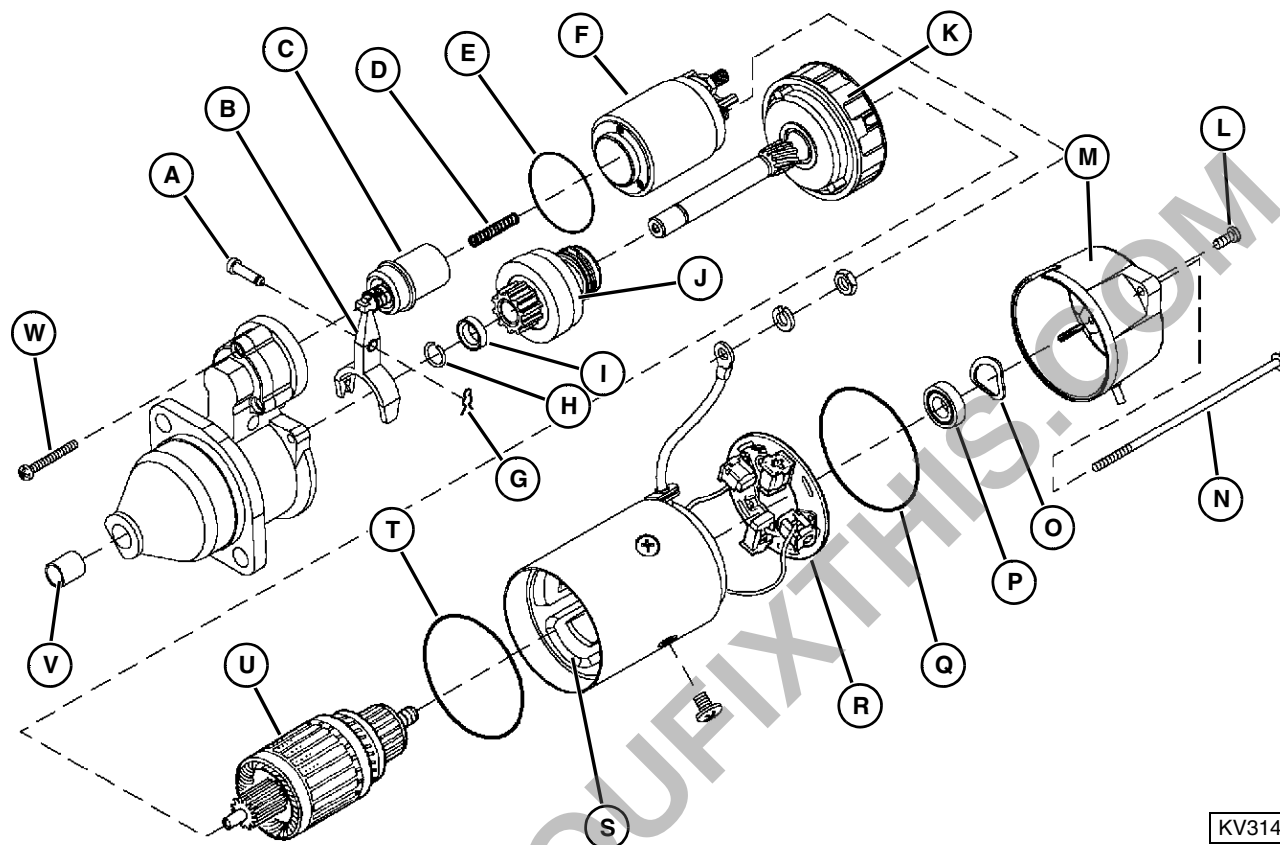
NOTE: Close all openings using caps or plugs to prevent contamination of fuel system.

13. Disconnect outlet line from fuel filter. Remove filter base and attach to fuel pump using wire or plastic tie.
14. Disconnect upper radiator hose from radiator and remove finger guard.



15. Remove six cap screws from fan shroud. Move shroud toward engine away from radiator.
16. Disconnect lower radiator hose from radiator.
17. Remove three cap screws and shims. Lift door up and out of pivot.

STARTING MOTOR EXPLODED VIEW



KV31464

- A. Pivot Pin
- B. Engaging Lever
- C. Plunger
- D. Solenoid Spring
- E. O-Ring
- F. Solenoid Body*
- G. Retainer
- H. Retaining Ring

- I. Pinion Stop
- J. Overrunning Clutch/Pinion*
- K. Gear Reduction Assembly
- L. Screw, Brush Plate (2 used)
- M. End Cover
- N. Through Bolt (2 used)
- O. Spring Washer
- P. Rear Bearing

- Q. O-Ring
- R. Brush Plate and Brushes
- S. Field Winding
- T. O-Ring
- U. Armature
- V. Bushing
- W. Solenoid Attaching Screw (3 used)

NOTE: Components marked with an asterisk (*) are available as service parts.

