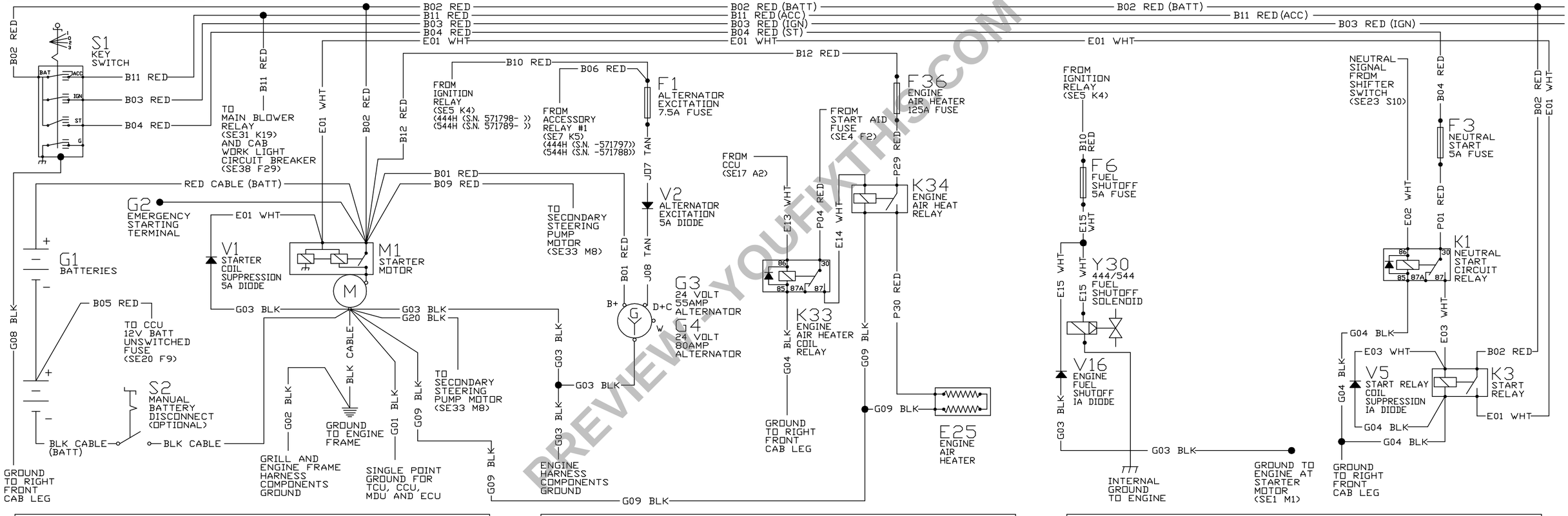
T131733 —19—23JUN00

POSITION	B	IG	ACC	ST	G	BODY
ACC	●		●			
OFF						
ON	●	●	●			
BULB CHECK	●	●			●	●
START	●	●		●	●	●

KEY SWITCH

GROUND WIRES

G01 BLK - SINGLE POINT GROUNDS FOR MDU, TCU, AND CCU - AT STARTER (W25)
G02 BLK - GRILLE AND ENGINE FRAME COMPONENTS - RIGHT SIDE OF ENGINE FRAME BY STARTER (W26)
G03 BLK - ENGINE COMPONENTS - AT STARTER (W27)
G04 BLK - CAB COMPONENTS - AT RIGHT FRONT CAB LEG (W28)
G05 BLK - LOADER FRAME COMPONENTS - AT RIGHT FRONT CAB LEG (W29)
G08 BLK - FRONT DASH COMPONENTS - AT RIGHT FRONT CAB LEG (W30)



SE1 BATTERY, IGNITION POWER CIRCUIT (24V SYSTEM)

SE2 ALTERNATOR AND ENGINE AIR HEATER CIRCUITS

SE3 FUEL SHUTOFF AND STARTING CIRCUIT

T131733

444H, 544H SYSTEM FUNCTIONAL SCHEMATIC (1 OF 13)

Battery, Ignition, Alternator, Engine Air Heater, Fuel Shut Off, and Starting Circuits (SE1, SE2, SE3)

Continued on next page

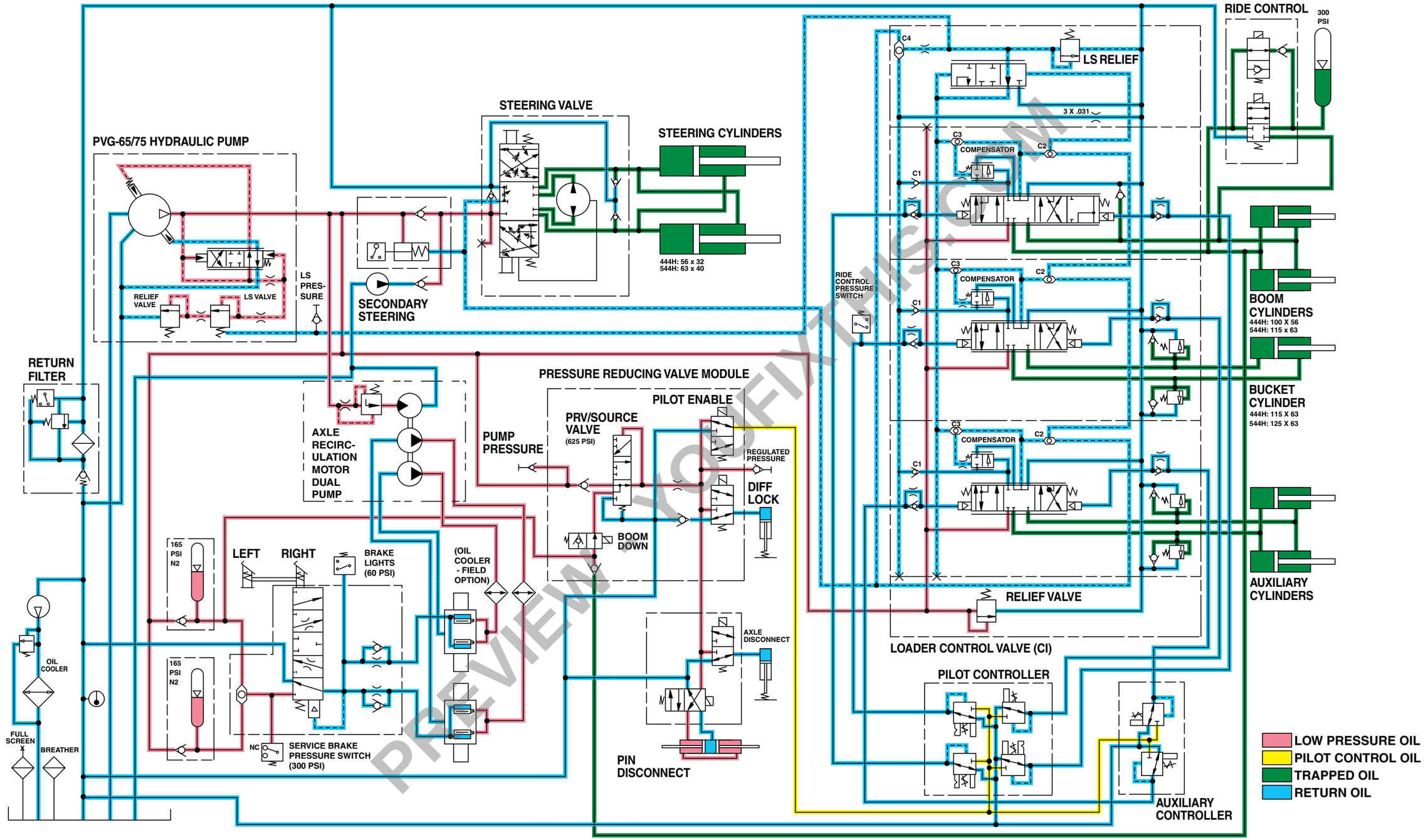
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T133616 —19—30AUG00



