

Career Exploration Centre

Online



 **SAIT**
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Automotive Service Technician

Career Description

Automotive service technicians perform preventative maintenance, diagnose faulty operations, and repair automotive vehicles and light trucks. They are problem solvers that perform precise mechanical tasks.

They are employed by:

- Motor vehicle dealers
- Garages and service stations
- Automotive specialty shops
- Transportation companies

Working conditions:

Most automotive service technicians work a 40-hour, five-day week. Some evening, weekend, or holiday work may be required. It is important for automotive service technicians to wear appropriate safety attire when working

Skills and abilities:

Automotive service technicians need to possess:

- The ability to pay close attention
- Good communication skills
- A working knowledge of electricity, electronics and computers
- Good hearing, eyesight, and manual dexterity
- The ability to lift up to 20 kg

Stats:

Average salary In Alberta: \$71,754.00 Annually*

Average wage: \$34.11/Hour

Minimum education: Apprenticeship

*statistics from 2018, alis.alberta.ca

For more Alberta Career Information and stats: <https://alis.alberta.ca/occinfo/occupations-in-alberta/occupation-profiles/automotive-service-technician/>

Activity Mission

You will complete two duties of an automotive service technician:

1. Explain the brakes to a customer
2. Diagnose problems

Tools:

Pen or pencil and paper

Task 1: Explain the Brakes to a Customer

Background

Auto service technicians must often explain the working parts of a vehicle to their customers. A customer has brought their car into the garage because the brakes aren't working correctly and are making strange noises. Your boss has asked you to explain to the customer how her vehicle's brakes function.

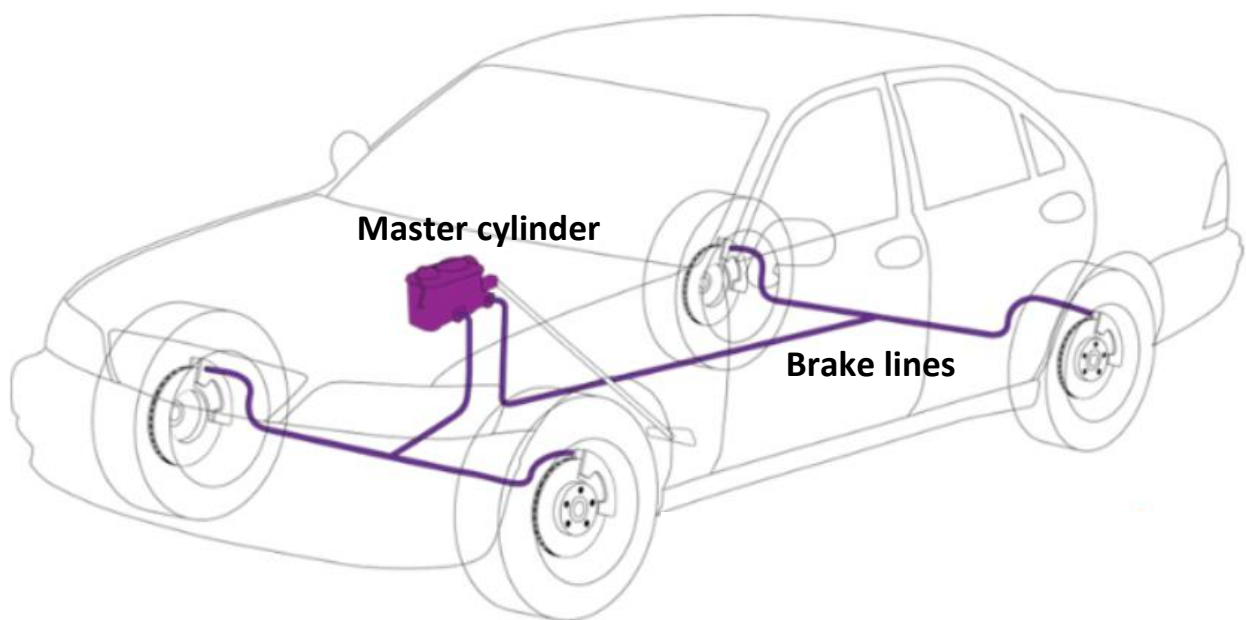
Instructions

1. Read through the brake system sheets on the next few pages.
2. Learn the steps so that you don't have to read them; memorize the steps.
3. If possible, use a family member to play your "customer".
4. Teach the brake system to your customer.
5. Use the pictures if it helps you to explain to your customer, but don't let your customer see the words.
6. Once your customer understands the steps, have them match the step to the description on the worksheet called **Explain the Brakes** (after the Brake System Steps.)
7. See how well you communicated the steps to your customer by how they do on the worksheet.