STARTING MOTOR SPECIFICATIONS

Weight 10.3 kg (22.7 lb)
 Brush Length:
 New 18.2 mm (0.72 in.)
 Used (Min)..... 10 mm (0.40 in.)
 Number of Pinion Teeth..... 10

STARTING MOTOR TORQUE SPECIFICATIONS

Starting Motor-to-Engine..... 50 N•m (37 lb-ft)
 Through Bolts..... 4.8—6.8 N•m (42—44 lb-in.)
 Field Winding Terminal Nut..... 15 N•m (132 lb-in.)

<div> <div>Problem or Symptom</div> <div>Check or Solution</div> </div>	Engine will not start.	Engine starts but does not continue to run.	Low engine output.	Exhaust smoke white when under load.	Exhaust smoke black when under load.	Engine surges at idle.	Engine surges under load.	High fuel consumption.	High oil consumption.	Coolant in oil/oil in coolant.	Fuel in oil.	Low oil pressure.	Air intake pressure drop.	Air intake pressure rise.
Engine oil leaking									●			●		
Oil pump worn												●		
Oil filter clogged												●		
Pressure control valve worn												●		
Oil quantity low												●		
Advanced injection pump timing				●	●									
Retarded injection pump timing			●	●	●			●						
Wrong type of fuel			●	●	●									
Water in fuel	●	●	●	●		●	●							
Fuel filter clogged	●	●	●											
Air entering fuel system	●	●	●											
Clogged or cracked fuel line	●	●	●											
No fuel	●	●	●											
Injection pump volume insufficient	●	●	●	●	●	●	●							
Injection pump volume excessive					●			●						●
Incorrect spray pattern at fuel injection nozzle			●	●	●	●	●	●						
Air filter clogged	●	●	●		●								●	
High altitude/temperature operation			●		●			●					●	
Exhaust system restricted			●		●									●
Inspect starting motor	●													
Inspect alternator	●													
Electrical system troubleshooting	●													

CAPACITIES

Fuel Tank	91 L (24.0 gal)
Hydraulic Reservoir	32.2 L (8.5 gal)
Hydraulic System	51.1 L (13.5 gal)
Cooling System	13.4 L (14 qt)
Engine Oil (with Filter)	12.0 L (12.7 qt)
Chain Case (per Side)	18.9 L (5 gal)



HYDRAULICS AND HYDROSTATICS

Hydrostatic Pumps:

Type	Servo controlled, hydrostatic four wheel drive
Displacement (Max)	.45 cm ³ (2.75 in. ³) per revolution

Hydrostatic Motor Type

Single Speed	Fixed displacement, radial piston
2-speed	Dual displacement, radial piston

Hydraulic/Charge Pump:

Type	High pressure gear pump
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Hydraulic Control Valve	3-spool open center
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Hydraulic Oil Filter	Spin-on canister
--------------------------------	------------------

Charge Oil Filter	Spin-on canister
-----------------------------	------------------

Hydraulic System Flow @ 2400 rpm and 10 340 kPa (1500 psi):

(Standard)	106 L/min (28 gpm) (minimum)
(High-Flow Option)	157 L/min (41.5 gpm) (minimum)

Hydrostatic System Relief Pressure	37 921 ± 1379 kPa (5500 ± 200 psi)
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Charge Circuit Pressure	3103 + 689 - 172 kPa (450 +100 - 25 psi)
-----------------------------------	--

Hydraulic System Relief Pressure	21 374—22 063 kPa (3100—3200 psi)
--	-----------------------------------

Boom-Up Circuit Relief Pressure	24 338 ± 345 kPa (3530 ± 50 psi)
---	----------------------------------

Boom-Down Circuit Relief Pressure	15 341 ± 345 kPa (2225 ± 50 psi)
---	----------------------------------

Bucket-Rollback Circuit Relief Pressure	30 337 ± 345 kPa (4400 ± 50 psi)
---	----------------------------------

Bucket-Dump Circuit Relief Pressure	24 338 ± 345 kPa (3530 ± 50 psi)
---	----------------------------------

