Previous Screen

Product: EXCAVATOR
Model: 325 L EXCAVATOR 6KK
Configuration: 325, 325L TRACK TYPE EXCAVATORS 6KK00001-UP (MACHINE) POWERED BY 3116 ENGINE

Systems Operation
3114 , 3116 and 3126 Engines for Caterpillar Built Machines
Media Number -SENR3583-13 **Publication Date -01/10/2008** **Date Updated -31/10/2008**

i01684169

Air Inlet and Exhaust System

SMCS - 1050

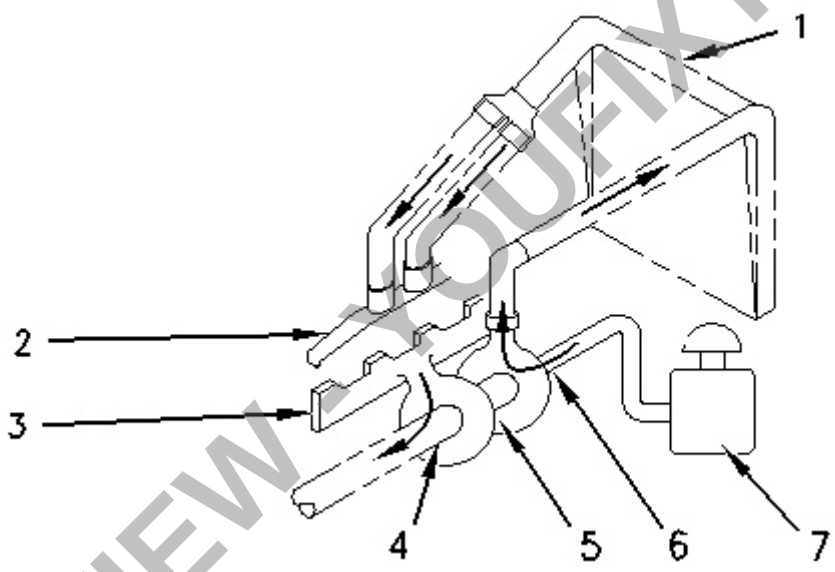


Illustration 1 g00692826

Air Inlet And Exhaust System Schematic

(1) Aftercooler (aftercooled engines)

(2) Air inlet manifold

(3) Exhaust manifold

(4) Exhaust outlet

(5) Turbocharger

(6) Air inlet

(7) Air cleaner

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3114 , 3116 and 3126 Engines for Caterpillar Built Machines
Media Number -SENR3583-13 **Publication Date -01/10/2008** **Date Updated -31/10/2008**

i01613617

Basic Engine

SMCS - 1200

Cylinder Block and Head

The cylinder block for the four cylinder engine has five main bearings that support the crankshaft. The cylinder block for the six cylinder engine has seven main bearings that support the crankshaft. The main bearing caps are fastened to the cylinder block with two bolts per cap.

The removal of the oil pan allows access to the following components:

- Crankshaft
- Main bearing caps
- Piston cooling jets
- Oil pump

The compartment for the camshaft is accessible through covers on the left side of the cylinder block. These side covers also support the pushrod lifters. The camshaft is supported by bearings that are pressed into the cylinder block. There are five camshaft bearings for the four cylinder engine and there are seven camshaft bearings for the six cylinder engine.

The cylinder head is separated from the cylinder block by a gasket that is made of steel and non-asbestos fiber. Coolant flows out of the cylinder block through gasket openings and into the cylinder head. The gasket also seals the oil supply and the drain passages between the cylinder head and the cylinder block. The air inlet ports are located on the top of the cylinder head. The exhaust ports are located on the right side of the cylinder head. There is one intake and one exhaust valve for each cylinder. Valve guides are pressed into the cylinder head. The fuel injector is located between the two valves. Fuel is injected directly into the cylinders at very high pressure. A system with pushrods and with rocker arms is used in order to control the valves and the fuel injectors.

Pistons, Rings, and Connecting Rods

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3114 , 3116 and 3126 Engines for Caterpillar Built Machines
Media Number -SENR3583-13 **Publication Date -01/10/2008** **Date Updated -31/10/2008**

i01624735

Cooling System

SMCS - 1350

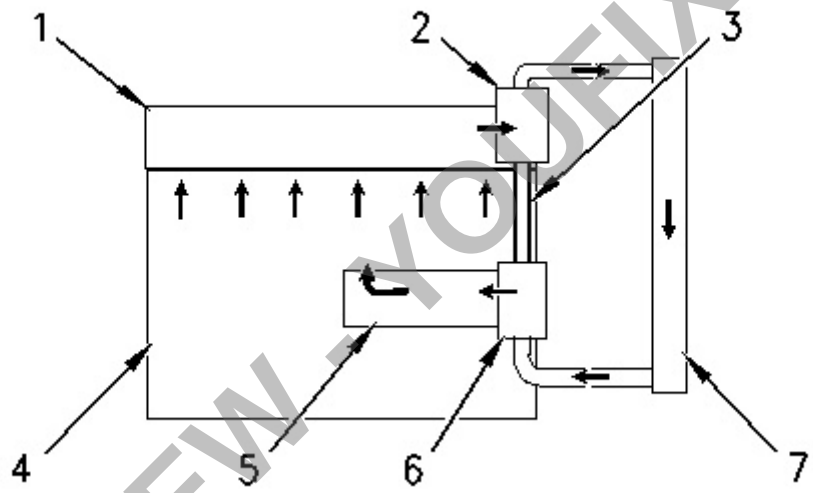


Illustration 1 g00697237

Cooling System Schematic

(1) Cylinder head

(2) Water temperature regulator housing

(3) Bypass hose

(4) Cylinder block

(5) Oil cooler

(6) Water pump

(7) Radiator

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i01582838

Electrical System

SMCS - 1400; 1550; 1900

Engine Electrical System

The electrical system has two separate circuits.

- the charging circuit
- the starting circuit

Some of the electrical system components are used in more than one circuit. The following items are common in each of the circuits:

- The battery
- The circuit breaker
- The cables
- The wires for the battery

The charging circuit is in operation when the engine is running. An alternator makes electricity for the charging circuit. A voltage regulator in the circuit controls the electrical output in order to keep the battery at full charge.

NOTICE

The disconnect switch, if so equipped, must be in the ON position to let the electrical system function. There will be damage to some of the charging circuit components if the engine runs with the disconnect with in the OFF position.

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Systems Operation
EquipmentManager Dealer Administrator Manual
Media Number -KENR6304-08 **Publication Date -01/05/2010** **Date Updated -18/05/2010**

i03319401

General Information

SMCS - 7600; 7606

Use of this Manual

EquipmentManager provides valuable information that allows remote monitoring of either a single machine or a fleet of machines. Customers can perform the following tasks if the customer can provide the location of the machine, Service Meter Unit (SMU), and information about the health of the machine:

- Manage the location and the basic usage of engines and machines.
- Schedule maintenance that is planned and schedule major repairs.
- Manage fault codes or diagnostic codes.
- Detect problems before problems cause a major component failure.
- Increase the availability and the productivity for the machines by avoiding unexpected downtime for repairs.
- Identify the need for training in order to improve the efficiency of the operator.

EquipmentManager is part of Dealer Web site and works with other applications such as PartStore and EquipmentManager. EquipmentManager enables customers to remotely manage fleets. The customer is alerted to only those machines that need immediate attention.

