

MX80C, MX90C and MX100C Tractors

Service Manual Don 7-72626

Table of Contents

Binder 1 Contains Tabs 1 to 6
Binder 2 Contains Tabs 7 to 10

	Section	Pub. No.
1 GENERAL		
Loctite Product Chart		8-98902
Safety Rules, General Information and Torque Specifications.....	1001	8-86531
General Specifications and Torques	1002	7-72192
Special Tools	1005	7-72202
2 ENGINE		
Engine Removal	2001	7-72210
NOTE: For Service and Overhaul procedures refer to your Engine Service Manual Don 7-71721.		
3 FUEL SYSTEM		
Fuel Tank Removal and Servicing.....	3005	7-72220
NOTE: For Service and Overhaul procedures refer to your Engine Service Manual Don 7-71721.		
4 ELECTRICAL		
Electrical Schematics	4001	7-73860
Instrument Cluster Programming.....	4002	7-71332
Battery Servicing and Testing.....	4004	7-73210
5 STEERING		
How It Works	5	7-72230
Steering Column and Steering Hand Pump	5001	7-72241
Danfoss Steering Hand Pump	5002	7-73341
Eaton Steering Hand Pump.....	5002	7-73351
Rexroth Steering Hand Pump.....	5002	7-73960
6 TRANSMISSION		
How It Works	6	7-72260
Separating the Tractor (Engine and Speed Transmission) and Torque Dampener	6002	7-72270
Separating the Speed and Range Transmission	6003	7-72280
Servicing the Powershift Transmission	6006	7-72290
Range Transmission Servicing.....	6007	7-66111
Powershift Valve.....	6009	7-66131
Shuttle Valve	6010	7-66141

.....continued

NOTE: Information contained in this Manual may cover features that are not available in all markets worldwide.

CASE CORPORATION
700 State Street
Racine, WI 53404 U.S.A.

CASE CANADA CORPORATION
3350 South Service Road
Burlington, ON L7N 3M6 CANADA

Don 7-72636

Copyright © 2000 Case Corporation
Printed in U.S.A.
April 1998 (Revised October 2000)

Synchronizer Creep Transmission	6011	7-72780
Differential and Differential Lock	6012	7-66161
MFD Drive Shaft.....	6014	7-72330
MFD Output Shaft and Bearing.....	6015	7-72771
MFD Clutch	6017	7-72340
Rear Axles and Planetaries.....	6018	7-72350
PTO - Reversible and Shiftable.....	6019	7-66201
PTO Front Drive Shaft and Hydraulic Pump Drive Gear prior to Transmission Serial Number JKA475119.....	6023	7-66221
PTO Front Drive Shaft and Hydraulic Pump Drive Gear from Transmission Serial Number JKA475120.....	6023	7-72710
 7 BRAKES		
How It Works.....	7	7-72380
Parking Brake	7001	7-72720
Service Brakes	7002	7-72390
Hydraulic Trailer Brake.....	7004	7-67711
 8 HYDRAULICS		
How it Works	8	7-72320
How to Read Hydraulic Schematics	8000	8-94372
Hydraulic Troubleshooting and Schematic.....	8001	7-72660
Charge Pump/Transfer Pump	8003	7-66290
Hydraulic Valves	8006	7-66331
Hydraulic Schematic Poster		7-72820
 9 CHASSIS AND MOUNTED EQUIPMENT		
Pedal, Lever Adjustments	9001	7-72441
Air Conditioner Troubleshooting (Visual and Operating)	9002	7-73002
Air Conditioner Troubleshooting (Gauges and Testing)	9003	7-73010
Air Conditioner System Service (Refrigerant Recovery, System Evacuation and Recharging)	9004	7-72860
Air Conditioner System Components Servicing	9005	7-72460
Cab Removal and Tilting the Cab Roof.....	9006	7-72470
 10 CONTROLLER SYSTEMS		
Hitch/MFD/Differential Lock Controller Calibration, Error Codes and Schematics	10002	7-73562
PTO/FNR Controller and Powershift Configuration, Error Codes and Schematics.....	10006	7-73571
Programming the PTO/FNR Controller and Hitch/MFD/Differential Lock Controller	10010	7-74001

Section 1001

1001

SAFETY, GENERAL INFORMATION
AND TORQUE SPECIFICATIONS

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>

TABLE OF CONTENTS

SAFETY 3


GENERAL INFORMATION

- Cleaning 5
- Inspection 5
- Bearing 5
- Needle Bearings 5
- Gears 5
- Oil Seals, O-Rings And Gaskets 5
- Shafts 5
- Service Parts 5
- Lubrication 5

STANDARD TORQUE DATA FOR NUTS AND BOLTS

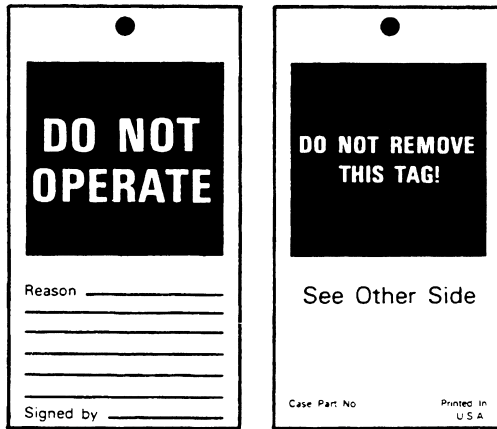
- Chart 1 (Plain Nuts/Bolts) 6
- Chart 2 (Phosphate Coated Nuts/Bolts) 6
- Chart 3 (Zinc or Cadmium Plated Nuts/Bolts) 7


SAFETY


 **This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about safety. Carefully read the message. Make sure you fully understand the causes of possible injury or death.**


To prevent injury always follow the Warning, Caution and Danger notes in this section and throughout the manual.


Put the warning tag shown below on the key for the key switch when servicing or repairing the machine. One warning tag is supplied with each machine. Additional tags Part Number 331-4614 are available from your service parts supplier.





 **WARNING: Before starting engine, study Operator's Manual safety messages. Read all safety signs on machine. Clear the area of other persons. Learn and practice safe use of controls before operating.**
It is your responsibility to understand and follow manufacturers instructions on machine operation, service, and to observe pertinent laws and regulations. Operator's and Service Manuals may be obtained from you J.I. Case dealer.


 **WARNING: If you wear clothing that is too loose or do not use the correct safety equipment for your job, you can be injured. Always wear clothing that will not catch on objects. Extra safety equipment that can be required includes hard hat, safety shoes, ear protection, eye or face protection, heavy gloves and reflector clothing.**


 **WARNING: Read the operators manual to familiarize yourself with the correct control functions.**

 **WARNING: When working in the area of the fan belt with the engine running, avoid loose clothing if possible, and use extreme caution.**

 **WARNING: Operate the machine and equipment controls from the seat position only. Any other method could result in serious injury.**

 **WARNING: When doing checks and tests on the equipment hydraulics, follow the procedures as they are written. DO NOT change the procedure.**

 **WARNING: This is one a man machine, no riders allowed.**

 **WARNING: When putting the hydraulic cylinders on this machine through the necessary cycles to check operation or to remove air from a circuit, make sure all people are out of the way.**



WARNING: Use insulated gloves or mittens when working with hot parts.