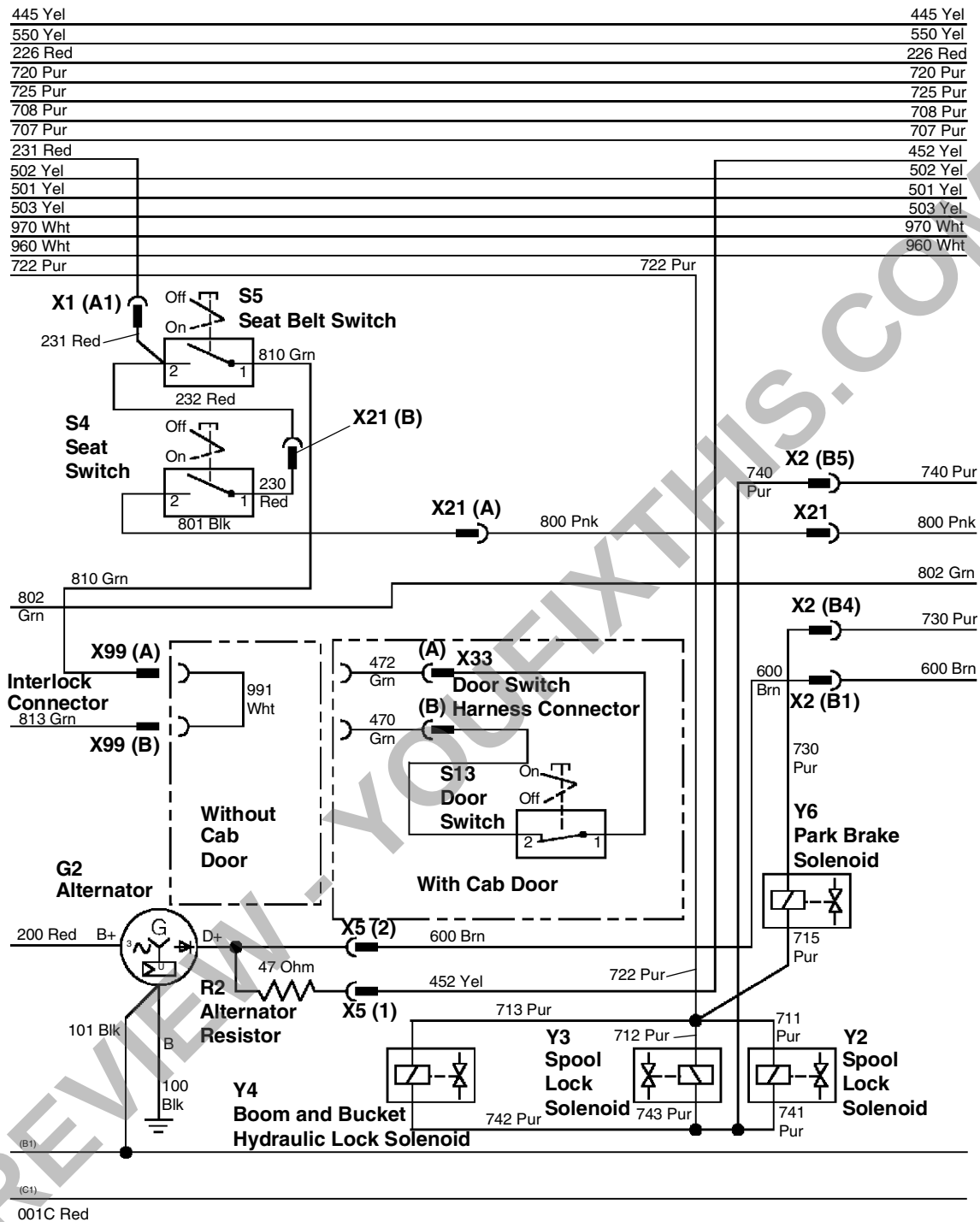
Skid Steer SAE Rated Operating Capacity	1451 kg (3200 lb)
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Maximum Ground Speed:

Single Speed and Low Range (2-Speed Models)	11.3 km/h (7 mph)
2-Speed	19.3 km/h (12.0 mph)