The "EquipmentManager Dealer Administrator Manual" includes the following information:

- Setting up Product Link Modules (PLM)
- Registering PLM
- Setting up and maintaining the accounts of the customer
- Customizing EquipmentManager for optimum use
- Managing EquipmentManager functions

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Note: The accuracy of the SMU value could be impacted by manual SMU adjustments.

Exports

The Export function enables you to export your current view to multiple file formats. The data can then be sorted, filtered, charted, manipulated, and shared with others.

In order to export data to an Excel spreadsheet, perform the following steps:

1. On the "Equipment Usage Summary" screen, click Export. The "Export" window appears.



Illustration 2 g01393488

Export Window

Note: You can export data to other file formats. Lotus 1, 2, 3 works similarly to Excel. Tab Delimited Text enables easy import into other applications like Access.

2. Select "MS Excel Spreadsheet", and then click "OK".

   The "File Download" dialog box appears.

3. Click "Save" to save the file as a spreadsheet on your hard drive, where you can manipulate the file using standard Excel spreadsheet functions such as "Average and Chart", or share the file electronically.

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Systems Operation
3114 , 3116 and 3126 Engines for Caterpillar Built Machines
Media Number -SENR3583-13 **Publication Date -01/10/2008** **Date Updated -31/10/2008**

i03349741

General Information

SMCS - 1000

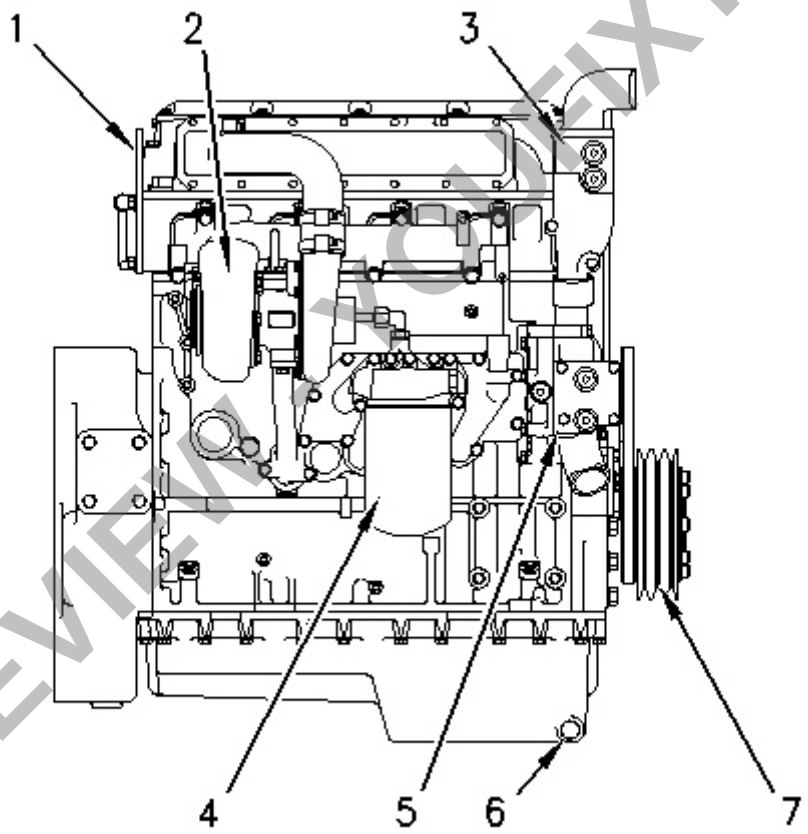


Illustration 1 g00709380

Right Side View Of The 3114 Engine (Typical Example)

(1) Lifting eye

(2) Turbocharger

(3) Water temperature regulator housing

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Product: EXCAVATOR
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Disassembly and Assembly
325, 325L & 325N EXCAVATORS VEHICLE SYSTEMS
Media Number -SENR5408-00 **Publication Date -01/03/1992** **Date Updated -26/10/2004**

SENR54080011

Counterweight

SMCS - 7056-010

Remove & Install Counterweight

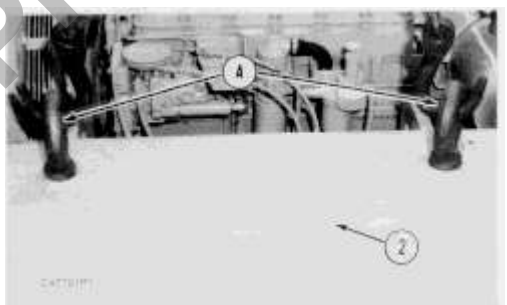
Tools Needed		A
9U5887	Eyebolt	2

1. Start the machine, and place the bucket on the ground.

2. Remove the hood from the machine. The weight of the hood is **75 kg (165 lb).**



3. Using a suitable size socket or spanner wrench, remove two caps (1) from the top of the counterweight.



4. Be sure the threaded holes in the top of the counterweight are clean prior to installation of tool (A). Install tool (A) in the threaded holes of counterweight (2) as shown. Fasten a hoist to tool (A).

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Systems Operation
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Media Number -SENR3583-13 **Publication Date -01/10/2008** **Date Updated -31/10/2008**

i01664183

Fuel System

SMCS - 1250

Fuel System

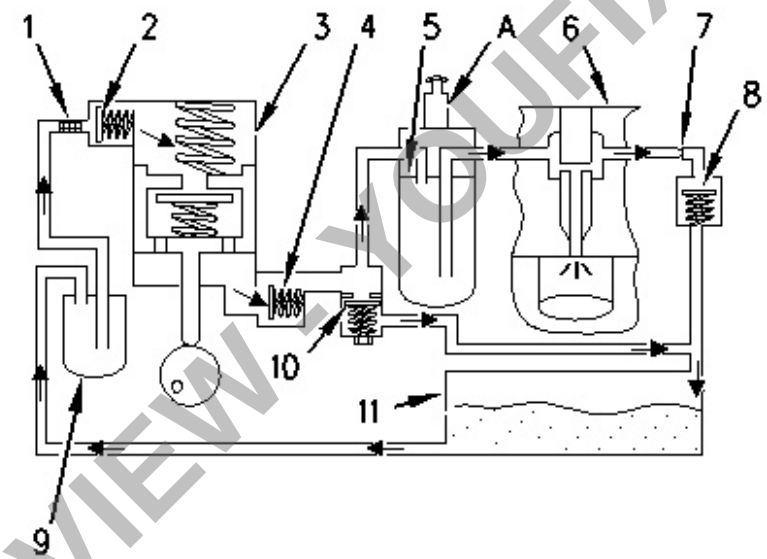


Illustration 1 g00690661

Fuel System Schematic

(A) Fuel priming pump (if equipped)

(1) Screen (if equipped)

(2) Inlet check valve

(3) Fuel transfer pump that is integral with the governor

(4) Outlet check valve

(5) Fuel filter

(6) Cylinder head

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Systems Operation
325, 325L, 325N, AND 325 LN EXCAVATORS HYDRAULIC SYSTEM
Media Number -SENR5405-01 **Publication Date -11/01/1996** **Date Updated -11/10/2001**

Systems Operation

SMCS - 5479-010; 5479-017

Introduction

Reference: For Systems Operation of the electronic controller, make reference to Systems Operation 325, 325 L and 325 N Excavators Electronic Controller, SENR5404

Reference: For Testing and Adjusting of the hydraulic and electronics systems, make reference to Testing And Adjusting For 325, 325 L and 325 N Excavators Hydraulic And Electronic Systems, SENR5406

Reference: For specifications, make reference to SENR5403, Specifications.

