

9350 Tractor Service Manual

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Section 1002

1002

GENERAL INFORMATION AND SPECIFICATIONS For 9350 Series Tractor

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NOTE: Case Corporation reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

SAE FASTENER TORQUE CHART

NOTE: Use these torques, unless special torques are specified. Values are for UNC and UNF thread fasteners, plated or unplated, as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, moly-disulphide or other extreme pressure lubricant is used.

SAE Grade No	2				5				8*			
Bolt head identification (See Note 1)												
Bolt Size	LB FT		Nm		LB FT		Nm		LB FT		Nm	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1/4	5	6	7	8	9	11	12	15	12	15	16	20
5/16	10	12	14	16	17	20.5	23	28	24	29	33	39
3/8	20	23	27	31	35	42	48	57	45	54	61	73
7/16	30	35	41	47	54	64	73	87	70	84	95	114
1/2	45	52	61	70	80	96	109	130	110	132	149	179
9/16	65	75	88	102	110	132	149	179	160	192	217	260
5/8	95	105	129	142	150	180	203	244	220	264	298	358
3/4	150	185	203	251	270	324	366	439	380	456	515	618
7/8	160	200	217	271	400	480	542	651	600	720	814	976
1	250	300	339	406	580	696	787	944	900	1080	1220	1464
1-1/8					800	880	1085	1193	1280	1440	1736	1953
1-1/4					1120	1240	1519	1681	1820	2000	2468	2712
1-3/8					1460	1680	1980	2278	2380	2720	3227	3688
1-1/2					1940	2200	2631	2983	3160	3560	4285	4827

NOTE 1 Bolt head identification marks as per grade. Manufacturing marks will vary. *Thick nuts must be used with Grade 8 bolts.

STANDARD TORQUE DATA FOR HYDRAULIC TUBES AND FITTINGS

TUBE NUTS FOR 37° FLARED FITTINGS								O-RING BOSS PLUGS, ADJUSTABLE FITTING LOCK NUTS, SWIVEL JIC - 37° SEATS			
SIZE	TUBING O.D.		THREAD SIZE	LB FT		Nm		LB FT		Nm	
	Inches	mm		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
4	1/4	6.4	7/16-20	9	12	12	16	6	10	8	14
5	5/16	7.9	1/2-20	12	15	16	20	10	15	14	20
6	3/8	9.5	9/16-18	21	24	29	33	15	20	20	27
8	1/2	12.7	3/4-18	35	40	47	54	25	30	34	41
10	5/8	15.9	7/8-14	53	58	72	79	35	40	47	54
12	3/4	19.1	1-1/16-12	77	82	104	111	60	70	81	95
14	7/8	22.2	1-3/16-12	90	100	122	136	70	80	95	109
16	1	25.4	1-5/16-12	110	120	149	163	80	90	108	122
20	1-1/4	31.8	1-5/8-12	140	150	190	204	95	115	129	156
24	1-1/2	38.1	1-7/8-12	160	175	217	237	120	140	163	190
32	2	50.8	2-1/2-12	225	240	305	325	250	300	339	407

Above torque figures are recommended for plain, cadmium or zinc plated fittings, dry or wet installations and swivel nuts either swaged or brazed. These torques are not recommended for tubes 1/2 inch (12.7 mm) O.D. and larger with wall thickness of 0.035 inch (0.889 mm) or less. The torque is specified for 0.035 inch (0.889 mm) wall tubes on each application individually.

STANDARD TORQUE DATA FOR HYDRAULIC TUBES AND FITTINGS

TUBE NUTS FOR 37° FLARED FITTINGS								O-RING BOSS PLUGS, ADJUSTABLE FITTING LOCK NUTS, SWIVEL JIC - 37° SEATS			
SIZE	TUBING O.D.		THREAD SIZE	TORQUE				TORQUE			
				FOOT POUNDS		NEWTON METERS		FOOT POUNDS		NEWTON METERS	
	Inches	mm		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
4	1/4	6.4	7/16-20	9	12	12	16	6	10	8	14
5	5/16	7.9	1/2-20	12	15	16	20	10	15	14	20
6	3/8	9.5	9/16-18	21	24	29	33	15	20	20	27
8	1/2	12.7	3/4-18	35	40	47	54	25	30	34	41
10	5/8	15.9	7/8-14	53	58	72	79	35	40	47	54
12	3/4	19.1	1-1/16-12	77	82	104	111	60	70	81	95
14	7/8	22.2	1-3/16-12	90	100	122	136	70	80	95	109
16	1	25.4	1-5/16-12	110	120	149	163	80	90	108	122
20	1-1/4	31.8	1-5/8-12	140	150	190	204	95	115	129	156
24	1-1/2	38.1	1-7/8-12	160	175	217	237	120	140	163	190
32	2	50.8	2-1/2-12	225	240	305	325	250	300	339	407

Above torque figures are recommended for plain, cadmium or zinc plated fittings, dry or wet installations.

Swivel nuts either swaged or brazed.

These torques are not recommended for tubes 1/2 inch (12.7 mm) O.D. and larger with wall thickness of 0.035 inch (0.889 mm) or less. Torque is specified for 0.035 inch (0.889 mm) wall tubes on each application individually.

2001

Section 2001

ENGINE REMOVAL 9350 Model Tractors

CASE CORPORATION
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3350 SOUTH SERVICE ROAD
BURLINGTON, ON L7N 3M6 CANADA

Rac 8-83810

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ENGINE REMOVAL

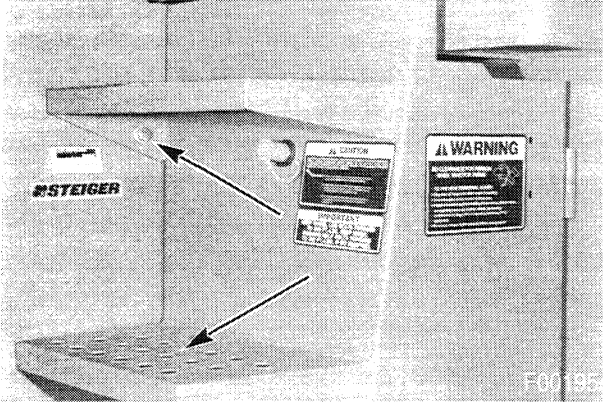
STEP 1

See Section 6005 in this manual for instructions to remove the hood and grille.

STEP 2

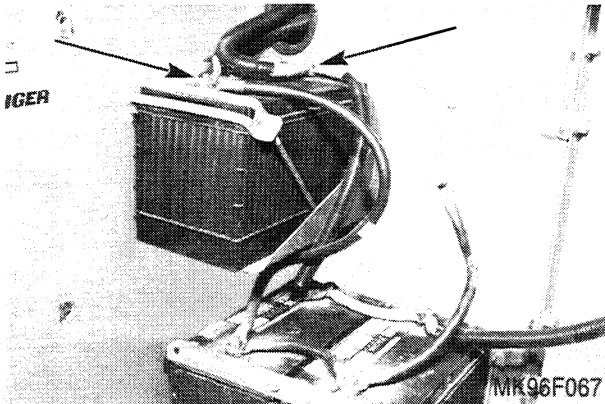
See Section 9007 in this manual for instructions on discharging the air conditioning system.

STEP 3



Remove the two bolts from the battery access door.

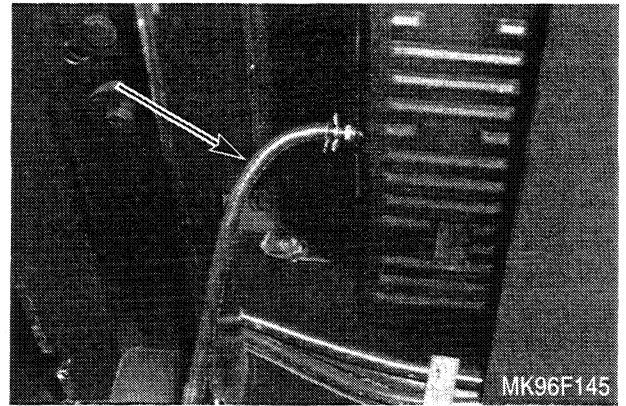
STEP 4



Open the battery access door and disconnect the negative and positive battery cables from the upper battery.

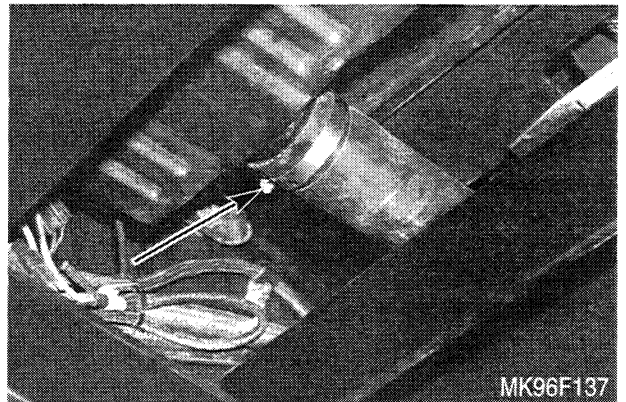
NOTE: Always disconnect the negative battery cable first.

