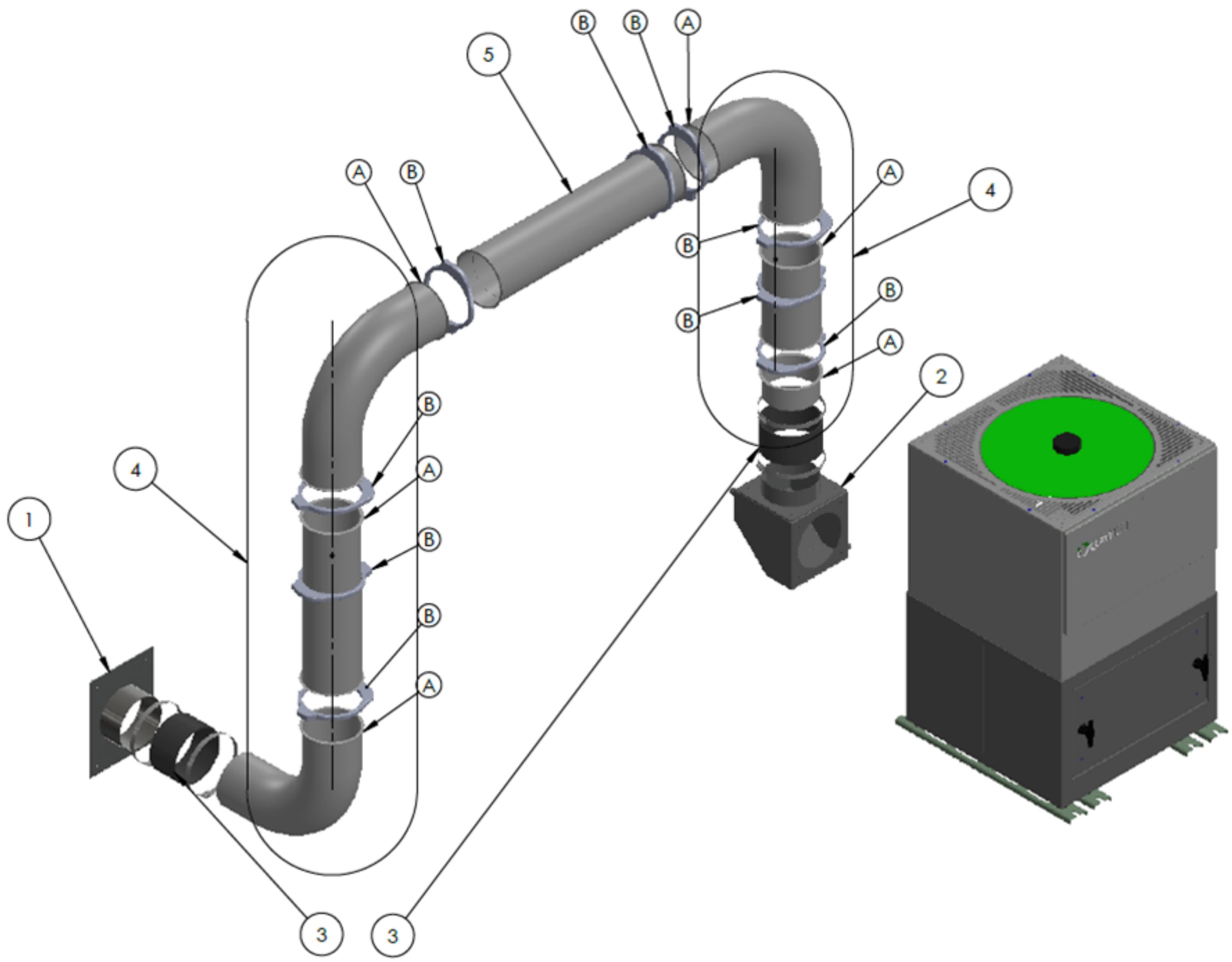
A GUIDE TO FLEXIBLE HARD DUCTING

Revision 2*

01/05/2026



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*B HARD DUCT ORDERING GUIDE

Contents

1 Introduction

This document will outline the benefits of using hard ducting during a mist collector installation, the recommended shape of a duct run and its benefits, along with a comprehensive guide to both measuring and ordering the required components.

2 Why Do We Use Hard Duct?

MP Systems offers hard ducting for mist collector installations because hard duct has better performance, less maintenance, and a more aesthetically pleasing than flexible hose.

Flexible hose has a tendency to sag which leads to an accumulation of coolant in the hose over time. Hard duct does not sag which allows mist that has condensed over the length of the duct to drain back to the machine tool. This both increases air flow along the length of the duct, and eliminates the need for maintenance such as removing excess coolant or replacing hoses.

Figure 1: Simple Duct Installation

Hard ducting boasts a more professional, integrated look for both the mist collector and the machine tool while offering increased strength and reliability. It also allows the mist collector to be placed further away from the machine than what is allowed by flex hose, increasing installation flexibility.

3 The "U" Shaped Duct Run

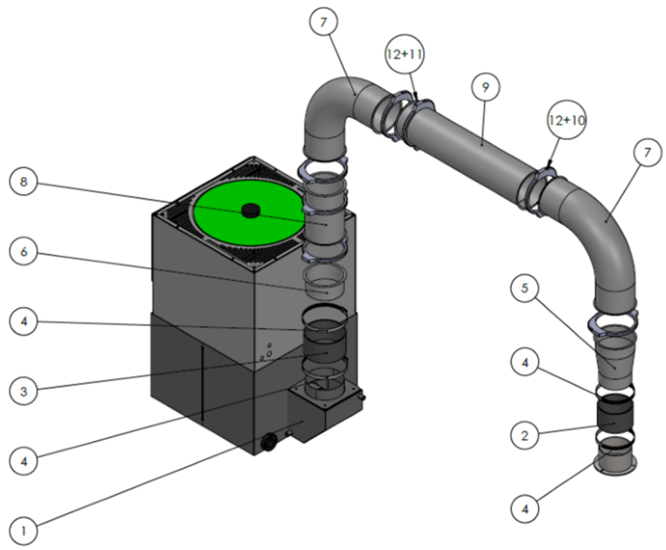


Figure 2: Example of The "U" Shape Install

The most straightforward and efficient way to design your own custom ducting is to follow the "U" shape duct design. This design utilizes two vertical duct segments and one horizontal segment. One segment comes up from the mist port on the machine, the other comes up from the mist port on the mist collector. These two segments are then connected by the horizontal section of duct with two 90 degree elbows. (Figures: 2, 3, 4)

The U shape duct run is the simplest ducting shape to install. This decreases installation time. Both vertical segments are self supporting and allow for the horizontal segment to be placed into position and secured with clamps, eliminating the need for auxiliary supports to be used during the installation process.

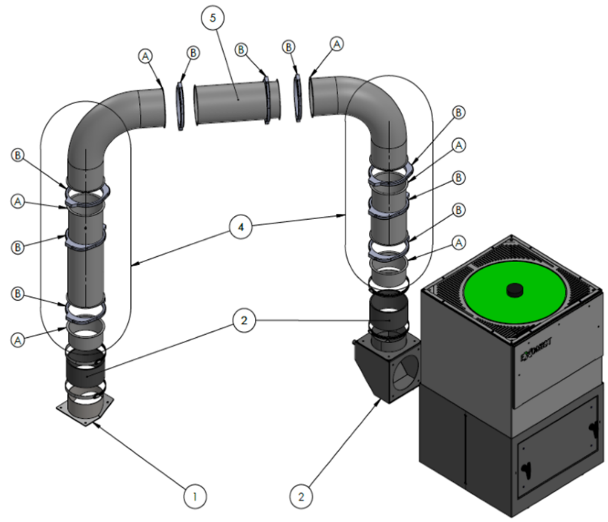


Figure 3: Example of The "U" Shape Install

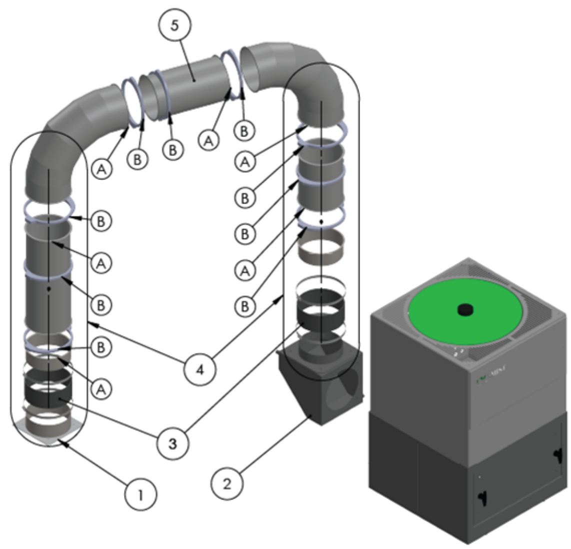


Figure 4: Example of The "U" Shape Install

4 Flexible Hard Duct

MP Systems stocks telescopic ducting with various ranges that clamp into the desired length. This allows for flexibility when designing the duct run and during the installation while maintaining rigidity once fully assembled.

4.1 Ducting Assembly

Each section of telescopic ducting utilizes 3 components.