Hydraulic Schematic

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Systems Operation
325, 325L & 325LN EXCAVATORS ATTACHMENTS
Media Number -SENR5412-00 **Publication Date -01/10/1992** **Date Updated -11/10/2001**

Systems Operation

SMCS - 5467-010; 5467-017

One Way Hydraulics

Single Action/One Pump Circuit

NOTE: For Hydraulic System Single Action, One Pump Schematic see Form SENR5419.

NOTE: The two pump flow system can be used with this attachment if needed.

NOTE: The two speed hammer attachment can be add to this attachment.

The one way hydraulics is for attachments which require one way pressurized hydraulic flow. A hydraulic hammer is a good example. The main components of the one way hydraulics attachment are pilot lines, hydraulic control (1), attachment relief valve (19) and upper structure lines. Operation of the main control valve is the same as with the standard control lines group.

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Systems Operation
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Media Number -SENR3583-13 **Publication Date -01/10/2008** **Date Updated -31/10/2008**

i01310427

Lubrication System

SMCS - 1300

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Product: EXCAVATOR
Model: 325 L EXCAVATOR 6KK
Configuration: 325, 325L TRACK TYPE EXCAVATORS 6KK00001-UP (MACHINE) POWERED BY 3116 ENGINE

Systems Operation
All Products Air Conditioning and Heating R134a for All Caterpillar Machines
Media Number -SENR5664-22 **Publication Date -01/08/2012** **Date Updated -13/08/2012**

i03007150

General Information

SMCS - 7309

The purpose of this service manual is to describe the operation, testing and adjusting procedures, and disassembly and assembly procedures of Caterpillar operator station heating and air conditioning systems.

These systems are designed to provide thermal comfort to machine operators in various conditions.

Both systems are closed loop systems that work by exchanging heat between the system fluid and the air that is supplied to the operator station. The fluid in the air conditioning system is refrigerant, and the fluid in the heating system is engine coolant.

In the air conditioning system, heat is transferred from the hot cab air to the cold refrigerant in the evaporator. The refrigerant is then transported to the condenser. Heat is deposited outside the condenser.

In the heating system, heat is transferred from the hot engine coolant to the cold cab air in the heater coil. The engine coolant is then transported to the engine. When the coolant is back in the engine, the coolant is heated again.

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Product: EXCAVATOR
Model: 325 L EXCAVATOR 6KK
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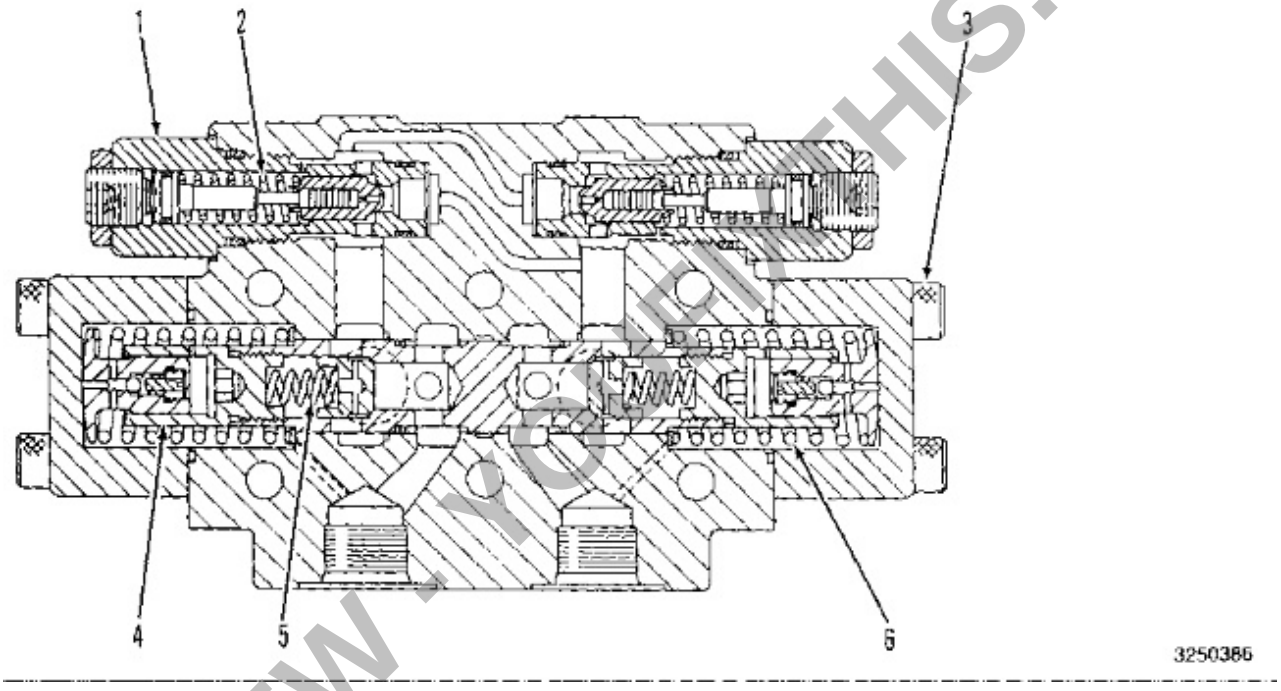
Specifications

325, 325L AND 325LN EXCAVATORS HYDRAULIC SYSTEM

Media Number -SENR5403-02 **Publication Date -04/04/1996** **Date Updated -11/10/2001**

Travel Brake Valve

SMCS - 7312-010



Torque for two valves (1) ... 195 ± 20 N·m (150 ± 15 lb ft)

(2) 41-6433 Spring

Free length ... 51.67 mm (2.034 in)

Outside diameter ... 17.00 mm (.670 in)

Torque for eight bolts (3) ... 80 ± 8 N·m (60 ± 6 lb ft)

Apply 9S-3263 Thread Lock on the threads of guide (4), omitting 3.0 mm (.12 in) area from tip end.

Torque for guide (4) ... 86 ± 8 N·m (64 ± 6 lb ft)

(5) 7Y-4424 Spring

Free length ... 37.50 mm (1.476 in)

Outside diameter ... 11.80 mm (.465 in)

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HARNESS CONNECTOR LOCATION CHART

Connectors	Vehicle Location	Harness And/Or Components	Schematic Location
40 Contacts	•	B – 518213 Engine Pump Control	A-10
24 Contacts	•	B – 518213 Engine Pump Control	B-10
10 Contacts	❶	A – 518212 B – 518213	D-5
	❶	A – 518212 B – 518213	D-4
	❶	A – 518212 B – 518213	D-4
	❶	A – 518212 B – 518213	D-4
	C	A – 518212 H – 518215	E-6
	❷	B – 518213 M – 518214	C-3
	❷	B – 518213 M – 518214	C-4
	❷	B – 518213 M – 518214	C-4
	C	A – 518212 F – 518216	E-10
	C	A – 518212 L – 7Y3923	F-9
	C	A – 518212 J – 7Y3921	E-9
	❸	B – 518213 C – 7Y8112	D-13
9 Contacts	•	T – 7Y8139 Radio	E-11
7 Contacts	C	A – 518212 E – 7Y3898	E-10
	❹	B – 518213 D – 7Y8113	B-15
	❷	B – 518213 M – 518214	C-5
6 Contacts	C	F – 518216 G – 518217	E-1
5 Contacts	C	A – 518212 J – 7Y3921	E-9
	•	A – 518212 A/C Unit	F-10
	•	B – 518213 Gov Actuator Motor	A-15
	•	H – 518215 Throttle Pos Switch	E-5
4 Contacts	❷	B – 518213 B – 518213	A-10
	•	E – 7Y3898 Instrument Panel	E-2
	•	A – 518212 Wiper Motor	F-2
	•	G – 518217 Wiper Motor	F-2
	❺	F – 518216 T – 7Y8139	D-10
	❺	U – 7Y8105 Radio AM/FM	E-12

Vehicle locations are repeated for connectors located close together.
• = Connector is located at the component.
C = Connectors located in operator's compartment – Right console.

