

A EN 201 – Agricultural Power Units Maintenance & Operation Laboratory Exercises

I. Four- Stroke Engine Skills:

- Follow the directions for each station in order to complete each skill.

Skill 1 – Referencing Part Numbers Utilizing Microfiche:

Engine Specifications:	Part:	Part Number:
<i>Model:</i>	Rings	
<i>Type:</i>	Head Gasket	
<i>Code:</i>	Connecting Rod Cap	

Question: What type of carburetor is the engine equipped with?

Skill 2 – Engine Oil Change:

- Choose one engine, which is designated as an oil change engine.

Model:	Type:	Code:
<i>Equipment Description:</i>		

- Follow these steps and answer the questions in the table below:
 - Check the current engine oil level
 - Inspect the oil's condition
 - Start the engine, if possible
 - Drain Oil
 - Replace Oil Plug
 - Fill crankcase to the correct level with appropriate engine oil

Task:	Description:
Oil Level?	
Oil Condition?	
Did the Engine Start?	
Drain Plug Location?	
Oil Provided?	

Question: What type of carburetor is the engine equipped with?

Skill 3 – Blade Sharpening:

- Sharpen one side of the provided blade with a file and the other with the power sharpener.
- Check the blade to ensure that it is balanced.

Skill 4 – Air Filters:

- Indicate what type of filters are labeled

Filter A	Filter B	Filter C
Indicate if the filters be? “Replaced” – “Serviced” – “No Service Needed”		

Skill 5 - Four-Stroke Engine Maintenance: (Perform the following on the lawnmower)

Complete the chart and give your recommendation.

1. Is the fuel level acceptable for operation?
2. Is the engine oil level acceptable for operation?
3. Is the blade acceptable for operation?
4. Is the deck and collection bag acceptable for operation?
5. Is the air cleaner sufficiently clean for operation?
6. Is the cooling system in acceptable condition? Are there excessive particle build-up or obstructions?
7. Is the spark plug in acceptable condition for operation? See lab handout for specifications.

Service Action	Service	No Service Needed	Recommendation
Fuel Level			
Engine Oil Level			
Blade			
Deck & Collection Bag			
Air Cleaner			
Cooling System			
Spark Plug			

Answer the Following According to Your Lab Handout:

1. Recommend an engine oil of the appropriate SAE & API grades: _____
2. What type of air cleaner does the mower have? _____
3. According to proper storage rules, what should be done to store this piece of equipment?

II. Two - Stroke Engine Skills:

- Follow the directions for each station in order to complete each skill.

Skill 1 – Referencing Service Diagrams Online:

- Using the Internet, visit www.walbro.com
- Click on the link labeled “Service & Aftermarket”
- Insert the Walbro carburetor part number into the search box labeled: “Search by Walbro Part #”
- Answer the questions in the table below.

Question:	Response:
<i>Part #:</i>	
<i>Availability Status: (Under List Price)</i>	
<i>List Price: (If available)</i>	
<i>Repair Kit Part No. & Cost: (See Exploded View)</i>	
<i>Print-Out Exploded View & Attach:</i>	

Skill 2 – Spark Plug Maintenance:

- Choose a spark plug and complete the checklist below:

Plug Name Brand:	Model Number:	Current Condition & Gap:
Can the plug be returned to service if serviced?		YES / NO

Skill 3 – Utilizing Owner’s/Operator’s Manuals:

- You have lost the owner/operator manual for the provided equipment
- Go to the manufacturer’s website and find the piece of equipment and its manual in order to answer the questions below.

Make	Model #	Description
Product’s Specific Internet Address:		

Two-Stroke Engine Maintenance: (Complete the chart according to the owner’s manual. Place the following codes in the appropriate boxes: **I**-Inspect, **C**-Clean, **R**-Replace.)

Service Action	Before Use	Every Fueling	3 Months/ 90 Hrs.	6 Months/ 270 Hrs.	Yearly/ 600 Hrs
Carburetor					
Cyl. Exhaust Port					
Air Filter					
Choke					
Fuel Filter					
Fuel Line					
Cooling System					
Muffler					
Gear Housing					
Starter Rope					
Fuel Leaks					
Spark Plug					
Screws/Nuts/Bolts					

Answer the Following Questions From the Owner’s Manual:

1. Engine Bore, Stroke, & Displacement: _____
2. Spark Plug Gap: _____
3. Minimum Octane Rating & Fuel/Oil Ratio: _____
4. Idle & Full Throttle RPM: _____
5. Choose one maintenance procedure from the manual and list the steps in the procedure.