Boom Breakout Force	3016 kg (6650 lb)
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Bucket Breakout Force	5262 kg (11,600 lb)
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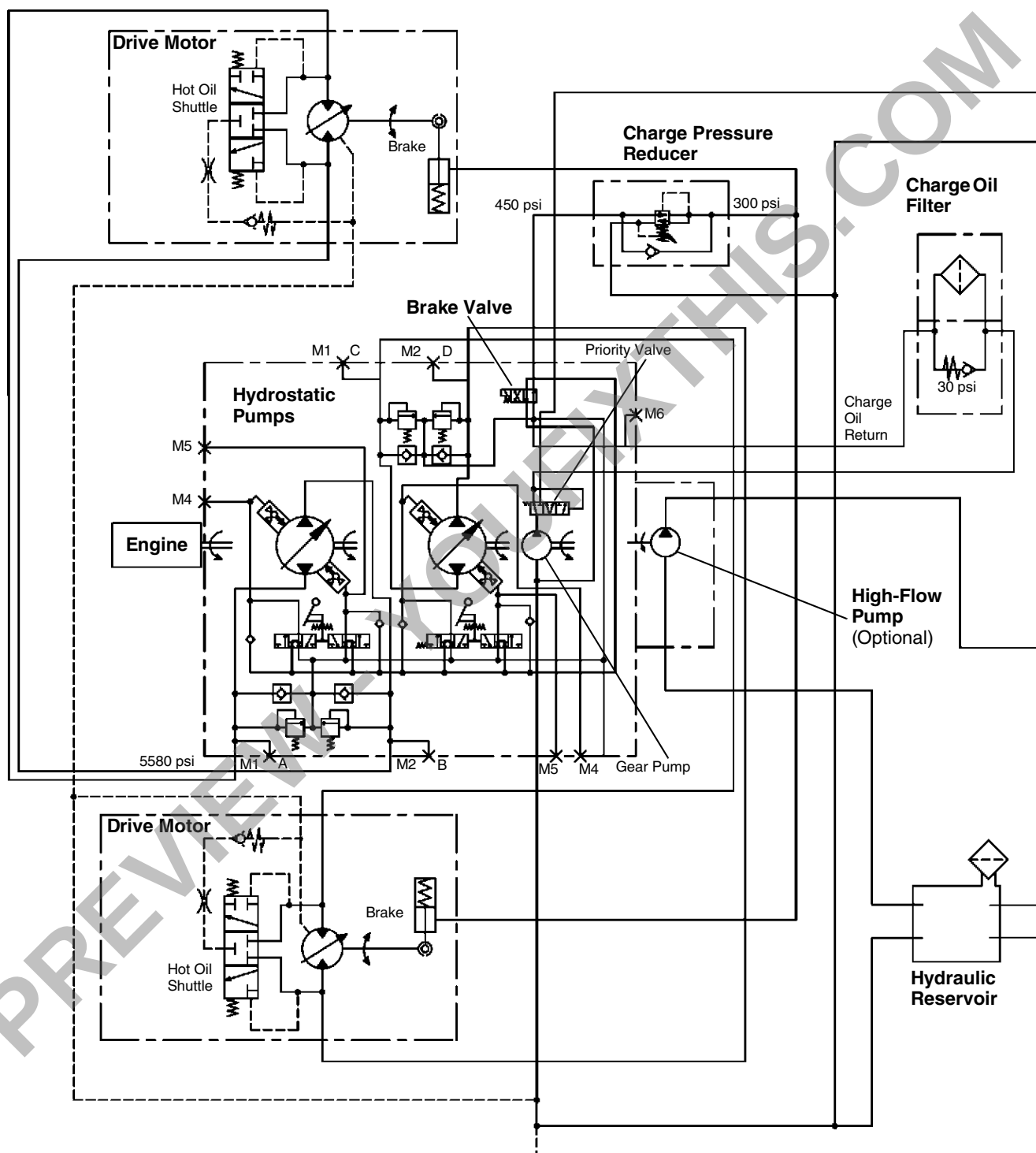


SE4 - CHARGING CIRCUIT

SE5 - BOOM/BUCKET LOCKOUT AND PARK BRAKE CIRCUIT

KV31897

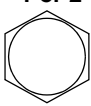
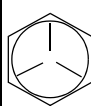
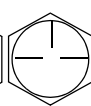
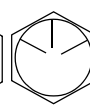
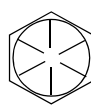
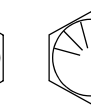
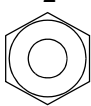
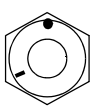
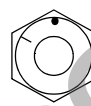
SYSTEM SCHEMATIC—SINGLE SPEED



KV31811

KV31811

INCH FASTENER TORQUE VALUES

SAE Grade and Head Markings	1 or 2 ^b No Marks 	5 5.1 5.2   	8 8.2  
SAE Grade and Nut Markings	2 No Marks 	5  	8   TS1162