CAUTION: Lower all attachments to the ground or use stands to safely support the attachments before you do any maintenance or service.



CAUTION: Pin sized and smaller streams of hydraulic oil under pressure can penetrate the skin and result in serious infection. If hydraulic oil under pressure does penetrate the skin, seek medical treatment immediately. Maintain all hoses and tubes in good condition. Make sure all connections are tight. Make a replacement of any tube or hose that is damaged or thought to be damaged. **DO NOT** use your hand to check for leaks, use a piece of cardboard or wood.



CAUTION: When removing hardened pins such as a pivot pin, or a hardened shaft, use a soft head (brass or bronze) hammer or use a driver made from brass or bronze and a steel head hammer.



CAUTION: When using a hammer to remove and install pivot pins or separate parts using compressed air or using a grinder, wear eye protection that completely encloses the eyes (approved goggles or other approved eye protectors).



CAUTION: Use suitable floor (service) jacks or chain hoist to raise wheels or tracks off the floor. Always block machine in place with suitable safety stands.



CAUTION: When servicing or repairing the machine. Keep the shop floor and operator's compartment and steps free of oil, water, grease, tools, etc. Use oil absorbing material and or shop cloths as required. Use safe practices at all times.



CAUTION: Some components of this machine are very heavy. Use suitable lifting equipment or additional help as instructed in this Service Manual.



DANGER: Engine exhaust fumes can cause death. If it is necessary to start the engine in a closed place, remove the exhaust fumes from the area with an exhaust pipe extension. Open the doors and get outside air into the area.



DANGER: When the battery electrolyte is frozen, the battery can explode if (1), you try to charge the battery, or (2), you try to jump start and run the engine. To prevent that battery electrolyte from freezing, try to keep the battery at full charge. If you do not follow these instructions, you or others in the area can be injured.



DANGER: Batteries contain acid and explosive gas. Explosions can result from sparks, flames or wrong cable connections. To connect the jumper cables correctly to the battery of this machine see the Operator's Manual. Failure to follow these instructions can cause serious injury or death.

GENERAL INFORMATION

Cleaning

Clean all metal parts except bearings, in mineral spirits or by steam cleaning. Do not use caustic soda for steam cleaning. After cleaning dry and put oil on all parts. Clean oil passages with compressed air. Clean bearings in kerosene, dry the bearings completely and put oil on the bearings.

Inspection

Check all parts when the parts are disassembled. Replace all parts that have wear or damage. Small scoring or grooves can be removed with a hone or crocus cloth. Complete visual inspection for indications of wear, pitting and the replacement of parts necessary will prevent early failures.

Bearings

Check bearings for easy action. If bearings have a loose fit or rough action replace the bearing. Wash bearings with a good solvent or kerosene and permit to air dry. **DO NOT DRY BEARINGS WITH COMPRESSED AIR.**

Needle Bearings

Before you press needle bearings in a bore always remove any metal protrusions in the bore or edge of the bore. Before you press bearings into position put petroleum jelly on the inside and outside diameter of the bearings.

Gears

Check all gears for wear and damage. Replace gears that have wear or damage.

Oil Seals, O-Rings And Gaskets

Always install new oil seals, o-rings and gaskets. Put petroleum jelly on seals and o-rings.

Shafts

Check all shafts that have wear or damage. Check the bearing and oil seal surfaces of the shafts for damage.

Service Parts

Always install genuine Case service parts, when ordering refer to the Parts Catalog for the correct part number of the genuine Case replacement items. Failures due to the use of other than genuine Case replacement parts are not covered by warranty.

Lubrication

Only use the oils and lubricants specified in the Operators or Service Manual. Failures due to the use of non specified oils and lubricants are not covered by warranty.

STANDARD TORQUE DATA FOR NUTS AND BOLTS

NOTE: A "click type" torque wrench is recommended for the bolt torques listed below.

Chart 1 (Plain Nuts/Bolts)

BOLT SIZE (mm)	TYPE 8.8				TYPE 10.9			
	MIN		MAX		MIN		MAX	
	lb ft	Nm	lb ft	Nm	lb ft	Nm	lb ft	Nm
M4	3.0	4.0	3.4	4.5	4.3	5.8	4.8	6.5
M5	4.8	6.5	5.5	7.5	7.0	9.5	7.8	10.5
M6	8.2	11.0	9.2	12.5	11.8	16.0	13.3	18.0
M8	20.0	27.0	22.5	31.0	28.7	39.0	32.3	44.0
M10	40.0	54.0	45.0	61.0	56.0	77.0	64.0	87.0
M12	69.0	94.0	78.0	106.0	100.0	134.0	110.0	151.0
M14	110.0	150.0	125.0	170.0	160.0	215.0	180.0	240.0
M16	175.0	235.0	190.0	260.0	245.0	335.0	275.0	375.0
M20	345.0	470.0	390.0	530.0	480.0	650.0	540.0	730.0
M22	475.0	640.0	530.0	720.0	655.0	890.0	735.0	1000.0
M24	600.0	810.0	675.0	915.0	830.0	1125.0	930.0	1265.0
M30	1190.0	1615.0	1340.0	1815.0	1645.0	2235.0	1855.0	2515.0
M36	2080.0	2825.0	2340.0	3175.0	2875.0	3900.0	3235.0	4390.0

Chart 2 (Phosphate Coated Nuts/Bolts)

BOLT SIZE (mm)	TYPE 8.8				TYPE 10.9			
	MIN		MAX		MIN		MAX	
	lb ft	Nm	lb ft	Nm	lb ft	Nm	lb ft	Nm
M4	2.3	3.0	2.6	3.4	3.2	4.4	3.6	4.9
M5	3.6	4.9	4.1	5.6	5.2	7.1	5.9	8.0
M6	6.2	8.3	6.9	9.4	8.9	12.0	10.0	13.5
M8	15.0	20.3	16.9	23.3	21.5	29.2	24.2	32.8
M10	30.0	41.0	34.0	46.0	42.0	58.0	48.0	65.0
M12	52.0	71.0	59.0	80.0	75.0	101.0	83.0	113.0
M14	83.0	113.0	94.0	126.0	120.0	161.0	135.0	180.0
M16	131.0	176.0	143.0	195.0	185.0	251.0	205.0	280.0
M20	259.0	353.0	293.0	400.0	360.0	490.0	405.0	550.0
M22	355.0	480.0	400.0	540.0	490.0	665.0	550.0	750.0
M24	450.0	608.0	506.0	686.0	625.0	845.0	700.0	950.0
M30	893.0	1211.0	1005.0	1361.0	1235.0	1675.0	1390.0	1885.0
M36	1560.0	2119.0	1755.0	2381.0	2156.0	2925.0	2425.0	3295.0

Section 2001

2001

ENGINE REMOVAL

MX80C, MX90C and MX100C Tractors

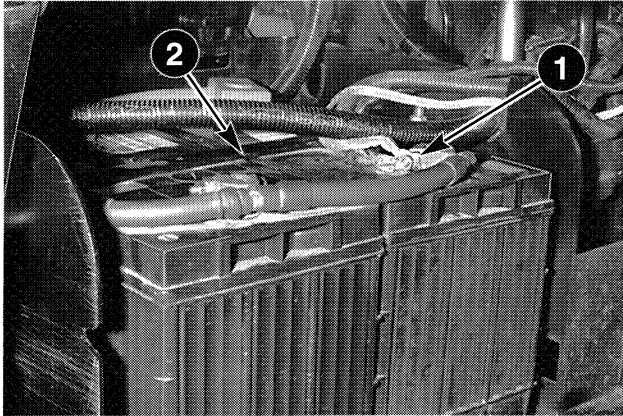
ENGINE REMOVAL

Removal

Before removing the Engine it is necessary to carry out the following:

- Park the tractor on hard level ground and apply the parking brake.
- Stop the engine and remove the key.
- Put blocks in front of and behind the rear wheels.
- Remove the Front Hitch, if equipped.
- Remove the front weights and bracket, if equipped.
- Remove the Hood.
- Remove the MFD Drive Shaft, refer to Section 6014.