The Brake System Steps

Step 1

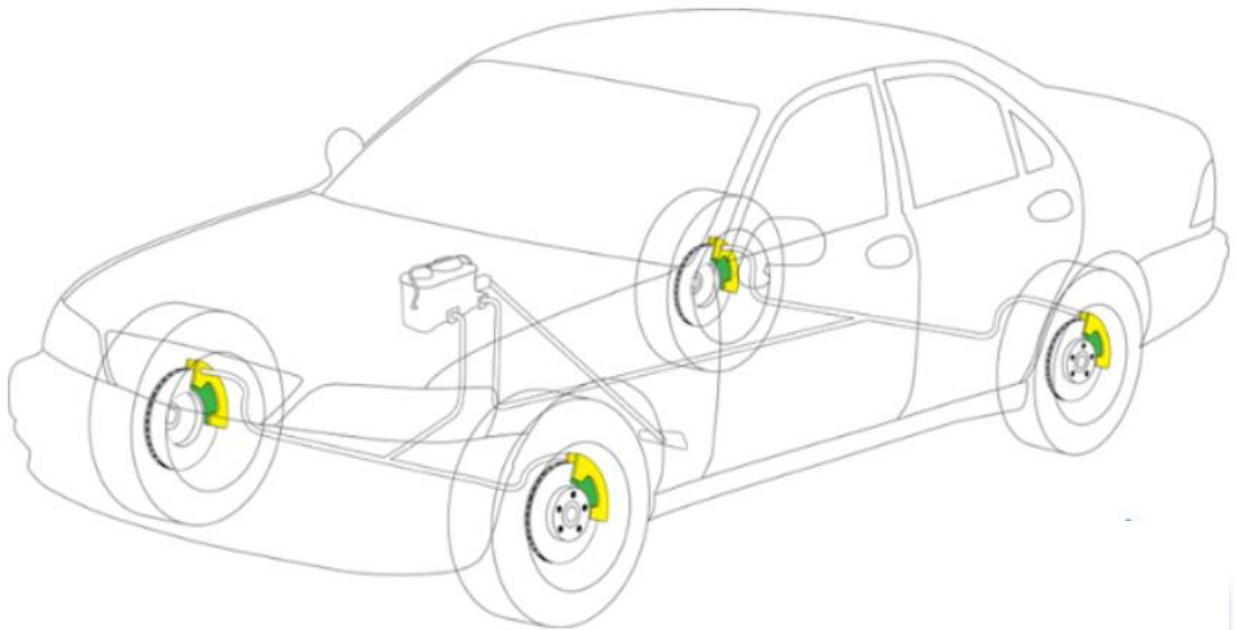
- When the brake pedal is pressed, the **master cylinder** sends brake fluid through the **brake lines** to each of the 4 wheels.



Master Cylinder: a control device that converts force from the driver's foot into hydraulic pressure.

Step 2

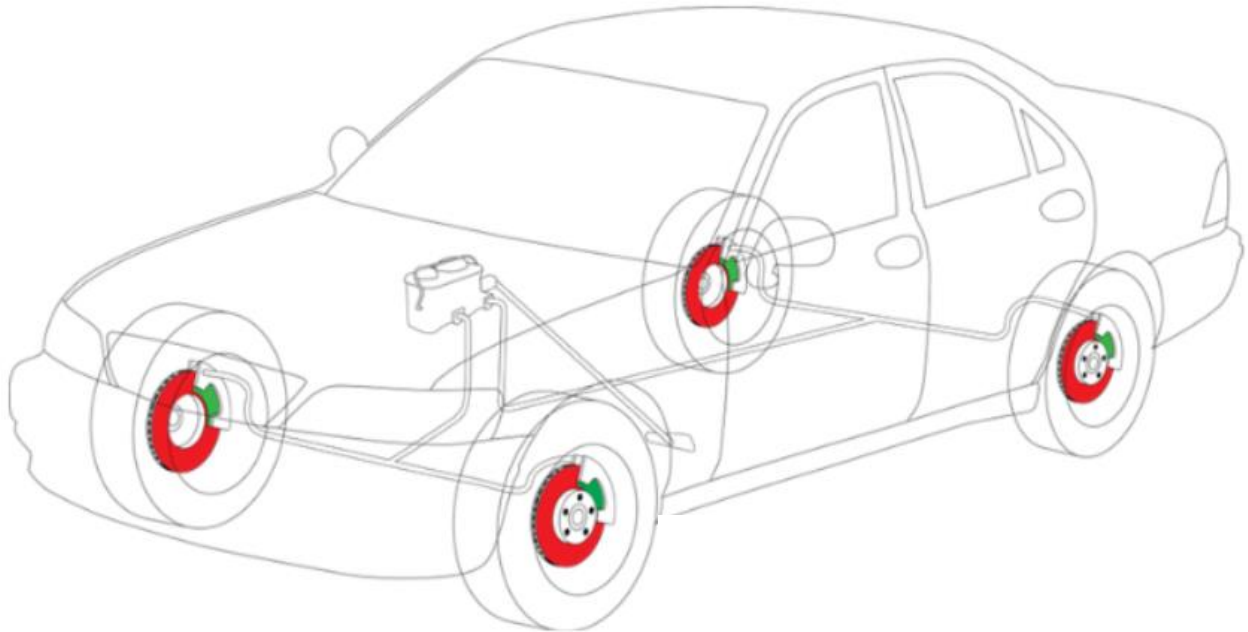
- Inside the **caliper**, the brake fluid forces the **brake pads** to squeeze.



