Model: 977K TRACK LOADER 11K

Configuration: 977L TRAXCAVATOR 11K07763-UP (MACHINE) POWERED BY 3306 ENGINE

Disassembly and Assembly 3306 VEHICULAR ENGINE FOR 977L TRACK-TYPE LOADER

Media Number -SENR7773-00

Publication Date -01/03/1978

Date Updated -12/10/2001

Fuel Check Valve And Bypass Valve

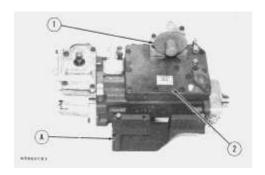
SMCS - 1256-11; 1256-12

Remove Fuel Check Valve And Bypass Valve

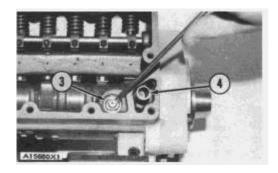
	Tools Needed	A
2P8315	Bracket Assembly	11

NOTICE

Clean the outer surface of the fuel injection pump housing and governor before removal of the fuel check valve and bypass valve.



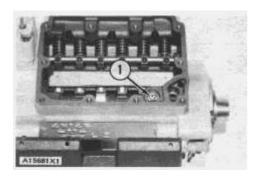
1. Remove fuel filter base (1). Remove the bolts that hold cover (2) in position. Remove the cover.



- 2. Remove check valve (3).
- **3.** Remove spring (4) and the bypass valve.

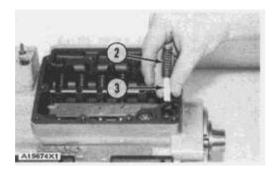
Install Fuel Check Valve And Bypass Valve

	Tools Needed	A
2P8315	Bracket Assembly	1



1. Install check valve (1) in the fuel injection pump housing. Make sure the check valve is installed evenly in the fuel injection pump housing.

NOTE: Do not install a check valve that is bent.



- 2. Install bypass valve (3) and spring (2) in the fuel injection pump housing.
- **3.** Put the cover in position on the fuel injection pump housing. Make sure the spring on the bypass valve is in the cover. Install the nine bolts that hold the cover in position.
- **4.** Install the fuel filter base.

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Fuel Injection Pumps

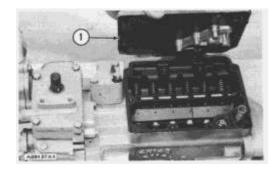
SMCS - 1251-15; 1251-16; 1251-11; 1251-12

Remove Fuel Injection Pumps

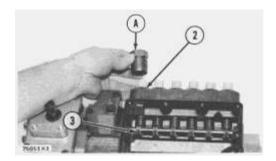
	Tools Needed	A
8S2243	Wrench	1

NOTICE

Before any service work is to be done on the fuel system the outer surface of the injection pump housing must be clean.



1. Remove cover assembly (1) from the pump housing. Remove the spring for the bypass valve.



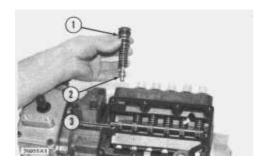
2. Loosen bushing (2) from the pump housing with tool (A).

NOTE: Do not loosen screws (3) when the pumps are removed or installed. If the levers are moved, the fuel pump adjustment will be changed.

3. Remove the fuel injection pump from the pump housing. The sleeve on the plunger will slide off the lever as the pump is removed.

Install Fuel Injection Pumps

	Tools Needed	Α
8\$2243	Wrench	1

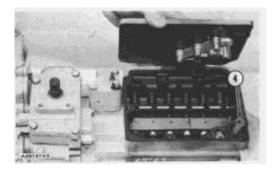


- 1. Put fuel injection pump (1) in the bore of the pump housing.
- 2. Sleeve (2) must be engaged with lever (3) when installed correctly.

NOTICE

If the levers (3) have been moved on the shaft, fuel pump adjustment must be made. See TESTING AND ADJUSTING.

