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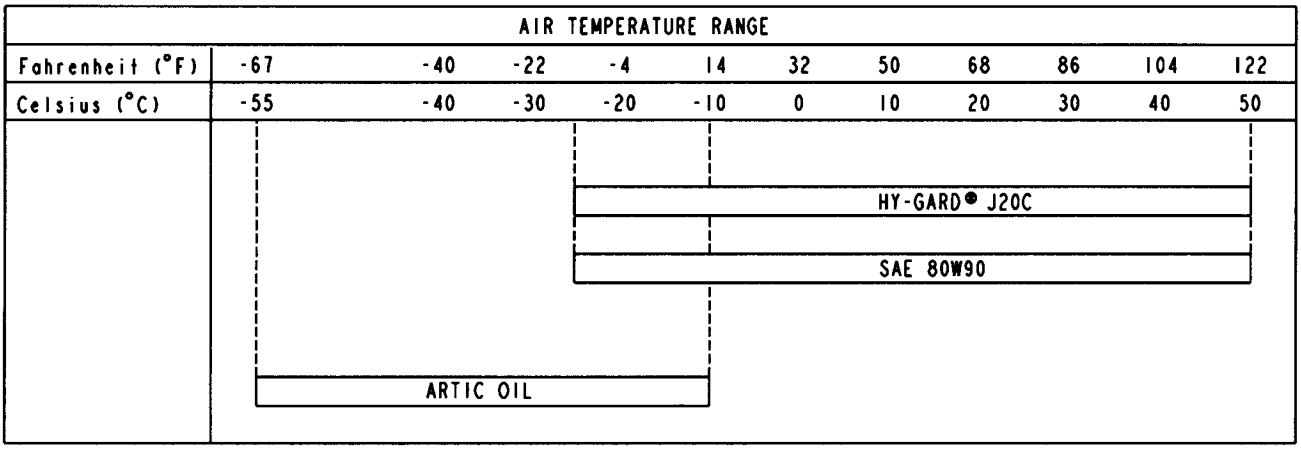
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THANK YOU!

TX,TM,FAX –19–03JUL01–1/1

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6

Inner and Outer Final Drive Oil



T8448AT

T8448AT –19–26JUN95

Depending on the expected air temperature range between oil changes, use oil viscosity shown on the chart above.

John Deere HY-GARD® is preferred.

Other oils may be used if they meet the following:

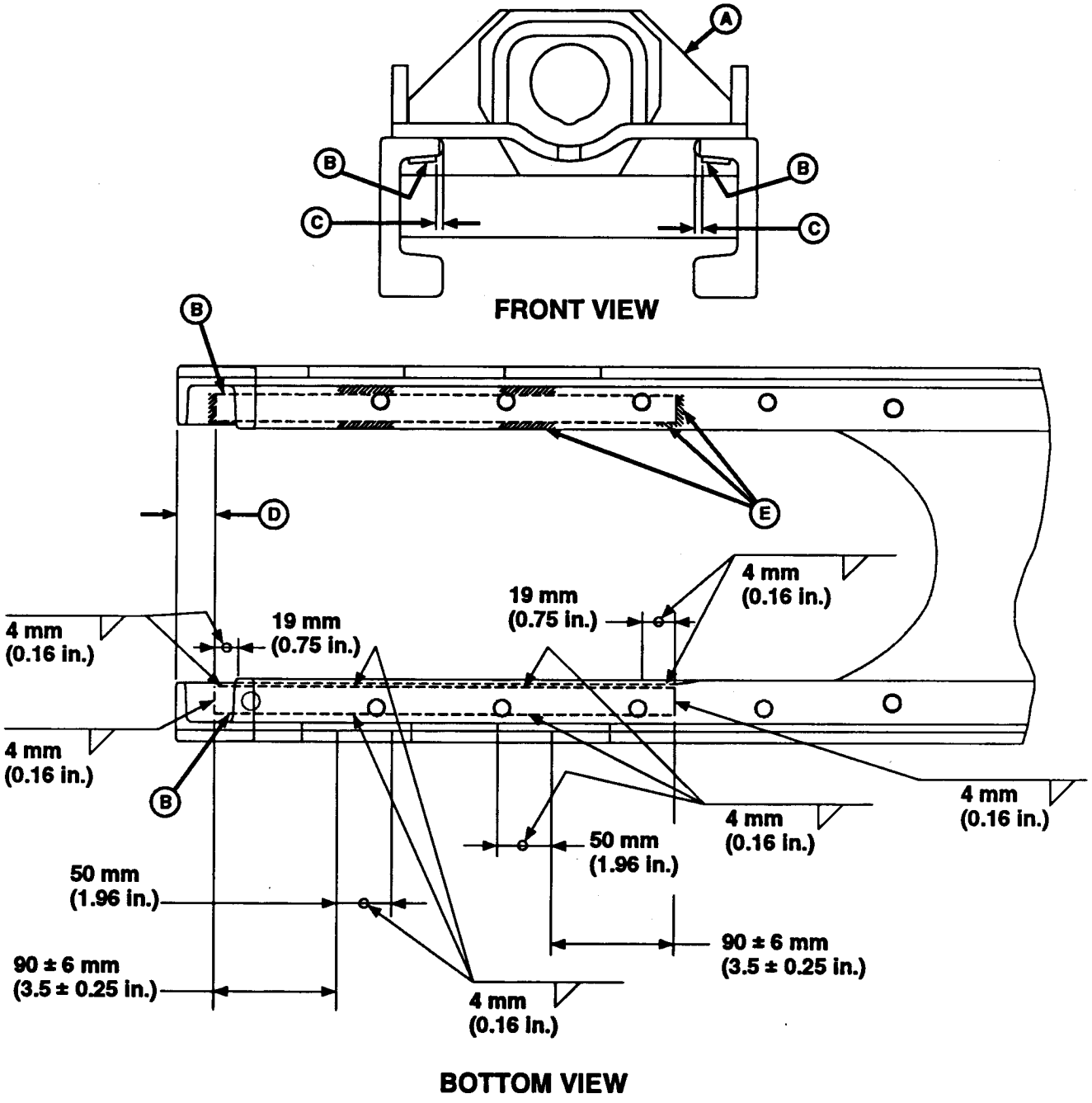
- John Deere API GL-5 Gear Oil (SAE 80W90)

Arctic oils (such as Military Specifications MIL-L-46167B) may be used at temperatures below —30°C (—22°F).

HY-GARD is a registered trademark of Deere & Company.

CED,TX03768,2689 –19–25JAN00–1/1

Remove and Install Frame Wear Strips



T8058AH –UN–13SEP93

A—Track Frame
B—Wear Strip (2 used)
C—6 ± 1.5 mm (0.23 ± 0.06 in.)
D—30.8 mm (1.21 in.)
E—Welded Areas

1. Remove front idler. (See procedure in this group.)
2. Remove wear strips (B).
3. Grind track frame (A) wear strip surfaces smooth. Area must be free of any weld spatter.

