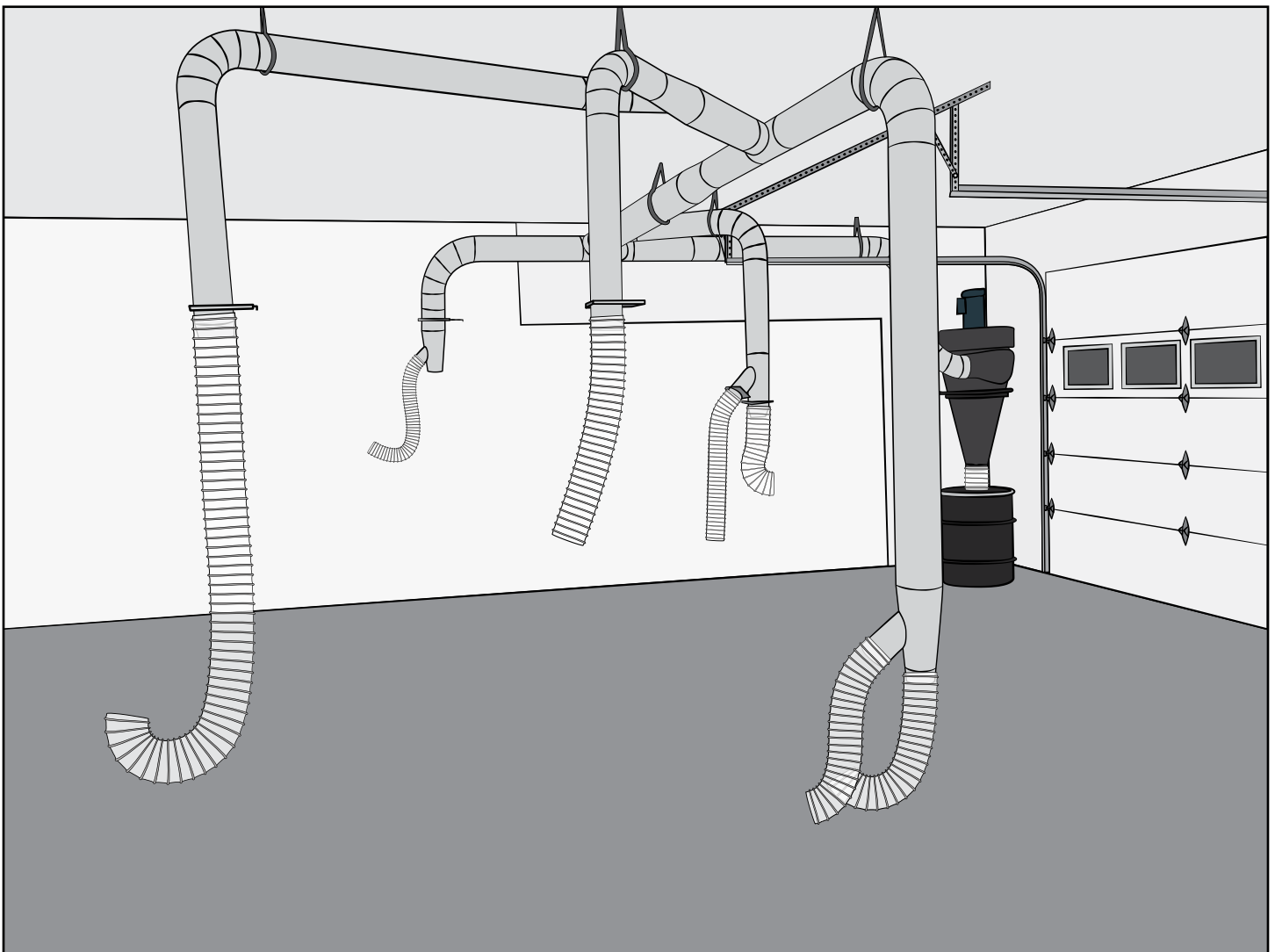




# DUCTWORK INSTALLATION GUIDE





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# Introduction

---

Congratulations on your decision to purchase an Oneida Air Systems' dust collector for your shop! Since our founding in 1993, we've dedicated ourselves to manufacturing the best performing and highest quality dust collection systems for shops of all sizes. We fully guarantee our airflow performance and filtration specifications to provide our customers with a safe, practical, and healthy work environment.

From shop design\* through installation, Oneida Air Systems is with you every step of the way.

Please understand that the collector itself is only one part of an efficient dust collection system. The information in this guide is designed to provide a basic understanding of dust collection air flow and the components required to successfully complete an entire ductwork installation.

## **The installation guide is broken into the following main sections:**

1. Components: The primary function and use of each type of ductwork fitting.
2. Preparation: As with any project, it is important to plan ahead to ensure a successful installation.
3. Main Line: How to assemble the primary path of airflow that connects to the dust collector.
4. Drops: How to assemble the branches of airflow that connect to your tools.
5. FAQ: Addressing common issues and concerns when assembling ductwork.

*Note: If you do not feel comfortable doing the ductwork installation yourself, consider hiring a local HVAC installer.*

## **Main Goals to remember when installing your ductwork:**

1. The system must be airtight.
2. The system must be noise/vibration free.
3. The system must minimize resistance to air flow.

\*Oneida Air Systems offers ductwork design services for customers who have purchased one of our dust collectors. Our design ensures the correct duct size and layout, ensuring a configuration that will provide the correct air flow to effectively collect the wood waste at the source. Effective collection of wood dust at the point of generation prevents airborne dust which can cause an unhealthy and unsafe working environment. If you wish to take advantage of our ductwork design service, please fill out the form at: <https://www.oneida-air.com/shop-plan-design>

## Standard Ductwork

Components are designed with airflow performance in mind, featuring gradual splits and large radius turns to minimize air resistance. Our standard ductwork can withstand the high suction pressures and constant friction created in dust collection and other material handling applications. Standard ducting components include Snap-Lock and Spiral Pipe fittings that must be crimped, coupled, screwed, or welded together.

Snap-Lock assembly is made quick and easy thanks to the convenient seam running down the length of the pipe. Simply snap both sides together and add a small amount of silicone sealant or foil tape to ensure there are no air leaks.

Spiral piping is the ductwork of choice for shop owners in need of reinforced, material conveying equipment, and is recommended for commercial dust collection applications with systems 5HP and larger. Standard Snap-Lock ductwork may collapse under the high suction pressures of larger dust collection systems, and in those installations spiral pipe is necessary. Spiral pipe fittings can be connected using Spiral Pipe Adapters or by welding Angle Rings Flanges to both ends and bolting them together.



**Male Duct Adapter**  
**DAB#####**  
Used to convert tapered fittings (like blast gates) to crimped ends



**Female Duct Adapter**  
**DAF#####**  
Used to mate two crimped fittings with each other



**Standard Reducer**  
**DRL#####**  
Used to reduce the diameter of your ductwork runs



**Heavy Reducer**  
**DRH#####**  
Used to reduce the diameter of your ductwork runs



**Metric Duct Adapter**  
**DAB#####**  
Used to convert metric tool ports to fit imperial ductwork



**Snap-Lock Piping**  
**DPT#####**  
Used with dust collectors 5HP and under



**Spiral Piping**  
**DPP#####**  
Used with industrial dust collectors 5HP and larger



**Spiral Duct Adapter**  
**DAS#####**  
Used to couple together raw fittings



**Adjustable Elbow**  
**DEA#####**  
Used for more flexibility in your duct runs



**Heavy Fixed Elbow**  
**DEH#####**  
Used with industrial dust collectors 5HP and larger



**45 Degree Wye Joint**  
DWS#####  
Used to split your ducting run off from your main line



**Saddle Tap Wye**  
DWT#####  
Used to install a branch into an existing ductwork line



**Pants Wye**  
DWP#####  
Mainly used to split the discharge of the dust collector



**Ball Joint**  
GBZ#####  
Allows for rapid radial hose movement common with CNC machines.



**Radial/Miter Saw Hood**  
DOR#####  
Captures dust behind both Radial Arm Saws and Miter Saws



**Square Dust Hood**  
DOS#####  
Largest surface area for dust collection



**Rectangular Dust Hood**  
DOT#####  
Captures dust and debris using a wide narrow area



**Circular Dust Hood**  
DOU#####  
Highest suction performance



**Open Floor Sweep**  
DSN#####  
Sweep excess debris to cyclone dust collector, requires blast gate



**Closed Floor Sweep**  
DSD#####  
Sweep excess debris to cyclone dust collector, no gate required



**End Cap**  
DCZ#####  
Used to close up unused airways



**Aluminum Blast Gate**  
DGA#####  
Temporarily close off airway to branches and tools



**Plastic Blast Gate**  
DGP#####  
Temporarily close off airway to branches and tools

## Quick-Clamp ductwork

The ductwork of choice for those looking to considerably reduce downtime for installation and/or modifications. This modular system connects ductwork fittings in seconds, easily adapting to your existing tools and clamp-together ductwork; No more rivets, screws, or welding. The heavy-gauge galvanized steel is built to last and the laser welded fittings and robust clamp gaskets require no additional sealing.



**Machine Adapter**  
**DAB#####**

Used to convert machine dust collection ports to rolled end



**Hose Adapter**  
**GAF#####**

Used to connected rolled end duct fittings to hose



**Duct Clamp**  
**DQM#####**

Used to secure rolled end ducts in place



**Sleeve with O-Ring**  
**GNZ#####**

Used to make small adjustable extensions. Includes one O-Ring.



**O-Ring**  
**GOR#####**

Required for installations using sleeves



**Pipe**  
**GPZ#####**

Modular pipe used with dust collectors 5HP and over



**Short Radius Elbow**  
**GES#####**

30 Degree Short Radius Elbows recommended for tight spacing



**Short Radius Elbow**  
**GES#####**

45 Degree Short Radius Elbows recommended for tight spacing



**Short Radius Elbow**  
**GES#####**

60 Degree Short Radius Elbows recommended for tight spacing



**Short Radius Elbow**  
**GES#####**

90 Degree Short Radius Elbows recommended for tight spacing



**Long Radius Elbow**  
**GEL#####**

30 Degree Long Radius Elbows are more airflow efficient



**Long Radius Elbow**  
**GEL#####**

45 Degree Long Radius Elbows are more airflow efficient



**Long Radius Elbow**  
**GEL#####**

60 Degree Long Radius Elbows are more airflow efficient



**Long Radius Elbow**  
**GEL#####**

90 Degree Long Radius Elbows are more airflow efficient



**Reducer**  
**GRZ#####**

Used to reduce the diameter of your ductwork runs



**Gated Tee Joint**  
**DWE#####**

Easily split off from your main duct line with a high-pressure system



**Gated Tee Joint Kit**  
**DMT040404**

Easily split off from your main duct line with a high-pressure system



**Wye Joint**  
**GWZ#####**  
Used to split your ducting run off from your main line



**Saddle Tap Wye**  
**GWT#####**  
Used to install a branch into an existing ductwork line



**Pants Wye**  
**GWP#####**  
Mainly used to split the discharge in dust collection system



**Ball Joint**  
**GBZ#####**

Allows for rapid radial hose movement common with CNC machines.



