Objectives

After reading the Auto Upkeep text and completing the following activities, you will be able to:
- Identify different types of fluids used in the automobile.
- Analyze fluid conditions.
- Perform basic fluid level checks.

Summary

Fluids in the automobile have critical functions. Fluids that are neglected and run low for long periods of time add stress to components and can cause premature damage. Practice preventative maintenance by checking fluid levels frequently. Always refer to your owner’s manual to identify the correct type of fluid for your specific vehicle. Using incorrect fluids can harm vital systems and could cause a hazardous situation while driving. Most of the fluids used in automobiles are toxic. Antifreeze has a sweet taste to animals and can be fatal if ingested. Dispose of all fluids properly. Always wash your hands thoroughly after checking and adding fluids.

THINK SAFETY

Do not leave antifreeze in an open container or spilled on the floor where it might be accessible to children or animals. Antifreeze is toxic and can be fatal if ingested.

Web Exploring

Key Terms/Internet Search Words

Use a search engine to investigate any of the following terms or phrases. Summarize your findings in a research paper.
- American Petroleum Institute
- Amsoil
- Automatic Transmission Fluid
- Battery Electrolyte
- Chevron
- Dex-Cool
- Ethylene Glycol
- Exxon-Mobil
- How to Check Motor Oil
- Mobil Oil
- Pennzoil
- Phillips Petroleum
- Power Steering Fluid
- Prestone
- Quaker State
- Society of Automotive Engineers
- STP

www.AutoUpkeep.com
Study Questions - Fluid Level Check

1. What functions do various fluids provide to vehicle components?

2. What is the process to check engine oil?

3. What is the color of clean oil? What is the color of dirty oil?

4. What is the process to check automatic transmission fluid?

5. What is the color of clean automatic transmission fluid?

6. What is the process to check antifreeze (coolant) level?

7. What are the two common types of antifreeze? What is the difference between them?

8. What is a common color for windshield washer fluid?

9. What are some safety precautions when handling brake fluid?

10. What is the process to check power steering fluid?
Fluid Level Check Activity

Objective
Upon completion of this activity, you will be able
to safely check the fluid level in various vehicle
components.

Connections to NATEF General
Service Technician Tasks
Basic Vehicle Service:
- Check and adjust engine oil level.
- Check and adjust engine coolant level.
- Check and adjust power steering fluid
  level.
- Check and adjust brake fluid level.
- Check and adjust windshield washer fluid
  level.
- Check and adjust differential/transfer case
  fluid level.
- Check and adjust transmission fluid level.
- Determine fluid type requirements and
  identify fluid.

Tools
Safety goggles, chemical resistant gloves, basic
hand tools

Supplies
Shop rags, correct type and amount of fluids that
need to be added

Cautions
Read owner’s manual to identify the correct type
of fluids to be used. Never remove a hot radiator
cap.

Directions
Check off the boxes ☑ when completed. When
you see a hand ✂ next to the task, write the
information in the activity journal. If you have
any questions during the duration of this activity,
stop and ask the instructor (if available) for
assistance. Reread the procedures in the text to
correctly check and add fluids. Since variations
can occur from one vehicle manufacturer to
another and from one model to another, reread
your owner’s manual for specific procedures
and type of fluids. The following are general
procedures.

Procedure 1 - Engine Oil Fluid
☐ Put on your safety goggles.
☐ Pop open the hood.
☐ Locate the engine oil dipstick.

Oil Fill Cap

Oil Dipstick

☐ Pull out the dipstick, wipe it off with a paper
towel.

Oil Level Reading

☐ Reinsert the dipstick completely, remove it
again, and note the reading.

☐ If low, remove the oil filler cap and use a clean
funnel to add the correct type of oil. Do not
overfill. Allow the oil time to flow to the pan.
Recheck the level and correct if needed.

www.AutoUpkeep.com
Procedure 2 - Transmission Fluid

- Locate the transmission dipstick (if automatic transmission).

- With the engine idling (most vehicles), pull out the dipstick, wipe it off with a paper towel.

- Reinsert the dipstick completely, remove it again, and note the reading.

- If low use a clean funnel to pour the correct fluid directly into the dipstick tube or hole. Do not overfill. Recheck the level and correct if needed.

Procedure 3 - Power Steering Fluid

- Locate the power steering fluid cap and dipstick which are one unit. Note that some power steering reservoirs are translucent with "min" and "max" lines.

- With the engine off, remove the dipstick, wipe it off with a paper towel.

- Reinstall the dipstick, remove it again, and note the reading.

- If low, add the correct type of power steering fluid to the power steering reservoir. Do not overfill.
CHAPTER 8 FLUID LEVEL CHECK

Procedure 4 - Brake Fluid

- Locate the brake reservoir. With the engine off check the brake fluid level through the translucent reservoir with “min” and “max” lines.

- If low, clean around the cap and reservoir, remove the cap, and add the correct type of fluid. Do not overfill. When reinstalling the cap, make sure that the rubber gasket seats properly.

Procedure 5 - Clutch Fluid

- Located the clutch fluid reservoir. It is usually next to the brake master cylinder.

- With the engine off check the clutch fluid (manual transmissions only) level. It should be at or near the top. If low, clean around the cap and reservoir, remove the cap, and add the correct type of fluid. Do not overfill.

Procedure 6 - Differential Fluid

- To check the differential fluid level (where applicable on RWD and FWD vehicles) remove the check plug from the rear and/or front axle housings.

- If low, add the correct type of fluid. On most vehicles the level should be at the bottom of the plug hole, but check your owner’s manual.

Procedure 7 - Coolant Fluid

- Check the coolant level. Do not remove a hot radiator cap.

- Check the fluid in the overflow reservoir. Add the correct type and mixture of antifreeze to the radiator reservoir or radiator if necessary.
Procedure 8 - Battery Electrolyte

- Check the battery electrolyte level if applicable. Some battery caps are not removable. Refer to the owner’s manual or read the top of the battery to determine if it is a sealed battery.
- To check the electrolyte level, take off your rings and watch, put on safety goggles and gloves, and then remove the caps.
- Shine a flashlight into the cells and inspect the level in each cell. Commonly a split ring indicator in each cell identifies the correct electrolyte level.

- If necessary, add only distilled water to any cell that is low, making all cell levels equal. Do not overfill. Replace the caps. **Warning:** Batteries contain sulfuric acid. Wash hands thoroughly to remove any battery acid after removing gloves.

Procedure 9 - Windshield Washer Fluid

- Check the windshield washer fluid level.

- To add windshield washer fluid, remove the cap and fill until the fluid almost reaches the top.

- Clean and put away all tools and supplies.
- Wash your hands thoroughly.

**Activity Journal**

1. What type and viscosity of oil did your owner’s manual recommend to use?

2. What type of transmission fluid is recommended to use in your vehicle?

3. What color was your vehicle’s antifreeze? What might this indicate?

4. What color was your windshield washer fluid?

5. What type of power steering fluid did your owner’s manual recommend to use?