OFF VEHICLE SWITCH SPECIFICATIONS

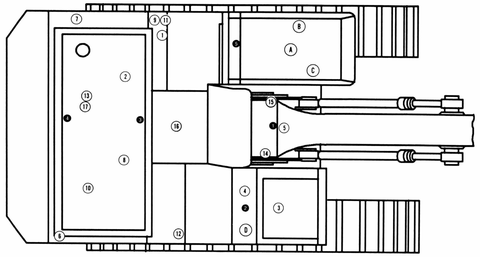
Part No.	Function	Actuate	Deactuate	Normal Condition
4I5387	Boom Raise Press	490 ± 49 kPa MAX (71.0 ± 7.1 psi)	290 kPa MIN (71.0 psi MIN)	N.O.
6T1546	Engine Oil Press	95.0 ± 21.0 kPa (13.5 ± 3.0 psi)	69.0 ± 21.0 kPa (10.0 ± 3.0 psi)	N.O.
7Y5463	Travel/Implement Press	1225.0 ± 343.0 kPa MAX (178.0 ± 50.0 psi MAX)	735.0 kPa MIN (107.0 psi MIN)	Pins 1-2 N.O. Pins 1-3 N.C.
8C3569	Engine Coolant Temp (St Aid)	37.8 ± 2.8° C (100.0 ± 5.0° F)	26.7° C MIN (100.0° F MIN)	N.C.
9X3489	Aux Hydraulic Press	293 kPa MAX (42.5 psi Max)	230.0 ± 20 kPa (33.4 ± 3.0 psi)	N.O.

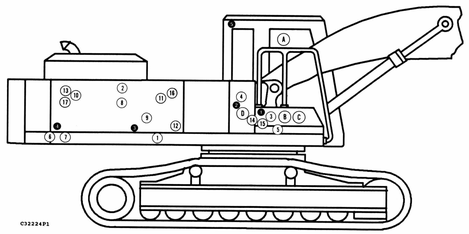
N.O. = NORMALLY OPEN
N.C. = NORMALLY CLOSED

COMPONENT RESISTANCE SPECIFICATIONS

Component	Part No.	Resistance (Ohms) [1]
Resistor	7Y8242	47.0 ± 4.7
Resistor - Backup	7Y5462	41.0 ± 2.0
Solenoid - Engine Shutdown (Dual Coil)	7T7744	Start: 70.0 ± 0.04 Stop: 5.50 ± 0.08

[1] At room temperature.





C32224P1

VEHICLE HARNESS CONNECTOR AND COMPONENT LOCATIONS

COMPONENT LOCATION CHART

Vehicle Location	Component	Schematic Location
A	Air Conditioner	F-10
C	Alarm – Action	E-2
1	Alarm – Travel	E-14
2	Alternator	D-14
D	Assembly – Terminal Block	C-4
3	Batteries	A-2
D	Breaker – Alternator	A-9
4	Control – Engine Pump	B-10
A	Converter	E-12
5	Horn – Forward Warning	C-2
5	Horn – Forward Warning	D-2
C	Meter – Service	E-2
6	Motor – Engine Governor Actuator	A-15
A	Motor – Lower Wiper	F-2
7	Motor – Refueling Pump	F-14
8	Motor – Starter	C-14
A	Motor – Wiper	F-2
9	Motors – Washer	F-13
C	Panel – Instrument	E-2
A	Radio	E-11
D	Relay – Chassis/Cab Light	A-9
D	Relay – Boom - Light	A-7
D	Relay – Fine Swing	A-9
D	Relay – Forward Horn	B-6
D	Relay – Main	B-9
D	Relay – Refueling Pump	A-6
D	Relay – Start	B-7
D	Relay – Washer	B-7
D	Relay – Wiper	B-9
D	Resistor	C-6
C	Resistor – Backup	F-9
2	Sensor – Engine Coolant Temperature	E-14
10	Sensor – Engine Speed	C-15
11	Sensor – Fuel Level	F-13
12	Sensor – Hydraulic Oil Temperature	A-11
13	Solenoid – Air Conditioner Clutch	E-15
12	Solenoid – Engine Pump Control	A-12
13	Solenoid – Engine Shutdown	D-15
14	Solenoid – Fine Swing	C-6
15	Solenoid – Hammer Control	D-5
12	Solenoid – Level Finish	B-12
9	Solenoid – Start Aid	F-13
12	Solenoid – Travel Speed	A-12
12	Solenoid – Trenching	A-12
A	Switch – Auxiliary Hydraulic Pressure	E-3
C	Switch – Backup Accelerator	E-8
C	Switch – Backup Governor	E-9
B	Switch – Backup/EPR Valve	F-8
16	Switch – Boom Raise Pressure	D-12
D	Switch – Disconnect	A-3
2	Switch – Engine Coolant Temperature (Start Aid)	D-14
17	Switch – Engine Oil Pressure	D-15
C	Switch – Fine Swing Control	E-5
C	Switch – Hammer Control	E-7
C	Switch – Horn	F-5
C	Switch – Key (Start)	E-6
C	Switch – Low Idle	E-5
A	Switch – Neutral Start	F-3
7	Switch – Refrigerant Pressure	E-15
7	Switch – Refueling Pump	F-14
C	Switch – Start Aid	E-5
16	Switch – Implement Swing Pressure	D-12
C	Switch – Throttle Position	E-5
16	Switch – Travel Pressure	D-12
A	Switches – Lower Washer	E-7

Vehicle locations are repeated for components located close together.
A = Components in operator's compartment.
B = Components in operator's left console.
C = Components in operator's right console.
D = Components on relay panel.

CATERPILLAR®

SENR5409-01
September 1995

Schematic

325, 325 L & 325 LN Excavators
Electrical System

325:
7TG1-UP
8JG1-UP
9SG1-UP
8YK1-UP
9ZK1-142

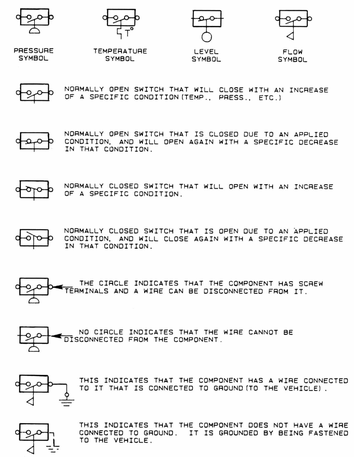
325 L:
7CJ1-UP
7LJ1-UP
2JK1-UP
6KK1-UP
8NK1-UP
2SL1-UP

325 LN:
2SK1-UP
3LL1-677

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ELECTRICAL SCHEMATIC SYMBOLS AND DEFINITIONS



C32231P1

HARNESS AND WIRE ELECTRICAL SCHEMATIC SYMBOLS

ELECTRICAL SCHEMATIC SYMBOLS AND DEFINITIONS

FUSE — A component in an electrical circuit that will break (open) the circuit (make a not complete circuit) if too much current goes through it. A fuse is destroyed when it breaks a circuit.