**Floor Sweep**  
**GSN#####**  
Sweep excess debris to cyclone dust collector, no gate required



**End Cap**  
**GAE#####**  
Used to close up unused airways



**Blast Gate**  
**GGZ#####**  
Temporarily close off airway to branches and tools



## Flex hose and Miscellaneous

Industrial-grade flex hose for use in dust collection applications connecting tools and ductwork. Made from an abrasion resistant polyurethane material with metal wire reinforcement for long lasting durability and static dissipation. Clear lining makes it easy to spot and clear potential blockages.

Tools, parts, and other components used for affixing ductwork to walls and ceilings, assembling, sealing, and modifying steel ductwork components.



**Flex Hose**  
**DHF#####**

Used to connect to tools and ductwork



**Hose Clamps**  
**ACB#####**

Used to secure hose fittings in place



**Male Quick-Connect**  
**DQM#####**

Converts ductwork fittings to readily accept flex hose connections



**Female Quick-Connect**  
**DQF#####**

Converts ductwork fittings to readily accept crimped fittings



**Quick-Connect Kit**  
**DQK#####**

Kit containing both the Male and Female Quick-Connect



**Angle Ring**  
**DFZ#####**

Welded into the end of spiral ducting to create flange ducting



**Take-Off Collar**  
**DLX#####**

Used to modify your tool's ports



**4" Ductwork Wall Hanger**  
**DBH040001**

Used to support 4" ducting on the wall



**Hanger Strap**  
**ATP#####**

Used to support ducting from your ceiling or wall



**Grippler Hang-Fast**  
**AHD#####**

Used to support heavy ducting from your ceiling from 5-15' away



**Clean Out Port**  
**DDC#####**

Access port for inspections, cleaning, and other maintenance



**Aluminum Foil Tape**  
**ATF000000**

Used to seal ductwork



**Silicone**  
**ASC000000**

Used to seal ductwork



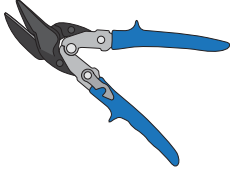
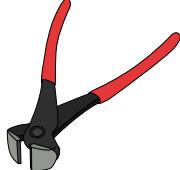

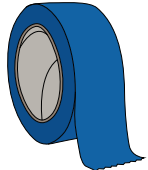
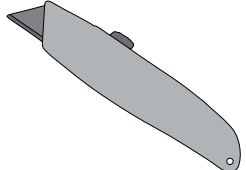



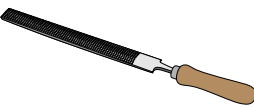
**Pop Rivets**  
**AFR999901**


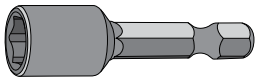

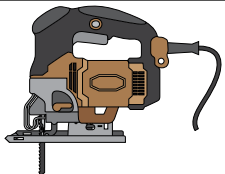
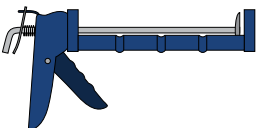
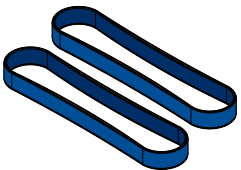
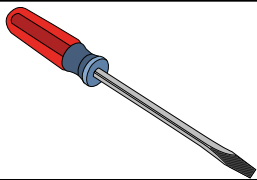


Used to secure ductwork



**Sheet Metal Screws**  
**AF5000000**

Used to secure ductwork

RECOMMENDED TOOLS	IMAGE	WHY WE RECOMMENDED IT
Tin Snips		Ideal for reducing the diameter of light duty ductwork to insert into similar size pipe. Re-use scrap lengths of pipe cut-offs, and make those stubborn pieces fit together easier. Also, can be used for cutting galvanized ducting.
Wire Cutters		Used to cut the reinforcing wire within ducting hose. May also be used to trim off excess length from adjustable hose clamps.
Marking Pen		General purpose pen for marking pilot holes, cutting lines on pipe, guide line when modifying adjustable elbows, etc.
Painter's Tape		Can be used as an alternative to a marking pen while making radial modifications to adjustable elbows.
Box Cutter or Scissors		General purpose cutter for unboxing components, cutting off lengths of tape, and cutting through vinyl flex hose.
Ladder		May or may not be required depending on your ceiling height. Wide step ladder recommended for aiding and lifting up long and heavy ductwork fittings.
Power Drill		Required for drilling pilot holes through sheet metal ducting so that ductwork components can be permanently secured using screws and rivets. Also convenient to use when installing strapping and hangers.
Crimper Item #: ATC000000		Ideal for reducing the diameter of round duct and sheet metal pipe to insert into similar size pipe. Re-use scrap lengths of pipe cut-offs, and make those stubborn pieces fit together easier.
File		Ensures that any cuts you make are clean and free of burrs.

RECOMMENDED TOOLS	IMAGE	WHY WE RECOMMENDED IT
Pop Rivet Gun Item #: ATR000000		Used to drive rivets to secure ductwork components together.
Hex Driver Bit		Used to rapidly open and close adjustable hose clamps as well as drive self tapping screws to secure ductwork components together.
Needle Nose Pliers		Used to pull end of flex hose over crimped pipe, cyclone ports, and the dust exhaust ports on tools.
Cutting Device		There are several options for cutting galvanized or steel ducting. Whether you use a jigsaw, reciprocating saw, nibbler or other method, it is important that the cut is clean and that the pipe is not crushed into an oval shape during cutting. Follow all manufacturer safety guidelines for your cutting tool.
Caulk Gun		Used to cleanly apply silicone sealant to ductwork.
Large Rubber Bands		Used to hold together snap lock piping during assembly. Ideal when assembly is being done by a single person.
Flat head screwdriver		Can be used to pry apart stuck ductwork fittings, or widen the seal on snap lock fittings to aid in installation.
Level / Plumb Bob		Most duct runs should be level and all vertical runs should be plumb.
Safety Equipment		Work Gloves: sheet metal can be sharp and burrs are possible. Eye & Ear Protection: for use whenever cutting pipe. Safety Helmet: to avoid injury from falling parts or tools.



**SHEET METAL FITTINGS CAN HAVE SHARP EDGES! FOR SAFETY, ALWAYS WEAR WORK GLOVES AND GOGGLES WHEN HANDLING YOUR DUCTWORK!**

**1**

Check for any damage

- a. Please note any tears or irregularities in shipping packaging [FIG. 1a] [FIG. 1b], however slight, on the shipping delivery receipt. They could be an indication of extensive concealed damage. If the product is received damaged, and you sign for it free and clear, then you have no recourse with the freight company. The shipping company will not take responsibility if the damage is not noted on the delivery receipt.
- b. Concealed Damage [FIG. 1c] [FIG. 1d]: If you sign for the shipment free and clear and then later notice damage, please contact us immediately. We have 3 days from the date of delivery to file a concealed damage claim. The shipping company will typically accept responsibility for only 1/3 of the damage claim if it's signed for free and clear.
- c. In the event of shipping damage, call Oneida Air Systems Customer Service immediately at 1-866-387-8822 so we can expedite replacements. Please check all parts within 3 days from receiving order. Notify us immediately of any missing or incorrect parts. Oneida Air Systems does not accept any claims for damage or shortage after 3 days from date of delivery.



FIG. 1a



FIG. 1b



FIG. 1c



FIG. 1d

2

Oneida packs boxes with the goal of reducing shipping costs, not in the order the parts are needed. Do not simply tear into the boxes and begin removing parts. Locate the one box that contains your "Pick Ticket" [FIG. 2] before opening any boxes.

\*\*\*PICK TICKET\*\*\*  
 03-16-2021 08:18  
 ONEIDA AIR SYSTEMS  
 1001 WEST FAYETTE ST  
 SYRACUSE, NY 13204  
 PHONE: 315-476-5151  
 FAX : 315-476-5044

Ductwork

SHIP TO:

BILL TO:

US

=====

TERMS	CUSTOMER NUMBER	PO NUMBER	CUSTOMER PHONE
Credit Card PreAut			

=====

SHIPPING INSTRUCTIONS:

SHIP VIA SHIP DATE SALES REP: use card

Ground Shipment

QTY ORDERED	SHIP	UOM	ITEM NUMBER	DESCRIPTION	BACKORDERED
1		EA	DHF052500	FLEX HOSE 5" D PRECUT 25' LEN	
1		EA	DOR040000	RADIAL ARM SAW HOOD 10x2x4 USE W/DWS050403 FROM 5" DROP	
1		EA	DPT260460	PIPE 4" DIA X 60" LONG 26GA	
7		EA	DPT260560	PIPE 5" DIA X 60" LONG 26GA	
1		EA	DPT260624	PIPE 6" DIA X 24" LONG 26GA	
7		EA	DPT260660	PIPE 6" DIA X 60" LONG 26GA	
3		EA	DPT260724	PIPE 7" DIA X 24" LONG 26GA	
2		EA	DPT260760	PIPE 7" DIA X 60" LONG 26GA	

FIG. 2

3

When received check to make sure all components are received per your design [FIG. 3].

