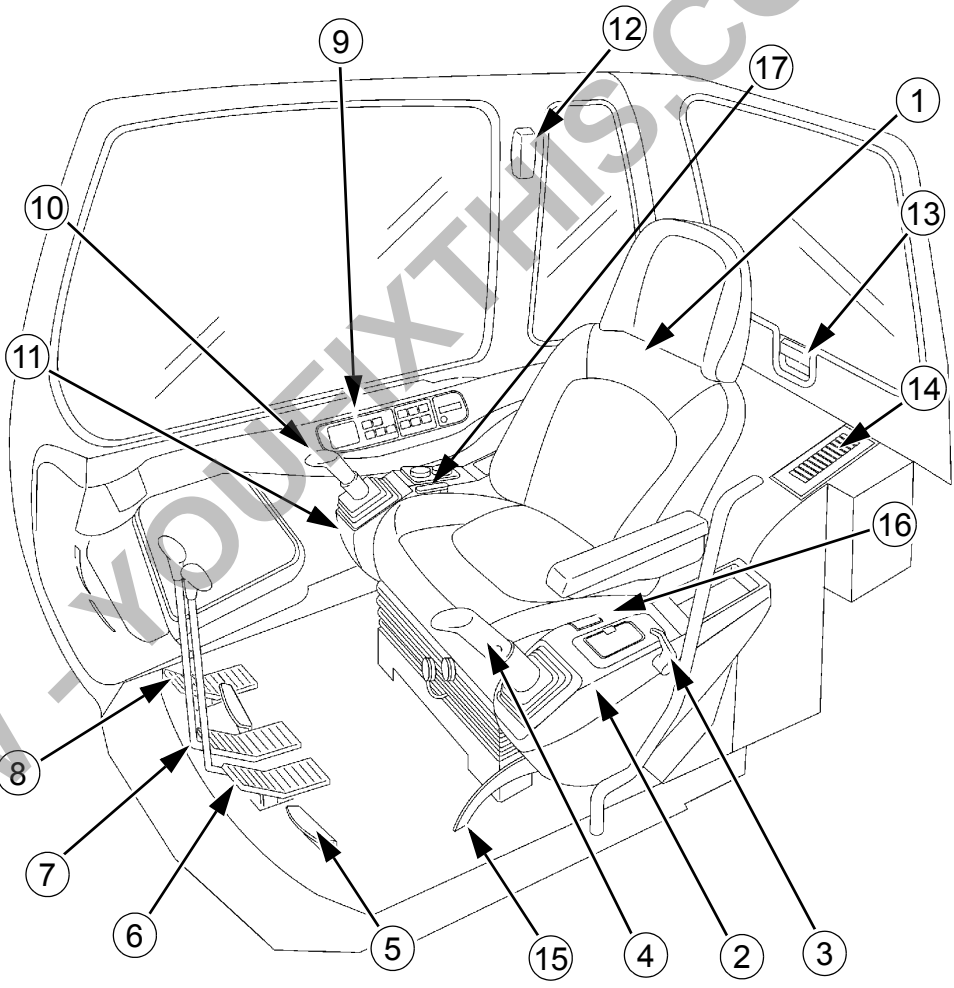
OPERATOR'S COMPARTMENT CONTROLS

WARNING: *Before starting the engine, make sure that you are fully aware of the location of and the function of each control. Incorrect operation of the controls can cause serious injuries.*

LOCATION OF CONTROLS AND ASSOCIATED COMPONENTS



CS00E501

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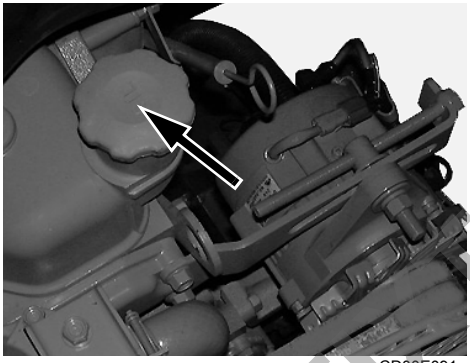
Engine oil change and oil filters replacement

NOTE: Change the oil while the engine is still warm. The oil will flow more easily.

STEP 1

Park the machine on flat, horizontal ground, stop the engine and remove the starter switch key.

