Interpreting Brake Drum Measurements

Lesson 15

Remember:
Pretty **P**lease **M**y **D**ear **A**unt **S**ally
(From left to right; **P**arentheses; **P**ower; **M**ultiply; **D**ivide; **A**dd, **S**ubtract)

Who knows the difference between original diameter, refinished diameter and discard diameter?

What is the state inspection regulations concerning brake drums?

Why is it important for a technician to be able to determine the size of a brake drum, interpret the measurements and decide if it possible to machine a scored brake drum so it will be within specs?

If the brake drum reading is larger than the discard or maximum drum diameter, can we reuse the drum?

Some of the math and math terms we'll be using today are:

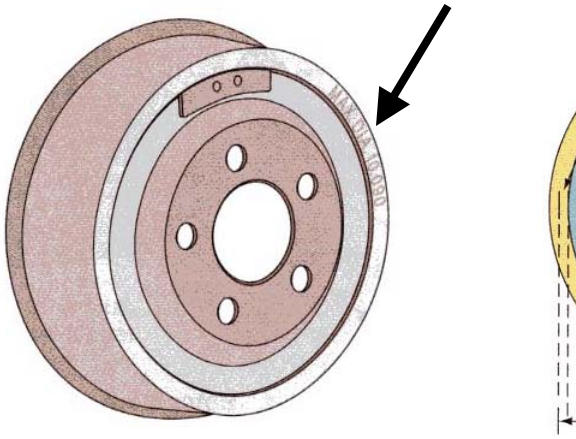
Have you ever solved an equation or inequality?

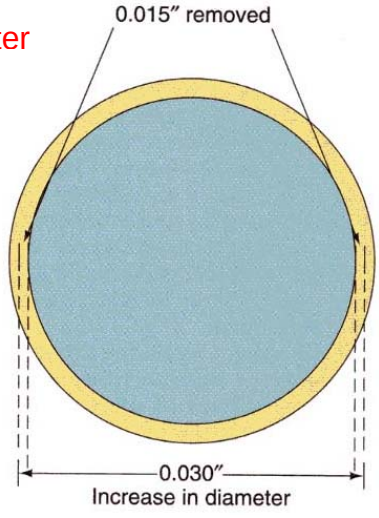
Are there any differences between the two?

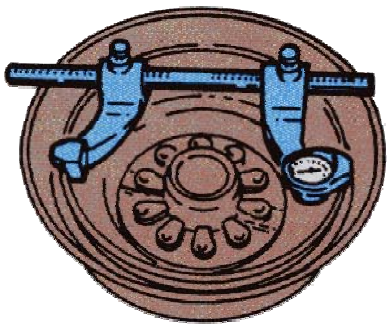
An example of an equation and an inequality sign:

An equation has an = Equal Sign, an inequality has an < Less Than or > Greater Than Sign

Example: The maximum diameter of a brake drum is listed as 11.090 inches. The drum measures 11.063 inches. What is the maximum cut (the amount of drum lining which can be removed) before the drum must be discarded? Do you remember the formula we used to determine if a brake drum can be resurfaced?







The formula we'll be using to determine if a drum can be resurfaced is:

$m + 2c < D$
m = measurement of drum,
c = cut measurement
D = discard value as determined by manufacturer specifications

1. The maximum diameter of a brake drum is listed as 12.030 inches. The drum measures 11.990 inches. What size cut can be made before the drum must be discarded?

$11.990 + 2c < 12.030$

2. The maximum diameter of a brake drum is listed 11.090 inches. The drum measures 11.072 inches. What size cut can be made before the drum must be discarded?

$11.072 + 2c < 11.090$

3. Solve the following inequality for x:

$2x - 5 > 10$

4. Solve the following inequality for x:

$12 - 2x < 5$

You must "Reverse" the inequality symbol if you multiply or divide on both sides of the inequality by a negative!

5. Solve the following inequality for x:

$6 - 4x < 34$

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Lesson 15 Worksheet - Interpreting Brake Drum Measurements

Name: _____ AM-1: _____ PM _____ Date: _____

$m+2c<D$

1. The maximum diameter of a brake drum is listed as 222.4 mm. The drum measures 219.94 mm. What size cut can be made before the drum must be discarded?

2. The maximum diameter of a brake drum is listed as 13.48 inches. The drum measures 13.02 inches. What size cut can be made before the drum must be discarded?

3. The maximum diameter of a brake drum is listed as 204mm. A maximum .019 mm cut can be made without exceeding the maximum diameter. What is the diameter of the drum before resurfacing?

4. Solve the following inequality for x:

   $24 + x > 28$

5. Solve the following inequality for x:

   $3x + 14 < 23$

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Lesson 15 Homework - Interpreting Brake Drum Measurements

Name: _____ AM-1: _____ PM _____ Date: _____

$m+2c<D$

1. The diameter of a brake drum is 6.85 inches. There is a score on the cylinder wall that measures 0.015 inches deep. The maximum diameter of the drum can be machined to 6.95 inches. Can this drum be machined?

2. The diameter of a brake drum is 152 mm. There is a score on the cylinder wall that measures .7mm deep. The maximum diameter of the drum can be machined to 153.25mm. Can this drum be machined?

3. The diameter of a brake drum is 210 mm. There is a score on the cylinder wall that measures .025 inch deep. The maximum diameter of the drum can be machined to 212.5 mm. Can this drum be machined?

4. Solve the following inequality when x=3 & y=1.5:

   $2x + 2y < 9$

5. Solve the following inequality when x=9 & y=4:

   $6x + y \geq 50$

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6. The maximum diameter of a brake drum is listed as 240 mm. The drum measures 237.5 mm. What size cut can be made before the drum must be discarded?

7. The maximum diameter of a brake drum is listed as 4.25 inches. The drum measures 4.125 inches. What size cut can be made before the drum must be discarded?

8. The maximum diameter of a brake drum is listed as 148mm. The drum is to be cut at .065 mm. What is the diameter of the drum?

9. Solve the following inequality for x:

$$20 - 3x \geq 65$$

10. Solve the following inequality for x:

$$6x + 4 \leq 76$$