Continued on next page

CED,OUTX547,103 –19–20OCT98–1/2

53. If removed, install boot (3) and switch (2) in grip (1).



T124646B –UN–17SEP99

CED,OUTX547,108 –19–29SEP99–27/30

54. Install and tighten screws (1—3).

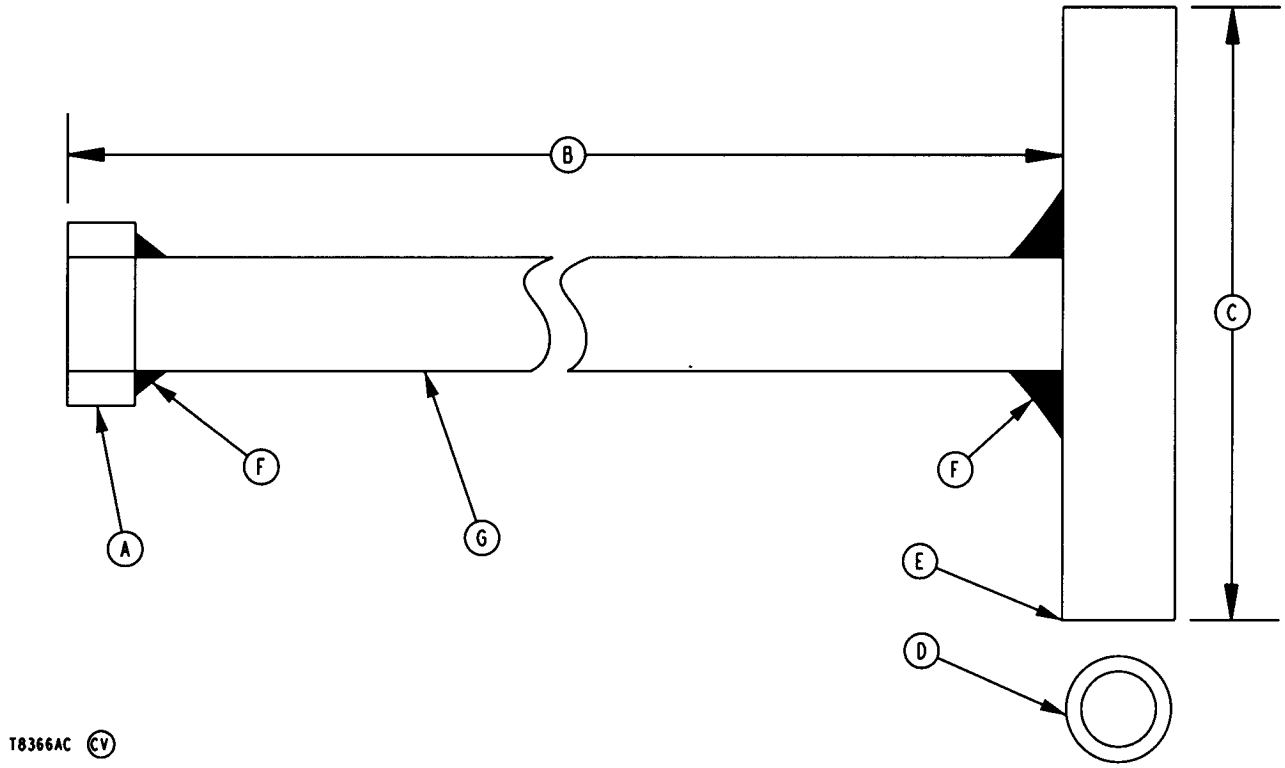


T124645B –UN–17SEP99

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CED,OUTX547,108 –19–29SEP99–28/30

DFT1132 Hydrostatic Motor Removal and Installation Tool



T8366AC –UN–10JUL95

A—1 in. Nut
B—Pipe 2134 mm (7 ft) long
C—Pipe 457 mm (18 in.) long
D—1 in. ID Heavy Wall Steel Pipe
E—Pipe
F—Weld
G—Pipe

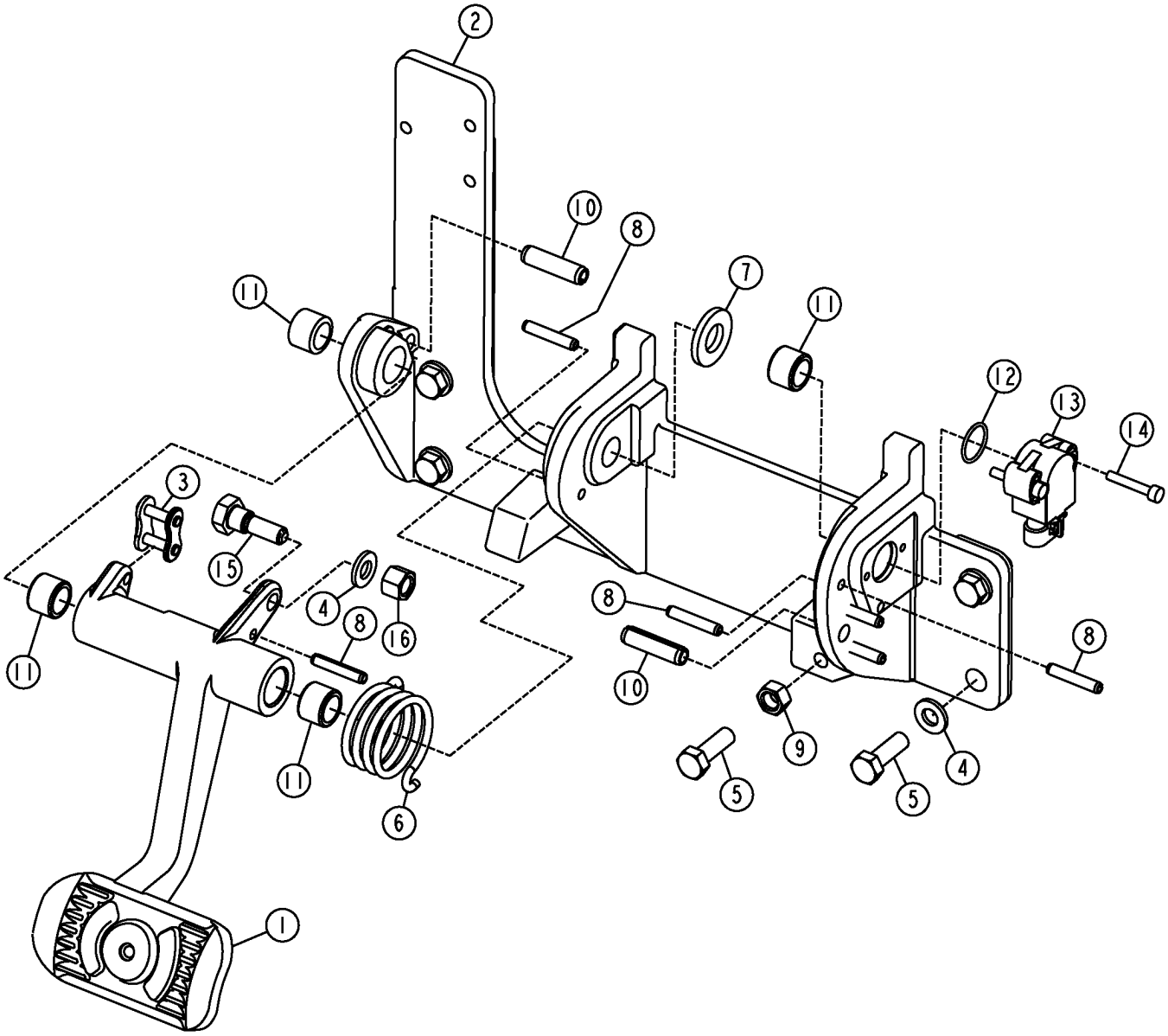
This tool is used to remove and install hydrostatic motors from rear of machine.

Material required:

- 1 in. piece heavy wall steel pipe 8 ft. x 6 in. long
- Weld (E) to (G)

CED,TX03399,5070 –19–10NOV98–1/1

Remove and Install Brake Pedal Control Linkage



T119121

T119121 –UN–06JAN99

Continued on next page

CED,OUTX547,129 –19–08APR99–1/2

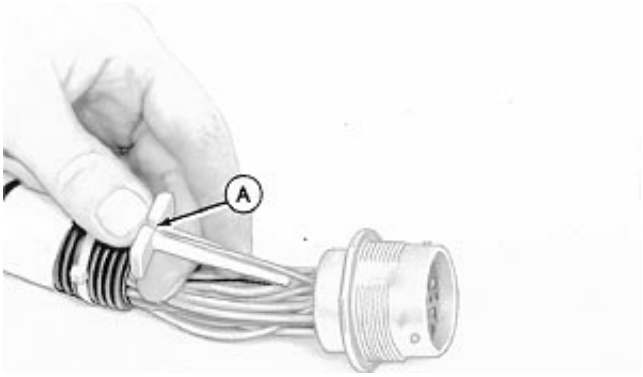
Fuse and Relay Color Codes

Amperage Rating	Color
1	Black
3	Violet
4	Pink
5	Tan
7-1/2	Brown
10	Red
15	Light Blue
20	Yellow
25	Natural (White)
30	Light Green

CED,OUTX547,148 –19–21OCT98–1/1

Replace DEUTSCH™ Connector

1. Select correct size extractor tool for size of wire to be removed:
   - JDG361 Extractor Tool for 12 to 14 gauge wire.
   - JDG362 Extractor Tool for 16 to 18 gauge wire.
   - JDG363 Extractor Tool for 20 gauge wire.
2. Start correct size extractor tool over wire at handle (A).