	Grade 1				Grade 2 ^b				Grade 5, 5.1 or 5.2				Grade 8 or 8.2			
	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
1/4	3.7	2.8	4.7	3.5	6	4.5	7.5	5.5	9.5	7	12	9	13.5	10	17	12.5
5/16	7.7	5.5	10	7	12	9	15	11	20	15	25	18	28	21	35	26
3/8	14	10	17	13	22	16	27	20	35	26	44	33	50	36	63	46
7/16	22	16	28	20	35	26	44	32	55	41	70	52	80	58	100	75
1/2	33	25	42	31	53	39	67	50	85	63	110	80	120	90	150	115
9/16	48	36	60	45	75	56	95	70	125	90	155	115	175	130	225	160
5/8	67	50	85	62	105	78	135	100	170	125	215	160	215	160	300	225
3/4	120	87	150	110	190	140	240	175	300	225	375	280	425	310	550	400
7/8	190	140	240	175	190	140	240	175	490	360	625	450	700	500	875	650
1	290	210	360	270	290	210	360	270	725	540	925	675	1050	750	1300	975
1-1/8	470	300	510	375	470	300	510	375	900	675	1150	850	1450	1075	1850	1350
1-1/4	570	425	725	530	570	425	725	530	1300	950	1650	1200	2050	1500	2600	1950
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2150	1550	2700	2000	3400	2550
1-1/2	1000	725	1250	925	990	725	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

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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.

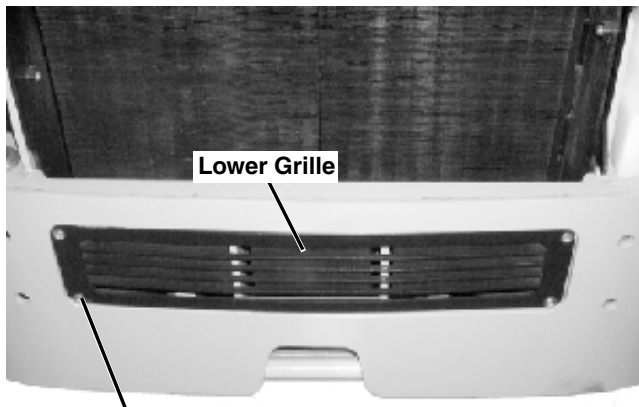
When bolt and nut combination fasteners are used, torque values should be applied to the **NUT** instead of the bolt head.

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.

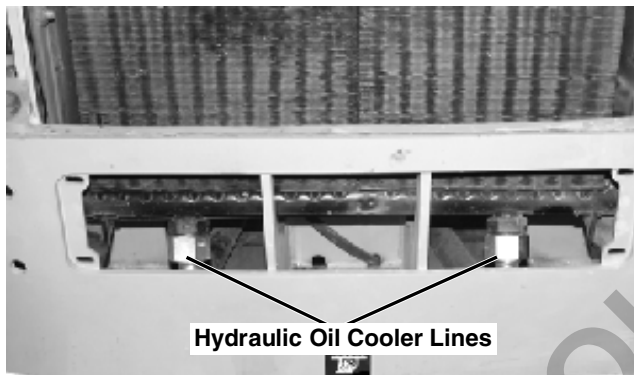
b. "Grade 2" applies for hex cap screws (not hex bolts) up to 152 mm (6-in.) long. "Grade 1" applies for hex cap screws over 152 mm (6-in.) long, and for all other types of bolts and screws of any length.

Reference: JDS—G200.



KV31618

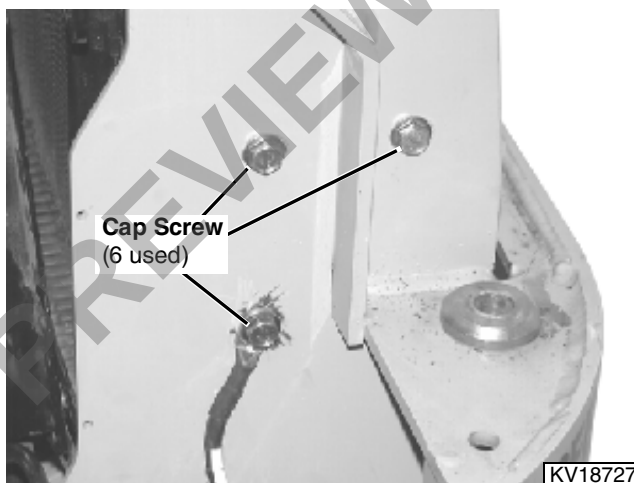
18. Remove four cap screws and lower grille.



KV18730

NOTE: Use caps and plugs to close all openings to avoid hydraulic system contamination.

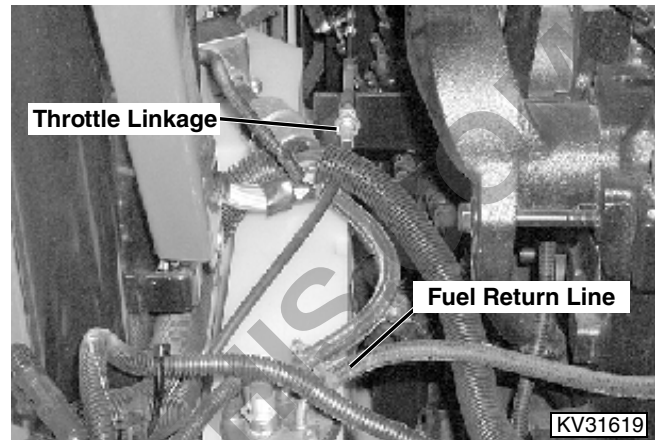
19. Disconnect two hydraulic lines to oil cooler.