STEP 5



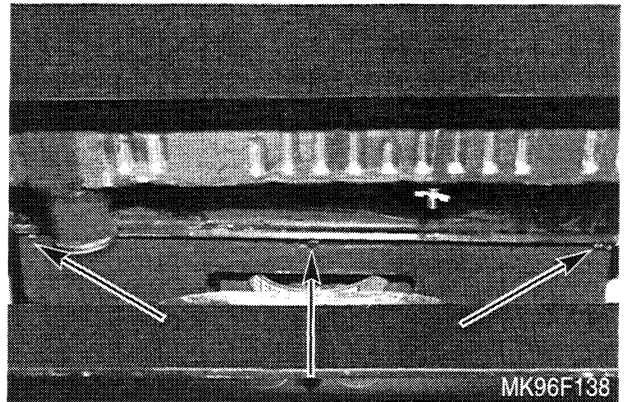
Install a short length of hose on the radiator drain valve. Open the valve and drain the radiator.

STEP 6



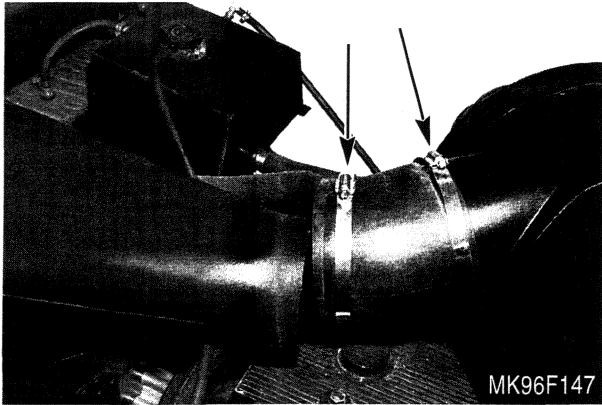
Place a catch pan under the lower radiator hose. Loosen the hose clamp and remove the hose.

STEP 7



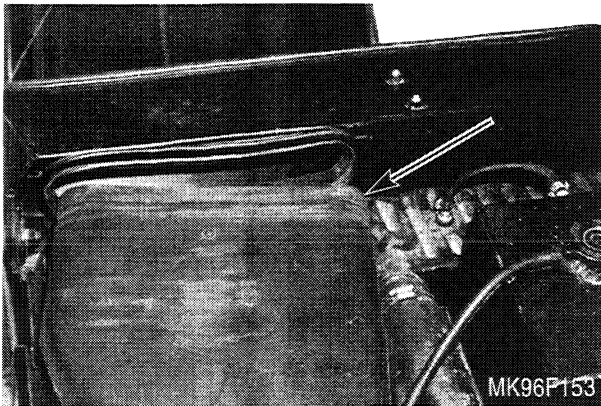
Remove the bottom fan shield.

STEP 8



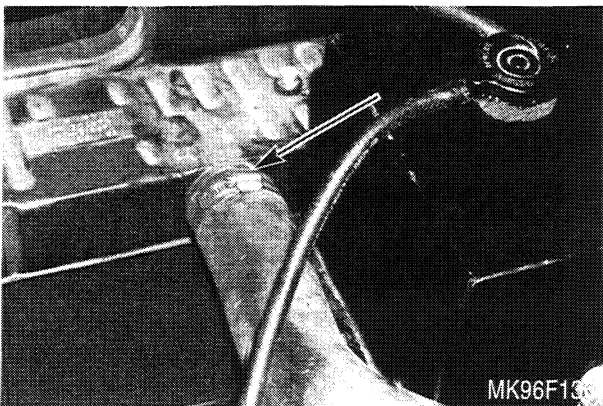
Loosen both hose clamps and slide the air duct elbow (Item 1) off the air duct tube (Item 2) and onto the air filter cannister (Item 3).

STEP 9



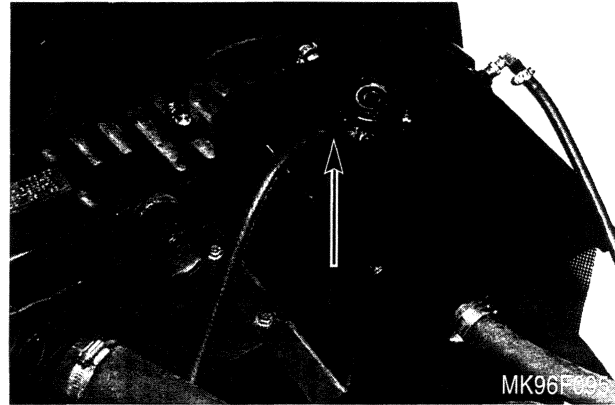
Remove the air duct tube from the radiator mount frame.

STEP 10



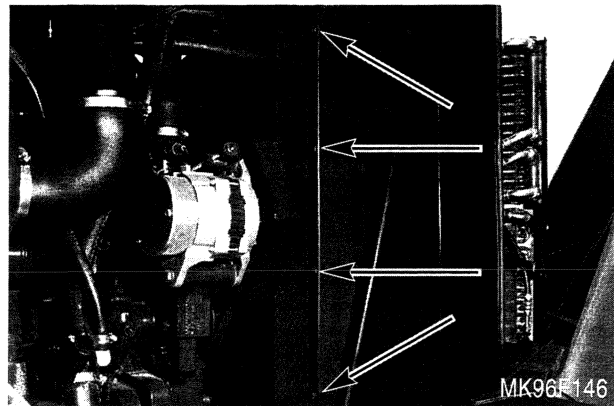
Loosen the hose clamp and remove the upper radiator hose.

STEP 11



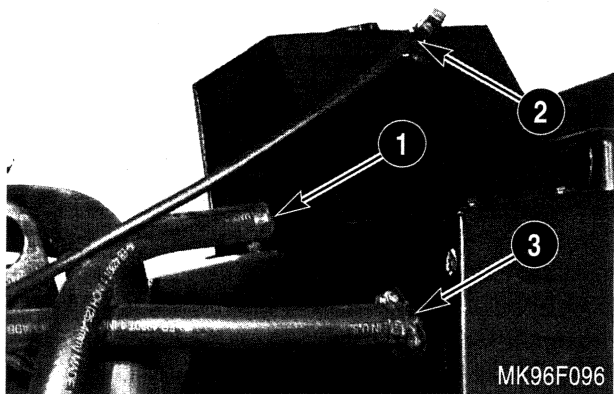
Remove the coolant recovery reservoir hose from the radiator fill tube.

STEP 12



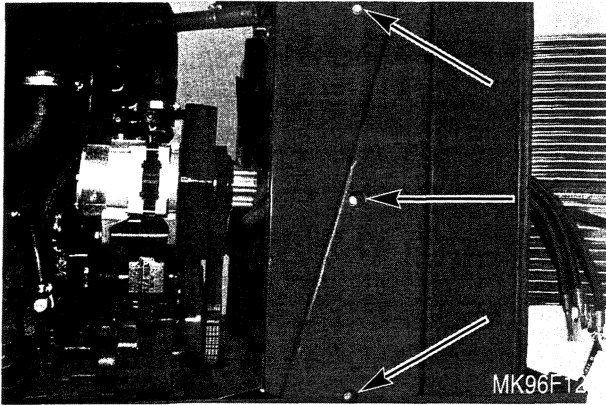
Remove the LH and RH side fan shields.

STEP 13



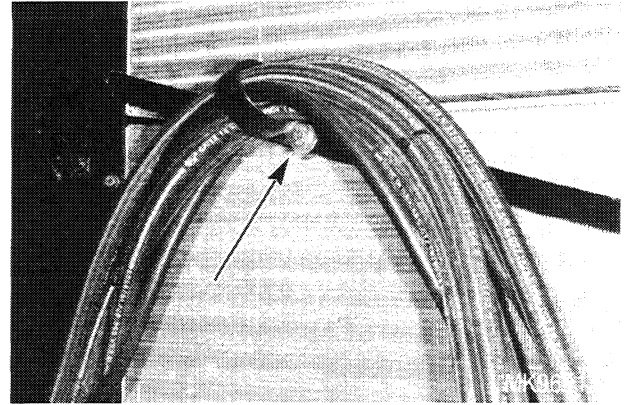
Remove the heater return hose (Item 1) and engine air bleeder hose (Item 2) from the radiator fill tank and the evacuator hose (Item 3) from the fan shroud.

