



**NAVISTAR<sup>®</sup>**

**KL 20050NAV  
EGR LEAK DETECTION KIT  
2007-2009 MAXXFORCE DT, 9 & 10**



**OPERATING INSTRUCTIONS**

## INTRODUCTION:

This manual contains information to help you to learn about the safe and proper use of the KL20050 EGR Leak Detection Kit. The instructions included in this manual are not necessarily all-inclusive. K-Line® cannot anticipate all conceivable or unique situations. 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. If necessary, obtain additional information from the vehicle manufacturer.

## SAFETY PRECAUTIONS:



**Before using the KL20050NAV EGR Leak Detection Kit 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.



- If the operator cannot read English, operating instructions and safety precautions must be read and discussed in the operator's native language.
- Si el operador no puede leer inglés, las instrucciones de operación y las precauciones de seguridad deberán leerse y comentarse en el idioma nativo del operador.



- Si l'utilisateur ne peut lire l'anglais, les instructions et les consignes de sécurité doivent lui être expliquées dans sa langue maternelle.



**Do not drink antifreeze or solution. Avoid inhaling mist or hot vapors. (Ethylene glycol base.)** If swallowed, drink two glasses of water; induce vomiting; and call a physician. If inhaled, move to fresh air and call a physician. Use the unit in locations with mechanical ventilation that provides at least four air changes per hour. If accidental system discharge occurs, ventilate the work area before resuming work.



**Contact with antifreeze/coolant may cause injury. Hot antifreeze/coolant can burn skin and injure eyes.** Wear protective equipment, including safety goggles and gloves, when operating this equipment. If contact with eyes occurs, call a physician immediately, and flush eyes with cold water for 30 minutes. If contact with skin occurs, thoroughly wash area with soap and water.

# OBJECTIVE:

This tool kit is designed to detect leaks on the EGR cooler using two separate and different tests. The first test uses air pressure while the operator looks for air pressure decay on an air pressure gage to check for leaks in the exhaust side of the EGR Cooler system. The second test uses air pressure while the operator looks for leaks in the form of bubbles in a can of water to check for leaks in the coolant side of the EGR Cooler system.

# APPLICATION:

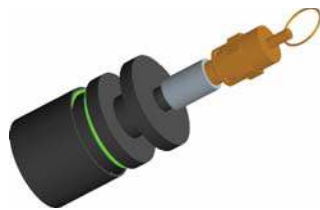
2007-2009 MaxxForce DT, 9 & 10

# CONTENTS:

PART #	DESCRIPTION	QTY
KL20020-1	Small Quick Connect	1
KL20020-2A	Cold Side Seal - Pop Off	1
KL20020-2B	Hot & Cold Side - Air Inlet	1
KL20020-3	Hot Side Seal - Pop Off	1
KL20020-4A	Hot Side End Seal	1
KL20020-4B	Hot & Cold Side Leak Detection Fitting	1
KL20020-5	Cold Side End Seal	1
KL20020-13	Pressure Regulator	1



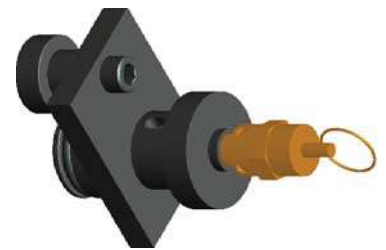
KL20020-1  
Small Quick Connect



KL20020-2A  
Cold Side Seal  
Pop Off



KL20020-2B  
Hot & Cold Side  
Air Inlet



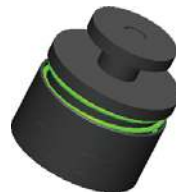
KL20020-3  
Hot Side Seal  
Pop Off



KL20020-4A  
Hot Side End Seal



KL20020-4B  
Hot & Cold Side  
Leak Detection Fitting



KL20020-5  
Cold Side End  
Seal



KL20020-13  
Pressure Regulator

# GENERAL USE AND INSTRUCTIONS:

**CAUTION:** This tool kit uses compressed air at high pressures! Use extreme caution during testing! For your safety, make sure all fittings are tight and do not stand in front of fittings while under pressure!

