

NAVISTAR®

The Navistar® Coolant Management Tool

**Study Guide
TMT-101009**

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Introduction

Welcome to the coolant management tool training program. This program demonstrates the coolant drain, pressure testing, and rapid fill procedures using the coolant management tool.

This tool is designed to save time, prevent spills, help in keeping coolant types separated, and ensure a complete fill; which is critical for today's EGR equipped engines.

Upon completion of this program, technicians will be able to drain, pressure test, and fill the cooling system, using the coolant management tool.

The tool consists of a 20 gallon storage tank, pressure module, vacuum module, and tank adapter. When servicing vehicles built prior to 2011, a quick-connect fitting may be required to adapt this tool to the radiator.

The tool is connected to the cooling system at two locations; the bottom of the radiator and the de-aeration tank.

Objectives

Upon completion of this course technicians will be able to use the Coolant Management Tool to:

- **Drain**
- **Pressure Test**
- **Fill the cooling system**

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Step by Step Demo

Module 1

There are nine steps in a complete drain, test, and refill of the cooling system.

Step 1: Connecting the Tool

Connect the tool's storage tank to the quick connect fitting on the radiator and turn the tank valve to the drain position.

Step 2: Install Adapter

Attach the adapter to the de-aeration tank.

Step 3: Install Pressure Module

Attach the pressure module to the adapter.

Step 4: Connect Shop Air

Connect shop air to the pressure module.

Step 5: Set Valve & Drain

Open the valve on the module to apply pressure to the system. This will force coolant into the storage tank. When the system is drained, close the valve on the module.

“When the system is drained, close the valve on the module.”

Step 6: Pressure Test

“After completing any required repairs, pressure test the system.”

After completing any required repairs, pressure test the system by closing the control valve on the storage tank and opening the valve on the module. With the system pressurized, close the module valve, and watch the gauge for decay. If decay is observed, a leak is present in the system. Relieve pressure from the system and repair as necessary.

Step 7: Install Vacuum Module

After testing the system, replace the pressure module with the vacuum module. Connect the shop air to the vacuum module. Close the vent valve, and open the air supply valve. Wait for the gauge needle to go into the green zone.

Step 8: Set Valve & Fill

Turn the valve on the storage tank to the fill position to draw the coolant from the tank into the system.

As the system is filling, there are two factors to be aware of:

- First, when the system is under a vacuum, the coolant hoses will collapse. When venting the system, the hoses expand to their original size, which draws

in additional coolant. This is necessary to completely fill the system. To vent the system, close the vacuum module air supply valve and open the vent valve.

- The second factor to be aware of is that it's possible to draw air into the cooling system if the level in the storage tank falls below the pickup tube. To avoid this, turn off the tank valve before the end of the pickup tube is exposed.

Step 9: Disconnect Tool

When the system is full, quickly close both the air supply and storage tank valves.

“When system is full, quickly close both valves.”

Now, open the vent valve to relieve vacuum from the system.

Remove the equipment from the vehicle, and if necessary, top off the de-aeration tank with coolant.

Re-install the de-aeration tank cap.

Start the engine and bring to operating temperature. Check for leaks and, if necessary, add additional coolant.

This completes the steps to drain, pressure test, and fill the cooling system. Next, we'll demonstrate the quick connect fitting installation procedure.

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Radiator Quick Connect Installation

Module 2

If necessary, replace the radiator petcock with the permanent quick connect fitting.

To install the fitting:

Use the vacuum module to draw a vacuum on the system and wait for the gauge needle to go into the green zone.

Next, remove the radiator petcock and quickly install the quick connect fitting.

Finally, remove the equipment.

“Use the vacuum module to draw a vacuum on the system.”

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings present.

Conclusion

This completes the quick connect fitting installation procedure and the coolant management tool training program.

Thanks for your participation.

You are now required to take a post-test.

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