3. Tighten the bushing with tool (A) to a torque of 70 ± 5 lb.ft. $(95 \pm 7 \text{ N} \cdot \text{m})$.

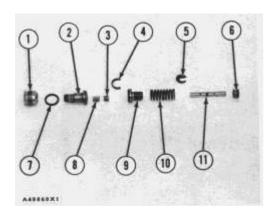


4. Put the spring and bypass valve in place. Install the cover assembly on the pump housing. Be sure spring (4) is in position in the cover.

Disassemble Fuel Injection Pumps

start by:

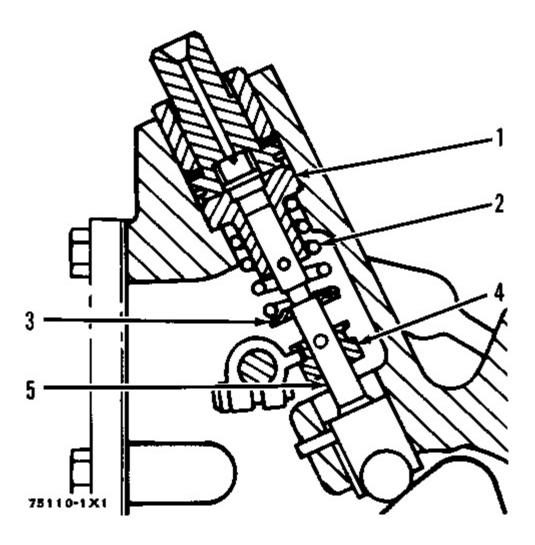
a) remove fuel injection pumps



- 1. Remove bushing (1) and seal (7) from bonnet (2).
- **2.** Remove ring (4) from the bonnet and barrel (9). Remove check valve (3) and spring (8) from the bonnet.
- 3. Remove spring (10) and washer (5). Remove plunger (11) and sleeve (6).

NOTE: Keep the plunger and sleeve with their respective barrel for installation. Do not use plungers, sleeves or barrels with other plungers, sleeves or barrels.

Assemble Fuel Injection Pumps



1. Install sleeve (4), plunger (5), spring (2) and washer (3) on barrel (1).

NOTICE

Make sure the sleeve is installed with the thin edge up.

NOTE: Be sure the sleeve and plunger are installed in their original barrel. Make sure the large hole in the plunger is up.

2. Install the check valve and spring in the bonnet. Connect the barrel and bonnet and install the ring. Install the seal and bushing on the bonnet.

end by:

a) install fuel injection pumps

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Disassembly and Assembly 3306 VEHICULAR ENGINE FOR 977L TRACK-TYPE LOADER

Media Number -SENR7773-00

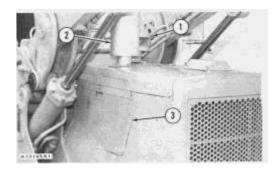
Publication Date -01/03/1978

Date Updated -12/10/2001

Hood, Muffler And Precleaner Assembly

SMCS - 1055-11; 1055-12; 1062; 7251

Remove Hood, Muffler And Precleaner Assembly

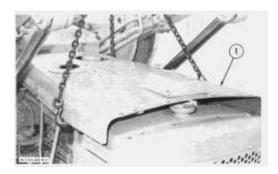


- 1. Remove the right side guard (3). Remove the left side guard.
- 2. Loosen the clamp on muffler (2) under the hood. Remove muffler (2).
- **3.** Remove precleaner (1).

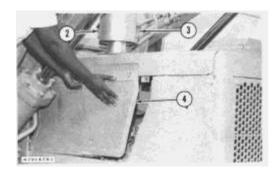


4. Fasten a hoist to hood (4). Remove twelve bolts and washers and remove hood (4). Weight of the hood is 140 lb. (63 kg).

Install Hood, Muffler And Precleaner Assembly



1. Fasten a hoist to hood (1) and put it in position on the machine. Install the twelve bolts and washers that hold the hood in place.