STEP 14



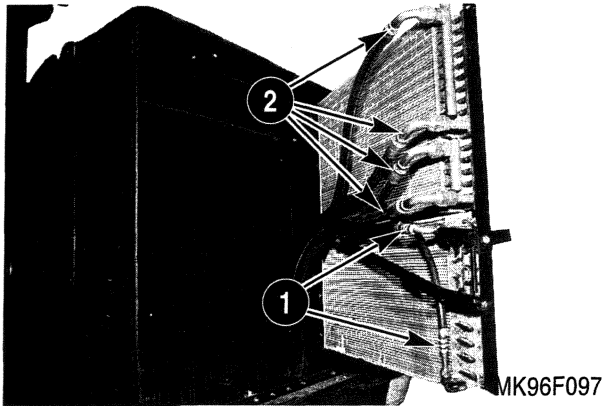
Remove the LH and RH fan shroud bolts. Move the fan shroud rearward against the crankshaft pulley.

STEP 16



Remove the clamp supporting the hydraulic and condenser hoses.

STEP 15

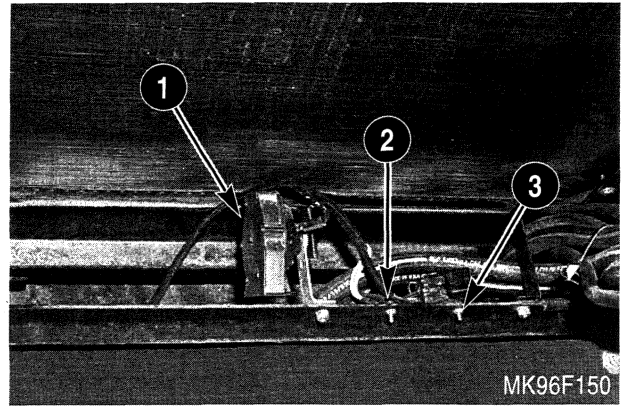


Open the cooler assembly and remove the air conditioner condenser hoses (Item 1). Cap the condenser and plug the hoses.

IMPORTANT: *The hoses and condenser must be plugged and capped immediately to prevent contamination from entering the system.*

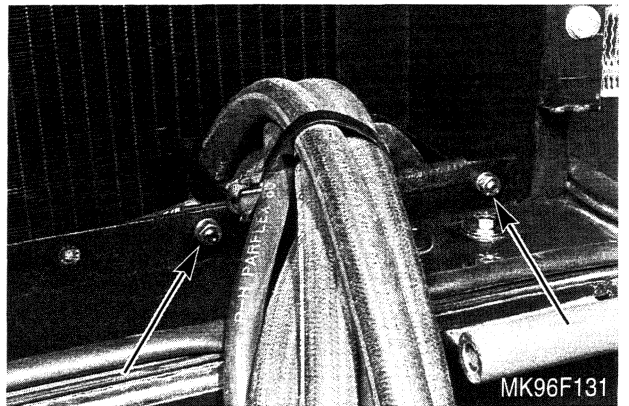
Label the transmission and hydraulic cooler hoses (Item 2) with shipping tags. Remove the hoses. Cap the cooler fittings and plug the hoses.

STEP 17



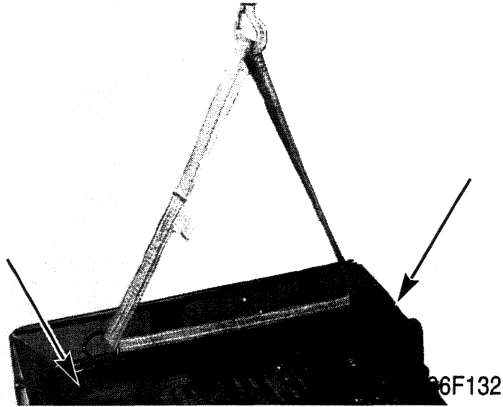
Remove the horn (Item 1), the ground bolt (Item 2) and the horn relay (Item 3) from the radiator mounting frame.

STEP 18



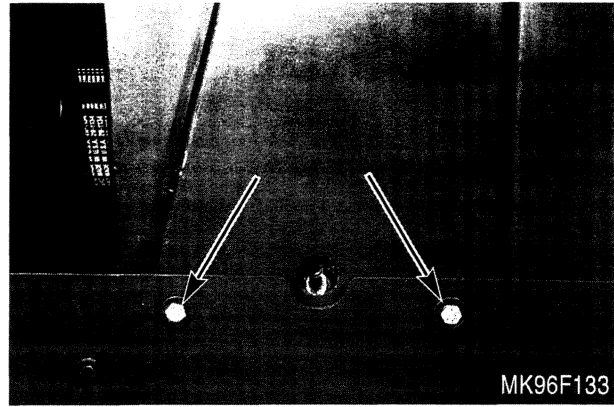
Remove the hydraulic and condenser hose frame bracket.

STEP 19



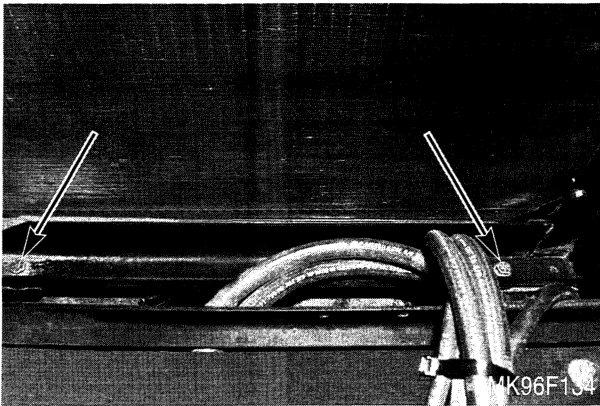
Install lifting hooks in the radiator support frame. Support the radiator assembly with an overhead hoist.

STEP 21

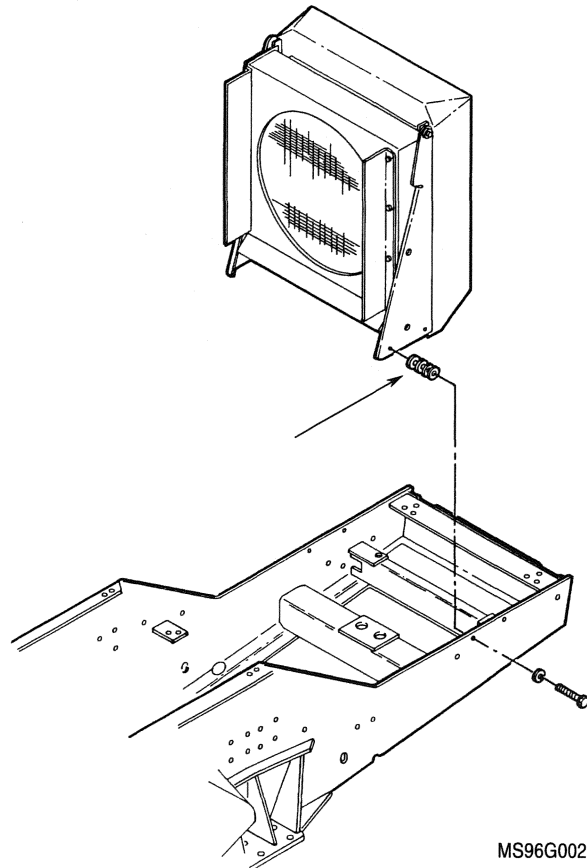


Remove the four radiator support assembly mounting bolts and washers.

STEP 20

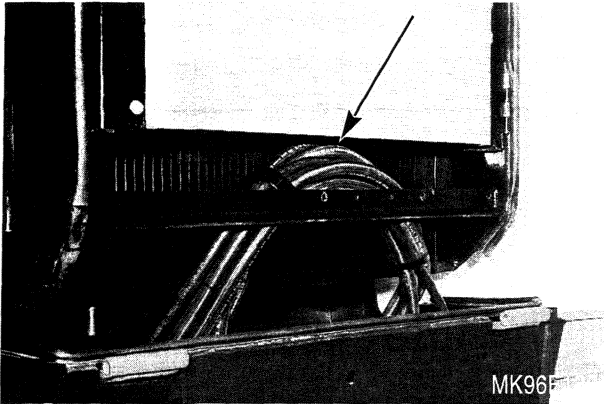


Remove the two radiator frame crossmember mounting bolts, washers and nuts.