T133616

HYDRAULIC SYSTEM SCHEMATIC - NEUTRAL

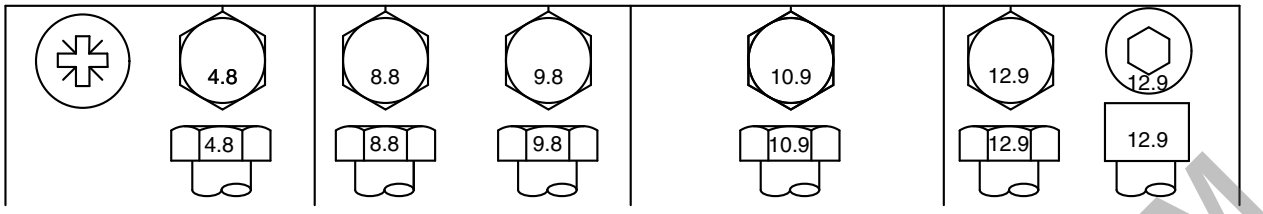
TX,9025,HH184A -19-27AUG96-2/2

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Metric Bolt and Screw Torque Values

TS1670 —UN—01MAY03



Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]	
	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.
M6	4.7	42	6	53	8.9	79	11.3	100	13	115	16.5	146	15.5	137	19.5	172
									N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.
M8	11.5	102	14.5	128	22	194	27.5	243	32	23.5	40	29.5	37	27.5	47	35
			N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.								
M10	23	204	29	21	43	32	55	40	63	46	80	59	75	55	95	70
	N·m	lb.-ft.														
M12	40	29.5	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	46	80	59	120	88	150	110	175	130	220	165	205	150	260	190
M16	100	74	125	92	190	140	240	175	275	200	350	255	320	235	400	300
M18	135	100	170	125	265	195	330	245	375	275	475	350	440	325	560	410
M20	190	140	245	180	375	275	475	350	530	390	675	500	625	460	790	580
M22	265	195	330	245	510	375	650	480	725	535	920	680	850	625	1080	800
M24	330	245	425	315	650	480	820	600	920	680	1150	850	1080	800	1350	1000
M27	490	360	625	460	950	700	1200	885	1350	1000	1700	1250	1580	1160	2000	1475
M30	660	490	850	625	1290	950	1630	1200	1850	1350	2300	1700	2140	1580	2700	2000
M33	900	665	1150	850	1750	1300	2200	1625	2500	1850	3150	2325	2900	2150	3700	2730
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2770	4750	3500

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown in the chart, unless different instructions are given for the specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

[a] *"Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.*

[b] *"Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.*

DX,TORQ2 -19-12JAN11-1/1

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Complete Machine Operational Checkout

This procedure is designed so technician can make a quick check of the operation of machine while sitting in operator's seat.

A location will be required which is level, has adequate space to complete the driving checks

and to work the unit.

The engine and all other major components must be at operating temperature for some checks.

Complete the necessary visual checks (oil levels, oil condition, external leaks, loose hardware, loose linkage, etc.) prior to doing the checkout.

Before starting this operational checkout, check diagnostic service codes using the monitor or SERVICE ADVISOR™ application. These Service Codes must be corrected or cleared before starting this checkout.

No special tools or gauges are needed. Always start in the left column and read completely, following this sequence from left to right. Read each check completely before performing.

At the end of each check, if no problem is found (YES:), you will be instructed to go to next check. If problem is indicated (NO:), you will be given repair required and either group location, CTM number, or hyperlink if viewing in electronic format. If verification is needed, you will be given next best source of information:

Group 10 (System Operational Checks)

Group 15 (Diagnostic Information)

Group 20 (Adjustments)

Group 25 (Tests)

CTM (Component Technical Manual)

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TX,9005,WW2427B -19-25FEB16-1/97

❶ Checking And Clearing Diagnostic Service Codes From Monitor

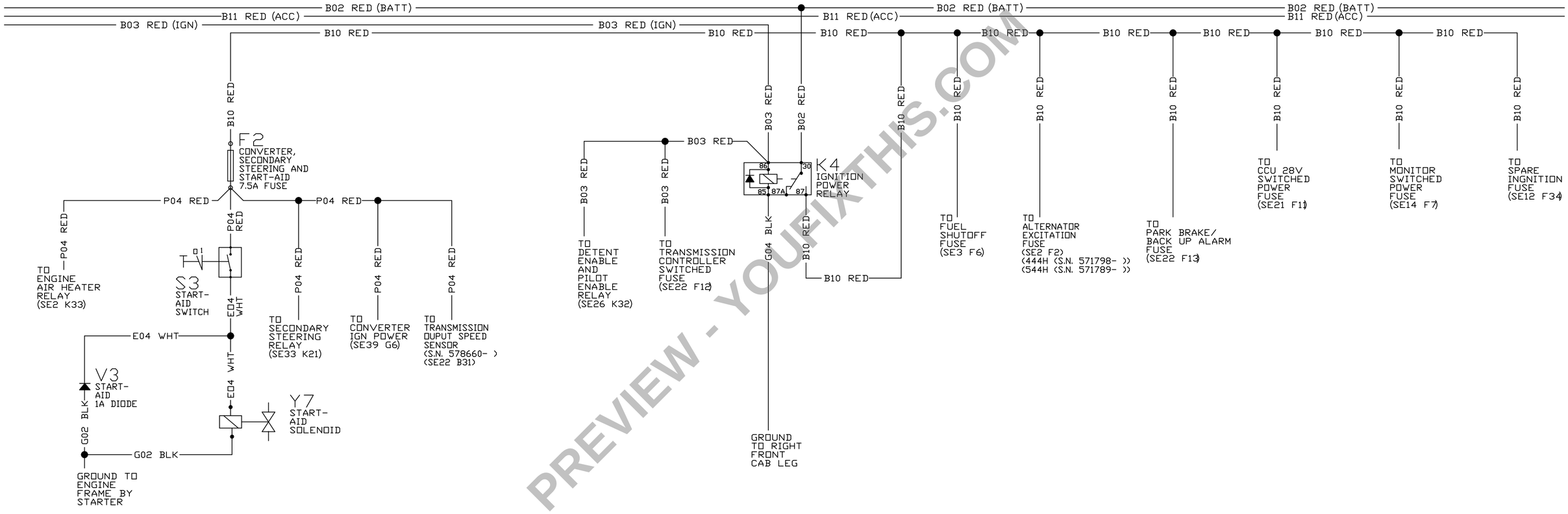
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T137572 —19—25JAN01



SE4 START AID CIRCUIT

SE5 IGNITION POWER CIRCUIT

SE6 IGNITION POWER CIRCUIT

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T137572

444H, 544H SYSTEM FUNCTIONAL SCHEMATIC (2 OF 13)

Start Aid, Ignition Power Circuits (SE4, SE5, SE6)

