

# KL34000 COOLANT MANAGEMENT SYSTEM



## OPERATING INSTRUCTIONS



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# INTRODUCTION:

This manual contains information to help you to learn about the safe and proper use of the KL34000 Coolant Management System. K-Line® Industries, Inc cannot anticipate all conceivable or unique situations. The instructions and warnings included in this manual are not necessarily all-inclusive. You must make sure all conditions and procedures do not jeopardize your personal safety.

**DISCLAIMER:** All information, images, and specifications contained in this manual are based on the latest information available at the time of publication. K-Line® reserves the right to make changes at any time without notifying any person or organization of such revisions or changes. K-Line® is not liable for incidental or consequential damages (including lost profits) in connection with the furnishing, performance, or use of this material.

# SAFETY PRECAUTIONS:

**Before using the KL34000 Coolant Management System, read, understand, and follow the safety precautions and operating instructions outlined in this manual.**

This equipment must be operated by qualified personnel. The operator must be familiar with vehicle cooling systems, coolants, and the dangers they present.

## PERSONAL PROTECTION/ IMPORTANT INFORMATION

### ⚠ WARNING



To avoid personal injury, carefully read and understand all instructions before attempting to operate any equipment or tools. Do not operate or work on a machine unless you read and understand the instructions and warnings in this and all other applicable manuals.



To avoid eye injury, always wear protective glasses to guard against possible flying particles and/or debris. If contact with eyes occurs, flush eyes with cold water for 30 minutes.



To avoid personal injury, always wear protective gloves. Hot antifreeze/coolant can burn skin. If antifreeze/coolant comes in contact with skin, thoroughly wash area with soap and water.

## HAZARD AVOIDANCE

### ⚠ WARNING



To avoid personal injury, allow engine to cool completely. Hot vehicle cooling systems are under pressure. Opening a hot system can cause an uncontrolled release of engine coolant. Do not open the radiator cap, and do not remove hoses from a hot system except as directed in this manual.



To avoid inhaling mist or hot vapors, use this product in a well ventilated area. If inhaled, move to fresh air and call a physician. If swallowed, drink two glasses of water; induce vomiting; and call a physician.



Do not pressurize the vehicle cooling system above its pressure rating. Doing so may result in cooling system failure and the release of engine coolant.

## OBJECTIVE:

The KL34000 Coolant Management System uses two unique adapters and standard shop air to create regulated pressure that forces the coolant out of the entire system, allowing for a pressure test and any necessary repairs to be made. After this, a powerful vacuum is used to create negative pressure and draw the coolant through the entire system from the bottom-up. This eliminates the possibility of air pockets forming in the EGR cooler.

## CONTENTS:

### KL34000 INCLUDES:

PART #	DESCRIPTION	QTY
KL34001	20 Gallon Tank and Cart Assembly	1
KL34008	Radiator Cap Adaptor Kit	1
KL34009	Pressure Regulator/Vacuum Handle Unit	1
KL34010	15' Clear Hose Assembly	1

To order optional accessories or replacement parts, contact K-Line Customer Service at 1-800-824-KLINE (5546) or online at [www.klineind.com](http://www.klineind.com).

## GENERAL USE AND INSTRUCTIONS:



**WARNING:** Coolant may be HOT. Follow vehicle manufacturer's instructions for removing cooling system cap.



**CAUTION:** Safety glasses must be worn when using this tool.

## BEFORE PROCEEDING:

1. A special male quick-connect fitting will be needed to replace the coolant drain petcock. Vehicles not built with this fitting are easily retrofitted. Refer to TMC RP353 or ISO 16028 to ensure that you have the proper fitting. Please ensure that this fitting is installed on the vehicle before using the tool. If the truck is not equipped with the fitting, connect the Vacuum Module to the surge tank, follow steps 1- 4 under the Vacuum Procedure to draw partial vacuum and swap the cooling system drain-cock with the Male Quick Connect Fitting.
2. Inspect the coolant level of the storage tank and engine.
3. If there is a known leak in the system a Gravity Drain must be performed using Drain Procedure Steps 1 and 2. After necessary repairs have been made, proceed to the Pressure Test Procedure on page 5.
4. Check the screen in the Y-Strainer on the Tank Valve for debris.

