

Everything You Need to
Know About

CLAMP TOGETHER DUCT



DUCTWORK MADE EASY



Clamp Together Duct has become a go-to ductwork system for many industrial applications. It has been around for years and has proven to be one of the most versatile and reliable systems. But many are still learning about the benefits of this fast and easy ductwork system.

If you're reading this guide, you might be a Clamp Together Duct novice. Or you might be interested in expanding your knowledge of the system. Regardless of your background — we've got you covered.

From how it works to what applications it works best in, this guide gives you **EVERYTHING** you need to know about Clamp Together Duct (and some information you probably didn't want or need).





What is Clamp Together Duct?

Clamp Together Duct is an easy-to-install industrial ductwork system. There are three major components of the system that make it so versatile:

- A five-foot, laser-welded pipe with rolled-lip ends
- An 11-inch adjustable sleeve with rolled-lip ends
- An over-center, stainless steel clamp

The system is available in 3–24" diameters; light or heavier gauges (up to 10 gauge); and stainless steel, galvanized steel, and carbon steel. Since the pipe and all additional components — elbows, branches, reducers, transitions, gates, hoods, and specially-fabricated parts — are available with rolled-lip ends, you can install a complete system based on your specifications and application with ease and speed.

The pipe: Rolled-lip and laser-welded

Although welding duct pipes seems pretty standard, we decided that good wasn't good enough. Investing in a laser welder for seam welding duct and tubing improved a product that already functioned well and performed to expectations. Laser welding:

- Produces a rounder duct, so the adjustable sleeve fits tighter and slips over the pipe smoothly.
- Creates a continuous weld to the end of the duct, so the notch in the rolled-lip disappears and gives a cleaner look.
- Completes the process slightly faster than before, so the product is completed and delivered to you on time.



The sleeve: Key to infinite adjustability



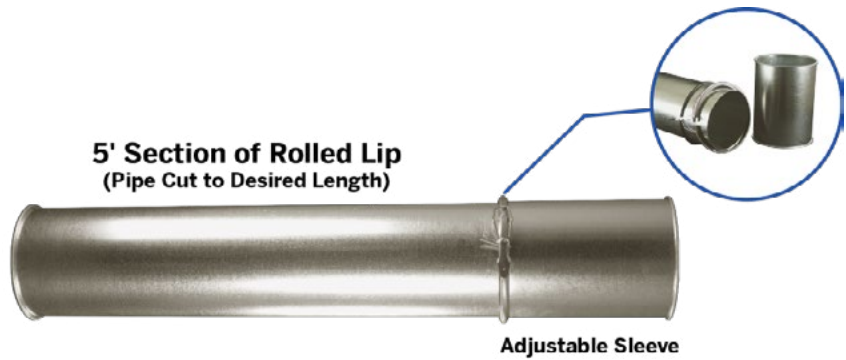
The 11" adjustable sleeve is what makes this style of ductwork so versatile and easy to manage. The sleeve's interior diameter is slightly larger than the pipe's outside diameter, allowing it to slip over the laser-welded pipe. This creates a telescoping capability to ensure the exact fit between components — even if the pipe is cut shorter than needed.

That means precision measuring and cutting aren't needed, and you don't need to be skilled at bolting, welding, or riveting to create strong joints.

The clamp: Made for repeatable use

The stainless steel duct clamp is designed for repeatable and long-term service. The over-center latch securely draws a contoured band around the components' rolled-lip ends and seals them tightly. The clamp securely holds the duct but is ready for easy release for the next move or modification. Unlike other types of connection types — this is all done WITHOUT removing screws, tape, or bolts.





How does Clamp Together Duct work?

The combination and design of these three components (the pipe, sleeve, and clamp) are what make the Clamp Together Duct system so quick-fitting, easy to install, and infinitely adjustable.

Since the pipe comes in a standard 5' length, it needs to be cut down to size — but precision doesn't matter. You can cut the pipe a few inches shorter than the length you actually need. The 11" adjustable sleeve will slip over the end of the pipe and create a telescoping effect that can bridge the gap to the next pipe or fitting. Finally, the pipe is secured to the sleeve or the fitting using the rubber O-ring and clamp.

