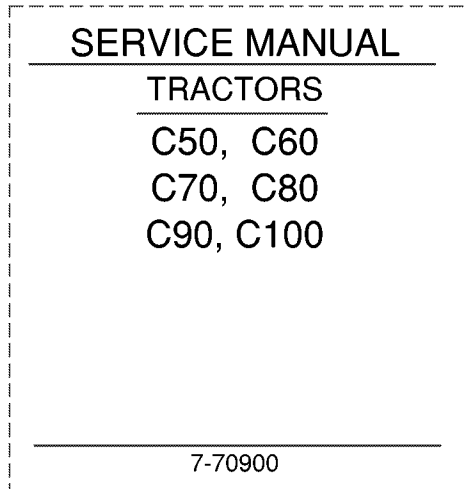
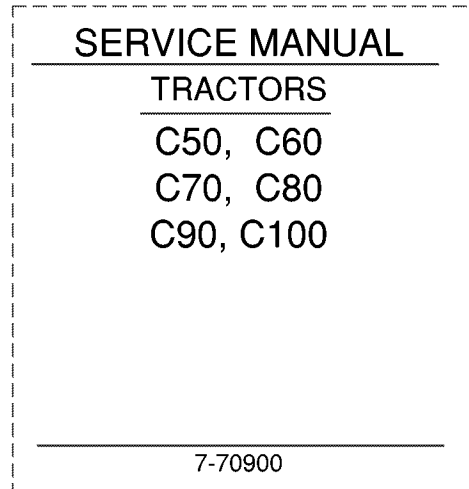




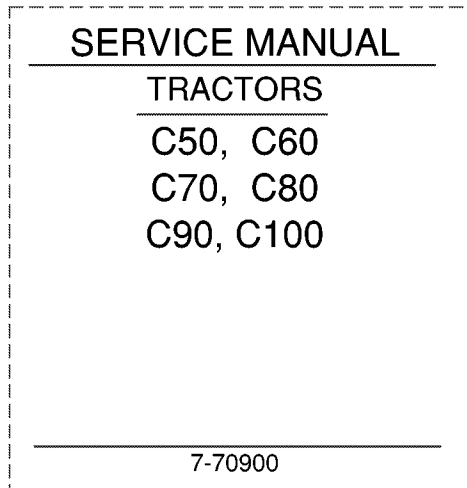
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2. Slide into pocket on Binder Spine.

TYPE 1-4



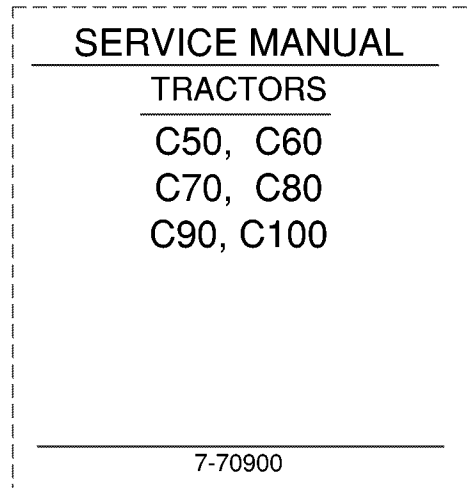
1. Trim along dashed line.
2. Slide into pocket on Binder Spine.

TYPE 1-4



1. Trim along dashed line.
2. Slide into pocket on Binder Spine.

TYPE 1-4



1. Trim along dashed line.
2. Slide into pocket on Binder Spine.

TYPE 1-4

C50, C60, C70, C80, C90 and C100 Tractors

Service Manual Don 7-70900

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Reprinted



Section 1001

1001

SAFETY, GENERAL INFORMATION AND TORQUE SPECIFICATIONS

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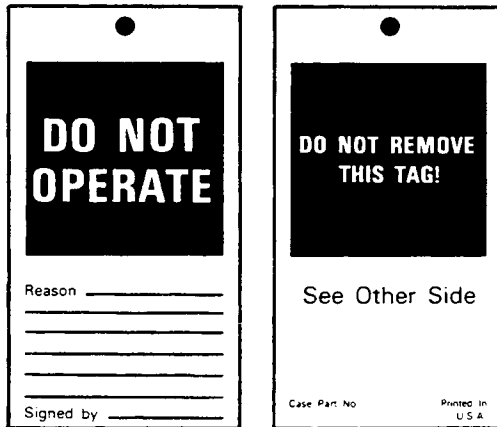
SAFETY