- 2. Put the muffler (2) in position and tighten the clamp that holds it.
- **3.** Install precleaner (3).
- **4.** Install the right side guard (4) and the left side guard.

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Disassembly and Assembly 3306 VEHICULAR ENGINE FOR 977L TRACK-TYPE LOADER

Media Number -SENR7773-00 Publication Date -01/03/1978 Date Updated -12/10/2001

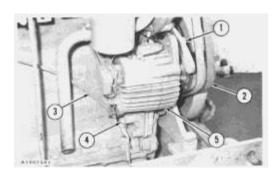
Alternator

SMCS - 1405-11; 1405-12

Remove Alternator

NOTE: The radiator guard is removed from the machine for better photo illustration for the removal of the alternator.

1. Remove the two right side engine guards.

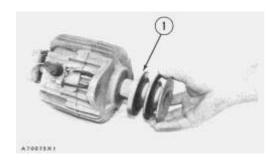


- 2. Put identification on wires (3) and disconnect the wires from the alternator.
- **3.** Loosen bolt (1) and bolt (4) to release the tension on the vee belts (2). Remove the vee belts from the pulley on the alternator.
- **4.** Remove bolt (1) and bolt (4) and remove the alternator (5).

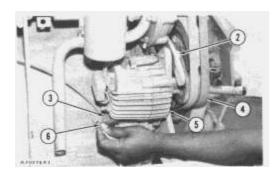


5. Remove the nut that holds the pulley (6) to the alternator. Remove the pulley.

Install Alternator



1. Put pulley (1) in position on the alternator. Install the nut that holds it. Tighten the nut to a torque of 75 ± 5 lb.ft. ($100 \pm 7 \text{ N} \cdot \text{m}$).



- **2.** Put alternator (5) in position on the bracket. Install bolt (2) and bolt (3) to hold it. Put the vee belts (4) in position on the pulley.
- 3. Connect the wires (6) to the alternator. Make sure the wires are in correct positions.
- **4.** Install the two right side engine guards.
- **5.** Make an adjustment to the tension on the vee belts. See FAN AND ALTERNATOR BELTS in LUBRICATION AND MAINTENANCE GUIDE.

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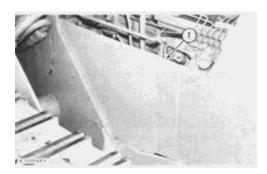
Electric Starting Motor

SMCS - 1453-11; 1453-12

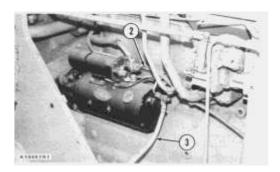
Remove Electric Starting Motor

start by:

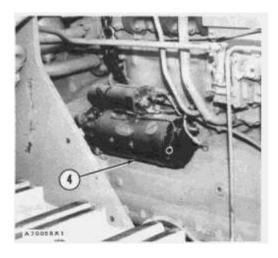
a) remove hood, muffler and precleaner assembly



- 1. Remove five bolts and washers and remove the right lower guard (1).
- **2.** Put identification on all the wires and cables that are connected to the electric starting motor for correct installation.

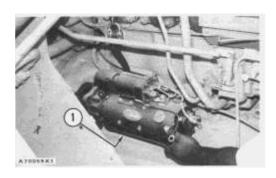


3. Disconnect wires (2) and cables (3) from the electric starting motor.

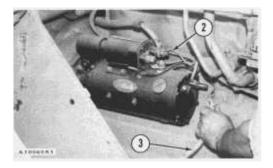


4. Fasten a hoist to the electric starting motor (4). Remove the three bolts that hold the starting motor to the flywheel housing. Remove the starting motor. Weight of the starting motor is 80 lb. (36 kg).