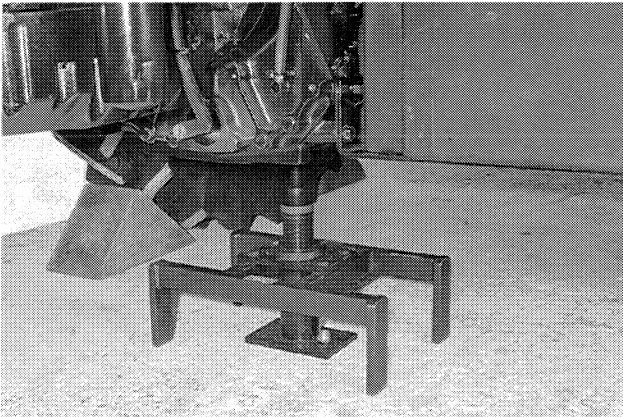
STEP 1



DD98E177

Remove the battery box cover, disconnect the battery negative (-) terminals first. Disconnect engine harness clean ground wire (1), remove the battery clamp retaining nuts and clamp (2) and remove the batteries.

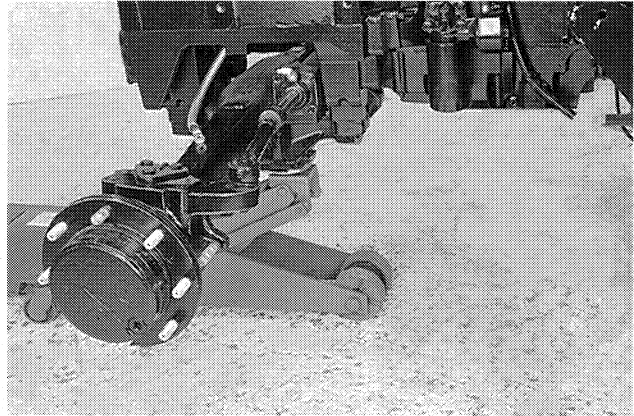
STEP 2



DP98B156

Raise the front of the tractor and remove the front wheels. Support the tractor on a suitable stand under the speed transmission.

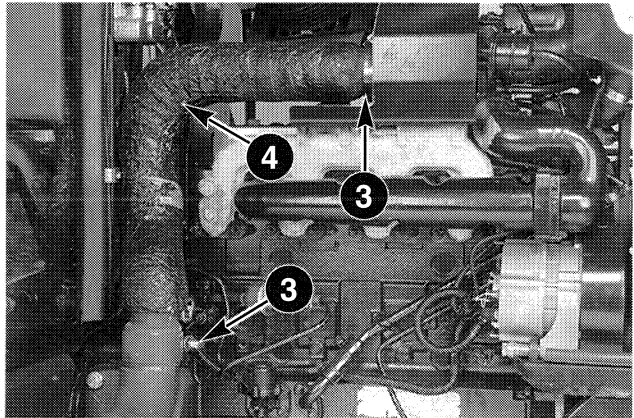
STEP 3



DP98B480

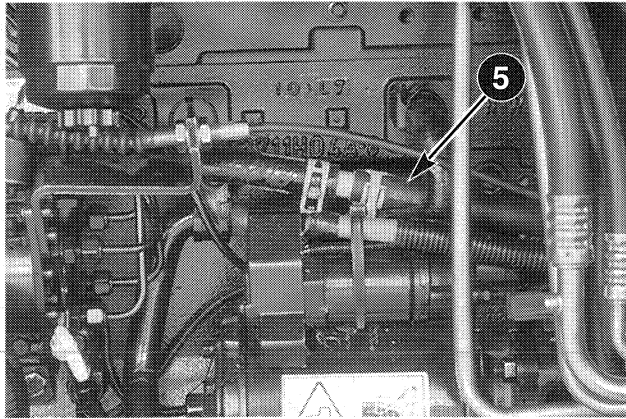
Disconnect and cap the steering hoses. Remove the retaining bolts and carefully remove the front axle.

STEP 4



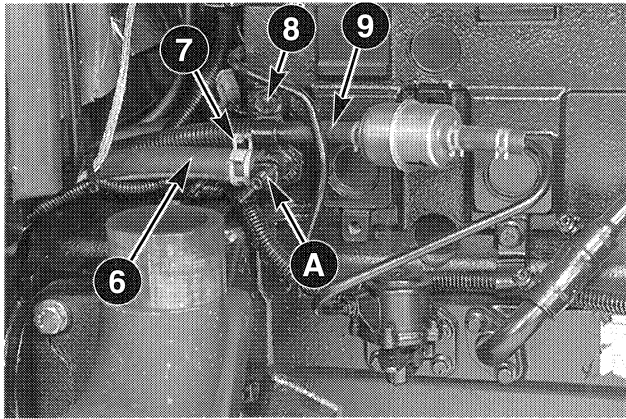
DP98E158

Loosen clamp bolts (3) and remove exhaust tube (4).

STEP 5

DP98E160

Use a suitable hose clamp and clamp heater return hose (5).

STEP 6

DP98E159

Close heater tap (A), use a suitable hose clamp and clamp heater feed hose (6). Release the hose clip (7) and disconnect the heater hose, plug the hose with a 5/8 inch diameter plug and secure with the hose clip. Connect a suitable length of hose to the tap (A) place the open end of the hose into a suitable container, open the tap (A) and drain the coolant from the engine. Remove the retaining bolt and remove fuel hose clamp (8). Release the hose clip and disconnect fuel hose (9) from the fuel filter. Cap the hose and fuel filter.

STEP 7**Tractors Equipped with Air Conditioner**

Refer to Section 9005 (Air Conditioner Components "Strip Away") and remove the air conditioner compressor, receiver drier and condenser. DO NOT disconnect the components.



WARNING: Never touch liquid refrigerant, since even a drop on your skin will cause sever and painful frostbite.