1. Sleeve
2. Pipe
3. O-Ring

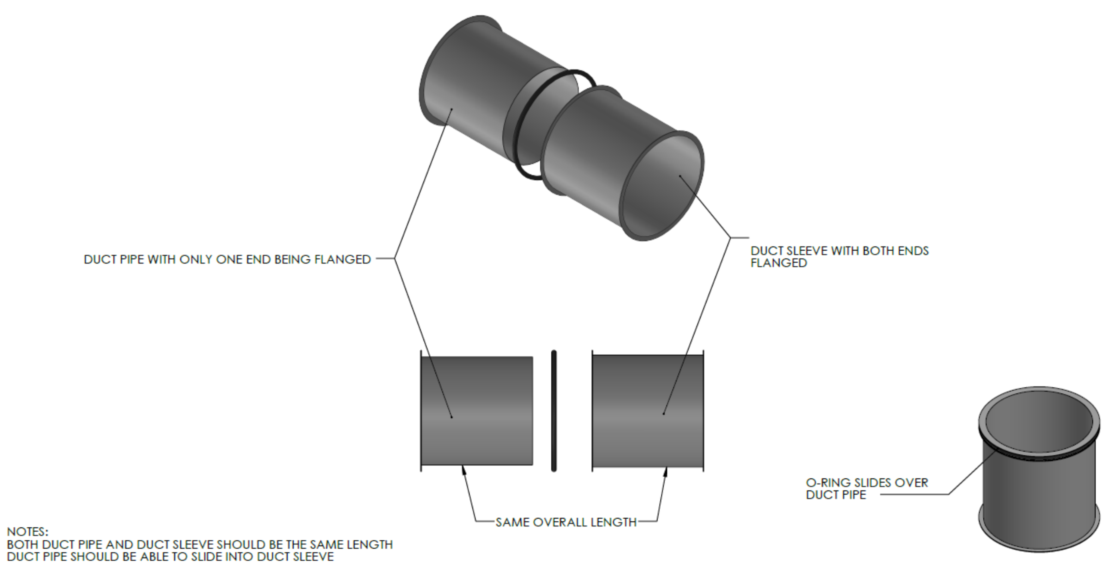


Figure 5: Example of Telescopic Duct

The sleeve is the minimum length of the duct segment and serves as the outer layer of the assembly. The Pipe is the same length as the Sleeve and is the component responsible for the telescopic nature of the ducting. The O-Ring can be moved along the length of the pipe and when used in conjunction with a Clamp, sets the final length of the duct segment while creating a seal along the joint.

4.2 How is it Flexible?

Telescopic ducting allows us to change the size of each duct segment. We have the ability to vary the vertical height of the run and the horizontal length. This can all be done in the field.

Additionally, two 90 degree elbows at the top of the duct segments give us full directional control over the run. Your custom design will also include two sets of rubber couplers. This gives us a few more degrees of adjust-ability at either end of the duct.

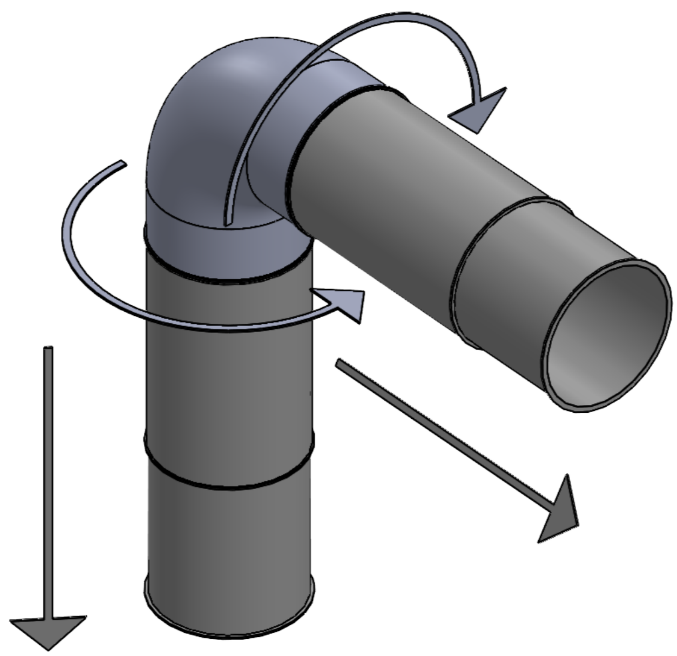


Figure 6: Ducting Flexibility

This system allows rough measurements to be taken in the field and translated into a duct run that is compliant yet rigid once secured. See Figure 7 for available telescopic duct and its ranges.

Pipe Segment Size Guide								
6"			8"			12"		
Name	Min Length (in)	Max Length (in)	Name	Min Length (in)	Max Length (in)	Name	Min Length (in)	Max Length (in)
HT 6" DUCT TUBE X 1'	12	22	HT 8" DUCT TUBE X 1'	12	22	HT 12" DUCT TUBE X 1' SLEEVE	12	20
HT 6" DUCT TUBE X 2'	24	44	HT 8" DUCT TUBE X 2'	24	44	HT 12" DUCT TUBE X 2' SLEEVE	24	40
HT 6" DUCT TUBE X 3'	36	66	HT 8" DUCT TUBE X 3'	36	66	HT 12" DUCT TUBE X 3' SLEEVE	36	60
HT 6" DUCT TUBE X 4'	48	88	HT 8" DUCT TUBE X 4'	48	88	HT 12" DUCT TUBE X 4' SLEEVE	48	78
HT 6" DUCT TUBE X 5'	60	110	HT 8" DUCT TUBE X 5'	60	110	HT 12" DUCT TUBE X 5' SLEEVE	60	100
HT 6" DUCT TUBE X 6"	6	10	HT 8" DUCT TUBE X 6"	6	10	HT 12" DUCT TUBE X 6" SLEEVE	6	10

Figure 7: Telescopic Duct Sizing

5 Measuring For Ducting

Every hard duct design will have 3 duct segments. When following the U shape duct run design outlined on page 4, these segments can be measured for and picked by utilizing one of the various documents provided in this packet.

To determine which document to use for your design you must first determine the diameter of the ducting that you need. MP Systems stocks 6", 8", and 12" diameter duct. Measure the port on the mist collector and the port on the machine tool. Ensure that these diameters match. Also note the relative location of the port on the machine tool, either the side or the top of the machine. We will use this information later.

5.1 Measurement Procedure

There will be 3 steps (A, B, C) which must be completed to properly measure for your ducting.

Step A. Determine the length of the segment that comes off the machine.

Step B. Determine the length of the segment that comes off the mist collector.

Step C. Determine the length of the segment that connects segments A and B.

5.2 Step A

Using a tape measure, measure the height (inches) from the ground to the center of the mist port on your machine tool. Record this measurement as Measurement 1. Next, measure the height (inches) from the ground to an unobstructed path between the machine tool mist port and the mist collector port. This path must be level to the ground and higher than the mist collector port. See Figure 8. Record this measurement as Measurement 3. Subtract Measurement 1 from Measurement 3. Record this value as A. If A is less than 16", make A = 16". This value will be what determines the length of segment A.

$$Measurement.3 - Measurement.1 = A \tag{1}$$

In Equation 1, if A is less than 16", set A equal to 16"

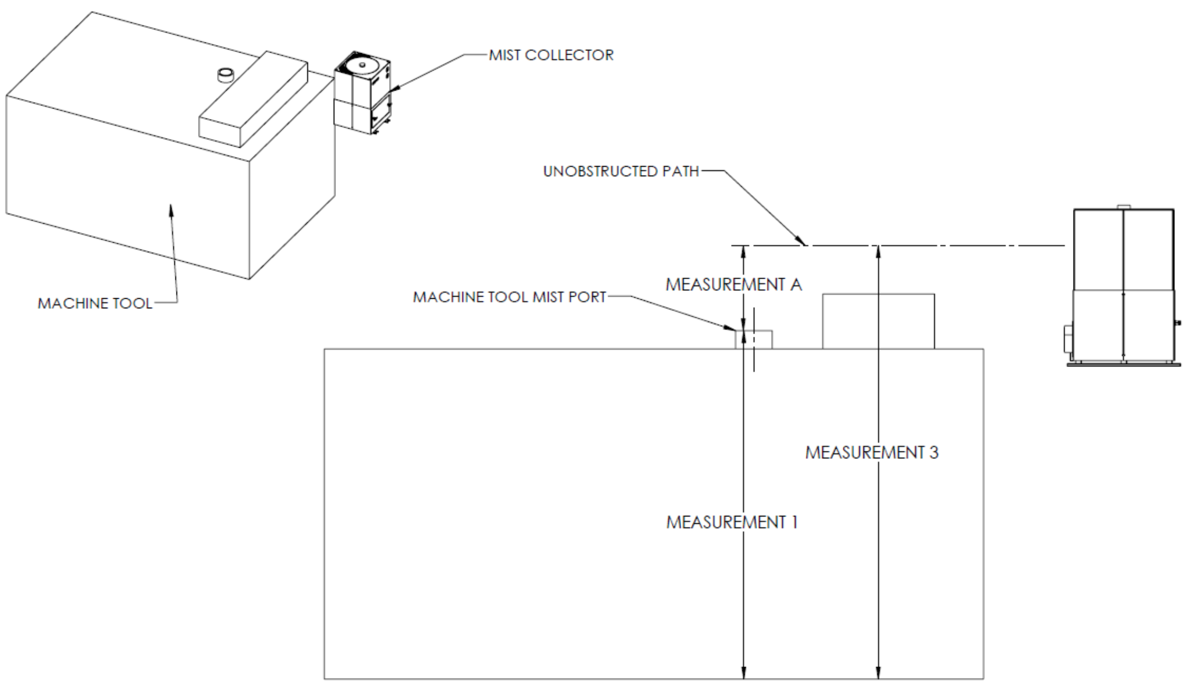


Figure 8: Measurements For Step A

5.3 Step B

Using a tape measure, measure the height (inches) from the ground to the center of the mist port on your mist collector. Record this measurement as Measurement 2. Subtract Measurement 2 from Measurement 3 (we took this measurement during Step A). Record this value as B. This value will be what determines the length of segment B.

