

**ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL
FOR**

LOADER

SCOOP TYPE, DED 4 X 4

ARTICULATED FRAME STEER,

2 1/2 CUBIC YARD BUCKET (CCE)

AIRBORNE/AIRMOBILE,

SECTIONALIZED AND NONSECTIONALIZED

MODEL 950BS

NSN 3805-01-126-7914

MODEL 950BSCE

NSN 3805-01-260-5162

MODEL 950BNS

NSN 3805-01-126-7915

MODEL 950BNSCE

NSN 3805-01-260-5163

This technical manual is an authentication of the manufacturers commercial literature and does not conform with the format and content specified in AR 25-30, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment.

*This publication supersedes TM 5-3805-258-24-2 dated August 1987

Approved for public release; distribution is unlimited

HEADQUARTERS, DEPARTMENT OF THE ARMY

AUGUST 1991

TECHNICAL MANUAL

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington D.C., 9 August 1991

ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL FOR
LOADER, SCOOP TYPE, DED 4X4
ARTICULATED FRAME STEER, 2 1/2 CUBIC YARD BUCKET (CCE)
AIRBORNE/AIRMOBILE, SECTIONALIZED AND NONSECTIONALIZED
MODEL 950BS; MODEL 950BSCE; MODEL 950BNS; MODEL 950BNSCE

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located in the back of this manual, directly to: Commander, U. S. Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished to you.

TABLE OF CONTENTS
DISASSEMBLY AND ASSEMBLY
ENGINE INDEX

Air Cleaner Housing	5-10	Fan	5-21
Air Compressor		Fan Drive	5-23
Models 950BNS & 950 BS	5-12	Flywheel	5-156
Models 950BSCE & 950BNSCE	5-18a	Flywheel Housing	5-157
Alternator	5-12a	Fuel Filter Base and Filter	5-91
Batteries	5-5	Fuel Injection Lines	5-76
Balancer Shafts	5-135	Fuel Injection Nozzles	5-77
Balancer Shaft Bearings	5-136	Fuel Injection Pump Housing and Governor	5-92
Camshaft	5-137	Fuel Injection Pump Housing Disassembly and Assembly	5-98a
Camshaft Bearing	5-139	Fuel Injection Pumps (See Fuel Injection Pump Housing Dis- assembly and assembly)	5-78
Connecting Rod Bearings	5-142	Fuel Priming and Primary Filter Pump Group	5-84
Crankshaft and Gear	5-145	Fuel Ratio Control	5-80
Crankshaft Front Seal and Wear Sleeve	5-59	Fuel Shutoff Solenoid	5-80
Crankshaft Main Bearings	5-143	Fuel Tank	5-160
Crankshaft Pulley	5-58		
Crankshaft Rear Seal and Wear Sleeve	5-159	Fuel Transfer Pump	5-86
Cylinder Head	5-124	Fuel Transfer Pump (Disassembly and Assembly) Models 950BS and 950BNS)	5-87
Cylinder Liners	5-140	Models 950BSCE and 950BNSCE	5-90
Electric Starting Motor	5-12d		
Engine	5-148		
Engine Front Support	5-69		
Engine Oil Cooler	5-57		
Exhaust Manifold	5-79		

* This publication supercedes TM 5-3805-258-24-2 dated August 1987

ENGINE INDEX (Cont)

Governor (Disassembly and Assembly) Models 950BS and 950BNS	5-19	Spacer Plate	5-130
Models 950BSCE and 950BNSCE	5-20a	Timing Gear Cover	5-71
Hood	5-6	Timing Gear and Plate	5-73
Muffler	5-9	Torque Converter Oil Cooler	5-37
Oil Filter Base	5-55	Turbocharger	5-49
Oil Pan	5-60	Turbocharger, Disassembly and Assembly	5-51
Oil Pan Plate	5-63	Valve Cover	5-120
Oil Pump	5-64	Valve Lifters	5-131
Pistons	5-131	Water Pump	5-28
Piston Cooling Orifices	5-147	Water Pump, Disassembly and Assembly	5-31
Radiator, Hydraulic Oil Cooler and Guard Models 950BS and 950BNS	5-39	Water Temperature Regulator	5-36
Models 950BSCE and 950BNSCE	5-42a		
Radiator and Hydraulic Oil Cooler Models 950BS and 950BNS	5-43		
Models 950BSCE and 950BNSCE	5-48a		
Rocker Shaft and Push Rods	5-121		