REED SWITCH — A switch whose contacts are controlled by a magnet. A magnet closes the contacts of a normally open reed switch; it opens the contacts of a normally closed reed switch.

SENDER — A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.

RELAY (Magnetic Switch) — A relay is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close the switch that is part of the relay.

CIRCUIT BREAKER (C/B) — A component in an electrical circuit that will open the circuit (make a not complete circuit) if too much current goes through it. This does not destroy a circuit breaker and it can be part of the circuit again.

SOLENOID — A solenoid is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close a valve, or move a piece of metal that can do work.

C32230P1

SENR5409-01
20 Page, KWG

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Product: EXCAVATOR
Model: 325 L EXCAVATOR 6KK
Configuration: 325, 325L TRACK TYPE EXCAVATORS 6KK00001-UP (MACHINE) POWERED BY 3116 ENGINE

Systems Operation
All Products Air Conditioning and Heating R134a for All Caterpillar Machines
Media Number -SENR5664-22 **Publication Date -01/08/2012** **Date Updated -13/08/2012**

i02991866

Cab Pressurization and Filtration System

SMCS - 7320; 7342

Caterpillar machines with an enclosed cab area need to provide adequate air flow to the operator inside the cab area so that a standard air pressure is met. Maintaining a proper air pressure level is accomplished by ensuring that the appropriate seals are used. When the appropriate seals are correctly installed, the cab will be pressurized by the ventilation system. See Troubleshooting, SENR5664, "Troubleshooting Cab Pressurization and Filtration System" for tips on resolving problems.

Maintaining the proper pressurization level in the cab area is important to the health of the operator because changes to the air pressure may lead to problems with breathing. Low pressure can cause dust to enter the cab and the Heating Ventilation Air Conditioning (HVAC) system, which can lead to premature system deterioration. Low pressure is often caused by improper sealing of the cab. Poor sealing of the cab requires an increase in the fresh air flow to maintain pressurization. The increase in fresh air flow will lead to a lower air conditioning and heater performance. The increase in fresh air flow will also lead to increased intervals in filter service. Additional noise that is entering the cab can also result from poor sealing of the cab.

Cab sealing objectives for the operator cab environment are for the cab to pressurize to a minimum of 50 Pa (0.2 inch of H_2O) with no more than 76 m^3/hr (45 cfm) () of fresh air flow. The minimum cab fresh air flow while the ventilation system is operating on any fan speed is 43 m^3/hr (25 cfm). This objective satisfies the requirements for fresh air flow from SAE J1503 and ISO 10263-4. In HVAC systems with a mode door that controls the balance of fresh air and recirculation air, the control shall be set to minimum fresh air flow while measuring cab pressure.

The air flow of a HVAC system is used to pressurize a cab as the air flow passes through different components. First, outside air is drawn into the HVAC compartment after being filtered for dust particles. Air is drawn in with the help of a blower fan. The blower fan pulls air or pushes air across the heater and/or the evaporator coil. The air flow is then directed into the ventilation ducts of the system. The air flow travels into the environment of the cab through the directional louvers. Finally, the air inside the cab area returns to the HVAC system through the recirculation filter.

Some ventilation systems can be enhanced by using different options. One option that is available for a wide variety of Caterpillar machines is the inclusion of a powered precleaner unit. As part of the pressurized system of the cab, a precleaner removes additional dirt/dust from the fresh air flow that is entering the cab. This provides extended life for the filter to the fresh air filter. These precleaners are coupled with higher efficiency fresh air filters in order to prevent finer particles of

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Product: EXCAVATOR
Model: 325 L EXCAVATOR 6KK
Configuration: 325, 325L TRACK TYPE EXCAVATORS 6KK00001-UP (MACHINE) POWERED BY 3116 ENGINE

Torque Specifications

Torque Specifications

Media Number -SENR3130-14 **Publication Date -01/01/2013** **Date Updated -09/01/2013**

i02357647

General Information

SMCS - 7553

WARNING

Mismatched or incorrect fasteners can result in damage or malfunction, or personal injury.

Take care to avoid mixing metric dimensioned fasteners and inch dimensioned fasteners.

Introduction to Torque

"Torque" is measured in terms of force and distance. Force is the amount of pushing or pulling applied at the end of the lever. Distance is the length of the lever that is being used. Torque values are given in the following units: NEWTON meters (N·m), pound inches (lb in) and pound feet (lb ft)

This manual is intended to provide the operator with a reference. This manual will provide the standard torque settings for the following: bolts, nuts, plugs, fittings and clamps.

Exceptions to these torques are given in the Service Manual, if necessary.

Be sure to use a torque wrench that has the proper range. Torque wrenches must be used properly in order to ensure that the correct torque is applied. Always use a smooth pull for torque wrenches. Do not jerk a torque wrench. Do not use adapters that change the length of the torque wrench. For the correct use of your torque wrench, refer to the instructions that were packaged with your torque wrench. For more information on the correct use of torque wrenches, refer to Special Publication, SEBV0516, "An Introduction to Torque".

Prior to installation of any hardware, ensure that components are in near new condition. Bolts and threads must not be worn or damaged. Threads must not have burrs or nicks. Hardware must be free of rust and corrosion. Clean reused fasteners with a noncorrosive cleaner. Lightly lubricate

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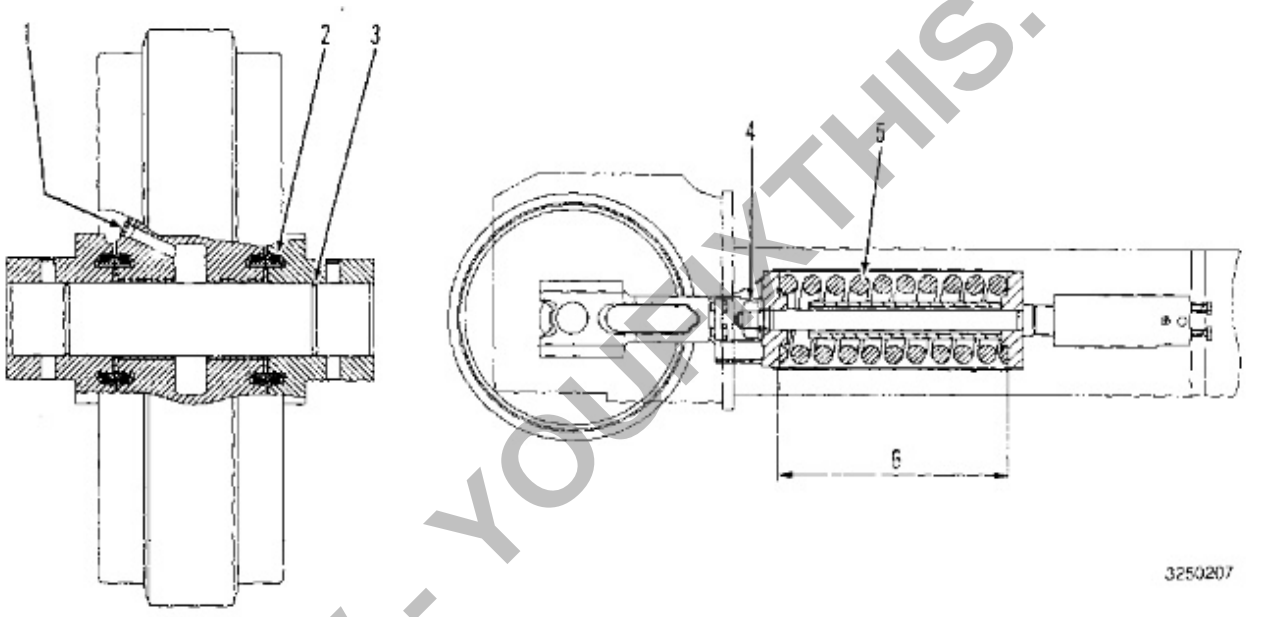
Specifications