Caliper: the brake caliper fits like a clamp on the wheel's rotor to stop the wheel from turning when you step on the brakes. Inside each caliper is a pair of metal plates known as brake pads.

Step 3

- The **brake pads** squeeze against the **rotor**, slowing the wheels down.



Rotors: also called disks; they are what the vehicle's brake pads clamp down on to stop the wheels from spinning.

Worksheet on the next page

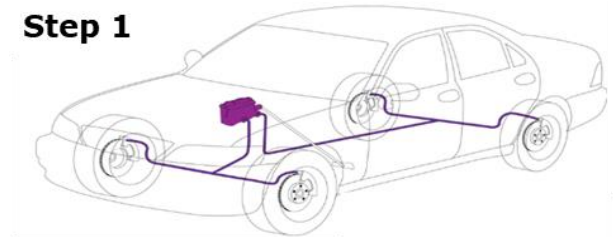
Worksheet - Explain the Brakes

Instructions

1. If you are able to print off this page, have your customer draw a line from each description to the correct step.
2. If you can not print the page, use a pen or pencil and paper to write down your answers.

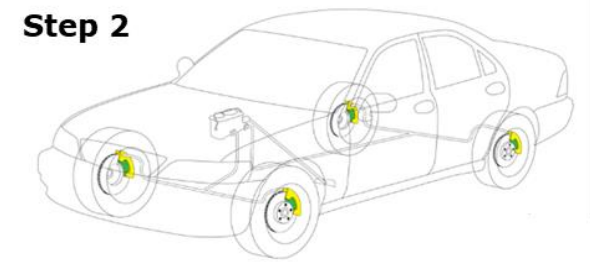
The brake pads squeeze against the rotor, slowing the wheels down.

Step 1



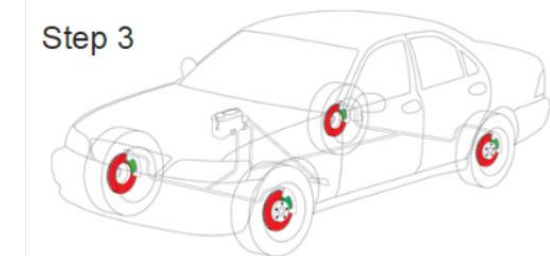
When the brake pedal is pressed, the master cylinder sends brake fluid through the brake lines to each of the 4 wheels.

Step 2



Inside the caliper, the brake fluid forces the brake pads to squeeze.

Step 3



How are your explanation skills? Did your customer get the answers right?

Task 2: Interpreting the Code

Background

All cars made today are built with an electronic diagnostic system. When the “check engine” light goes on, a technician will connect an auto scanner to the vehicle electronic system to diagnose the problem. The scanning tool displays a code based on what your car’s system is experiencing.

Instructions

1. You have scanned the customer's vehicle and the auto scanner tool provided you with the code below.
2. Use the **Interpret the Code** sheet on the next page to determine where to look for the Issue with the client's vehicle.
3. Check the answer key at the end of the activity.

Auto Scanner Tool



Interpret the Code

LOCATION	NUMBER or LETTER	CODE
FIRST LETTER	B	Body: includes air conditioning and airbags
	C	Chassis: frame under vehicle
	P	Powertrain: engine
	U	Network: wiring
SECOND NUMBER	0	Universal code
	1	Manufacturer specific code
LAST 3 NUMBERS	0,1,2	Fuel and air metering
	3	Ignition system
	4	Emissions controls
	5	Speed control
	6	Computer circuit
	7,8,9	Transmission

Task 2: Answer Key

P: Powertrain – engine

0: Universal code

3: Ignition system

0: Fuel and air metering

2: Fuel and air metering

To learn about SAIT's Automotive Service Technician program, please visit:

<https://www.sait.ca/programs-and-courses/full-time-studies/diplomas/automotive-service-technology>