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



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



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



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



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



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

Chart 3 (Zinc or Cadmium Plated 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	2.6	3.5	2.9	3.9	3.7	5.0	4.1	5.6
M5	4.1	5.6	4.6	6.3	5.9	8.0	6.6	9.0
M6	7.0	9.5	7.8	10.6	10.0	13.6	11.3	15.3
M8	17.0	23.1	19.1	25.9	24.4	33.1	27.4	37.2
M10	34.0	46.0	38.3	52.0	48.0	65.0	54.0	74.0
M12	59.0	80.0	66.0	90.0	85.0	114.0	94.0	128.0
M14	94.0	128.0	106.0	145.0	136.0	183.0	153.0	205.0
M16	149.0	200.0	161.0	220.0	208.0	285.0	235.0	320.0
M20	293.0	400.0	330.0	450.0	408.0	555.0	460.0	620.0
M22	400.0	545.0	450.0	615.0	555.0	755.0	625.0	850.0
M24	510.0	690.0	575.0	780.0	705.0	955.0	790.0	1075.0
M30	1010.0	1375.0	1140.0	1545.0	1400.0	1900.0	1580.0	2140.0
M36	1770.0	2400.0	1990.0	2700.0	2445.0	3315.0	2750.0	3730.0

Section 1002

1002

GENERAL SPECIFICATIONS AND TORQUES

**C50, C60, C70, C80, C90
and C100 Tractors**

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GENERAL SPECIFICATIONS

Capacities

TRANSMISSION/HYDRAULIC (HY-TRAN PLUS ®) OIL CAPACITY

2WD Tractors	34 Litres	9.0 US gal
MFD Tractors	36.5 Litres	9.6 US gal

Steering Specifications

TRACK ADJUSTMENT

Toe-in	0 to 5 mm	0 to 0.20 inch
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Transmission Specifications

CLUTCH

C50/60/70 Tractors

Maximum Clutch Plate Thickness	10.4 mm	0.41 inch
Clutch Plate Diameter	305 mm	12 inch
Number of Friction Plate Pads		5 each side

C80/90/100 Tractors

Maximum Clutch Plate Thickness	10.4 mm	0.41 inch
Clutch Plate Diameter	310 mm	12.20 inch
Number of Friction Plate Pads		7 each side

Pressure Plate and Friction Plate Spline Lubricant MOLYKOTE D321R or equivalent

SPEED TRANSMISSION

Speed Transmission Rear Synchronizer End Play	0.05 to 0.30 mm	0.002 to 0.012 inch
Speed Transmission Front Synchronizer End Play	0.05 to 0.30 mm	0.002 to 0.012 inch

RANGE TRANSMISSION

Pinion Bearing End Play (Maximum)	0.076 mm	0.003 inch
Synchronizer Running Clearance	0.4 to 0.6 mm	0.016 to 0.024 inch
Selector Fork Running Clearance		
Standard Transmission	0.45 mm	0.018 inch
Forward/Reverse Transmission	0.05 mm	0.002 inch

REAR AXLE

Planetary Gear/Planetary Gear Carrier Shimming refer to Section 6012

DIFFERENTIAL

Differential Lock Selector Ring Clearance (Engaged Position) ...	0.025 to 0.90 mm	0.001 to 0.035 inch
Ring Gear to Pinion Backlash	0.152 to 0.304 mm	0.006 to 0.012 inch
Ring Gear to Differential Housing Run-out	0 to 0.102 mm	0 to 0.004 inch
Differential Bearing Rolling Pull	2.0 to 6.5 kg	4.5 to 14.5 lb

PTO CLUTCH

Standard Clutch

Number of Friction Plates	5
Number of Steel Separator Plates (2 between each Friction Plate)	8

Heavy Duty Clutch

Number of Friction Plates	6
Number of Steel Separator Plates	5

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Hydraulic Specifications

HYDRAULIC PUMP

	C50/60	C70/80/90/100
Hydraulic pump - Standard capacity	N/A	59 L/min (15.6 US gpm)
Hydraulic pump - High capacity	62 L/min (16.4 US gpm)	540/750 PTO - 66 L/min (17.4 US gpm) 540/1000 PTO - 68 L/min (18.0 US gpm)
Flow to Remotes - Standard capacity hydraulic pump	N/A	48 L/min (12.7 US gpm)
Flow to Remotes - High capacity hydraulic pump	49 L/min (12.9 US gpm)	540/750 PTO - 55 L/min (14.2 US gpm) 540/1000 PTO - 57 L/min (15.0 US gpm)
Pump gear (No. of teeth) - Standard capacity hydraulic pump	540/750 PTO - 19 teeth 540/1000 PTO - 23 teeth	
Pump gear (No. of teeth) - High capacity hydraulic pump	N/A	540/750 PTO TYPE - 17 teeth 540/1000 PTO TYPE - 20 teeth
Pump mounting plate thickness - Standard capacity hydraulic pump	5.31 to 5.43 mm (0.209 to 0.213 inch)	
Pump mounting plate thickness - High capacity hydraulic pump	7.86 to 7.98 mm (0.309 to 0.314 inch)	

