

# How to Calculate Spindle Quantities

When calculating for spindles you account for the spindles and the spaces between them. The maximum space allowed is 4", using this as our starting point we add the width of the spindle to the width of the space to get our total gap distance. For a standard 1 5/8" spindle the total gap is 4" + 1.625" = 5.625".

## For a horizontal section:

1. Measure the length of the area between the posts, if the posts aren't installed measure as closely as you can estimating the post locations.
2. Take the length of the section in inches and divide by the gap distance, see the values charted below depending on your spindle selection.

Max 4" Spacing between spindles		
Spindle Type	Formula	Example
Wood, 1 5/8" x 1 5/8"	Length in inches ÷ 5.625	60" ÷ 5.625 = 10.67 (10 spindles)
Wood, 1 1/4" x 1 5/8"	Length in inches ÷ 5.25	60" ÷ 5.25 = 11.4 (11 spindles)
Metal, 1/2" x 1/2"	Length in inches ÷ 4.5	60" ÷ 4.5 = 13.3 (13 spindles)
Metal, 3/4" x 3/4"	Length in inches ÷ 4.75	60" ÷ 4.75 = 12.6 (12 spindles)

3. Typically, quantities are always rounded down, if the answer has no decimal places use that value, your spindles will need to be installed slightly closer than the standard 4" space.

## For a diagonal section:

1. Determine if your staircase has an open stringer or a closed stringer.



For an open stringer the spindles are installed into the treads. Typical installations require 2 wooden spindles or 3 metal spindles per tread. The spindle at the front of the tread will need a 35", the 1 or 2 spindles on the back of the tread will be at least 42", cut to fit. For a closed stringer the spindles are installed into a base rail on top of the stringer, they will be 35".

2. There are two methods for measuring diagonal sections. The horizontal run and the diagonal run.

3. If measuring the horizontal run use the formula as above. If measuring the diagonal run divide

length in inches by 1.25 for the horizontal equivalent and use the formula as above.

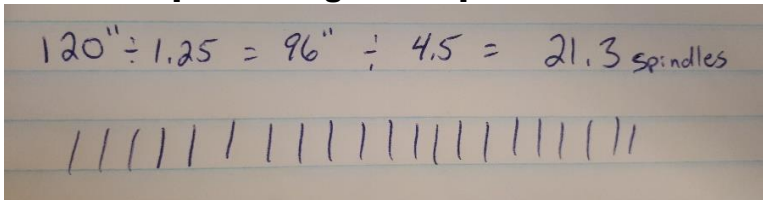
Ex. Diagonal run = 120" ÷ 1.25 = 96" (with 1 5/8" spindle) 96" ÷ 5.625" = 17 spindles

# Creating Spindle Patterns

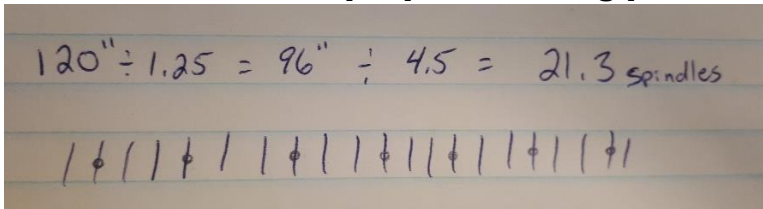
Mixing and matching different spindles can add a personalized and unique touch to your home. The most common pattern we see is 2x plain and 1x fancy. Once you have determined how many spindles you need to fill the section you need to design your pattern, the easiest way to do this is to quickly draw things out.

Follow along with our example using 1/2" metal spindles:

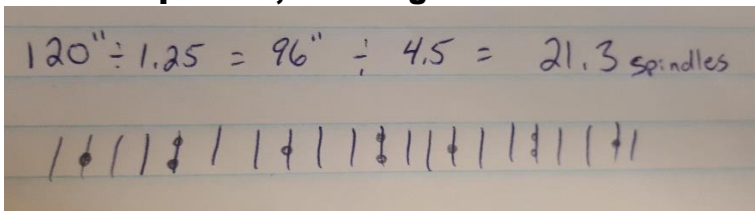
Here we have a diagonal run of 120", we calculated that we will need 21 spindles. Draw 21 lines representing each spindle.



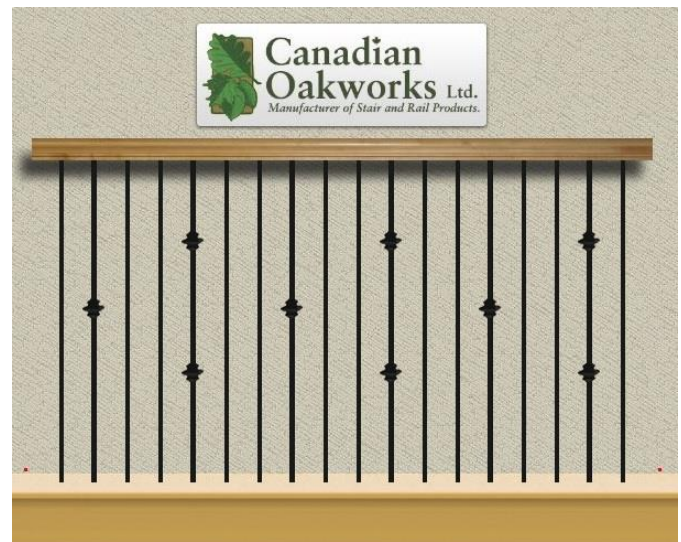
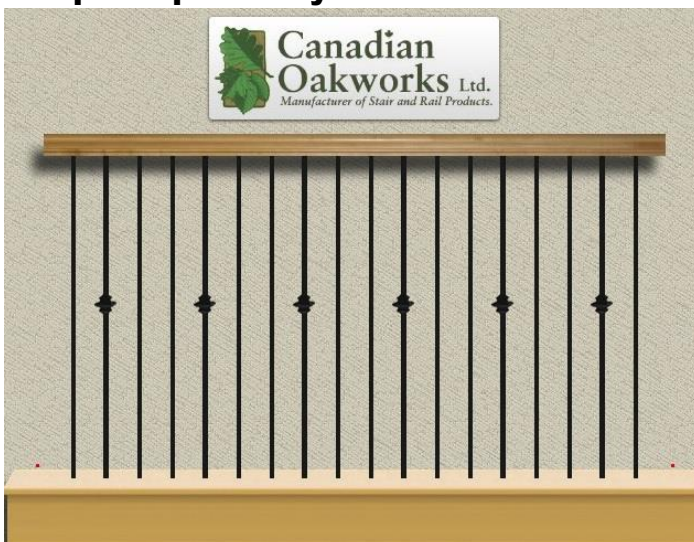
You can create a simple pattern using plain and single knuckle spindles