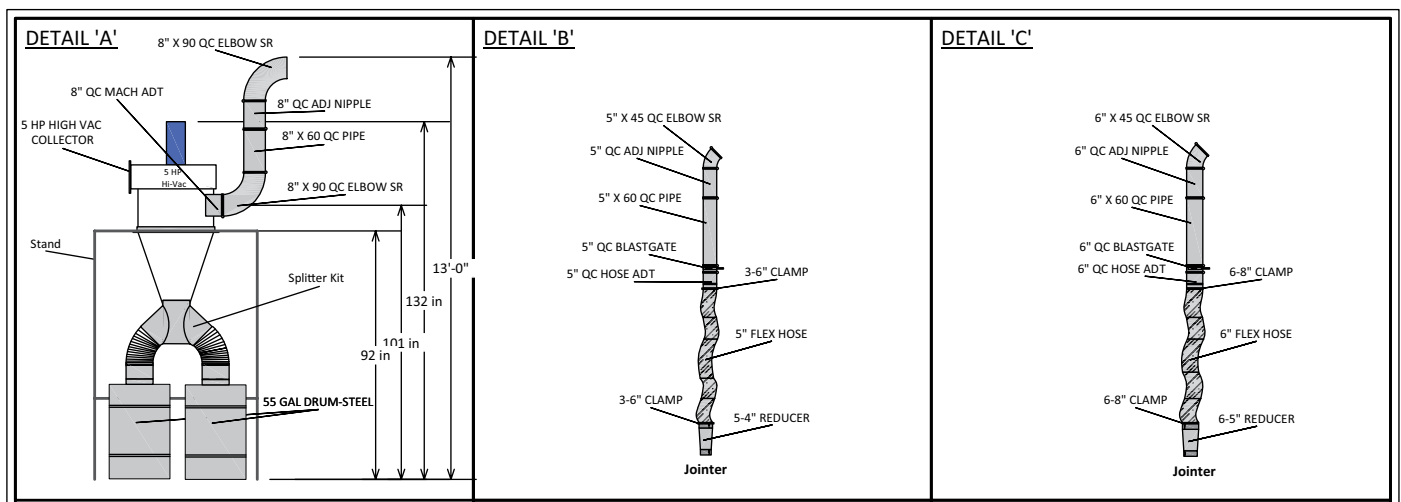
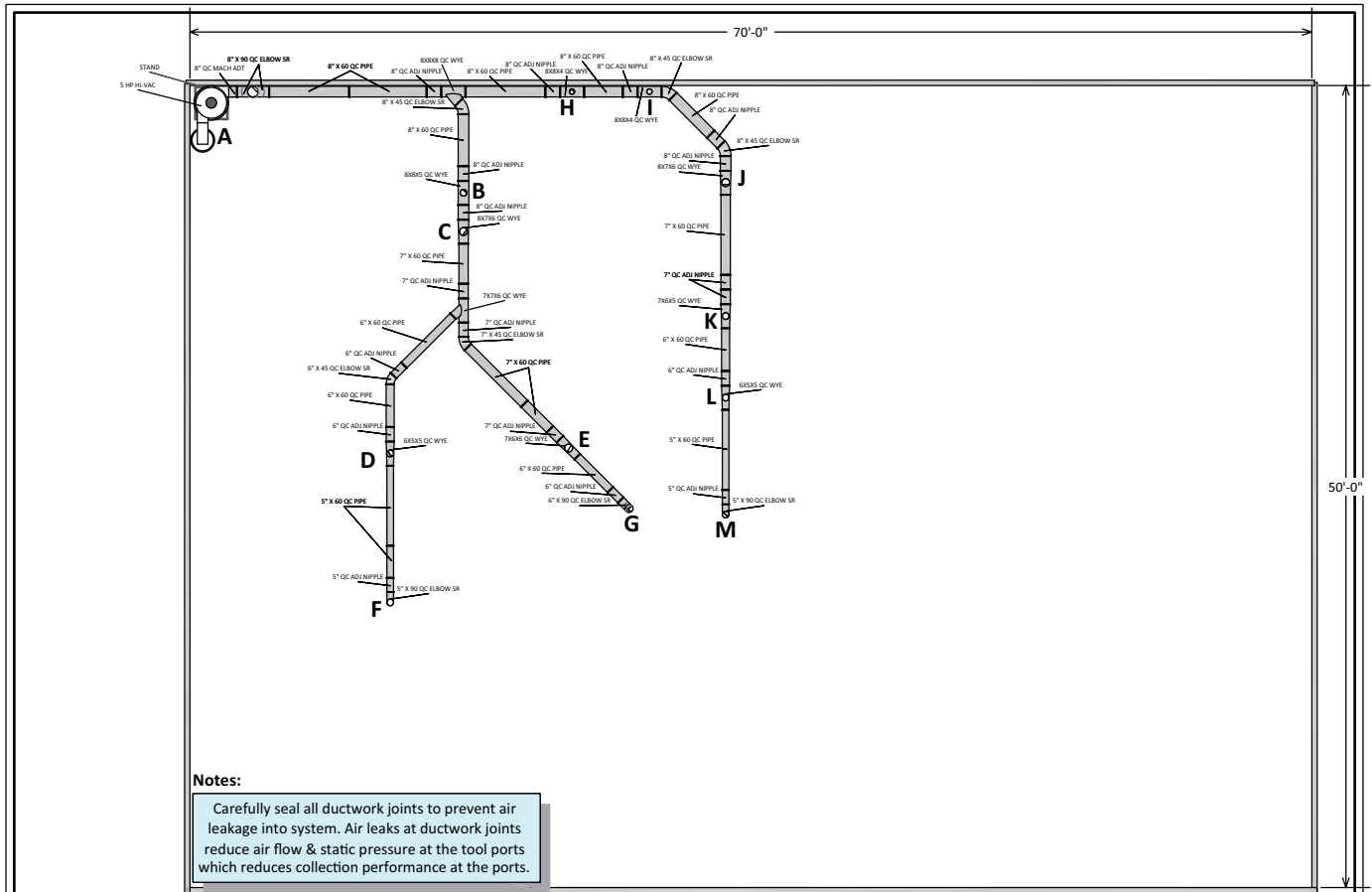


FIG. 3



4

Ensure that all of your ductwork components are of the correct size. In the event of incorrect pipe sizes, please provide images of each mistaken component. The images should show the label or marking on the product [FIG. 4a] and the actual size of the ductwork using a measuring tape in the image as evidence [FIG. 4b]. Contact Customer Service immediately at 1-866-387-8822 so we can expedite replacements.



FIG. 4a



FIG. 4b

5

Lay ductwork on the floor below where it will hang before connecting as you may have extra pipe. Remember that two parts that connect will often not be in the same box, so this step dramatically reduces the time it takes to complete the job once the installation begins. The main duct may be assembled on the ground in sections [FIG. 5].

*Note: This is the step where you could possibly find that you do not have all the parts necessary to complete the job. In that case, contact Oneida Air Systems Customer Service immediately so that we can get a head start on getting you the needed parts as well as help you verify that your layout matches the one planned by the system designer.*



FIG. 5

## What is the main line?

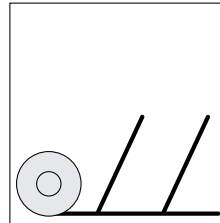
A main line (sometimes referred to as a trunk line) is round, galvanized steel ducting to convey airborne dust and debris directly to the dust collector. It is typically a straight line of the largest size to minimize air resistance and static pressure loss. Components of the main line are designed with airflow performance in mind, featuring gradual splits and large radius turns to minimize air resistance.

6

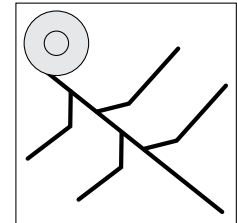
Centrally locate the dust collector [FIG. 6]:

- Position your system closest to the machines with the highest airflow requirement e.g. planers, jointers, drum sanders, etc.
- Always keep ductwork length to a minimum so you will have more air available at your machine.
- Bear in mind what obstructions the ductwork may run into when coming out from the collector.

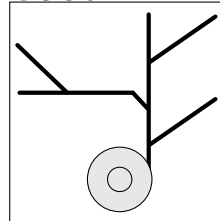
**Good**



**Good**



**Good**



**Poor**

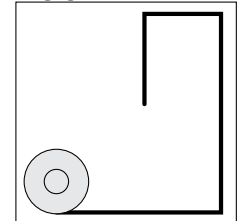


FIG. 6

7

Connect a smooth transition of ductwork to the collector's inlet:

- A straight segment at the start of your main line ensures maximum airflow [FIG. 7a].
- If turns are required, run 1 or 2 feet of straight pipe at the collector's inlet to allow a smoother, less turbulent flow of air into the cyclone. [FIG. 7b] Avoid turns at the inlet as this creates a "system effect" that will hurt airflow and separation efficiency.
- If necessary, adjust the height of the inlet to ensure a straight line; the motor can be positioned between ceiling joists leaving 1" of free space for the motor's ventilation. Extra length of flex hose may be required [FIG. 7c].

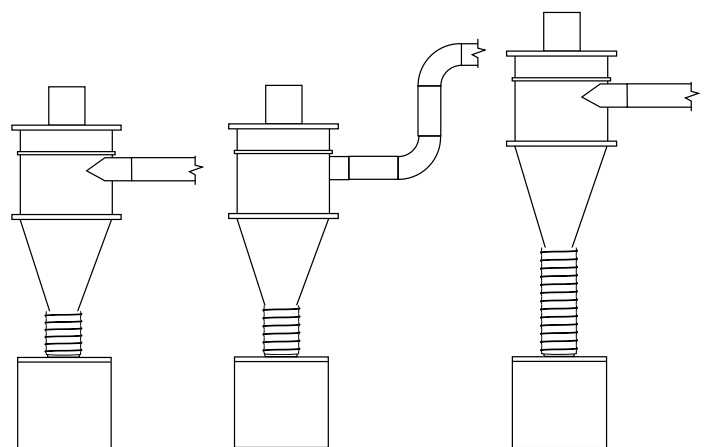


FIG. 7a

FIG. 7b

FIG. 7c

*Note: Instructions are recommended based off of airflow efficiency and may not always be right for every shop. Design a layout that works best for you and your work.*



8

Connect the Adapter (Machine Adapter for Quick Clamp) to the dust collector's inlet with Aluminum Foil Tape [FIG. 8].

*Note: For a more secure connection attach sheet metal screws through both the adapter and the dust collector's inlet.*

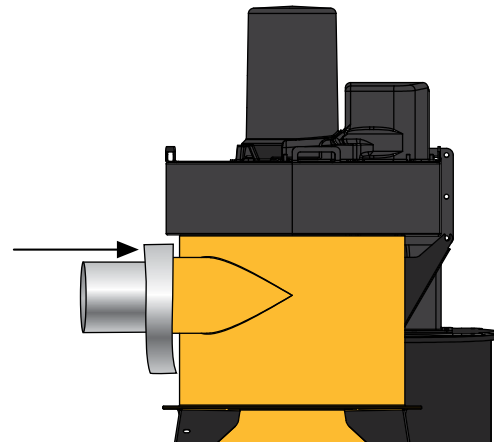


FIG. 8

9

Oneida offers Hanger Strap or the Gripple Hang-Fast System, but it is your responsibility to ensure the safety of all ducting.

- Check with local agencies to ensure that your ducting is supported in a way that meets local codes. When determining the weight your hangers must support, always allow for the ducting being 100 percent clogged with whatever material is being conveyed [FIG. 9a].
- Use a stud finder to identify where you will install the ductwork hangers in your shop. It must mount to a reinforced ceiling or wall (studs, joists, etc.) [FIG. 9b].
- Mark a line parallel to the dust collector's inlet along the reinforced positions from Step 9b [FIG. 9c].
- Plan to install ductwork hangers to support the pipe every 3-4 feet [FIG. 9d].
- For the Gripple Hang-Fast system [FIG. 9e] refer to the instruction sheet included. For the Hanger Strap, proceed to Step 10.

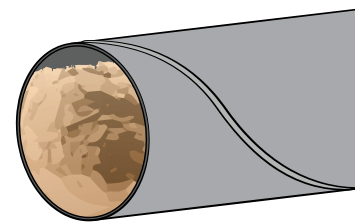


FIG. 9a

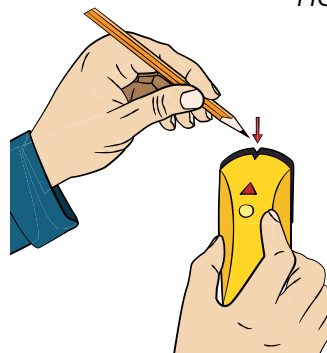


FIG. 9b

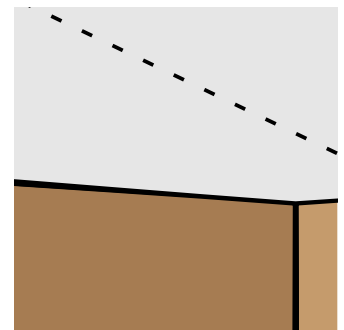


FIG. 9c

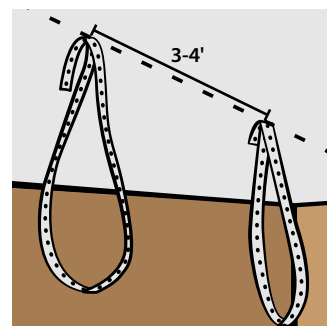


FIG. 9d



FIG. 9e

10

There are two methods for installing the Hanger Strap.

