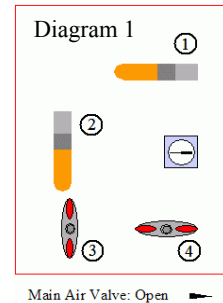




# Coolant Changer Quick Start Guide

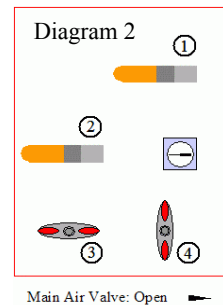
## A. To fill new coolant into the cylinder (Diagram 1)

1. Connect the air hose.
2. Turn on the air.
3. Turn VALVE#2 to down position (pressurize).
4. Turn VALVE #4 to the open position.
5. Suck new water or coolant into the new coolant cylinder.
6. After the cylinder is filled, close VALVE #4.
7. Turn VALVE #2 up (depressurize).
8. Turn off air.



## B. To extract waste coolant from a reservoir tank (Diagram 2)

1. Connect the air hose.
2. Attach a smaller hose (red or white tube hose) to the rubber cone.
3. Turn on the air.
4. Turn VALVE #3 (waste coolant) to open position.
5. Insert hose into reservoir and extract coolant.
6. After extraction, close VALVE #3.
7. Turn off air.



## C. Preparing for extraction of waste coolant (No Diagram)

1. The temperature of the engine should be brought up to 140 degrees Fahrenheit by warming up the engine.
2. All the valves in the control panel need to be in the non-operating position.
3. Connect the air hose (when air is turned on, air pressure should be at 5 kgf/cm<sup>2</sup>).
4. After reaching operating temperature, remove the radiator cap carefully (use a rag to cover the radiator cap).
5. Cover the radiator spout with the cone plug.

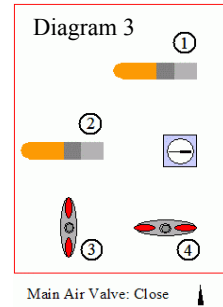
## D. To service radiator

### D-1: To extract the old coolant from the radiator (See Diagram 2)

1. Open the radiator cap and put the appropriate black cone on the radiator.
2. Turn on the air.
3. Watch the gauge to make sure a minimum vacuum of -0.05 MPa is reached.
4. Open VALVE #3 (waste coolant cylinder).
5. Check the gauge to see if the needle quivers or goes to zero.  
\*If it does, stop the service and check for leaks.  
\*If not, continue to extract coolant.
6. After all the coolant is extracted, close VALVE #3.
7. VERY IMPORTANT! Turn off the air!!!

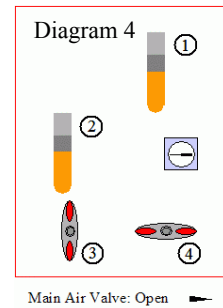
**D-2: To refill the radiator IMMEDIATELY after the extraction of old coolant (Diagram 3)**

1. After extracting all of the waste coolant and closing both VALVE #3 and the AIR VALVE, open VALVE #4 immediately.
2. The new coolant will be vacuumed into the radiator and will stop automatically when full.
3. Remove the black cone and check the coolant level. Add if necessary.



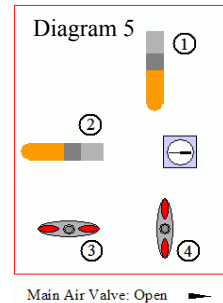
**E. To add coolant to the radiator and reservoir (Diagram 4)**

1. Turn on the air.
2. Turn VALVE #2 to the down position.
3. Open VALVE #4 (new coolant cylinder).
4. Turn VALVE #1 down *VERY SLOWLY* to control the flow of the coolant, while checking the gauge to see that the needle does not go into the red zone (a position greater than 45 degrees is not recommended).
5. After adding coolant, bring VALVE #1 to the up position.
6. Close VALVE #4 (new coolant cylinder).
7. Turn VALVE #2 to the up position.
8. Turn off the air.



**F. To empty out the waste coolant (Diagram 5)**

- A. Turn on the air.
- B. Open VALVE #3 (waste coolant).
- C. Turn VALVE #1 down *VERY SLOWLY* to control the flow of the coolant, while checking the gauge to see that the needle does not go into the red zone (a position greater than 45 degrees is not recommended).
- D. After emptying out the coolant, bring VALVE #1 to the up position.
- E. Close VALVE #3.
- F. Turn off the air.



**G. Extracting air out of the engine and returning old or new coolant back into the radiator (See Diagram 2)**

1. Open the radiator cap and put the appropriate black cone on the radiator.
2. Turn on the air.
3. Immediately open VALVE #3 (waste coolant cylinder).
4. Watch the needle on the gauge go down as air is being extracted from the engine.  
\*If needle does not go down, stop the service and check for leaks.
5. Once the needle reaches approximately -0.1 Mpa and stops moving, wait 10 seconds just to make sure all of the air has been extracted.

If returning old coolant

- After all the air is out, turn off the air and the coolant will automatically go back into the engine.

If refilling with new coolant

- See **D-2** for instructions.