325, 325L AND 325LN EXCAVATORS HYDRAULIC SYSTEM

Media Number -SENR5403-02 **Publication Date -04/04/1996** **Date Updated -11/10/2001**

Front Idler And Recoil Spring

SMCS - 1318-010; 1318-017



(1) Add 0.42 liter (.100 U.S. gal) of SAE 30CD oil through plug hole. Before installing plug, apply 9S-3263 Thread Lock on the threads.

(2) O-rings of floating seal and all surfaces in contact with them must be clean and dry at assembly. Apply a thin layer of oil on the contacting surfaces of the metal seals just before installation.

(3) Put a thin coat of oil on seal.

(4) Apply 9S-3263 Thread Lock on threads of nut.

(5) 7Y-0631 Spring:

Free length ... 684.10 mm (26.933 in)

Outside diameter ... 208.80 mm (8.220 in)

(6) Length installed ... 542.00 mm (21.339 in)

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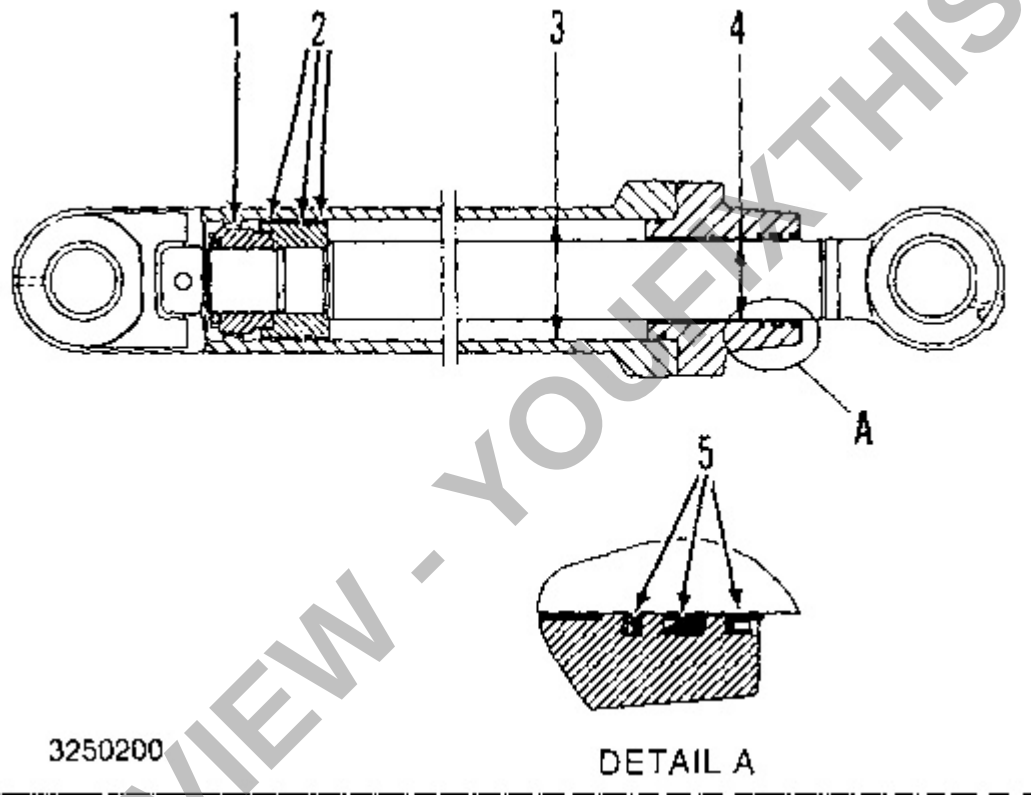
Specifications

325, 325L AND 325LN EXCAVATORS HYDRAULIC SYSTEM

Media Number -SENR5403-02 **Publication Date -04/04/1996** **Date Updated -11/10/2001**

Bucket Cylinder

SMCS - 4157-015; 4157-016; 4157-010



(1) Lubricate threads and torque nut to ... 4510 ± 225 N·m (3320 ± 165 lb ft)

(2) Fill clearances between seals with grease to remove air.

(3) Bore of new cylinder ... 130.00 ± 0.10 mm (5.118 ± .004 in)

(4) Bore of new head ... 85.73 ± 0.03 mm (3.375 ± .001 in)

Diameter of new rod ... 84.93 ± 0.03 mm (3.344 ± .001 in)

(5) Lubricate sealing lip with a small amount of oil.

Boom Cylinder Drift

Maximum permissible drift (new) ... 18.0 mm (.71 in)/3 min

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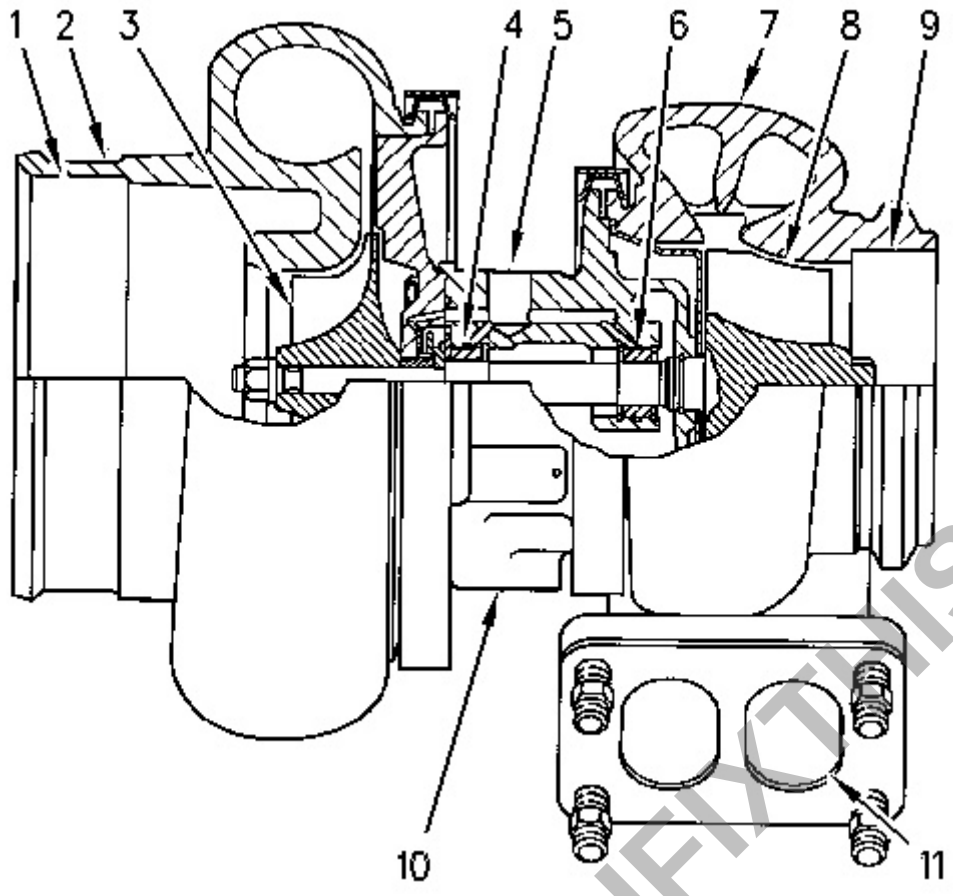