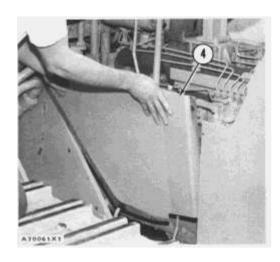
Install Electric Starting Motor



1. Fasten a hoist to electric starting motor (1) and put it in position in the flywheel housing. Install the three bolts that hold it.



2. Connect wires (2) and cables (3) to the starting motor. Tighten the terminal nuts that hold the cable to a torque of 20 to 25 lb.ft. (25 to 35 N·m).



3. Install the right lower guard (4). end by:

a) install hood, muffler and precleaner assembly

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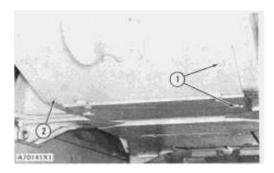
Date Updated -12/10/2001

Front Crankcase Guards

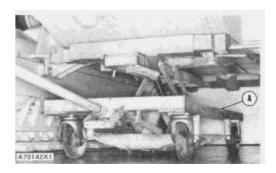
SMCS - 7151-11; 7151-12

Remove Front Crankcase Guards

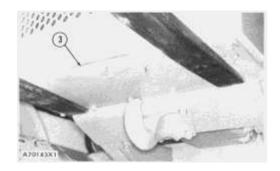
	Tools Needed	A
5P3050	Jack	1



1. Put tool (A) in position under crankcase guard (2).



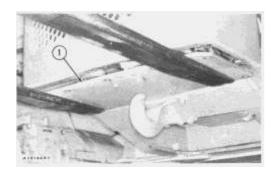
2. Remove four bolts (1) and remove crankcase guard (2). Weight of the crankcase guard is 125 lb. (56 kg).



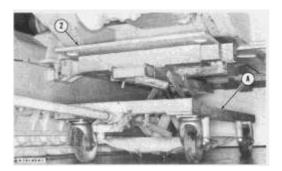
3. Put the forks of a lift truck in position under the front crankcase guard (3). Remove eleven bolts and remove crankcase guard (3). Weight of crankcase guard is 75 lb. (34 kg).

Install Front Crankcase Guards

	Tools Needed	Α
5P3050	Jack	1



1. Put crankcase guard (1) in position on the forks of a lift truck. Use the lift truck and put crankcase guard (1) in position under the radiator guard. Install the eleven bolts that hold it.



2. Put crankcase guard (2) in position on tool (A). Use tool (A) and put crankcase guard (2) in position under the frame of the machine. Install the four bolts that hold it.

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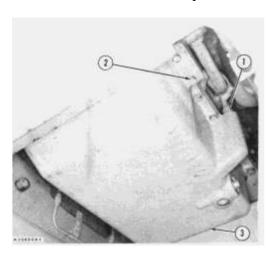
Oil Pan

SMCS - 1302-11; 1302-12

Remove Oil Pan

start by:

- a) remove front crankcase guards
- 1. Drain the oil from the oil pan.



- **2.** Remove the oil level gauge and disconnect oil level gauge tube (1).
- **3.** Remove bolts (2) that hold oil pan (3) in position and remove the oil pan. The weight of the oil pan is 20 lb. (9 kg). Remove the old gasket from the oil pan.

Install Oil Pan

1. Install a new gasket on the oil pan.



- 2. Put oil pan (2) in position on the engine and install the bolts that hold it.
- **3.** Connect the oil level gauge tube (1) and install the oil level gauge.
- **4.** Fill the crankcase with oil to the correct level. See LUBRICATION AND MAINTENANCE GUIDE.

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Oil Pan Plate

SMCS - 1302-11; 1302-12

Remove Oil Pan Plate

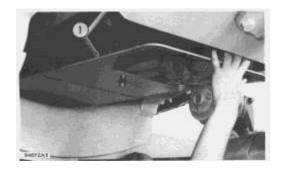
start by:

- a) remove oil pan
- 1. Remove suction bell and tube.