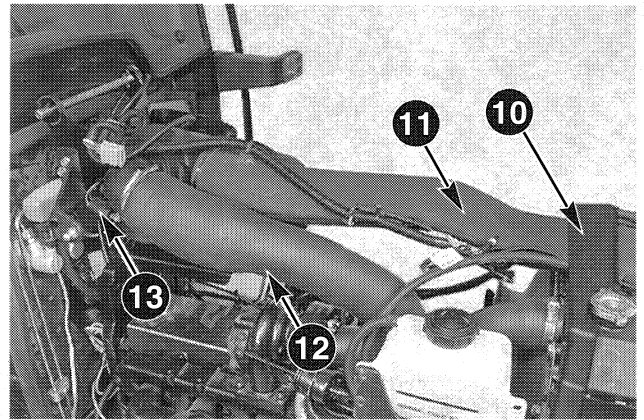
SM114A



WARNING: Always wear safety goggles when working with liquid refrigerant. Liquid refrigerant in your eyes could cause blindness.

SM105A

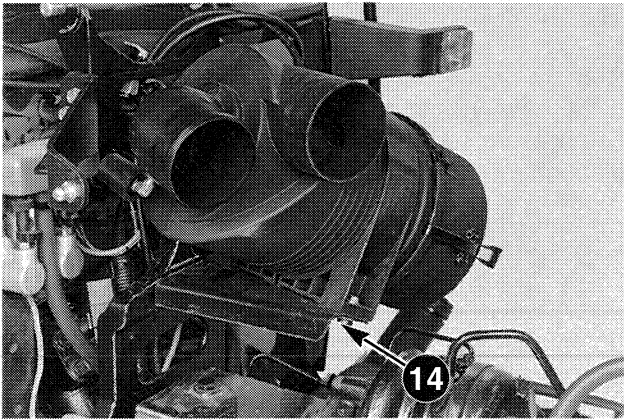
NOTE: Make sure the condenser remains in the upright position after removal.

STEP 8

DR98E253

Remove the retaining bolts and remove the foam insulation bracket (10). Remove tie straps securing the upper engine harness to the air intake tube (11). Loosen the clamps and remove the air filter intake tube (11) and outlet tube (12). Disconnect the air filter restriction switch (13) from the harness. Cap the turbocharger inlet and outlet ports.

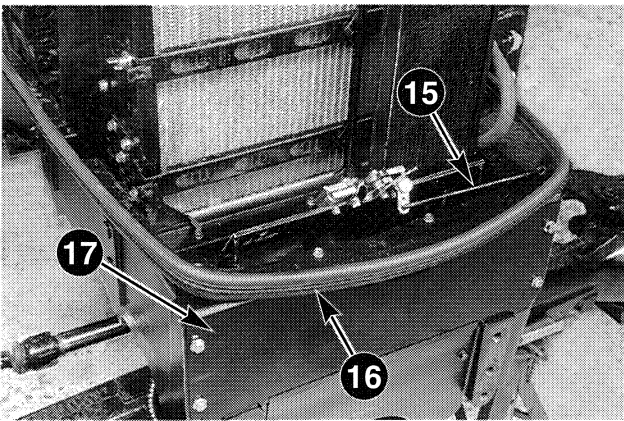
STEP 9



DP98B122

Remove the retaining bolts and remove air filter bracket assembly (14).

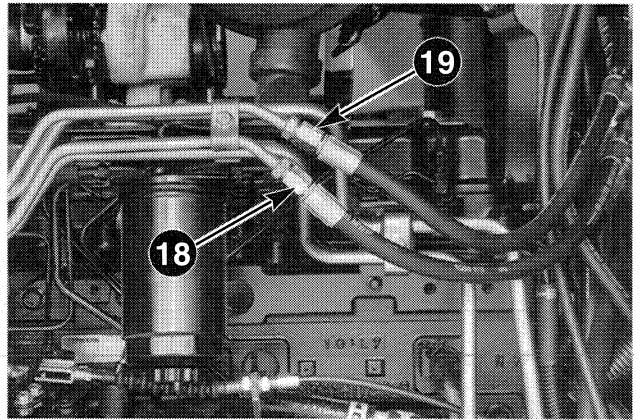
STEP 10



DP98E166

Remove the retaining clip and disconnect hood release rod (15), remove the retaining bolts and carefully remove lower grille (16). Remove the retaining bolts and front cover (17).

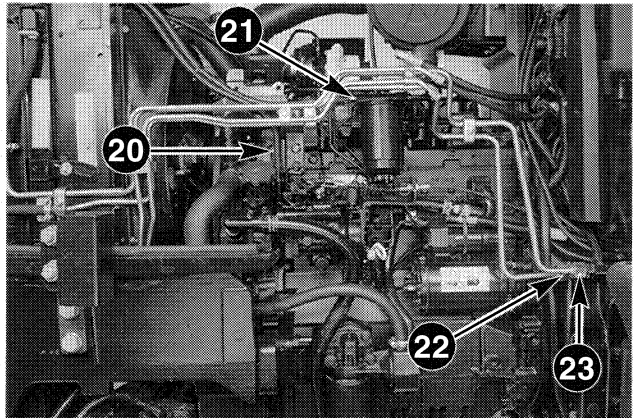
STEP 11



DP98E182

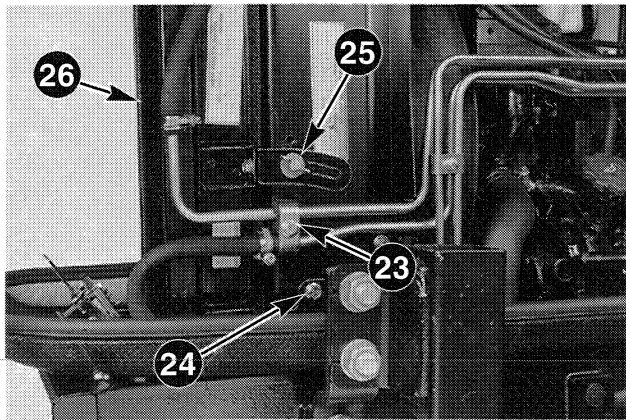
Put identification marks on and disconnect the steering hoses (18) and (19). Cap the hoses and fittings.

STEP 12



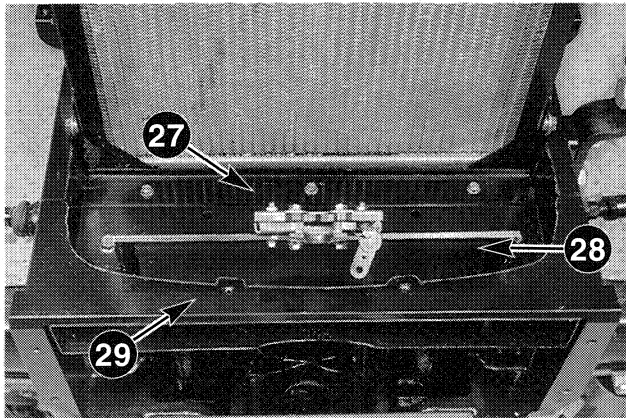
DP98E163

Put identification marks on the fuel cooler hoses. Remove the hose clips and disconnect the fuel cooler hoses (20) and (21), cap the hoses and tubes. Put identification marks on and disconnect the oil cooler hoses (22) and (23), remove and discard the o-rings. Cap the hoses and fittings.

