CEBM020902

Shop Manual

430FX-1
430FXL-1
445FXL-1

CRAWLER FELLER BUNCHERS/HARVESTERS

SERIAL NUMBERS

430FX-1	**A10001**	**and up**
430FXL-1	**A10001**	**and up**
445FXL-1	**A10001**	**and up**

ENGINE QSC 8.3 TIER 3

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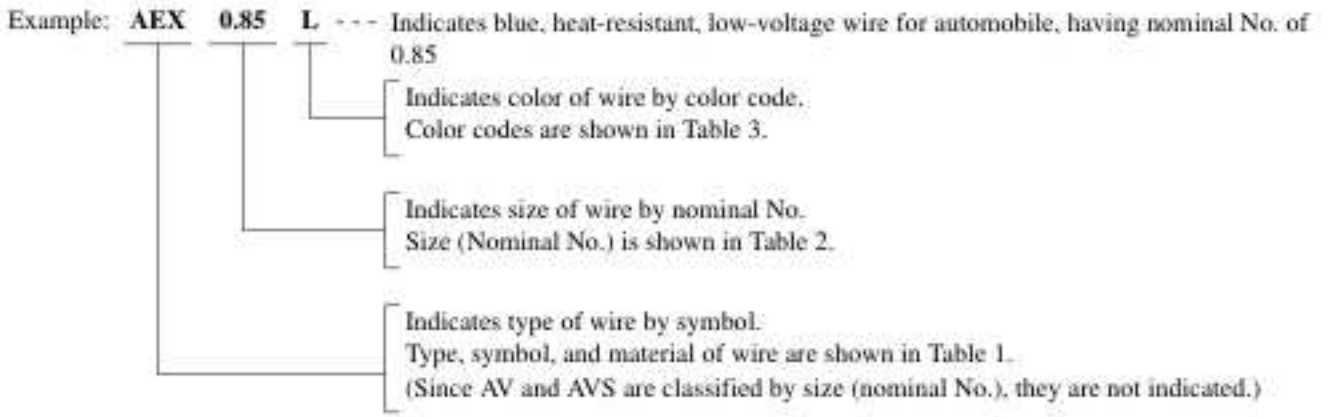
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How To Read Electric Wire Code

★ The information about the wires unique to each machine model is described in Troubleshooting section, Relational information of troubleshooting.

In the electric circuit diagram, the material, thickness, and color of each electric wire are indicated by symbols. The electric wire code is helpful in understanding the electric circuit diagram.



1. Type, Symbol, And Material

AV and AVS are different in only thickness and outside diameter of the cover. AEX is similar to AV in thickness and outside diameter of AEX and different from AV and AVS in material of the cover.

(Table 1)

Type	Symbol	Material		Using temperature range °C (°F)	Example of use
Low-voltage wire for automobile	AV	Conductor	Annealed copper for electric appliance	−30 to +60 (-22 to +140)	General wiring (Nominal No. 5 and above)
		Insulator	Soft polyvinyl chloride		
Thin-cover low-voltage wire for automobile	AVS	Conductor	Annealed copper for electric appliance		General wiring (Nominal No. 3 and below)
		Insulator	Soft polyvinyl chloride		
Heat-resistant low-voltage wire for automobile	AEX	Conductor	Annealed copper for electric appliance	−50 to +110 (-58 to +230)	General wiring in extremely cold district, wiring at high-temperature place
		Insulator	Heat-resistant crosslinked polyethylene		

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Hydraulic Valve Configuration: 233 Bar Saw w/Lateral Tilt Option

1. **Saw Section (Attachment):**
   Port Relief A & B: 306 kgf/cm² (4,350 psi)
   Pressure Limiter A & B: 255 kgf/cm² (3,625 psi)
   Minimum Flow A & B ports: 165 ℓ/m (44 gpm)

2. **Clamp Section (Attachment):**
   Port Relief A & B: 306 kgf/cm² (4,350 psi)
   Pressure Limiter A & B: 255 kgf/cm² (3,625 psi)
   Minimum Flow A & B ports: 165 ℓ/m (44 gpm)

