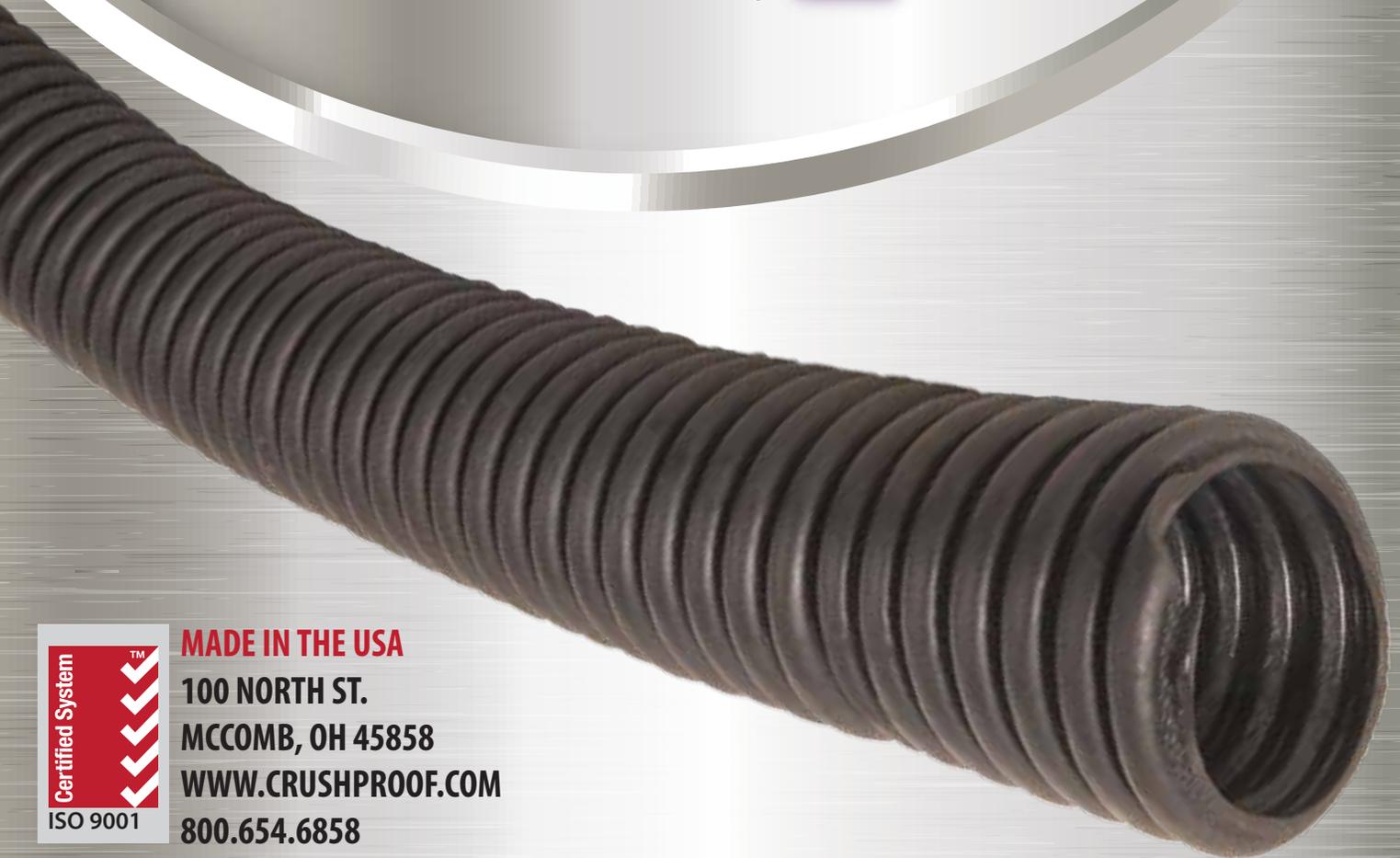


GARAGE EXHAUST SOLUTIONS

CRUSHPROOF[®] TUBING CO.