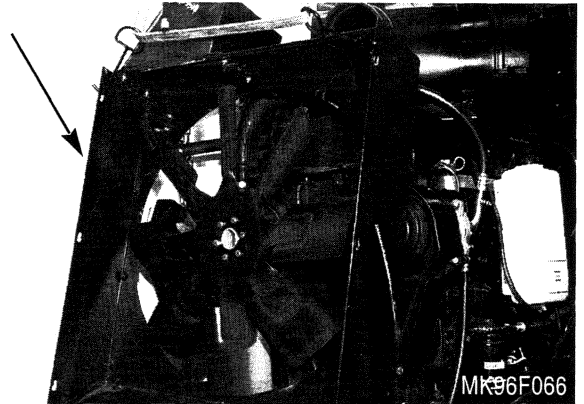
NOTE: If spacer washers are used record the number of washers between the radiator mount frame and tractor frame.

STEP 22

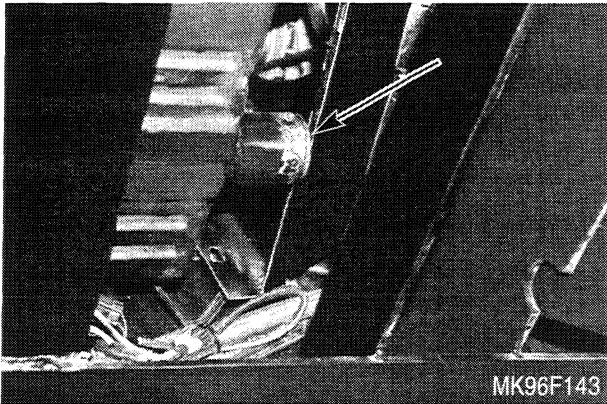


Lift the radiator and support assembly out of the tractor while guiding the condenser and hydraulic hoses through the bottom of the assembly.

STEP 23



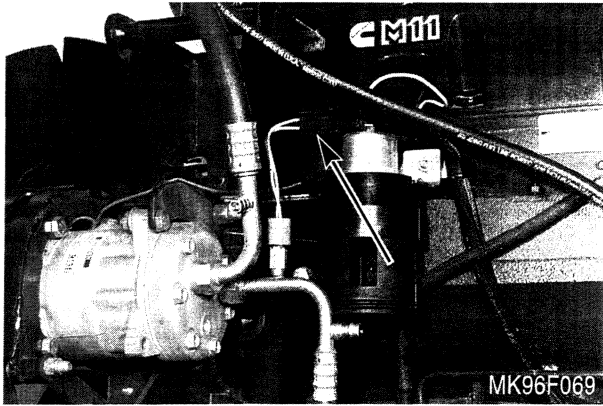
Remove the fan shroud.



NOTE: *The clearance between the fan shroud and the lower radiator hose mounting tube is very tight. Guide the tube past the fan shroud as the radiator assembly is lifted out of the tractor.*

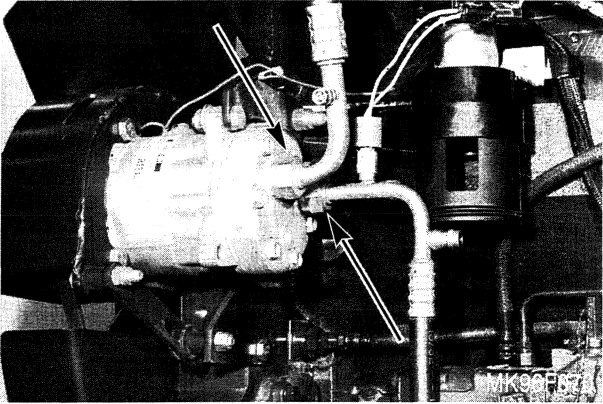
LEFT SIDE

STEP 24



Disconnect the compressor high pressure switch wire connector from the engine wire harness.

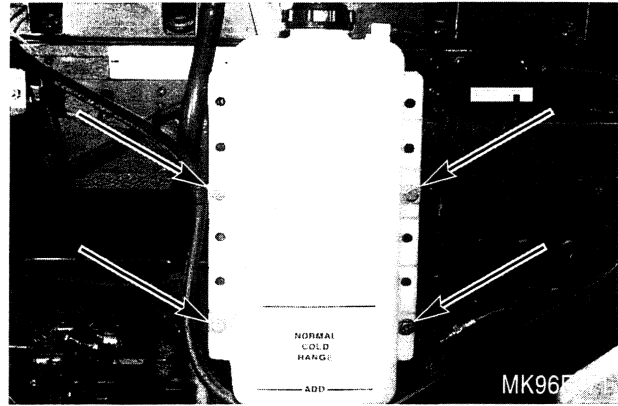
STEP 25



Remove the high pressure and low pressure hoses from the compressor.

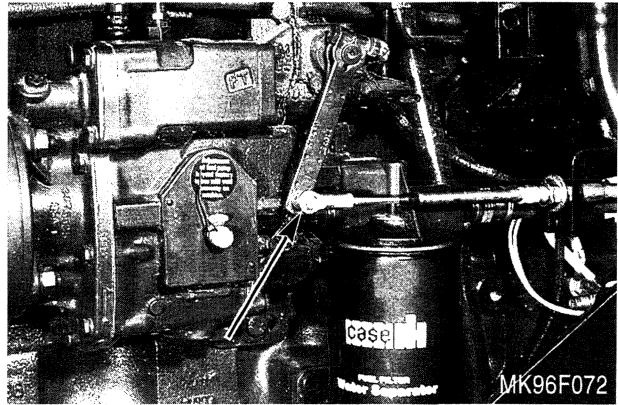
IMPORTANT: Cap the fittings and plug the hoses immediately to prevent contamination from entering the hoses or compressor.

STEP 26



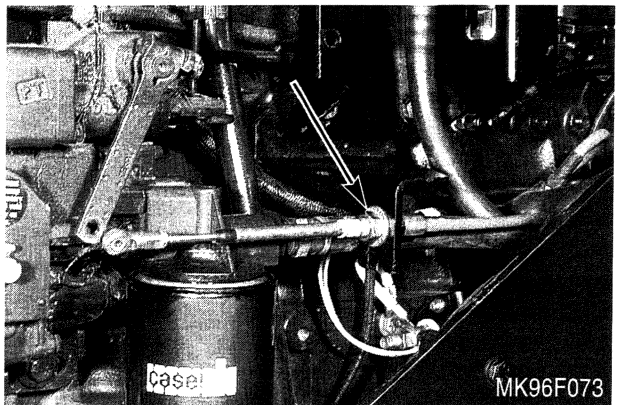
Remove the four mounting bolts and remove the coolant recovery reservoir. Cut any tie straps holding the reservoir hose to other hoses.

STEP 27



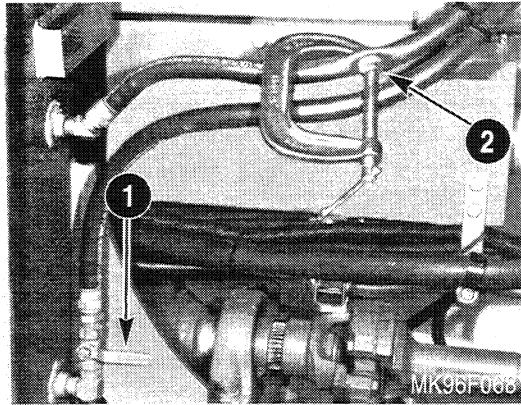
Remove the throttle linkage from the fuel pump.

STEP 28



Loosen the jam nut and remove the throttle cable from the mounting bracket.

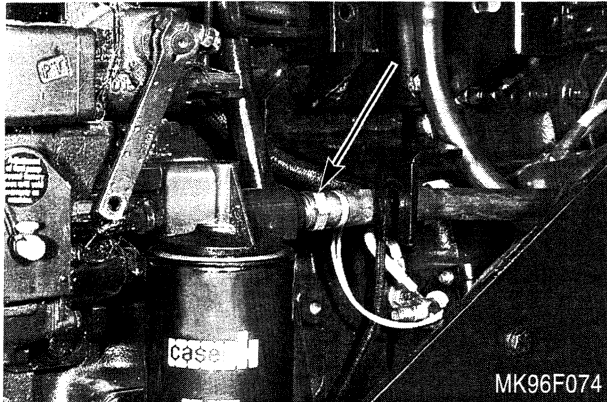
STEP 29



Shut off the fuel supply hose valve (Item 1) and clamp off the fuel return hose (Item 2).

NOTE: Do not tighten the clamp more than necessary or the fuel line may be damaged.