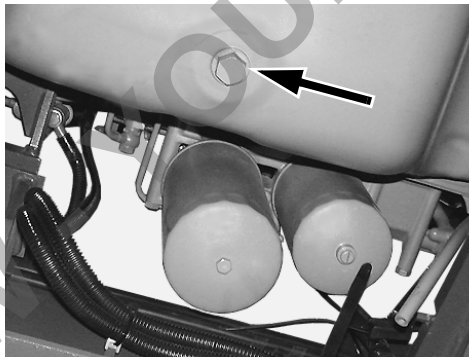
STEP 2



CD00E091

Remove the oil filler cap.

STEP 3



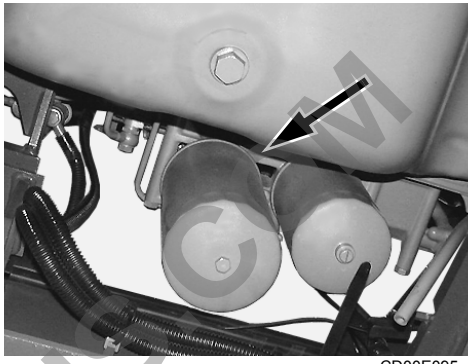
CD00E095

Remove upper undercover to access the oil pan.
Place a receptacle of a suitable capacity under the engine sump drain plug, remove the plug and allow the oil to flow out.

STEP 4

Install a new seal on the drain plug and install and tighten the plug.

STEP 5



CD00E095

Clean the area around the oil filters and remove them, using a filter wrench.

STEP 6



PH08325

Coat the seal of each new filter with a fine film of oil.

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SPECIFICATIONS

ENGINE

Make and model..... ISUZU BB-6BG1T
Aif induction..... Turbocharged
Number of cylinders 6
Bore/stroke.....105 mm x 125 mm (4.13 in x 4.92 in)
Displacement .....6 494 cc (396 cu in)
SAE net, horsepower-rated, **210 LX**,103 kW (138 hp) @ 1 950 min/1 (1 950 rpm)
SAE net, horsepower-rated, **240 LX**, 121 kW (162 hp) @ 2150 min/1 (2150 rpm)
Engine speeds
    Full throttle - full load .....
    Idle speed .....
Cooling
    Radiator cap .....
    Thermostat.....
Electrical System
    Batteries..... (2) 12 volt, 000 ampere
    System voltage .....24 volts
Valve clearance - engine cold
    Intake valves.....
    Exhaust valves.....

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SERVICE INTERVALS

PAGE	SERVICE POINTS	NB OF POINTS	INTERVALS IN HOURS				
			CLEAN	REPLACE	CHECK	GREASE	DRAIN
112/156	Hydraulic breaker (optional)	1			2/10/50 (A)		
135	Engine oil level	1			10		
135	Coolant level	1			10		
135	Hydraulic reservoir level	1			10		
172	Radiator and oil cooler	1	250		10		
173	Fan/alternator belt tension	1			10/250		
177	Attachment	13/5				50/1000	
143	Drain fuel tank sediment	1			50		
143	Drain water separator	1			50		
157	Hydraulic system lines	-			50		
156	Return filter hydraulic breaker	1		100			
149	Drain hydraulic reservoir sediment	1			250		
158	Primary air filter element	1	250 (B)	1000 (C)	250 (B)		
162	Swing reduction gear oil level	1			250		
164	Travel reduction gears oil level	2			250		
171	Track shoe bolt torque	-			250(D)		
181	Air conditioning	-	250		250 (E)		
187	Bolt and nut torque	-			250 (D)		
191	Batteries electrolyte level	2			250		
132	Turntable bearing	1				1000	
133	Turntable bearing teeth	1				500	
137	Engine oil	1					500
138	Engine oil filters	2		500			
144	Fuel filter	1		500			
147	Hydraulic fluid condition	1			1000		
150	Pilot filter	1		2000(F)			
153	Breather filter	1		1000			
159	Secondary air filter element	1		1000 (G)			
162	Swing reduction gear	1				5000	1000 (H)
164	Travel reduction gears	2					1000 (H)
150	Suction filter	1	2000	5000			
151	Return filter	1		2000 (F)			
152	Nephron filter	1		2000			
147	Hydraulic fluid	1		5000			
86	Hose burst check valves (opt)	2				(I)	
181	Cooling circuit	1					(J)
167	Tracks	2	(K)		(K)		