 **SAFETY GLASSES MUST BE WORN WHEN USING SHOP AIR.**

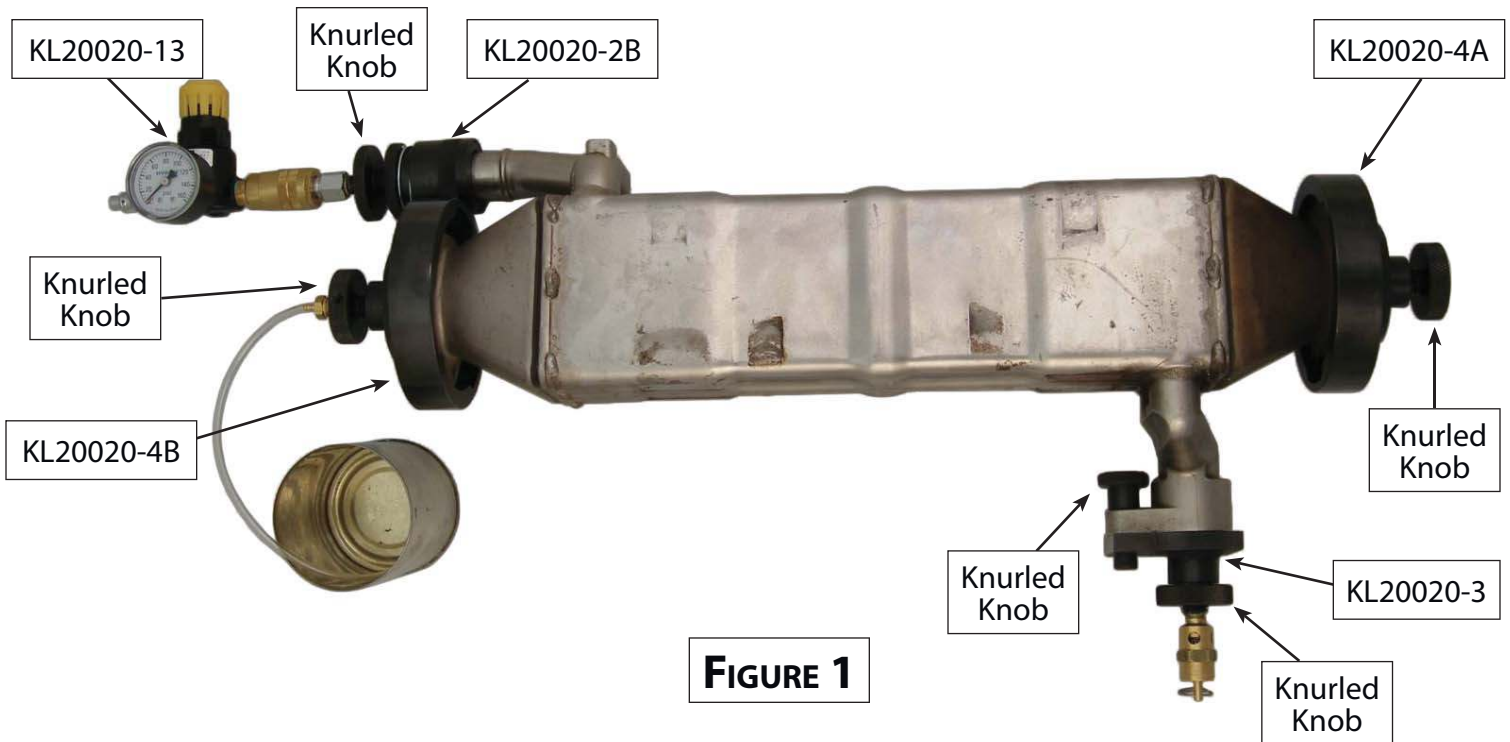
## BEFORE PROCEEDING:

Clean all sealing surfaces on the EGR Cooler. This will insure proper sealing of all the tools, and will eliminate any error in the procedure.

**NOTE:** To reduce the chance of damaging the EGR cooler, set the Pressure Regulator (KL20020-13) to 55 psi before connecting it to the system and beginning the test.

## INSTALL TOOLS - HOT SIDE

Hot Side Cooler shown with all tools fully installed with a container of water to watch for bubbles.



**FIGURE 1**

### KL20020-2B:

1. Before installing the quick connect, back the knurled knob out several turns to insure that there is enough clearance to properly install the quick connect.
2. Install the quick connect onto the pipe as shown in Figure 1. Make sure the quick connect is fully seated and locked onto the pipe before tightening the knurled knob.
3. When the quick connect is fully seated, the knurled knob can be tightened until the rubber seal contacts the pipe. Hand tight is sufficient; do not over tighten the knob as damage to the rubber seal could result.

### **KL20020-3:**

1. Remove the knurled stud from the tool.
2. Insert the tool into the proper location, and replace the knurled stud onto the screw and tighten on the back side of the plate as shown in Figure 1.
3. Tighten the knurled knob under the air poppet in order to compress the o-ring and seal against the inside of the pipe.