STEP 13

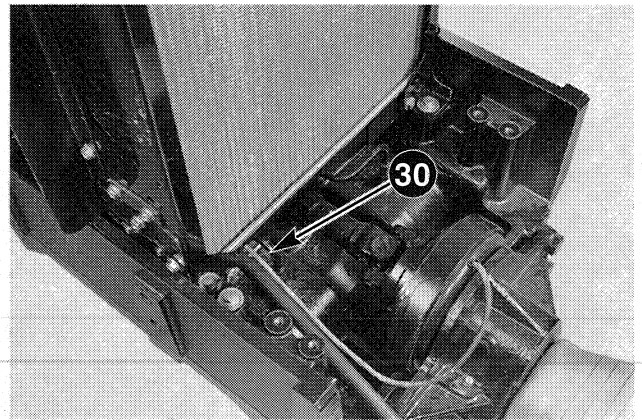
DP98E164

Remove the retaining bolt and tube clamp (23). Loosen bolt (24) and remove retaining bolt (25) from both sides of the radiator. Remove the oil/fuel cooler assembly (26).

STEP 14

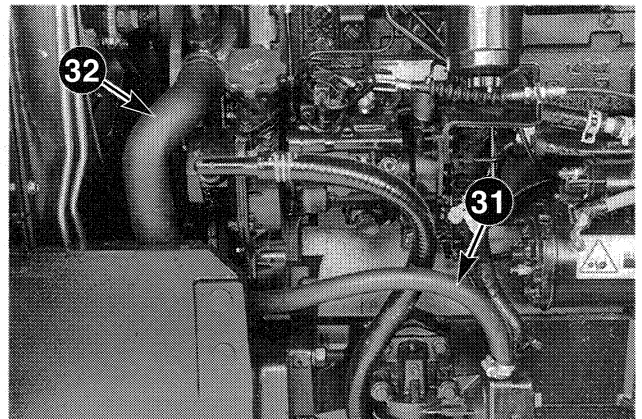
DP98E165

Loosen radiator seal bracket (27) retaining bolts. Remove the retaining bolts and remove the hood latch bracket (28) and top plate (29).

STEP 15

DP98E136

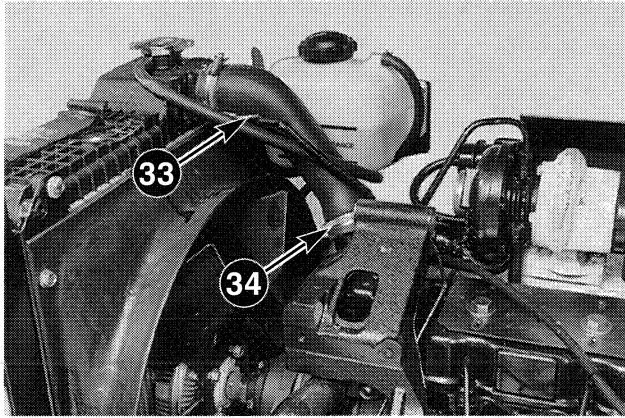
For Tractors equipped with Front PTO and Front Hitch, remove the tie strap (30) securing the Front PTO clutch cable and front hitch hose to the RH steering tube. Remove the front hitch hose from the bolster and place onto the battery box.

STEP 16

DP98E167

Put a container under the engine oil cooler, loosen the hose clip and disconnect hose (31), drain any remaining coolant from the radiator and engine. Loosen the hose clip and disconnect bottom radiator hose (32).

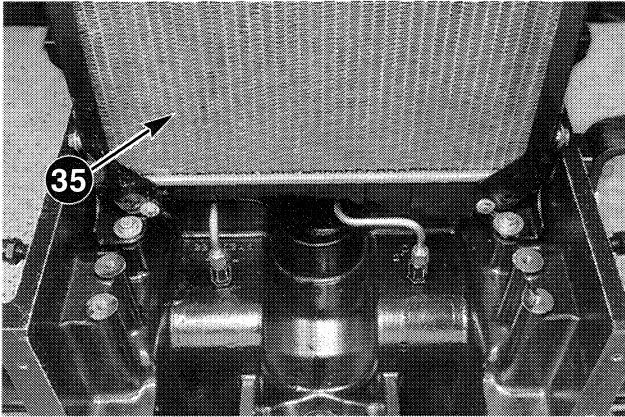
STEP 17



DP98E170

Remove the tie strap securing the harness to the top radiator hose. Disconnect coolant level sender (33) from the harness. Loosen the hose clip and disconnect top radiator hose (34).

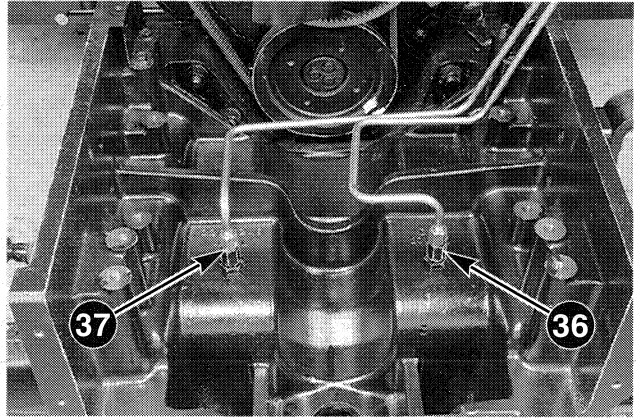
STEP 18



DP98E168

Remove the four radiator mounting bolts and remove the radiator assembly (35).

STEP 19



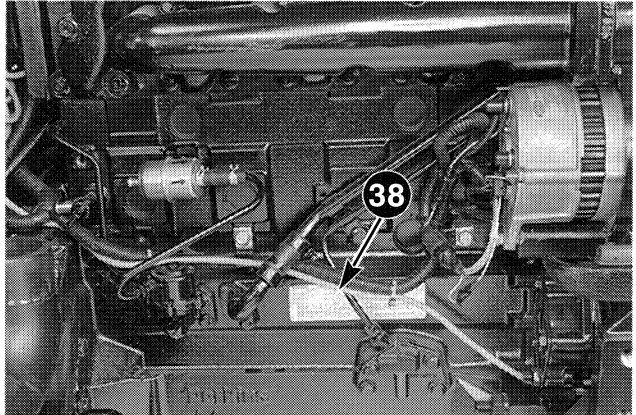
DP98E173

Disconnect and remove the steering tubes (36) and (37), cap the tubes and fittings.

NOTE: For Tractors not equipped with Front PTO or Front Hitch go to STEP 22.

STEP 20

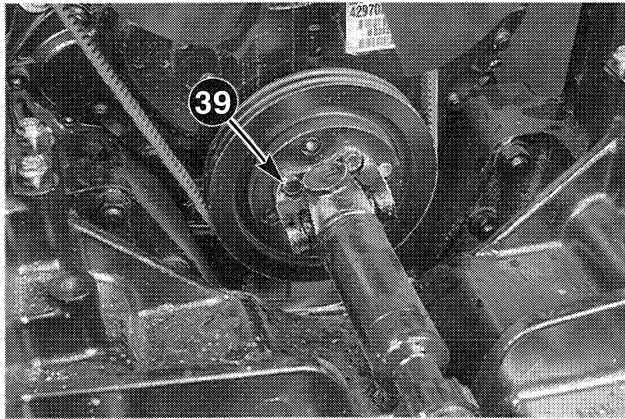
For Tractors Equipped with Front PTO



DP98B118

Disconnect front PTO clutch cable at the firewall and remove the tie straps securing the cable to the engine harness. Place front PTO cable (38) onto the front PTO assembly.

