CEBM023102

# Shop Manual

KOMATSU®

# 450FXL-1

## CRAWLER FELLER BUNCHER

SERIAL NUMBERS 450FXL-1 A10001- and UP

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October 2011
Printed in USA

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00-1 ②

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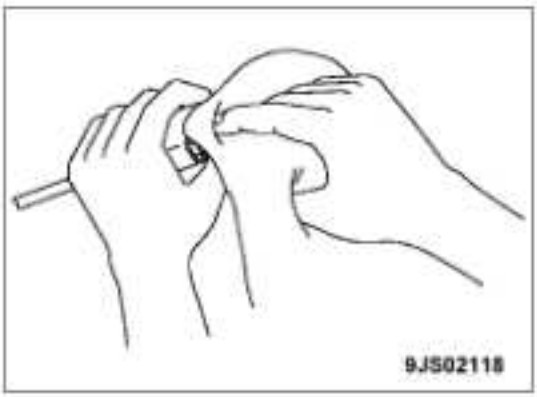
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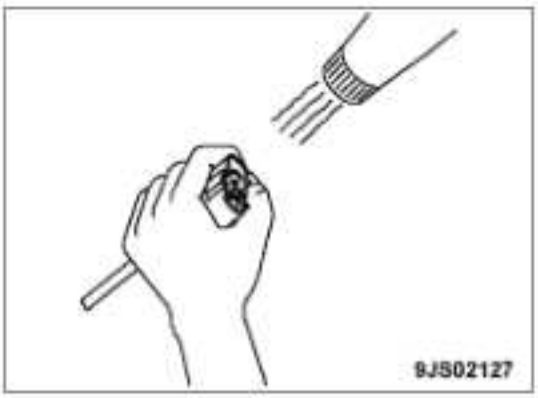
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E. Drying wiring harness

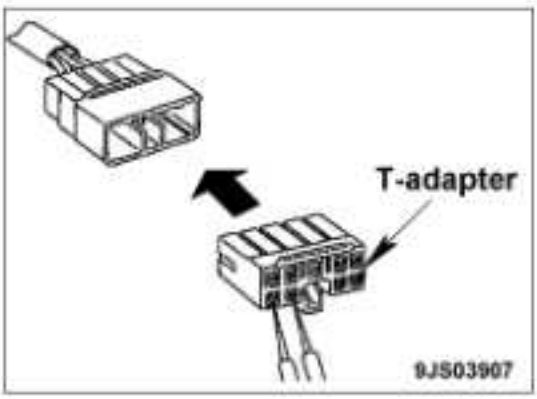
- If there is any oil or dirt on the wiring harness, wipe it off with a dry cloth. Avoid washing it in water or using steam. If the connector must be washed in water, do not use high-pressure water or steam directly on the wiring harness. If water gets directly on the connector, do as follows.
- Disconnect the connector and wipe off the water with a dry cloth.
  - ★ If the connector is blown dry with compressed air, there is the risk that oil in the air may cause defective contact, so remove all oil and water from the compressed air before blowing with air.




- Dry the inside of the connector with a dryer.
- If water gets inside the connector, use a dryer to dry the connector.
  - ★ Hot air from the dryer can be used, but regulate the time that the hot air is used in order not to make the connector or related parts too hot, as this will cause deformation or damage to the connector.




- Perform a continuity test on the connector.
- After drying, leave the wiring harness disconnected and perform 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.



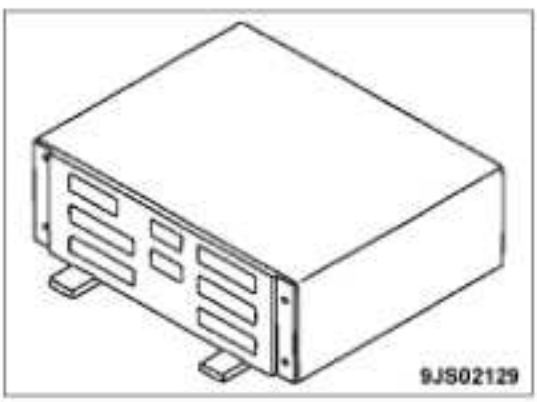

5. Handling controller

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.






