PART NO.AAAO 1310-7

Kawasaki

OPERATION & MAINTENANCE MANUAL

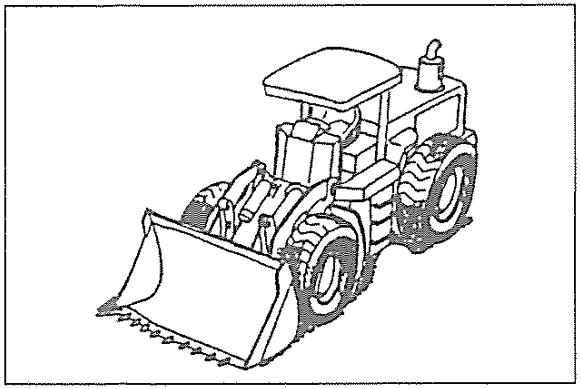
SHOVEL LOADER

Model 80ZII

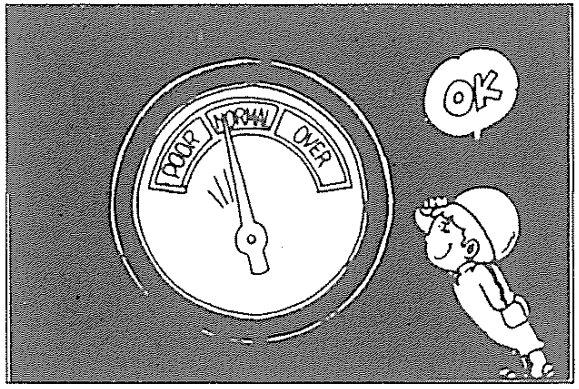
WITH CUMMINS 6CT8.3 ENGINE

READ AND SAVE THIS BOOK

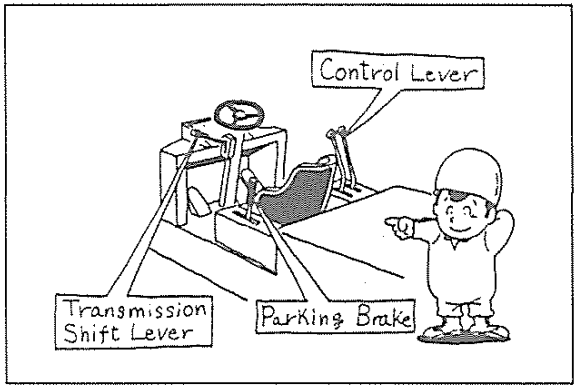
SERIAL NUMBERS
80Z2C-1101 and up.



- Always use the standard ROPS equipment.
- The protection offered by this ROPS will be impaired if it has been subjected to structural damage or has been involved in an overturn incident.
- Periodically check that the ROPS mounting bolts are torqued to the proper amount as prescribed by the ROPS manufacturer.
- Replace any broken glass immediately if equipped with enclosed ROPS.