POWER TRAIN INDEX

Anti-Pivot Link Connection and Separation	5-163	Tires and Rims	5-164
Axles	5-166	Torque Converter and Transmission	5-236
Center Drive Shaft	5-195	Torque Converter, Disassembly and Assembly	5-238
Drive Shaft Carrier Bearing	5-191	Torque Converter Outlet Relief Valve	5-217
Engine, Torque Converter, Transmission and Transfer Gears	5-220	Transfer Gears	5-299
Engine, Torque Converter, Transmission and Transfer Gears Separation and Connection	5-235	Transmission, Disassembly and Assembly	5-262
Final Drive	5-168	Transmission Hydraulic Control Valve	5-251
Final Drive Planet Carriers	5-169	Transmission Hydraulic Control Valve, Disassembly and Assembly	5-255
Front Axle Housing	5-182	Transmission Oil Filter	5-209
Standard Differential	5-197	Transmission Oil Filter, Disassembly and Assembly	5-210
Front Drive Shaft	5-195	Transmission Oil Pump	5-213
Front and Rear Differentials	5-199	Transmission Oil Pump, Disassembly and Assembly	5-214
No-Spin Differential	5-198	Wheels, Bearings and Duo-Cone Seals	5-170
Rear Axle Housing	5-183	Wheel Spindles	5-180
Rear Axle Housing Front Support	5-185	Wheel Brakes	5-175
Rear Axle Housing Rear Support	5-187	Wheel Brakes, Disassembly and Assembly	5-177
Rear Drive Shaft	5-196		

VEHICLE SYSTEMS INDEX

Air Dryer	.5-430a	Parking Brake	.5-454
Air/Hydraulic Cylinder Group	.5-441	Parking Brake Chamber	.5-448
Air\Hydraulic Cylinder Group, Disassembly and Assembly.	.5-443	Pilot and Hydraulic Pump	.5-394a
Air Reservoir	.5-430	Pilot Control Valve	.5-338
Brake Quick Release Valve	.5-459	Selector and Pressure Control Valve	.5-348
Bucket Cylinders	.5-372a	Steering Control Make-Up Valve	5-386a
Bucket Positioner Control	.5-324	Steering Control Valve Manifold 950BS and 950BNS	.5-384
Foot-Operated Brake Valves	.5-431	950BSCE and 950BNSCE	.5-386
Hand Metering Pump	.5-435	Steering Control Valve 950BS and 950BNS	.5-386b
Hydraulic oil Filters	.5-410	950BSCE and 950BNSCE	.5-388
Hydraulic Tank	.5-412	Steering Cylinders	.5-373
Lift Cylinders	.5-362	Steering Neutralizer Valves	.5-380
Lift Kickout Control	.5-323	Supplemental Steering Gear Pump	.5-394
Loader Control Valves	.5-326	Tilt Cylinders	.5-350
Loader Frame	.5-318	Tilt Link and Lever	.5-31
Loader Main Frame, Separation and Connection		Transmission Neutralizer Group 950BS and 950BNS	.5-425
950BS and 950BNS	.5-461	950BSCE and 950BNSCE	.5-426a
950BSCE and 950BNSCE	.5-476		

OPERATOR'S STATION INDEX

Adjustable Steering Column	.5-507	Instrument Panel	.5-496
Brake Pedal	.5-505	Mirror	.5-495
Fuse Panel	.5-493	Parking Brake Cable 950BS and 950BNS	.5-491
Governor Pedal Group 950BS and 950BNS	.5-501	950BSCE and 950BNSCE	.5-492a
950BSCE and 950BNSCE	.5-504a	Rollover Protective Structure (ROPS)	.5-519
Hydraulic Control Group	.5-520	Seat	.5-476m
		Steering Wheel	.5-490

SUPPLEMENTAL OPERATING MAINTENANCE INSTRUCTIONS

Refer to page 5-531 (Includes MAC Chart and PMCS)

TABLE OF CONTENTS

Lubrication and Maintenance: Refer to Operator's Manual

Specifications: Refer to Maintenance Manual Volume 1

Systems Operation: Refer to Maintenance Manual Volume 1

Testing and Adjusting: Refer to Maintenance Manual Volume 1

Disassembly and Assembly: This volume.