### Method A:

- Use sheet metal snips to cut a length of Hanger Strap equal to 2x the circumference of the pipe you will be hanging.
- Repeat for each pipe segment to be hung.
- Secure the Hanger Strap strapping to the wall/ceiling at each end of the strap creating open half-loops [FIG. 10a].
- Feed the ductwork through each loop, connecting components together as you go [FIG. 10b] [FIG. 10c].
- If ductwork must be closer to the surface, use increasingly inner holes on the Hanger Strap until sufficiently tight and then trim off excess strap.

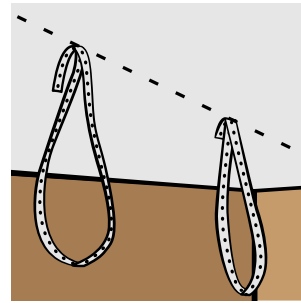


FIG. 10a

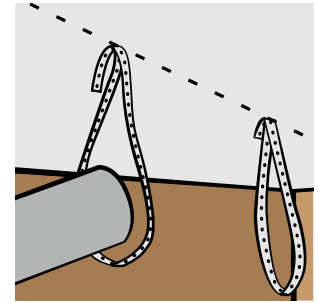


FIG. 10b

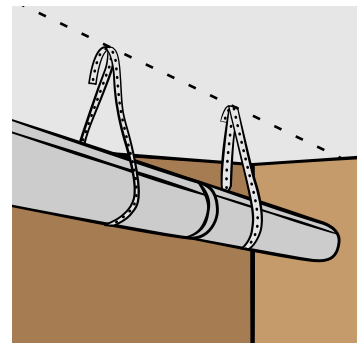


FIG. 10c

### Method B:

- Secure one end of the hanger strap to your wall/ceiling.
- Raise ductwork into place and grab the open end of the Hanger Strap, pulling it against the pipe and securing it to the wall/ceiling [FIG. 10d].
- Cut the hanger strap and repeat.

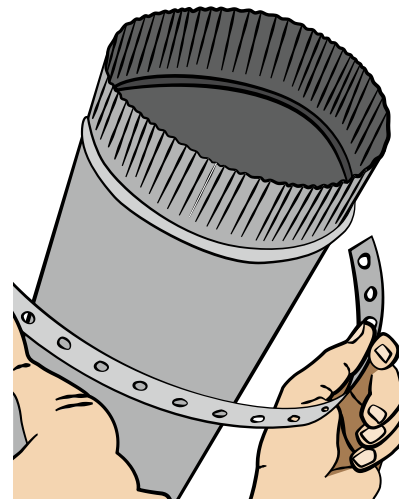


FIG. 10d

11

The main trunk line [FIG. 11] can be composed of either:

- Snap Lock Ductwork
- Quick-Clamp Ductwork
- Spiral Pipe Ductwork. Spiral Pipe will need to be connected using Spiral Pipe Adapters or by welding Angle Rings Flanges to both ends and bolting them together.

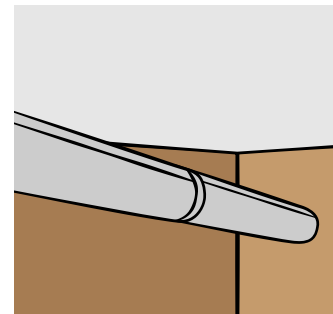


FIG. 11

12

If using Quick-Clamp Ductwork, proceed to Step 22. Depending on your installation you may need to cut your snap-lock to fit in your layout:

- Measure the distance you want to span and mark all around the pipe.
- Cut out along the line that you drew and peel the sheet metal back as you cut. For ease of removal either cut off sections as you continue or rotate the duct around to start on the other side [FIG. 12a]
- Once cut, file and/or deburr the sharp edges to ensure that there are no rough parts that could grab or snag airborne dust and debris [FIG. 12b].

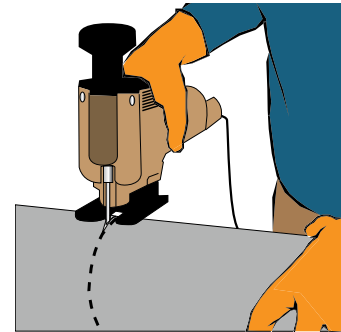


FIG. 12a



FIG. 12b

13

Oneida will pre-crimp any ordered ductwork at your request. Crimping ductwork will reduce the overall diameter by roughly 1/8". To crimp ductwork on site:

- Ensure that the side of the hand crimper with the most blades is on the outside.
- Press the crimpers firmly down and repeat around the circumference of the pipe [FIG. 13].

*Note: If you crimped all the way around, don't worry about crimping the seam. Hand crimping is not suitable for gauges thicker than 24 gauge and we recommend using an adapter instead.*



FIG. 13

14

To ensure proper airflow performance, crimped ends of the ductwork must be pointed in the direction of the airflow (i.e. towards the dust collector) [FIG. 14].

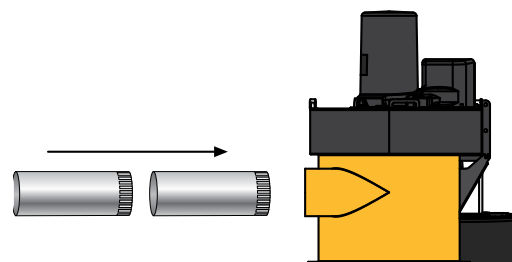


FIG. 14

15

To assemble Snap Lock:

- a. Use a flathead screwdriver to open up the lip of the seam [FIG. 15a].
- b. Start at the crimped end and work the seam together like a zipper. Hold together with one hand (or with large rubber bands) and move down the pipe as the seam snaps together [FIG. 15b]. When you get halfway, it should snap fully closed [FIG. 15c].
- c. Seams that runs the length of the straight snap lock pipe do not need sealing.

*Note: If you make a mistake and have to dismantle a pipe, gently drop flat on the ground, seam side up. It should pop right apart.*

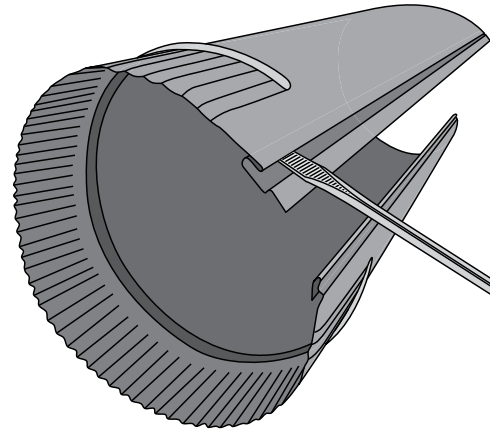


FIG. 15a

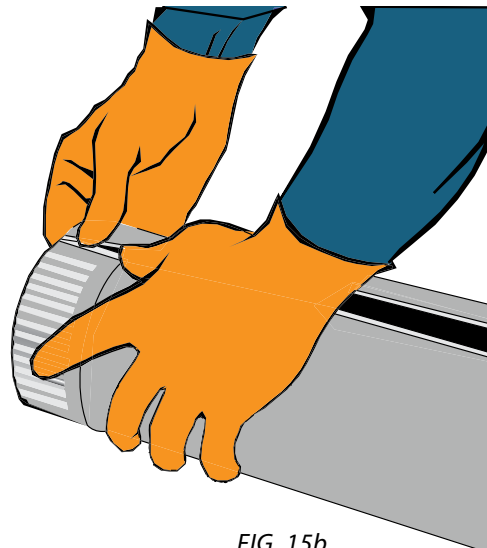


FIG. 15b

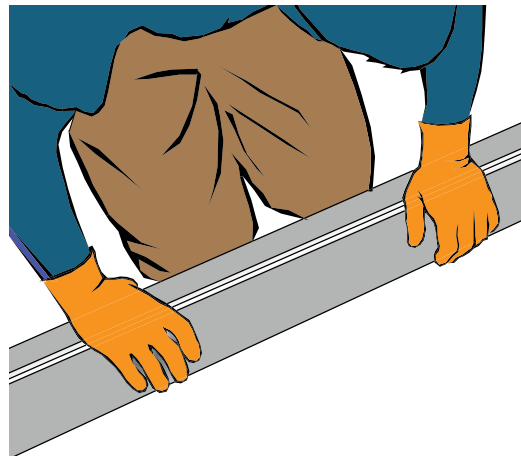


FIG. 15c

16

After joining ductwork together, secure using either Pop Rivets or #8 x 1/2" Sheet Metal Screws. Secure in place at a minimum of four locations [FIG. 16].

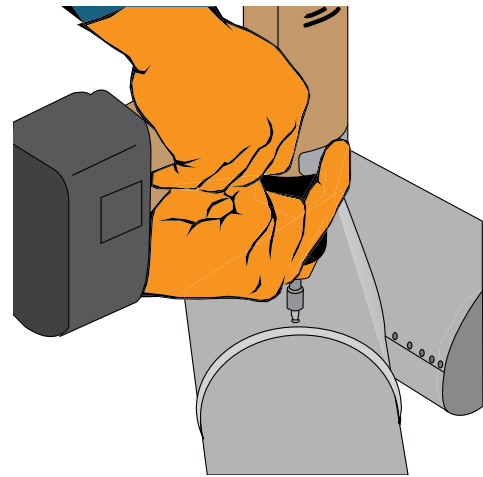


FIG. 16



**ALUMINUM FOIL TAPE HAS VERY SHARP EDGES! FOR SAFETY, ALWAYS WEAR WORK GLOVES!**

17

Fortify and seal all connections, joints, and seams on your ductwork. All joints on adjustable elbows should be sealed after installation.

- Seal with adhesive-backed aluminum tape, cutting strips long enough to circle the joint at least twice [FIG. 17a].
- As an alternative permanent sealing method, silicone sealant is recommended on the outside of connections so ductwork can be disassembled if needed [FIG. 17b].