3. **Tool Tilt Section:**
   Port Relief A & B: 286 kgf/cm² (4,060 psi)
   Pressure Limiter A & B: 255 kgf/cm² (3,625 psi)
   Minimum Flow A port: 170 ℓ/m (45 gpm)
   Minimum Flow B port: 190 ℓ/m (50 gpm)

4. **Arm Section:**
   Port Relief A & B: 306 kgf/cm² (4,350 psi)
   Pressure Limiter A & B: None
   Minimum Flow A port: 180 ℓ/m (48 gpm)
   Minimum Flow B port: 25 ℓ/m (7 gpm)

5. **Boom Section:**
   Port Relief A & B: 306 kgf/cm² (4,350 psi)
   Pressure Limiter A & B: None
   Minimum Flow A port: 230 ℓ/m (61 gpm)
   Minimum Flow B port: 35 ℓ/m (9 gpm)

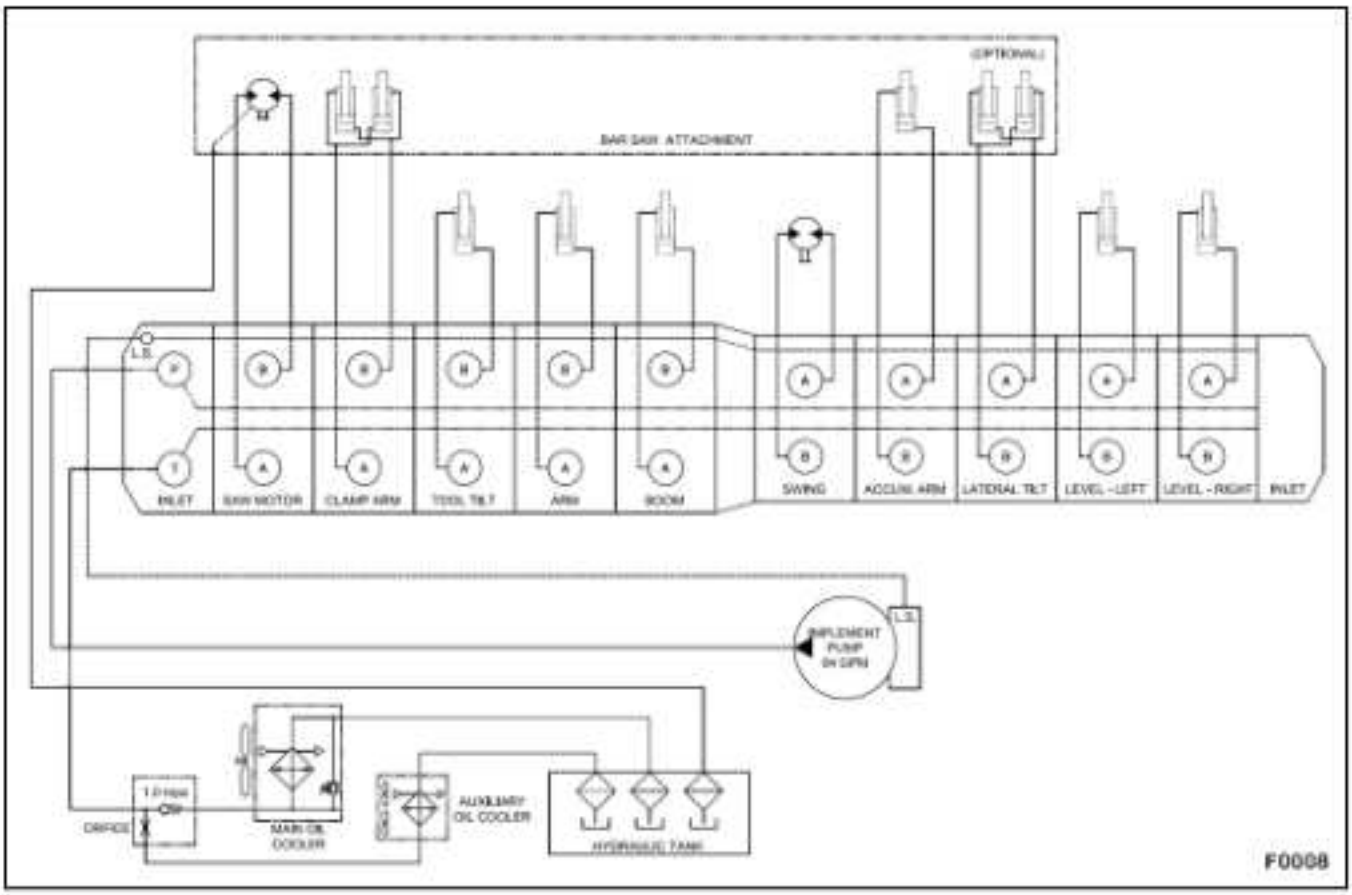
6. **Swing Section:**
   Port Relief A & B: 286 kgf/cm² (4,060 psi)
   Pressure Limiter A & B: 245 kgf/cm² (3,481 psi)
   Minimum Flow A & B ports: 125 ℓ/m (33 gpm)