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- The coolant has the important function of preventing corrosion as well as preventing freezing. Even in the areas where freezing is not an issue, the use of antifreeze coolant is essential.
- When using antifreeze, always observe the precautions given in the Operation and Maintenance Manual.
- ★ Antifreeze coolant is flammable, so be sure to keep it away from flame.
- The ratio of Supercoolant (AF-NAC) to water differs according to the ambient temperature.
- Supercoolant (AF-NAC) may be supplied in premix. In this case, never add diluting water.
- If the engine overheats, wait for the engine to cool before adding coolant.
- If the coolant level is low, it will cause overheating, and will also cause problems with corrosion due to air entering the coolant.

## Hydraulic Oil Information

Choosing the correct hydraulic oil to use in your hydraulic system is extremely important. Consider these two things when selecting hydraulic oil:

1. Select a hydraulic oil with the properties that meet the equipment manufacturers performance specifications.
2. Use the correct ISO viscosity oil for your ambient temperature.

Using a hydraulic oil that meets the above requirements will help eliminate costly machine downtime and reduce the overall operating cost of your machine. Failure to use the correct hydraulic oil will only create problems and cost you time and money.

## Hydraulic Oil Type

Modern hydraulic systems use components that require hydraulic oil with specific properties and containing additives that reduce wear, foaming, oxidation, etc. This is called the oils Performance Specifications.
All machines leaving the factory are filled with high quality US Oil or Shell Tellus Series hydraulic oil that meets published performance specification requirements. If you want to use a different brand, it must meet the recommended hydraulic oil performance specifications found in this manual. You can provide your oil supplier a copy of these specifications so that he can keep you supplied with the proper oil.

## Hydraulic Oil Viscosity

The viscosity of an oil is identified by its ISO Viscosity Rating. The ISO viscosity rating can be found on the oil containers label. The factory uses three ISO viscosity oils when filling machines during production.

1. **ISO 32** – A light weight oil for cold weather conditions with ambient temperatures from -29 to 10°C (-20 to 50°F).
2. **ISO 46** – A medium weight oil for mid-range conditions with ambient temperatures from –4° to 21°C (+25° to 70°F).
3. **ISO 68** – A heavier oil for warm weather conditions with ambient temperatures from 4° to 32°C (40° to 90°F).

Although it is not supplied from the factory, the following ISO viscosity is commonly used in extreme cold weather.

**ISO 22** – A light weight oil for arctic cold weather conditions with ambient temperatures from -40° to 40°C (-40° to 104°F).

The viscosity of the hydraulic oil used at the factory is determined by the time of year the machine is manufactured and where the machine will be shipped.
*For example:* A machine built in December for operation in Wisconsin would be factory filled with ISO 32 hydraulic oil.
That same machine if built in June, would be filled with ISO 46 hydraulic oil.
Using the correct hydraulic oil viscosity for your ambient conditions is extremely important. If the oil viscosity is too light for ambient, the hydraulic oil system will overheat easily and damage to components can occur. If the oil viscosity is too heavy for ambient, the oil will be too thick to flow easily and damage to components can occur from cavitation. Also, it may be harder to start the machine.
Extreme weather conditions may require seasonal oil viscosity changes.

★ Check with your supplier before mixing hydraulic oils of different type, brand, or viscosity. Many oils are not compatible and damage to your hydraulic system could result.
When changing oil viscosity, flush and clean the hydraulic system before adding new oil.



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3. Check before troubleshooting.