20. Remove three cap screws from each side of radiator support.

NOTE: It is not necessary to discharge A/C system. Compressor and condenser can be set on side of machine while engine is being removed.

21. Remove radiator and oil cooler assembly using a lifting strap and hoist.
22. For machines equipped with A/C, remove compressor from mounting bracket and slide condenser out of shroud. Hang both on right side of machine.



23. Disconnect throttle linkage from injection pump and bracket.
24. Disconnect fuel return line.



25. Remove crossover tube from turbocharger and intake manifold.

ELECTRICAL DIAGNOSTIC INFORMATION

READING ELECTRICAL SCHEMATICS

The schematic is made up of individual circuits laid out in a sequence of related functions. It is formatted with all power wires (A) across the top and all ground wires (B) across the bottom. Current flow is generally from top to bottom through each circuit and component. All components are shown in the OFF position. The diagram does not list connector (C) information unless needed to avoid confusion. If the connector is shown, the number next to it is the terminal pin location (D) in the connector.

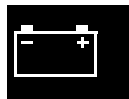
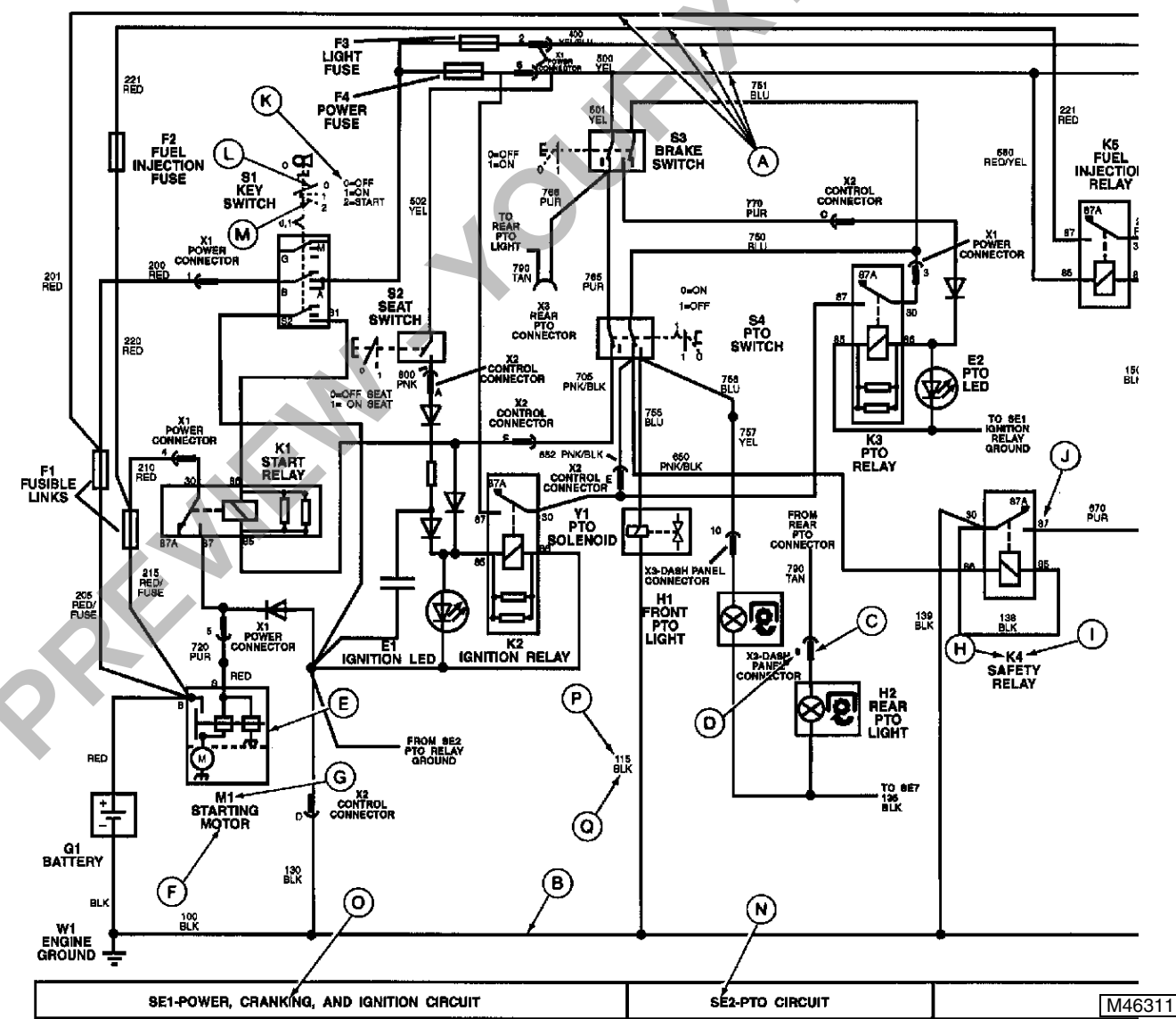
Each component is shown by a symbol (E), its name (F), and an identification code (G). The identification code contains a device identifying letter (H) and number (I).

