

Name: _____

Period: _____

Partner: _____

Engine No. _____

Date: _____

M.T.H.S. - Auto Tech
Mr. S. Carlson

Briggs & Stratton Small Engine Compression Test Job Sheet

Instructions:

1. Warm engine up and check out tools.
 - * 3/8" Ratchet and a 5/8" OR 13/16" spark plug socket
 - * Compression tester
 - * Adapter hose with valve in threaded end
 - * Safety glasses
2. Pull spark plug wire(s) and remove spark plug(s) without getting dirt in the engine.
3. Set throttle to wide-open position (W.O.T.). You may have to hold it open.
4. Ground spark plug wire to metal on top of engine.
5. Thread in proper adapter hose (it has a valve in the threaded end) and hook up tester.
6. Put engine with base board on floor and pull on starter rope quickly while placing a foot or two on the engine mounting board. Keep pulling until the needle stops increasing. Record your reading.
7. Use release valve or button to release the pressure from the first test.
8. Again pull on starter rope quickly while placing a foot or two on the engine mounting board. Keep pulling until the needle stops increasing. Record your reading.
9. It is OK to do a third reading if the first 2 were not very similar to each other.
10. Fill in chart below:
11. Reinstall plug(s) and prepare engine to run (close throttle) and put away tools.

Engine Make: _____ Engine Size/Horsepower: _____

of Cylinders: _____ Model Number: _____ Serial Number: _____

Cyl #	1 st Reading (p.s.i.)	2 nd Reading (p.s.i.)	Average (p.s.i.)	Diagnosis
# 1				
# 2				
# 3				
# 4				

Individual Cylinder Chart:

- 0 - 24 p.s.i. = Bad valve **OR** bad head gasket
- 25 - 54 p.s.i. = Poor (worn rings)
- 55 - 64 p.s.i. = OK
- 65 - 79 p.s.i. = Good
- 80 + p.s.i. = Race or too high compression

Engine % Variation Chart: (if 2 or more cyl.)

- 0-5 % = Great
- 6-10 % = Good
- 11-25 % = OK
- 26% = Poor

OVER PLEASE

Answer the following questions: (Read instructions, use charts, read book, ask your partner, and lastly, ask teacher for answers.)

Note: Ignore questions # 1 - 3 if your engine only has 1 cylinder.

1. What is the highest reading _____ p.s.i., Lowest _____ p.s.i.?
2. What is the difference in p.s.i. _____ (Highest minus Lowest)
3. What percentage of the highest reading is the difference? _____ %
4. What is the minimum pressure in p.s.i. (see chart) recommended for an OK cylinder?

5. What is the minimum pressure in p.s.i. for a good cylinder? _____
6. What should be the maximum percentage difference from the highest to lowest Cylinder for a good engine _____ % (See engine % chart above)
7. The engine p.s.i. tested is: _____ Bad _____ OK _____ Good _____ Race
Because: a. Lowest cylinder is # _____ at _____ p.s.i.
b. Percent difference for engine is _____ % (from question #3)
8. Why should the engine be warmed up?: _____
9. Why is the carb set at W.O.T.?: _____
10. Why is the ignition disabled?: _____
11. Why do you keep dirt out of the engine?: _____
12. How are the following problems diagnosed with a compression tester? (see instructions)
 - A. Ring trouble: _____
 - B. Valve trouble: _____
 - C. Bad head gasket: _____
 - D. Carbon deposits: _____

Test Your Knowledge:

The following are cylinder pressure possibilities in p.s.i. during a 4 cylinder compression test.

- A. Engine poor with bad rings
- B. Engine poor with bad valve
- C. Engine poor with bad head gasket
- D. Engine barely OK
- E. Engine good

Pick the best answer and write the letter in space provided below.

Cylinder:	#1	#2	#3	#4
_____ 1.	70	71	70	72
_____ 2.	50	53	51	52
_____ 3.	70	71	24	24
_____ 4.	73	72	73	20
_____ 5.	52	51	53	50
_____ 6.	78	75	73	76
_____ 7.	56	58	57	55
_____ 8.	78	20	20	77
_____ 9.	77	75	23	78
_____ 10.	50	51	50	53