Illustration 3 g00294193

Turbocharger

(1) Air inlet

(2) Compressor housing

(3) Compressor wheel

(4) Bearing

(5) Oil Inlet port

(6) Bearing

(7) Turbine housing

(8) Turbine wheel

(9) Exhaust outlet

(10) Oil outlet port

(11) Exhaust inlet

The turbocharger is installed on the center section of the exhaust manifold. All the exhaust gases from the engine go through the turbocharger. The compressor side of the turbocharger is connected to the aftercooler by pipe.

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external, and select the option button for the appropriate customer. Next, click the "Transfer Subscription to UCID" button.

- If PLM registration is successful and equipment does not exist in equipment data or is not associated with a Customer or UCID, the customer field will be blank. Caterpillar recommends to create the equipment record in equipment data and complete the UCID association before accepting the subscription in "Automatic Subscription".
- The "Automatic Subscription" feature will not activate a subscription if it has been previously downgraded. In this case, the manual downgrade flag is retained and accepted.
- When a subscription is purchased at a customer level, the customer will see the data from the purchase date of the subscription. The dealer view of subscriptions at either the customer or the dealer level allows the view of data from registration date.

Rules for Automatic Downgrade

The following rules apply to automatic downgrades:

- Automatic downgrades occur to existing subscriptions if customer (UCID) ownership changes between registrations.

Note: The subscription will be downgraded for the previous customer (UCID), and the "Automatic Subscription" screen will display the new customer (UCID).

- Automatic downgrades occur to existing subscriptions if a module is registered again under a new dealer code.

Note: The subscriptions will be downgraded for the previous customer (UCID) and/or dealer as applicable. The subscriptions will be displayed on the "Automatic Subscription" screen for the new dealer that is registering.

Note: EquipmentManager history is associated with the previous customer will not be viewable by the new customer.

Edit Subscriptions

Edit Dealer or Customer Subscriptions

In order to upgrade or downgrade a dealer subscription, complete the following procedure:

Note: Only the dealer administrator and the customer administrator can upgrade or downgrade subscriptions for equipment, which is done through the "Edit Subscription" option in EquipmentManager.

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PL321SR System (PL121SR plus the PL300 System) Harness Wiring

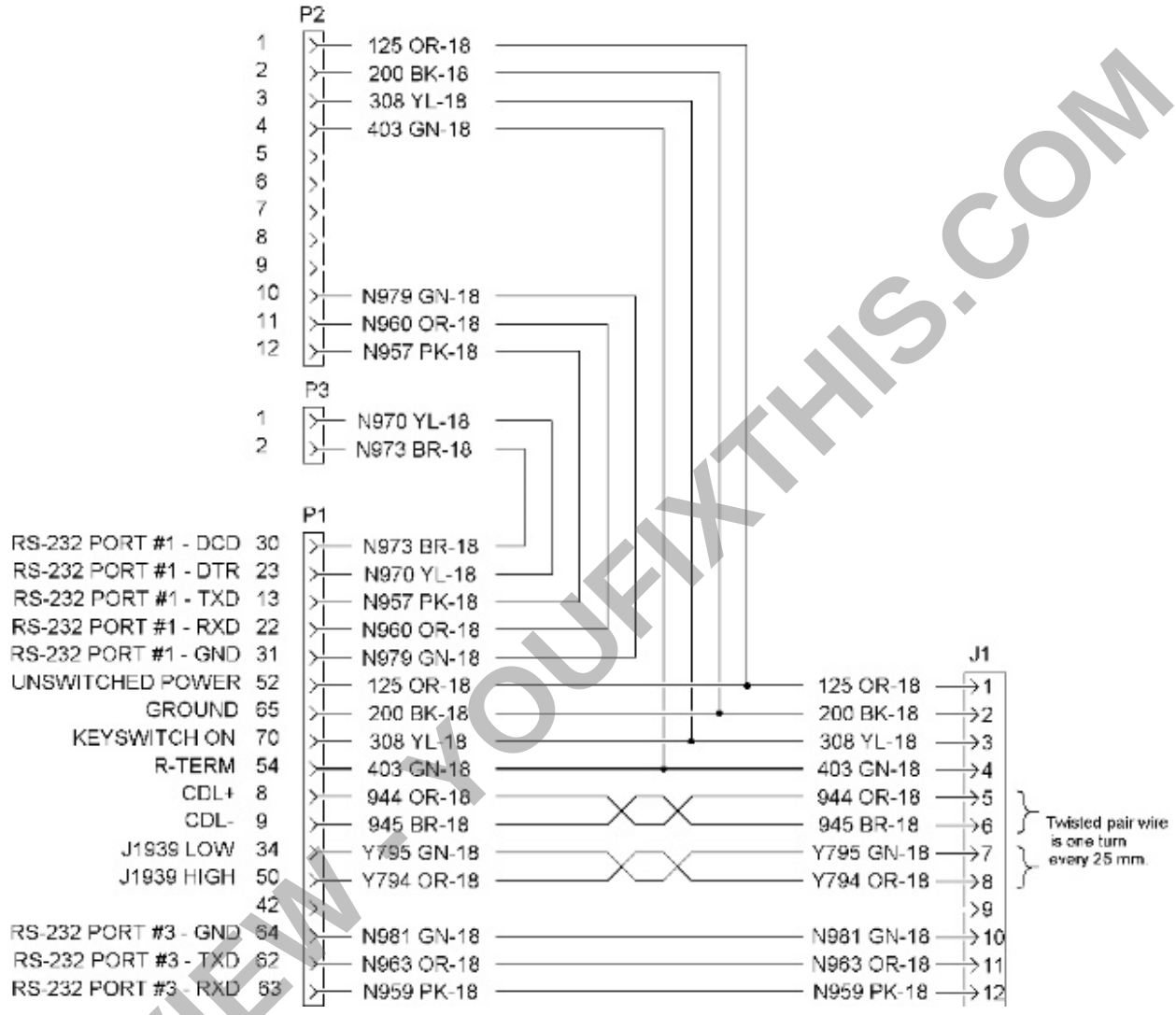


Illustration 10 g01117887

PL321 Harness Schematic

PL300 Digital Inputs

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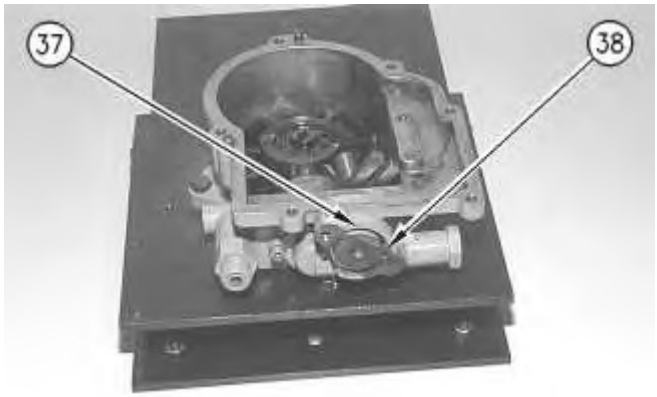