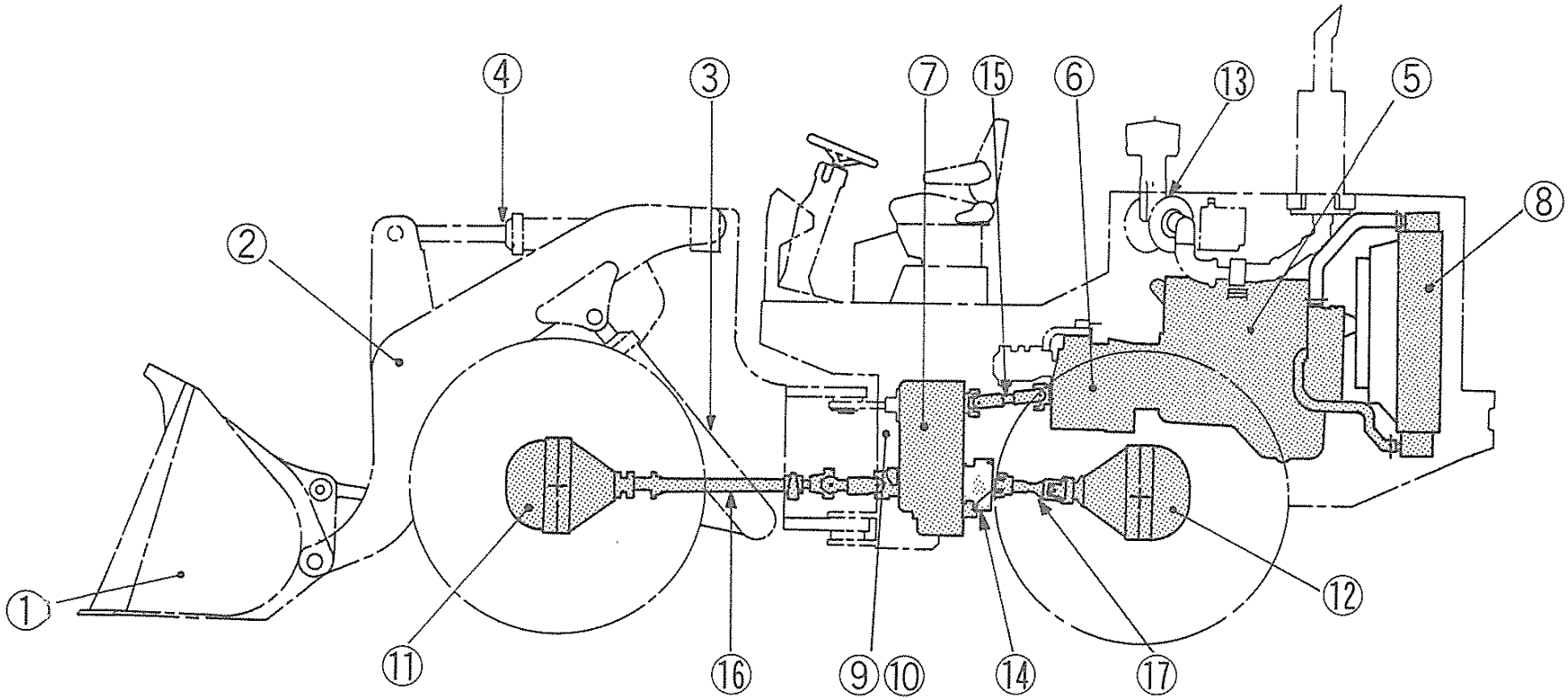


- Confirm that all gauges and warning devices are functioning correctly, and that the gauge readings are within the prescribed range.
- Test all of the controls, before starting to work.
- Test the right and left steering before moving the machine.
- Be sure that all brakes are operating properly before moving the machine.
- Make sure the horn, backup buzzer, etc., are working properly.
- Check for proper operation of all controls and protective devices while moving slowly in an open area:



- Shift transmission control lever to neutral, and apply parking brake, before starting the engine.
- Make sure no one is working on, underneath, or close to the machine before starting the engine, or beginning to move the machine.
- Lower the bucket and move controls to NEUTRAL before starting the engine.
- Operate the controls only while seated. Operate the controls only with the engine running except during the engine starting procedure.

COMPONENT NAME



1. BUCKET
2. BOOM
3. BOOM CYLINDER
4. BUCKET CYLINDER
5. ENGINE
6. TORQUE CONVERTER
7. TRANSMISSION
8. RADIATOR
9. FUEL TANK (LEFT HAND)
10. HYDRAULIC OIL TANK (RIGHT HAND)
11. FRONT AXLE
12. REAR AXLE
13. AIR CLEANER
14. PARKING BRAKE DRUM
15. 1-ST PROPELLER SHAFT
16. 2-ND POPELLER SHAFT
17. 3-RD PROPELLER SHAFT

1-(2) Indicator lamp monitor

: Working light lamp:
- Lights up when rear working light is ON.

: Parking light lamp:
- Lights up when parking light is ON.