The identifying letter is always the same for a specific component, but the identifying numbers are numbered consecutively from upper left to lower right. The terminal designation (J) is placed directly outside the symbol next to the connecting wire path. Switch positions (K) are also placed directly outside the symbol. The solid line (L) shows the position the switch is currently in and dash lines (M) represent other switch positions.

Each circuit is identified at the bottom of the drawing by a section number (N) and section name (O).

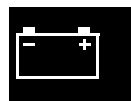
The circuit number (P) and wire color (Q) of the wires are shown directly next to the wire path.

The same component name and identification code are used consistently on all diagrams in this section. Components can be easily cross-referenced.



TROUBLESHOOTING CHART

<div> <div>Problem or Symptom</div> <div>Check or Solution</div> </div>	Engine will not crank	Engine will not start or will not stay running	Air intake heater not working properly	Engine will not shut off	Fuel pump will not run	Battery not charging or overcharging	Warning lamps or fuel gauge stay on or will not light	Hour meter does not operate	Road/work lights do not operate	Fuel shutoff solenoid not working properly	Boom/bucket control not working properly
See cranking circuit diagnosis	●										
Test battery and connections	●					●	●				
See charging circuit diagnosis						●					
See lights circuit diagnosis									●		
See hydraulic boom and bucket lockout circuit diagnosis											●
See auto-preheat circuit diagnosis		●	●								
Check fuel shutoff solenoid circuit See fuel circuit diagnosis		●		●						●	
See power circuit diagnosis	●	●	●		●	●	●	●	●	●	●
Check shutdown module operation		●								●	
Check fuel pump ground circuit		●			●						
See appropriate circuit diagnosis indicated by warning light that is on		●				●	●	●			



DIMENSIONS

(See note below.)



Overall Operating Height	4000 mm (157.5 in.)
Height to ROPS	2106 mm (82.9 in.)
Height to Hinge Pin	3226 mm (127.0 in.)
Overall Width (less Bucket)	1961 mm (77.2 in.)
Overall Width (with Bucket)	1981 mm (78.0 in.)
Overall Length (less Bucket)	2921 mm (115.0 in.)
Overall Length (with Bucket)	3504 mm (138.0 in.)
Wheelbase	1235 mm (48.6 in.)
Operating Weight	4173 kg (9200 lb)
Ground Clearance	241 mm (9.5 in.)
Dump Height	2591 mm (102.0 in.)
Dump Reach	813 mm (32.0 in.)
Dump Angle	45 degrees
Bucket Rollback	35 degrees
Angle of Departure	27 degrees

NOTE: Standard tires (14.00 x 17.50) and 1981 mm (78 in.). Foundry bucket used in determining dimensions.

TIRES (STANDARD)

Size 14 x 17.5

RECOMMENDED LUBRICANTS

Engine Oil John Deere TORQ-GARD SUPREME®
John Deere PLUS-50®

(See ENGINE OIL in the DIESEL ENGINE section for cold weather oil)

Engine Coolant John Deere COOL-GARD™
John Deere ANTIFREEZE/SUMMER COOLANT

Hydraulic Oil and Hydrostatic Oil John Deere HY-GARD®
John Deere Low Viscosity HY-GARD (cold weather operation)

Chain Case Oil John Deere HY-GARD
John Deere Low Viscosity HY-GARD (cold weather operation)
John Deere TORQ-GARD SUPREME
John Deere PLUS-50

Grease John Deere MOLY HIGH TEMPERATURE EP GREASE
John Deere NON-CLAY HIGH TEMPERATURE EP GREASE

TORQ-GARD SUPREME, PLUS-50, and HY-GARD are registered trademarks of Deere & Company.
COOL-GARD is a trademark of Deere & Company.

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SAFETY

RECOGNIZE SAFETY INFORMATION



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.