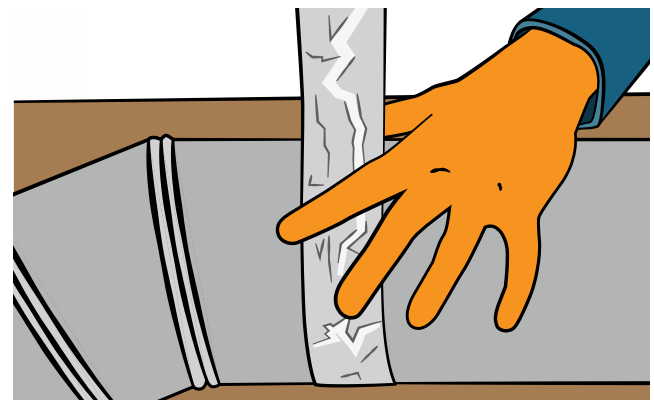


FIG. 17a

*Note: Even small cracks create significant air loss. Well sealed ductwork will ensure you have maximum air available at your woodworking machine where it is needed.*

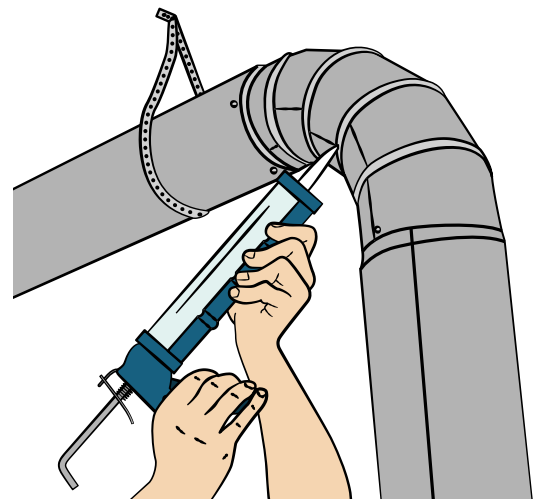


FIG. 17b

**18**

To ensure proper airflow performance, Wye Joints must be oriented so that the branch segment is pointing off and away from the direction of airflow i.e. do not point the branch "jackknifing" back towards the dust collector [FIG. 18].

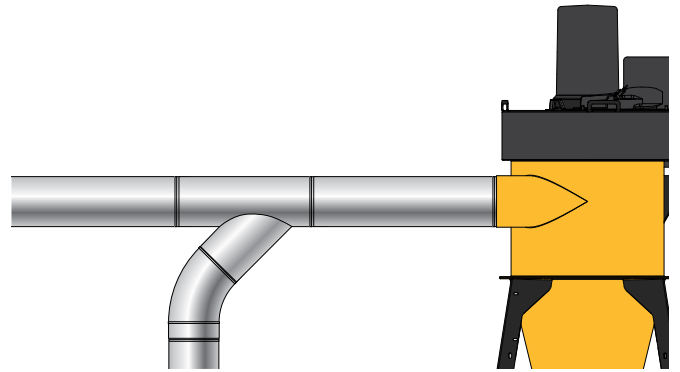


FIG. 18

**19**

To secure the Saddle Tap Wye to your ductwork:

- Lay the Saddle Tap Wye in the correct orientation (see Step 18) and trace the egg shape onto the pipe from inside the branch [FIG. 19a].
- Drill a pilot hole using a stepped drill bit to create a starting place for cutting [FIG. 19b].
- Cut out the shape that you drew and peel the sheet metal back as you cut [FIG. 19c].
- Once cut, file and/or deburr the sharp edges to ensure that there are no rough parts that could grab or snag airborne dust or debris.
- Lay the Saddle Tap Wye onto the pipe and align the branch with the hole that you cut. If it's not aligned the airflow efficiency will significantly decrease at the branch [FIG. 19d].
- Secure the Saddle Tap Wye to the pipe with self-tapping screws or pop rivets, starting with the end at the bottom of the egg shaped hole. Secure in place at a minimum of four locations [FIG. 19e].
- Use silicone or adhesive-backed aluminum tape to create an airtight seal.

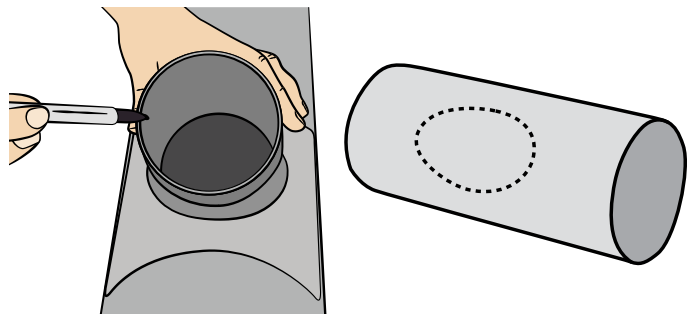


FIG. 19a

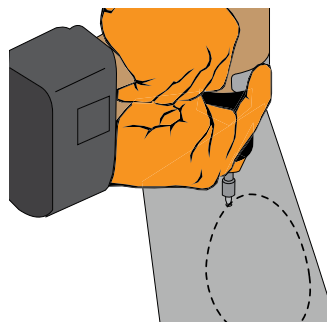


FIG. 19b

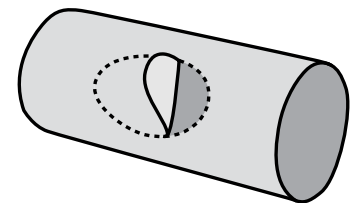


FIG. 19c

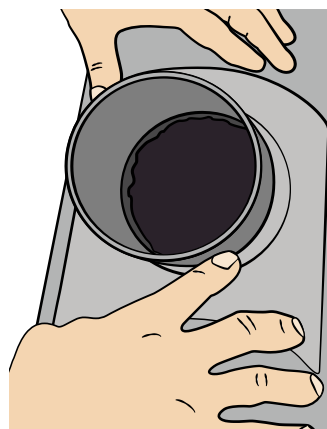


FIG. 19d

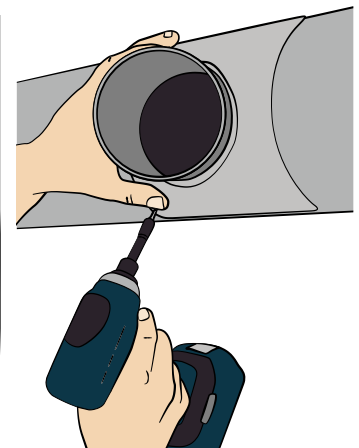


FIG. 19e

20

To secure the Clean Out onto your ductwork:

- Lay it on your pipe, open the Clean Out, and trace the inner oval shape onto your pipe [FIG. 20a].
- Drill a pilot hole using a stepped drill bit to create a starting place for cutting. Cut out the shape that you drew [FIG. 20b] and peel the sheet metal back as you cut [FIG. 20c].
- Once cut, file and/or deburr the sharp edges to ensure that there are no rough parts that could grab / snag airborne debris.
- Lay the Clean Out back onto the pipe and align with the hole you cut [FIG. 20d].
- Secure in place with self-tapping screws or pop rivets.
- Use silicone to create an airtight seal.

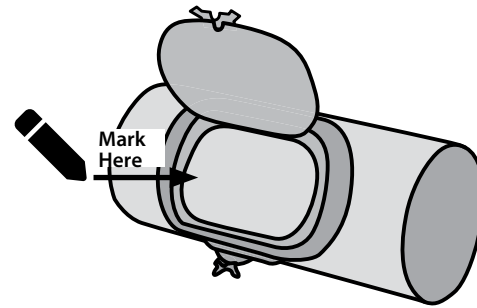


FIG. 20a

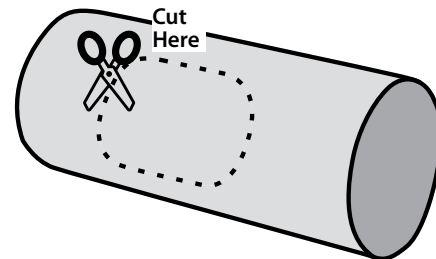


FIG. 20b

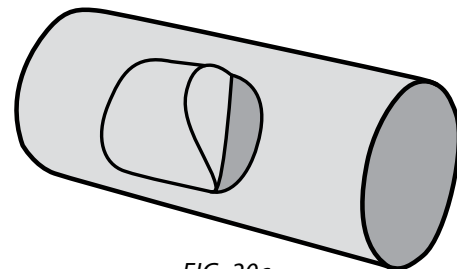


FIG. 20c

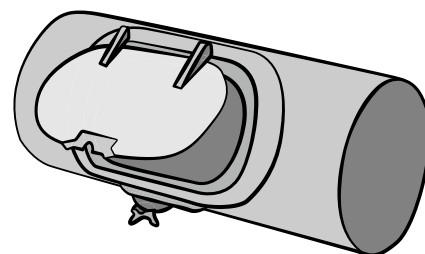


FIG. 20d

21

Seal off the Main Line using an End Cap.

- Push End Cap firmly into open pipe end [FIG. 21].
- Secure in place using Foil Tape.

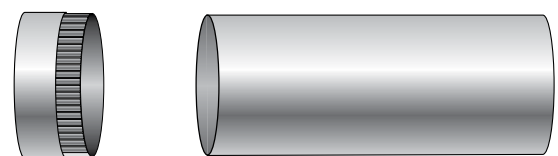


FIG. 21

22

Wrap a clamp around the rolled ends of two connecting pieces and snap the clamp closed. When clamped together, the pipes and fittings form an air-tight seal.

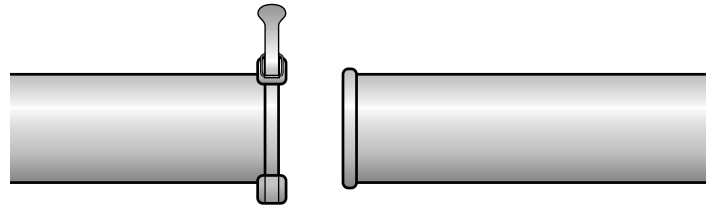


FIG. 22

23

The Quick-Fit clamps are designed to provide a tight seal, which means that they also require some pressure to close. By pre-stretching the clamp, you can make it much easier to close when you connect two pieces together [FIG. 23].

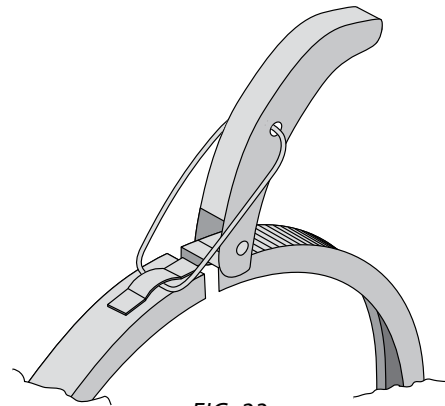


FIG. 23



**ON VERY RARE OCCASIONS, UNPINNED CLAMPS CAN SPRING OPEN UNEXPECTEDLY WHICH CAN CAUSE THE PIPE TO DROP. ADDITIONALLY, THE HANDLES ON UNPINNED CLAMPS HAVE BEEN KNOWN TO CAUSE INJURY WHEN THEY SPRING OPEN.**

24

After closing each clamp, install one of the enclosed cotter pins into the hole as shown in [FIG 24]. This ensures that the clamp cannot come open unexpectedly.

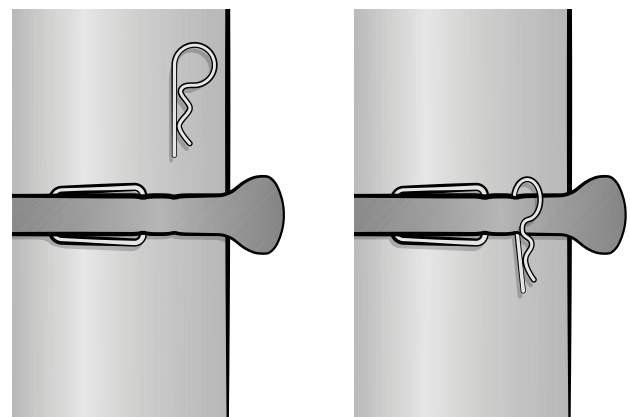


FIG. 24





**TO ENSURE A STRONG, SAFE AND STABLE SYSTEM, THERE MUST ALWAYS BE AT LEAST FOUR INCHES OF DUCT INSERTED INTO THE QUICK-FIT SLEEVE.**

**25**

During installation, there will be times when you'll need less than a full 5' length of pipe to accommodate your design. In those cases, you'll need to cut the pipe to shorten it and then connect it to an adjustable sleeve to ensure an airtight seal. Adjustable sleeves also allow up to 11" of movement, which is useful for making small adjustments to connect to tools or ducting drops.