7. **Accumulator Section (Attachment)**
   Port Relief A & B: 306 kgf/cm² (4,350 psi)
   Pressure Limiter A & B: 255 kgf/cm² (3,625 psi)
   A & B ports: 125 ℓ/m (33 gpm)

8. **Lateral Tilt Section (not shown):**
   Port Relief A & B: 255 kgf/cm² (3,625 psi)
   Pressure Limiter A & B: 204 kgf/cm² (2,900 psi)
   Minimum Flow A & B ports: 125 ℓ/m (33 gpm)

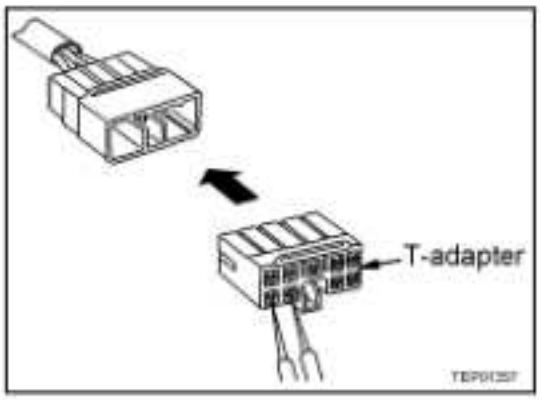
9. **Level (Left) Section:**
   Port Relief A & B: 286 kgf/cm² (4,060 psi)
   Pressure Limiter A & B: None
   Minimum Flow A & B ports: 54 ℓ/m (14 gp

10. **Level (Right) Section:**
    Port Relief A & B: 286 kgf/cm² (4,060 psi)
    Pressure Limiter A & B: None
    Minimum Flow A & B ports: 54 ℓ/m (14 gp



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iii. Carry out a continuity test on the connector.
After drying, leave the wiring harness disconnected and carry out a continuity test to check for any short circuits between pins caused by water.
★ After completely drying the connector, blow it with contact restorer and reassemble.



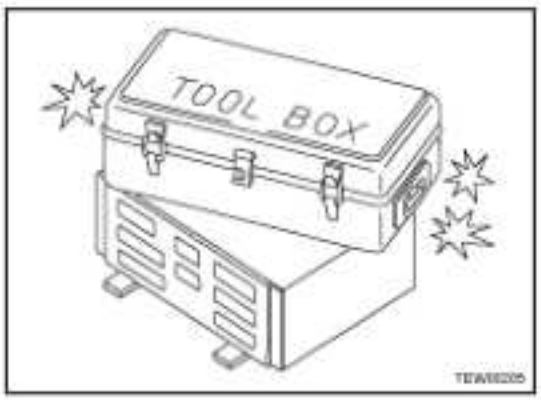
4. Handling controller.

A. The controller contains a microcomputer and electronic control circuits. These control all of the electronic circuits on the machine, so be extremely careful when handling the controller.