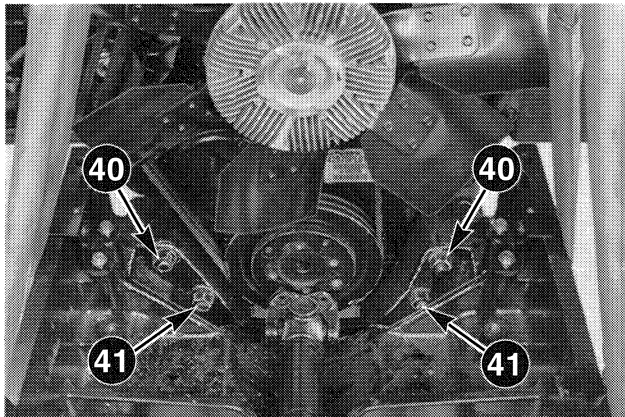
STEP 21
For Tractors Equipped with Front PTO



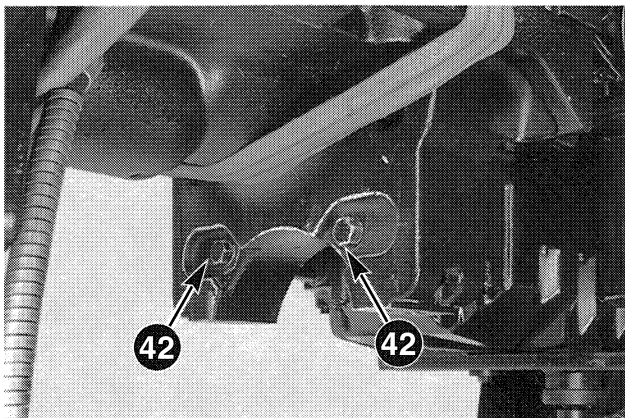
DP98B137

Remove retaining bolts and disconnect front PTO drive shaft (39) from the engine.

STEP 22



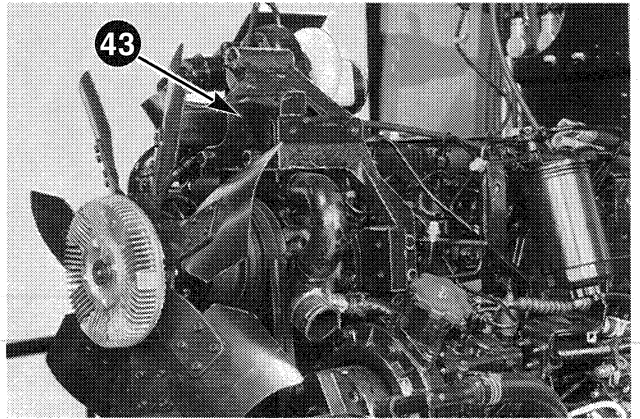
DP98B141



DP98B138

Attach suitable lifting equipment to the front bolster. Remove retaining nuts (40), (41), bolts (42) and washers. Remove the shims (if equipped) from between the bolster and engine sump. Carefully remove the front bolster.

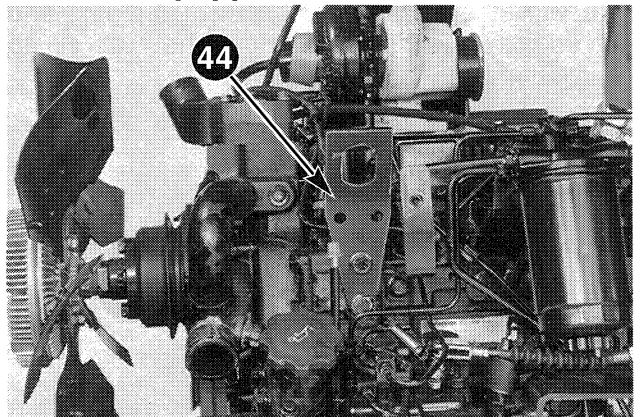
STEP 23
Tractors Equipped with Air Conditioner



DP98E171

Remove retaining bolts and compressor bracket (43).

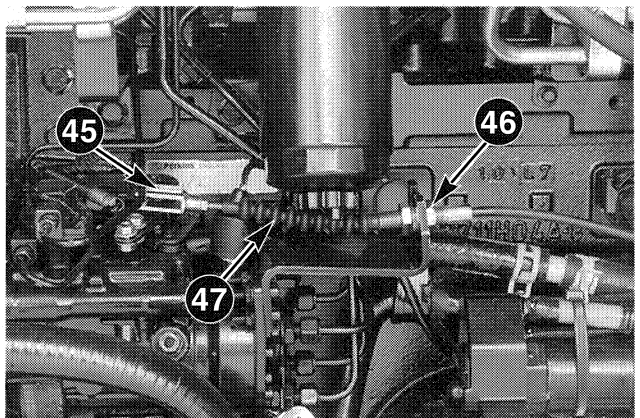
STEP 24
Tractors Equipped with Air Conditioner



DP98E172

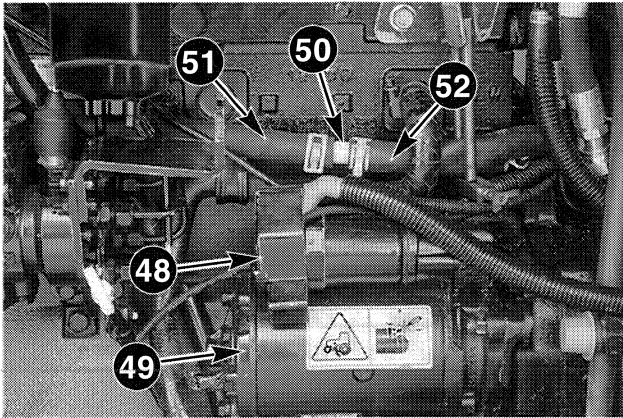
Install front engine lifting bracket (44), install and tighten two 10 x 25 mm flange type bolts to a torque of 44 Nm (33 lb ft).

STEP 25



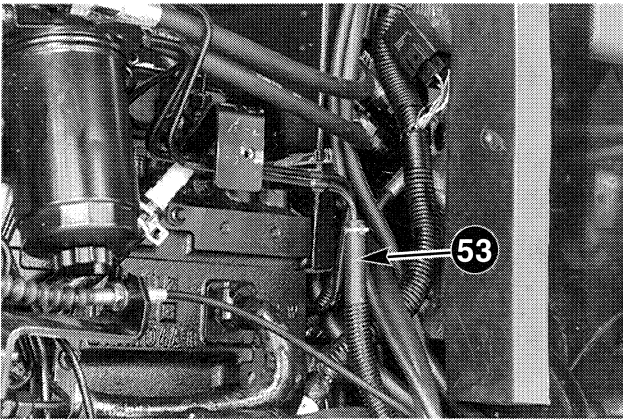
DP98E162

Remove spring clip (45), loosen adjuster nuts (46) and remove throttle cable (47) from the bracket.