To install Adjustable Sleeve:

<https://youtu.be/HbmJLf9t2v8>

- Measure how long your shortened pipe section needs to be [FIG. 25a].
- Mark the pipe approximately 4" shorter than the measurement from Step 25a. [FIG. 25b]. Use the Sleeve's provided O-Ring to mark the cut. [FIG. 25c].
- Move the O-Ring away from the marked line and cut the pipe (NOT the Sleeve). Make sure the cut is free of burrs and that it maintains its round shape [FIG. 25d].
- Slip the cut end of the pipe into the Sleeve [FIG. 25e]. Be sure that the 11" Sleeve is downstream of the cut piece.
- Slide the O-Ring until it is seated against the rolled edge of the sleeve. The O-Ring will form a seal and provide a rolled surface for the Clamp to grab onto [FIG. 25f].
- Use a Clamp to connect the rolled edge of the Sleeve and the O-Ring together [FIG. 25g]. Once in place, you can re-adjust the length of the assembly by releasing the clamp and changing the length of the pipe that is inserted into the Adjustable Sleeve.

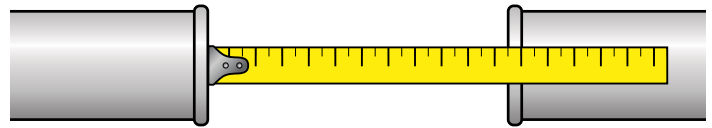


FIG. 25a

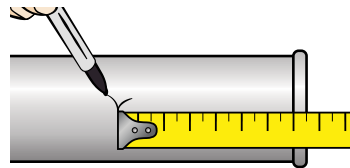


FIG. 25b

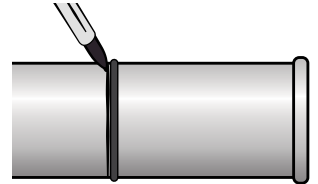


FIG. 25c

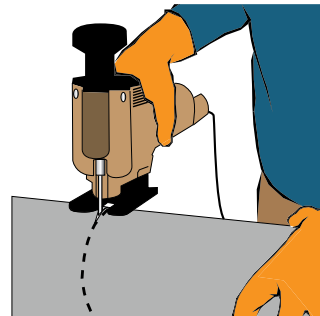


FIG. 25d

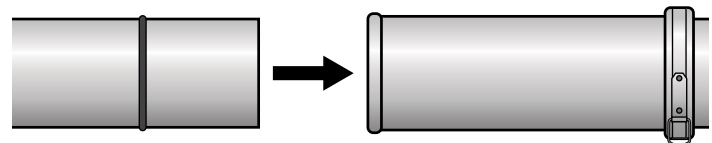


FIG. 25e

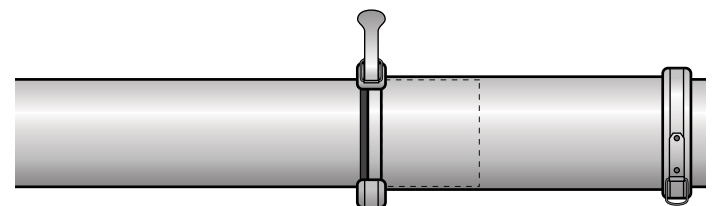


FIG. 25f

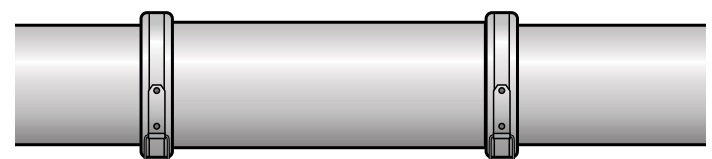


FIG. 25g

## What are drops?

Sometimes also referred to as branches they are called as such because they quite literally branch or drop off of the main line and connect your dust producing tools to the main line of the dust collector. Branches feature blast gates to close off the connection to tools that are not being used.

26

Elbows are used to gradually arc down from your main line to your tools. To change the angle of your Adjustable Elbow:

<https://youtu.be/cYO47IqF1zI>

- Draw a line down the outside center line of the elbow [FIG 26a].
- Loosen the adjustable elbows by gently tapping the ends on a flat surface. This allows the seams and the sections to rotate easier [FIG 26b].
- Move one elbow ring at a time, starting with the crimped end [FIG 26c].
- Adjusting from 90 degree to 45 degrees. Turn each section so that the line is 90 degrees or 1/4 turn from its original position in alternating directions [FIG 26d].
- Depending on the angle you need, slightly adjust the sections. To get a 30-degree sweep, turn each section 120 degrees instead of 90 degrees.

*Note: Do not make 90-degree turns if you don't have to. A 90-degree elbow creates the same resistance as adding 5 ft. of pipe.*

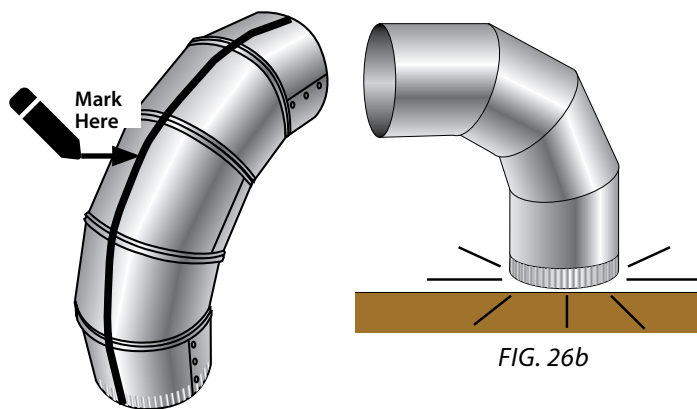


FIG. 26a

FIG. 26b

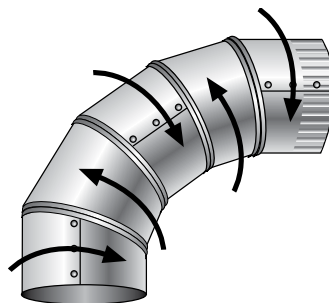


FIG. 26c

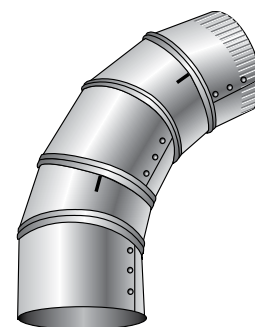


FIG. 26d

27

Fixed Elbows do not require additional air tight sealant, but will need to be connected using Spiral Pipe Adapters or by welding Angle Rings Flanges [FIG. 27] to both ends and bolting them together.

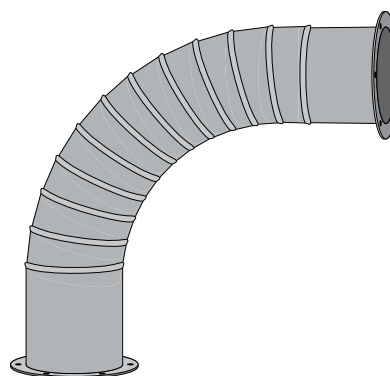


FIG. 27

28

The number of branch runs required will vary by each installation. Due to the flex hoses tugging on them, duct drops down to machines need to be supported to prevent the sealed seams from breaking.

- a. Single Tool Drops: Large diameter drop to main dedicated tool with a single dust port [FIG 28a].
- b. Double Tool Drops: Large diameter drops to tools that are side by side, each with a single dust port, or tools with multiple dust ports [FIG 28b].
- c. Floor Sweep Drops: Convenient end terminal for sweeping shop waste into cyclonic dust collector [FIG 28c].
- d. Hood Drops: Specialized shaped dust hood for collecting from tools without dust ports such as a lathe or a drill press or supplemental collection for larger tools [FIG 28d].



FIG. 28a

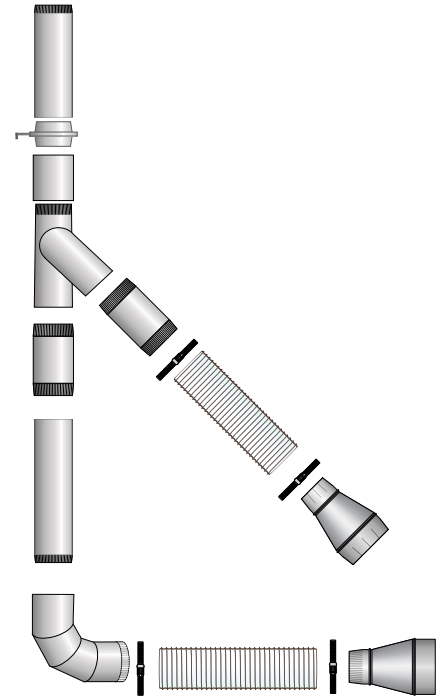


FIG. 28b

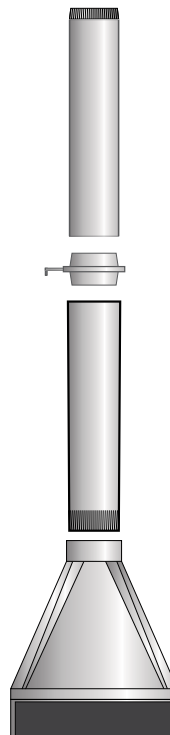


FIG. 28c

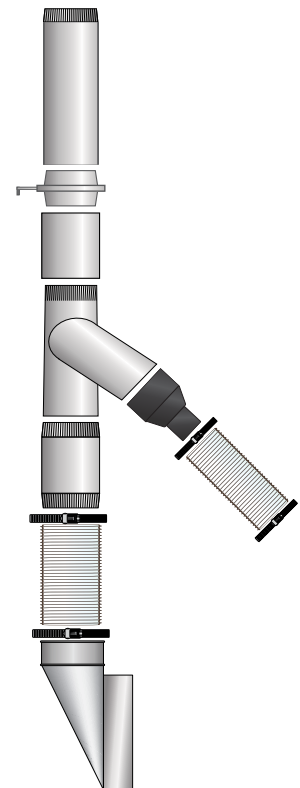


FIG. 28d

29

Blast Gates are used to open and close specific lines in your system, giving more air flow to the specific tool you are working with.

- Blast gates must be used at every drop to control air flow.
- When thinking about your drops consider where you want your Blast Gate to land as you will need to open and close them regularly. For your convenience, install it between eye line and waist level.
- Secure your ductwork pipe and Blast Gate Adapter to the Blast Gate using either Pop Rivets or #8 x 1/2" Sheet Metal Screws. Secure in place at a minimum of four locations. Seal with silicone [FIG 29a].
- Blast Gates can be installed facing either direction so that the handle on the plate is in the most convenient position [FIG 29b].
- Blast gates are designed to seal in one direction. When tightening the locking screw-pin, it should be tightened in the direction of the airflow. The plate will be pushed tighter towards the pipe and seals everything airtight [FIG 29c].