B. Do not place objects on top of the controller.

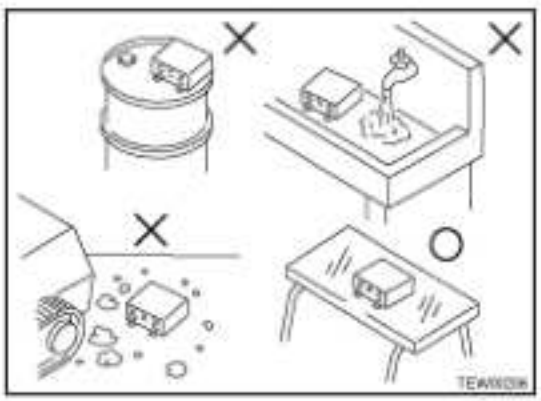
C. Cover the control connectors with tape or a vinyl bag. Never touch the connector contacts with your hand.

D. During rainy weather, do not leave the controller in a place where it is exposed to rain.



E. Do not place the controller on oil, water, or soil, or in any hot place, even for a short time. (Place it on a suitable dry stand).

F. Precautions when carrying out arc welding.
When carrying out arc welding on the body, disconnect all wiring harness connectors connected to the controller. Fit an arc welding ground close to the welding point.



5. Points to remember when troubleshooting electric circuits.

A. Always turn the power OFF before disconnecting or connecting connectors.

B. Before carrying out troubleshooting, check that all the related connectors are properly inserted.
★ Disconnect and connect the related connectors several times to check.

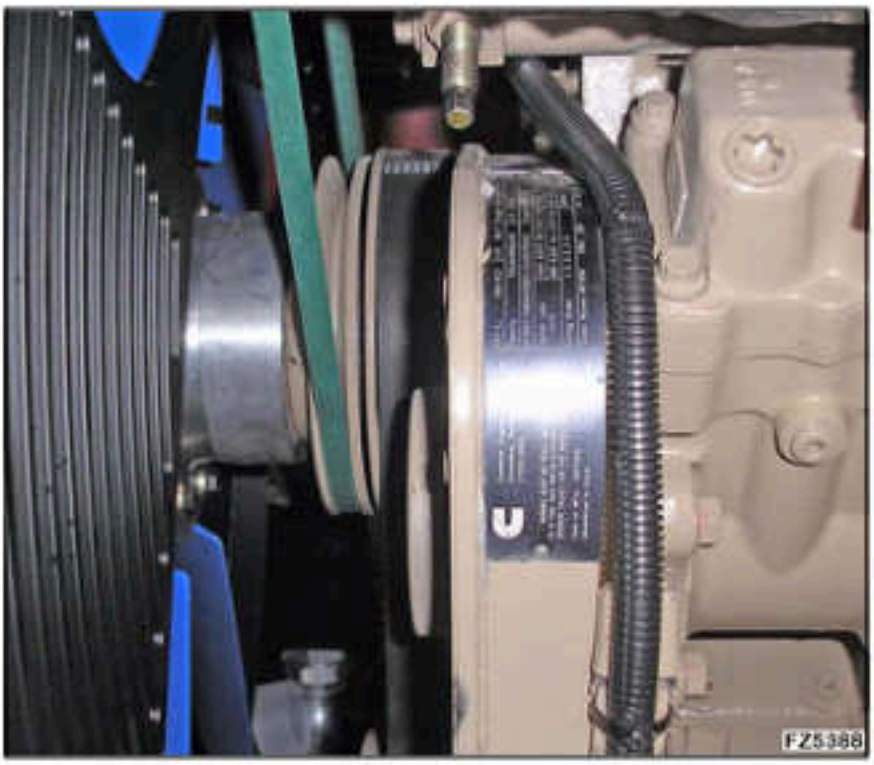
C. Always connect any disconnected connectors before going on to the next step.
★ If the power is turned ON with the connectors still disconnected, unnecessary abnormality displays will be generated.

D. When carrying out troubleshooting of circuits (measuring the voltage, resistance, continuity, or current), move the related wiring and connectors several times and check that there is no change in the reading of the tester.
★ If there is any change, there is probably defective contact in that circuit.