Sometimes you may need a length of pipe shorter than 11" — and that's where the adjustable collar feature on our rolled-lip fittings come in. All fittings, accessories, and components have a collar that allows for 2" of adjustability. Using a short piece of pipe and the collar, you can use the Clamp Together Duct system to secure the length that you need.

THERE'S NO BOLTING, WELDING, OR RIVETING NEEDED TO INSTALL CLAMP TOGETHER DUCT.

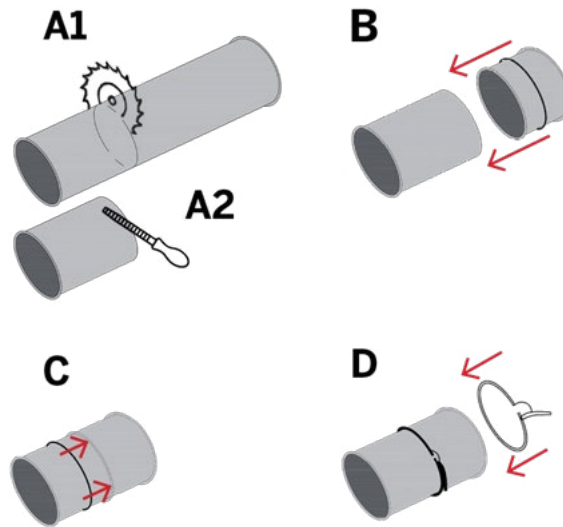
"I have used US Duct's Clamp Together Duct for many jobs. We've never had any issues and it's a breeze to work with."

Matthew Daniels, TSR Solutions, Inc.



STEP-BY-STEP INSTRUCTIONS TO INSTALL CLAMP TOGETHER DUCT

1. Measure the length of pipe that you need to make. For example, if you need 7' of pipe between two branches, you will have to use a standard 5' section and cut a 2' section.
2. To make the smaller piece of pipe, take a 5' standard section and cut it slightly shorter (about 2–4") than you need. In this case, where we need 24", cut it around 20–22" long using a reciprocal saw or a grinding wheel (figure **A1**).
3. Deburr the cut end with a file to remove any sharp edges (figure **A2**).
4. Slide the sleeve (with the O-ring) onto the pipe's cut end and adjust until the pipe and sleeve "assembly" is the desired length (figure **B**).
5. Once adjusted, roll the O-ring off the sleeve and onto the pipe, then roll it up against the sleeve's rolled lip (figure **C**).
6. Using the standard clamp, clamp the O-ring to the sleeve's rolled lip to secure it to the pipe, creating a 2' section (figure **D**).
7. Attach the 2' section of pipe (figure **D**) to a 5' standard length of pipe to create a 7' length of pipe.



Need to know	Because of CTD's design, you don't need to take exact measurements or be a skilled welder to install it. If you know how to use a reciprocal saw, you can install Clamp Together Duct.
Nice to know	We'll provide you with a free sample or simple "A-to-B" instruction guide on installing Clamp Together Duct. Just ask a Duct Guy!
Didn't want to know	Why don't shirts come with adjustable sleeves?

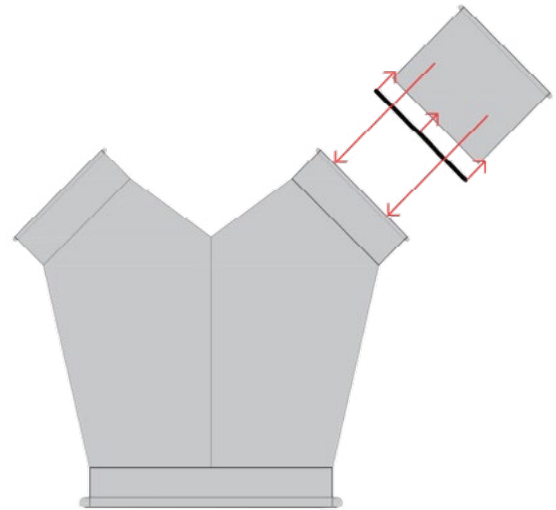
HOW TO USE THE ADJUSTABLE COLLAR FEATURE ON FITTINGS

Sometimes you may need a length of pipe shorter than 11”.