   A. Check the oil level.

   B. Check for any external leakage of oil from the piping or hydraulic equipment.

   C. Check the travel of the control levers.

   D. Check the stroke of the control valve spool.

   E. Other maintenance items can be checked externally, so check any item that is considered to be necessary.

4. Confirming the failure.
   Confirm the extent of the failure yourself, and judge whether to handle it as a real failure or as a problem with the method of operation, etc.
   ★ When operating the machine to reenact the troubleshooting symptoms, do not perform any investigation or measurement that may make the problem worse.

5. Troubleshooting

   A. Use the results of the investigation and inspection in Steps 2 - 4 to narrow down the causes of the failure, then use the troubleshooting flowchart to locate the position of the failure exactly.

   B. The basic procedure for troubleshooting is as follows.

      i. Start from the simple points.

      ii. Start from the most likely points.

      iii. Investigate other related parts or information.

6. Measures to remove root cause of failure.
   Even if the failure is repaired, if the root cause of the failure is not repaired, the same failure will occur again.
   To prevent this, always investigate why the problem occurred. Then, remove the root cause.



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## Removal and Disassembly

***Remark***

*Tag and mark all of the hydraulic hoses, wire connectors, and fittings before removal to ensure correct installation.*

***Remark***

*Cap and plug all the fittings and hoses after removal to prevent contaminants from entering the hydraulic system.*

1. If equipped with a vacuum pump, remove the pump cover from the top of the tank.




2. Remove the hydraulic filter cover from the top of the tank.

3. Remove all the hoses and fittings from the hydraulic filters on top of the tank.




4. Unplug the oil level sensor connector (1) from the back of the tank.

***Remark***

*Follow the wires down to the connector.*




5. Remove all the hydraulic hoses from the bottom of the tank.
The fittings are easier to remove after the tank is removed from the machine.



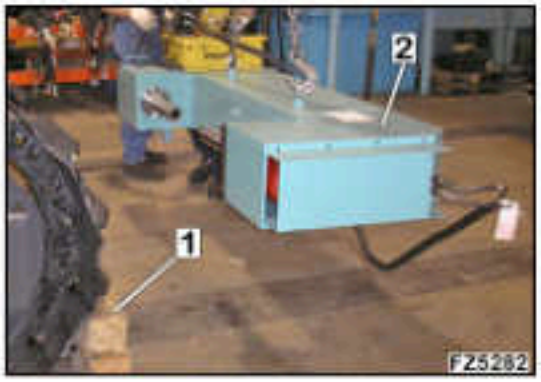



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3. Follow the "Decreasing Track Tension" procedure and completely remove the tension from the track assembly.

4. Block the track up with wood blocks to keep the tension off the master pin before removing the pin (1).

5. Attach a pin inserter to a suitable lifting device (2).



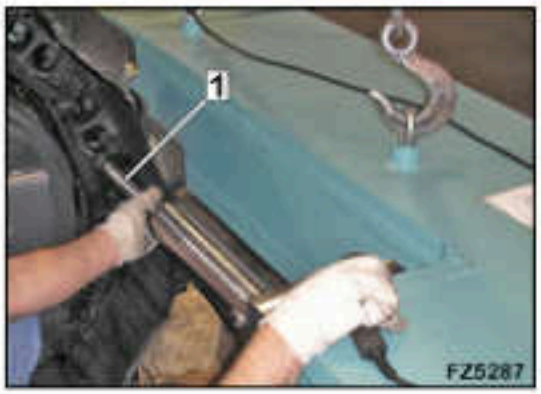

6. Line up the pin inserter to the pin.




7. Insert the pin inserter push pin (1) and press the pin out of the track.

8. Drive the machine in reverse until the track end is on top of the rear drive sprocket. Then use a suitable lifting device to remove the track end from the sprocket so it is on the ground.

9. Lay the new set of tracks that is replacing the track on the machine. Pin the new track to the present track with the pin inserter.