### **KL20020-4 (A & B):**

1. Before installing the tools, back the knurled knob out several turns to insure that there is enough clearance to properly install the tool over the flange.
2. Install the tool over the flange as shown in Figure 1, inserting the flange into the opening in the tool.
3. Turn the tool clockwise until the flange contacts the stops inside the tool.
4. When the tool is fully rotated clockwise over the flange, the knurled knob can be tightened until the rubber seal contacts the flange.

### **KL20020-13:**

1. Connect a pressurized air line to the regulator assembly, and verify that the air pressure is being properly regulated to 65 psi. If it is not, use the regulator's adjustment knob to adjust the pressure to 65 psi.

## **PRESSURIZE THE SYSTEM**

To pressurize the system, connect the regulator assembly, tool number KL20020-13, to tool number KL20020-2B, which is installed on the cooler. Check for leaks by placing the end of the hose from tool number KL20020-4B into a container of water to a depth of .375" which is marked with red dye on the hose. The system must remain pressurized and the operator should look for air bubbles to come from the end of the hose. The bubbles indicate a leak, and a very small leak may take up to **5 minutes** to appear. This is the maximum time that would be required of the operator to watch for air bubbles to be sure there are no leaks in the cooler.

**NOTE:** Be sure to record if the EGR cooler passed or failed the leak test.

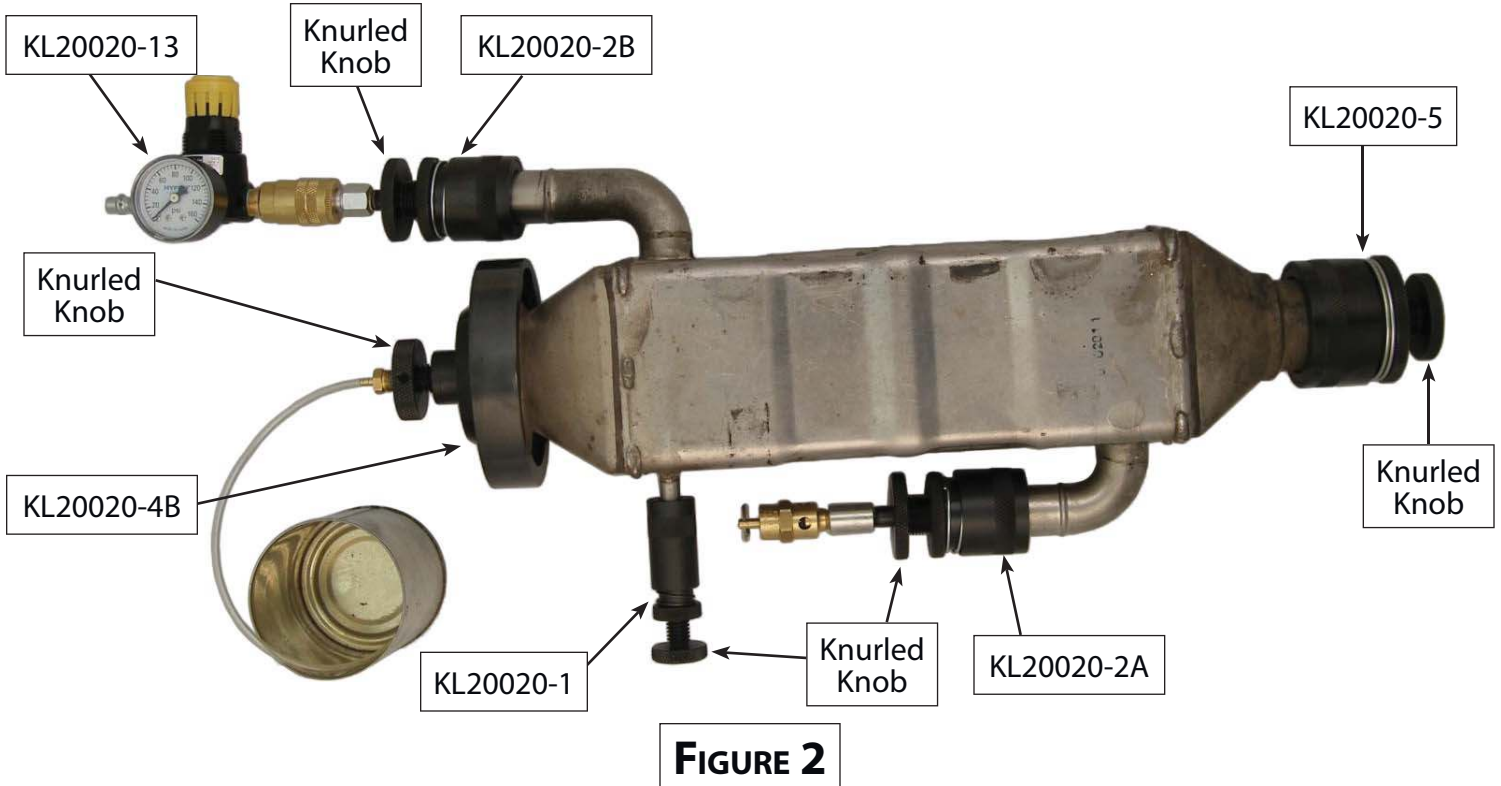
**NOTE:** The air poppet in KL20020-3 is set to 70 PSI to prevent damage to the cooler and for safety in the case of over pressurization. **The compressed air line that is connected to this system must be regulated to 65 PSI using the included regulator assembly, tool number KL20020-13.**