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TORQUE AND SPECIFICATIONS PER COMPONENT

Component	Bolt Size	Torque (Ft.Lbs)	Torque (Nm)
Travel reduction gear (*)	M16	196-230	267-312
Drive sprocket (*)	M16	196-230	267-312
Idler wheel (*)	M16	196-230	267-312
Upper roller (*)	M20	384-448	521-608
Lower roller (*)	M18	273-318	371-432
Chain guide	M18	280-326	380-443
Track shoe	M20	275-335	370-450
Counterweight	M27 M30	780-910 983-1142	1058-1235 1333-1549
Turntable bearing (undercarriage)	M20 M24	345-401 577-673	468-545 783-913
Turntable bearing (upperstructure)	M20 M24	345-401 577-673	468-545 783-913
Swing reduction gear (*)	M20 M24	384-448 577-673	521-608 783-913
Engine (*)	M16	195-230	265-313
Engine mounts (*)	M10	47-53	64-73
Radiator	M16	108-129	147-176
Hydraulic pump (*)	M10 M20	47-54 270-365	64-74 367-496
Hydraulic reservoir (*)	M16	171-203	232-276
Fuel tank (*)	M16	171-203	232-276
Control valve (*)	M16	196-230	267-312
Hydraulic swivel (*)	M12	80-93	109-127
Cab	M16	57-59	78-80

NOTE: *Use Loctite 262, or the equivalent, on bolts marked (*).*

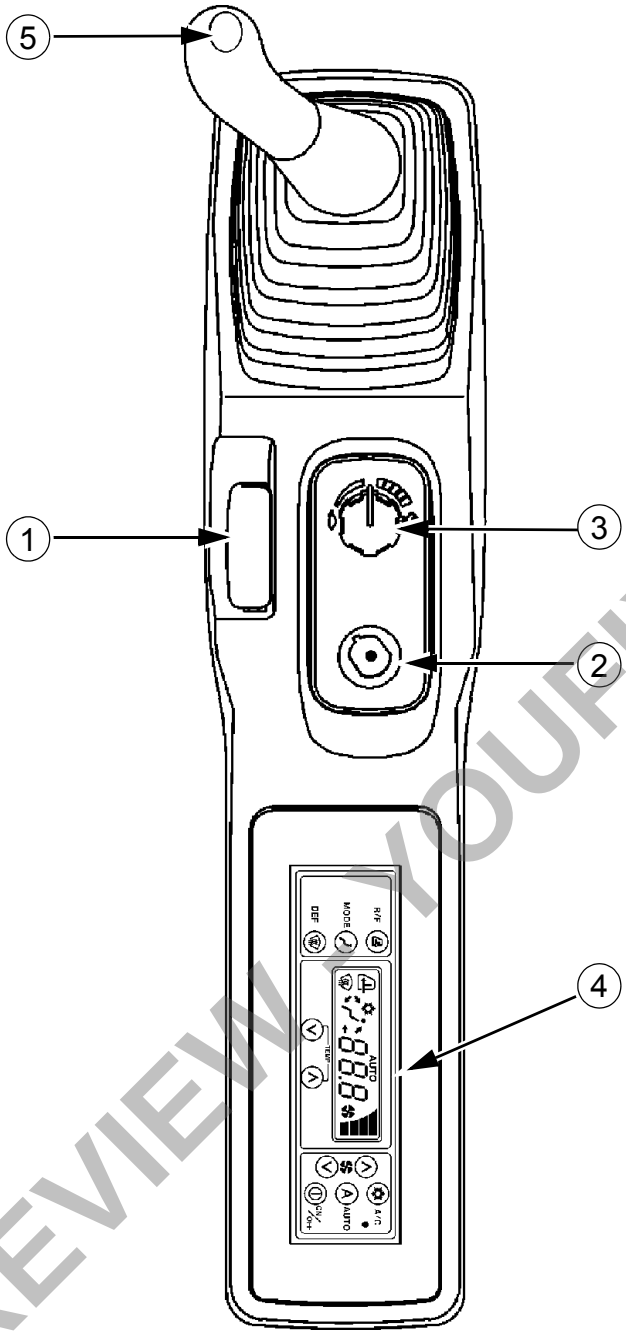
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ENGINE TROUBLESHOOTING