- **2.** Disconnect tube assembly (1) from oil pump.
- **3.** Remove the bolts that hold oil pan plate (2) to cylinder block. Remove oil pan plate.

Install Oil Pan Plate



TYPICAL EXAMPLE

- Put the oil pan plate (1) in position and install bolts that hold it to cylinder block.
 Connect tube assembly to oil pump.
 Install suction bell and tube.
- end by:

a) install oil pan

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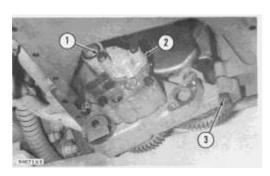
Oil Pump

SMCS - 1302-11; 1302-12; 1304-15; 1304-16

Remove Oil Pump

start by:

- a) remove oil pan
- **1.** Remove the suction bell and tube from oil pump.



- 2. Remove two bolts (1) and disconnect tube (2) from oil pump.
- **3.** Remove bolts (3) that hold oil pump to cylinder block.
- **4.** Remove oil pump.

Install Oil Pump



- **1.** Put the oil pump (1) in position on the cylinder block and install bolts and locks that hold it to engine.
- 2. Connect tube to oil pump.
- **3.** Install suction bell and tube on oil pump.

end by:

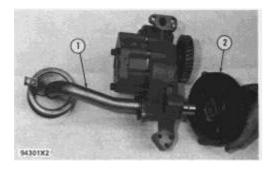
a) install oil pan

Disassemble Oil Pump

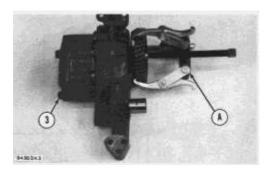
Tools Needed	Α	В	C
Puller Assembly	1		77
Step Plate	1	10	
Handle		1	1
Drive Plate		1	
Drive Plate		1	
Drive Plate			1
Drive Plate	arcone o <u>e</u>		1
	Puller Assembly Step Plate Handle Drive Plate Drive Plate Drive Plate	Puller Assembly 1 Step Plate 1 Handle Drive Plate Drive Plate Drive Plate	Puller Assembly 1 Step Plate 1 Handle 1 Drive Plate 1 Drive Plate 1 Drive Plate 1

start by:

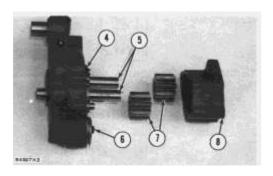
a) remove oil pump



- 1. Remove idler gear (2). Remove bearing from gear with tooling (B).
- 2. Remove suction bell (1).
- **3.** Remove the bolt and the washer from the oil pump drive gear.



- **4.** Remove the drive gear from the shaft with tooling (A).
- **5.** Remove the key from the pump shaft.
- **6.** Remove bolts (3) from the pump body.



- 7. Remove body (8), two gears (7), keys and spacer (4) from the pump.
- **8.** Remove two shafts (5) and the gears.
- **9.** Remove bolts (6), the cover and the pressure relief valve from the body.