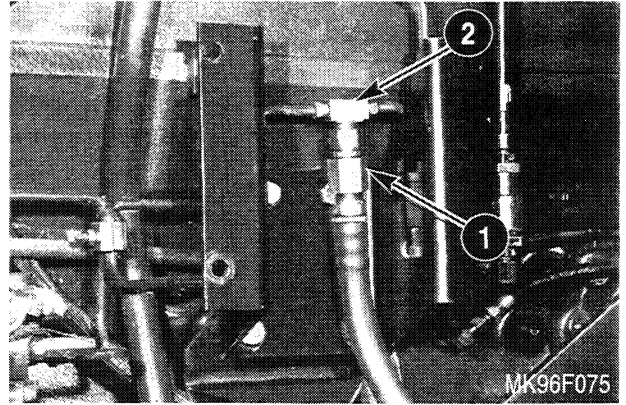
STEP 30



Remove the fuel supply hose from the fuel filter assembly. Install a cap on the fitting and a plug in the hose end.

NOTE: Some fuel trapped in the hose will leak out when the hose is disconnected.

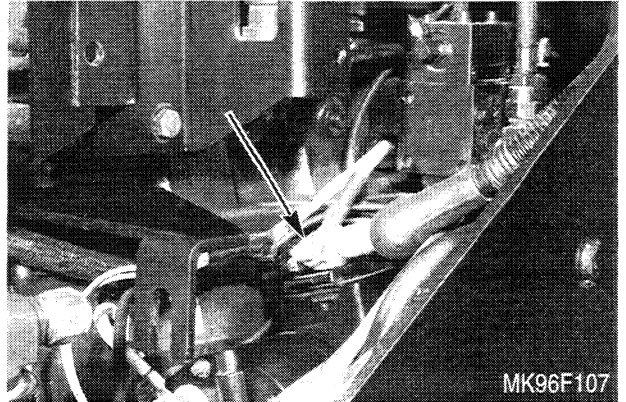
STEP 31



Remove the fuel return hose (Item 1) from the return lines. Cap the fitting and plug the hose end.

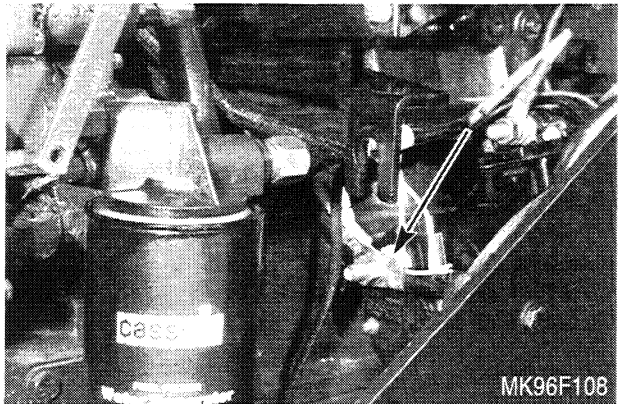
IMPORTANT: Use two wrenches to prevent damage to the fuel junction block (Item 2) and lines.

STEP 32



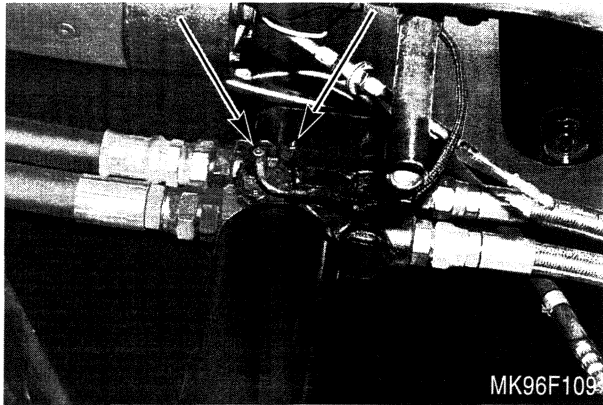
Remove the battery cable from the starter solenoid.

STEP 33



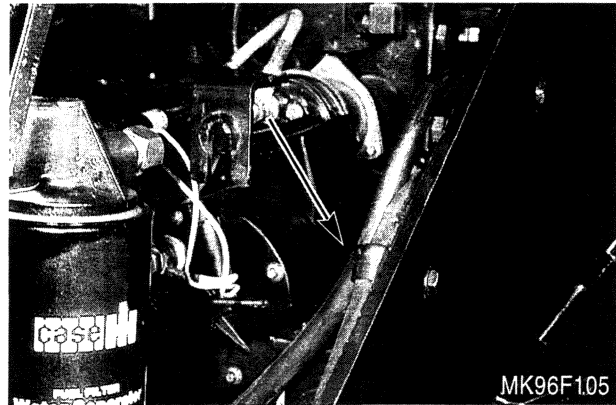
Remove the ground cable from the starter.

STEP 34



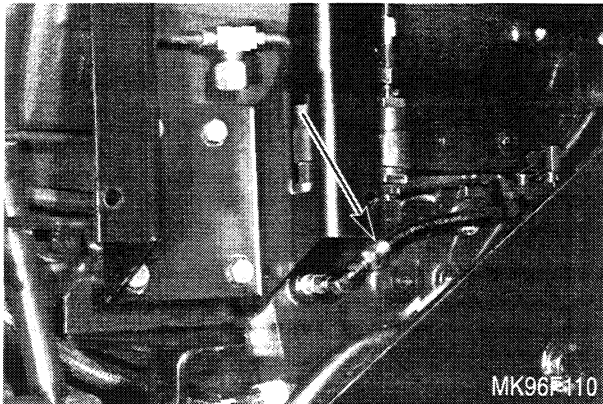
Remove the temperature switch and restriction indicator wires from the transmission filter assembly.

STEP 37



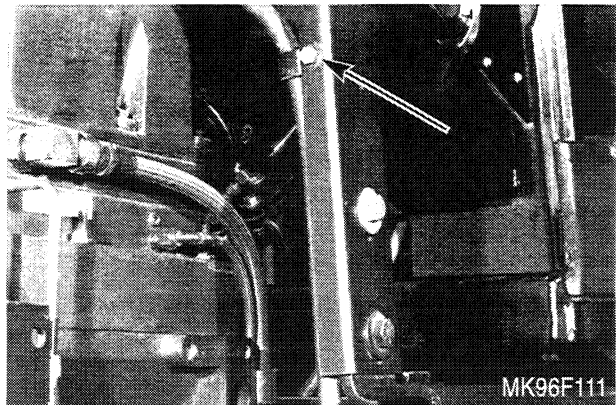
Remove the A/C high pressure hose frame clamp.

STEP 35



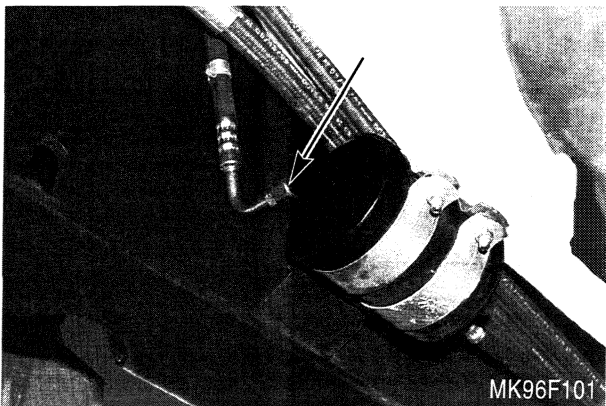
Remove the oil pressure gauge hose from the engine. Install a cap on the fitting and a plug in the hose end.

STEP 38



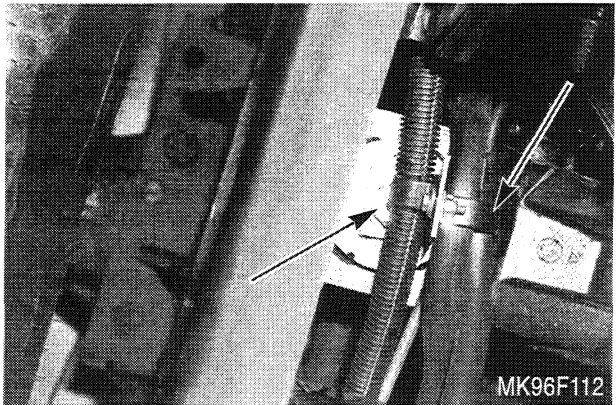
Remove the A/C high pressure hose from the hood support bracket.

STEP 36



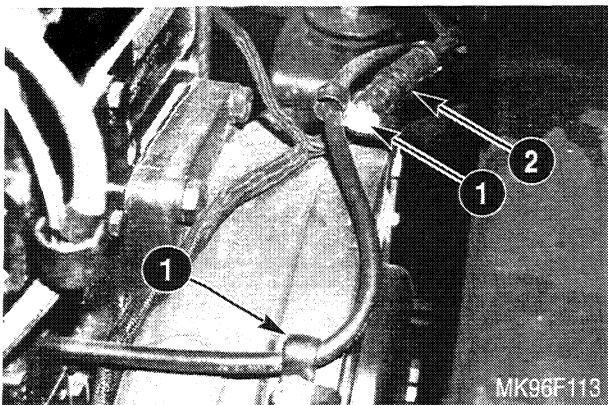
Remove the A/C high pressure hose from the dryer.