MADE IN THE USA

100 NORTH ST.

MCCOMB, OH 45858

WWW.CRUSHPROOF.COM

800.654.6858

North America's Exhaust Leaders

For over half a century, Crushproof Tubing Company has set the standard in value and performance for Garage Exhaust Hose. We are constantly reviewing the ever-changing landscape of vehicle exhaust and revising our product offerings to accommodate those changes.

One of the trends we see today is the growth of the tailpipe as a design element, with dual exhaust and twin tailpipes becoming more common than ever. What once was an afterthought is now chrome trimmed and prominently displayed on the back end of new cars. We have designed a new set of adapters and kits for these applications. You can find them on pages 4 and 5 in this brochure.

We will continue to advance the cause of workplace safety by making it affordable to keep carbon monoxide out of garages around the world.



Made in the USA

Carbon Monoxide Kills



Working near vehicle exhaust fumes exposes you to large amounts of carbon monoxide (CO), an odorless, colorless, **poisonous** gas. Even mild exposure to CO can cause headaches, dizziness, nausea, and fatigue; while overexposure can cause death. Always use a rubber exhaust hose with proper ventilation when working on vehicles. Actions required to avoid carbon monoxide poisoning include:

- Always using a tailpipe adapter and a quality venting system.
- Providing exhaust hoses for each and every vehicle service bay.
- Replacing damaged hoses immediately.
- Using garage exhaust hoses even when doors and windows are open.
- Check all powered exhaust systems daily.

...BECAUSE OSHA IS WATCHING

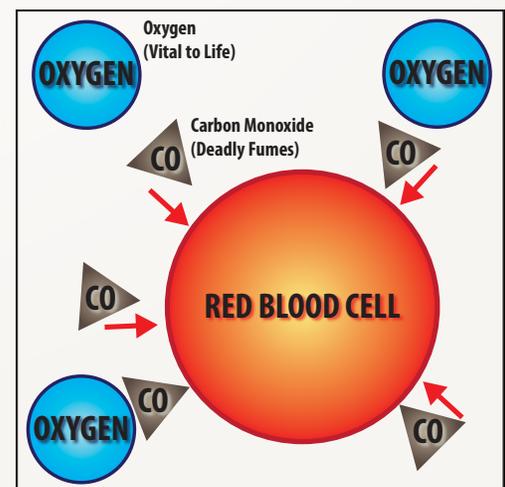
What are the symptoms of CO poisoning?

The most common symptoms of CO poisoning are headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. High levels of CO inhalation can cause loss of consciousness and death. Unless suspected, CO poisoning can be difficult to diagnose because the symptoms mimic other illnesses. People who are sleeping or intoxicated can die from CO poisoning before ever experiencing symptoms.*

How does CO poisoning work? (see graphic)

Red blood cells pick up CO quicker than they pick up oxygen. If there is a lot of CO in the air, the body may replace oxygen in blood with CO. This blocks oxygen from getting into the body, which can damage tissues and result in death.*

*Bottom two paragraphs courtesy of The Centers for Disease Control.



System Designs

Proper system design is critical to success in safely removing exhaust fumes from your garage, and also prolongs the life of the exhaust hoses and accessories involved. The most common option for Crushproof hoses is the ground-based, out-the-door solution. It works well for almost any rear, low mounted exhaust pipes. Other options are overhead and underfloor systems. Any way you go, there are some key things to remember about the design to ensure proper fume removal and worker safety.

OUT-THE-DOOR

The most inexpensive and easiest way to get exhaust fumes out of your garage is to install an out-the-door hose system. It can be used for cars and pick-up trucks with rear-mounted exhaust pipes, even if they are diesel.

There are two key points to remember when considering a system like this: 1. Always allow for an air gap of at least 1/2" around the tailpipe and 2. keep the distance from the door to the vehical under 25'. These steps will ensure proper air flow and hose performance by cooling the air and minimizing the risk of pooling and backup of the air.