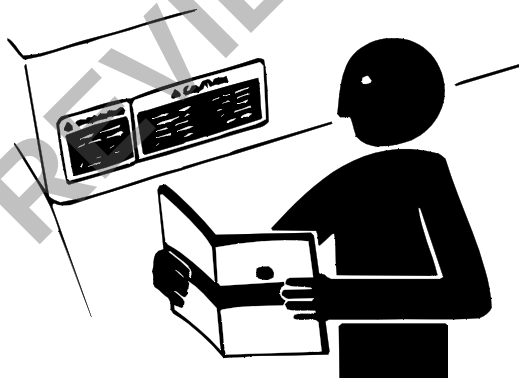
Follow recommended precautions and safe servicing practices.

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.

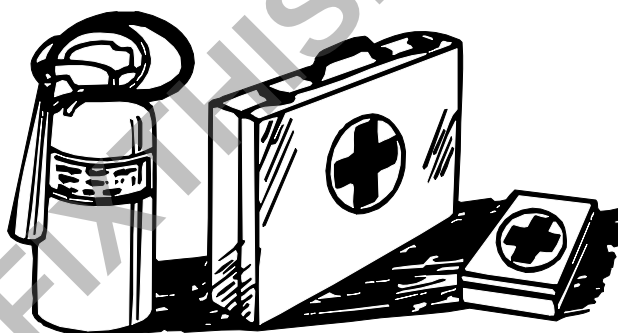
REPLACE SAFETY SIGNS



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



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.

CAB DOOR SWITCH TEST

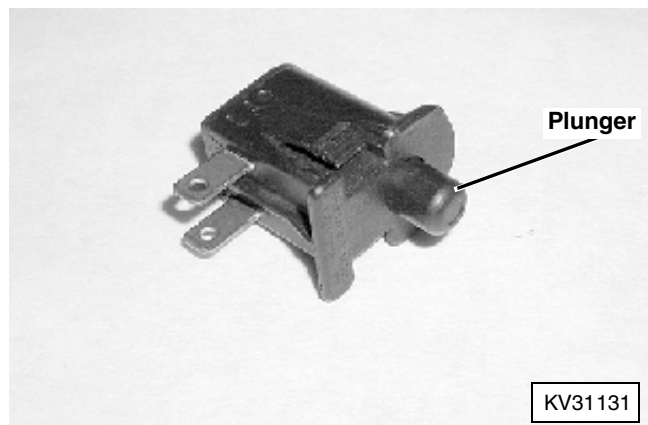
Reason:

To check operation of cab door switch.

Equipment:

- JT05791 Digital Multimeter

Procedure:



1. Disconnect battery, negative (–) cable first.
2. Remove cab door switch from machine.
3. Use multimeter to check continuity between switch terminals in the positions as shown in the table.

CAB DOOR SWITCH CONTINUITY	
Plunger Position	Continuity Between Terminals
Out	YES
In	NO

Results:

- If continuity is not correct, replace switch.

DUAL FLASHER SWITCH TEST

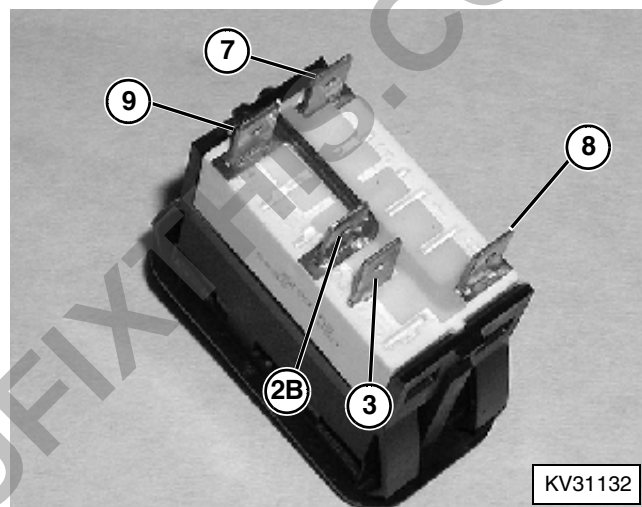
Reason:

To check operation of dual flasher switch.

Equipment:

- JT05791 Digital Multimeter

Procedure:



1. Disconnect battery, negative (–) cable first.
2. Remove dual flasher switch from control panel.
3. Use multimeter to check continuity between switch terminals in the positions as shown in the table.

DUAL FLASHER SWITCH CONTINUITY	
Switch Position	Continuity (<1 ohm) Between Terminals
Off	7, 8 and 9, 2B
On	2B, 3, 9 and 7, 8
All positions	7, 8 and 9, 2B

Results:

- If continuity is not correct, replace switch.

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