STEP 39



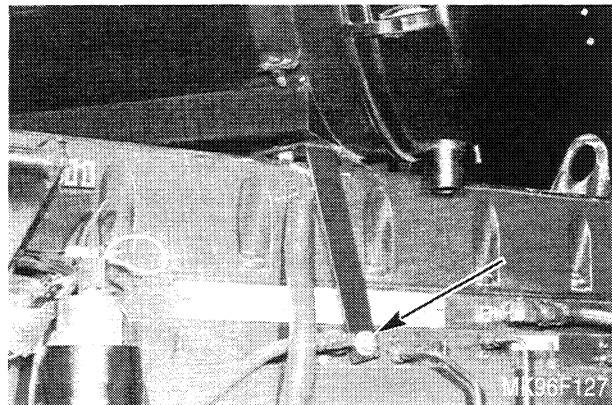
Remove the hose clamps from the LH rear engine mount.

STEP 40



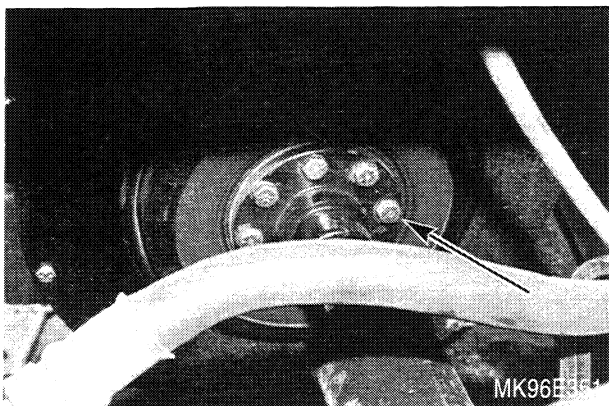
Remove the oil pressure hose clamps (Item 1) from the rear of the engine and disconnect the engine wire harness (Item 2).

STEP 42



Remove the air cleaner bracket mounting bolt.

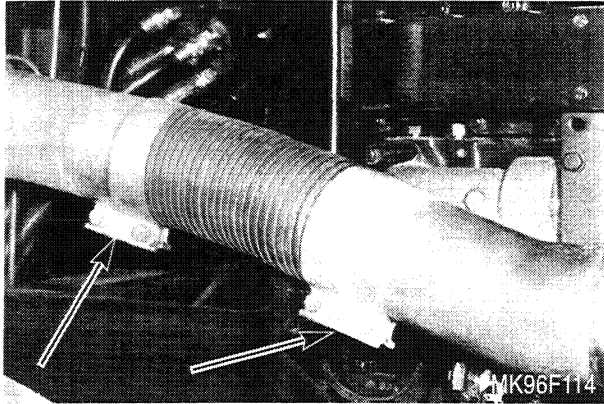
STEP 41



Remove the drive shaft bolts from the drive coupler and slide the drive shaft rearward away from the engine.

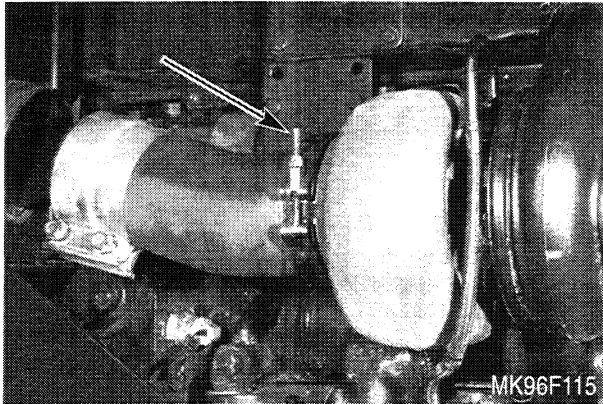
RIGHT SIDE

STEP 43



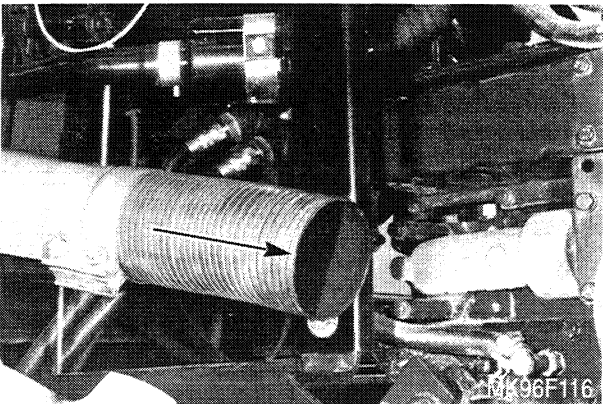
Loosen the sleeve clamps on the exhaust flex tube. Slide the flex tube off the exhaust pipe elbow.

STEP 44



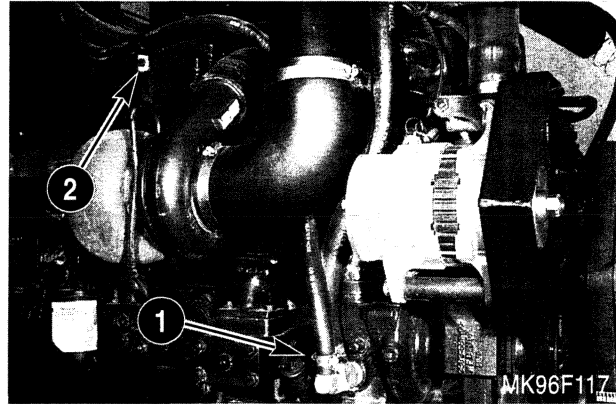
Loosen the exhaust pipe elbow clamp and remove the elbow.

STEP 45



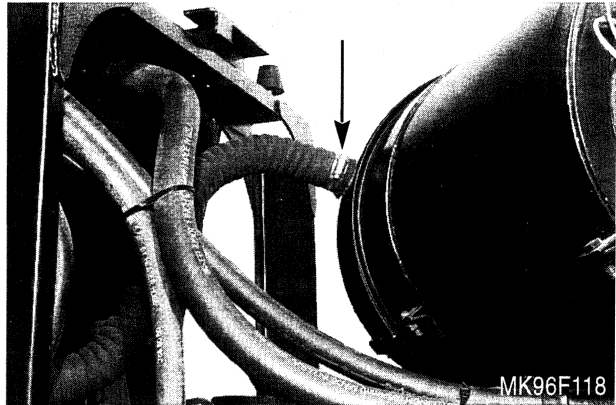
Slide the flex tube forward off the exhaust pipe and remove.

STEP 46



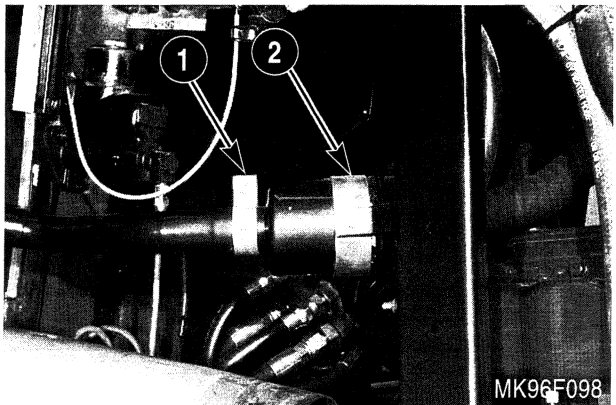
Remove the heater return hose (Item 1) and hose clamp (Item 2) from the engine and set the hose to the outside of the frame.

STEP 47



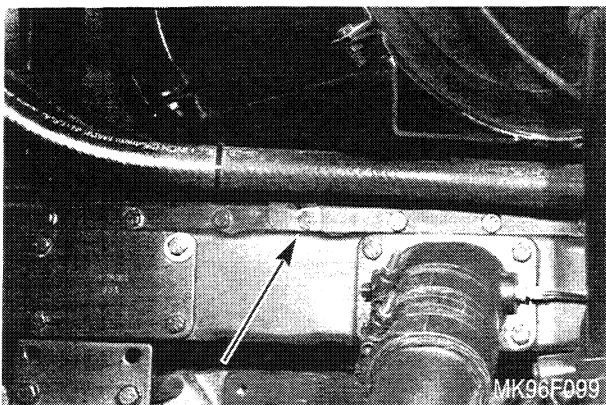
Remove the aspirator hose from the air cleaner.