Illustration 28 g00522822

29. Install spring (38) for the throttle lever onto throttle shaft (37) .

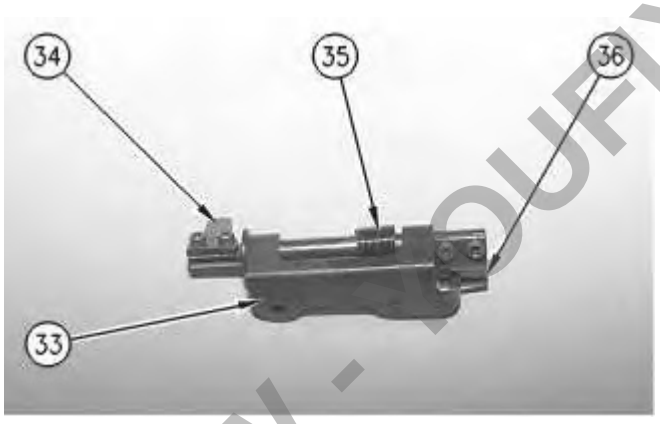


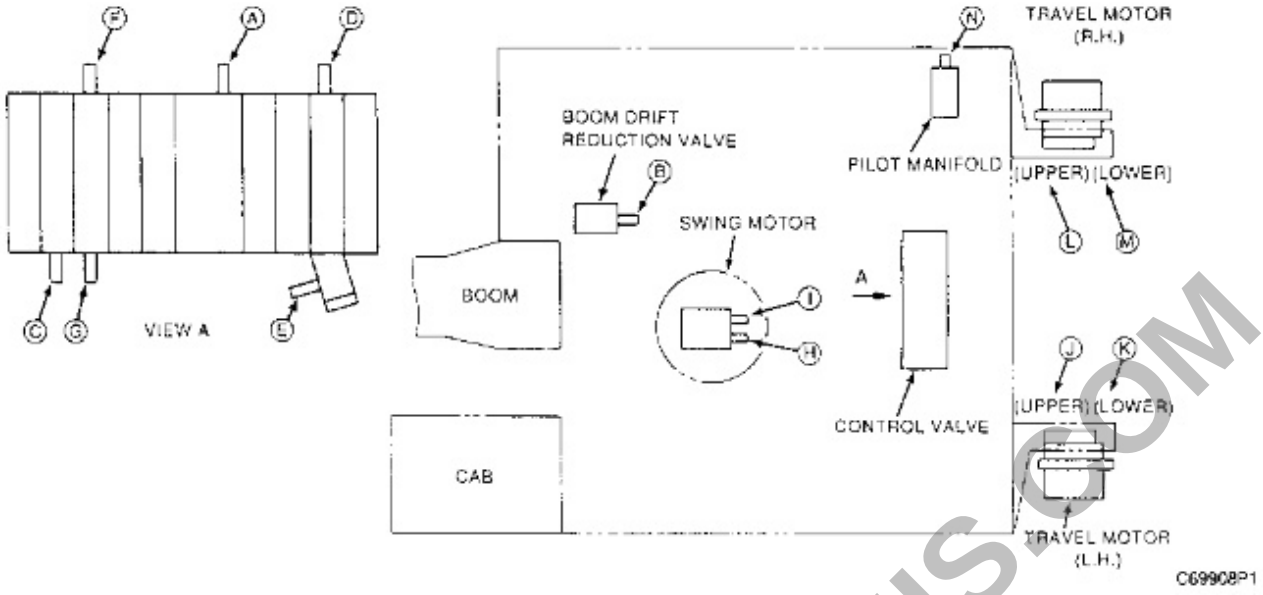
Illustration 29 g00522821

30. Install blade (34) and blade (36) onto shutoff assembly (33). Tighten the bolts that hold blades (34) and (36) to a torque of 2.0 ± 0.2 N·m (18 ± 2 lb in).

Note: Spring (35) should not have been removed.

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Relief Valve		Specifications kPa (psi) New	Rebuild	Service Limit	Locknut Torque N·m (lb ft)
(A) Main	Implement	31 400 ± 490 (4550 ± 72)	31 400 ± 490 (4550 ± 72)	31 400 +490 −1960 (4550 +72 −285)	50 ± 10 (37 ± 7)
	Travel	34 300 ± 490 (4950 ± 72)	34 300 ± 490 (4950 ± 72)	34 300 +490 −1960 (4950 +72 −285)	59 ± 10 (44 ± 7)
(B) Boom cylinder line (head end) (C) Boom cylinder line (rod end) (D) Stick cylinder line (head end) (E) Stick cylinder line (rod end) (F) Bucket cylinder line (head end) (G) Bucket cylinder line (rod end)		33 800 ± 1470 (4900 ± 215)	33 800 ± 1470 (4900 ± 215)	33 800 +1470 −2950 (4900 +215 −430)	59 ± 6 (44 ± 4)
(H) Swing (right) (I) Swing (left)		29 400 ± 980 (4250 ± 140)	29 400 ± 980 (4250 ± 140)	29 400 +980 −1960 (4250 +140 −285)	155 ± 29 (115 ± 21)
(J) Left travel crossover (forward) (K) Left travel crossover (reverse) (L) Right travel crossover (forward) (M) Right travel crossover (reverse)		36 800 ± 1470 (5350 ± 215)	36 800 ± 1470 (5350 ± 215)	36 800 +1470 −2950 (5350 +215 −430)	44 ± 5 (32 ± 4)
(N) Pilot		3450 ± 200 (500 ± 30)	3450 ± 200 (500 ± 30)	3450 ± 200 (500 ± 30)	16 ± 1 (12 ± 1)

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Adjustment Procedures

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Disassembly and Assembly
SUPPLEMENT FOR 3116 ENGINE 325, 325L, & 325N EXCAVATORS
Media Number -SENR5523-00 **Publication Date -01/02/1992** **Date Updated -12/10/2001**

Engine Oil Cooler

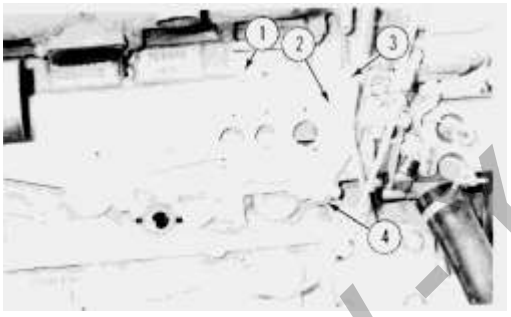
SMCS - 1378-010

Remove & Install Engine Oil Cooler

Start By:

a. remove turbocharger

b. remove engine oil filter base



1. Disconnect oil line (1) (previously removed).

2. Remove fifteen bolts (2).

3. Remove engine oil cooler (4). Check seals and gasket for wear or damage, replace if necessary.

4. Remove plug (3) and seal if the cooler by-pass valve spring and by-pass valve need replaced. Check seal for wear or damage, replace if necessary.

NOTE: For installation of the engine oil cooler, reverse the removal steps.

End By:

a. install engine oil filter base

b. install turbocharger

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