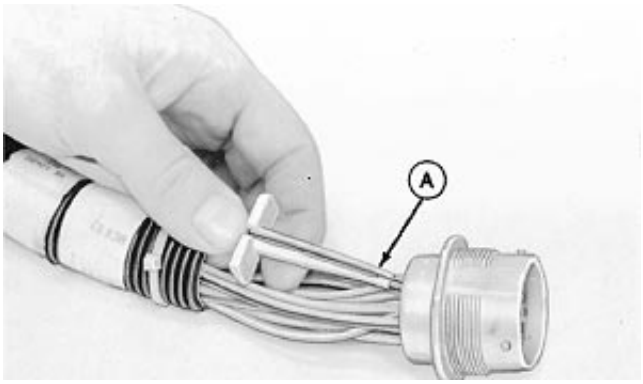


TS0124 –UN–23AUG88

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CED,OUTX547,149 –19–14APR99–1/5

3. Slide extractor tool rearward along wire until tool tip (A) snaps onto wire.



TS0125 –UN–23AUG88

Continued on next page

CED,OUTX547,149 –19–14APR99–2/5

Specifications

Item	Measurement	Specification
Compressor Oil	Volume	6 mL (0.2 fl oz) minimum
Oil, New Compressor Installation, Complete System Flushed	Volume Volume	230 ± 20 mL (7.7 ± .7 fl oz) supplied by parts depot 32.5 mL (1.1 fl oz) additional amount required
Oil, Used Compressor Installation, Complete System Flushed	Volume	260 mL (8.8 fl oz)
Oil, New Compressor Installation, Complete System Not Flushed	Volume	Drain and return 45 mL (1.5 fl oz)
Oil, Used Compressor Installation, Complete System Not Flushed, Oil Drained	Volume	Add 45 mL (1.5 fl oz)
Oil, Used Compressor Installation, Complete System Not Flushed, Oil Drained, Flushed	Volume	Add 60 mL (2.0 fl oz)
Evaporator	Oil Charge	32.5 mL (1.1 fl oz)
Condenser	Oil Charge	32.5 mL (1.1 fl oz)
Receiver/Dryer	Oil Charge	30 mL (1.0 fl oz)
Hoses	Oil Charge	121.2 mL (4.1 fl oz) (Approximate)
Vacuum	Pressure at Sea Level Pressure Above Sea Level	98 kPa (980 mbar) (29 in. Hg) Subtract 3.4 kPa (34 mbar) (1 in. Hg) from 98 kPa (980 mbar) (29 in. Hg) for each 300 m (1000 ft) elevation
Refrigerant	Weight	1.5 kg (3.5 lbs)
Nitrogen Purge	Pressure	275 kPa (40 psi) (2.75 bar) for two minutes
Compressor Flushing Solvent	Quantity Quantity	240 mL (8 fl oz) In Suction Port 120 mL (4 fl oz) In Discharge Port
Flusher Tank	Capacity	4 L (1 gal)
Regulated Air	Pressure	620 kPa (6.2 bar) (90 psi) Minimum

Continued on next page

CED,OUO1066,275 –19–05JUN00–1/2

9. Attach chain and hoist.



CED,TX03768,2521 –19–08APR99–2/4

CAUTION: The approximate weight of hydraulic reservoir is 102 kg (225 lb).

Hydraulic Reservoir—Specification

Hydraulic Reservoir—Weight ..... 102 kg (225 lb) (Approximate)

10. Remove cap screws (1 — 4).

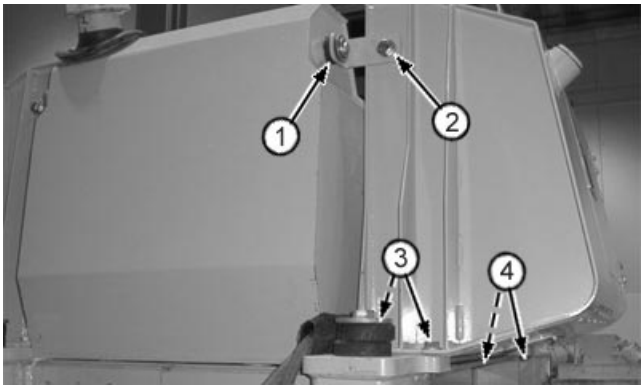
11. Install reservoir. Tighten cap screws (1—4).

Hydraulic Reservoir—Specification

Hydraulic Reservoir-to-Main Frame Cap Screws—Torque..... 319 N•m (235 lb-ft)

Fuel Tank Bracket-to-Hydraulic Reservoir Cap Screw—Torque ..... 244 N•m (180 lb-ft)

Bracket-to-Isolator-to-Fuel Tank Cap Screws—Torque ..... 87 N•m (64 lb-ft)



1—Cap Screw
2—Cap Screw
3—Cap Screw
4—Cap Screw

Continued on next page

CED,TX03768,2521 –19–08APR99–3/4

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2

Operate Only If Qualified

Do not operate this machine unless you have read the operator's manual carefully and you have been qualified by supervised training and instruction.

Familiarize yourself with the job site and your surroundings before operating. Try all controls and machine functions with the machine in an open area before starting to work.

Know and observe all safety rules that may apply to your work situation and your work site.

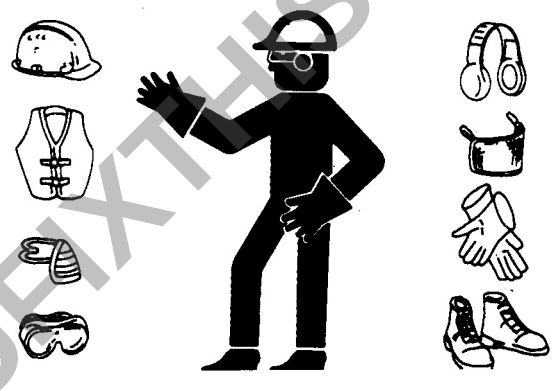
TX03679,00016FA –19–30OCT00–1/1

Wear Protective Equipment

Guard against injury from flying pieces of metal or debris; wear goggles or safety glasses.

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protection such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



TS206 –UN–23AUG88

TX03679,00016D0 –19–30OCT00–1/1

Avoid Unauthorized Machine Modifications

Modifications of this machine, or addition of unapproved products or attachments, may affect machine stability or reliability, and may create a hazard for the operator or others near the machine. The installer of any modification which may affect the electronic controls of this machine is responsible for establishing that the modification does not adversely affect the machine or its performance.

Always contact an authorized dealer before making machine modifications that change the intended use, weight or balance of the machine, or that alter machine controls, performance or reliability.

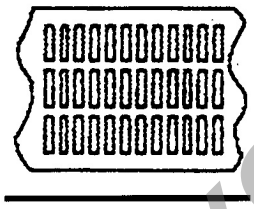
TX03679,00016B7 –19–12AUG03–1/1

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Radiator Outside Air Flow Check (Blower Fan)	**CAUTION: Keep park lock lever in locked position during this check to prevent movement of unit.** Start engine. Run at fast idle. *FEEL: Air flow must be brisk and even through radiator.* *NOTE: It is normal to have less air flow at center of fan.* Stop engine. Inspect fins for mud and debris. *LOOK: Sides of radiator must be free of mud, leaves, grass, and other debris.* Inspect radiator for bent or damaged fins. *LOOK: Fins must be straight and not broken or cracked.*	**OK:** Check complete. **NOT OK:** Clean outside of radiator. **NOT OK:** Straighten fins. Replace radiator if severely damaged. – – –1/1

