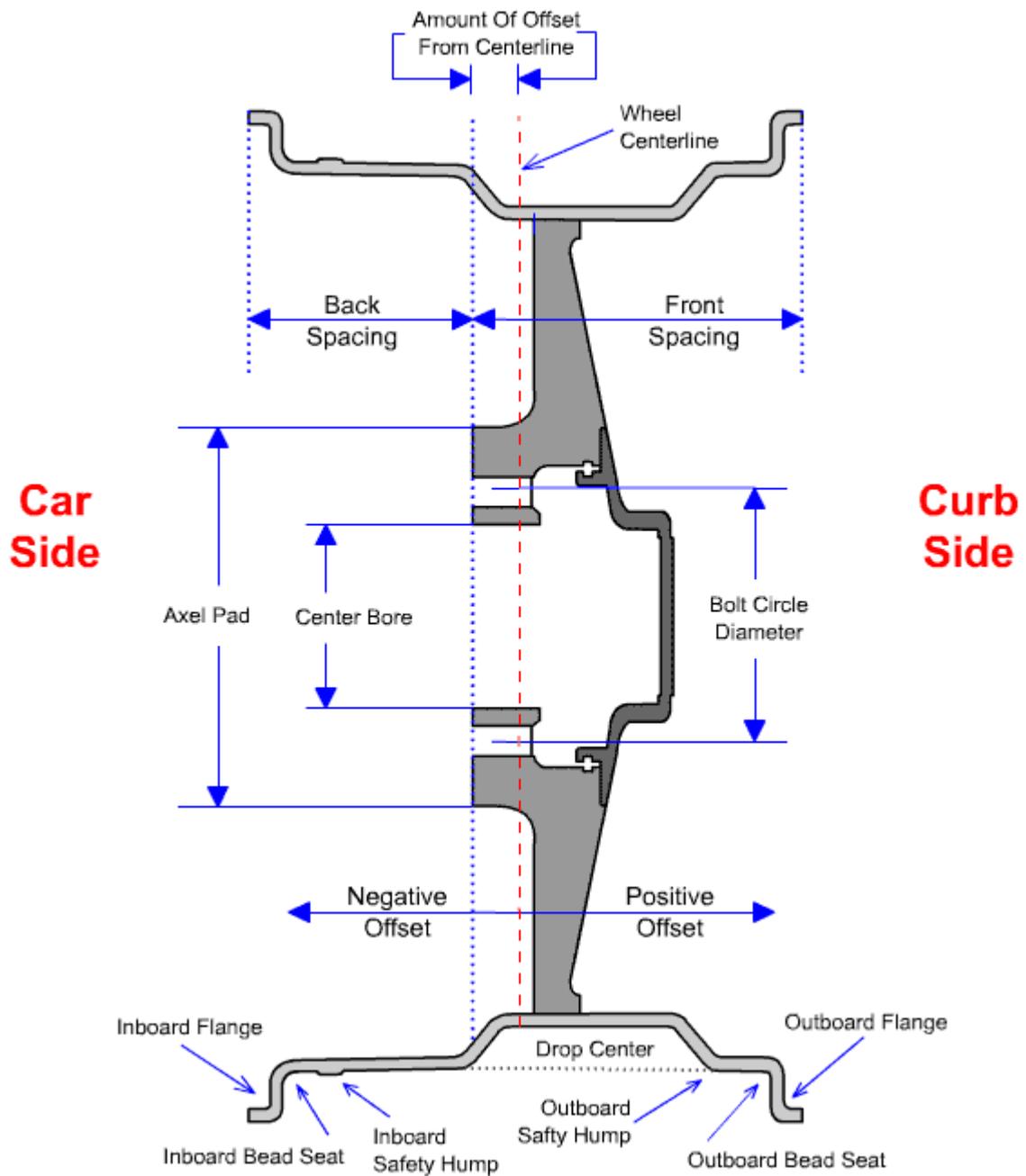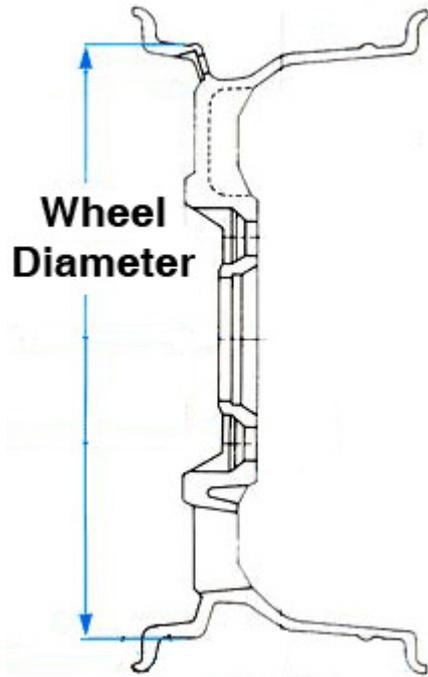**Reference Diagram:**

Wheel Diameter:

One of the first things your your going to deal width is wheel size. Wheel sizes (Example 15x8) is a combination of wheel diameter and rim width.