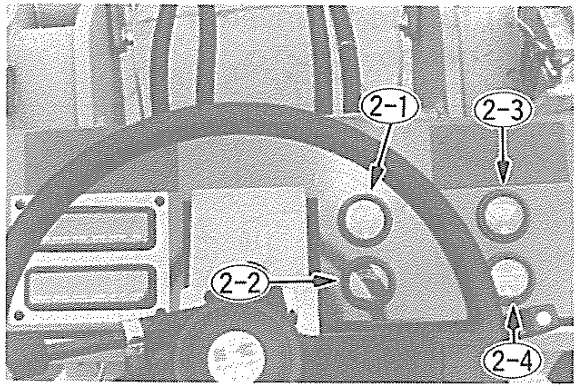
: Hi beam lamp:
- Lights up when headlights are switched to high beam.

: Charge lamp:
- Lights up when alternator charge level is low.
- If the charge lamp lights up, check the charging circuit. Refer to "TROUBLE SHOOTING" section page 132.

: Cold starter lamp:
- Lights up when cold starter switch is ON.

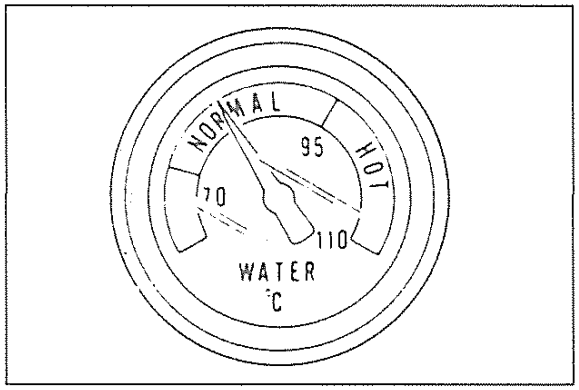
: Parking brake lamp:
- Lights up when parking brake engaged.

2. GAUGE PANEL



2-(1) Engine cooling water temp. gauge
2-(2) Air pressure gauge
2-(3) Torque converter oil temp. gauge
2-(4) Hour meter

2-(1) Engine cooling water temp. gauge

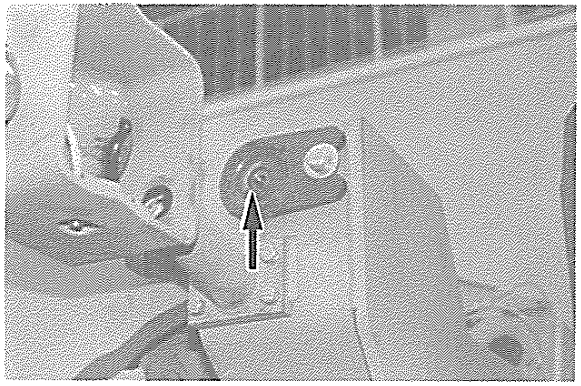


- Indicates engine cooling water temperature
- Normal if the indicator stays in the green range while operating (158°F to 203°F).
- If the indicator enters the red area while operating, slow the engine down to midrange speed and wait until the indicator reaches the green area again.

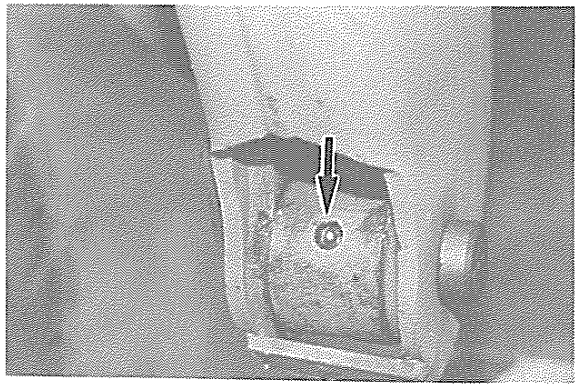
CAUTION
If the gauge stays in the red area stop the engine and allow it to cool naturally. After cooling, check the coolant level.