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Engine

Your machine comes equipped with a Cummins QSC 8.3 liter, 300 hp engine. You can identify your engine by looking at the tag located on the engine (see photo). You will need the engine serial number when ordering spare or replacement parts for your engine or for service work.

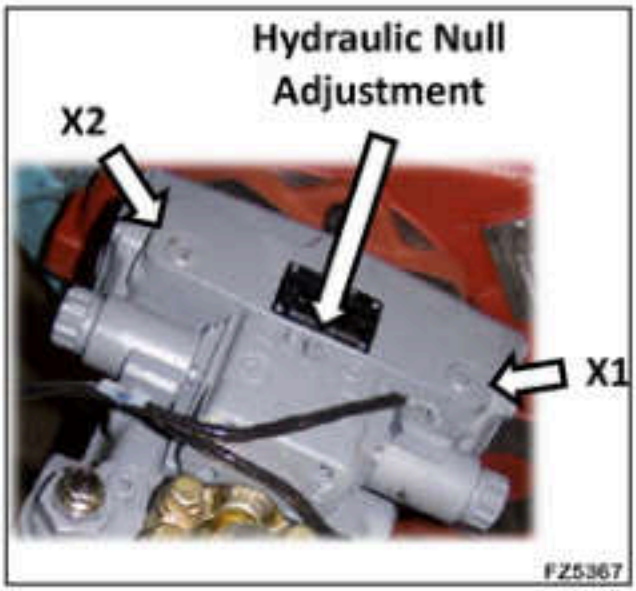


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Track Pump Null Adjustments

★ Make sure hydraulics are at correct operating temperature.
★ Apply track locking pins to both tracks to prevent accidental machine movement.

1. Remove plugs from ports X1 and X2.
   - Install adapters into the ports.
   - Connect jumper hose between ports X1 and X2.



2. Install 422 kg/cm² (6000 psi) pressure gauge to track motor test port.
   Loosen mechanical null adjustment jam nut and turn setscrew in/out until gauge indicates lowest possible pressure.

3. Remove 422 kg/cm² (6000 psi) pressure gauge and replace with 70 kg/cm² (1000 psi) gauge.
   Loosen mechanical null adjustment jam nut and turn setscrew in/out until gauge indicates lowest possible pressure.