$$Measurement.3 - Measurement.2 = B \tag{2}$$

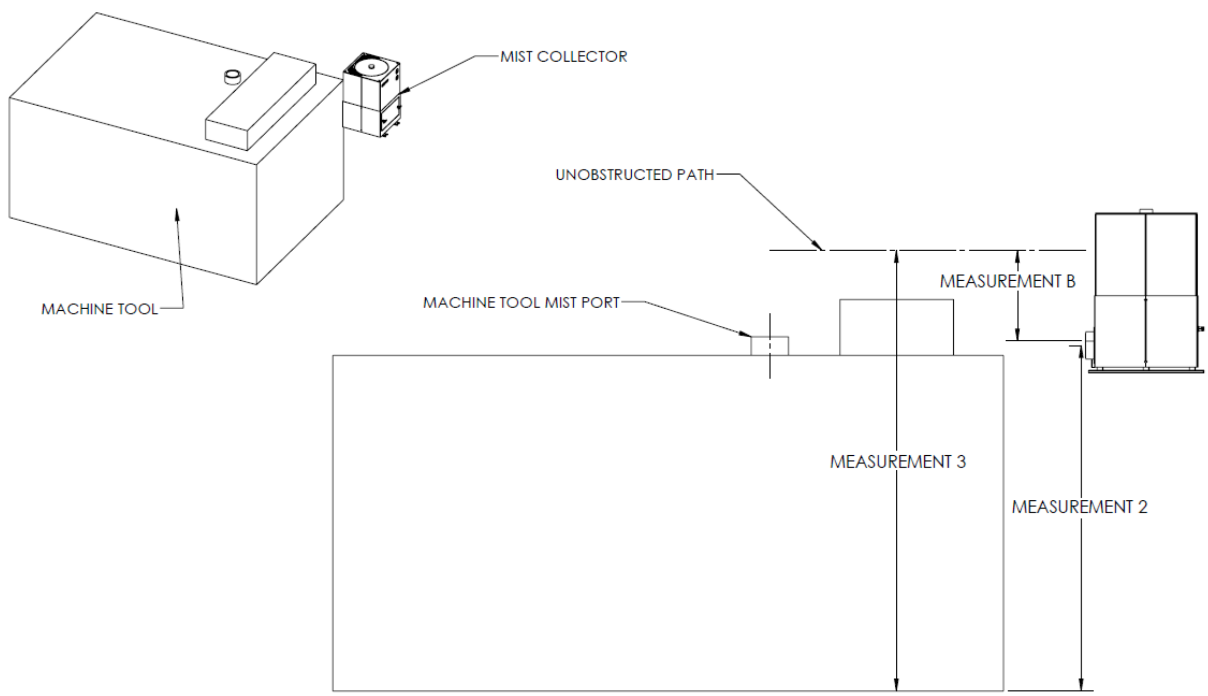


Figure 9: Measurements For Step B

5.4 Step C

Measure the distance (inches) from the center of the machine tool mist port to the center of the mist collector mist port. Record this measurement as C. This value will be what determines the length of the segment that connects segments A and B.

$$Measurement.4 = C \tag{3}$$

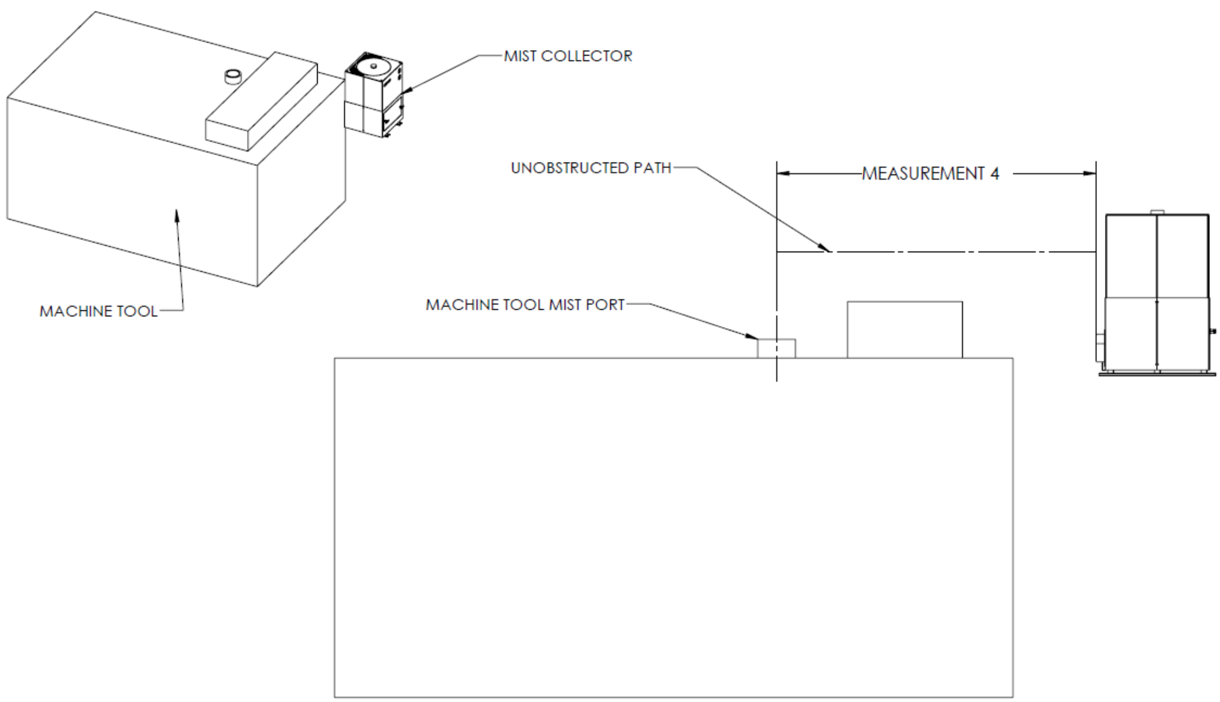


Figure 10: Measurements For Step C

6 How to Order Duct

You now have 3 values: A, B, and C. You should also know what the diameter of your ducting is, and the location of the mist port on the machine tool. We will use this information along with these values to determine what duct pieces should be ordered.

6.1 Example Duct Order

In this example, we will walk through how to use your measurements and one of the documents at the end of this guide to order your required duct sections.

In the example below, you can see that we took measurements 1, 2, 3, and 4. Following our equation from step A we have:

$$Measurement.3 - Measurement.1 = A \tag{4}$$

$$162" - 84" = A \tag{5}$$

$$78" = A \tag{6}$$

Following our equation from step B we have:

$$Measurement.3 - Measurement.2 = B \tag{7}$$

$$162" - 132" = B \tag{8}$$

$$30" = B \tag{9}$$

Following our equation from step C we have:

$$Measurement.4 = C \tag{10}$$

$$120" = C \tag{11}$$

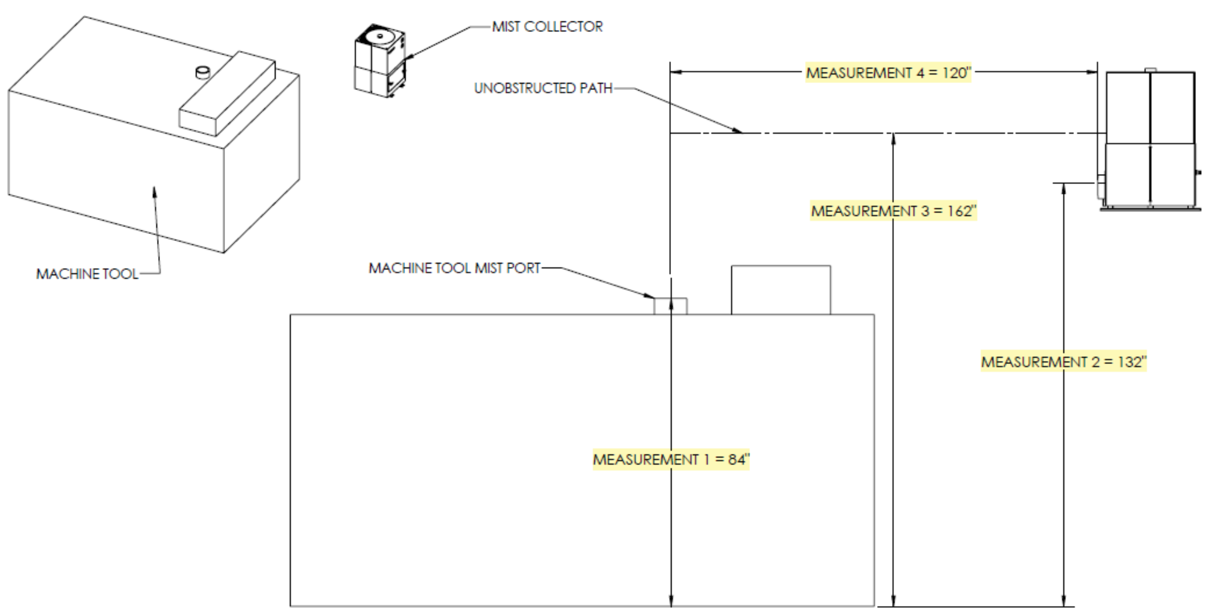


Figure 11: Example Measurements

We can now use our answers from step A, B, and C to fill out the document. Given this scenario, we know that the diameter of the mist ports are 8" so we need to use 8" duct. We also know that the mist port is on the top of the machine. We would navigate to the page titled 8" Diameter-Top Port. There you will find 3 diagrams, one for each step. On diagram "A" you will draw a horizontal line across the diagram at your given measurement (This diagram will be represented in ft). You will then select the piece of duct that best fits your line. The line must go through the hatched section of the duct, as that is the adjustable section. See figure 12.

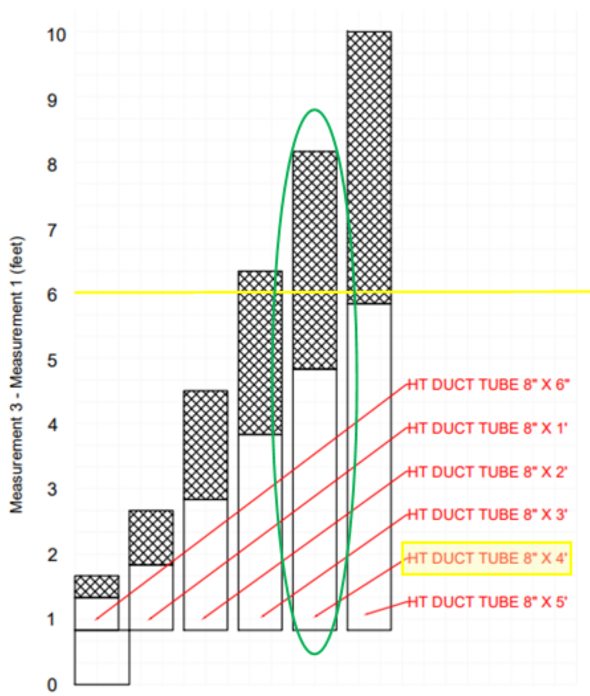


Figure 12: Step A Example

We have circled the duct piece that best fits the yellow line and highlighted the duct piece that should be recorded as "Segment A" on the order form.

On diagram "B" you will draw a horizontal line across the diagram at your given measurement (This diagram will be represented in ft). You will then select the piece of duct that best fits your line. The line must go through the hatched section of the duct, as that is the adjustable section. See figure 13.

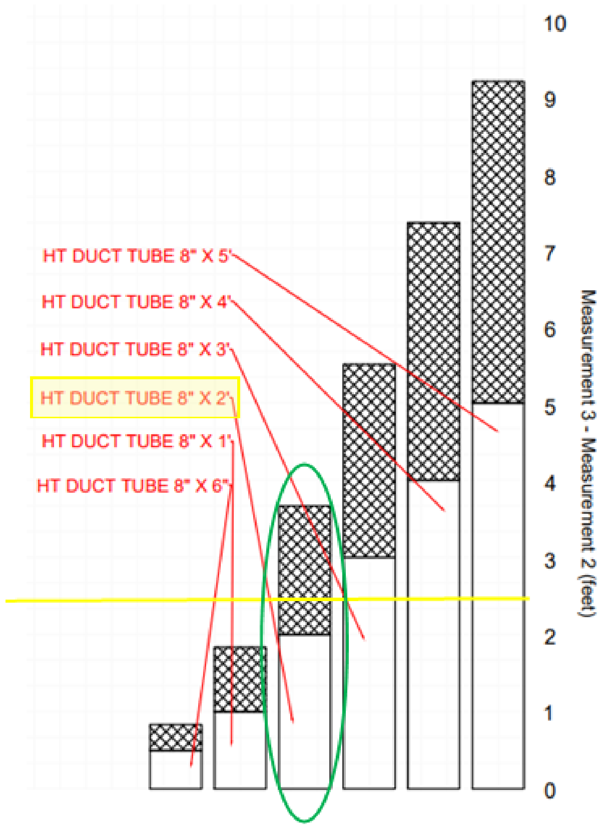


Figure 13: Step B Example

We have circled the duct piece that best fits the yellow line and highlighted the duct piece that should be recorded as "Segment B" on the order form.

On diagram "C" you will draw a vertical line down through the diagram at your given measurement (This diagram will be represented in ft). You will then select the piece of duct that best fits your line. The line must go through the hatched section of the duct, as that is the adjustable section. See figure 14.

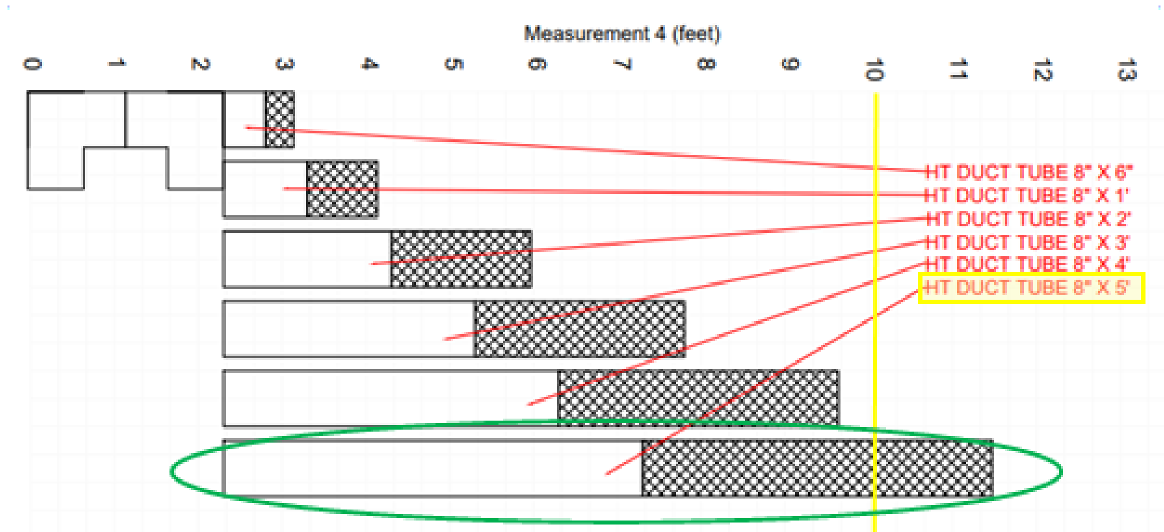


Figure 14: Step C Example

We have circled the duct piece that best fits the yellow line and highlighted the duct piece that should be recorded as "Segment C" on the order form.

MP Systems

Hard Duct Order Form

Company Name: (Your Company Name Here)

Salesperson: (Salesperson Name Here)

Quote Number: (Quote Number Here)

End User/Project: (End User/Project Name Here

Duct Size: (Select One)

- ☐ 6” Diameter
- ☒ 8” Diameter
- ☐ 12” Diameter

Machine Mist Port Location: (Select One)

- ☒ TOP
- ☐ SIDE

-Ducting Selections-

Segment A: HT DUCT TUBE 8" X 4'