STEP 26

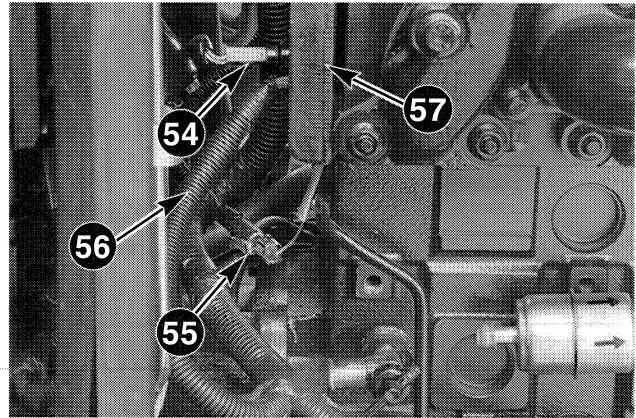
DP98B146

Remove cover (48) and disconnect the cables and wires from starter motor (49). Remove the retaining nuts and remove starter motor (49). Remove the hose clips, disconnect and remove connector (50) from heater return hoses (51) and (52). Plug hose (52) with a suitable 5/8 inch diameter plug and secure with a hose clip. Remove the hose clamp installed in STEP 5 on page 5.

STEP 27

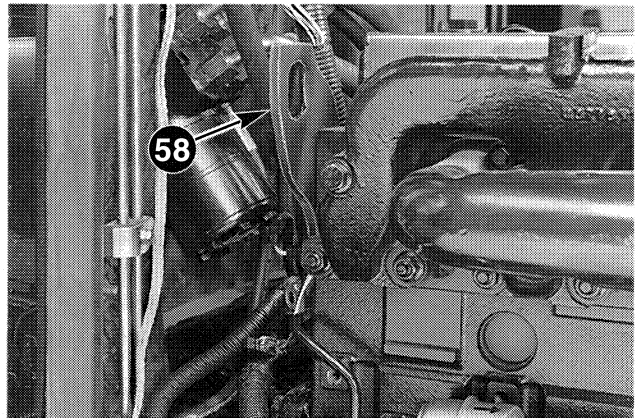
DP98E169

Release the hose clip and disconnect fuel return hose (53), cap the hose and tube.

STEP 28

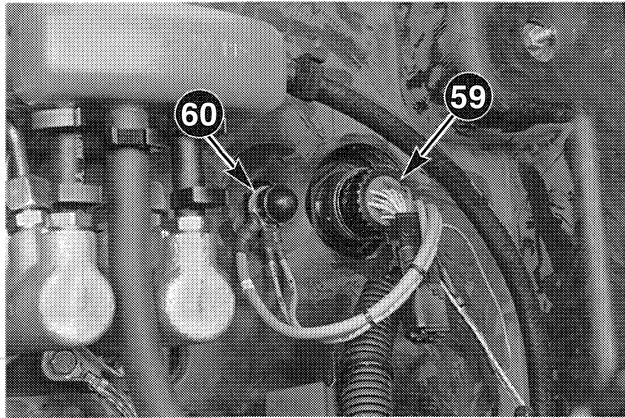
DP98B152

Disconnect fuel auto advance temperature switch connector (54) and chassis ground connector (55). Remove the RH lower hood bracket retaining bolt and chassis ground cable (56). Remove the remaining retaining bolts and hood bracket (57).

STEP 29

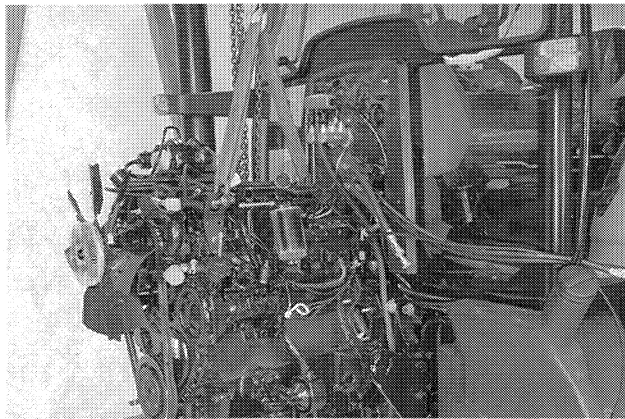
DP98B153

Install rear engine lifting bracket (58), install and tighten two 10 x 25 mm flange type bolts to a torque of 44 Nm (33 lb ft).

STEP 30

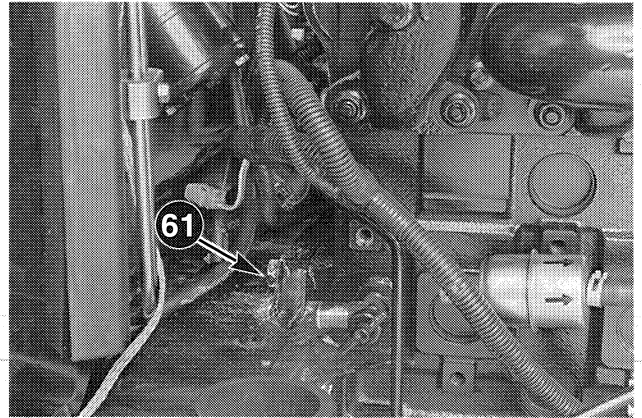
DP98B154

Disconnect engine harness connector (59) and unswitched power cables (60) from the firewall.

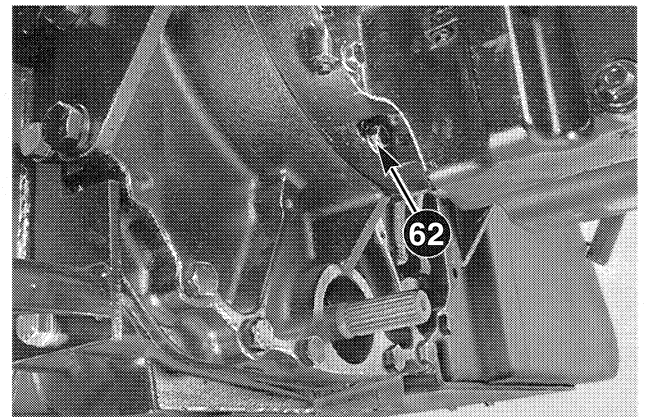
STEP 31

DP98B155

Attach suitable lifting equipment to the engine as shown. Operate the lifting equipment until tension is just applied to the lifting equipment. **DO NOT** lift the tractor on the lifting equipment.

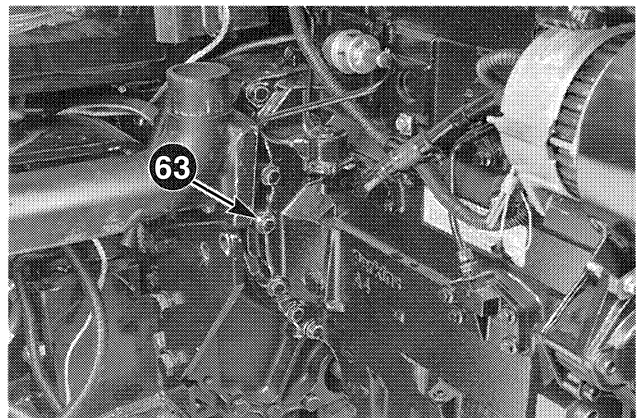
STEP 32

DP98B157



DP98B159

Remove top engine to transmission retaining bolts (61) and bottom bolts (62) from both sides.