Steering Relief Valve Pressure.....	141 to 148 bar	2050 to 2150 psi
Pilot Relief Valve Pressure	172 bar	2494 psi
Priority Flow Divider (Flow at all engine speeds).....	10.5 to 12 L/min	2.8 to 3.2 US gpm
Auxiliary Remote Detent Kick-out Pressure	144.7 to 172.3 bar	2100 to 2500 psi
Steering Relief Valve Pressure.....	141 to 148 bar	2050 to 2150 psi
Forward/Reverse Regulator Pressure	22 bar	320 psi
Powershift Regulator Pressure.....	22 bar	320 psi
MFD Regulator Pressure.....	22 bar	320 psi
PTO Pressure.....	15 to 17 bar	220 to 250 psi
Steering Regulator Return Flow	10.5 to 12 L/min	2.8 to 3.2 US gpm
Oil Cooler Flow	10.5 to 12 L/min	2.8 to 3.2 US gpm
Hydraulic Oil Type	Case Hy-Tran [®] Plus	
Hydraulic Oil Test Temperature	49° C	120° F

FLOW DIVIDER SPRING

Free Length.....	60.23 mm	2.37 inch
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PTO PRESSURE REGULATOR VALVE SPRING

Free Length.....	45.44 mm	1.79 inch
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OIL COOLER/LUBRICATION SYSTEM BYPASS VALVE SPRING

Free Length.....	48.00 mm	1.88 inch
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PTO CONTROL SPOOL ASSEMBLY

Heavy Duty Spring

Free Length.....	37.77 mm	1.49 inch
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Light Duty Spring

Free Length.....	46.99 mm	1.85 inch
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Return Spring

Free Length.....	70.61 mm	2.78 inch
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UNLOADING VALVE SPRING

Free Length.....	39.88 mm	1.57 inch
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FLOW CONTROL VALVE SPRING

Free Length..... 43.18 mm

1.70 inch

CHECK VALVE SPRING

Free Length..... 11.68 mm

0.46 inch

ACTION (DROP RESPONSE) VALVE SPRING

Free Length..... 43.31 mm

1.70 inch

DRAFT CONTROL VALVE

Draft Valve Spring

Free Length..... 80.62 mm

3.17 inch

Drop Valve Poppet Spring

Free Length..... 38.74 mm

1.52 inch

Drop Valve Spool Spring

Free Length..... 23.37 mm

0.92 inch

SPECIAL TORQUES

Steering

Steering Wheel Retaining Nut	45 to 51 Nm	33 to 37 lb ft
Steering Hand Pump Retaining Bolts	45 to 51 Nm	33 to 37 lb ft
Steering Hand Pump End Cover Retaining Bolts	25 to 35 Nm	19 to 26 lb ft
Steering Cylinder Clevis (with Loctite 270)	110 to 135 Nm	80 to 100 lb ft
Steering Cylinder Clevis Pin Retaining Bolt.....	27 to 31 Nm	20 to 23 lb ft
Lower Bearing Carrier Retaining Bolts	110 to 122 Nm	80 to 90 lb ft
Steering Relief Valve Plug	40 to 60 Nm	30 to 44 lb ft
Front Weight Bracket Retaining Bolts.....	481 to 542 Nm	355 to 400 lb ft
Steering Arm Clamp Bolt.....	108 to 122 Nm	80 to 90 lb ft
Front Wheel Nuts.....	refer to Operators Manual for correct wheel rim size	
Wheel Bearing Nut	refer to Operators Manual for tightening procedure	
Tie Rod		
Lock Nut	34 to 40 Nm	25 to 30 lb ft
Lock Bolt	81 to 88 Nm	60 to 65 lb ft
Tie Rod Tube Lock Nut.....	235 to 250 Nm	173 to 184 lb ft

Transmission

Flywheel Retaining Bolts	105 Nm	77 lb ft
Engine to Speed Transmission Mounting Bolts	101 to 114 Nm	75 to 84 lb ft
Speed to Range Transmission Retaining Bolts		
5/8 inch Bolts (With Loctite 271)	230 Nm	170 lb ft
1/2 inch Bolts (With Loctite 271)	110 Nm	81 lb ft
Main Shaft Retaining Bolts	42 to 47 Nm	31 to 34 lb ft
Selector Fork to Selector Rail Lock Bolt	89 to 100 Nm	65 to 74 lb ft
Selector Fork to Selector Rail Lock Nut	53 to 59 Nm	39 to 43 lb ft
PTO Bearing Retainer Bolts (with Loctite 271)	42 to 47 Nm	31 to 34 lb ft
Clutch Release Bearing Carrier Retaining Bolts (with Loctite 271)	42 to 47 Nm	31 to 34 lb ft
Pinion Shaft Retaining Bolts	45 to 50 Nm	33 to 37 lb ft
Planet Carrier Retaining Bolt	290 to 330 Nm	220 to 250 lb ft
Rear Axle Mounting Bolt	270 to 305 Nm	200 to 225 lb ft
Rear Wheel Nuts		
Flange Axle	280 to 340 Nm	206 to 250 lb ft
Bar Axle	210 to 270 Nm	155 to 200 lb ft
PTO Clutch Access Cover	117 to 133 Nm	86 to 98 lb ft
PTO Shaft Cover Retaining Bolts	45 to 50 Nm	33 to 37 lb ft
Top Link Sensing Bracket Cap Screws	285 to 312 Nm	210 to 230 lb ft
PTO Clutch Access Cover Retaining Bolts	117 to 133 Nm	86 to 98 lb ft
PTO Housing		
3/8 inch Retaining Bolts	45 to 50 Nm	33 to 37 lb ft
1/2 inch Retaining Bolts	136 to 152 Nm	100 to 112 lb ft