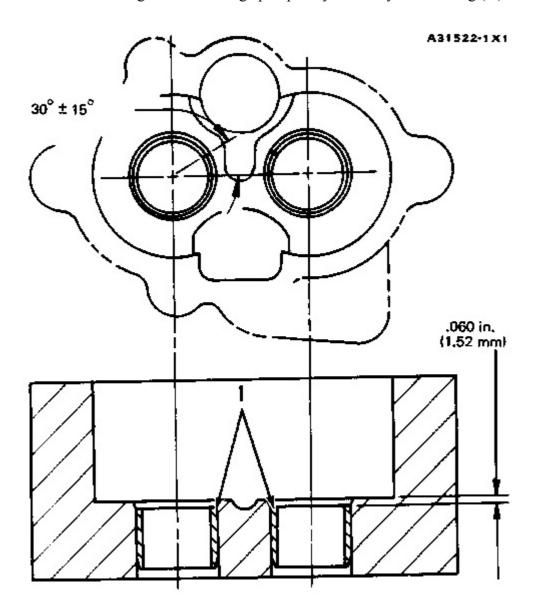


10. Remove the bearings from the oil pump body assembly and the scavenge pump body assembly with tooling (C).

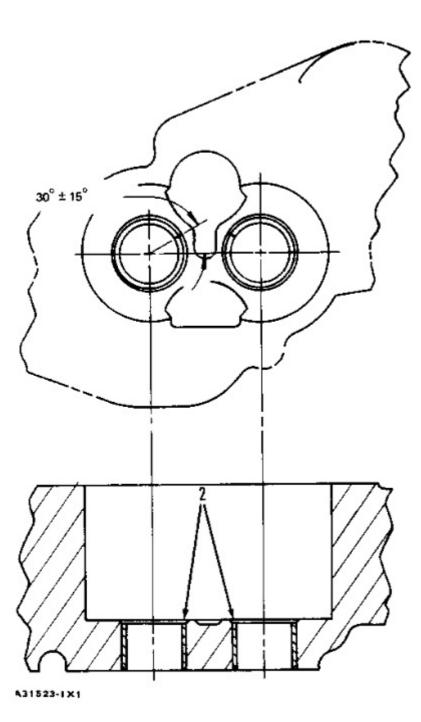
Assemble Oil Pump

	Tools Needed	Α	В
1P529	Handle	1	1
1P461	Drive Plate	1	
1P462	Drive Plate	1	
1 P46 5	Drive Plate		1
1P468	Drive Plate	807002	1

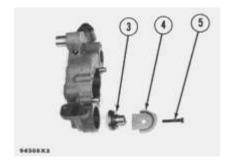
1. Install the bearings in the scavenge pump body assembly with tooling (A) as follows:



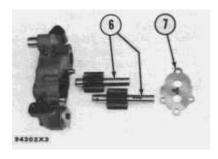
- a) Put bearings (1) in position on the inside of the scavenge pump body assembly with the chamfer on the bearing toward the outside of the pump body. Install the bearing until it is .060 in. (1.52 mm) below the inside machined surface of the scavenge pump body assembly. Make sure the joints in the bearings are at an angle of $30^{\circ} \pm 15^{\circ}$ from the center line through the bores in the scavenge pump body and toward the outlet passage of the pump. The outlet passage has a cavity between the bearing bores.
- **2.** Install the bearings in oil pump body assembly with tooling (A) as follows:



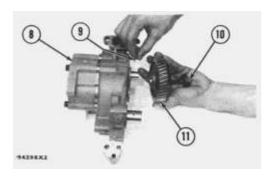
- a) Put bearings (2) in position on the inside of the oil pump body assembly with the chamfer on the bearings toward the outside of the pump body. Install the bearings until they are even with the outside of the pump body. Make sure the joints in the bearings are at an angle of $30^{\circ} \pm 15^{\circ}$ from the centerline through the bearing bores and toward the outlet passage of the pump. The outlet passage has a cavity between the bearing bores.
- **3.** Check the condition of the relief valve. Check the condition and specifications for all the parts of the oil pump before it is assembled. See OIL PUMP (2P1785) in SPECIFICATIONS.
- **4.** Put clean engine on all of the parts of the oil pump.



5. Install pressure relief valve (3), cover (4) and bolt (5) in the oil pump body assembly.



- **6.** Install gears and shafts (6) in the oil pump body assembly.
- 7. Install spacer (7) and the two keys in shafts (6).



- **8.** Install two gears and scavenge pump body assembly (8).
- **9.** Install key (9), drive gear (11), the washer and bolt (10). Tighten the bolt to a torque of 32 ± 5 lb.ft. $(43 \pm 7 \text{ N} \cdot \text{m})$.
- **10.** Install the bearing in the idler gear with tooling (B) until it is even with the outside surface of the gear.
- 11. Install the idler gear.

NOTICE

Before installation, lubricant must be in the oil pump and it must turn freely.

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