Problem	Possible cause	Solution
Engine does not start.	Defective starter switch (starter does not run)	Check switch
	Defective rotation of starter (starter rotates slowly)	Discharged batteries, starter problems, contaminated or loose wiring connectors
	Incorrect viscosity of engine oil	Inspect and replace as necessary
	Incomplete air bleeding of fuel system	Completely bleed air
	Engine too cold (cold weather)	Preheat the intake air or warm up the coolant
	No fuel in fuel tank	Refill
	Poor fuel quality	Inspect and replace as necessary
	Fuel filter clogged	Clean or replace
	Possible seizure in engine	*See your authorized LBX Link-Belt distributor*
	Low compression	
	Defective fuel injection pump	
Engine stops during operation.	No fuel in fuel tank	Refill
	Fuel filter clogged	Clean or replace
	Air in the fuel system	Retighten fuel in line connections
Improper oil pressure.	Low oil	Refill
	Oil filter clogged	Replace oil filter
	Low oil viscosity	Replace with oil of viscosity to match temperature
	Oil leakage from connections	Tighten connections
	Defective oil pressure switch	*See your authorized LBX Link-Belt distributor*
	Incorrect functioning of oil pump	

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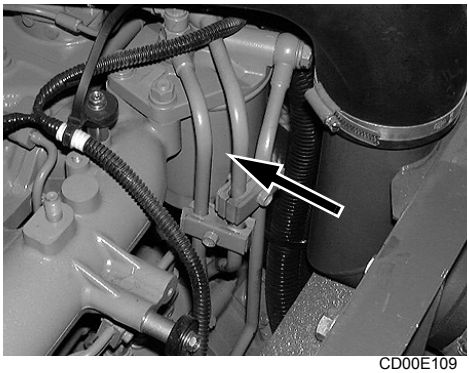
RIGHT-HAND CONTROL ARM



CS00E502

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Replacing the fuel filter



CD00E109

Clean the area around the filter head.

Place a receptacle of a suitable capacity under the filter and remove the filter, using a filter wrench.

Apply a thin coat of oil or grease on the new filter seal.

NOTE: Do not fill the new filter with fuel before installing.

Install the new filter. Turn the filter until the seal comes into contact with the filter head and turn an extra half turn by hand.

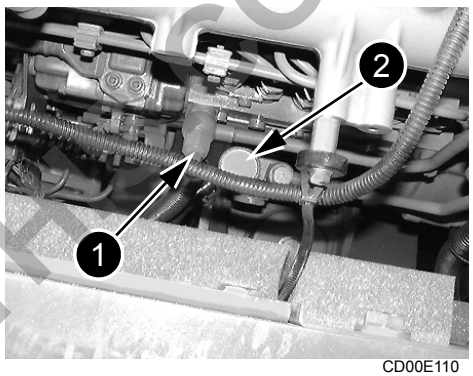
IMPORTANT: *Do not use a filter wrench to install the filter. Over tightening the filter can damage the seal and filter.*

NOTE: If the engine does not regain full power after replacing the filter, bleed the system.

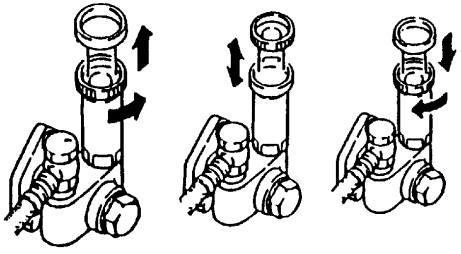
Bleeding the system

It is necessary to bleed the fuel system when :

- The tank has been completely emptied.
- The fuel filter has been replaced.
- Parts of the fuel system have been removed for servicing or repair work.
- The machine has been in storage for a fairly long period.



CD00E110



CS98M578

Loosen the knob of the priming pump (2). Loosen the air bleed screw (1). Move the handle of the priming pump (2) up and down until no bubbles come out of the air bleed screw (1).