Hydraulics

Multi Control Valve Retaining Bolts	45 to 50 Nm	33 to 37 lb ft
Hydraulic Filter Retaining Bolt	16 to 21 Nm	12 to 16 lb ft
Hydraulic Pump Retaining Bolts	24 to 28 Nm	18 to 21 lb ft
Hydraulic Pump Drive Gear Locknut	61 to 68 Nm	45 to 50 lb ft
Hydraulic Pump End Plate		
Retaining Bolt	27 to 31 Nm	20 to 23 lb ft
Cap Screw	24 to 27 Nm	18 to 20 lb ft
Unloading and Flow Control Valve Retaining Bolts	44.7 to 50 Nm	33 to 37 lb ft
Top Link Bracket Retaining Screws	285 to 312 Nm	210 to 230 lb ft
Lift Arm Retaining Bolt	133 to 149 Nm	98 to 110 lb ft

Section 1005

SPECIAL TOOLS

**C50, C60, C70, C80, C90
and C100 Tractors**

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SPECIAL TOOLS

TOOL APPLICATION

TOOL PART NUMBER

ENGINE

Gauge, piston height, valve depth and cylinder liner protrusion.....	PD.41D
Seal Installer, Crankshaft Rear Oil Seal	PD.145D
Timing Cover Aligning Tool.....	PD.162B
Engine Turn Over Tool	PD.165B
Seal Installer, Timing Cover Seal (main tool)	PD.170
Pressure Plate (use with PD.170)	PD.170-1
Sleeve (use with PD.170)	PD.170-2
Fastener Plate (use with PD.170)	PD.170-3
Adaptor (use with PD.170)	PD.170-4
Crankshaft Locking Pin	PD.241

FUEL

Timing Pin (Lucas Fuel Injection Pumps only)	PD.246
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ELECTRICAL

Multimeter	CAS1559
Signal Generator/Counter	CAS2109
Harness Repair Kit	AJI1400004
European only	
Harness Repair Kit	CAS31000

STEERING

Seal Installer, Danfoss Steering Hand Pump Seal	CAS2552
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TRANSMISSION

Alignment Tools, Engine Clutch.....	CAS1918 and CAS1919
Tractor Splitting Stands	
European	
Tractor Splitting Kit	CAS30009
North American	
Tractor Splitting Stand (Front)	CAS10852
Tractor Splitting Stand (Rear)	CAS10853
Hydraulic Jacks	CAS10855A
Seal Expander/Protector Set, Speed Transmission Mainshaft	CAS2366
Seal Compressor, Speed Transmission Mainshaft	CAS2367
Alignment Tool, Powershift Clutch.....	CAS1921A

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Sleeve Installer, Sprag Clutch	CAS1920
Seal Expander/Protector, Input Shaft	CAS2519-1
Spacer Ring	CAS2519-2
Seal Compressor, Input Shaft	CAS2520
Synchronizer Gauge	CAS2364
Shift Rail Gauge	CAS2365
Snap Ring Pliers	CAS2194

HYDRAULICS

Flowmeter	OEM1238
Tube (available through Case Parts).....	539835R2
Cap, 9/16-18 JIC (available through Case Parts)	218-754
Cap, 3/4-16 JIC (available through Case Parts)	218-755
Male Coupler, Quick Disconnect (available through Case Parts)	1272399C2
Hydraulic Test Kit (available through Case Parts)	1094059-R92
Drop Response Valve Adjusting Wrench	CAS1923
Unloader Valve Seat Wrench	CAS1922
Oil Pump, Stop Valve and Pressure Gauge	CAS1913

Section 2001

2001

ENGINE REMOVAL AND INSTALLATION

**C50, C60, C70, C80, C90
and C100 Tractors**

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Filling the Cooling System	8

SPECIAL TOOLS

CAS30009 SPLITTING STAND

SPECIAL TORQUES

Engine to Speed Transmission Mounting Bolts101 to 114 Nm

75 to 84 lb ft

ENGINE

NOTE: For Engine Service and Overhaul procedures, refer to your Engine Service Manual.

Removal and Installation

NOTE: For Installation follow the Removal procedure in reverse order.