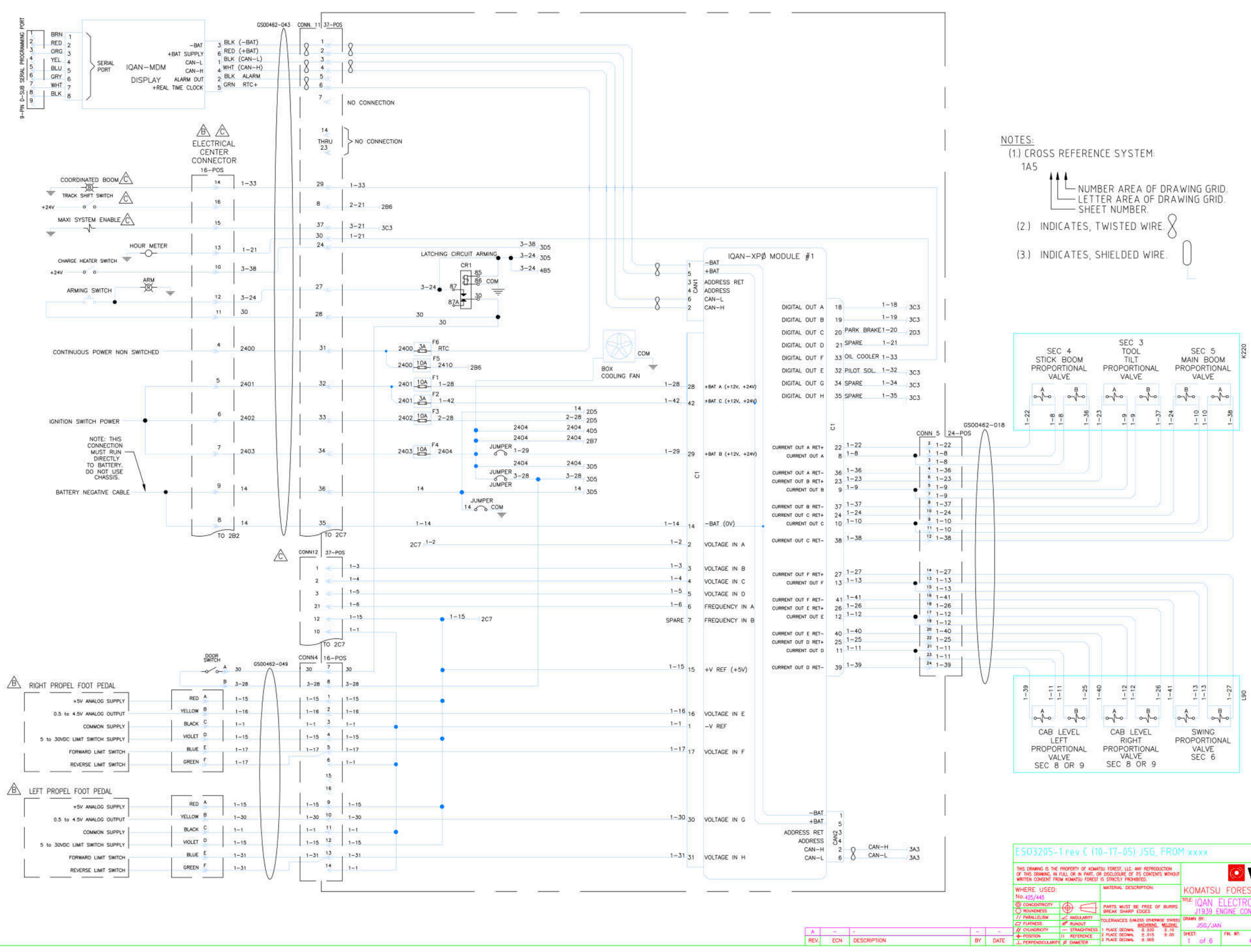

10. Drive the machine in reverse until the machine is on the new track and the master pin that joins the two sets of tracks is approximately three feet in front of track idler (1).

11. Remove the old track from the new track.






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