Since the adjustable sleeves are 11” long, you will not be able to make a piece that’s shorter. For example, you need to bridge a 4” gap between the fitting and next piece of Clamp Together Duct:

1. Measure the length that you need.
2. Cut an end off a 5’ section of pipe — 2” LONGER than you need — and debur the pipe end.
3. Take an O-ring* and put it onto the cut end of the pipe.
4. Slide the pipe into the collar and roll the o-ring up against the rolled lip of the fitting.
5. Clamp.

*Additional o-rings must be ordered to use with the collar, since they are only provided with the 11” sleeve.



Collars on fittings heavier than 18 gauge may not accommodate this feature as the collar is affixed in a different manner. Adjustability using the collar is limited to the distance that the cut pipe will slide into the fitting.



Other Clamp Together Duct considerations

The materials: Stainless vs. galvanized steel

We manufactured Clamp Together Ductwork in stainless steel, galvanized steel, and carbon steel. The material you need will depend on the application and what is being conveyed through the system.

STAINLESS STEEL DUCTING

All ducting steels have the same basic iron and carbon composition. However, stainless steel ductwork also contains a healthy dose of chromium — the alloy that gives stainless steel its famous corrosion resistance.

There are multiple grades under the stainless steel umbrella — each with slightly different alloy composition and, therefore, somewhat different physical characteristics. Stainless steel must contain at least 10.5% chromium. Depending on the grade, it may have much higher chromium levels and additional alloying ingredients like molybdenum, nickel, titanium, aluminum, copper, nitrogen, phosphorus, and selenium.

The two most common stainless steel grades for ducting are 304 and 316. The critical difference is molybdenum's presence in the 316 grade, an alloy that drastically enhances corrosion resistance, especially for more saline or chloride-exposed environments.

For outdoor and some corrosive ductwork applications, stainless steel is an ideal corrosion-resistant material. Still, it will only withstand long-term exposure if the grade is appropriate for its environment. 304 is an economical and practical



choice for most environments, but it doesn't have the chloride resistance of 316. The slightly higher price point of 316 ducting and components may be well worth it in areas or applications with high chloride exposure. Each application for stainless steel ductwork has its unique demands and needs a stainless steel that's up to the task.

Need to know	Stainless steel ductwork should be used in corrosive or outdoor applications — use 316 grade if the application is particularly harsh or the ductwork will be exposed to chloride.
Nice to know	Chromium is the alloy that gives stainless steel its famous corrosion resistance; molybdenum is what makes 316 grade its resistance to chloride.
Didn't want to know	Some stainless steel is polished to a mirror-like shine, but that is really overkill for ductwork.



GALVANIZED STEEL DUCTING

Most ductwork manufactured with galvanized metal is hot-dip galvanized, coating steel with a thin zinc layer. The steel passes through a molten bath of zinc at a temperature of around 860°F (460°C). When exposed to the atmosphere, pure zinc reacts with oxygen to form zinc oxide. The zinc oxide further reacts with carbon dioxide to form zinc carbonate — a dull grey, relatively durable material that stops further corrosion — and protects the steel below from the elements. Galvanized steel is widely used in ductwork applications that require rust resistance. This metal can be identified by the crystallization patterning on the surface (often called a “spangle”).



The hot-dip galvanizing process results in a metallurgical bond between zinc and steel with distinct iron-zinc alloys, creating a versatile and affordable material for manufacturing ductwork and duct components. The resulting coated steel can be used in much the same way as uncoated. Galvanized steel is suitable for high-temperature applications, typically up to 392°F (200°C). Use at temperatures above this level can cause the zinc to peel at the intermetallic layer. Galvanized sheet steel ducting is used in most dust collection ducting applications.

The gauges: From 22 to 10

Standard gauges range from 18-22 gauge, with the rolled-lip formed directly onto the pipe and becoming an integral part of it. Clamp Together Duct is available in gauges heavier than 16 gauge (up to 10 gauge), thanks to the use of a rolled-lip collar. This is a separate component that gets affixed to the end of the pipe using a stainless steel, reusable clamp and allows heavier gauges to be sized to work with standard clamps and gaskets. Thanks to the collar, users get the best of both worlds — heavier gauge pipes to reduce abrasion and the Clamp Together Duct system’s adjustability and ease of use.