BATTERIES

REMOVE BATTERIES

1401-11

WARNING

Batteries discharge highly explosive hydrogen gas and can explode and shower you with sulfuric acid if a spark is created near the battery. Batteries can also cause burn injuries when a ring or watch completes a circuit between the positive battery post and the frame of the machine. To prevent injuries always remove all rings and watches and wear safety glasses while work is done on or near the batteries. Use extra caution not to cause sparks near the battery. Disconnect the ground cable first and connect it last.

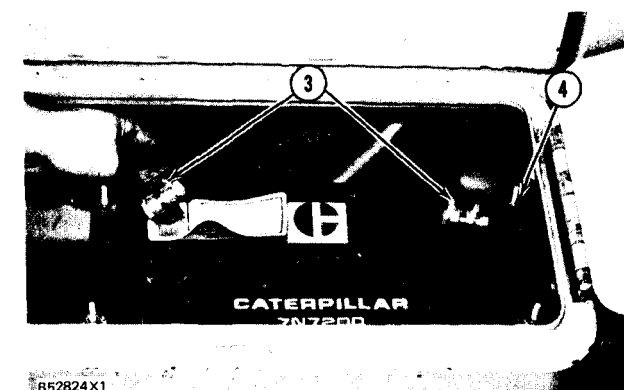
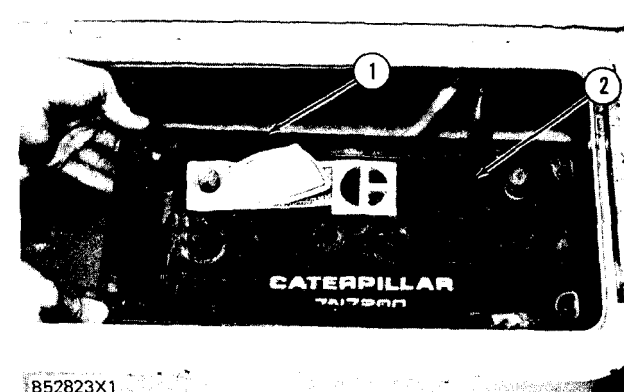
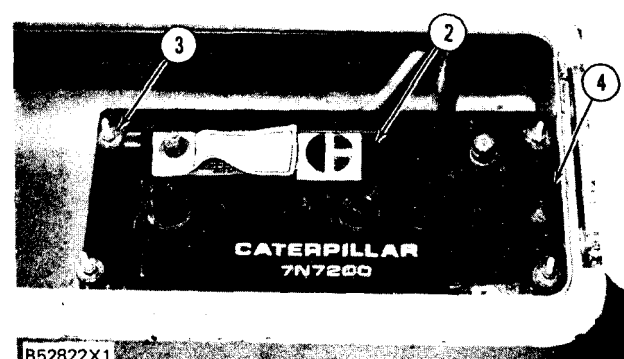
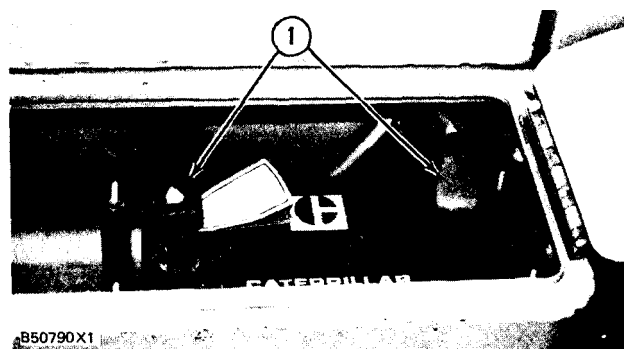
NOTE: Make sure the disconnect switch is in the "OFF" position.

1. Open access panels on the rear frame.
2. Disconnect cable assemblies (1) from the batteries.
3. Remove nuts (3) from the rods.
4. Remove plates (4) that hold batteries (2) in place.
5. Use battery carriers and two people to remove batteries (2) from the machine. The weight of each battery is 26 kg (58 lb.).

