

LAB - Oil Change








Students: 1. _____ Date: _____
 2. _____ Block: _____
 3. _____

Fill in each box with the appropriate information.

Be sure to have the Instructor's initials before moving on to the next step - these are there to ensure everything is SAFE and CORRECT.

Each team member must be able to answer questions from your instructor to receive credit for this lab.

VEHICLE IDENTIFICATION			
Year:		Make:	
Model:		Mileage:	
VIN Number:			
Engine Displacement:			
LOOK UP in the Service Manual or All Data or Mitchel On-Demand			
What is the SERVICE INTERVAL? <small>(how often should the oil be changed)?</small>		What is the oil CAPACITY? <small>(how much oil do you need)?</small>	
STOP!!!	INSTRUCTOR'S INITIALS:		
UNDER THE VEHICLE			
<p style="margin: 0;">SAFETY</p> <div style="margin: 5px 0;">  Jack Stands </div> <div style="margin: 5px 0;">  2-Post </div> <div style="margin: 5px 0;">  4-Post </div>	<p>Most repair shops practically “give away” oil changes just to get you in the shop. During the oil change, the Technician is on the lookout for problems – this is how they make their money. As you service YOUR vehicle – be on the look out for anything that needs repair. Finding and fixing a problem while it is small is usually less expensive than not catching it and having it fail.</p> <p>When I was a mechanic, an oil change paid 0.4 hours. That means it had to be in, done, and out in 24 minutes.</p> <p style="text-align: center;">IMPROPER USE OF THE HOIST or JACK STANDS CAN BE FATAL!</p> <p style="text-align: center;">CORRECT SETUP IS CRITICAL FOR YOUR SAFETY AND THE SAFETY OF OTHERS!</p> <p style="text-align: center;">GET YOUR INSTRUCTOR TO HELP!</p> <p><u>Jack Stands:</u> Raise the vehicle with jack in correct place, use jack stands in correct place</p> <p><u>Two-Post Hoists:</u> Raise the car slightly, check its stability, continue raising, lock it.</p> <p><u>Drive-On Hoists:</u> In gear, E-Brake on, wheel chocks; raise, then lock rails.</p>	 <i>Oil Change Demo</i>	
STOP!!!	INSTRUCTOR'S INITIALS:		

- Place drain pan under the ENGINE oil pan, remove the drain plug. Clean up any spills.
- While the oil is draining, remove the oil filter, allowing the oil to drain into the drain pan. Clean up any spills.



WHILE THE OIL CONTINUES TO DRAIN, INSPECT THE FOLLOWING:

You want to find SIMPLE PROBLEMS before they become BIG PROBLEMS.

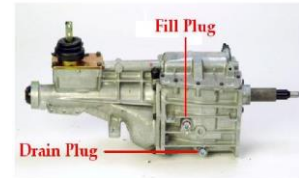
Inspect the ENGINE for any oil leaks.

If there are leaks - follow the oil leaks UP. Where is it coming from?

Inspect the TRANSMISSION for any oil leaks.

If there are leaks - follow the oil leaks UP. Where is it coming from?

If the transmission has a fill plug on the side (most manuals), remove the plug, stick your finger in, and see if you can feel oil. If you cannot, top it up with the correct fluid, and replace the plug



If the vehicle is 4WD or AWD, inspect the differential(s) for any oil leaks.

If there are leaks - follow the oil leaks UP. Where is it coming from?



Check the DIFFERENTIAL OIL level by removing the FILL plug – this is normally half-way up the differential. Insert your finger into the hole, and see if you can touch oil. Top it up with the correct oil if it is low, and replace the plug.

Inspect the CV Joint boots (if equipped), the Tie Rod boots, and the Ball Joint boots for any tears or cracks.

What condition are they in?



Squeeze and wiggle the steering joints to see if there is any play. Any play is bad.

What condition are they in?



Inspect the shocks and/or struts for any leaking oil. Oil leaking from the top of the shock body means the shocks are worn out. Shocking, eh?!

What condition are they in??



Squeeze any rusty parts of the exhaust. If you can feel the pipe flex in your grip, those pipes are exhausted. Ha ha ha. Seriously, they are worn out. Look also for any leaks – large holes are obvious, small holes usually have black soot around them.

What condition are they in?



BY NOW, THE OIL SHOULD HAVE DRAINED

- Replace the oil drain plug and tighten snugly
- Wipe some fresh oil on the oil filter o-ring with your finger, and replace the oil filter, tightening it snugly with **ONLY ONE HAND**
- Wipe the bottom of the oil pan dry, as well as any other drips
- Grease any components that have grease fittings – only until their rubber boots *just* swell.



STOP!!!

INSTRUCTOR'S INITIALS:

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Lower the vehicle, and fill the crankcase with oil **ONLY UP TO THE FULL LINE** on the dipstick (for most 4-cylinder cars, I usually put in 3L to start – I can always add more).



Have a look underneath to see if oil is leaking out the drain plug you forgot to re-install.

INSPECT THE FOLLOWING >>>>>>>> (CHECK ✓ or X) <<<<<<<<:

- | | |
|---|--|
| <input type="checkbox"/> Brake fluid reservoir is full and fluid is reasonably clear (do Brake Bleeding Lab?) | <input type="checkbox"/> Radiator overflow reservoir is full |
| <input type="checkbox"/> Power steering reservoir is full | <input type="checkbox"/> Washer fluid reservoir is full |
| <input type="checkbox"/> Radiator fins clean and free of debris | <input type="checkbox"/> Belts are tight and free of cracks |
| <input type="checkbox"/> Radiator is full and coolant looks fresh (do Cooling System Lab?) | <input type="checkbox"/> Battery posts are clean and free of corrosion (do Battery Service Lab?) |
| | <input type="checkbox"/> Air filter is clean |
| | <input type="checkbox"/> Crank case breather filter is clean |

START THE ENGINE. *The oil light should shut off within 4 (four) seconds. If it doesn't, SHUT IT OFF IMMEDIATELY and find out WHY!!!*

- | | |
|--|---|
| <input type="checkbox"/> With the car running – Check for NO leaks coming from under the car | <input type="checkbox"/> Wipe any dust, oil or finger prints from the top of the motor! |
| <input type="checkbox"/> With the car running – Check the automatic transmission oil (if equipped) | |

SHUT OFF ENGINE

- RE-CHECK the oil level, top up to the FULL line (the running engine filled the filter)

INSPECT THE FOLLOWING (✓ or X):

- | | |
|--|--|
| <input type="checkbox"/> Headlights work | <input type="checkbox"/> Hazard lights work |
| <input type="checkbox"/> Side marker lights work | <input type="checkbox"/> Wipers work |
| <input type="checkbox"/> Signal lights work | <input type="checkbox"/> Windshield Washer works |
| <input type="checkbox"/> Brake lights work | |

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An engine burns oil only when going downhill or decelerating rapidly. What is the likely cause?

An engine burns oil only at full throttle. What is the likely cause?

An engine burns oil only on startup. What is the likely cause?

Why is the oil filter only done up hand tight?

STOP!!!

INSTRUCTOR'S INITIALS:

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24 minutes. How did you do?