Gaskets and overlays: Choose based on the application

Gaskets and overlays are less glamorous yet crucial pieces of the Clamp Together Duct system and are available in various materials to suit your application.

	Gaskets formed to fit in clamp groove — winged		Overlays thin gasket laid over Buna N	
	Buna N (Nitrile)	FDA Silicone / Red Hi-Temp	GoreTex	Viton
Basic Info	Standard oil/mist and dust collection, impervious to most chemicals	Moderate solvent resistance	Resistant to all common chemicals in the 0–14 pH range, except molten alkali metals and elemental fluorine	Good for oils and solvents
Durometer / Hardness Range	20–95	40	N/A	N/A
Static Temp Range	(-)67F° to (+)275F°	(-)103F° to (+)475F°	(-)450F° to (+)600F°	(-)15F° to (+) 435F°
Resistance to Compression Set	Very Good	Excellent	Minimum Retorque	Excellent



Benefits of Clamp Together Duct

Modular: Infinitely adjustable

We aren't exaggerating when we say that Clamp Together Duct is infinitely adjustable.

Its features and components work together to create a modular system that can easily be reconfigured or disassembled when:

- New machines are added to the workflow
- Existing machines move to accommodate a different floor plan or process
- Ductwork needs to be cleaned out

Clamp Together Duct was designed with adjustability in mind:

- All components come with rolled-lip ends, so every fitting, gate, valve, and hood is compatible with the next piece of ducting.
- The adjustable sleeve can slide over the duct pipe, creating a telescoping effect that allows you to adjust the pipe's length without precise measuring.
- The stainless steel clamp draws securely around the components' ends to seal them together but can quickly be released when the ductwork needs to be moved or the layout modified.

Need to know	The cost of Clamp Together Ductwork components may be more expensive than spiral ductwork, but you'll save money in the long run because Clamp Together Ductwork can be reconfigured and reused.
Nice to know	Because of its ability to adjust on site, Clamp Together Ductwork often can make up for measurement errors without delaying the job!
Didn't want to know	Ever notice how much "duct" sounds like "duck"? (We did.)



Quick fit: Installs up to 70% faster

The number one reason tens of thousands of people have chosen Clamp Together Duct is for its installation speed. Contractors and installers have found that they can install Clamp Together Duct up to 70% faster than flanged or spiral ducting. The adjustable sleeve and clamp dramatically reduce installation time because **there is no need to precisely measure and cut pieces to size or to bolt, weld, or rivet pipes together at the joints.**

Both self-installers and contractors love the product because it is so simple to use — but simple doesn't mean you sacrifice any functionality. Our Duct guys can provide 3-D drawings and "A-to-B" instructions of your specific system to make it easier for you to install.

"Clamp Together Duct may cost a bit more than spiral, but the price difference is more than made up for with the significant decrease in installation time. My projects have had lower install costs and far less down time when using Clamp Together Duct. ."

Doug M. Air Filtration Specialist.

Plays nice with others: Compatibility with other rolled-lip ducting

Another feature of US Duct's Clamp Together Duct is that it is generally compatible with different types of quick-fit or rolled-lip ducting. This makes it easy to integrate Clamp Together Duct into an existing system — from **replacing or fixing a particular section of your ductwork to using leftover pieces to complete another.**

Need to know	Because other manufacturers may alter their specifications, we can't guarantee that our Clamp Together Ductwork will be compatible. You should always consult with a Duct Guy to be sure.
Nice to know	Always order adapters to connect your Clamp Together Duct to existing non-rolled lip systems or components.
Didn't want to know	The percentage of people who can roll the tongue varies from 60% to 80%.

Using Clamp Together Duct in industrial ventilation and dust collection systems

Typically, the need for a collection or ventilation system in a plant arises when dust, fumes, or chemical concentrations in the air become a safety hazard. These concentrations can reach a level that introduces the possibility of explosion, flame, or reduced oxygen level below acceptable limits.

Ventilation and collection systems typically follow this simple formula: capture, convey, and collect.



Capture

The single, most effective measure that you can take to improve industrial hygiene is to introduce dust/fume/mist collection and removal.