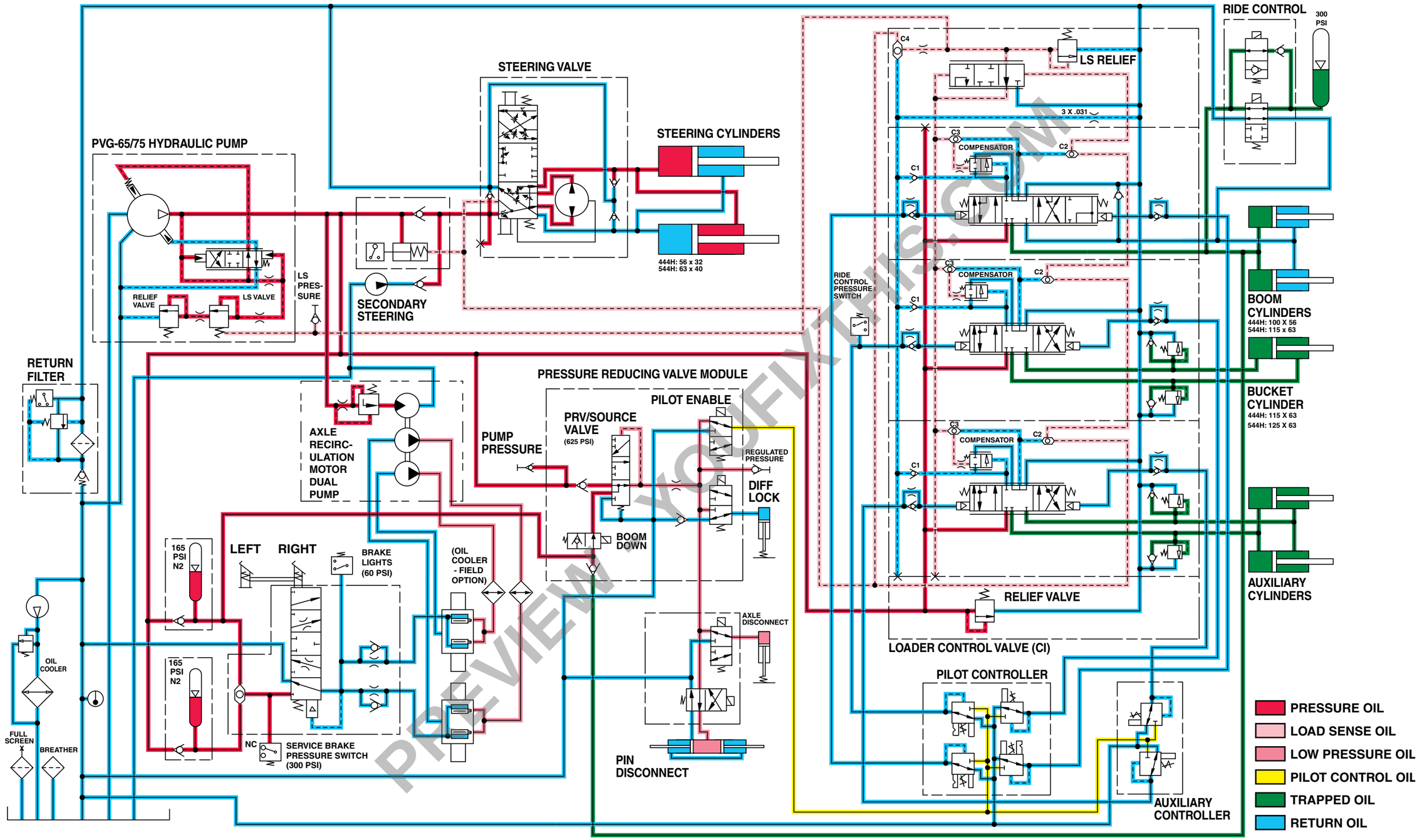
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T133617 —19—30AUG00



T133617

HYDRAULIC SYSTEM SCHEMATIC - STEERING

TX,15,SS3747 -19-17FEB97-2/2

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Additional Metric Cap Screw Torque Values

CAUTION: Use only metric tools on metric hardware. Other tools may not fit properly. They may slip and cause injury.

Check tightness of cap screws periodically. Torque values listed are for general use only. Do not use these values if a different torque value or tightening procedure is listed for a specific application.

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

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fastener threads are clean and that the thread engagement is properly started. This will prevent fasteners from failing when tightening.

Tighten cap screws having lock nuts to approximately 50 percent of amount shown in chart.

METRIC CAP SCREW TORQUE VALUES[a]						
	T-Bolt		H-Bolt		M-Bolt	
Nominal Diameter	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft
8	29	21	20	15	10	7
10	63	46	45	33	20	15
12	108	80	88	65	34	25
14	176	130	137	101	54	40
16	265	195	206	152	78	58
18	392	289	294	217	118	87
20	539	398	392	289	167	125
22	735	542	539	398	216	159
24	931	687	686	506	274	202
27	1372	1012	1029	759	392	289
30	1911	1410	1421	1049	539	398
33	2548	1890	1911	1410	735	542
36	3136	2314	2401	1772	931	687

[a] *Torque tolerance is ±10%.*



T-Bolt

T6873AA —UN—15APR13



H-Bolt

T6873AB —UN—18OCT88



M-Bolt

T6873AC —UN—18OCT88

04T,90,M170 -19-29SEP99-1/1

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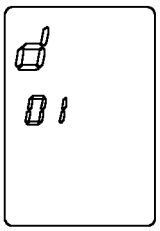
Check Service Codes

Service Codes can be displayed using SERVICE ADVISOR™ application or monitor on machine.

Using SERVICE ADVISOR application:

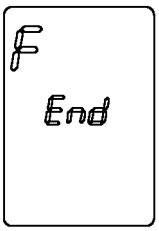
1. Establish a live connection to machine. (See SERVICE ADVISOR application Computer Connection (S.N. —578659) or (S.N. 578660—) in PDM kit instructions)
2. Select either
   - Service Codes icon under Readings tab
   - Or Refresh button under Diagnostics tab

Using Vehicle Monitor:



T103702

T103702 —UN—13SEP96



T103152

T103152 —UN—09SEP96

Turn key ON.

After bulb check, Press MENU until diagnostic mode (d) is in Basic Display window.

Press SELECT to get (d 01) displayed, then press SELECT to display service codes.

"End" will be displayed if no faults are detected.

Service code numbers (F1645) will be displayed if faults are detected.

LOOK: Does display read "End"?

YES: Go to first step of Operational Checkout .

NO: Go next check, Clear Service Codes.

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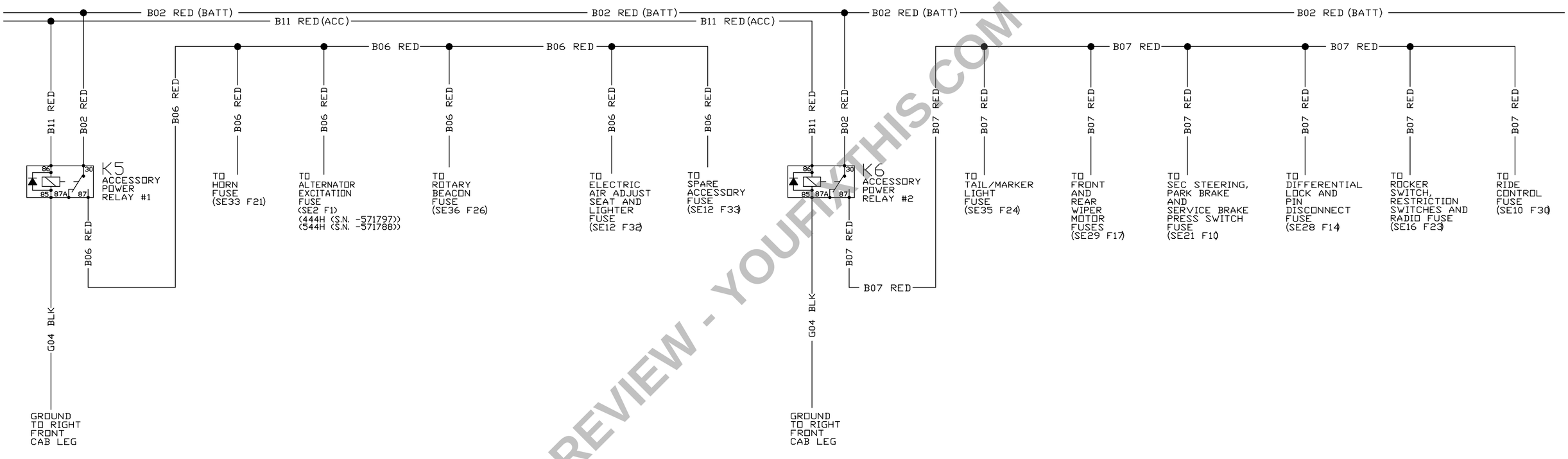
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TX,9005,WW2427B -19-25FEB16-3/97

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T131735 —19—23MAY11



SE7 ACCESSORY POWER CIRCUIT | SE8 ACCESSORY POWER CIRCUIT | SE9 ACCESSORY POWER CIRCUIT

T131735

444H, 544H SYSTEM FUNCTIONAL SCHEMATIC (3 OF 13)

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Accessory Power Circuits (SE7, SE8, SE9)