The wheel diameter is measured by measuring from the bead seat on one side of the rim to the opposite side bead seat. The bead seat is the part of the wheel where the bead of the tire sits once the tire is inflated. It is not measured from the outside rim to outside rim.
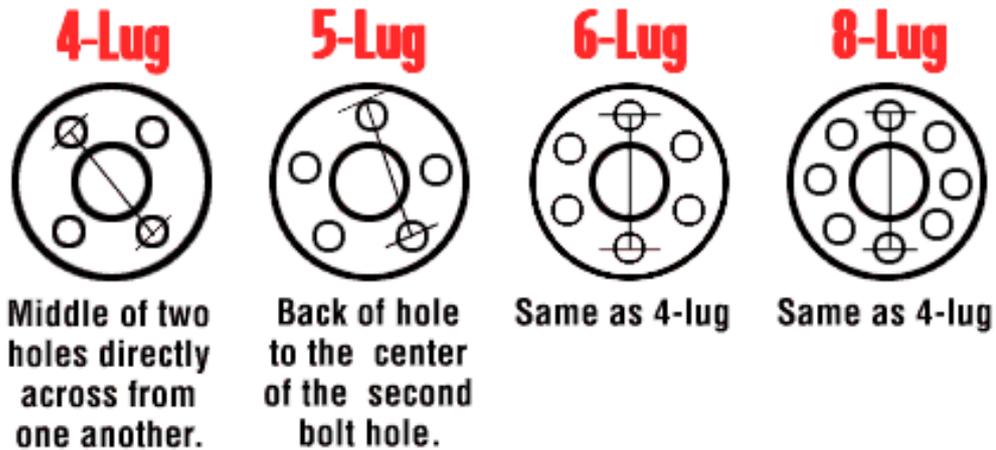
Rim Width:

A common mistake when measuring a rim's width is measuring the absolute width of the wheel.

To determine the width of the rim, measure from bead seat to bead seat across the wheel, not from lip to lip. The bead seat is the part of the wheel where the bead of the tire sits once the tire is inflated.

Bolt Patterns:

4-Lug — Measure from the center of the first lug to the center of the third lug in the pattern (opposite Holes).

5-Lug — Measure from the back of the first lug to the center of the third lug in the pattern.

6-Lug — Measure from the center of the first lug to the center of the fourth lug in the pattern (opposite Holes).

8-Lug — Measure from the center of the first lug to the center of the fifth lug in the pattern (opposite Holes).
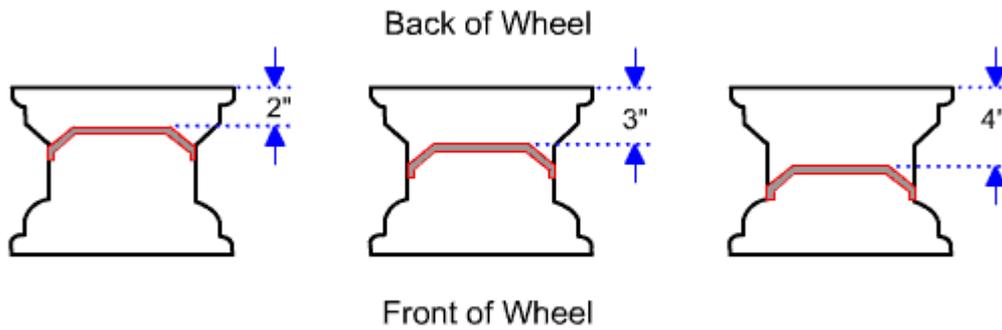
Putting It All Together:

(# of Lugs) X (Measurement Between Specified Lugs)

Example: (5 Lugs) X (4.5" Between Lugs 1 And 3) = 5x4.5 Lug Pattern

Backspacing:

Backspacing is the distance from the axle pad (the part that contacts the wheel hub) to the inner edge plane (inboard flange).

Deeper backspacing moves the wheel and tire inboard on the vehicle; shallower moves them outboard.

The diagram above shows a 2", 3" and 4" backspace.