This is often referred to as “source capture,” meaning that effective collection at the source prevents the contaminant from spreading. At this point, the concentrated dust can be removed relatively easily. It is much more difficult (and expensive) to remove once the contaminant has been diluted by the surrounding air.

A fan is usually the moving force that pulls (sucks) the contaminated air away from the workplace, machine, or worker. Fans are sized according to the air volume and pressure required to move the air through the duct, the collector, and the filter media. Efficiently capturing nuisance particulate depends on having:

- Properly designed a hood that pulls contaminated air in
- Correctly calculated the velocity required to move the material once it’s caught in the ductwork



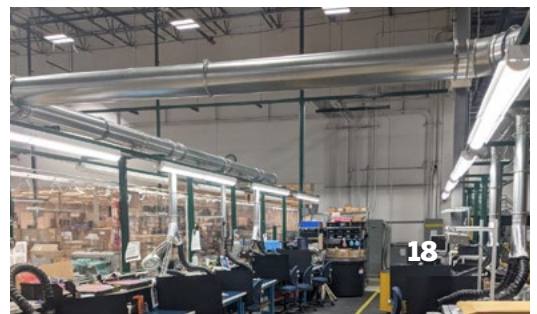
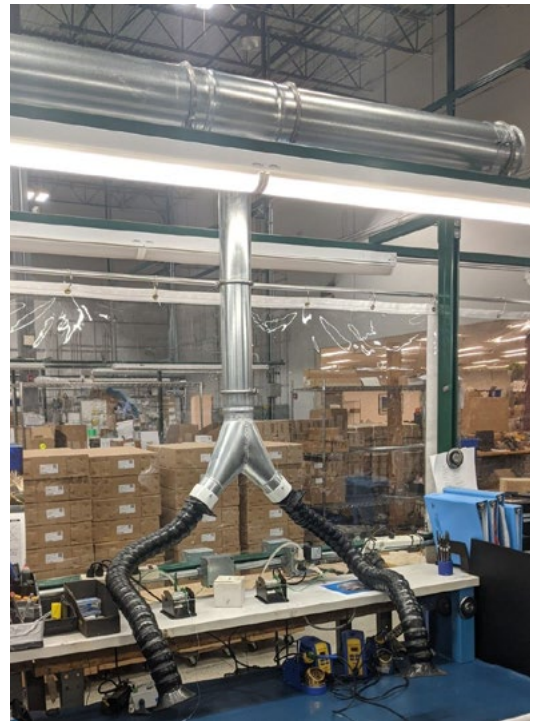
Convey

The duct system is the conduit that contains dust-laden air as it is removed from the air and conveyed to the collector.

The duct itself should be appropriately sized to keep the air moving at the correct velocity and prevent the material from “settling out” and further obstructing the flow.

Choosing the metal, gauge, and connection style for the system will depend mainly on the material being conveyed through it. Although Clamp Together Duct has become the go-to ductwork system for a variety of uses, you should always consult with a Duct Guy on your specific application and requirements. Designing an effective ductwork system requires knowledge of the:

- Material being collected and conveyed
- Explosiveness (Kst value) of the dust
- Impact of dynamic changes in the process or the collection process (surge of material, air density, etc.)



Collect

The collector acts as the system's cleaning element, passing air through some media and separating the air from the fugitive material.

It can be as simple as a basic pass-through filter, a cyclonic separator, an impingement baffle, or another separator system. Or, it can be as complex as an electrostatic precipitator, multistage baghouse, or chemically-treated wet scrubber or stripping tower. A Duct Guy can help determine:

- The type of collector needed and
- The media that will work best with the material.

“Clamp Together Duct is a great product that saves time, goes together easily, and is loved by our customers.”

Scott Seekell, Steel Environmental



Applications and uses for CTD

Woodworking

Clamp Together ductwork and cyclone dust collection work together to remove woodshop dust from the air and environment. Woodworking dust collection systems work on the basic formula of capture, convey, and collect.

A properly designed system with pipe correctly sized, the correct metal selected, and the proper airflow components goes a long way to creating an effective collection system for woodworking dust. The system should also include gates and valves to regulate airflow and thus maximize the fan's CFM capacity. In short — you can direct air where you need it and when you need it. Gates and valves can be operated manually by system users or automatically based on electrical signals from operating or shut-off equipment.