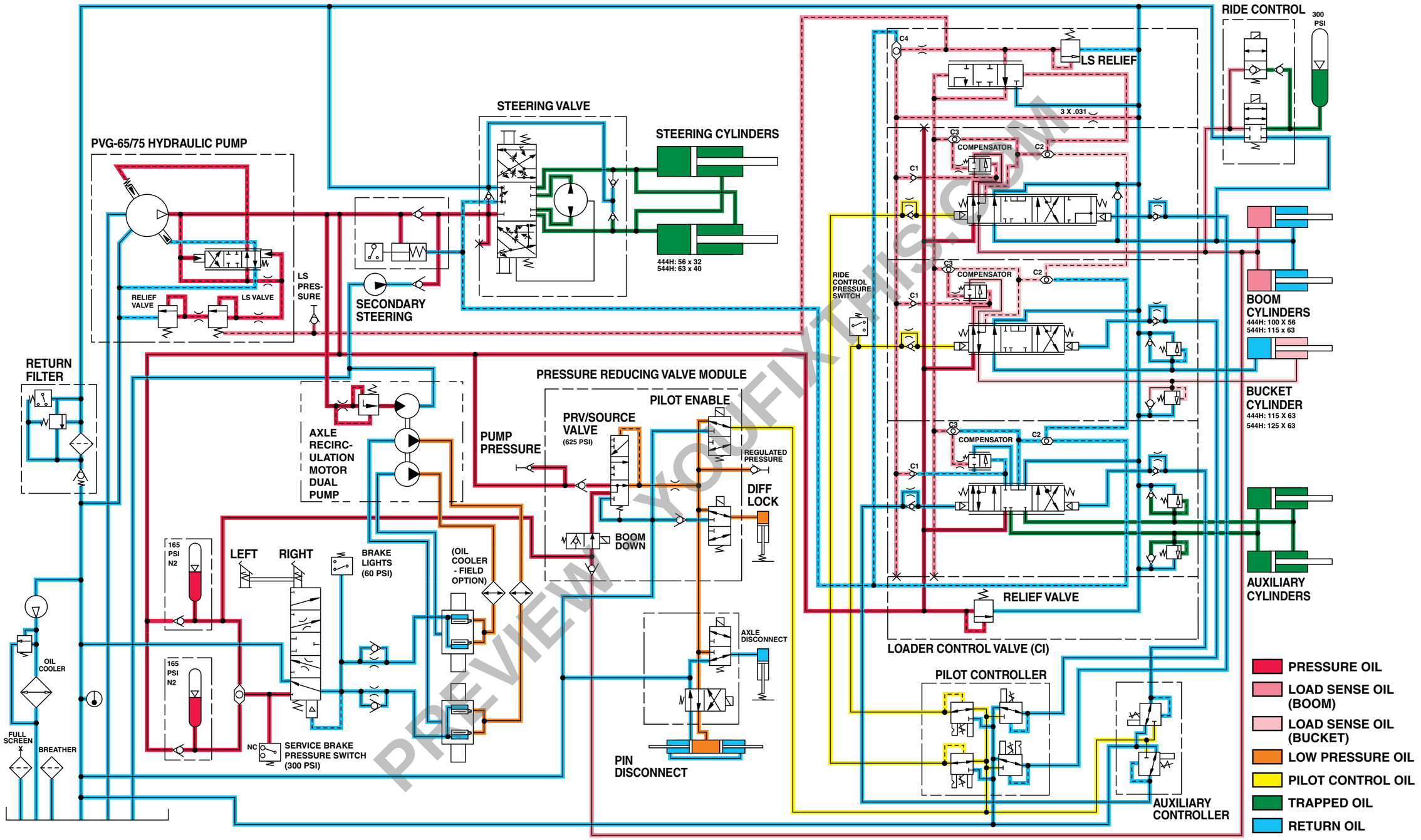
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T133625 —19—30AUG00



T133625

HYDRAULIC SYSTEM SCHEMATIC - BOOM RAISE AND BUCKET DUMP

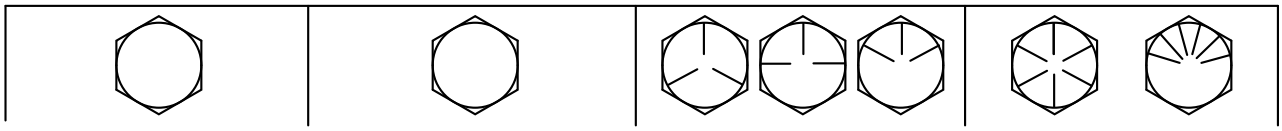
TX,15,SS3746 -19-17FEB97-2/2

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Unified Inch Bolt and Screw Torque Values

TS1671 —UN—01MAY03



Bolt or Screw Size	SAE Grade 1				SAE Grade 2[a]				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]	
	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.
1/4	3.7	33	4.7	42	6	53	7.5	66	9.5	84	12	106	13.5	120	17	150
													N·m	lb.-ft.	N·m	lb.-ft.
5/16	7.7	68	9.8	86	12	106	15.5	137	19.5	172	25	221	28	20.5	35	26
									N·m	lb.-ft.	N·m	lb.-ft.				
3/8	13.5	120	17.5	155	22	194	27	240	35	26	44	32.5	49	36	63	46
			N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.								
7/16	22	194	28	20.5	35	26	44	32.5	56	41	70	52	80	59	100	74
	N·m	lb.-ft.														
1/2	34	25	42	31	53	39	67	49	85	63	110	80	120	88	155	115
9/16	48	35.5	60	45	76	56	95	70	125	92	155	115	175	130	220	165
5/8	67	49	85	63	105	77	135	100	170	125	215	160	240	175	305	225
3/4	120	88	150	110	190	140	240	175	300	220	380	280	425	315	540	400
7/8	190	140	240	175	190	140	240	175	490	360	615	455	690	510	870	640
1	285	210	360	265	285	210	360	265	730	540	920	680	1030	760	1300	960
1-1/8	400	300	510	375	400	300	510	375	910	670	1150	850	1450	1075	1850	1350
1-1/4	570	420	725	535	570	420	725	535	1280	945	1630	1200	2050	1500	2600	1920
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2140	1580	2700	2000	3400	2500
1-1/2	990	730	1250	930	990	730	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For plastic insert or crimped steel type lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Replace fasteners with the same or higher grade. If higher grade fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

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

[b] "Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.

[c] "Dry" means plain or zinc plated without any lubrication, or 1/4 to 3/4 in. fasteners with JDM F13B, F13E or F13H zinc flake coating.

DX,TORQ1 -19-12JAN11-1/1

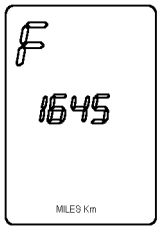
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Clear Service Codes

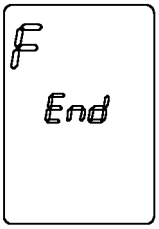
If connected to controller CAN bus with SERVICE ADVISOR™ application, the codes can be deleted with the “Clear” button under the diagnostics tab. (See SERVICE ADVISOR application Computer Connection (S.N. —578659) or (S.N. 578660—) in PDM kit instructions)

Or, service codes can be deleted from the monitor display unit as follows:



T103437

T103437 —UN—09SEP96



T103152

T103152 —UN—09SEP96

With key ON and diagnostic service codes displayed.

Press NEXT to view each service code and read explanation in message window (Deluxe Monitor only).

Without deluxe monitor refer to TM1602 Group 9015-20. for explanation of service codes.

Record service codes.

To clear a service code press NEXT until END is displayed, then press and hold SELECT for 5 seconds. Service codes will appear one at a time. Pressing and holding SELECT for 5 seconds will delete service codes. When END appears all service codes have been deleted.

NOTE: The service codes should disappear from window and next fault displayed or “End” displayed.

Repeat this procedure until “End” appears in Basic display window. Press NEXT and “End” should still appear.

YES: Start Operational Checkout

Press MENU to return to operating display.

NO: Go to System Diagnostics, Monitor Display Unit in 9015-15.

LOOK: Are all the service codes deleted? Does “End” appear in Basic Display window?

NO: Go to Service Codes Quick Reference List.

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TX,9005,WW2427B -19-25FEB16-4/97

❷ Monitor Indicator And Gauge Checks—Engine Off

Continued on next page

TX,9005,WW2427B -19-25FEB16-5/97

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Handle Fluids Safely—Avoid Fires

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.



TS227 —UN—15APR13

DX,FLAME -19-29SEP98-1/1

Prevent Battery Explosions

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).