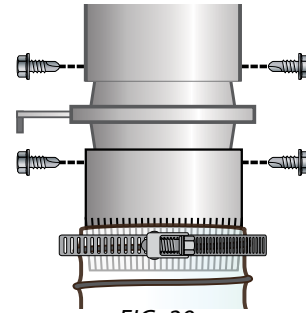


FIG. 29a

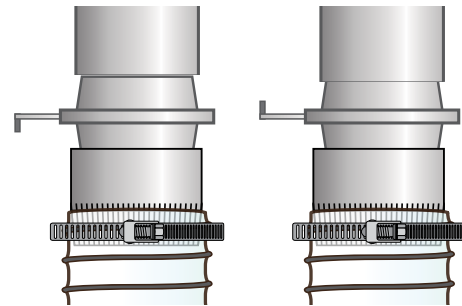


FIG. 29b

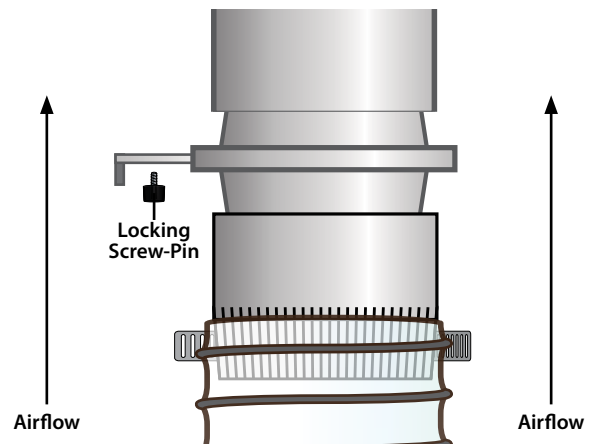


FIG. 29c

30

Floor sweeps are only compatible with cyclone dust collectors. Systems without a cyclone may be damaged by debris that is swept up and hits the impeller and can potentially generate a spark in the collection bin.

If you have an open Floor Sweep, you will need to install a Blast Gate above the Sweep to close it off when not in use [FIG. 30].

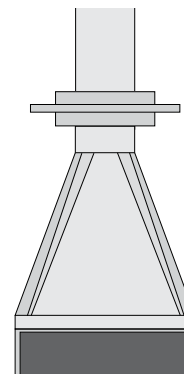


FIG. 30

31

Flex hose is used for the final run between the pipe and tool, but since its shape and texture creates more air resistance than metal pipe, you'll want to use a little hose as possible.

- Manage your hose lengths so that each tool is connected to the drop but has enough room to move a few feet without pulling the hose off [FIG 31a].
- Cut the Flex Hose to size using a razor knife and diagonal cutters to cut through the clear lining and reinforcing wire [FIG 31b].
- Attach the Hose to your ductwork and secure it in place with the Hose Clamp [FIG 31c].
- Repeat the process to attach the opposite end of the Hose onto your tool's port [FIG 31d].

*Note: The hose is a snug fit. Pull ends up little by little to work the hose. Pliers can be used to grab the reinforcing wire and aid in pulling the hose over the port.*

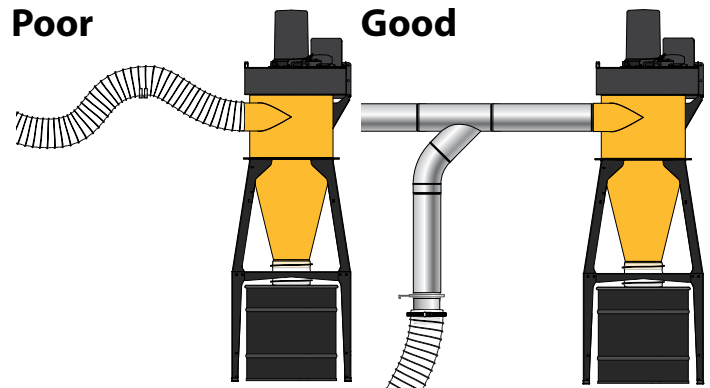


FIG. 31a

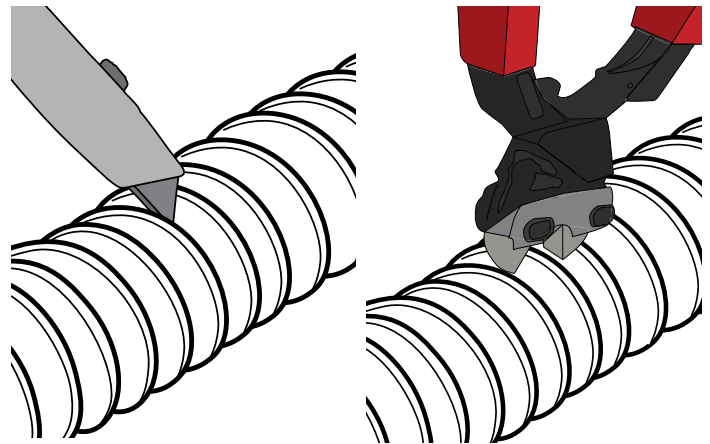


FIG. 31b

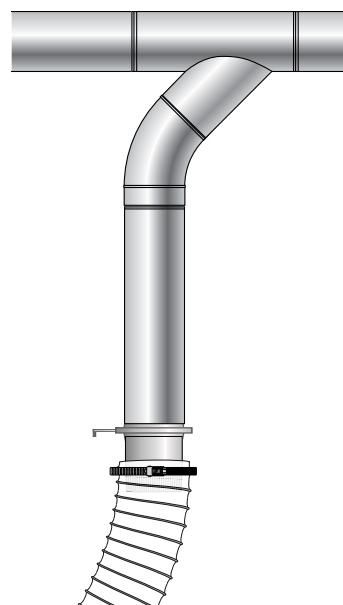


FIG. 31c

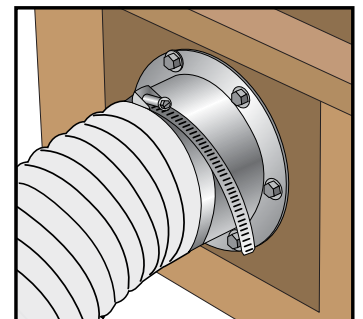


FIG. 31d

32

If your machines are not equipped with compatible dust ports, Take-Off Collars and Hoods [FIG. 32] can be used to retrofit your tool for supplemental dust collection. Common compatibility problems include:

- a. No Dust Ports: Some woodworking tools do not have dust port connections at all.
- b. Undersized Dust Ports: Port sizes smaller than 4" will typically not allow for sufficient airflow from the tool using a standard low pressure dust collector.
- c. Poor Dust Port Placement: Airflow should begin as close to the source of dust generation as possible (i.e. near the blade, bit, sanding belt, etc.).

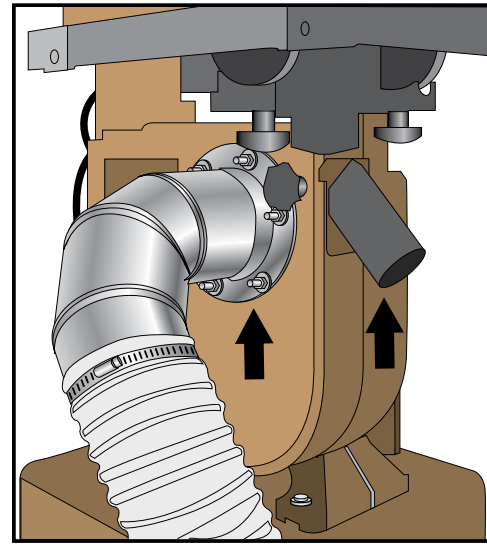


FIG. 32

33

A Take-Off Collar can be used to create a new or additional dust collection port. It features a flange end with mounting holes and a crimped end for attaching hose and ductwork. Common examples include cabinet saws, band saws, and other old tools. To install:

- a. Locate within the tool where the dust is typically deposited without dust collection.
- b. Find a flat surface near that dust where you can cut a hole matching the diameter of your ductwork drop, plus room for the diameter of the Collar's flange [FIG. 33a].
- c. Use a power drill to cut a pilot hole and then a reciprocating saw to finish the cut; Deburr the hole to remove sharp edges that could catch airborne dust.
- d. Install the Take-Off Collar onto the hole using the mounting holes around the flange [FIG. 33b].

*Note: Airflow can be improved by sealing off airways within the tool using foam, tape, wood blocks, etc. to funnel dust laden air to the Collar.*

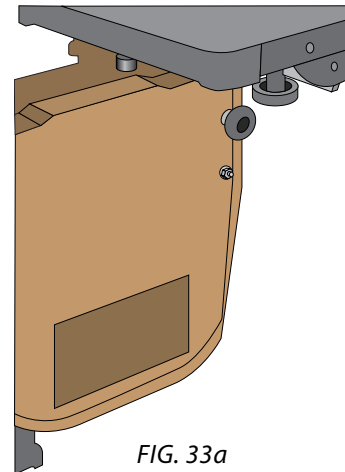


FIG. 33a

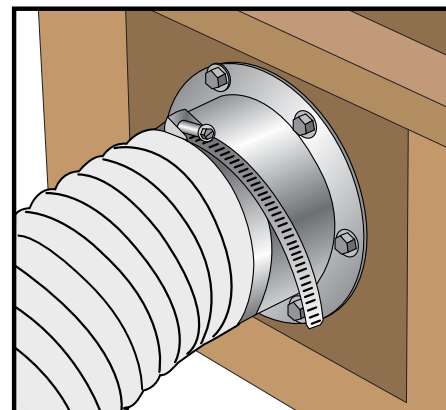


FIG. 33b

34

Hoods are used to collect dust from a variety of machines and should always be positioned as close to the source of dust generation as possible. The hood can then be fixed in place using metal wire, tape, and/or hanger strap. Which hood type is used depends on the tool in question:

- a. Rectangular Hoods are well suited for collecting dust from a wide, narrow area such as jointers, planers, belt sanders, drum sanders, rip saws, etc. [FIG. 34a].
- b. Square Hoods provide the most surface area for dust collection and are ideal for tools where dust is widely dispersed such as lathes, router tables, etc. [FIG. 34b]
- c. Round Hoods provide the highest airflow and lowest static pressure drop compared to other hood shapes, but they sacrifice surface area so they are best suited for tools with a very small dust area such as drill presses, CNC machines, etc. [FIG. 34c]
- d. Boot Hoods aka Radial Saw Hoods are best suited for use with radial/miter saws, serving as a supplemental capture zone in addition to any built in ports. [FIG. 34d]