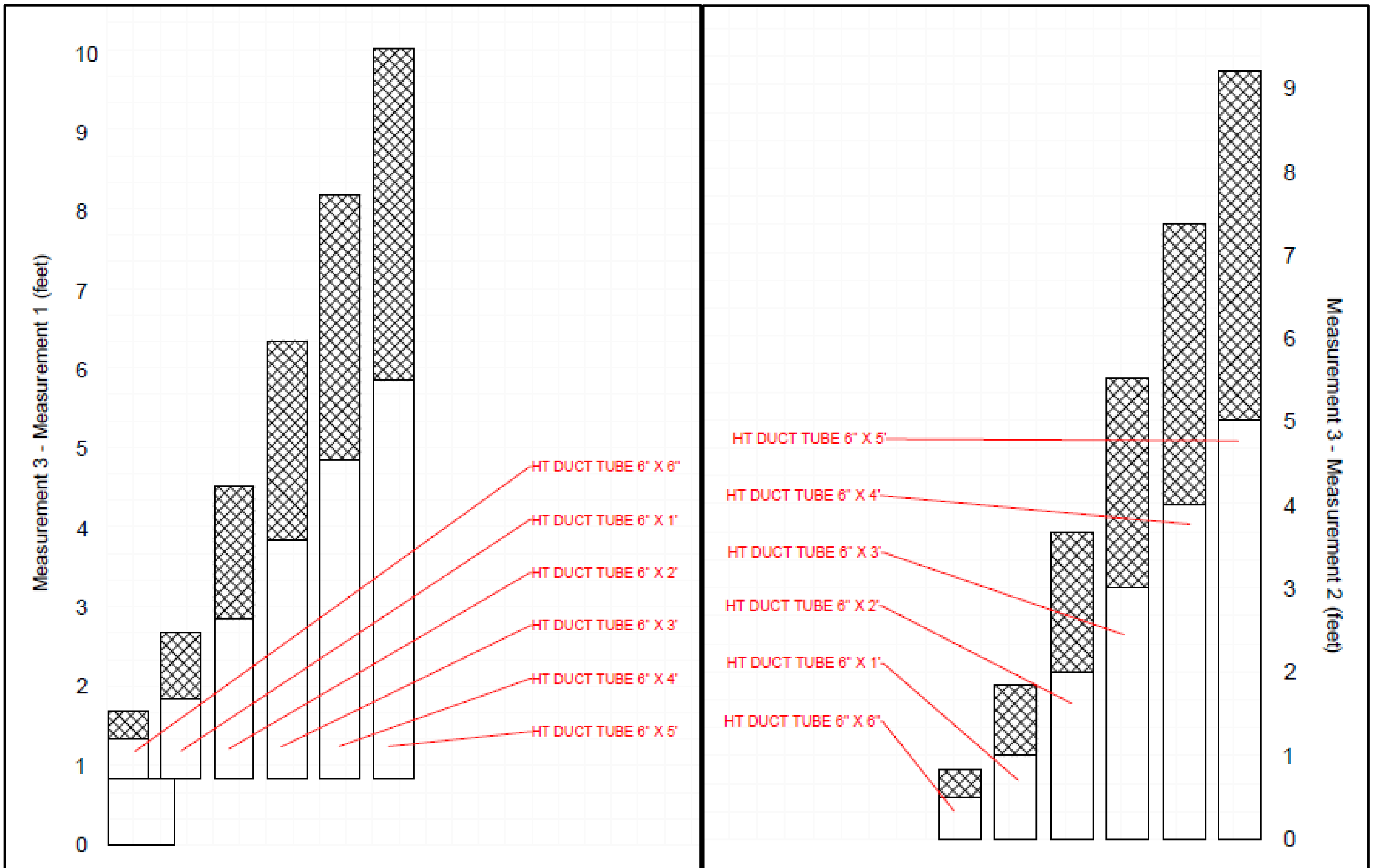
Segment B: HT DUCT TUBE 8" X 2'

Segment C: HT DUCT TUBE 8" X 5'

Figure 15: Example Order Form

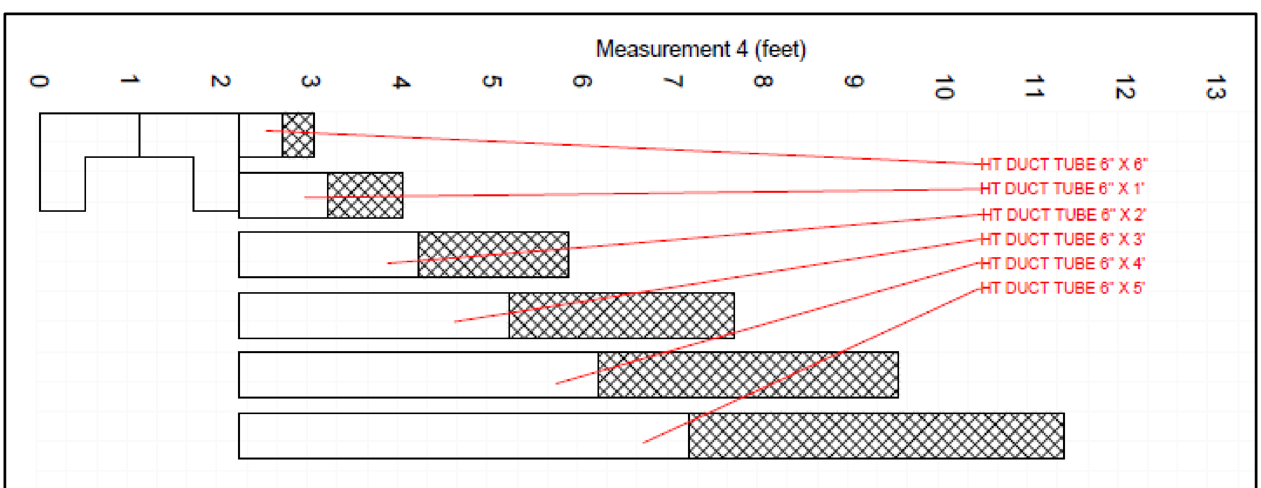
Figure 15 is an example of a completed order form. This is enough information for us to get you everything you would need for a hard ducting installation. Please see below for the documents pertaining to each unique ducting scenario along with the hard duct order form.