Or you can add a little more visual interest by mixing single knuckle and double knuckle spindles, creating a diamond effect.

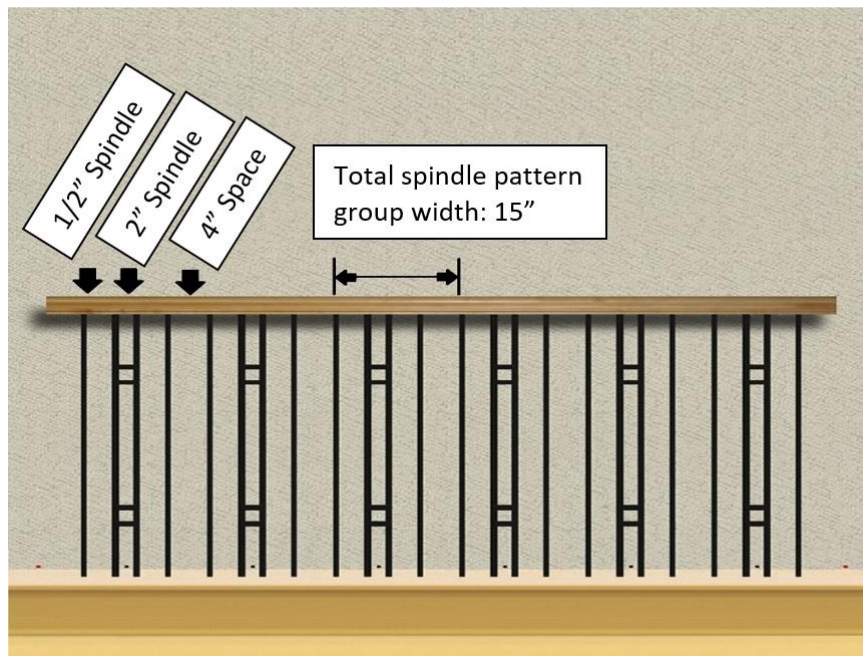


Check out our online Stair Artist tool to bring your patterns to life and quickly and easily compare spindle styles.



# Creating Patterns With Different Sized Spindles

If you are creating a pattern of spindles with different widths you need to measure the total distance of the pattern.



In our example, each group contains: 2x 1/2" plain bars, 1x 2" ladder style, and 3x 4" spaces. For a total of 15" per group.

1. Using the same formula we divide the length of the run in inches by the by total pattern group width.

Ex.  $60" \div 15" = 4$  groups

2. Multiply the spindles per group by the number of groups needed.

Ex. In total you need: 8x 1/2" plain bars and 4x 2" ladder style.

3. The same principal applies as before, if the answer has no decimal places use that value, your spindles will need to be installed slightly closer than the standard 4" space.



# Creating Patterns With Different Sized Spaces

The maximum spacing allowed between spindles is 4", but you can install them tighter together creating an assortment of new patterns. The most common pattern we see is groupings of three tight, then a 4" space. This can be done with a variety of spindles, creating a clustered look.



We typically allow for a 1" space between the spindles in the cluster. Just like calculating for spindles with different widths, you need to measure the total distance of the pattern.

1" Spacing between spindles in cluster, max 4" spacing between clusters		
Spindle Type	Formula	Example
All 1/2" plain	Length in inches ÷ 7.5	60" ÷ 7.5 = 8 groups
2x 1/2" plain, 1x 2" ladder	Length in inches ÷ 9	60" ÷ 9 = 6.6 groups
2x 1/2" plain, 1x 1 1/2" wide	Length in inches ÷ 8.5	60" ÷ 8.5 = 7 groups
All 3/4" plain	Length in inches ÷ 8.25	60" ÷ 8.25 = 7.2 groups
2x 3/4" plain, 1x 3" ladder	Length in inches ÷ 10.5	60" ÷ 10.5 = 5.7 groups
All Wood, 1 5/8" x 1 5/8"	Length in inches ÷ 10.875	60" ÷ 10.875 = 5.5 groups
All Wood, 1 1/4" x 1 5/8"	Length in inches ÷ 9.75	60" ÷ 9.75 = 6.1 groups

The same principal still applies, if the answer has no decimal places use that value, your spindles in the cluster will stay the same, but the clusters will need to be installed slightly closer than the standard 4" space.

Remember to check out our online Stair Artist tool to bring your renovation to life and get in touch with our helpful staff if you have any questions.