Function \ Lever/Switch /Vent		Control switches		Cool•Heat Mode selector levers		Air outlet		
		Air flow control switch	Thermostat switch	Heater regulator lever	FRESH-Recir-culated air selector lever	A (leg)	B (Cab)	C (front)
Cooling	Quick	III	Fully to "Cool"	Raise fully to "Cool" position	RECIRC	Closed	Closed	Open
	Normal	I-III	Between "Cool" and intermediate position	Between "Cool" and intermediate position	RECIRC or FRESH	Closed	Open	Open
Dehumidifying		I-III	Between "Cool" and intermediate position	Between "Heat" and intermediate position	FRESH	Closed or Open	Closed or Open	Closed or Open
Heating	Quick	III	OFF	Lower fully to "Heat" position	RECIRC	Open	Open	Closed
	Normal	I-III	OFF	Between "Heat" and intermediate position	RECIRC or FRESH	Open	Open	Closed
Defrosting		III	Optional	Between "Heat" and intermediate position	FRESH	Closed or Open	Closed	Open to wind-shield
Ventilation		I-III	Optional	Optional	FRESH	Open	Open	Open

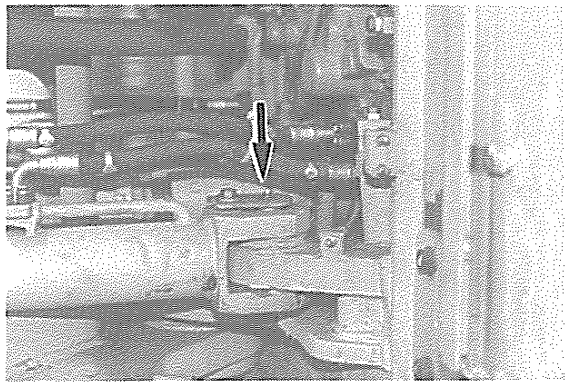
5. Boom arm (2 places)



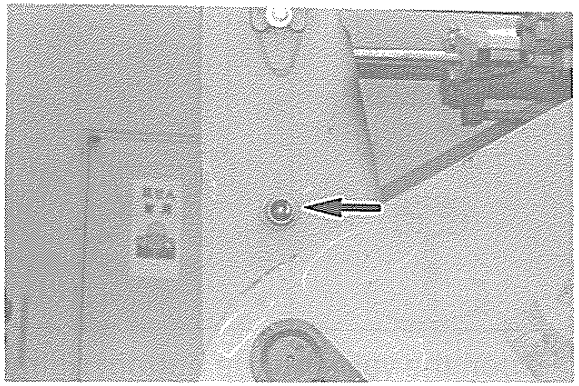
6-1 Link system (Lower) (2 places)



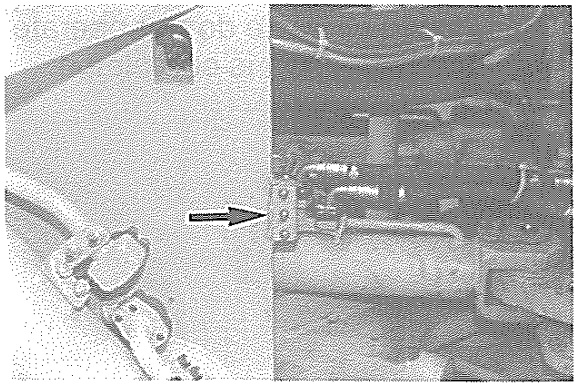
7-1 Steering cylinder (2 places)



6-2 Link system (Center) (2 places)



7-2 Steering cylinder (2 places)

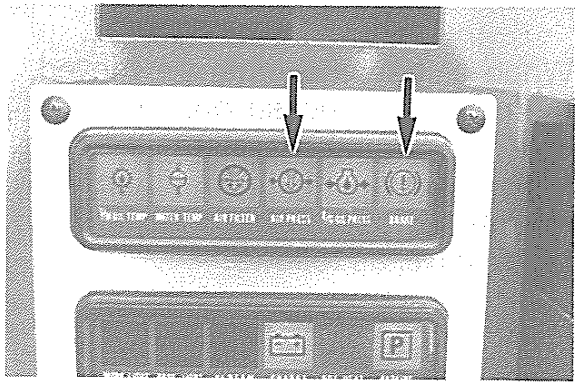


● PARKING/EMERGENCY BRAKE SYSTEM

⚠ The emergency brake works after the alarm turns on and warning monitor lamps light up, at the following emergency cases:

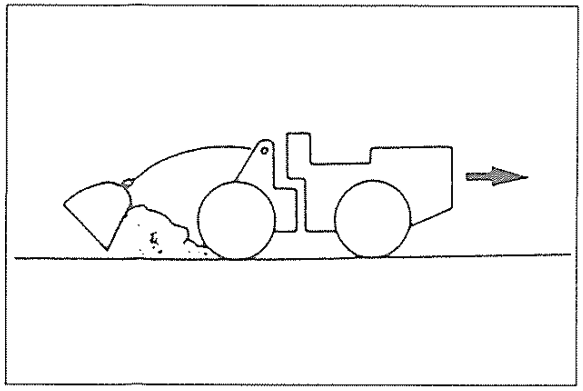
AIR PRESSURE is lower than 3.0kg/cm² (43 psi) or air master stroke is more than 95mm (3.7 in.), (Air master piston goes to stroke-end) indicating LOSS OF BRAKE FLUID.

⚠ Be prepared for a sudden stop. Correct the reason for the loss of air pressure/brake system trouble. Do not move the machine without normal air pressure/brake system operation.

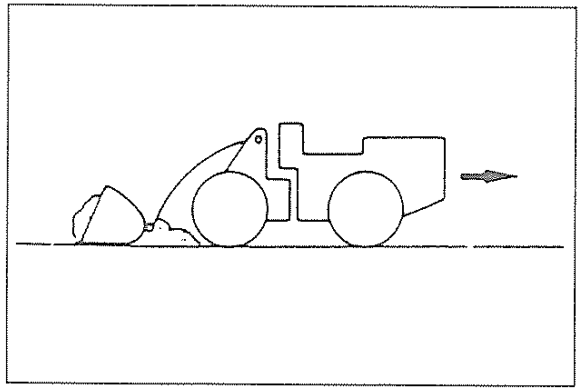


• Brake system trouble or low air pressure will cause the respective lamp on the warning monitor panel to come on. When the air pressure falls below 3.0kg/cm² (43 psi) or brake system trouble, the emergency brake will automatically engage and stop the machine.

NOTE:
To reset the parking/emergency brake to OFF if no problem is found turn the parking brake switch to "ON" and then to "OFF". Fully apply and release the service brake. If the emergency brake applies automatically **DO NOT** operate the machine. If it does not apply the emergency brake the machine may be operated.



2. Tilt the bucket, allow the cutting edge to contact the ground, and perform ground-leveling while moving in reverse, low gear.



3. Put material in the bucket, place the bucket flat on the ground, move in reverse with the boom in the "FLOAT" position, to complete leveling.

If leveling by forward travel can not be avoided, do not dump the bucket beyond 20°. This will prevent quick wear and damage of the work equipment and frame.

CAUTION
For leveling ground, always start off by driving in reverse.

LOADING

Loading for sand, gravel, rocks, etc. in a dump truck or hopper. Choose one of the following methods according to your needs.

During blasting, maintain a safe distance and wait for dust to clear before working.

Before entering the work site, always confirm that it is perfectly safe.

Cut off all protruding materials and watch out for landslides and sandslides, etc.

In case of falling rocks, evacuate to a safe place as far away as possible from the site.

ENGINE OIL

The change of temperature causes viscosity to vary, influencing lubrication effects. Refer to the RECOMMENDED LUBRICANTS, use oil with optimum viscosity which suits temperature.

BATTERY ELECTROLYTE

In a cold weather, keep the specific gravity of battery electrolyte about 1.27 to prevent reduction of the capacity and freezing of the electrolyte.

In a hot weather, it is necessary to check the electrolyte level once a week as the electrolyte is especially apt to evaporate

If the electrolyte gets on your skin or clothes, immediately wash with plenty of clean water.

To avoid gas explosions, do not bring fire or sparks near the battery.