TS204 —UN—15APR13

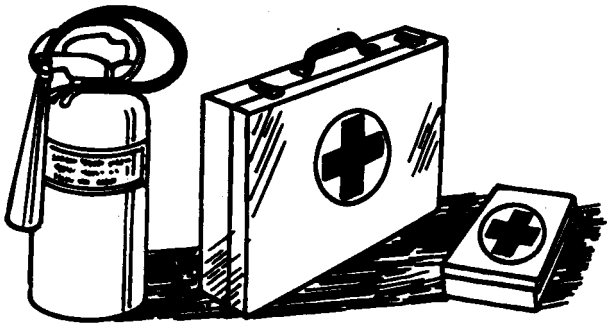
DX,SPARKS -19-03MAR93-1/1

Prepare for Emergencies

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.



TS291 —UN—15APR13

DX,FIRE2 -19-03MAR93-1/1

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General Information

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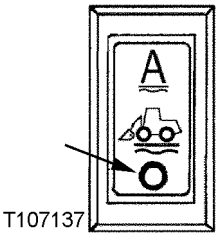
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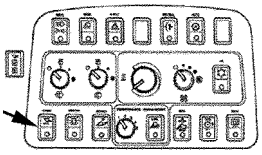
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Pilot Control Valve Boom Float Check



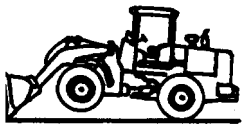
T107137

T107137 —UN—07FEB97



T103177

T103177 —UN—06SEP96



T6601AA —UN—19OCT88



T103427

T103427 —UN—09SEP96

Run engine at slow idle.

Push Ride Control Switch OFF.

Push Return To Carry Switch OFF.

With the bucket partially dumped, lower boom to raise front of machine.

Push control lever to the float detent position and release lever.

LOOK: Does front of machine lower to the ground and valve remain in float position when lever is released?

YES: Go to next check.

NO: Do Pilot Control Valve Pressure Test in Group 9025-25

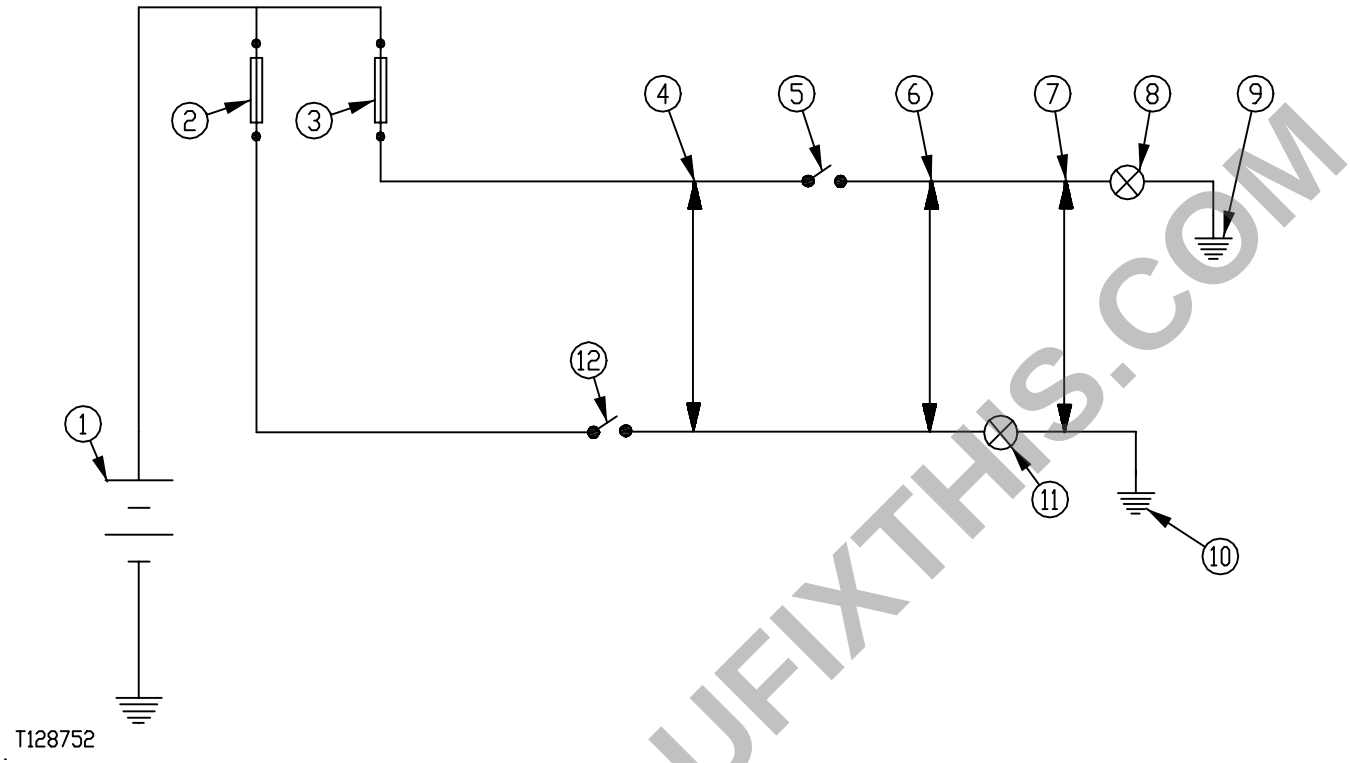
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TX,9005,WW2427B -19-25FEB16-44/97

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Shorted Circuit



1— Battery
2— Fuse F1
3— Fuse F2
4— Battery Wire Shorted to Circuit
5— Switch S2
6— Circuit Wire Shorted to Circuit
7— Circuit Wire Shorted to Ground
8— Light E2
9— Circuit Ground
10— Circuit Ground
11— Light E1
12— Switch S1

Definition of a Shorted Circuit: A shorted circuit has a power wire with its insulation burned or rubbed through, contacting a wire in another circuit causing a short (4, 6, or 7). This allows current to flow to several components when a switch from either circuit is turned ON. Fuse (3) will blow immediately when switch (5) is turned ON, whenever a wire is shorted to ground (7).

Troubleshooting a Shorted Circuit: The above diagram shows two circuits shorted in three different locations. A troubleshooting procedure is given for each shorted location.

Battery Wire Shorted to Circuit

1. Turn switch S1 (12) and switch S2 (5) OFF.
2. Light E1 (11) remains ON.
3. A short to battery power (4) is located before switch S2 (5) and after switch S1 (12).
4. Inspect wire harness for burned or pinched wires between switch S1 (12) and light E1 (11) of circuit 1 and between fuse F2 (3) and switch S2 (5) of circuit 2.

Power Wire Shorted to Circuit

1. Turn switch S1 (12) ON and switch S2 (5) OFF.
2. Light E1 (11) and light E2 (8) come ON. One or both lights may be dim.
3. Turn switch S1 (12) OFF and switch S2 (5) ON.
4. Light E2 (8) and light E1 (11) come ON. One or both lights may be dim.
5. A short to switched power (6) is located between circuit 1 and 2, after switches S1 and S2 (12, 5), and before light E1 and E2 (11, 8).
6. Inspect wire harness for burned or pinched wires between switch S1 (12) and light E1 (11) of circuit 1 and between switch S2 (5) and light E2 (8) of circuit 2.