Before removing the engine it will be necessary to carry out the following:

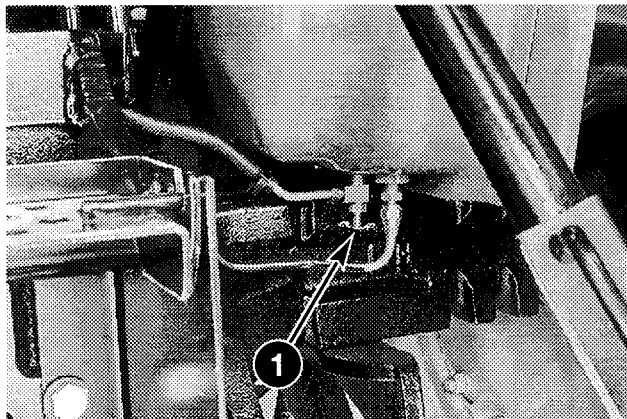
- Park the tractor on hard level ground and apply the parking brake.
- Lower the rear three point hitch.
- Stop the engine and remove the key.
- Put blocks in front of and behind the rear wheels.
- Put wooden blocks between the front axle bolster and front axle.
- Remove the front tractor weights (if equipped).
- Remove the Hood and Side Panels.
- Remove the Exhaust.
- For MFD Tractors, remove the MFD Drive Shaft and Cover.

STEP 1

Disconnect the battery, negative (-) terminal first.

NOTE: For Installation, connect and tighten the positive (+) terminal first.

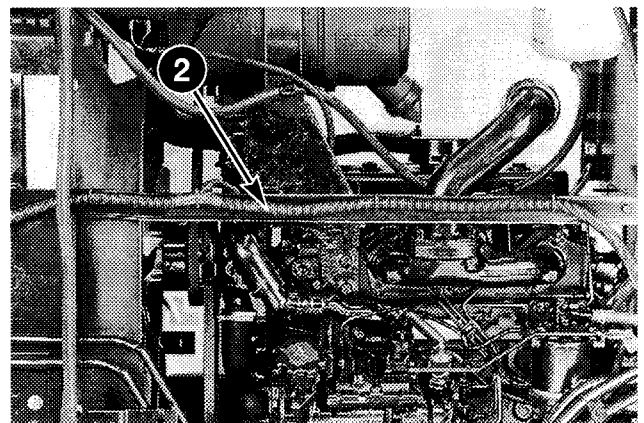
STEP 2



DP97E358

Close fuel supply tap (1) on the fuel tank.

STEP 3



DP97G112

Disconnect the horn and headlamps. Release harness (2) from the rail. Remove the rail between the radiator and battery tray.

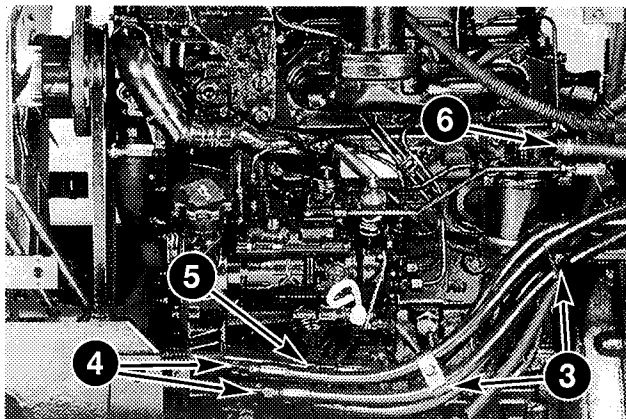
NOTE: Follow STEP 4 to STEP 10 and STEP 17 to STEP 24 for removing the engine from C50/60 Tractors.

NOTE: Follow STEP 11 to STEP 16 and STEP 17 to STEP 24 for removing the engine from C70/80/90/100 Tractors.

2001-4

C50 and C60 Tractors

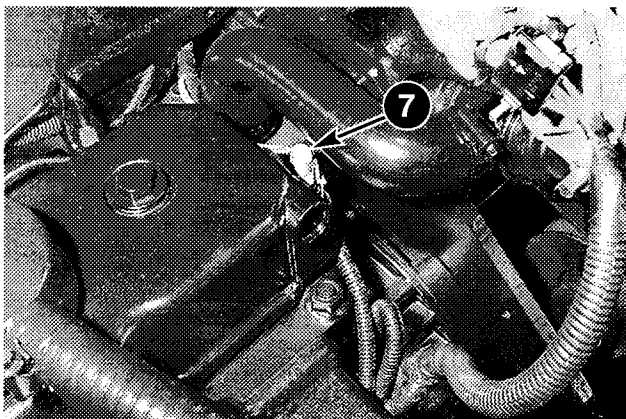
STEP 4



DP97G123

Remove tube clamps (3). Put identification marks on, disconnect and cap steering hoses (4), oil cooler hoses (5) and fuel return hose (6) from the fuel filter.

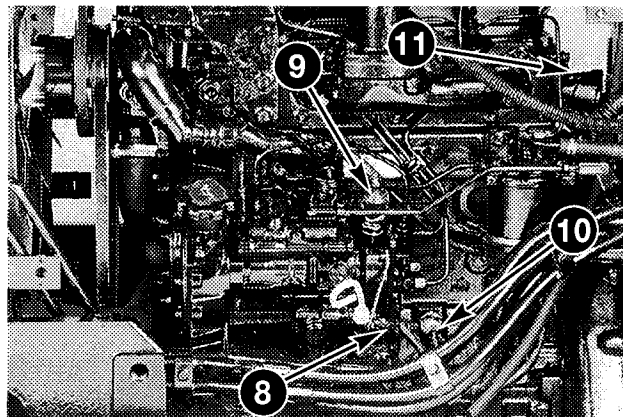
STEP 5



DP97G137

Disconnect water temperature switch (7).