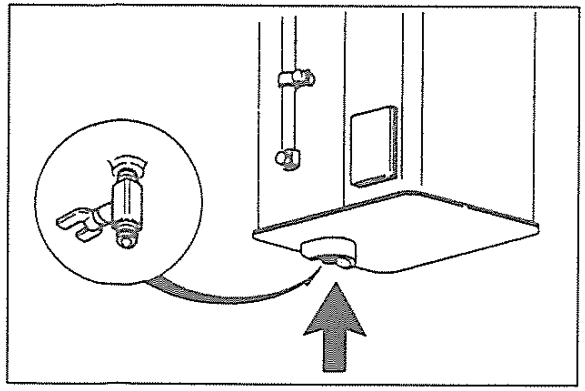
Power, dust and chemicals in the air can cause static electricity which could create a dangerous spark possibly causing the battery to explode.

INSPECTION AND MAINTENANCE TABLE

△Initial only ○ Clean, Check, Adjust, Oil & Grease ● Replace

Section	Checking Points (Severe applications require more frequent maintenance)	Operation by Every ( ) Hours							When Required	Page
		Daily	50	100	250	500	1000	2000		
Torque Converter Transmission	Check oil level	○								54
	Check each section for tightness and oil leakage	○								42
	Replace oil and clean strainer						●			116
	Replace torque converter element					●				112
	Check & clean T/M & T/C breather						○			117
	Grease T/M shift lever							○		126
Axle System	Check tire for damage	○								42
	Check tire air pressure		○							96
	Check tightness of wheel nuts		△	○						98, 100
	Grease propeller shafts			○						100
	Check oil level (Differentials and Planetaries)					○				113
	Replace oil (Differentials and Planetaries)							●		121
Brake System	Check brake fluid level	○								44
	Drain moisture from air tank	○								61
	Check that parking brake works properly	○								55
	Check that service brakes work properly	○								55
	Check disc (service) brake pad wear				○					104
	Check hoses and pipes for leakage, damage and disconnections	○								42
	Replace brake fluid							●		123
	Overhaul air master							○		125
Steering System	Check oil level (Steering gear box)						○			118
	Replace oil (Steering gear box)							●		122
	Check each part for tightness	○								42
	Grease steering cylinder	○								47
	Check steering play: Check that steering works properly	○								55
	Grease steering link system			○						101

B. DRAIN WATER AND SEDIMENT FROM FUEL TANK

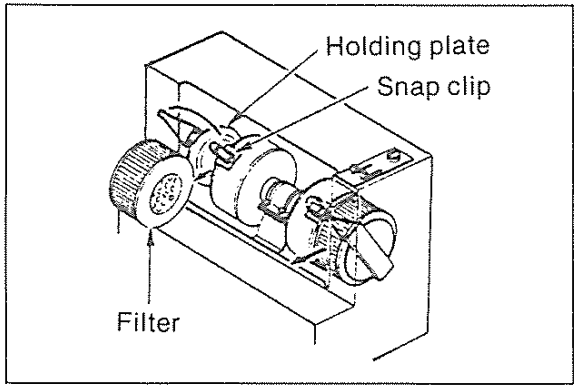


Escaping fuel is flammable. Do not smoke while draining moisture and sediment from the fuel tank. Keep open flame and sparks away.

- Loosen the drain cock on the bottom of the fuel oil tank to drain water and sediment, along with fuel oil.
- Be sure to close the drain cock after draining is complete.

C. CLEAN AIR CONDITIONER FILTER ELEMENT (OPTION)

- The air conditioner unit is located under the air inlet lid at the bottom of the cab at the rear. The air inlet filters are located to the left and right of the unit.



Release the snap clips and open the holding plate to remove the filters.

- These filters should be cleaned once every two weeks, or more often if necessary, as the heating and cooling performance of the air conditioner deteriorates if the filters become blocked with dust.
- Dust can be easily cleaned from the filters with a vacuum cleaner or air blow gun.
- Wash off more stubborn soiling with water. Dry the filters thoroughly in the shade (5 to 7 days) before remounting them in the unit. The filters should be replaced if the air flow is too low to permit the air conditioner to operate correctly. As a guideline, the filters should be changed after approximately 20 cleanings.