1. Door Port
2. Hose
3. Y-Connector
4. Tailpipe Adapter



OVERHEAD

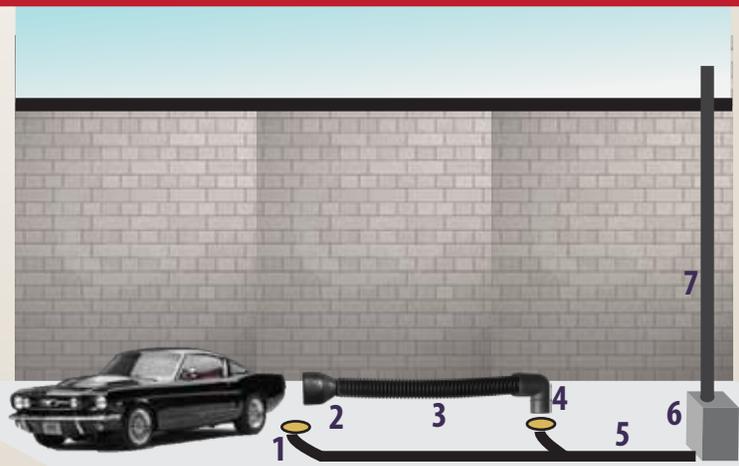
Use an overhead connector to hook our hoses up to your ventilation system. We offer a telescoping system, straight splice, or elbow connector to meet the demands of most any setup. You can use all our adapters and Y-kits as well.

- | | |
|--------------------------|-------------------------------|
| 1. Galvanized ducting | 4. LS634 Telescoping setup |
| 2. Ducting "T" or drop | 5. Fan |
| 3. Hose, elbow, & pulley | 6. Fan exhaust above building |

UNDER-FLOOR

Under-floor systems use our rubber elbows to connect the hose to the floor port, where a fan sucks the exhaust out of the garage. Our 2.5" and 3" hoses will work for these applications. On the vehicle side, all of our standard adapters and fittings are available, including Y's and service station kits.

- | | |
|-------------------------|---------------------|
| 1. Sealable floor plate | 5. Drainage tile |
| 2. Crushproof® adapter | 6. Sump or dry well |
| 3. Crushproof® hose | 7. Vent pipe to fan |
| 4. Crushproof® elbow | |



FlareLok® Hose

Designed for use with smaller gas vehicles up to SUV's and pickup trucks. The "FlareLok®" system allows multiple lengths to be connected without the need for a splice connector. FlareLok® hose can be used underground, out-the-door, or in overhead systems. Please review the adapters on Page 4 to ensure a proper fit for your application. All hoses are 11' long, and will withstand exhaust temps up to 600°F when used with a proper adapter and a fan assisted system.



- FLT200** 2" I.D. for small cars and motorcycles
- FLT250** 2.5" I.D. for most cars
- FLT300** 3" I.D. for gas cars and trucks
- FLT350** 3.5" I.D. for gas cars and trucks
- FLT400** 4" I.D. for larger gas cars and trucks

2"
FLT200

Adapters
F250, RA300

Door Port
DF25

Y-Connector
RY20

Elbows
N/A

Splice
SP20

Duct Connector
N/A

2.5"
FLT250

Adapters
F250, F300, RA250

Door Port
DF25

Y-Connector
RY25

Elbows
EB25, AEL25

Splice
SP25

Duct Connector
N/A

3"
FLT300

Adapters
F250, F300, RA300
F475, F575, F675
F675-SC

Door Port
ADF30

Y-Connector
RY30

Elbows
EB30, AEL30

Splice
SP30, AC30

Duct Connector
OC30

3.5"
FLT350

Adapters
F300, F350, F400
F450, RA250

Door Port
ADF40

Y-Connector
N/A

Elbows
N/A

Splice
N/A

Duct Connector
N/A

4"
FLT400

Adapters
F350, F400, F450, RA300
F475, F575, F675
F675-SC, DSR600, F800-4

Door Port
ADF40

Y-Connector
AY40

Elbows
AEL40

Splice
SP40, AC40

Duct Connector
OC40

ACT Hose

Designed for use with larger gas vehicles and diesel trucks. Add wire to resist kinking using the "W11" suffix for 11' of wire or "W30" suffix for 30" of wire. Always use an overhead exhaust system and proper adapter (see page 2) with your ACT hose to ensure the longest possible hose life and best ventilation. ACT hoses are all 11' long, except for the ACT40-20, which is 20' long. Hoses will withstand exhaust temps up to 600°F when used with a proper adapter and a fan assisted system.