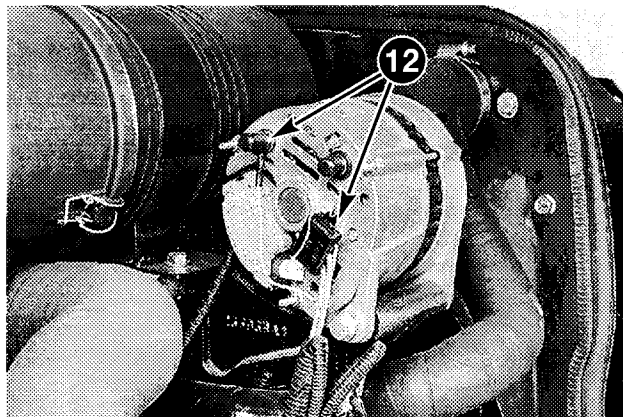
STEP 6



DP97G123

Disconnect the harness from fuel shut off solenoid (8), fuel advance coil (9), engine oil pressure switch (10) and fuel advance temperature switch (11).

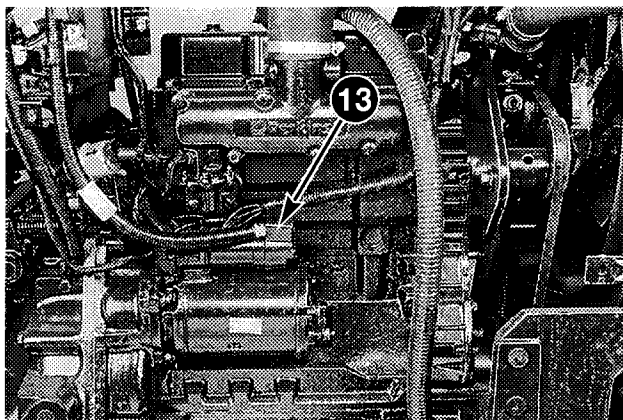
STEP 7



DP97E270

Disconnect harness (12) from the alternator.

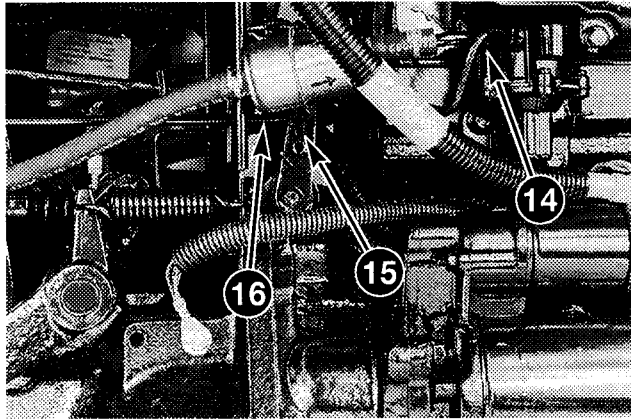
STEP 8



DP97E275

Remove cover (13) and disconnect the cables from the starter motor.

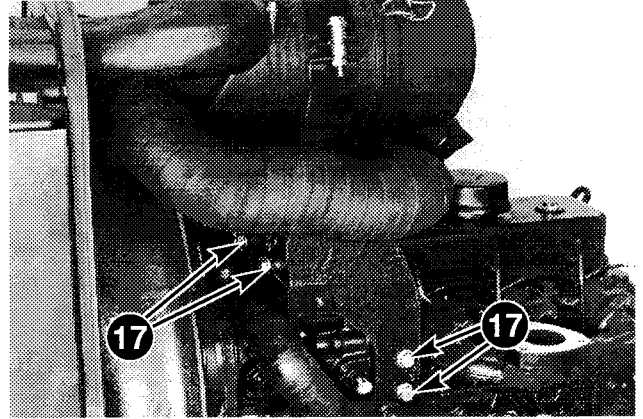
STEP 9



DP97G124

Disconnect and cap fuel supply hose (14) from the fuel lift pump. Remove and discard cotter pin (15) and disconnect throttle linkage (16).

STEP 10



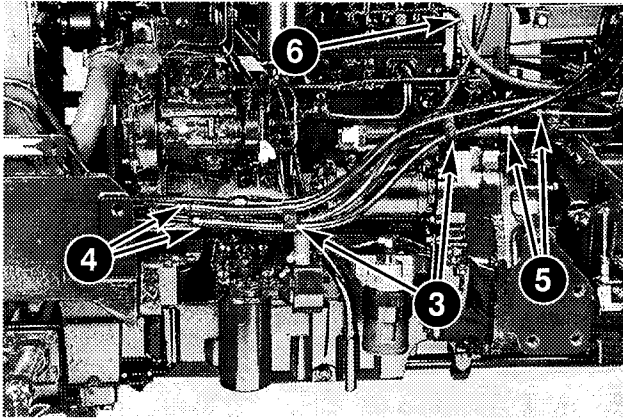
DD97K133

Remove the fan belt. Disconnect the air cleaner hoses. Remove the air cleaner and alternator mounting bracket bolts (17) and remove the air cleaner and alternator mounting bracket assembly from the engine.