INSTALL BATTERIES

1401-12

1. Put batteries (2) into position in the machine.
2. Install plates (1) on the batteries as shown.
3. Install nuts (4) that hold the plates in place.
4. Connect cable assemblies (3) to the batteries.
5. Close the access panels.



HOOD

REMOVE HOOD

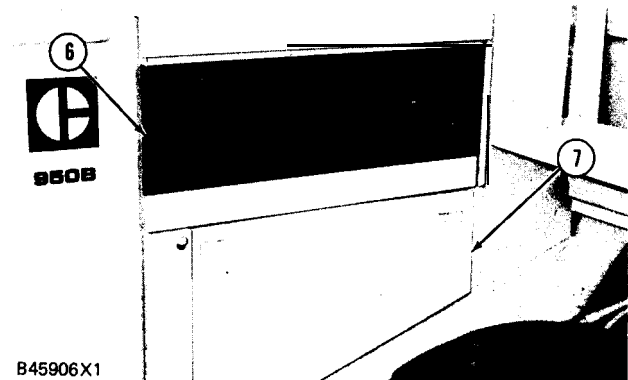
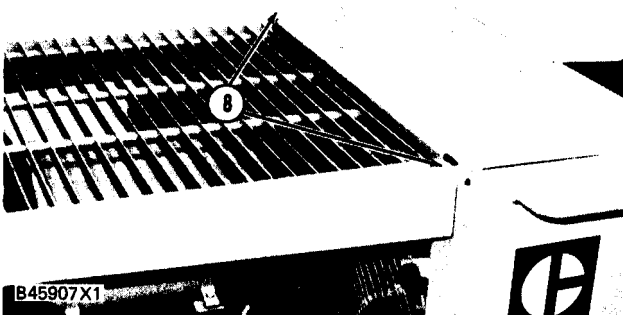
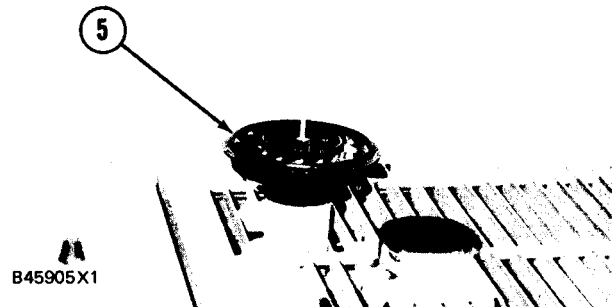
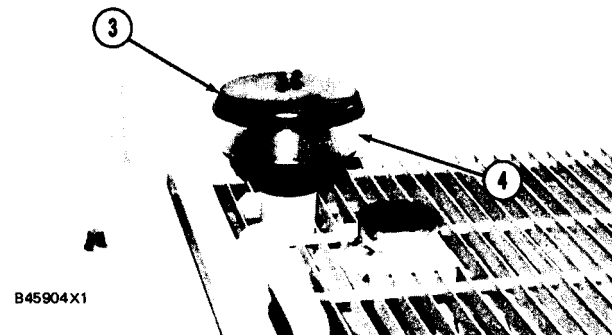
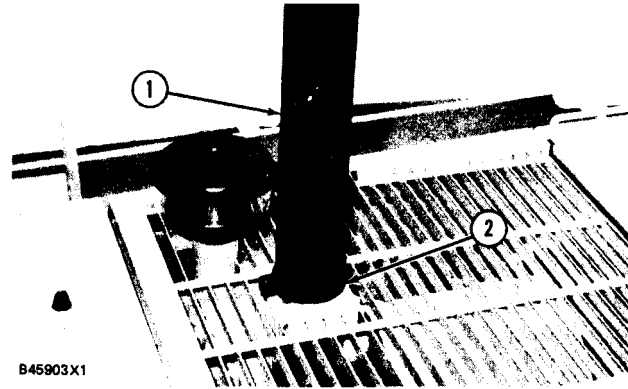
7251-11

1. Loosen the bolt that holds clamp (2) in place.
2. Remove exhaust pipe (1) from the machine.
3. Remove the wing nut, cover (3) and body (4) from the base assembly.
4. Remove base assembly (5) from the machine.

NOTE: It can be necessary to use heat on the base to remove it from the air cleaner housing.