Power Wire Shorted to Ground

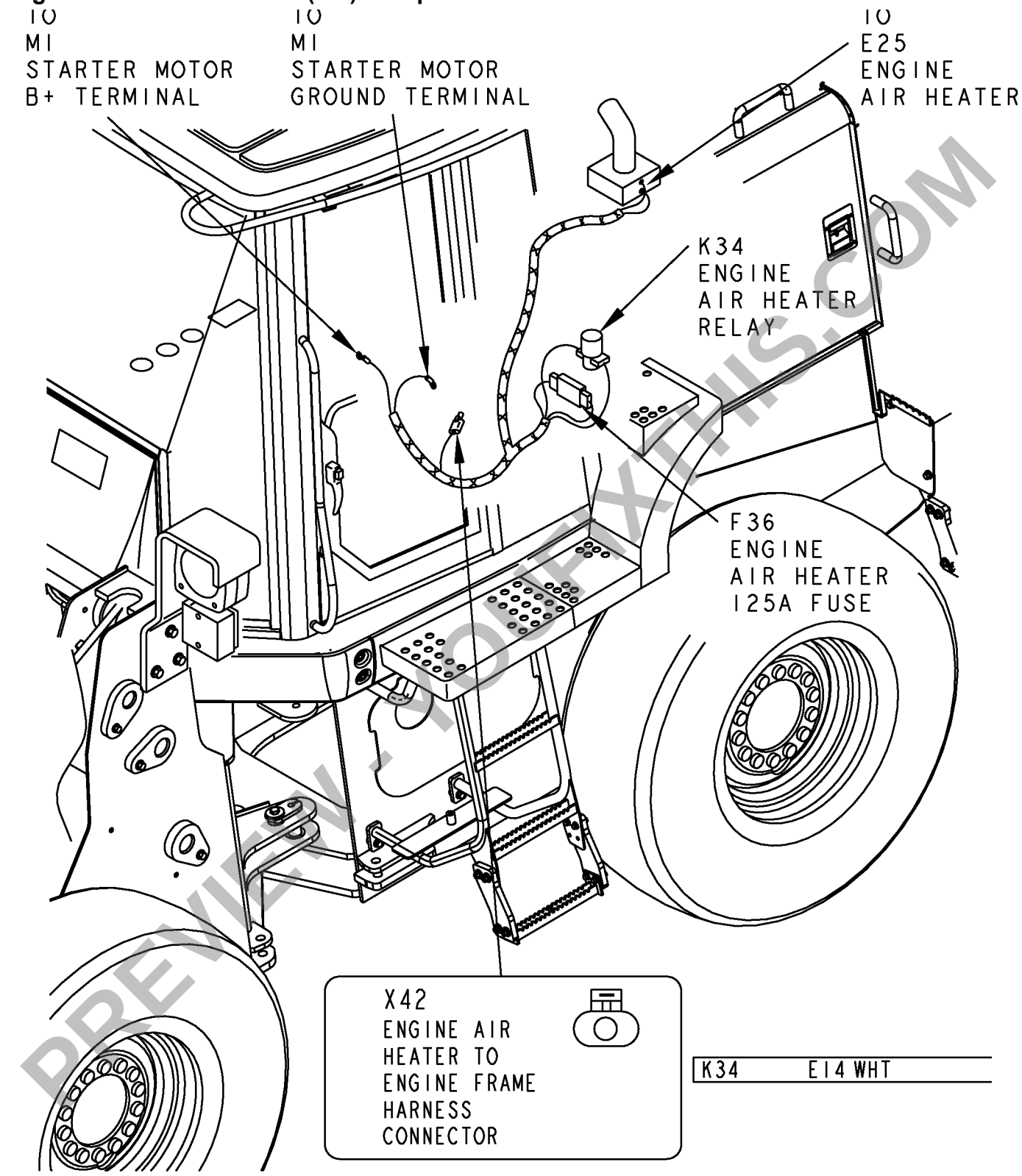
1. Turn switch S1 (12) ON, leave switch S2 (5) OFF.
2. Light E1 (11) and light E2 (8) come ON. One or both lights may be dim. Light E1 and E2 (11, 8) can come ON even if fuse F2 (3) is blown.
3. Turn switch S1 OFF.
4. Turn switch S2 (5) ON.

Continued on next page

CED,TX17984,449 -19-25FEB00-1/2

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Engine Air Heater Harness (W7) Component Location



ENGINE AIR HEATER HARNESS (W7) COMPONENT LOCATION
TI05682

T105682 —19—19FEB97

Continued on next page

TX,10,11126 -19-17MAY00-1/2

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Monitor Display Unit Circuit Theory Of Operation—Caution And Warning Lights And Gauges

IMPORTANT: When a critical warning is being displayed, the STOP light will flash and the display monitor audible alarm will sound. The machine must be stopped immediately or serious damage could result.

When the red STOP indicator flashes, machine must be stopped immediately.

When the audible alarm sounds, machine and engine should be stopped immediately. This alerts the operator to a critical service code condition indicated on the display.

When the yellow CAUTION indicator light flashes, machine must be checked or serviced as soon as possible.

The monitor display unit contains a speedometer and the following gauges:

- Engine Oil Pressure
- Engine Coolant Temperature
- Hydraulic Oil Temperature (Deluxe Monitor Display Only)
- Transmission Oil Temperature
- Fuel Level

Each of the above listed gauge sensors is an analog input to the chassis computer unit. The chassis computer unit will then excite the sensor and read the temperature, fuel level or pressure value. A message is sent to the monitor display unit by way of the CAN link.

After the monitor display unit receives the temperature, fuel level, or pressure reading it displays the value on the appropriate gauge by mapping the value to a needle position and turns on the indicator light, if applicable.

When the engine oil pressure falls lower than 82.7 kPa (0.83 bar) (12 psi), the indicator light will come On, the red STOP light will flash and the audible alarm will sound.

Specification

Engine Oil Pressure Indicator ON—Pressure.....Below 82.7 kPa (0.83 bar) (12 psi)

If the transmission oil temperature exceeds 120°C (248°F), the indicator light will come On, the red STOP light will flash and the audible alarm will sound.

Specification

Transmission Oil Temperature Indicator ON—Temperature.....Above 120°C (248°F)

If the hydraulic oil temperature exceeds 105°C (220°F), the indicator light will come On, the red STOP light will flash and the audible alarm will sound.

Specification

Hydraulic Oil Indicator Light ON—Temperature.....Above 104°C (219°F)

If the engine coolant temperature exceeds 107°C (225°F), the indicator light will come On, the red STOP light will flash and the alarm will come on.

Specification

Engine Coolant Indicator Light ON—Temperature.....Above 107°C (225°F)

The engine oil pressure gauge, transmission oil temperature gauge and engine coolant temperature gauges will turn on the flashing red STOP light and the audible alarm will sound when the pointer is in the red zone.

All of the temperature, pressure and fuel gauges will deflect to the far left of the scale whenever CAN communications is lost or when a sensor error is active.

NOTE: If the speedometer seems to be miscalibrated, check machine model on monitor display unit at start up. Also, check the tire size in the Service menu (S 03).

See Monitor Display Unit Reconfiguration—Machine Model (S 01) and Reconfiguration—Tire Size (S 03), in this group.

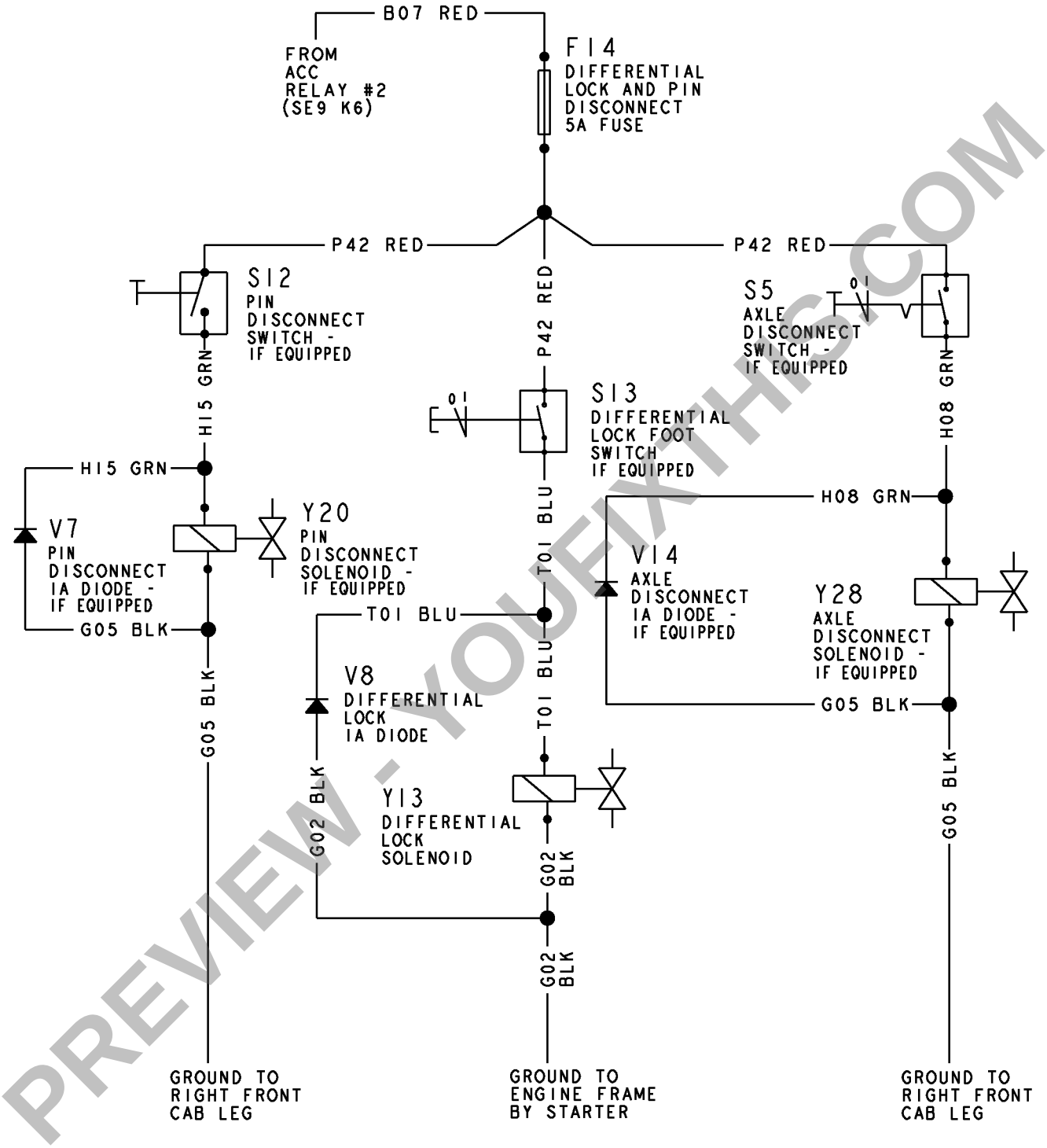
The transmission output shaft speed sensor sends a signal to the transmission controller unit, representing the speed of the shaft. This is transmitted to the monitor display unit in rpm's by way of the CAN link. The monitor unit then displays the wheel speed reading on the speedometer.