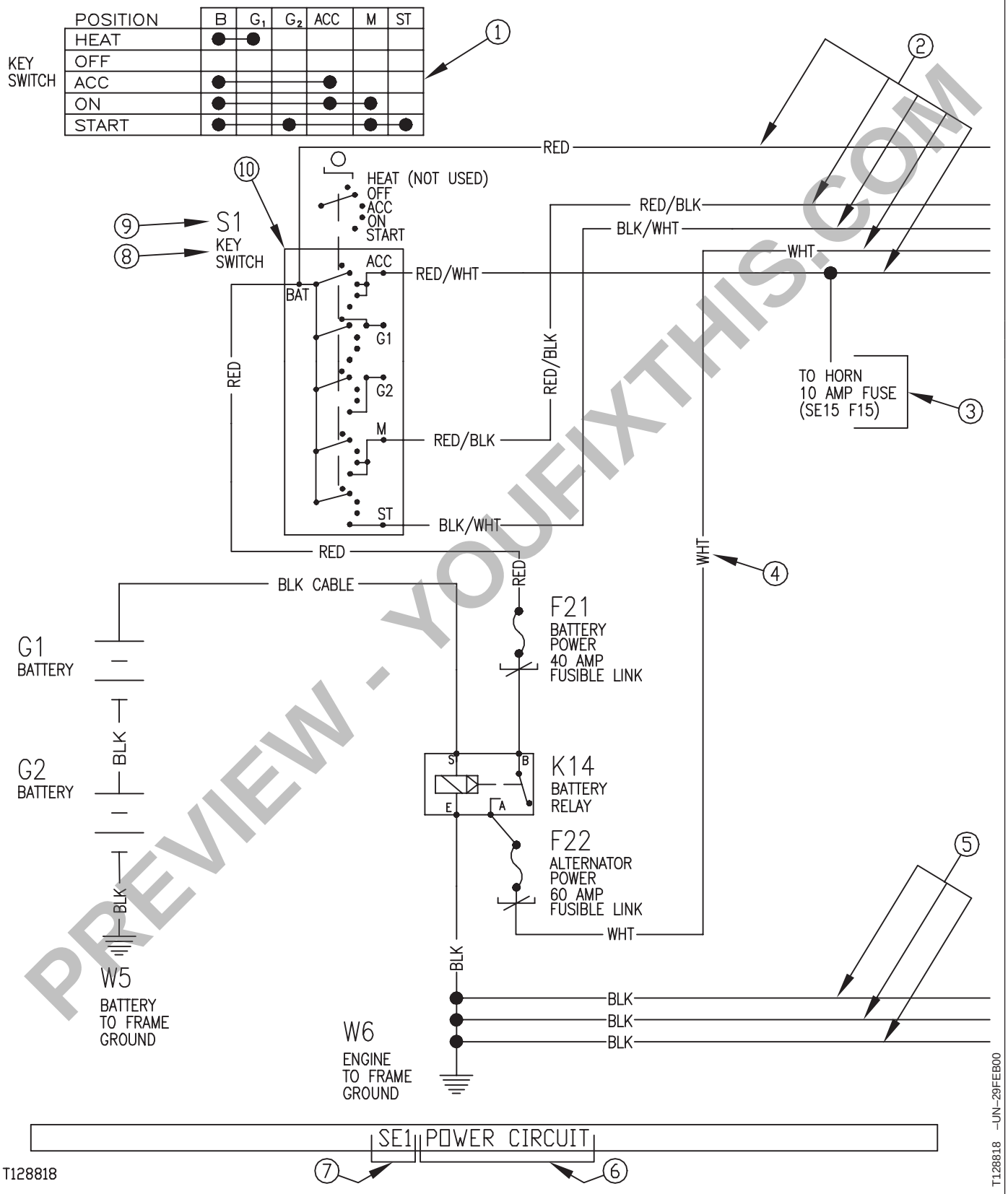
9005 10 3

Radiator Internal Core Check	 T6488FZ –UN–19OCT88 **CAUTION: Do NOT remove radiator cap unless engine is cool. Push button on top of cap to release pressure.** Raise engine access door. Remove right hand engine side shield. Remove radiator cap. Drain coolant into a clean container until core tubes are visible. Inspect radiator core. *LOOK: Radiator core must be free of rust or corrosion and passages in core must NOT be plugged.*	**OK:** Refill radiator with coolant and go to next check. **NOT OK:** Remove and clean radiator or replace radiator. Refill cooling system with new coolant. Go to Section 9000, Group 04. – – –1/1

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Electrical Diagram Information



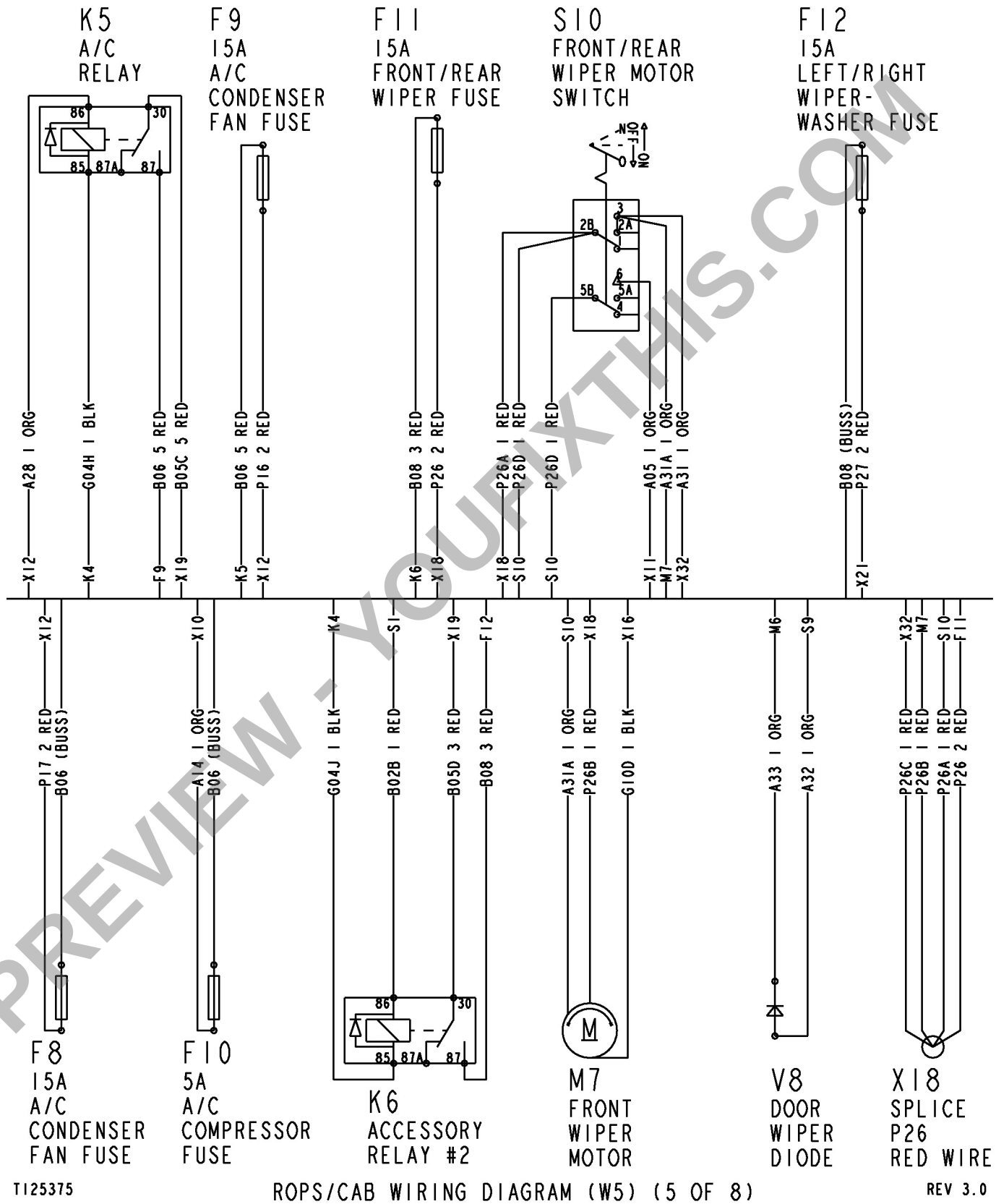
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CED,TX17984,455 –19–07MAY01–1/6