6" Diameter Duct – Top Port



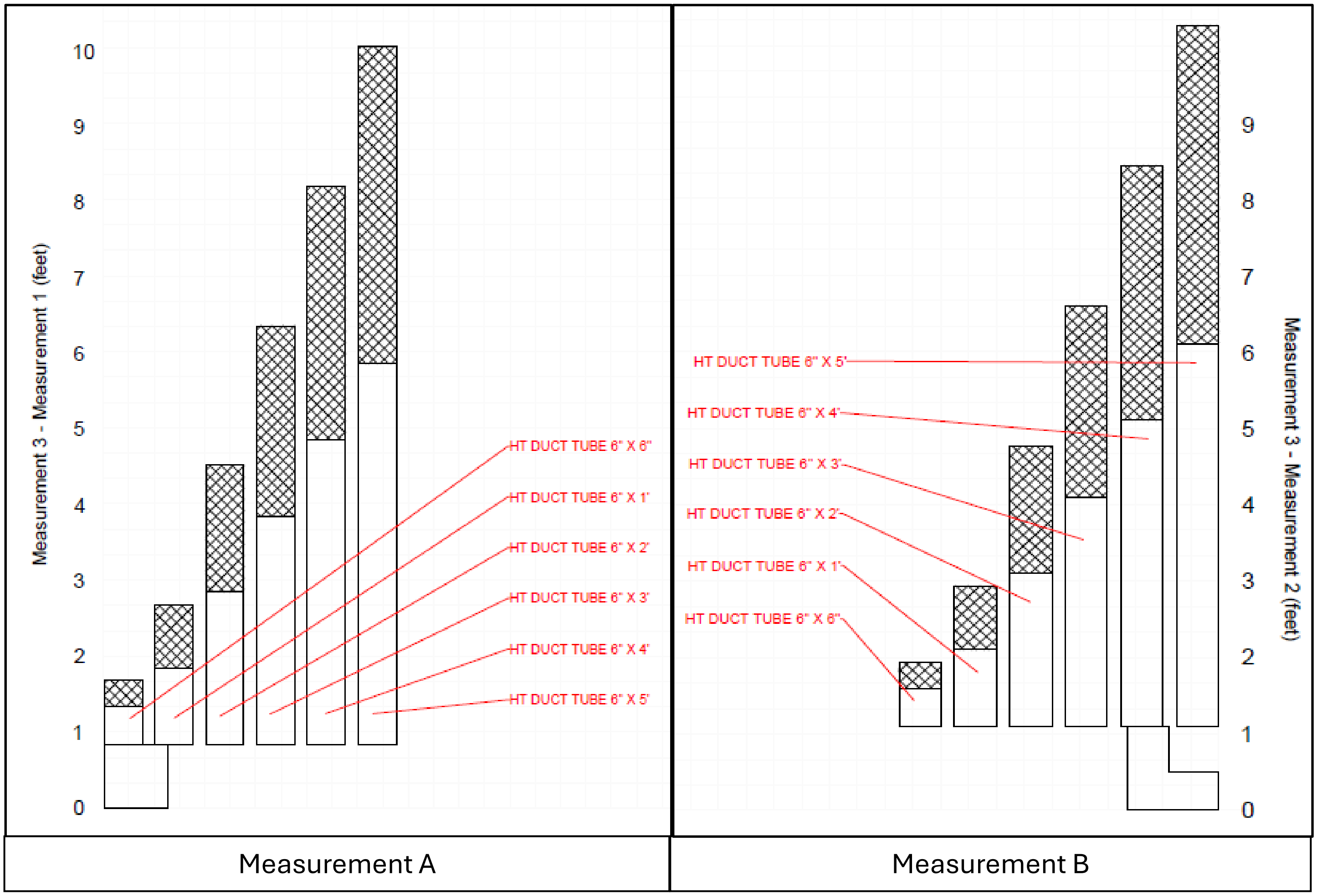
Measurement A

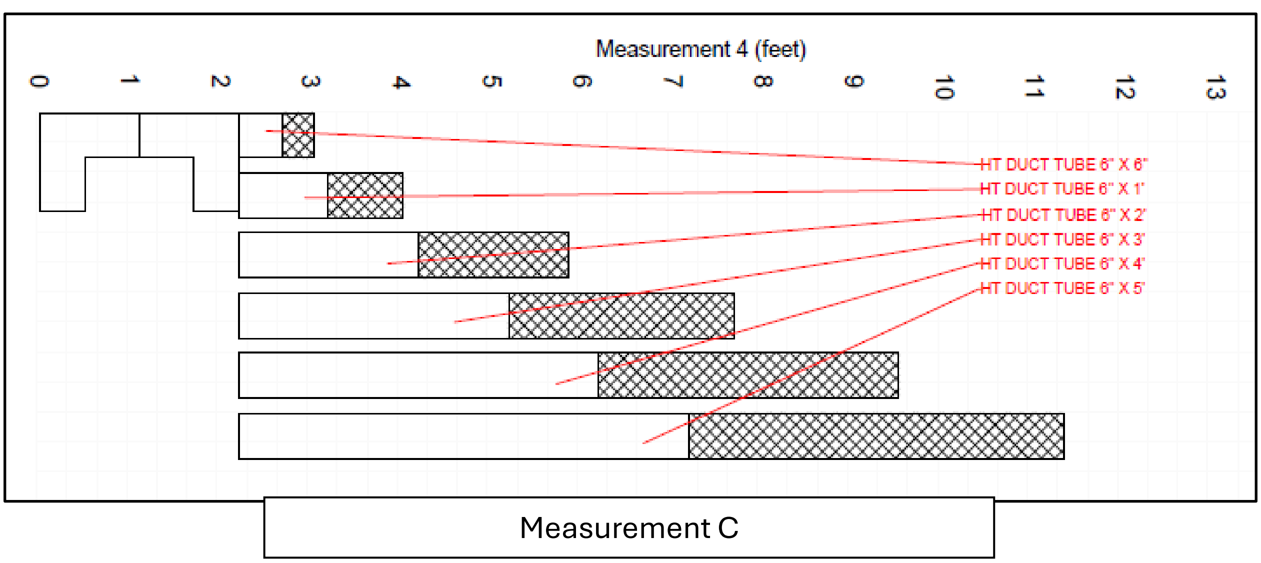
Measurement B



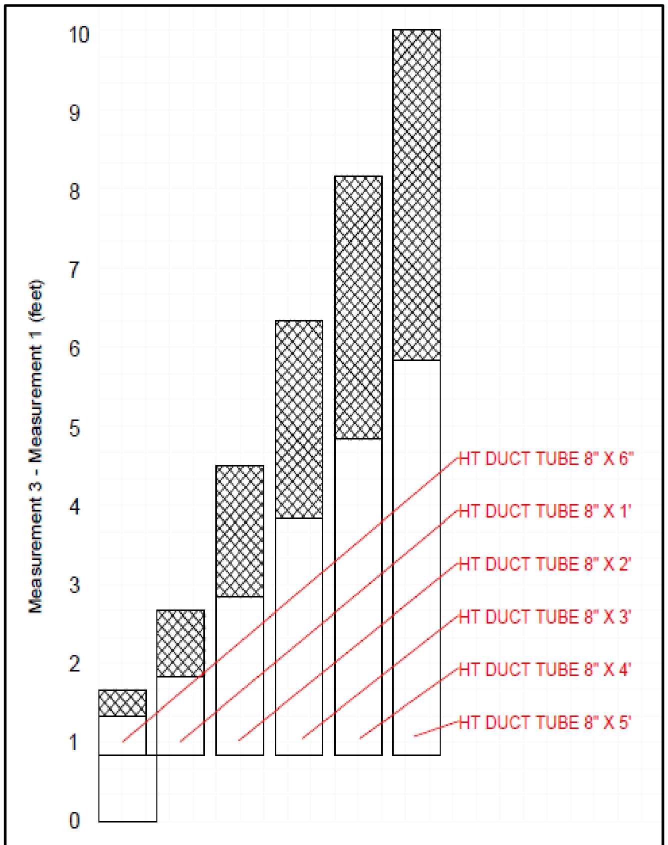
Measurement C

6” Diameter Duct – Side Port

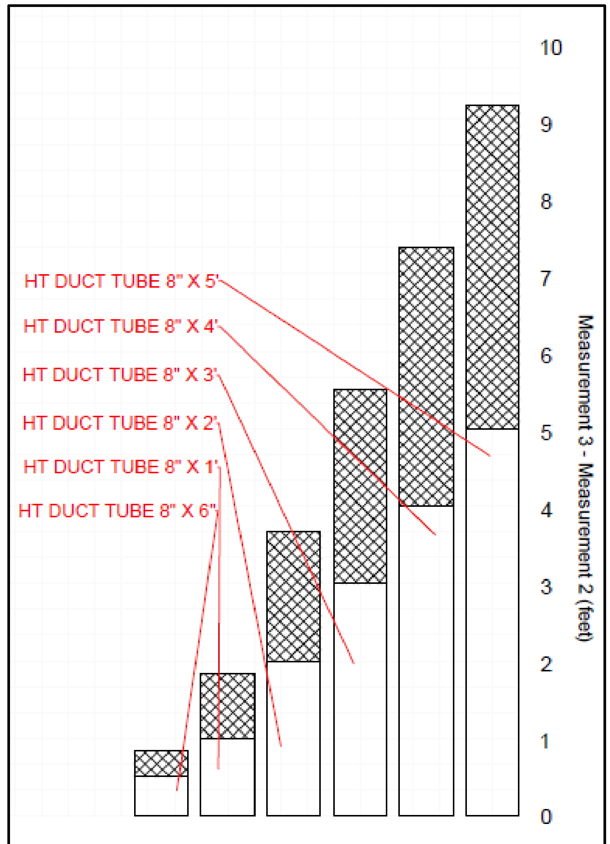




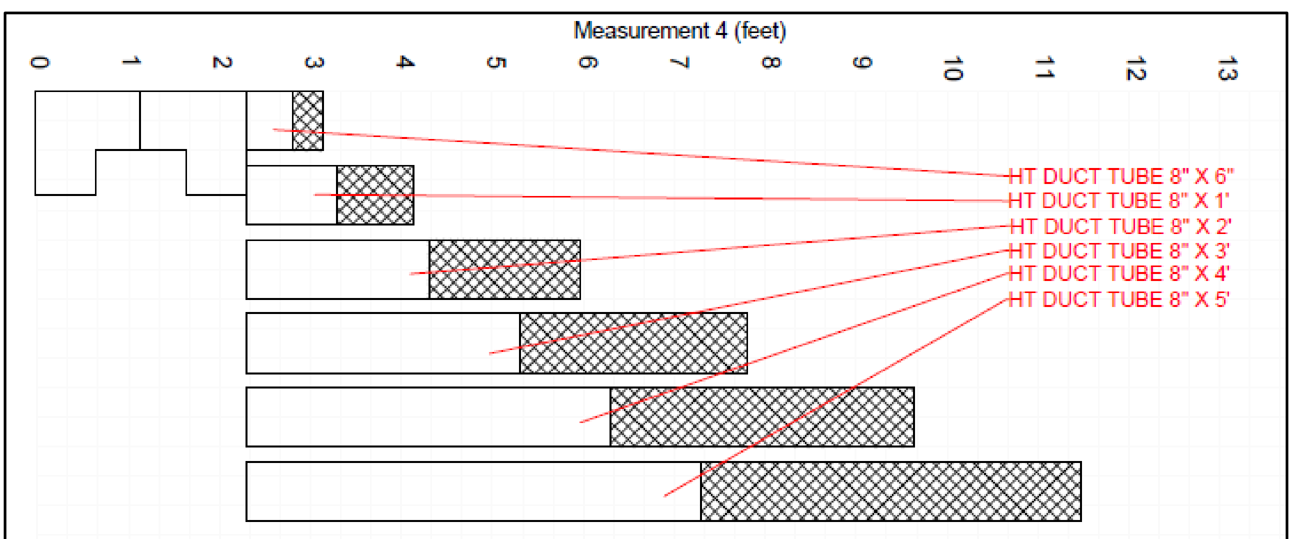
8" Diameter Duct – Top Port



Measurement A

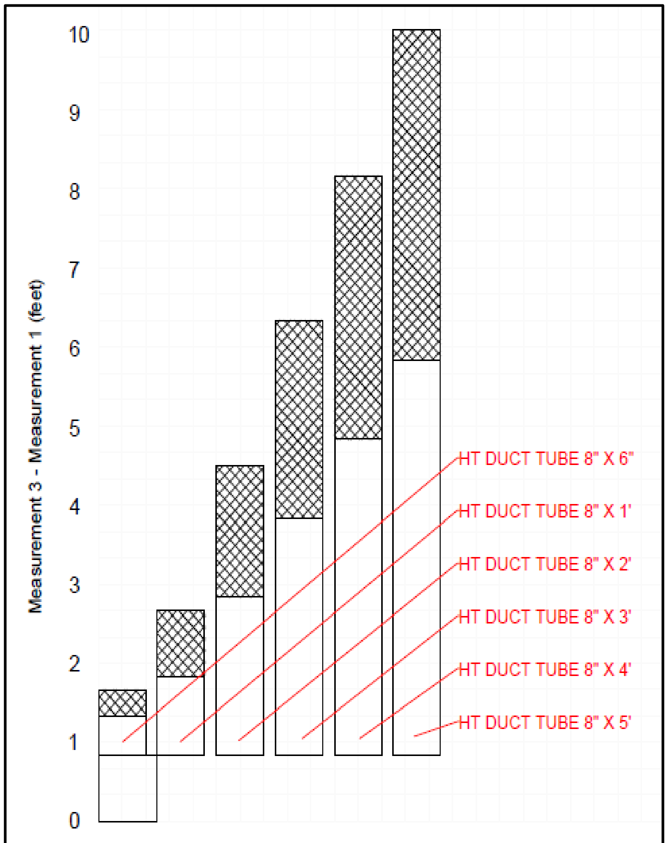


Measurement B

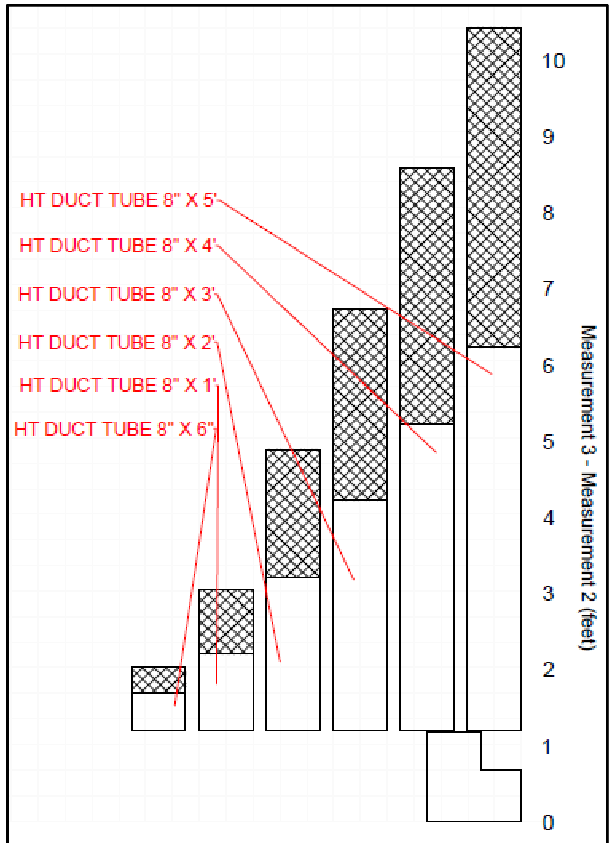


Measurement C

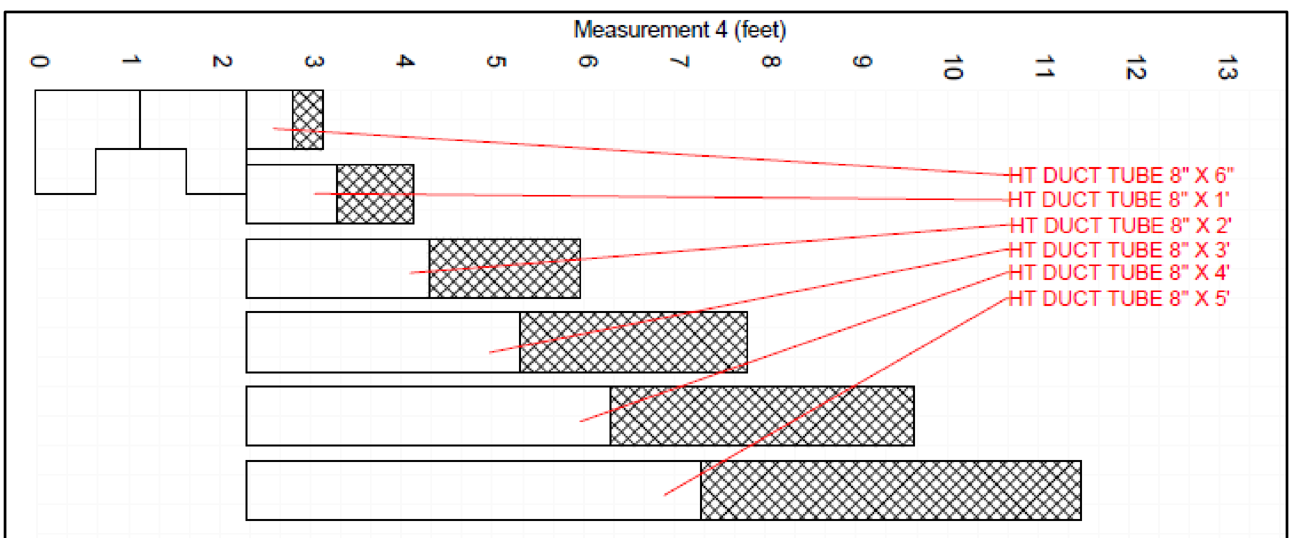