TX,9015,111908 -19-17SEP97-1/1

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Differential Lock, Pin Disconnect, and Axle Disconnect Circuit Functional Schematic



DIFFERENTIAL LOCK, PIN DISCONNECT AND AXLE DISCONNECT FUNCTIONAL SCHEMATIC - IF EQUIPPED

TI10242

T110242 —19—05SEP97

TX,15,111218 -19-28JAN97-1/1

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Symptom	Problem	Solution
F1633 Secondary Steering Driver Short-To- Ground	Monitor Configuration Wrong	MDU (Reconfigure). See Monitor Display Unit Reconfiguration Access Service Menu, Machine Model (S 01), Tire Size (S 03), Enable Options (S 06), and Delete Service Codes in Group 9015—15.
	Secondary Steering Relay (K21) Short-To-Ground	Secondary Steering Relay (K21) Short-To-Ground (Check/Replace)
	Wire H14 (Green) Harness (W3) Short-To-Ground	Load Center Harness (W3) - H14 (Green) Short-To-Ground (Check/Repair)
	CCU (A2)	CCU (Replace)
		MDU (Reconfigure). See Monitor Display Unit Reconfiguration Access Service Menu, Machine Model (S 01), Tire Size (S 03), Enable Options (S 06), and Delete Service Codes in Group 9015—15.
F1634 Rear Wiper Driver Short-To-Ground	Rear Intermittent Wiper Relay (K18) Short-To-Ground	Rear Intermittent Wiper Driver Relay (K18) Short-To-Ground (Check/Replace)
	Wire A29 (Orange) Harness (W3) Short-To-Ground	Load Center Harness (W3) - A29 (Orange) Short-To-Ground (Check/Repair)
	CCU (A2)	CCU (Replace)
		MDU (Reconfigure). See Monitor Display Unit Reconfiguration Access Service Menu, Machine Model (S 01), Tire Size (S 03), Enable Options (S 06), and Delete Service Codes in Group 9015—15.
F1635 Front Wiper Driver Short-To-Ground	Front Intermittent Wiper Relay (K16) Short-To-Ground	Front Intermittent Wiper Relay (K16) Short-To-Ground (Check/Replace)
	Wire A27 (Orange) Harness (W3) Short-To-Ground	Load Center Harness (W3) - A27 (Orange) Short-To-Ground (Check/Repair)
	CCU (A2)	CCU (Replace)
		MDU (Reconfigure). See Monitor Display Unit Reconfiguration Access Service Menu, Machine Model (S 01), Tire Size (S 03), Enable Options (S 06), and Delete Service Codes in Group 9015—15.

CED,TX13067,402 -19-24FEB16-38/22

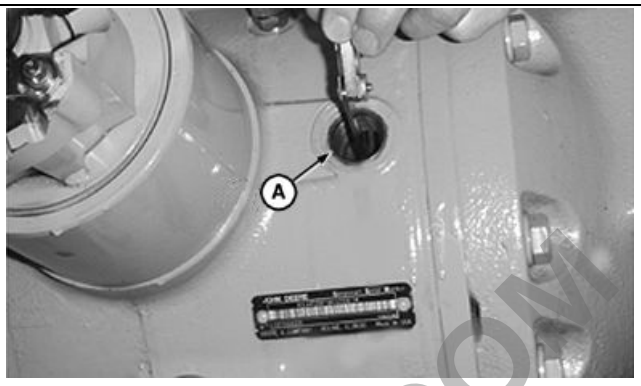
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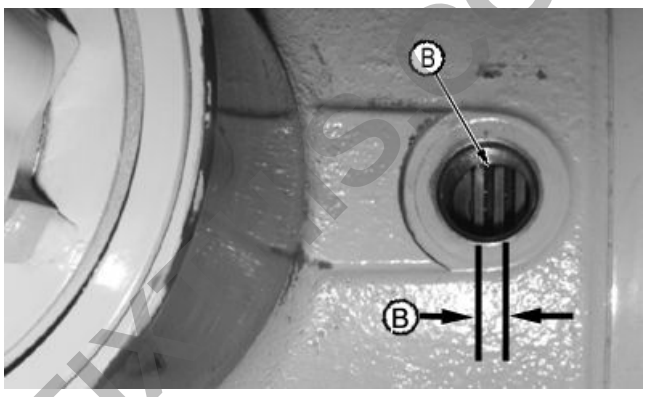
External Service Brake Inspection

SPECIFICATIONS	
Used Service Brake Disk Thickness Distance	2.29 mm (0.090 in.)
New Service Brake Disk Thickness Distance	2.90 mm (0.114 in.)
Used Service Brake Disk Thickness Distance	2.29 mm (0.090 in.)

SERVICE EQUIPMENT AND TOOLS
Feeler Gauge



T105193B —UN—02NOV98



T105767B —UN—25FEB97

A—Feeler Gauge **B—Disk Thickness**

Continued on next page

CED,TX13067,43 -19-23MAY11-1/2

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With the control lever (A) partially held in the return-to-dig position, the push bar (K) pushes the plunger (B) down which contacts the spring guide (I). The spring guide compresses both the return spring (H) and the metering spring (C) which moves the spool assembly (D) down, into a metering position, allowing oil to flow out the "D" port (G).