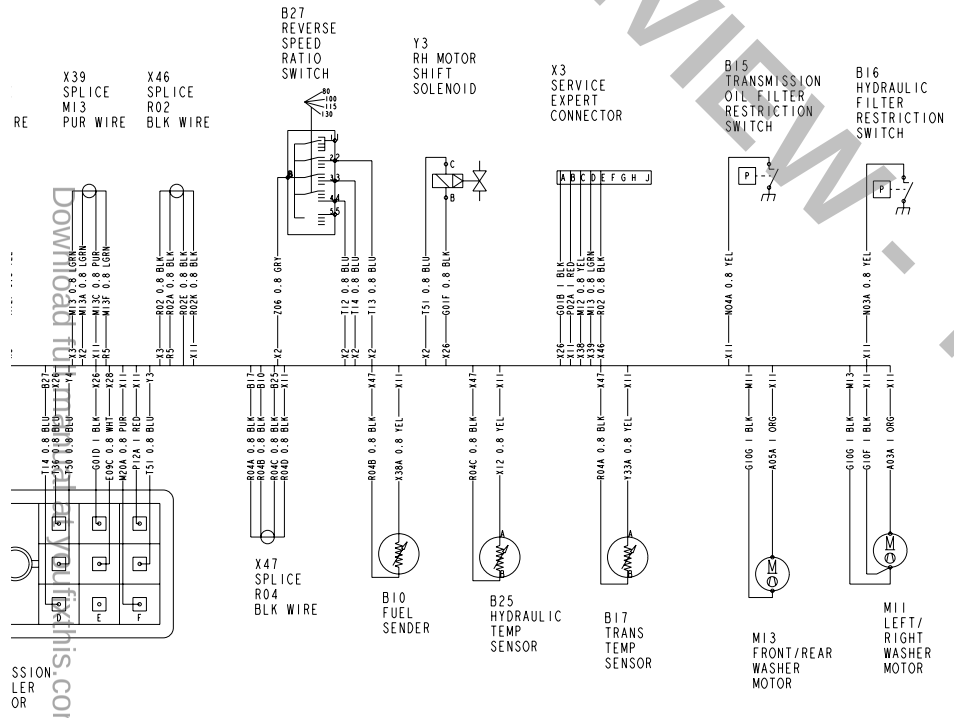
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Cab Harness (W5) Wiring Diagram 5 Of 8 (S.N. —910010)



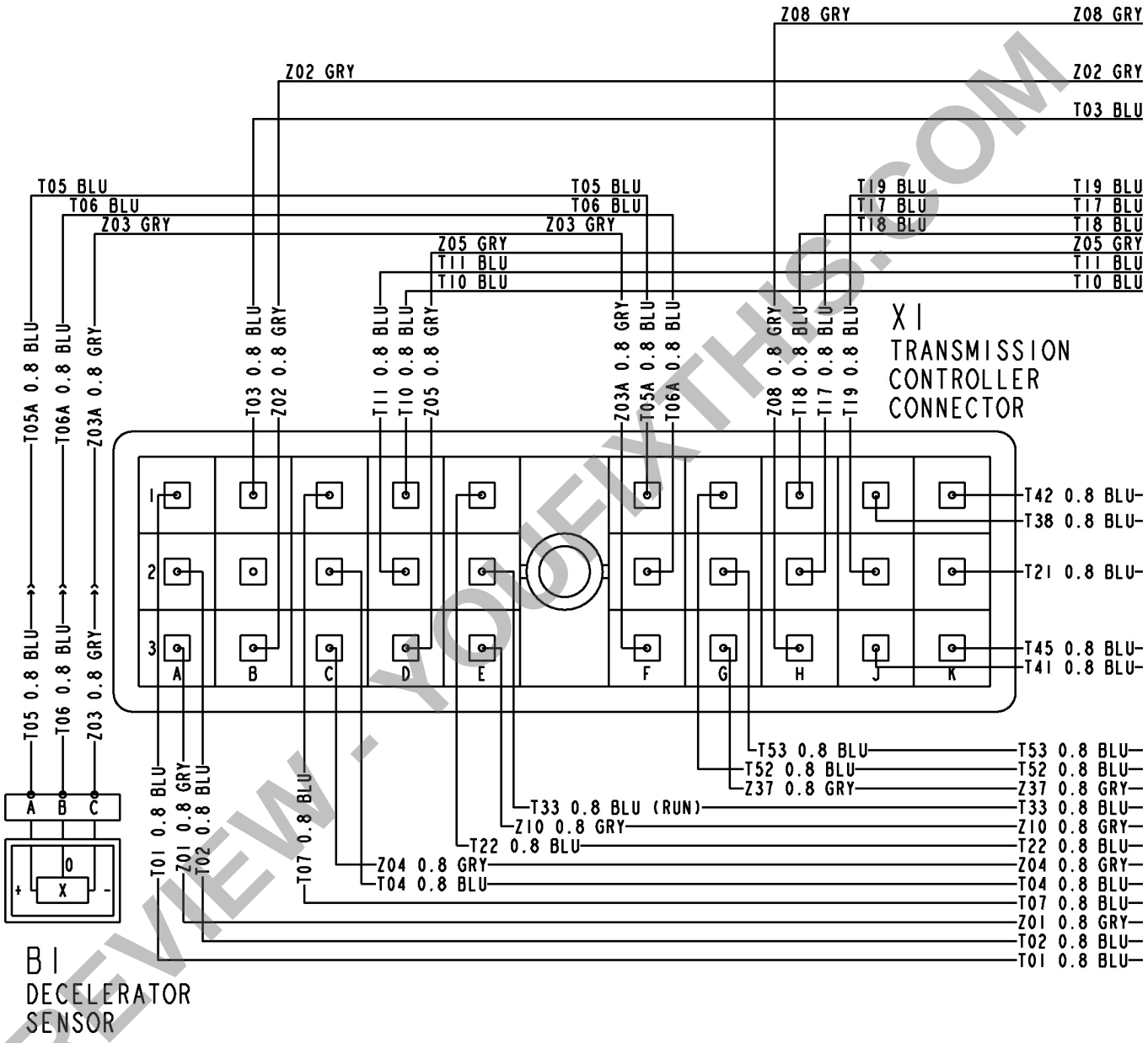
CED,TX14826,10537 –19–09OCT01–1/1

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Transmission Control Circuit Schematic (S.N. 883589—910010) With (SIG) Speed In Grip "Option"



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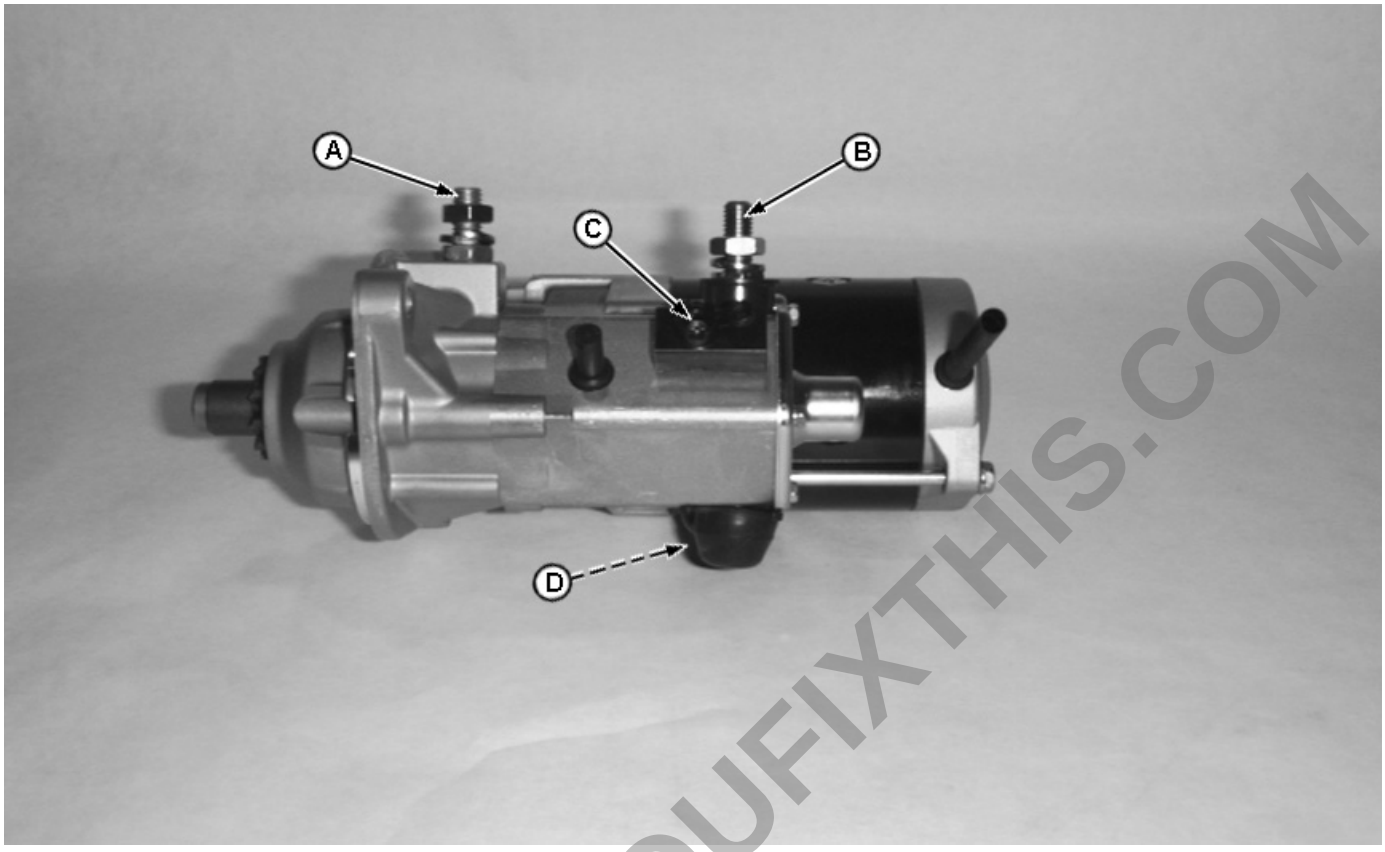
T123593 TRANSMISSION CONTROLLER CIRCUIT (1 OF 4) REV 3.0