Welding smoke and metal grinding dust

Appropriately sizing a ducting system to maintain a consistent air velocity is key to proper welding ventilation.

That air velocity depends on the minimum amount it takes to keep matter in suspension and transport it to the collection device. An improperly designed industrial dust collection system can cause material to settle in the duct system, ultimately clogging it or creating a fire hazard. Often, the machine producing the particulate will have a port to which a duct can be directly attached.



Painting fumes

Air pollution can be a common problem in paint and powder coating facilities. Airborne particulates, gases, and vapors can be harmful to employees and create dangerous work environments. Clamp Together Duct can be used in conjunction with other performance components, like custom-fabricated hoods, to capture and eliminate potential safety hazards.



Coffee roasting

There are three stages of the coffee bean roasting process where ducting is needed to exhaust and extract particulate from the air.

THE LOADING STAGE

When the beans are loaded into loaders and drums, dust can bloom. Hoods and ducting can be used to capture the dust and prevent it from settling back into the drum.

THE INITIAL ROASTING STAGE

The heat from the drum, bean hulls/skins, and dust all need to be extracted as exhaust from the 450° F degree drum environment.

THE COOLING STAGE

In the cooling stage, coffee beans move from the roaster to the cooling tray. The particulates generated during roasting and the drum's heat both need to be conveyed through ductwork as exhaust or directed to a collector for filtering.

Because types of ductwork needed for these stages of roasting vary, it is crucial to have a coffee roasting duct system that provides the right combination of versatility, seal, and heat tolerance. When ducting is traveling through a building envelope or near combustibles, single wall ducting may need modifications (shielding or double-wall segments). Consult authorities that have local jurisdiction regarding "clearance to combustibles" and other code requirements.



Silica/concrete dust collection

Silica dust containing crystalline silica can be hazardous to workers' respiratory systems if inhaled. Any activities that involve the cutting, drilling, chipping, sanding, or grinding of materials that contain silica can produce this harmful byproduct. Industries working with concrete, sand, brick, or stone should consider ways to minimize exposure to this toxic byproduct through proper dust collection and workspace ventilation.



Is Clamp Together Duct right for you?

- Do you want to decrease the amount of time you spend on ductwork installations?
- Do you want to cut down on the stress and headaches of finding skilled laborers who know how to measure, cut, fit, and weld ductwork?
- Do you want to eliminate the need for extra screws, bolts, and nuts just to install ductwork?
- Are you tired of cost overruns or wasting money on mismeasured and miscut pieces of ductwork?

If you answered “yes” to any of these questions, Clamp Together Duct might be a good fit. But if you still aren’t convinced that Clamp Together Duct is the right product for you and your customers, reach out to us. And if Clamp Together Duct truly doesn’t work in your application or meet your requirements, our team of Duct Guys has the experience and industry knowledge to help you find a solution that will.

Need to know	Clamp Together Duct and our Duct Guys MAKE DUCTWORK EASY.
Nice to know	Not all of our Duct Guys are guys — and we’re ok with that.
Didn’t want to know	When we say we’re experienced, we mean it! We’ve provided a 24” diameter Clamp Together Duct system for a chicken movement application. The chickens will walk through the ducting in response to airflow changes.

US Duct is an American owned and operated, industry-leading manufacturer and supplier of industrial ductwork systems and custom solutions.

The combination of a dedicated sales team and skilled fabricators gives contractors, ductwork installers, and OEM representatives everything needed to select and sell ductwork to end-users. US Duct has extensive knowledge of ductwork applications, design, and manufacturing that allows us to offer comprehensive lines of clamp together ductwork, air-tight tubing, flanged ductwork, and special solution products.

From take-off design services to on-time delivery to installation, we will provide the support you need for any project. We know that when you succeed, we succeed. That's why we're committed to developing long-term partnerships that save you time, money, and the stress of selling ductwork. And you may even have a little bit of fun along the way.



CONTACT A DUCT GUY TO SEE HOW US DUCT CAN MAKE DUCTWORK EASY FOR YOU.

CONTACT US

4898 McCracken Road Kernersville, NC 27284 855-487-3828 info@us-duct.com