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HYDRAULIC SYSTEM

210 LX

Main pumps
- Variable displacement - axial piston
  - Quantity 2
  - Flow each ..... 201 L/mn (53.1 gpm)

Pilot pump
- Fixed displacement - gear type
  - Quantity 1
  - Flow ..... 20 L/mn (5.3 gpm)

240 LX

Main pumps
- Variable displacement - axial piston
  - Quantity 2
  - Flow each ..... 212 L/min (56 .0 gpm)

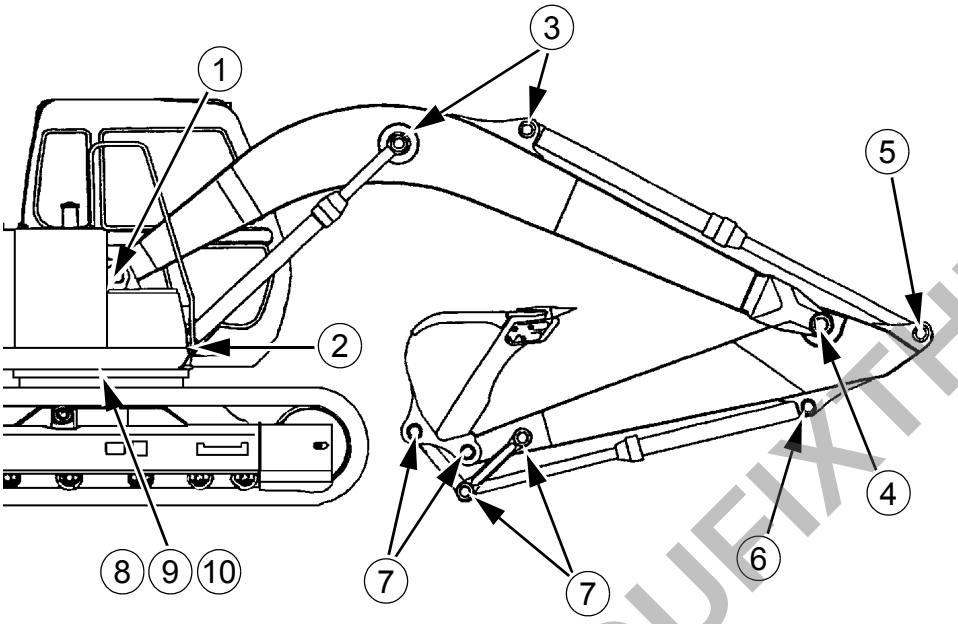
Pilot pump
- Fixed displacement - gear type
- Quantity 1
- Flow each ..... 22 L/mn (5.8 gpm)

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GREASE POINTS

Machine

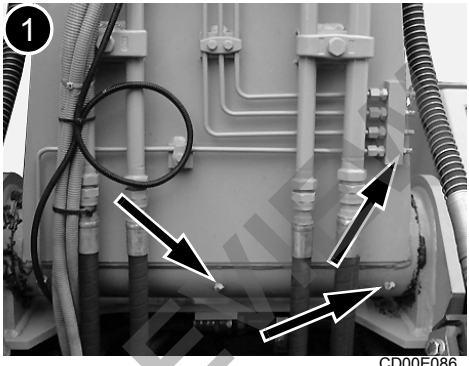
Use the following grease :
EP NLGI grade 2 (for temperate and hot climates) 0° F (-20°C) to + 140° F (+60°C)
EP NLGI grade 0 (for cold climates) -40° F (-40°C) to + 68°F (+20°C)



CS98N551

Note: The figures mentioned in brackets show the number of grease points.

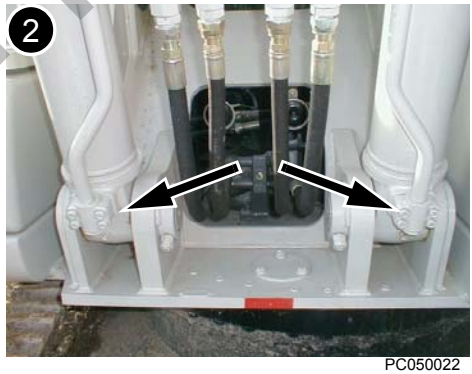
Every 1000 hours



CD00E086

Boom foot pin(3)

Every 50 hours



PC050022

Boom cylinder bottom pin(2)

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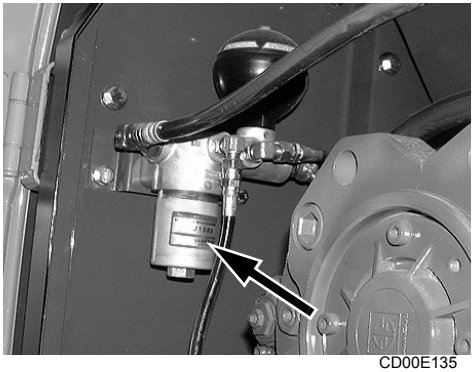
Engine troubleshooting (continued)

