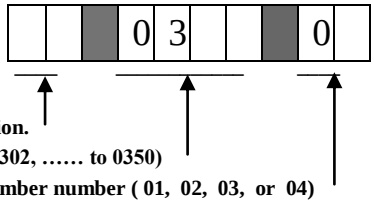
Students please affix one of the self adhesive labels from your sheet of identification labels to this page. Make sure the edges of the label are within the boundaries of this box and that the affixed label does not obscure any other parts of this page. If you do not have a self adhesive identification label, please complete the following information.

Your Name: _____

Write your name as it appears on your name badge.

Your Participant Code:

Write your participant code as it appears on your name badge.



Students please do not write or mark within this box.

Judges, after this skill sheet has been scored and double checked, write the total score for this activity in the blank below.

Skill Activity Score: _____

Judge's Initials: _____

2013 National FFA Agricultural Mechanics Career Development Event

Machine and Equipment Systems Skill Sheet

There are multiple parts to this activity!

Please read and follow directions carefully! Use your time wisely!

GENERAL INFORMATION/DIRECTIONS:

For this skill activity, assume that you are the manager of a custom baling operation that harvests and sells grass hay. The operation uses John Deere 559 and 569 round balers. The 559 baler creates bales 5 feet wide and 5 feet in diameter, averaging 1450 pounds each. The 569 baler creates bales 5 feet wide and 6 feet in diameter, averaging 2200 pounds each. The overall operation runs four (4) tractor/baler units (*of the model at your work station*), with each machine operating at 80% field-efficiency for a 10 hour day, five days a week during the harvest season. Each bale made requires a total time of four (4) minutes on average to form, net wrap, and eject.

Your total custom operation harvest is 900 acres of well-established and irrigated grass hay, twice each growing season. The average yield of three (3) tons/acre on a dry matter basis per cutting.

One of your balers in the field is unable to operate. The operator notes that on his bale monitor the gate is showing open, he cycled the gate several times with the same result. You will need to verify the error, identify the problem, and correct it.

_____

PROCEDURES:

1. Because you are working around machinery, safety glasses must be worn at all times.

   (Station No. _____) Baler brand _____ Model number _____.

2. What is the minimum tractor hp recommended for this baler? _____ HP

3. According to the bale monitor is the baler gate closed? Yes ____ No ____

4. Is the baler gate physically closed? Yes ____ No ____

5. Using the Test procedure for the gate close switch, is the gate switch depressed indicating that the gate is closed? Yes ____ No ____

6. Identify the cause of the problem. _____

_____

7. Using the operator's manual and information provided, determine the following items (*Answers for the next three questions are based on your baler model.)*:

A. Calculate the average bale density for your baler in lbs/cu. ft. _____ lbs. /cu. ft.

($V = \pi * r^2 * h$)

B. How many bales can be produced by each operator during a 10 hour day at 80% field efficiency? _____ bales

C. How many total bales are produced by each tractor/baler combination per season? _____ bales

_____

Skill Activity Score Sheet

Question Number	**Possible**	**Score**
1. Baler brand and model: (1)	2	_____
2. Correct recommended tractor horsepower (hp): (2)	2	_____
3. Correct identification of gate position on monitor: (3)	3	_____
4. Proper identification of physical gate position: (4)	2	_____
5. Identify diagnostic channel correctly: (5)	4	_____
6. Wiring issue correctly identified: (6)	5	_____
7. Proper bale density calculation in lbs. per cubic foot: (7.A)	3	_____
8. Correct bale capacity (bales/operato/shift): (7.B)	3	_____
9. Total bales produced per season: (7.C)	3	_____
10. Safety and work habits:	3	_____
TOTAL POINTS: (Double check point total and enter on front)	30	_____