2001-6

C70, C80, C90 and C100 Tractors

STEP 11



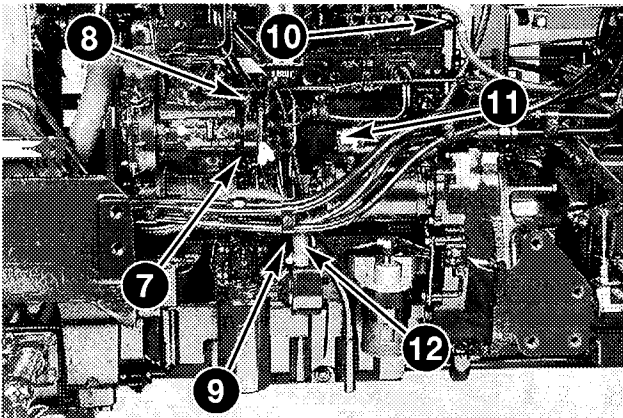
DP97G117

Remove tube clamps (3). Put identification marks on, disconnect and cap steering hoses (4), oil cooler hoses (5) and fuel return hose (6) from the fuel filter.

STEP 12

Disconnect the fuel cooler tubes from the fuel injection pump and the fuel filter.

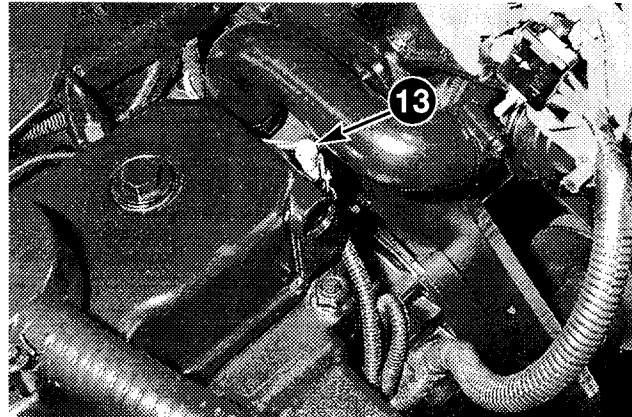
STEP 13



DP97G117

Disconnect the harness from fuel shut off solenoid (7), fuel advance coil (8), engine oil pressure switch (9) and fuel advance temperature switch (10). Remove cover (11) and disconnect the cables from the starter motor. Disconnect the oil cooler hose (12).

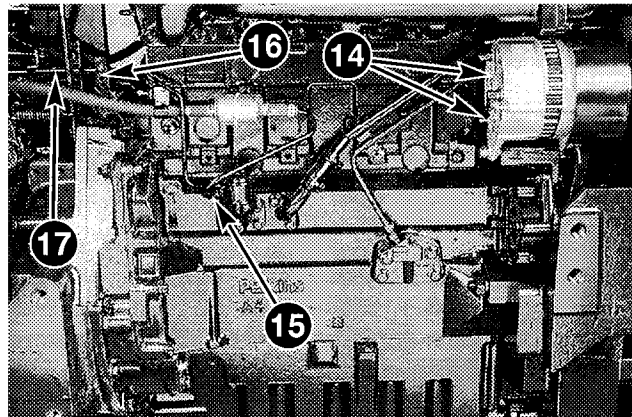
STEP 14



DP97G137

Disconnect the water temperature switch (13).

STEP 15



DP97G119

Disconnect the harness (14) from the alternator. Disconnect and cap the fuel supply hose (15) from the fuel lift pump. Remove and discard the cotter pin (15) and disconnect the throttle linkage (17).

STEP 16

Disconnect the air cleaner hoses and remove the complete air cleaner and mounting bracket from the engine.

All Models

STEP 17

Drain the coolant from the radiator and engine.

IMPORTANT: For Installation, refer to Filling the Coolant System on Page 8.

STEP 18

Disconnect the radiator top and bottom hoses from the water pump, disconnect the recovery bottle feed hose from the radiator filler neck.

STEP 19

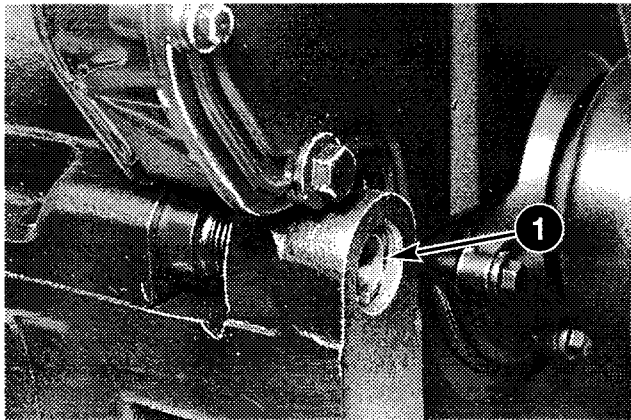
Install two 5/8 x 2 1/2 inch UNC bolts into each side of the front bolster.