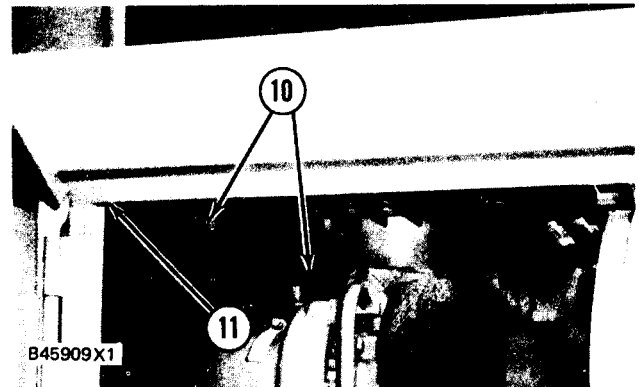
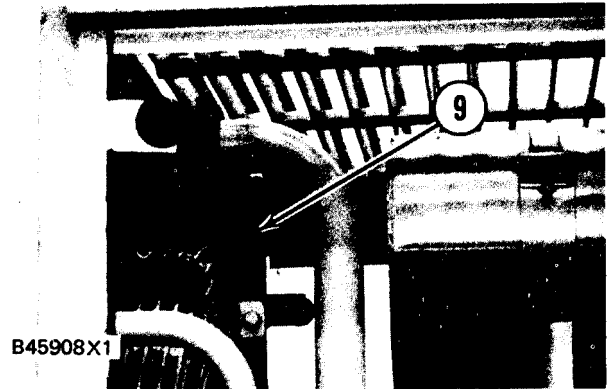
5. Open door assemblies (6) and (7) from both sides of the machine.

6. Remove bolts (8) from the rear of the hood.



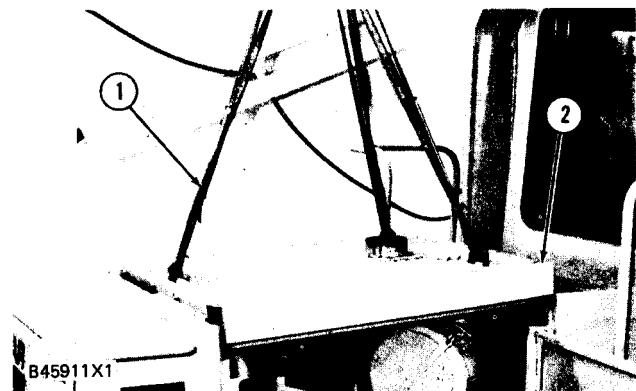
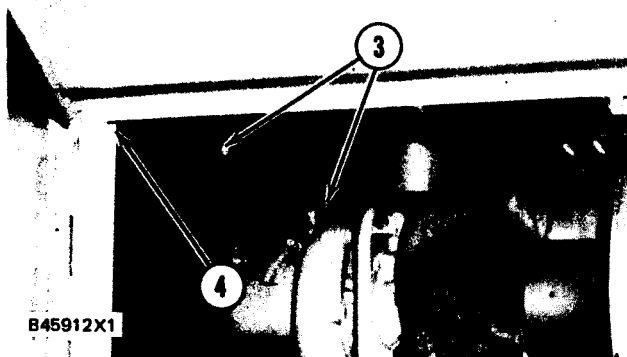
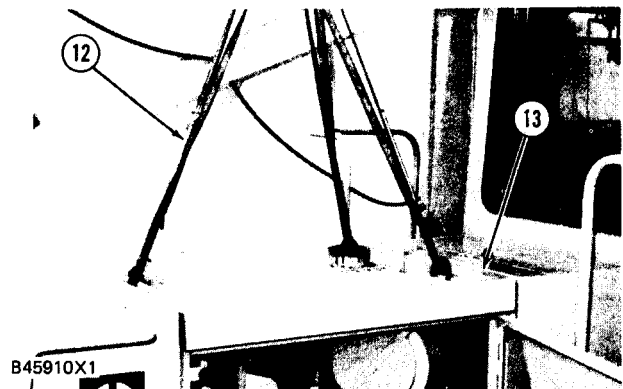
HOOD

7. Remove bolts (9) from each side of the rear hood.
8. Remove three nuts (10) from the front of the hood.
9. Remove two bolts (11) (not shown) from each side of the front of the hood.
10. Fasten straps (12) and a hoist to hood (13) as shown. Remove hood (13) from the machine. The weight of the hood is 52 kg (115 lb.).