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CED,TX14826,12084 –19–12SEP01–1/4

T123593 –19–10NOV99

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T112741D –UN–07JAN98

A—Starter Ground Terminal

B—Battery-To-Starter Solenoid Input Terminal

C—Start Relay-To-Starter Solenoid Energize Terminal

D—Starter Solenoid Positive Output-To-Starter Motor Terminal And Wire

When solenoid engages, it pulls shift lever and closes a heavy set of contacts connecting the battery current to the motor. The motor turns at high speed and its speed is reduced by gears to provide the proper speed and torque to start the engine. Shift lever pushes overrunning clutch drive to engage pinion in ring gear on flywheel. Armature turns and cranks the engine.

In some instances if the engine DOES NOT start right away the starter can spin the engine fast enough to cause the alternator to produce over 7 1/2 volts which then causes a loss of power to the starter, stopping the starter before the engine starts.

When key switch is released, current to solenoid hold-in windings shuts 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.

CED,TX14826,12016 –19–16MAR99–2/2

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RPCP “mAmp” Milliamps displayed (B9 “Front Pump” Right Pressure Control Pilot): Engine ON. You must move machine in forward and reverse to display real time value. Reverse value will be displayed as minus (-) value.

NOTE: To get displayed values for the following, the KEY SWITCH must be ON, but engine does not have to be ON.

Calibrated values are values stored after a calibration. Real time values are active.

LPCP “Ohms” Will display resistance reading for PCP coil. B8 “Rear Pump” Left Pressure Control Pilot.

RPCP “Ohms” Will display resistance reading for PCP coil. B9 “Front Pump” Right Pressure Control Pilot.

SPd1: Will display SPd1, mV, then a value. The value displayed is a stored calibrated value calibrated with transmission speed display at position “1.0”

SPd3: Will display SPd3, mV, then a value. The value displayed is a stored calibration value calibrated with transmission speed display at position “3.0”

SPd: Will display SPd, mV, then a value. The value displayed is a real time value. You can press transmission speed button to get complete range value.

RStr: Will display RStr, mV, then a value. The value displayed is a stored calibration value calibrated with FNR lever at right steer.

LStr: Will display LStr, mV, then a value. The value displayed is a stored calibration value calibrated with FNR lever at left steer.

RCtr: Will display RCtr, mV, then a value. The value displayed is a stored calibration value calibrated with FNR lever at right counter rotate.

LCtr: Will display LCtr, mV, then a value. The value displayed is a stored calibration value calibrated with FNR lever at left counter rotate.

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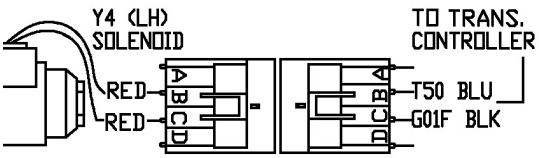
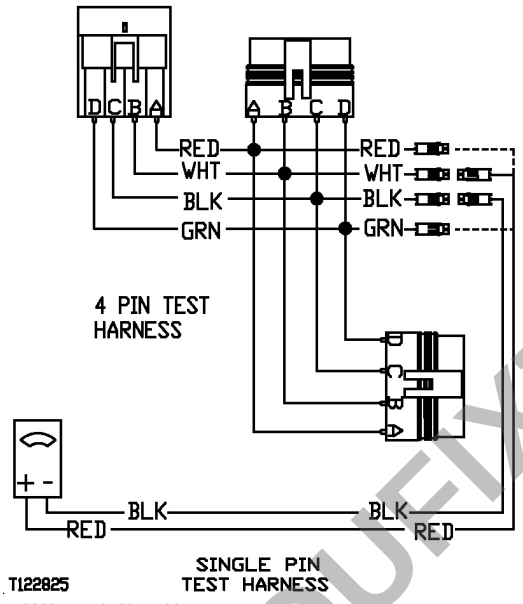
❶ **Transmission Controller Motor Speed Check**	Perform test in operator station and on level ground, or with machine off ground supported by blocks. Remove transmission controller cover. Start Engine. Access DIAG diagnostics in transmission controller on main menu. Press MENU until DIAG appears. Press SELECT. Press NEXT until LMtr appears. **CAUTION: Machine will move.** Pull park lock lever in down position. Put FNR lever into forward position. Move engine speed control lever until tracks move. Record LMtr value. Depress decel peddle. Press NEXT until RMtr appears. Release decel peddle. Record RMtr value. Do the motor RPMs match?	**YES:** Go to **2** **NO:** Go to **3** – – –1/1

9015 20 ,178

❷ **Left Track Motor Speed Sensor (B7) Intermittent Code, Repair**	An intermittent connection may be affected by temperature and vibration. This means that diagnosis may be difficult since an open or short circuit that caused a malfunction may no longer be present when the diagnosis actually takes place. It maybe helpful to flex harness or clean and repair all connectors to identify problem.	– – –1/1