STEP 20

Attach suitable lifting equipment to the front bolster. Support the engine using suitable stands. Remove the bolster retaining bolts.

NOTE: Carefully support and remove the front bolster and axle from the engine, take care not to damage the radiator. Support the front bolster and axle assembly on suitable stands.

STEP 21C50 and C60 Tractors

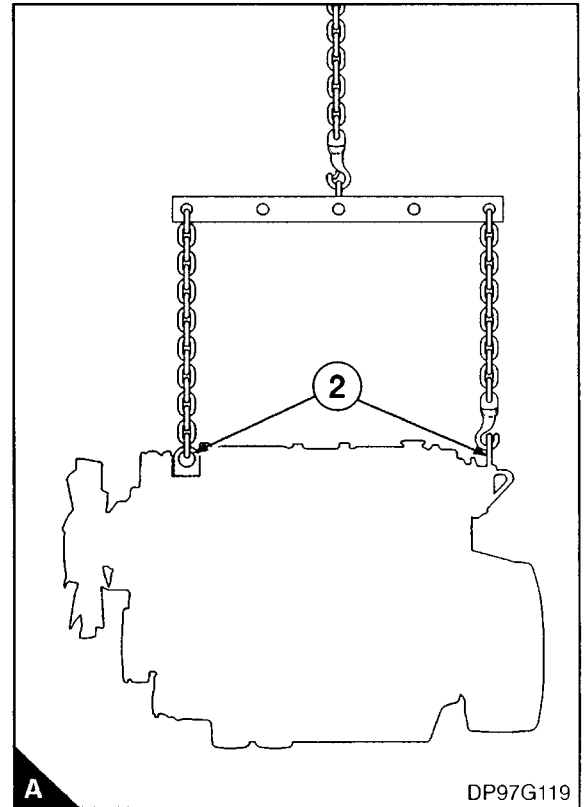


DD97K533

Remove the right hand bolster mounting stud from the engine block to gain access to the threaded spacer (1) (between the engine sump and the bolster mounting plate).

NOTE: For Installation, tighten the threaded spacer (1) to a torque of 15 Nm (11 lbft).

STEP 22



Install engine lifting eyes (2) if required (supplied with the tractor) and attach suitable lifting equipment to the engine.

NOTE: The engine dry weight is as follows:
C50 and C60 = 358 kg (789 lb)
C70, C80, C90 and C100 = 454 kg (1000 lb)

STEP 23

Remove the engine to speed transmission housing bolts and carefully separate the engine from the speed transmission, making sure that all hoses, tubes, cables and harnesses have been disconnected.

NOTE: For Installation, tighten the engine to speed transmission bolts to a torque of 101 to 114 Nm (75 to 84 lb ft).

NOTE: For Installation, follow the Removal procedure in reverse order.

STEP 24

Before connecting the engine to transmission, lubricate the splines of the clutch friction plate and pressure plate with MOLYKOTE D321R or equivalent.

2001-8

Filling the Cooling System

STEP 25

Only use coolant solution as specified, refer to Operators Manual.

IMPORTANT: *NEVER put coolant into a hot engine, the engine block or cylinder head can crack because of the difference in temperature between the metal and coolant.*

NOTE: *When filling the cooling system on C50 and C60 Tractors the vents on the thermostat housing must be opened until all air is removed from the cooling system.*

STEP 26

Fill the coolant recovery reservoir to the "Normal" mark with coolant. Install the radiator and coolant reservoir caps.

NOTE: *For C50 and C60 Tractors, close the thermostat housing vents.*

STEP 27

Start the engine and run at low idle for one minute. Stop the engine and add coolant to radiator and coolant recovery reservoir as necessary, install the radiator and reservoir caps.

STEP 28

If necessary, cover the radiator core to raise the engine temperature quickly. Start the engine and run at high idle without load to increase the coolant to normal operating temperature.

NOTE: *For C50 and C60 Tractors, continue to run the engine at 1700 rpm for 3 minutes after the thermostat has opened.*

STEP 29

Stop the engine and allow the coolant to cool. Remove the temporary cover (if used, See STEP 28) from the radiator core.

NOTE: *For C50 and C60 Tractors, open the thermostat housing vents to remove any air and close the thermostat housing vents.*

STEP 30

After the engine has cooled, remove the radiator and reservoir caps. Fill the radiator to the correct level and fill the reservoir to the upper marking. Install the radiator and coolant reservoir caps.

Section 4001

ELECTRICAL TROUBLESHOOTING AND SCHEMATICS

**C50, C60, C70, C80, C90
and C100 Tractors**

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