**INSTALL HOOD**

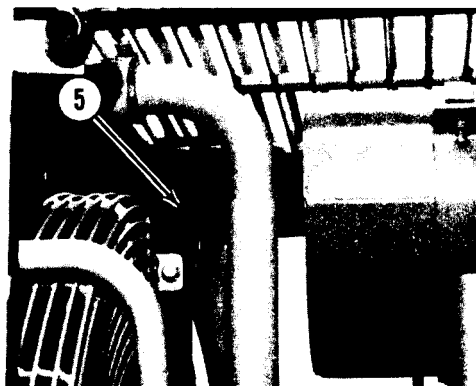
7251-11

1. Fasten straps (1) and a hoist to hood (2).
2. Put hood (2) in position on the machine as shown.
3. Install nuts (3) that hold the front of the hood to the machine.
4. Install two bolts (4) (not shown) on each side of the front hood.

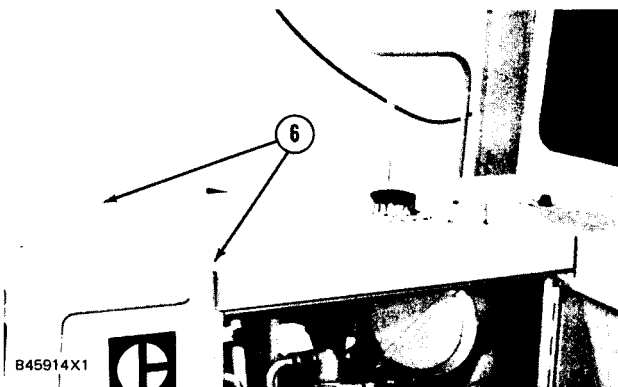


HOOD

5. Install bolts (5), two each side of the front head.

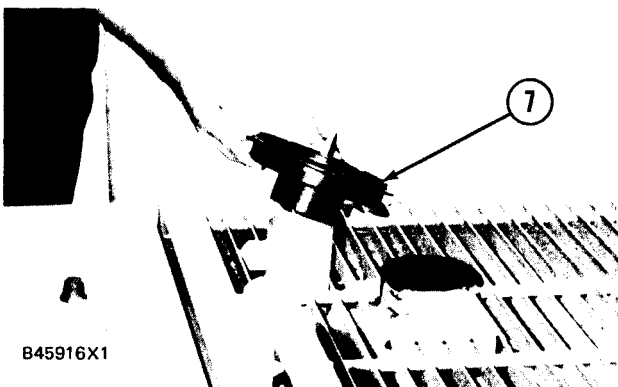


6. Install bolts (6) to the top of the rear hood.

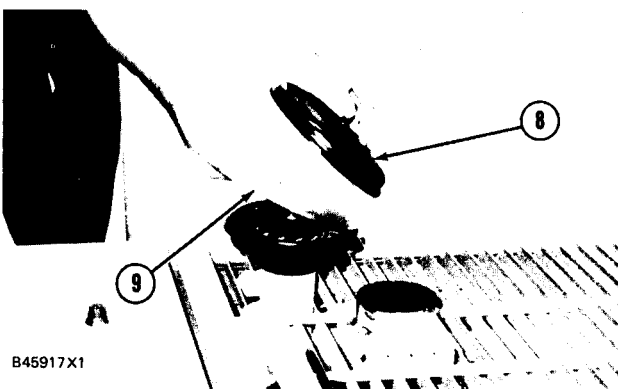


7. Close the door assemblies on each side of the machine.

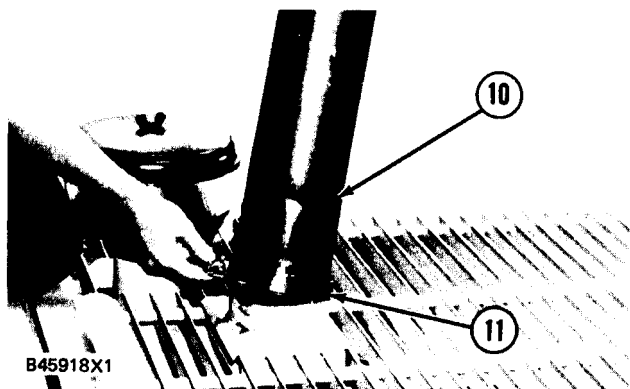
8. Install hose assembly (7) on the air cleaner housing.