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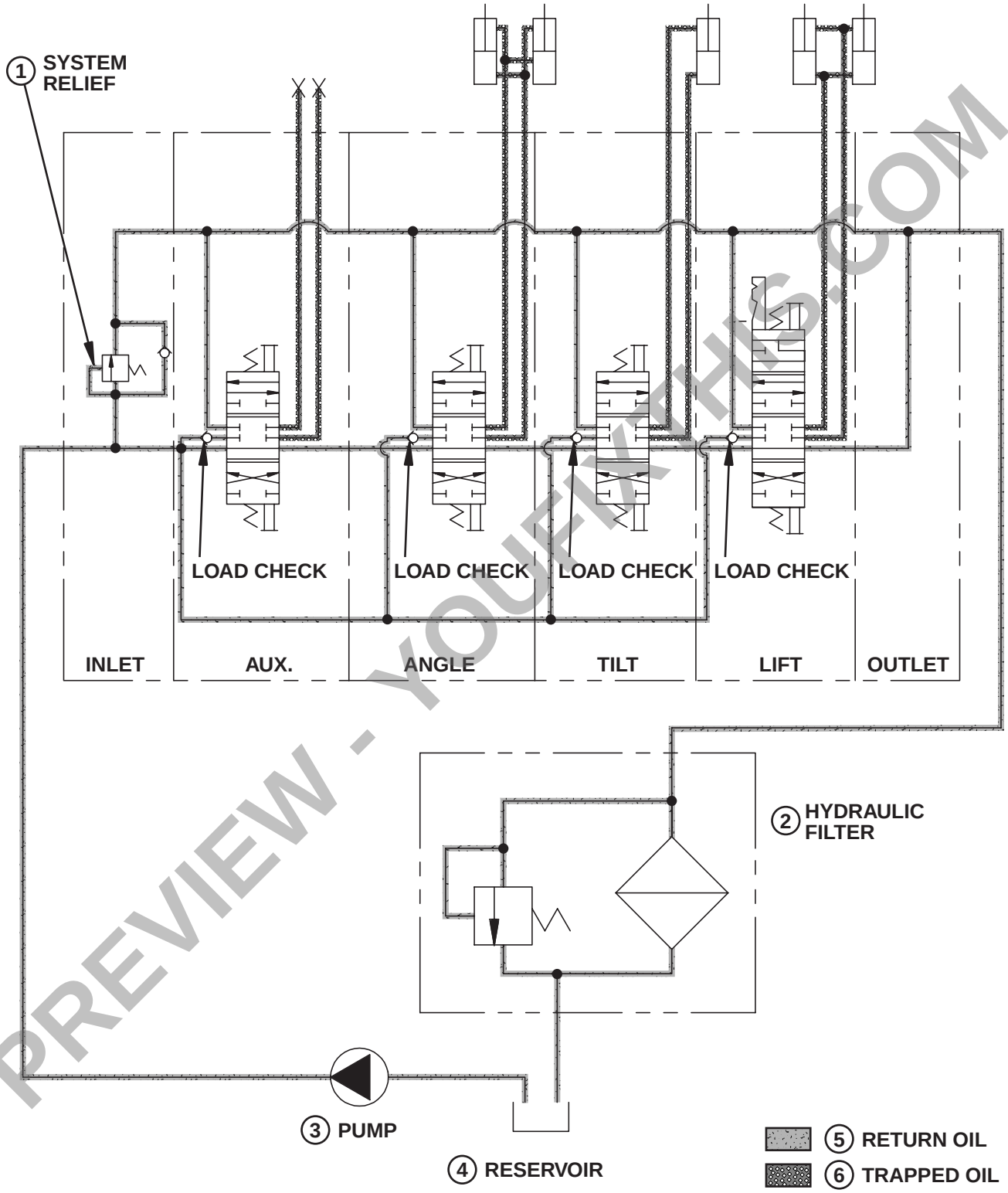
❷ **(LH) Motor Shift Solenoid (Y4), Check**	  T122825 –19–29JUL99 **IMPORTANT: When connecting harness to solenoid, be sure to have proper alignment or damage to pins may occur.** Connect (JTO7329-6) 4 pin test harness to solenoid only. Connect (JTO7237-1) single pin test harness to multimeter. Connect single pin test harness to red wire only, check for continuity to ground. Connect single pin test harness to black wire only, check for continuity to ground. If continuity is measured, replace solenoid. Connect single pin test harness to red wire and black wire connectors on 4 pin test harness. Set multimeter to ohms. Is reading between 6.9 to 12.7 ohms?	**YES: Solenoid OK:** Go to **3** **NO: Replace solenoid:** See Disassemble and Assemble Motor Shift Solenoid Valve. (Group 0360.) **- Code still active?** Go to **3** – – –1/1
❸ **Motor Solenoid Intermittent Code, Repair**	An intermittent connection may be affected by temperature and vibration. This means that diagnosis may be difficult since an open or short circuit that caused a malfunction may no longer be present when the diagnosis actually takes place. It maybe helpful to flex harness or clean and repair all connectors to identify problem.	– – –1/1

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Hydraulic System Schematic (SN —902404)



T117098

⑦ HYDRAULIC SYSTEM SCHEMATIC - NEUTRAL

T117098 –19–27APR99

9025 05 4

Continued on next page

CED,TX03768,2309 –19–16OCT98–1/2

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1—Park Brake Valve
2—Hydrostatic Oil Filter
3—To Charge Pumps
4—To Reservoir
5—Neutral Charge Relief
6—From Oil Cooler
7—To Oil Cooler
8—Charge Pressure Oil
9—Return Oil
10—Component Location Drawing (Neutral - Park Brake Off)

Continued on next page

CED,TX03543,2309 –19–21AUG02–2/8

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Pressure Control Pilot (PCP) Test

This procedure will test pump PCP's in neutral and also in operational mode.

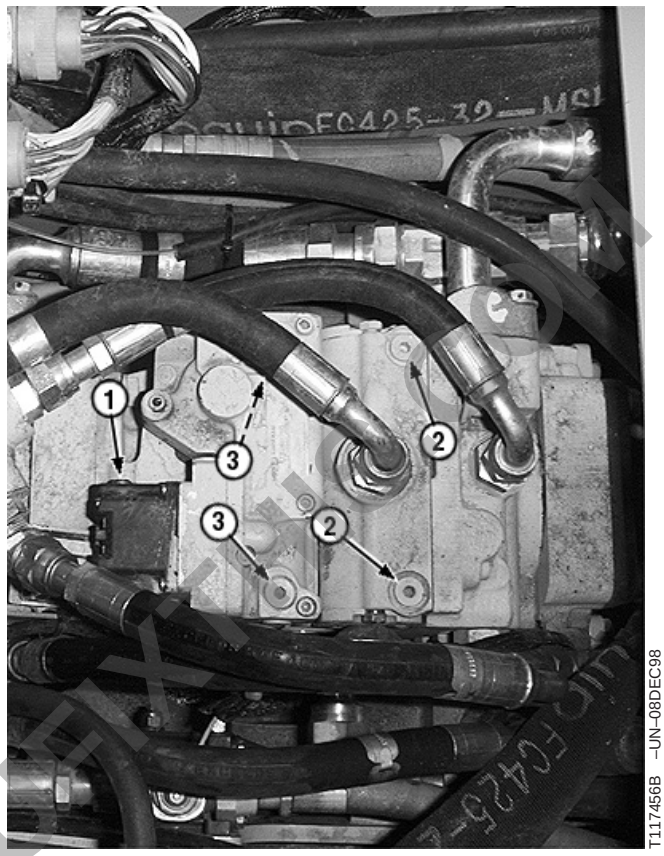
SPECIFICATIONS	
Oil Temperature	38—49°C (100—120°F)
Engine Speed	Fast Idle
Input Current-to-Control Pressure	1 mA/1 psi (approximate)

SERVICE EQUIPMENT AND TOOLS
JTO5800 Digital Thermometer
Parker #PD361 Nipple 9/16 M ORB
JT03448 Test Hose (2 used)
JT05753 Hydrostatic Switching Unit
JT05594 Gauge

CAUTION: Prevent possible injury from unexpected track movement. Raise the machine off the ground and support with blocks. Tracks MUST be free to rotate in either direction.

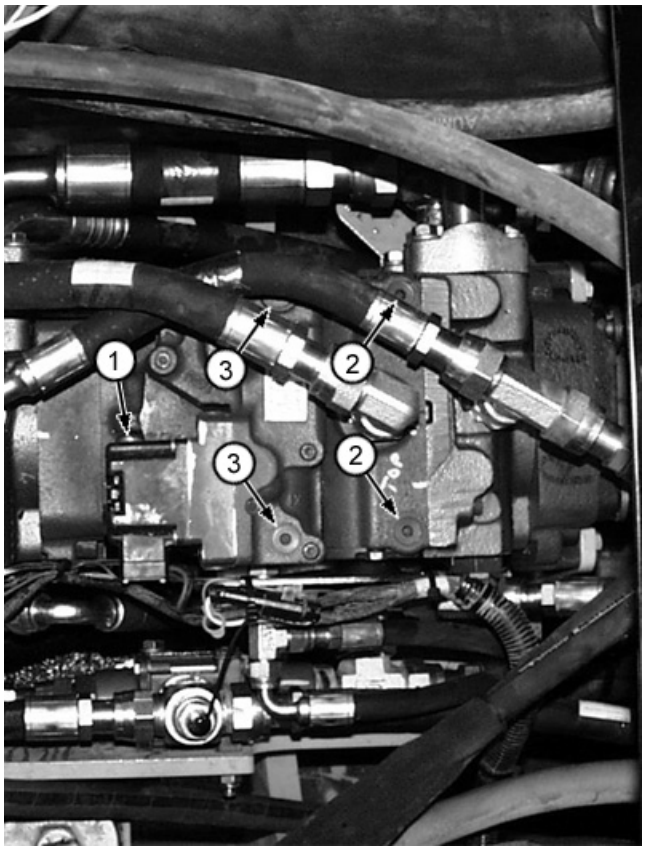
1. Raise machine off the ground and support with blocks. Lower blade to ground. Tracks MUST be free to rotate in either direction.
2. Install digital thermometer on transmission filter. (See JT05800 Digital Thermometer Installation in Group 9026-25.)
3. Remove rubber mat and floor plate from operator's station.
4. Remove transmission controller cover.
5. Install fittings and test hoses in ports (3).