STEP 48



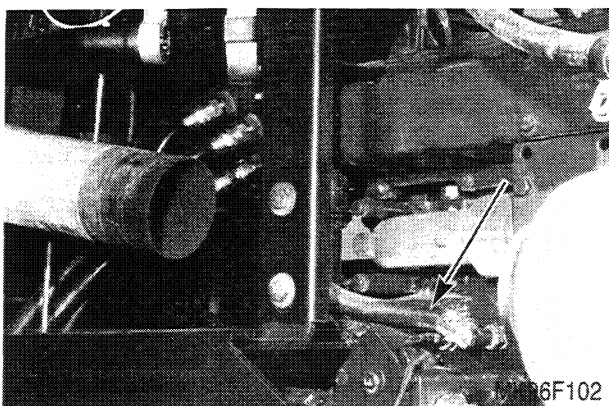
Loosen the aspirator tube clamp (Item 1) and the aspirator check valve clamp (Item 2). Remove the aspirator check valve.

STEP 49



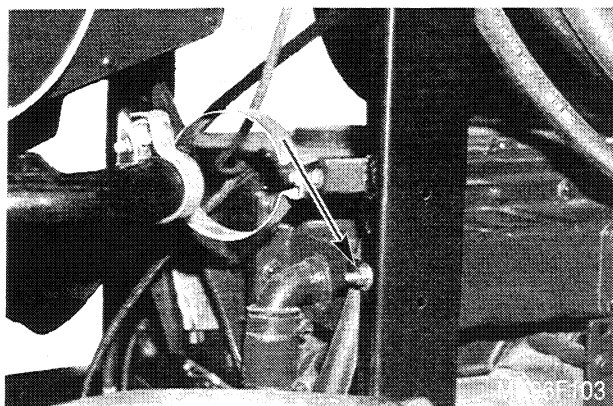
Remove the compressor low pressure hose clamp from the engine and set the hoses to the outside of the frame.

STEP 50



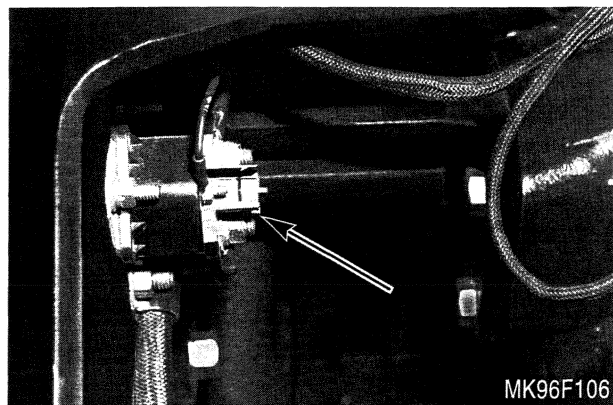
Remove the heater hose from the shut off valve.

STEP 51

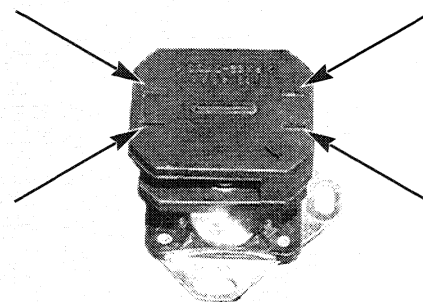


Remove the heater hose clamp from the hood support bracket.

STEP 52



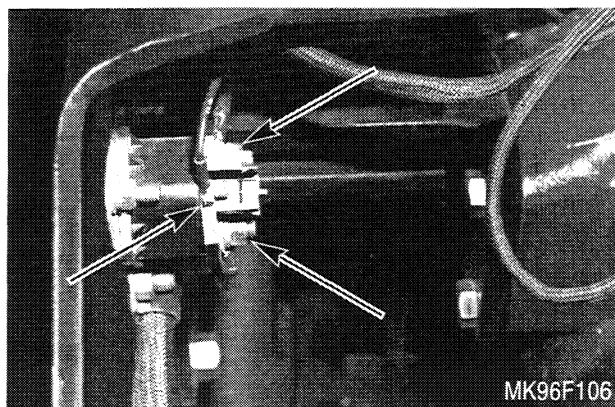
Remove the cover from the magnetic starter switch.



MK96F120

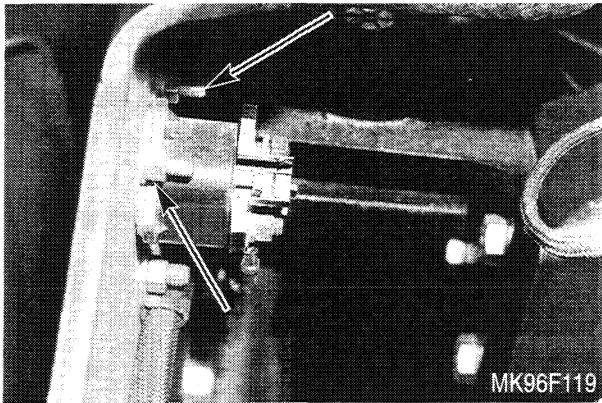
NOTE: Insert a thin blade screwdriver into the slots in the cover to release the cover lock tabs.

STEP 53



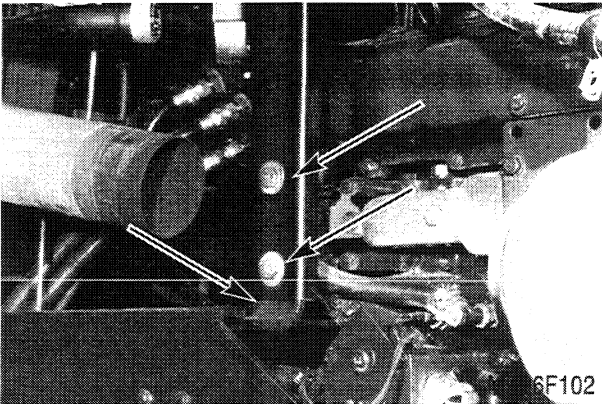
Remove the wires from the magnetic starter switch.

STEP 54



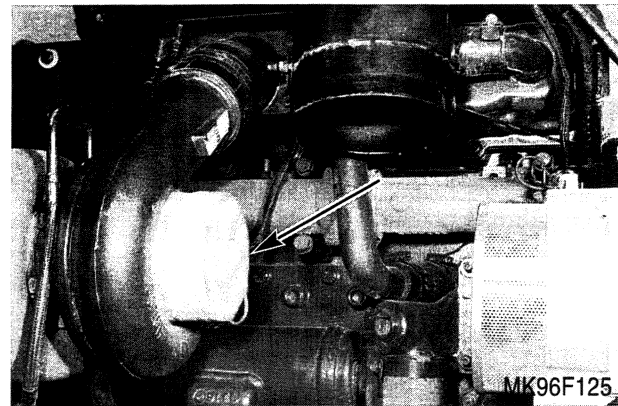
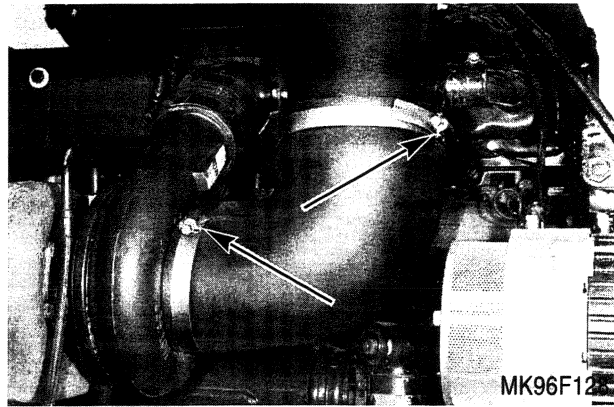
Remove the two mounting bolts and remove the starter switch from the frame.

STEP 55



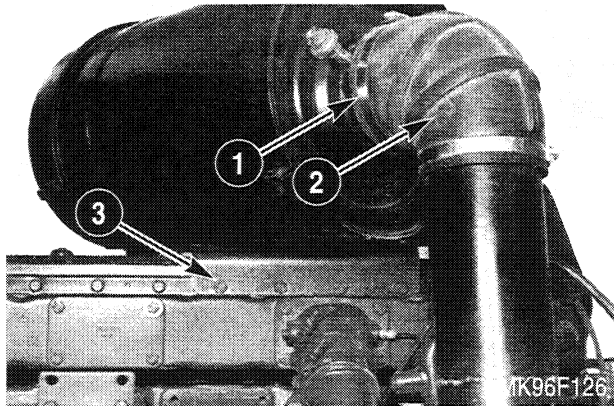
Mark the position of the hood support on the frame brackets. Remove the four hood support mounting bolts, washers and lock nuts. Remove the hood support.