9. Install body (9) and cover (8) on the base assembly.



10. Install exhaust pipe (10) and clamp (11) on the machine.



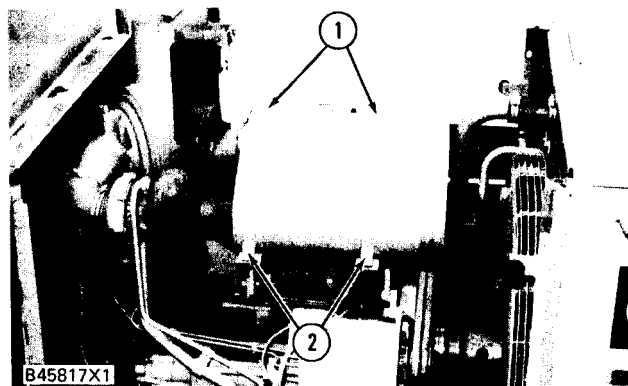
MUFFLER

REMOVE MUFFLER

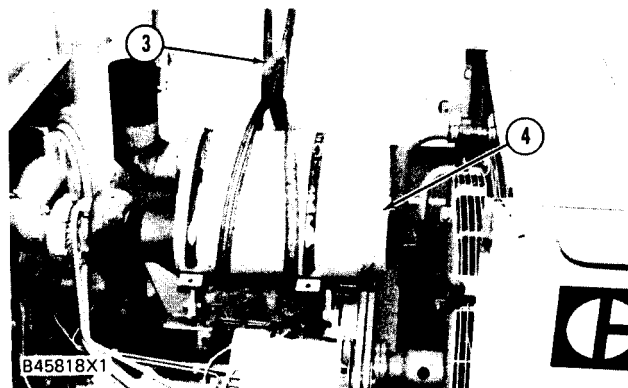
1062-11

start by:
a) remove hood

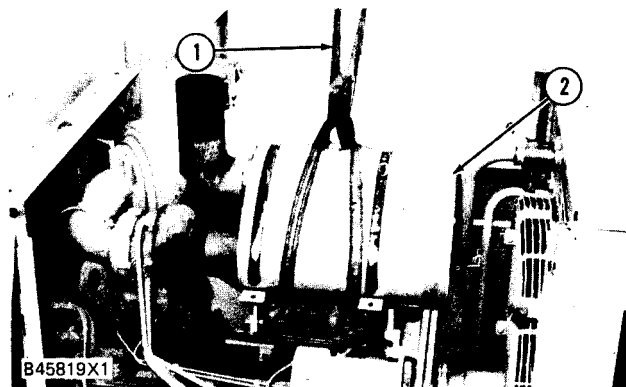
1. Remove bolts (2) and clamps (1) from the muffler.



2. Fasten strap (3) and a hoist to muffler (4).



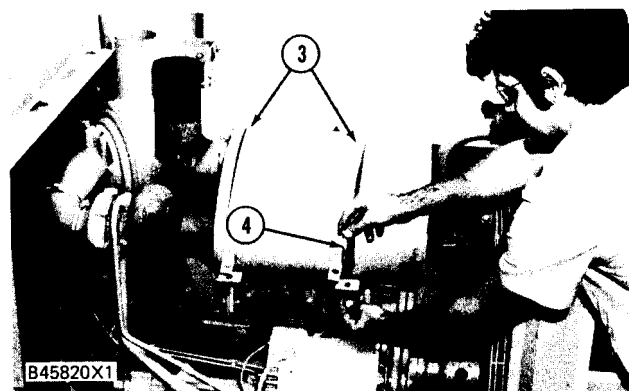
3. Move muffler (4) toward the rear of the machine to make a separation of the muffler from the turbocharger. Remove the muffler.



INSTALL MUFFLER

1062-12

1. Fasten a strap (1) to muffler (2). Put the muffler in position and make a connection between the muffler and the turbocharger.



2. Put clamps (3) in position on the muffler and install bolts (4) that hold them in place.