## **DISASSEMBLY**

1. Disconnect the compressed air line from the regulator assembly, KL20020-13.
2. Remove all tools from the cooler and clean any oil and dirt from it. Refer to installation instructions if needed and reverse them for removal.
3. Replace the tools in the storage case for protection.

# INSTALL TOOLS - COLD SIDE

Cold Side Cooler shown with all tools fully installed with a container of water to watch for bubbles.



**FIGURE 2**

## **KL20020-1 & KL20020-2 (A & B) & KL20020-5:**

1. Before installing the quick connect, back the knurled knob out several turns to insure that there is enough clearance to properly install the quick connect.
2. Install the quick connect onto the pipe as shown in Figure 2. Make sure the quick connect is fully seated and locked onto the pipe before tightening the knurled knob.
3. When the quick connect is fully seated, the knurled knob can be tightened until the rubber seal contacts the pipe. Hand tight is sufficient; do not over tighten the knob as damage to the rubber seal could result.

## **KL20020-4B:**

1. Before installing the tool, back the knob out several turns to insure that there is enough clearance to properly install the tool over the flange.
2. Install the tool over the flange as shown in Figure 2, inserting the flange into the opening in the tool.
3. Turn the tool clockwise until the flange contacts the stops inside the tool.
4. When the tool is fully rotated clockwise over the flange, the knurled knob can be tightened until the rubber seal contacts the flange.

## **KL20020-13:**

1. Connect a pressurized air line to the regulator assembly, and verify that the air pressure is being properly regulated to 65 psi. If it is not, use the regulator's adjustment knob to adjust the pressure to 65 psi.

## **PRESSURIZE THE SYSTEM**

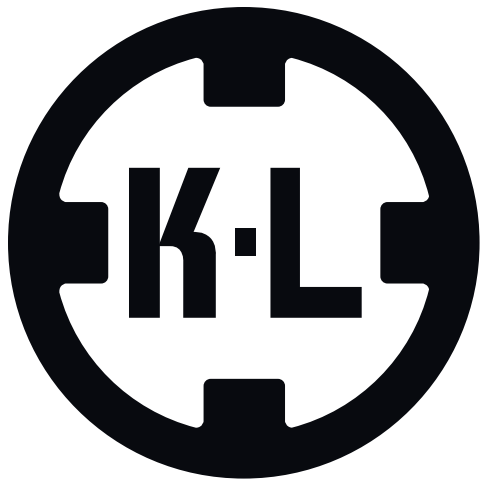
To pressurize the system, connect the regulator assembly, tool number KL20020-13, to tool number KL20020-2B, which is installed on the cooler. Check for leaks by placing the end of the hose from tool number KL20020-4B into a container of water to a depth of .375" which is marked with red dye on the hose. The system must remain pressurized and the operator should look for air bubbles to come from the end of the hose. The bubbles indicate a leak, and a very small leak may take up to **5 minutes** to appear. This is the maximum time that would be required of the operator to watch for air bubbles to be sure there are no leaks in the cooler.

**NOTE:** Be sure to record if the EGR cooler passed or failed the leak test.

**NOTE:** The air poppet in KL20020-3 is set to 70 PSI to prevent damage to the cooler and for safety in the case of over pressurization. **The compressed air line that is connected to this system must be regulated to 65 PSI using the included regulator assembly, tool number KL20020-13.**

## **DISASSEMBLY**

1. Disconnect the compressed air line from tool KL20020-2B.
2. Remove all tools from the cooler and clean any oil and dirt from it. Refer to installation instructions if needed and reverse them for removal.
3. Replace the tools in the storage case for protection.



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