CAUTION

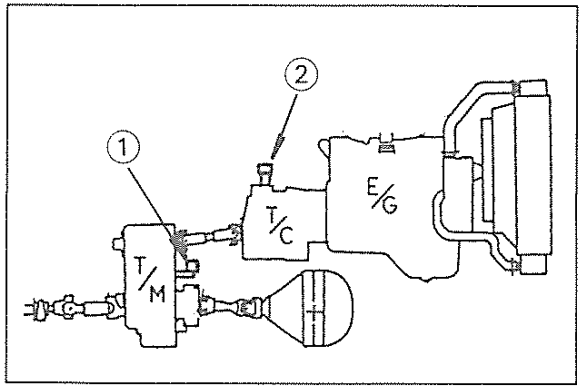
1) Take care not puncture or tear the filters.
2) When cleaning with an air blow gun, blow 2kg/ m^2 (30 psi) compressed air into the inside of the filter.
3) Leave filters to dry for 5 to 7 days after washing them with water. It may be adviseable to have a second set of filters to use while the first set dries.

●DCA 4 Unit Maintenance Guide

- Use supplemental coolant additives (corrosion inhibitors) to protect the engine cooling system from corrosion.
  Antifreeze alone does not provide enough corrosion protection for a heavy duty diesel engine. Supplemental corrosion protection must be supplied through periodic additions of supplemental coolant additives to the coolant.
- DCA4 can be used for in service engines provided the cooling systems are drained and flushed, and the old coolant is disposed of prior to installation of new coolant and the appropriate DCA4 filter.
- Mixing of DCA4 and other supplemental coolant additives is not recommended because there is currently no test kit available to measure concentration levels with mixed chemical solutions.
- With the use of DCA4 or the continued use of other supplemental coolant additives, Cummins Engine Company® recommends the following steps to prevent overconcentration and gel formation:
- Antifreeze concentration level in coolant must not exceed the required protection levels.
- Maintain proper supplemental coolant additive levels (do not overconcentrate).
- With the use of any supplemental coolant additive, we recommend an antifreeze containing less than 0.1 percent of silicate (measured as anhydrous alkali metasilicate).
- To protect against corrosion, a new coolant charge must be brought up to one DCA4 unit per 3.8 litres [1.00 U.S. gallon] of coolant (initial charge).
- Each time the coolant is drained and replaced, the coolant must be recharged with DCA4. New coolant can be correctly charged with supplemental coolant additives by using liquid DCA4 concentrates or a of DCA4 filter listed in the following table.
- If coolant is added between drain intervals, additional DCA4 will be required. The correct test kit to check DCA concentration. Check the coolant periodically. The DCA4 concentration must not fall below 1.0 unit per 3.8 litres [1.00 U.S. gallon] or exceed 3 units per 3.8 litres [1.00 U.S. gallon].

D. CHECK & CLEAN T/M & T/C BREATHER ELEMENT.

Hot oil and components can cause injury. Do not allow hot oil or components to contact the skin.



- Remove the elements ① and ② by removing the wing nuts or screws, checking and cleaning the body and elements.
- Install the elements and tighten the wing nuts or screws finger tight.

Do not allow used oil to remain on the skin for an extended period of time.

Wash skin thoroughly with soap and water.

CAUTION

If the element can not be cleaned or is damaged replace the breather assembly.

E. CHECK AND ADJUST INJECTORS

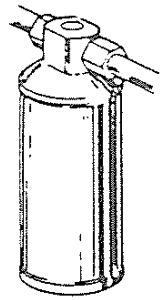
- Contact your local KAWASAKI dealer or local Cummins® engine dealer for necessary inspection and adjustment.

EVERY 6000 HOURS INSPECTION AND MAINTENANCE

At each "Every 6000 Hours" inspection and maintenance, perform all the "Daily," "Every 50 Hours," "Every 100 Hours", "Every 250 Hours," "Every 500 Hours" "Every 1000 Hours" and "Every 2000 Hours" Inspections and maintenance in addition to the following:

INSPECTION AND MAINTENANCE
A. REPLACE THE AIR CONDITIONER RECEIVER DRYER (OPTION)

A. REPLACE THE AIR CONDITIONER RECEIVER DRYER (OPTION)



Receiver dryer

- The air conditioner receiver dryer should be replaced after 6000 hours of operation, or every 3 years.
- Contact your local KAWASAKI dealer to replace the receiver dryer and refill the system with refrigerant (gas).