Frontspacing is the direct opposite of backspace. Subtract backspace from overall wheel width to get front space measurement.
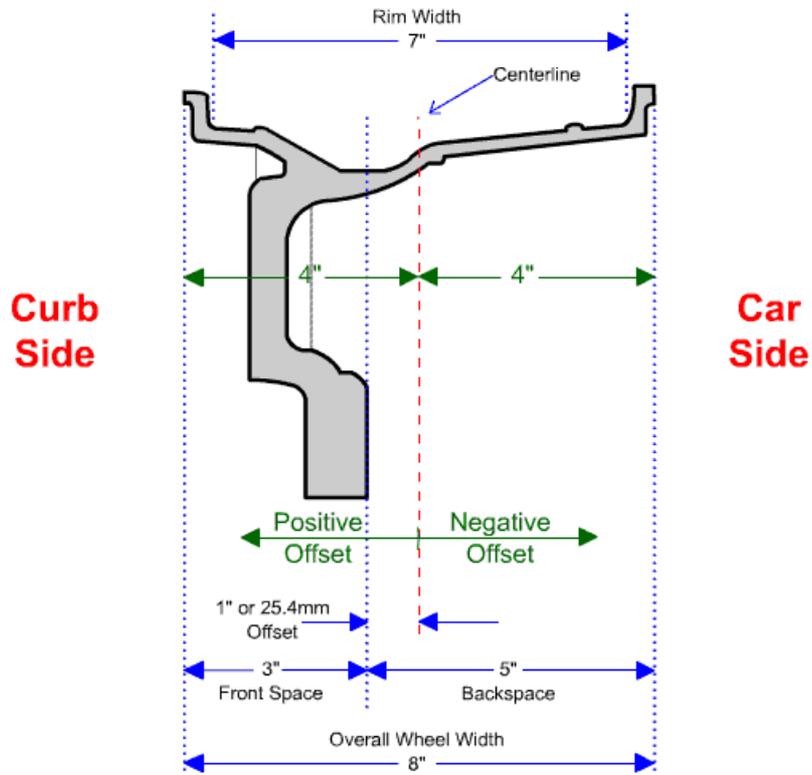
Items required to measure wheel backspace:

1) Tape measure (ruler)

2) Straightedge that will fit within the inboard flange of the wheel

Offset:

Offset is the distance +/- from wheel centerline, indicated in millimeters. To find the offset of a wheel you will need to measure the wheel for overall width and measure its front space (see Backspacing above).

Once you have these two measurements you need to subtract the front space measurement from 1/2 of the overall wheel width.

Example: A 16x7" wheel is approximately 8" wide overall, half of the overall wheel width of 8" is 4". Then 4" - 3" (front space) = 1"

If the resultant number is positive then the wheel has a positive offset. If the number is negative then the wheel has a negative offset.
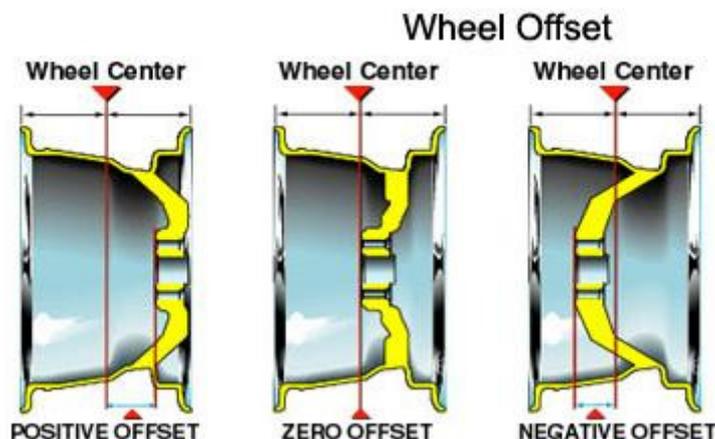
Offset is stated in millimeters so that it can be differentiated from back and front spacing. To convert inches into millimeters multiply by 25.4.

Example: 1" x 25.4 = 25.4mm

The wheel in the diagram above has a 25mm positive offset.

Backspace to Offset Conversion Chart

The table below is a quick reference for finding offset. Pick the rim width and follow the row over to the backspace of your wheel.

BACKSPACE	3.25"	3.5"	3.75"	4"	4.25"	4.5"	5"	5.25"	5.5"	5.75"	6"
WHEEL WIDTH											
5.5"	0	6	12	19	25	32	44	52	57	63	69
6"	-6.4	0	6	12	19	25	38	44	51	57	63
6.5"	-12	-6	0	6	12	19	32	38	44	51	57
7"	-19	-12	-6	0	6	12	25	32	38	44	51
8"	-32	-25	-19	-12	-6	0	12	19	25	32	38
8.5"	-38	-32	-25	-19	-12	-6	6	12	19	25	32
9"	-44	-38	-32	-25	-19	-12	0	6	12	19	25
9.5"	-51	-44	-38	-32	-25	-19	-6	0	6	12	19
10"	-57	-51	-44	-38	-32	-25	-12	-6	0	6	12
10.5"	-63	-57	-51	-44	-38	-32	-19	-12	-6	0	6
11"	-69	-63	-57	-51	-44	-38	-25	-19	-12	-6	0
12"			-69	-63	-57	-51	-38	-32	-25	-19	-6