## DRAIN PROCEDURE:

1. Turn Tank valve to DRAIN.
2. Attach Tank hose to the quick connect fitting on the bottom of the cooling system.

**WARNING:** Follow vehicle manufacturer's instructions for removing the cooling system cap.

3. Install the Cap Adapter (KL34008) on the surge tank and connect the Extension Hose to the Schraeder fitting.
4. Attach the Quick Connect Fitting of the Extension Hose to the Pressure Module.
5. Connect clean, dry shop air to the 3-Way Air Valve and turn to Drain.
6. When finished draining system, close 3-Way Air Valve and make necessary repairs.

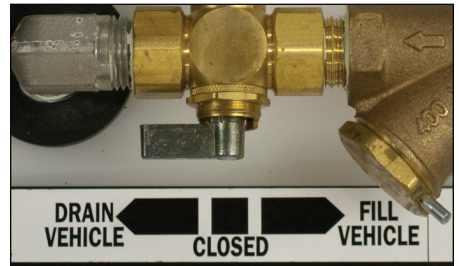


Image 1: Step 1



Image 2: Step 2

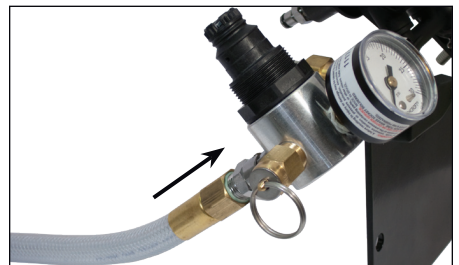


Image 3: Step 3

# PRESSURE TEST PROCEDURE:

1. Set Tank Valve to the CLOSED position.
2. Turn the 3-Way Air Valve to DRAIN and monitor the Pressure Module until gauge stabilizes.
3. Close 3-Way Air Valve. System is now pressurized with air. Take note of the gauge reading and check for pressure decay.
  - A constant pressure reading indicates no leaks in the system.
  - A drop in pressure indicates a leak in the system that must be repaired.
4. If decay is evident, locate and repair leak. When finished, repeat the Pressure Test. If no decay is detected, continue the procedure.
5. Turn the Tank Valve to DRAIN to vent air.

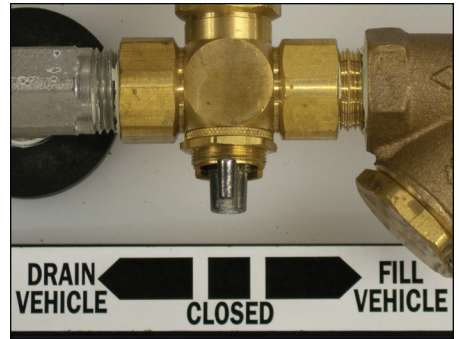


Image 4: Step 1



Image 5: Step 2



Image 6: Step 3

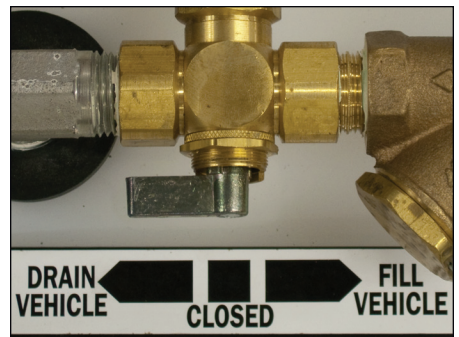


Image 7: Step 5

## FILL/VACUUM PROCEDURE:

1. Set the Tank Valve to the CLOSED position
2. Disconnect the Extension Hose from the Pressure Module and attach to the Vacuum Module.
3. Turn the Blue Vent Valve to the CLOSED position and attach clean, dry shop air.

**NOTE:** Clear Exhaust Hose must be directed to an appropriate location because air and coolant mist will exit hose.

4. Turn the 3-Way Air Valve to FILL VEHICLE
5. Allow the Vacuum to draw 20"-25"hg on the cooling system.

**NOTE:** Some engine manufacturers do not permit this depth of vacuum on the cooling system. Check with the engine manufacturer before drawing vacuum into the green zone.