1—PCP Internal Adjustment Port
2—Servo Test Ports
3—Displacement Control Valve Test Ports



T117456B –UN–08DEC98

Hydrostatic Pump (S.N. —908551)



T157960B –UN–23JUL02

Hydrostatic Pump (S.N. 908552—)

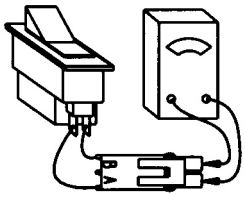
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CED,OUTX466,1281 –19–23AUG02–1/3

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Air Conditioning Switch Test


T8274AQ –UN–08JUL94

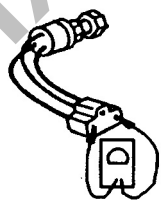
1. Disconnect harness from air conditioning switch.
2. Turn switch ON, and measure for continuity between connector terminals.
3. Is continuity measured?

   YES: A/C switch is OK. Check wiring harness.

   NO: Replace A/C switch.

CED,TX14826,12005 –19–29OCT98–1/1

Air Conditioner Low Pressure Switch Check


T8093AB –UN–05OCT93

1. Disconnect harness from switch.
2. Check for continuity between outer terminals. Is continuity measured?

   YES: Replace switch.

   NO: Continue with this check
3. Remove switch from system. (The line that attaches the low pressure switch has a valve to prevent discharging the air conditioning system when switch is removed.)
4. Does ohmmeter read open?

   YES: Switch is good. Check wiring harness.

   NO: Go to Low Pressure Switch Test, in this Group 9031-25.

CED,TX14826,12006 –19–29OCT98–1/1

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Blade Pitch Operation

You may want to change the pitch of the blade depending on the type of work you are doing and the soil conditions you are dozing, or to change the feel of the dozer to operator's preference.

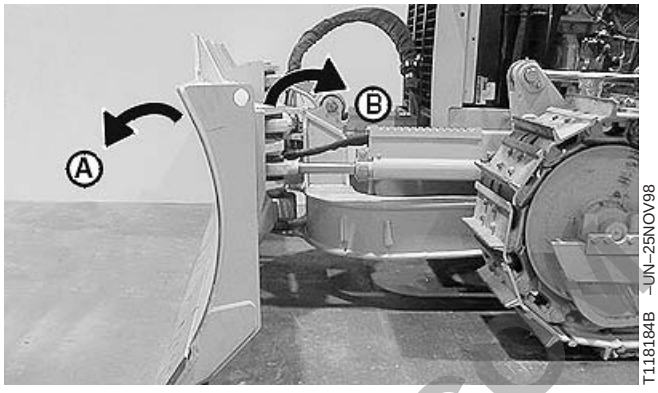
Pitching the Blade Forward Advantages:

With the top of blade pitched forward (A), the blade will not carry as much soil. The weight of the soil carried by the blade adds to the weight of the dozer and moves the balance of weight on the tracks forward. This can cause the front idlers of the crawler to sink in loose or soft soils. When the idlers sink, the blade cuts unevenly into the soil. With the blade forward, the dozer balance does not change as much with a full blade; therefore, the tendency for idlers to sink is reduced.

With the blade forward, there is less of a tendency for dirt to come over the back of the blade when dozing uphill. It is also easier to drop dirt at the end of a push when dozing uphill or when dozing very sticky materials.

Pitching the Blade Back Advantages:

With the blade pitched back (B), the cutting edge lies more horizontally resulting in a heavier cut into soils. Having the cutting edge more horizontal also provides a smoother cut in heavy soils. More soil is carried by the blade when it is pitched back. Carrying more soil on the blade adds to the weight of the dozer. This added weight can increase push force in heavy soils. The soil carried by the blade also moves the balance of weight forward on the machine. In heavy soils, this can be an advantage because the increased weight can help keep the front of the machine down and keep the cutting edge penetrating during heavy cutting.



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450H Shown

A—Forward Pitch
B—Back Pitch

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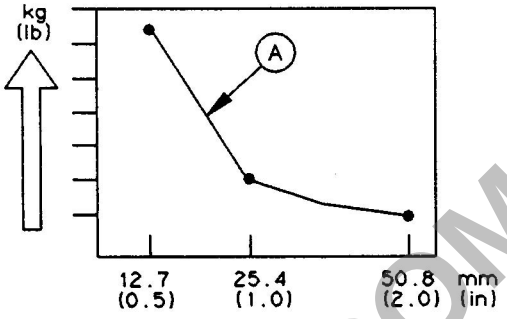
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Track Sag General Information

Properly adjusted tracks prolong chain life. To get the maximum life out of track bushings, keep the track sag properly adjusted. Improperly adjusted track wears at a more rapid rate.

A tight track causes higher loading which will increase wear on the pins, bushings, links, sprocket and front idler. The graph (A) shows how the loading on the track chain increases significantly when tracks are too tight. Also, a tight track requires more horsepower, increasing fuel consumption and decreasing productivity.



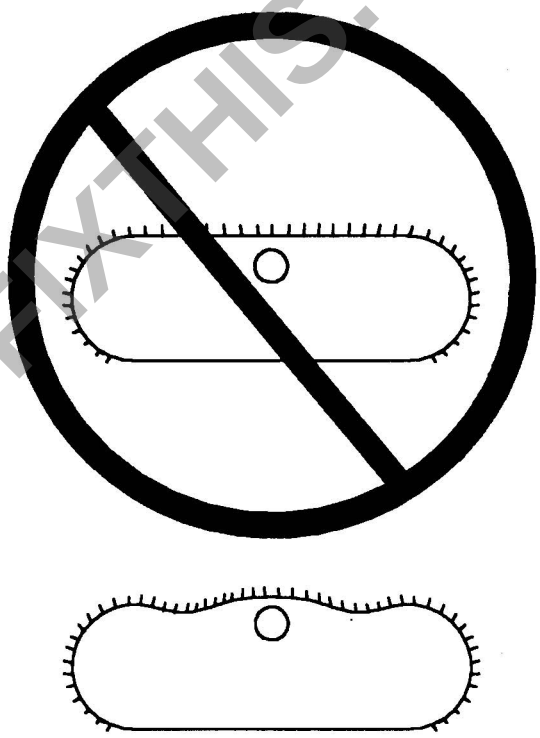
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Track Tension kg (lb) vs. Track Sag mm (in.)

Periodically check track sag. In some applications, tracks may require adjustment several times during a working day. This is especially true when working in different conditions on the same job site, as moisture content of the soil changes.

Tracks should always be adjusted in the actual operating conditions. If material packs in the undercarriage, the tracks should be adjusted with the material packed in the components.

When packing occurs, track sag is taken up and must be loosened to extend wear life. The track spring will recoil and the machine will continue to operate with tight track. However, continued operation without loosening the tracks will result in excessive pin and bushing wear, sprocket popping, tooth tip wear, and excessive loads on the entire undercarriage and final drive system.



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With sealed chain, internal pin and bushing wear creates sag which reduces the effects of packing. However, if a sealed chain is too tight, accelerated bushing wear occurs.

Lubricated chain is different due to the absence of internal pin and bushing wear. It is absolutely essential to keep sag adjusted to prevent accelerated bushing outside diameter wear.

Maintaining track sag is very important regardless of the type of track being used.

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