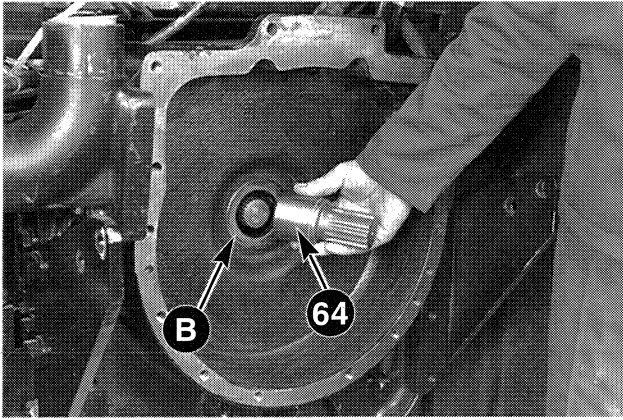
STEP 33

DP98B158

Remove engine to transmission retaining bolts (63) from both sides and install two alignment studs CAS1995A. Remove the remaining engine to transmission retaining bolts and carefully remove the engine. Make sure all tubes, hoses, harnesses and cables have been disconnected.

NOTE: *The engine to transmission retaining bolts are of different lengths. Make a note of the position of the bolts when removing.*

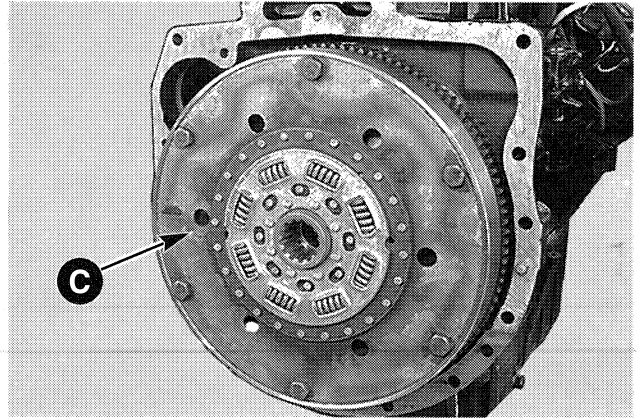
STEP 34



DK98A285

Remove drive shaft (64). Check the drive shaft oil seal (B) and replace as necessary, refer to Section 6006.

STEP 35



DK98B205

Remove the torque dampener retaining bolts and torque dampener (C). Check the torque dampener for wear or damage, replace as necessary. Check the flywheel for wear or damage, refer to your Engine Service Manual.



Suggest:

If the above button click is invalid.

Please download this document

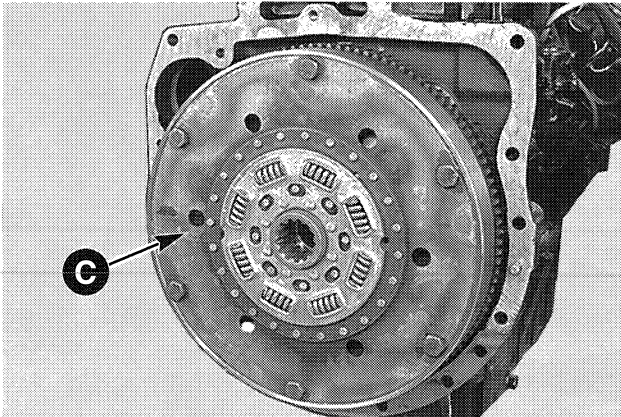
first, and then click the above link

to download the complete manual.

Thank you so much for reading

Installation

STEP 1

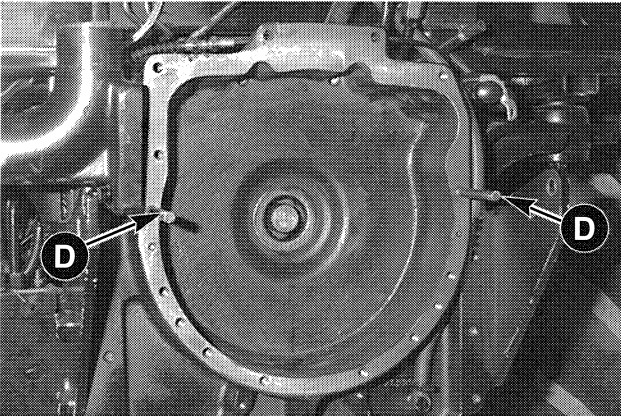


DK98B205

Install torque dampener (C), tighten the retaining bolts to a torque of 88 to 112 Nm (65 to 82 lb ft).

NOTE: The torque dampener is marked "FLYWHEEL SIDE" this side must be towards the flywheel. If the marking on the torque dampener cannot be found, install the torque dampener with the offset hub towards the transmission.

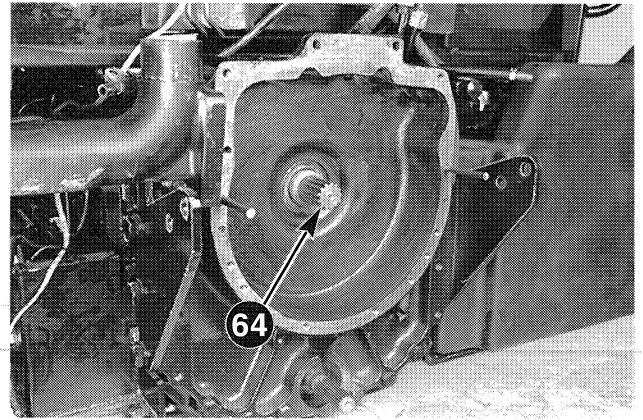
STEP 2



DD97N124

Install two alignment studs (D), CAS1995A, into the transmission front cover as shown.

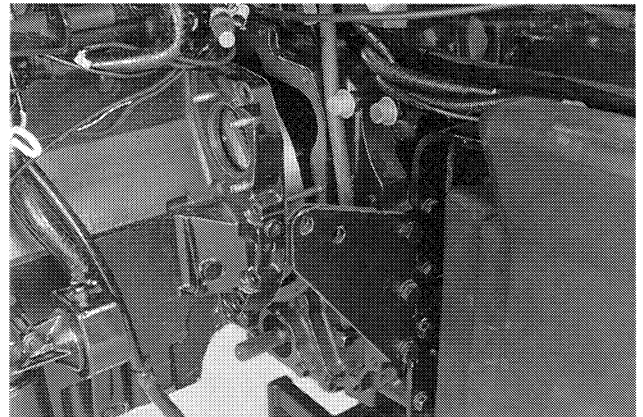
STEP 3



DK98E201

Lubricate the internal and external splines of drive shaft (64) with 251 EPM Lithium grease. Fully install the drive shaft onto the transmission input shaft.

STEP 4



DP98B161

Using suitable lifting equipment carefully install the engine onto the alignment studs.

STEP 5

When the engine and transmission are aligned use a suitable lever through the starter motor mounting hole onto the flywheel ring gear teeth. Slowly turn the flywheel while gently pushing the engine towards the transmission, until the drive shaft locates into the torque dampener. Fully connect the engine and transmission.

NOTE: Do not use excessive force to connect the engine to the transmission.

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>