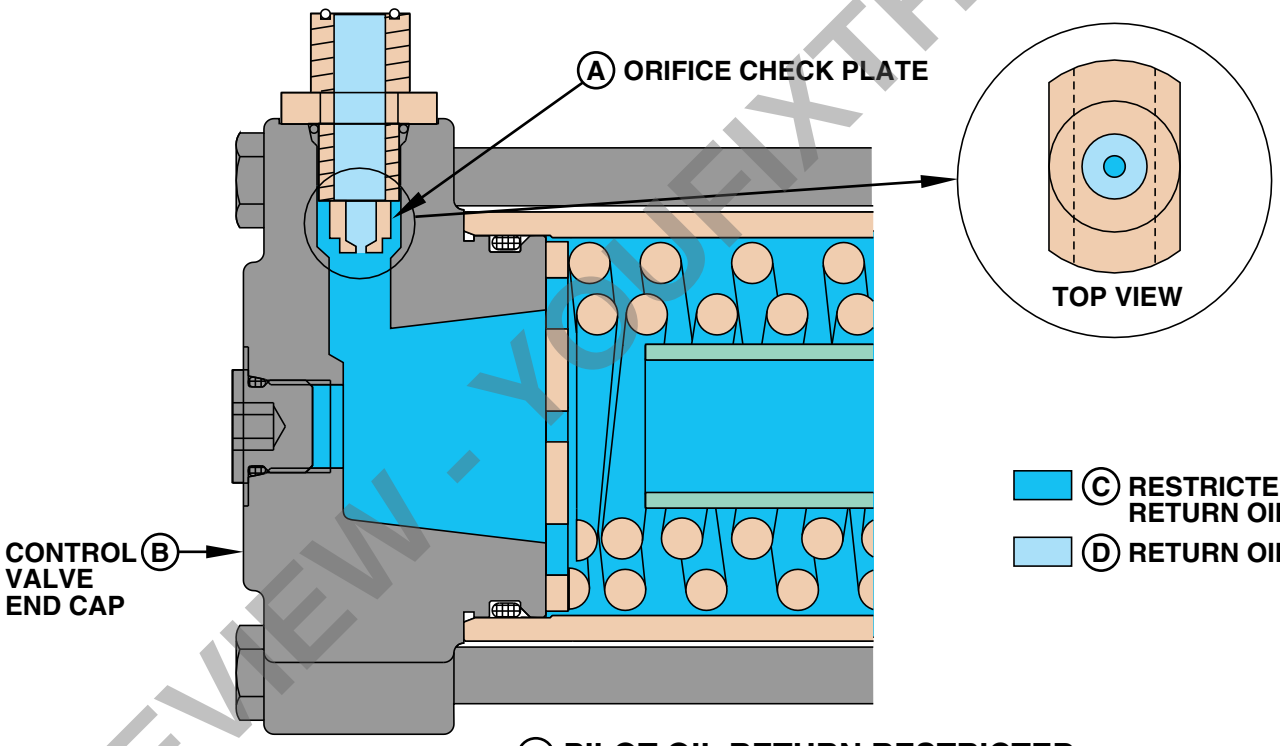
The pressure in the pilot controller workport controls the amount of stroke of the function spool in the loader control valve. As the control lever is moved further from neutral, the compression of the metering spring (C) is greater. The controller workport pressure acts on the bottom of the spool assembly (D) which pushes up on the metering spring to regulate the pressure delivered to the bucket control valve spool.

The return-to-dig function is controlled by a bucket mounted linkage which controls a switch. When the bucket is dumped, the switch closes and the return-to-dig detent is energized. When the control lever is moved to the full left position, the pull plate (L) comes in contact with the electric coil (J). The pull plate is held downward by the electromagnet with enough force to hold the control lever in the bucket rollback position. The detent will release when the bucket reaches the pre-set position and the switch on the bucket linkage opens. The detent can also be manually released by moving the control lever to the right.

The optional two-lever controller is designed and operated the same as the single lever controller.

TX,05,SS3727 -19-10AUG96-2/2

Pilot Orifice Check Valve For All Control Valve Sections



A—Orifice Check Plate
B—Control Valve End Cap
C—Restricted Return Oil
D—Return Oil
E—Pilot Oil Return Restricted

Orifice check plate is installed in control valve pilot cap of all control valve sections. Orifice (A) dampens the control valve spool movement to stop unwanted bucket or boom movement when the pilot controller lever is centering itself.

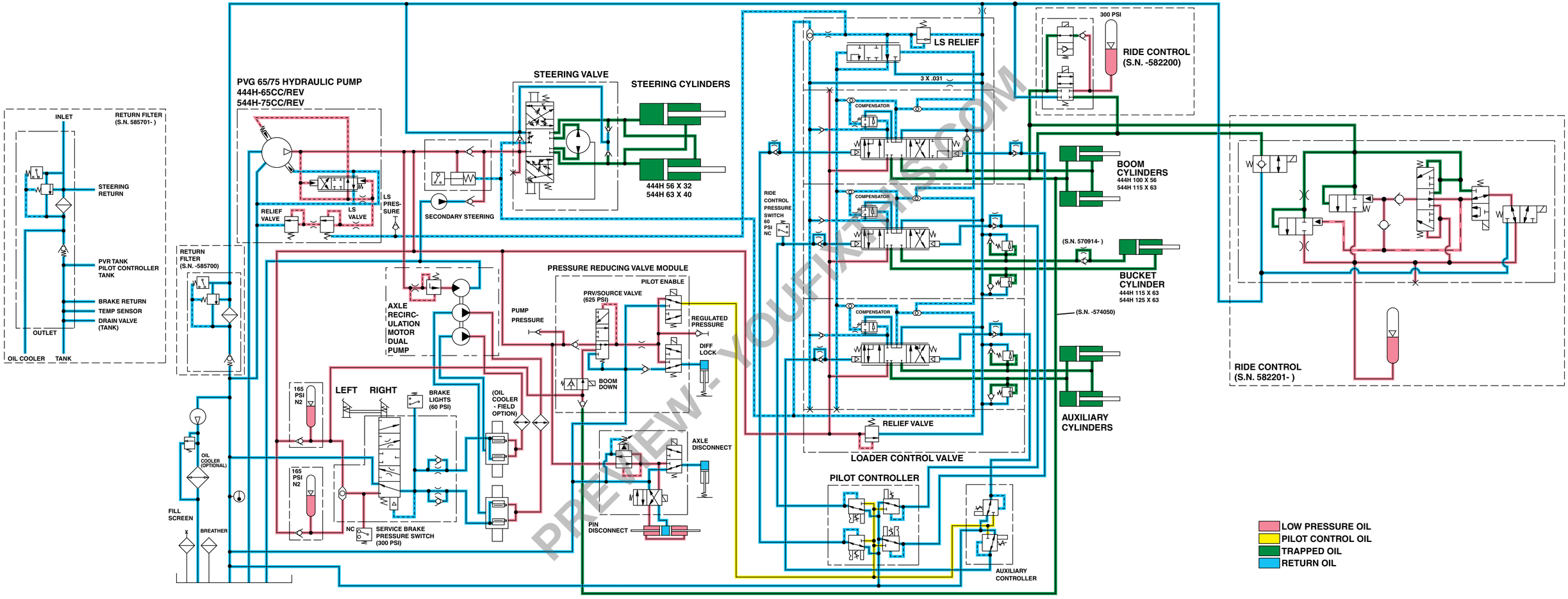
It also stops unwanted bucket or boom correction in other direction as the lever kicks out of bucket return-to-dig, or boom height kick out function.

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T195533 —19—22OCT03



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T195533

HYDRAULIC SYSTEM SCHEMATIC - NEUTRAL

CED,TX04577,1022 -19-04FEB02-2/2

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Brake And PRV Accumulator Inlet Check Valve Leakage Test

SPECIFICATIONS	
Hydraulic Oil Temperature	40 ± 6°C (100 ± 10°F)
Brake And PRV Accumulator Inlet Check Valve Leakage (maximum)	1 mL/min (0.034 oz/min)(16 drops per min)

ESSENTIAL TOOLS
38H1146 Plug (-6 M ORFS)

SERVICE EQUIPMENT AND TOOLS
Measuring Container
Stop Watch

1. Heat hydraulic oil to test specifications. (See Hydraulic Oil Warm-Up Procedure this group.)

   Use the monitor or SERVICE ADVISOR™ application to read engine rpm and hydraulic oil temperature.

   See Display Monitor Hydraulic Oil Temperature.

   Or use SERVICE ADVISOR application Cycle Time Test template. (See SERVICE ADVISOR application Computer Connection (S.N. —578659) or (S.N. 578660—) in PDM kit instructions)

Specification

Hydraulic Oil—Temperature..... 40 ± 6°C (100 ± 10°F)

2. Stop engine. DO NOT depress brake pedal to discharge accumulator.

CAUTION: Accumulator inlet check valve is located between inlet fitting and base inlet port. Only remove inlet line from inlet fitting. Removing inlet fitting from base inlet port will cause high pressure oil to be released out accumulator inlet port.

Escaping fluid under pressure can penetrate skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

If ANY fluid is injected into skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.



T103303B —UN—27AUG96

3. Disconnect inlet line from accumulator inlet fitting and plug line.
4. Measure leakage. If leakage is greater than specification, replace accumulator. (See Group 1060).

Specification

Brake And PRV Accumulator Inlet Check Valve—Leakage (maximum)..... 1 mL/min (0.034 oz/min) (16 drops per min)

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