Problem	Possible cause	Solution
Exhaust from engine is white or blue.	Excessive oil	Disassemble and repair, replace parts
	Excessively low oil viscosity	Replace with correct oil viscosity
	Excessive cooling by radiator	Adjust
	Incorrect fuel injection timing	*See your authorized LBX Link-Belt distributor*
	Low compression	
Exhaust from engine is black or dark gray.	Improper fuel	Replace with correct fuel
	Incorrect valve clearance	Adjust
	Insufficient air intake (air cleaner clogged)	Service the air filter
	Defective fuel injection pump	*See your authorized LBX Link-Belt distributor*
	Low compression	
Excessive fuel consumption.	Incorrect fuel	Replace with correct fuel
	Insufficient air intake	Clean or replace element
	Defective fuel injection pump	*See your authorized LBX Link-Belt distributor*
	Incorrect spray from fuel injection nozzle	
	Incorrect fuel injection timing	
	Low compression	
Excessive engine oil consumption.	Excessive oil	Drain oil to proper level
	Low oil viscosity	Replace with oil of viscosity to match temperature
	Oil leakage	Retighten and replace parts if necessary
	Worn cylinder piston ring	*See your authorized LBX Link-Belt distributor*
Unusual noise (fuel or mechanical).	Poor fuel quality	Replace
	Damage inside muffler	Replace
Engine overheating (water temperature is too high).	Low coolant	Refill
	Water leakage	Repair
	Worn or damaged belt	Replace
	Incorrect mixture of anti-freeze solution	Replace
	Defective radiator	*See your authorized LBX Link-Belt distributor*
	Broken fan	
	Defective thermostat	
	Defective water pump	
	Defective water temperature gauge	

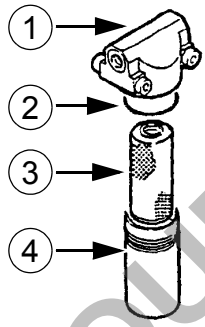
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Pilot filter replacement

Release all pressure in the hydraulic system. See “Releasing pressure in the hydraulic system”.



CD00E135



CS98M619

Use a wrench on the bottom of the filter body (4) to unscrew and remove it.

Remove the old filter (3) and the “O” ring (2).

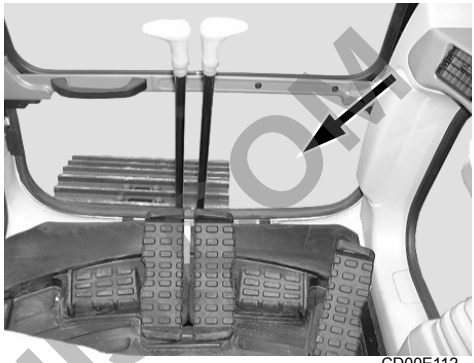
Clean the filter body (4) in solvent and wipe dry with a cloth.

Coat the new filter (3) and the new “O” ring (2) with clean hydraulic fluid, the new filter and install the filter on the head (1).

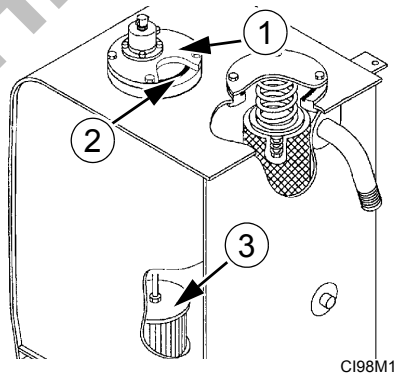
Install the filter body (4) and tighten with a wrench. Do not overtighten.

Cleaning and replacement of the suction filter

Release all pressure in the hydraulic reservoir. See “Releasing pressure in the hydraulic system”.



CD00E112



CI98M156

Clean the top of the hydraulic reservoir and clean the suction filter cover.

Remove the cover (1) and O-ring (2) and spring on the top of the suction filter rod assembly.

Remove the suction filter (3) and clean with solvent. Dry it completely and check it for any damage. If there is any damage on the surface, replace it with a new one.

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