STEP 56

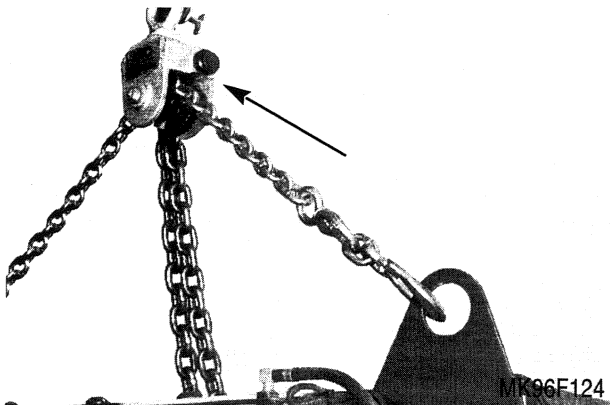


Remove the turbocharger inlet elbow. Cover the inlet opening to prevent any contaminants to enter the turbocharger.

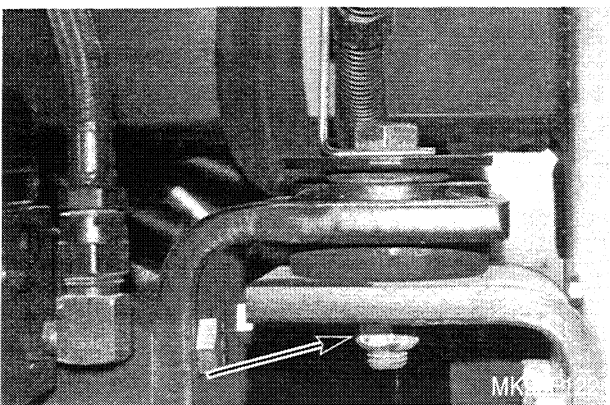
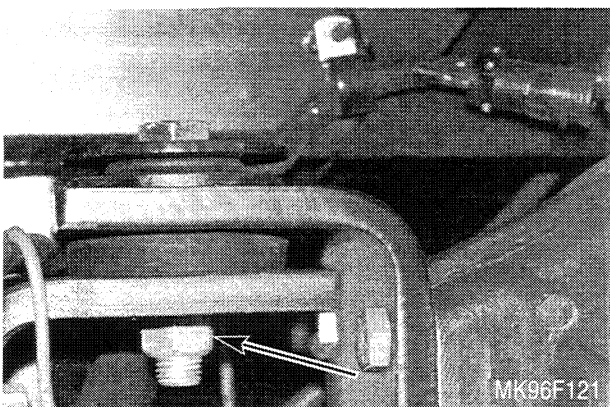
STEP 57



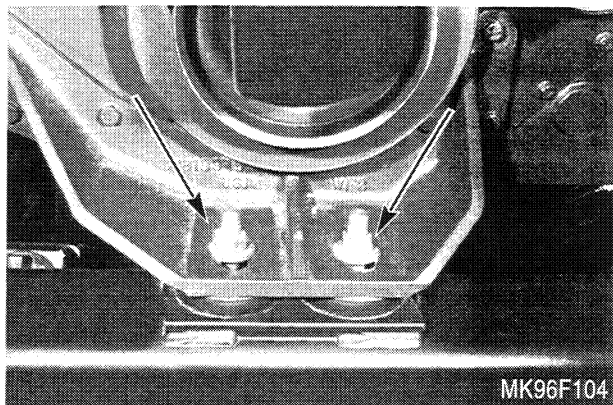
Loosen the clamp (Item 1) and remove the air cleaner outlet elbow and tube (Item 2). Remove the mounting bolts (Item 3) and remove the air cleaner assembly.

STEP 58

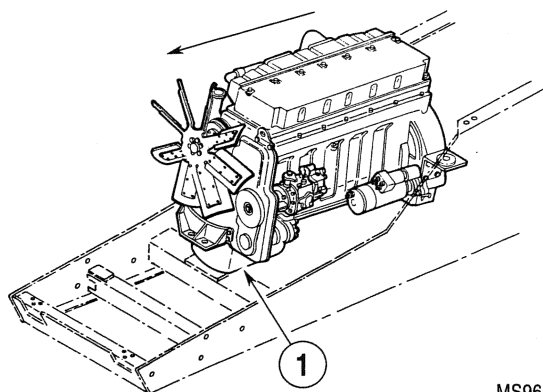
Use OEM 4225 4000 lb (1840 kg), or larger, load rotor onto an overhead hoist. Connect the ends to the front and rear engine lift brackets.

STEP 59

Remove the engine LH and RH side rear vertical mounting bolts, washers and nuts.

STEP 60

Remove the engine front mounting bolts, washers and nuts.

STEP 61

Lift the engine to remove the weight on the motor mounts. Be sure all hoses, lines, cables and wire harnesses are disconnected and clear of the engine. Move the engine forward as it is lifted out of the frame. Use the load rotor to tilt the front of the engine enough for the oil pan (Item 1) to clear the front frame crossmember.



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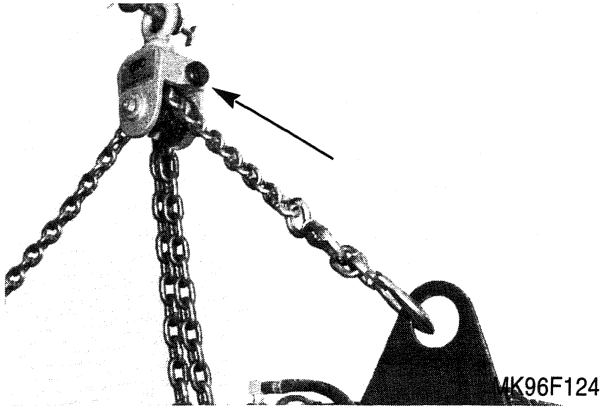
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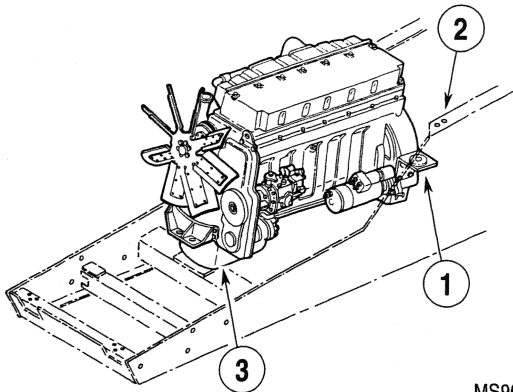
ENGINE INSTALLATION

STEP 62



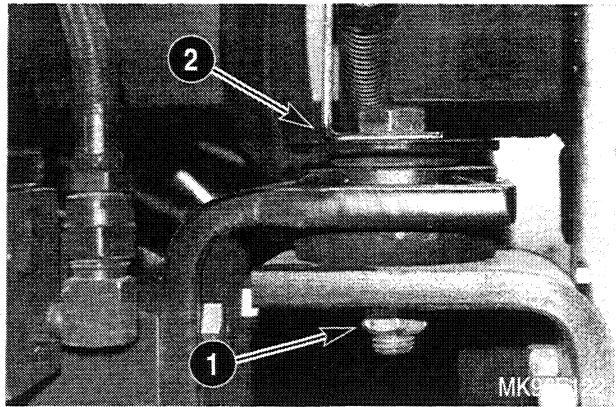
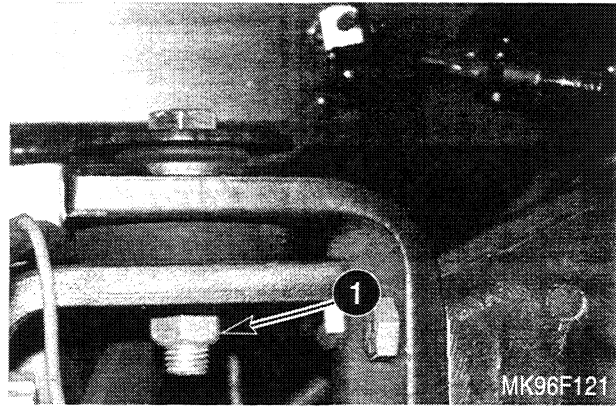
Use OEM 4125 4000 lb (1840 kg), or larger, load rotor on an overhead hoist. Connect the lifting chains to the front and rear engine lift brackets.

STEP 63



Lift the engine over the front frame crossmember. Move the engine rearward while lowering the engine. Tilt the front of the engine upward to allow the rear engine mounts (Item 1) to pass under the top flanges (Item 2) of the side frames as the oil pan passes over the front frame crossmember (Item 3).

STEP 64



Guide the driveshaft into the engine drive coupler as the engine is moved rearward to align the motor mounts. Lower the engine onto the mounts and install the LH and RH rear vertical mounting bolts, washers and nuts (Item 1). Do not tighten the bolts.

NOTE: The battery cable and fuel line support bracket (Item 2) must be installed with the LH rear engine mount bolt.

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