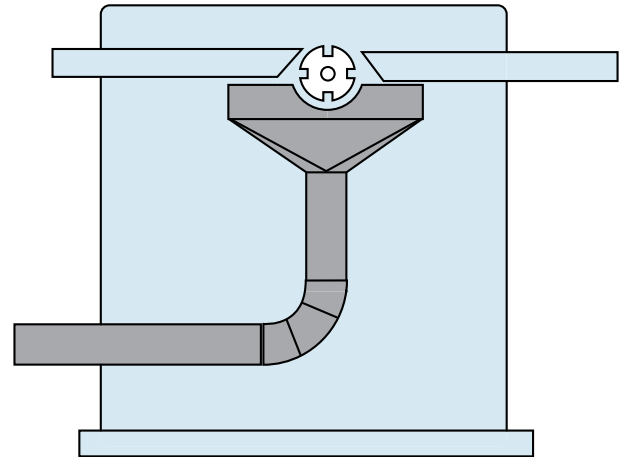


FIG. 34a

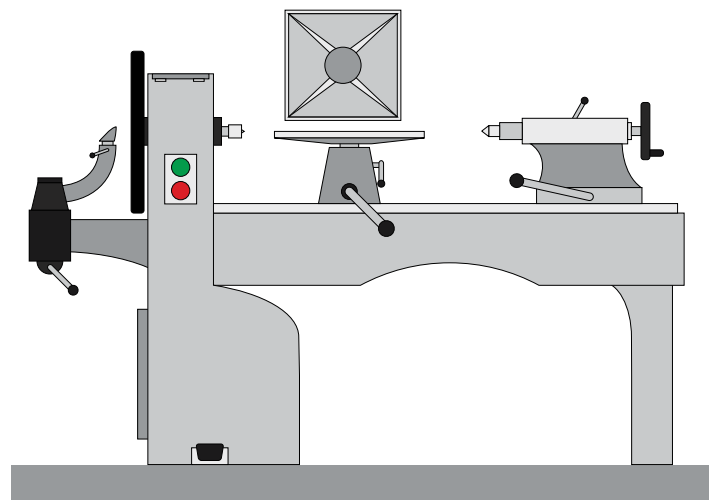


FIG. 34b

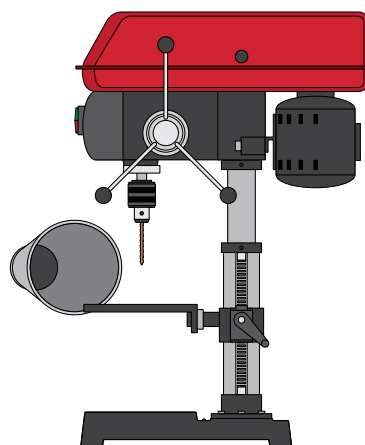


FIG. 34c

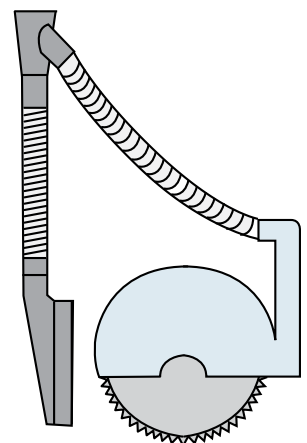


FIG. 34d

# FAQ

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## Can I paint my ductwork?

Galvanized steel is weather resistant and will not rust even if the protective zinc coating is nicked or scratched. If you wish to paint your pipe, you must do the following:

1. Wash down all parts with an industrial de-greaser.
2. Apply a light coat of epoxy primer.
3. Then apply a coat of an acrylic water base paint.

## What's the best way to apply foil tape on ductwork?

We've heard from many customers who have had great success using a simple Wallpaper Roller or a Wallpaper Squeegee to smooth out their foil tape, giving a very smooth, clean look on your ducting. The roller helps smooth out air bubbles and crinkled marks while making it easier to get to those hard to reach places on hanging ductwork.

We do not carry this product but it can be found easily at your local hardware store or home renovation outlet.

## What will happen if I turn the collector on with all of the blast gates closed? Will it burn out the motor? Why or why not?

It does not hurt the collector motor when all of the blast gates are closed. Closing the blast gates shuts off the air flow to the fan. The fan is doing "no work" so amperage draw drops. You can only overload the motor by not having enough resistance. For example, turning the collector on without the dust bin in place or running the fan without connecting it to a cyclone separator or ductwork.

## Why can't I use HVAC ducting in my ductwork layout?

HVAC ducting is roughly 50% thinner than dust collection ductwork and thus is much more prone to collapsing under negative pressure. Additionally, dust collection ductwork is manufactured with higher tolerances and more air tight seams and welding to preserve airflow performance.

## What do the different gauges of ducting mean and why would I choose one over the other?

Large industries that generate huge quantities of solid material generally need 22-18 gauge for industrial survivability and safety. Small custom shops do well with 26-22 gauge pipe and fittings. Thinner gauges (such as HVAC pipe) can collapse under fan pressure or dent too easily.

1. 24 gauge ductwork is required for 5 horse power and larger systems to prevent collapsing from high negative pressures and from the weight of long ducting runs.
2. Higher gauges such as 18 gauge Nordfab Quick-Clamp components are required for high pressure systems such as the Supercell.
3. 30 gauge or higher is typically used in HVAC ducting; see answer to HVAC ducting above The gauge of metal varies tremendously with the application.



# F.A.Q. (Continued)

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## **Installers for your system and ductwork?**

Unfortunately, we don't have any recommended installers for our systems. If needed, our customers typically reach out to a local zHVAC company to aid in installing both the ductwork and the system for their shop.

## **Do you do ductwork designs?**

Our ductwork design service is a special value available only to customers who have purchased one of our dust collectors. Service fees are 100% refundable when you purchase both your system and your ductwork from Oneida Air Systems.

Please Note: Due to technical limitations, we cannot offer our ductwork design service for shops using 3rd party dust collectors (e.g. Grizzly, Laguna, Clear Vue, etc.). Unlike Oneida Air Systems, competitive manufacturers do not provide real-world airflow performance data. Without that information, we cannot reliably size a ducting system for those dust collectors.

## **What does your Ductwork Design Service include?**

Our design service will maximize the performance of your dust collector before it is shipped from our warehouse and installed in your shop; we'll provide you with:

1. An easy-to-read, itemized list of components
2. Detailed ductwork assembly instructions
3. Explanation of pipe sizing and recommended fittings
4. Airflow determinations for each specific machine in your shop
5. Revision and adjustment as needed
6. Installation advice and support from a qualified technician.

## **Do you make custom ductwork components?**

No, Oneida Air Systems does not manufacture custom parts to order. Our entire product offering is showcased on our online store and in our downloadable catalog. If a part is not shown in these places, we do not currently offer it.

## **What ductwork components work together?**

While there are exceptions, dust collection ducting is typically designed to work with other components of the same type (e.g. Standard, Spiral, Quick-Clamp); you will need adapters to combine different types together.

For example, if you want to connect your standard sheet metal ducting to newer, clamp together components, you'll need to install Machine Adapters into your standard duct. These adapters will convert your raw, standard duct so they can accept Quick-Clamp components.

# F.A.Q. (Continued)

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## Do I need to ground my ductwork?

If you use metal ductwork and fittings along with flexible hose that has a wire embedded in it there is no need to further ground the pipe. Because it is metal, it is self-grounding back to the dust collector and the machines in your shop. However, the metal wire within the hose must be exposed and made to contact the metal ductwork it is attached to. This is one of the reasons why Oneida Air Systems recommends only using conductive metal or static dissipative ductwork.

## Metal ductwork over PVC?

Metal pipe is safer than PVC. Historically, plastic pipe has been “taboo” in the Woodworking industry. Panels and committees composed of scientists, engineers, and industry experts who work in insurance, human safety, woodworking, and equipment manufacturing consistently agree that plastic pipe should not be used for conveying wood waste.

Some of the reasoning is as follows:

1. Static sparks arcing internally or externally can ignite combustible mixtures inside or outside the pipe, not limited to wood dust mixtures.
2. Static sparks can jolt and startle personnel working on dangerous equipment.
3. The danger of duct fires. Plastic pipe itself is combustible. It cannot contain a fire starting in a duct.
4. Limited choices of diameter and fittings not designed for pneumatic conveying compromise efficiency and good design.

It's easy enough to check your dust bin or bags for smoldering material. However, sparks or embers can also ignite residual sap coatings or dust anywhere in your ductwork. Running the collector for a few minutes before shut down can help, but some material may remain in the duct. Smoldering materials inside the pipe are out of sight and inaccessible.

The above incidents do occur in the woodworking industry. Fire loss is much less likely in a small shop but the hazards are still present. Although generally more expensive, metal pipe is still a far better choice for woodworking applications.

## What material do you suggest for ductwork underneath a poured concrete floor for a small shop?

A lot of customers use PVC pipe, but we don't recommend using it. We would instead recommend using our spiral ductwork since it's pretty substantial. However, it has to be coated so that it will be rust proof.

# F.A.Q. (Continued)

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## **Can Spiral Pipe be crimped?**

No, not with common hand tools. Due to the pipe's heavy gauge and reinforced spiral beading, the pipe can only be crimped with a motorized press.

It is much simpler to use Oneida Air Systems' spiral pipe adapters to couple spiral pipe components together.

## **Should the inlet reducer for my dust collector be crimped or straight?**

The inlets on all of our dust collectors are sized to fit standard ductwork. If you need a reducer to connect to ductwork that's smaller than your collector's inlet, the end of the reducer that connects to the inlet will need to be crimped, so that it will fit inside the inlet.

## **Is your Quick-Clamp Duct compatible with Nordfab Quick-Fit Ducting?**

Yes! As long as the opening pipe diameters are the same, Quick-Clamp Duct components can be combined and used interchangeably with Nordfab® QF ducting and other common clamp-together ductwork products.

## **What tools will I need to install Quick-Clamp Duct components?**

Besides the standard tape measure, ladders, and any tools that may be required for attaching hangers, all you'll need to install Quick-Clamp Duct is a saw (preferably a reciprocating/saws-all) to cut the duct for fitting to various lengths. But these are tools required by any ductwork installation. With Oneida Air Systems' Quick-Clamp Duct there's no riveting, no screws, and no welding required.

## **What pressures will Quick-Clamp Duct withstand?**

Oneida Air Systems' Quick-Clamp Duct will withstand significant negative pressure. The duct is NOT a high positive pressure duct.

## **Is a Sleeve the same thing as an Adjustable Nipple? What is the Sleeve?**

Yes. It is the same exact part, but with a different name. It was updated to better reflect how the part works and what role it plays in the dust collection ductwork layout. The Sleeve is an 11" piece used when a 5' length of pipe has been cut smaller. You will need a Quick-Fit Sleeve when a pipe run is less than a 5' increment, and, for the most part, every time you use a branch or 90° elbow.

## **Do Quick-Clamp Clamps come with the Quick-Clamp Pipes?**

Clamps do not come with pipe. As a rule, you will need one clamp per component ordered.



*The* **Industry Leader in Dust Collection**

Thank you for your business!

Regardless of where you purchased your system, if you have any questions or issues with missing / damaged parts, please call Oneida Air Systems first to let us help resolve your problem. We fully stand behind the quality of our products and place the utmost value on customer satisfaction.

We want to do everything possible to make your purchase and experience with Oneida Air Systems a good one!

**Customer Service Dept.**

**1-866-387-8822 • [support@oneida-air.com](mailto:support@oneida-air.com)**

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