8” Diameter Duct – Side Port



Measurement A

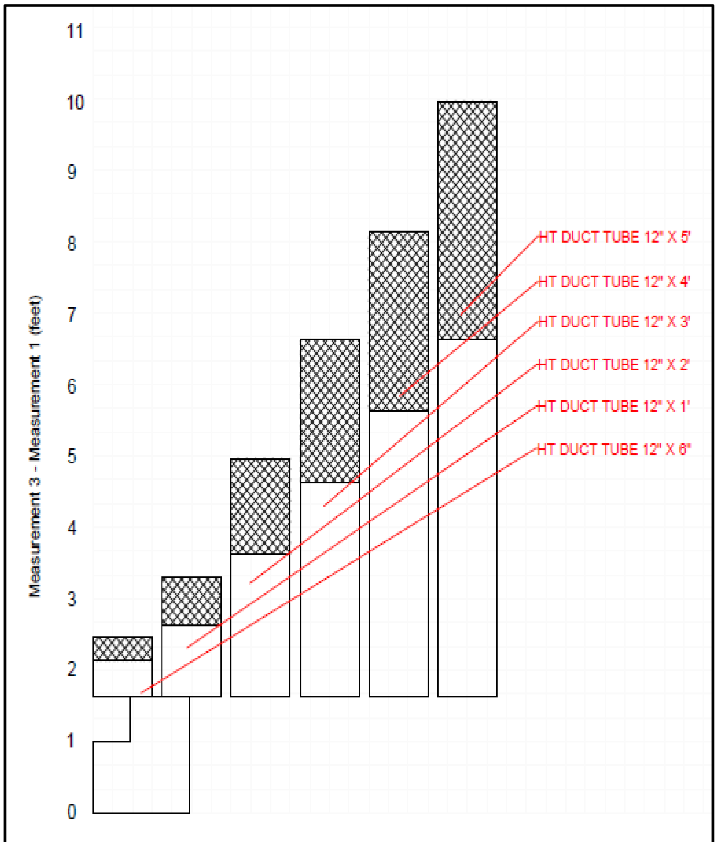


Measurement B

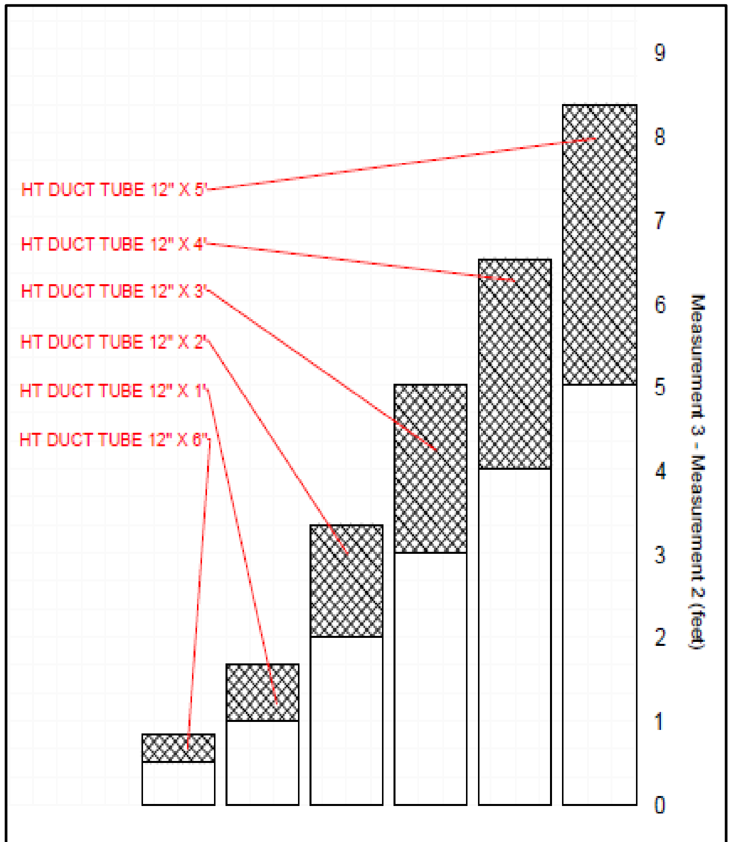


Measurement C

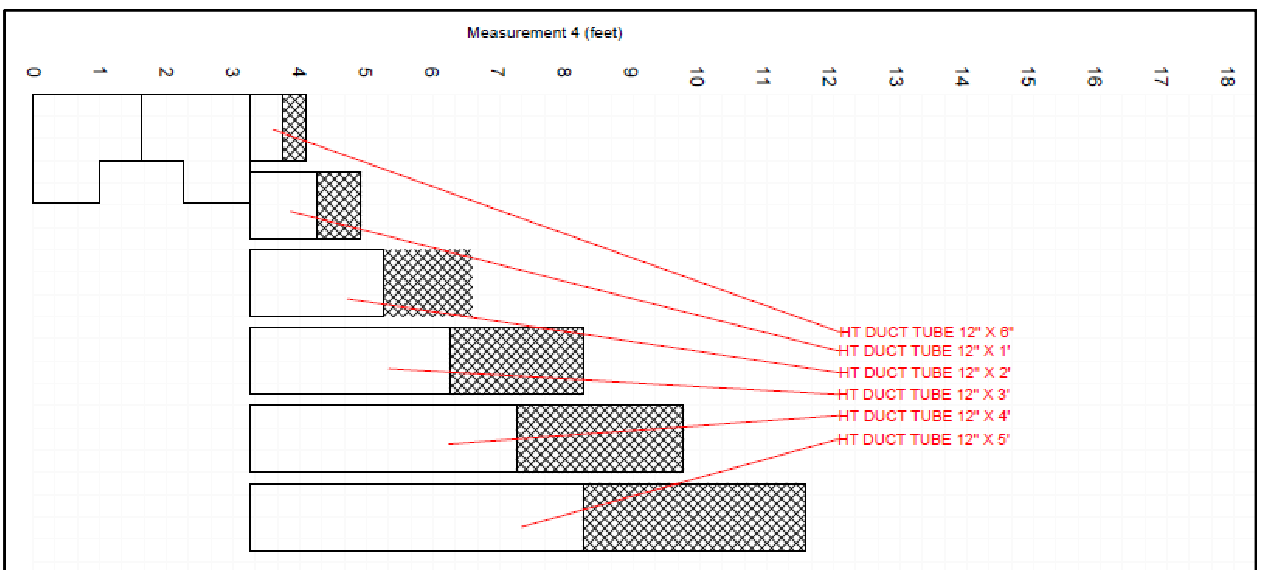
12” Diameter Duct – Top Port



Measurement A

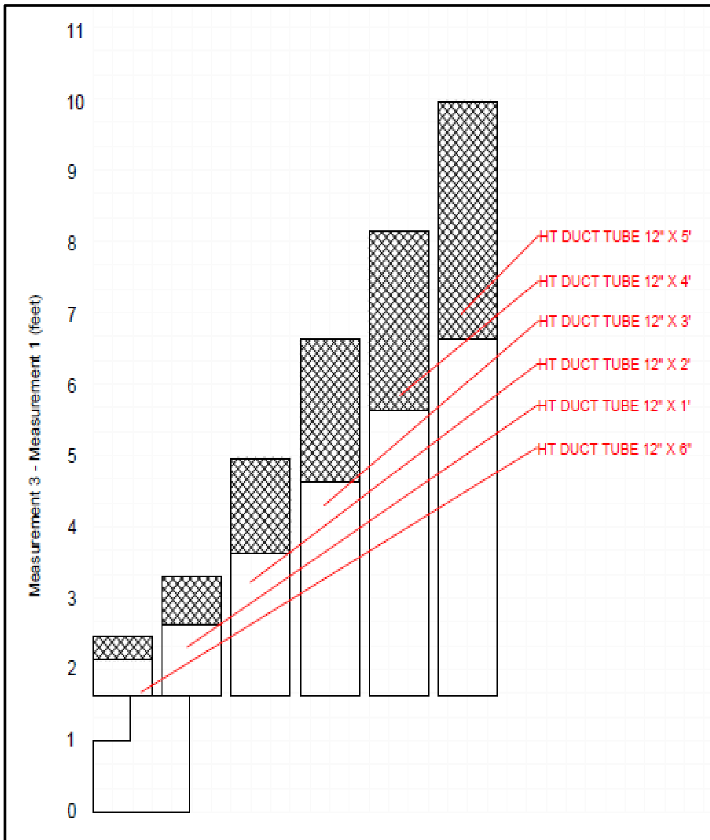


Measurement B

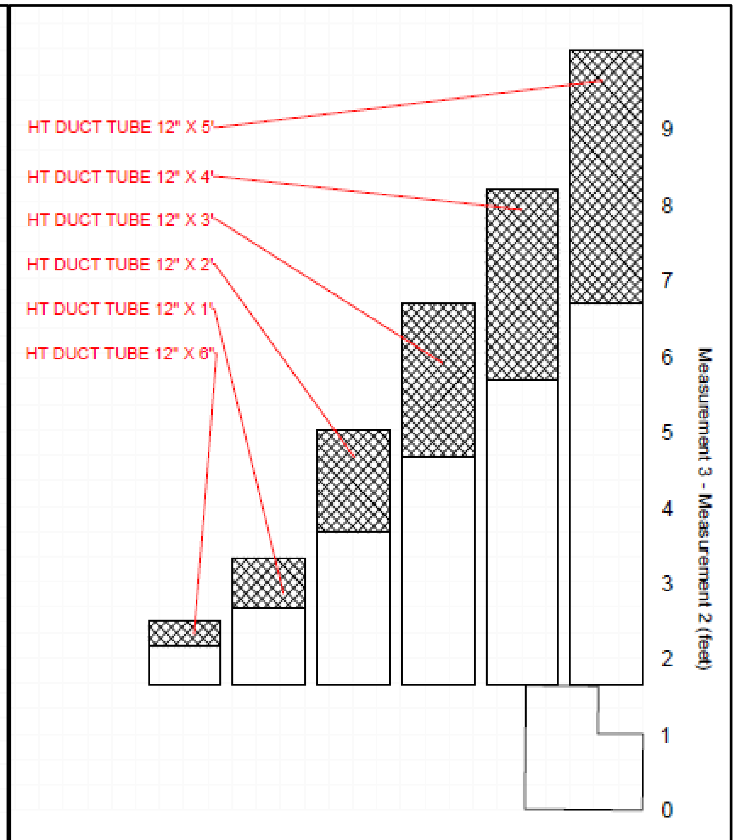


Measurement C

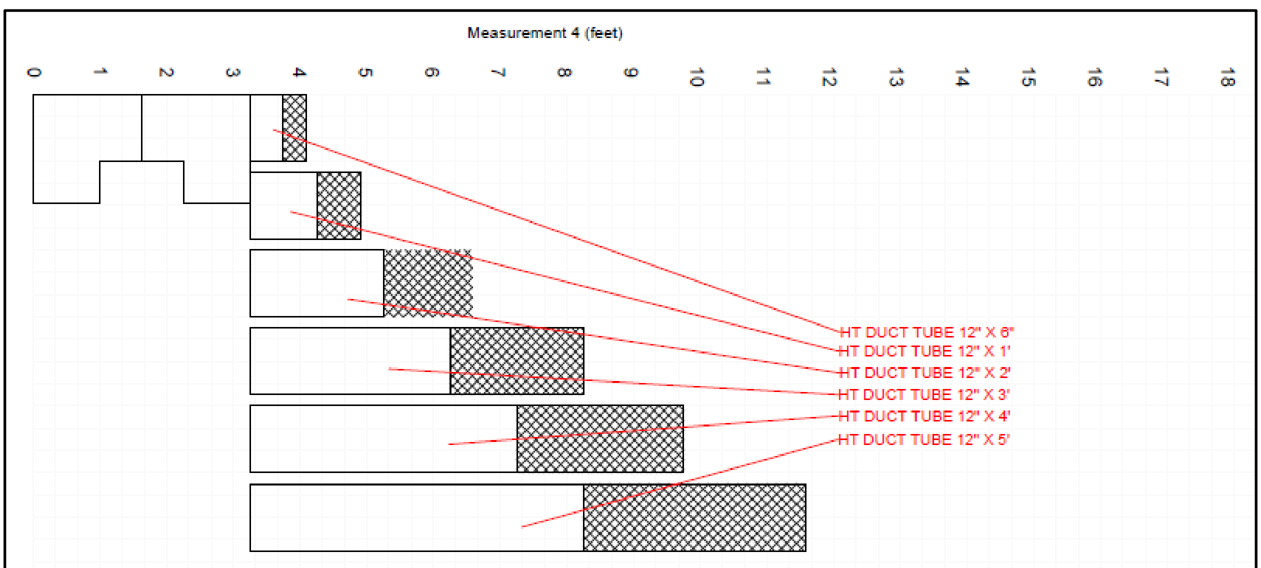
12” Diameter Duct – Side Port



Measurement A



Measurement B



Measurement C

Hard Duct Order Form

Company Name: ___________________________________

Salesperson: _____________________________________

Quote Number: ___________________________________

End User/Project: _________________________________

Duct Size: (Select One)

- ☐ 6” Diameter
- ☐ 8” Diameter
- ☐ 12” Diameter

Machine Mist Port Location: (Select One)

- ☐ TOP
- ☐ SIDE

-Ducting Selections-

Segment A: _________________________________

Segment B: _________________________________

Segment C: _________________________________