4. Remove jumper hose and adapters. Reinstall plugs into ports X1 and X2.

5. Remove 70 kg/cm² (1000 psi) pressure gauge and replace with 422 kg/cm² (6000 psi) gauge.

6. Loosen hydraulic null adjustment jam nut and turn setscrew in/out until gauge indicates lowest possible pressure.



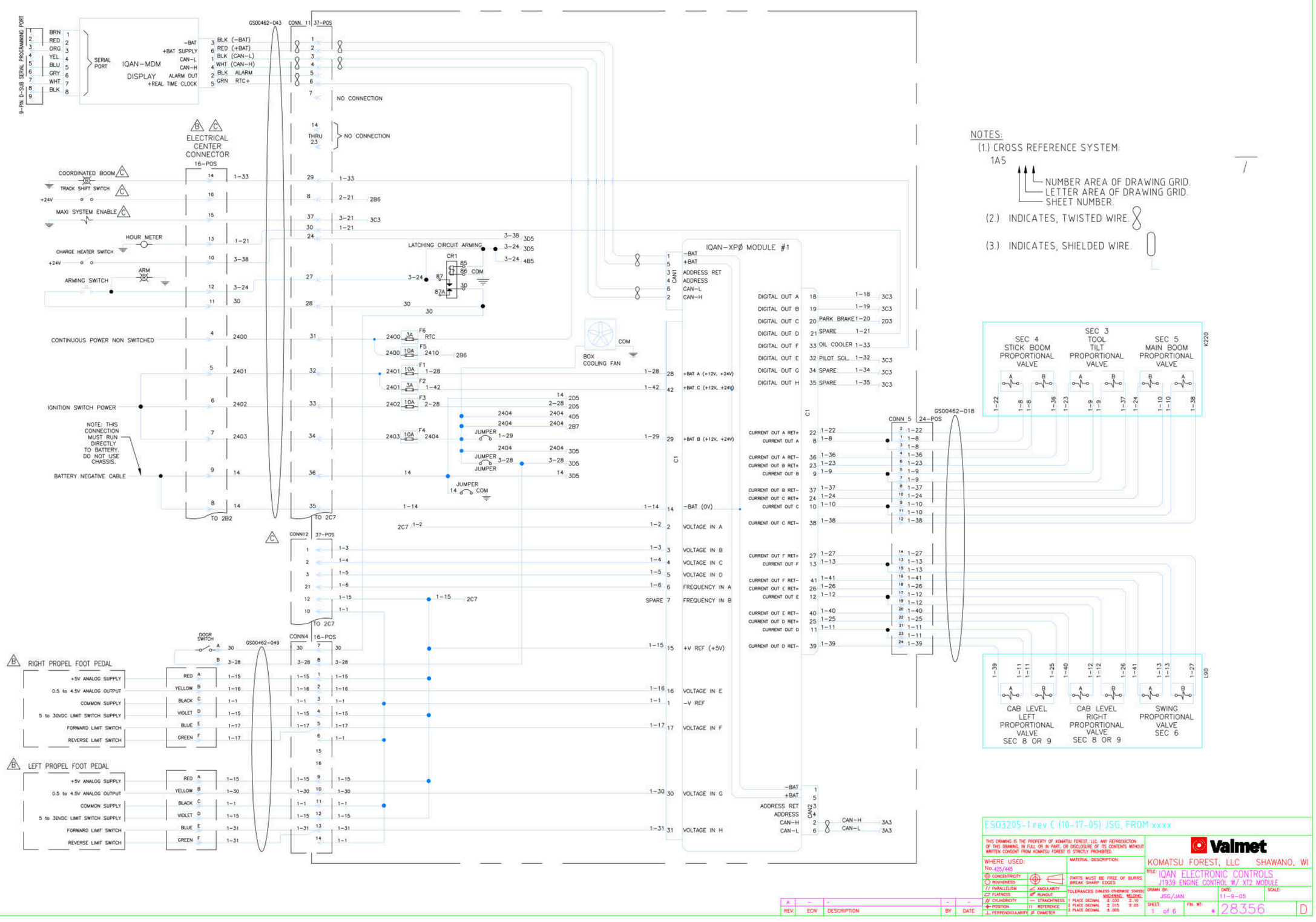
7. Remove 422 kg/cm² (6000 psi) pressure gauge and replace with 70 kg/cm² (1000 psi) gauge.

8. Loosen hydraulic null adjustment jam nut and turn setscrew in/out until gauge indicates lowest possible pressure.

9. Shut down engine and remove jumper hose, fitting and gauge.

10. Repeat procedure for other pump.

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NOTES:

(1.) CROSS REFERENCE SYSTEM:

1A5

- NUMBER AREA OF DRAWING GRID.
- LETTER AREA OF DRAWING GRID.
- SHEET NUMBER.

(2.) INDICATES, TWISTED WIRE.

(3.) INDICATES, SHIELDED WIRE.

ESO3205-1 rev C (10-17-05) JSG, FROM xxxx

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REV.	ECN	DESCRIPTION	BY	DATE
A	-	-	-	-

WHERE USED: No.425/445

MATERIAL DESCRIPTION:

PARTS MUST BE FREE OF BURRS. BREAK SHARP EDGES

TOLERANCES (UNLESS OTHERWISE STATED)

	MACHINE	WELDING
1 PLACE DECIMAL	± .030	± .10
2 PLACE DECIMAL	± .015	± .05
3 PLACE DECIMAL	± .005	

Valmet

KOMATSU FOREST, LLC SHAWANO, WI

TITLE: IQAN ELECTRONIC CONTROLS J1939 ENGINE CONTROL W/ XT2 MODULE

DRAWN BY: JSG/JAN

DATE: 11-9-05

SCALE:

SHEET: 1 of 6

FIN. WT: #

28356

D

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