6. Once Vacuum Module reaches the green zone, set Tank Valve to FILL position.

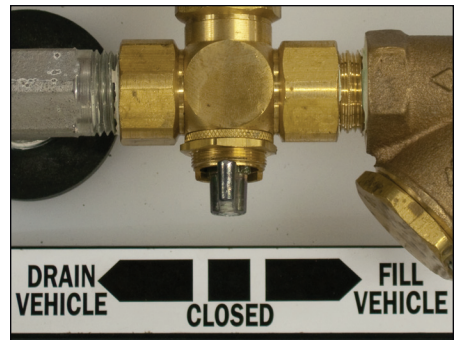


Image 8: Step 1

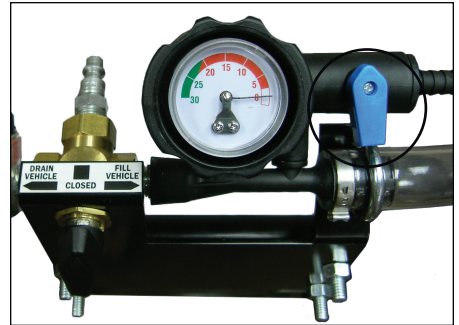


Image 9: Step 3



Image 10: Steps 4-5

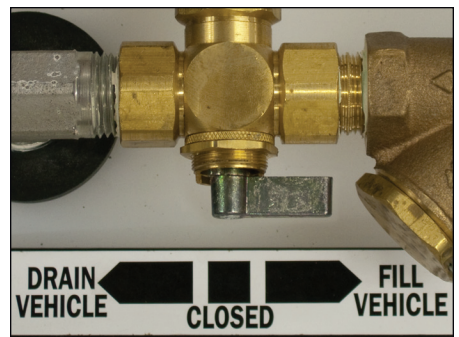


Image 11: Step 6

7. Watch coolant level in Storage Tank. When Tank is nearly empty turn both the Tank Valve and the 3-Way Air Valve to the CLOSED position.

**IMPORTANT:** Never allow the storage tank to completely empty and thereby allowing air to enter the cooling system.

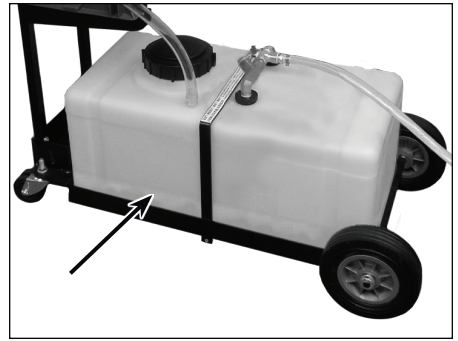


Image 12: Step 7

8. Open Blue Vent Valve to release vacuum. Disconnect the KL34010 Hose from the KL34008 Cap adapter, and then remove the KL34008 Cap Adapter.

9. Remove the Tank Hose and male quick connect fitting from the bottom of the surge tank, and replace the coolant drain petcock.

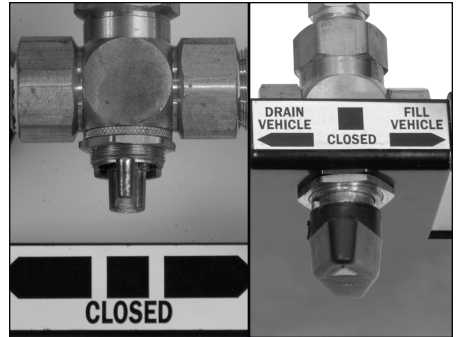


Image 13: Step 7

10. Add coolant and fill to proper level. Replace surge tank cap.



Image 14: Step 8

***THIS COMPLETES THE OPERATING INSTRUCTIONS***



For product information or  
to purchase replacement parts  
CONTACT CUSTOMER SERVICE AT  
**1-800-824-K-LINE (5546)**

Local (616) 396-3564

FAX 1-800-528-9138 or (616) 396-8974

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