4"

ACT400

Adapters

F350, F400, F450, RA300
F475, F575, F675
F675-SC, DSR600, F800-4

Door Port

ADF40

Y-Connector

AY40

Elbows

AEL40

Splice

SP40, AC40

Duct Connector

OC40

5"

ACT500

Adapters

DSR600
DSR8600
DSR9600

Door Port

N/A

Y-Connector

N/A

Elbows

AEL50

Splice

AC50

Duct Connector

OC50, OC50-D

6"

ACT600

Adapters

DSR600-6
DSR8600
DSR9600

Door Port

N/A

Y-Connector

N/A

Elbows

AEL60

Splice

AC60-OC

Duct Connector

AC60-OC

Size Options

ACT400 (W30 or W11 optional)

4" I.D. car, truck, and light diesel hose.

ACT40-20

20' continuous length of 4" I.D. hose.

ACT500 (W30 or W11 optional)

5" I.D. for gas or diesel trucks.

ACT600 (W30 or W11 optional)

6" I.D. for large diesel trucks.

ACT400DYNO

4" I.D. gray rubber (see page 6)

Tailpipe & Stack Adapters



RA250/RA300 open

RA250/RA300 closed

Universal adapters fit a wide variety of pipe styles. Bell is 5" and will work with pipes up to 4".

RA250

RA300

2.5"

FLT250

3.5"

FLT350

2"

FLT200

3"

FLT300

F475

For oval/twin tailpipes up to 2.5" x 5.5". It's the smallest of the three oval adapter styles compared to the F575 and F675.



3"

FLT300

4"

FLT400
ACT400

F575



For oval/twin tailpipes up to 3" x 8". It's the mid-size option between the F475 and F675.

3"

FLT300

4"

FLT400
ACT400

F675



For oval/twin tailpipes up to 2.5" x 10.5". It was designed for ultra-wide pipes on many car makes/models.

3"

FLT300

4"

FLT400
ACT400

F675-SC

For flush mounted tailpipes, our F675-SC provides the perfect solution! It's industrial-grade suction cup will stick to any vehicle without damaging the finish and hold the adapter over the tailpipe, creating a capture shroud. Because it does not slide over the pipe, it does need to be used as part of a fan-assisted system.

3"

FLT300

4"

FLT400
ACT400



Adapters are critical to proper exhaust system function and for prolonging hose life. A hook and chain holds the adapter in place during use. At least 1/2" diameter difference between pipe and adapter is required for proper performance. Please refer to the information below for proper sizing.

Straight tailpipe adapters come in a range of sizes to fit 2" to 4" hoses. The maximum OD of the tailpipe is 1/2" smaller than the ID of the adapter. Our size is listed in the part number. F250 is 2.5" ID, F400 is 4.0" ID, and so on. Hose sizes that each fits are listed below.



F250

F300

F350

2"
FLT200

2.5"
FLT250

3"
FLT300

2.5"
FLT250

3"
FLT300

3.5"
FLT350

3"
FLT300

3.5"
FLT350

4"
FLT400
ACT400

The DSR600 and DSR600-6 are 6" ID adapters that will work for pipes up to 5.5" OD. With a 4" hose it can be used on buses and fire trucks with large, rear mounted tailpipes.



DSR600

DSR600-6

F400 & F450

4"
FLT400
ACT400

5"
ACT500

6"
ACT600

3.5"
FLT350

4"
FLT400
ACT400

F800-4



F800-4 fits 4" hose and stacks up to 7.5" OD. For larger applications it needs to be used with a fan-assisted system.

DSR9600 (9") DSR8600 (8")

Designed for vertical applications. Will rest on top of the stack. Must have at least 1/2" gap around stack for air flow and be used with a fan.



4"
FLT400
ACT400

5"
ACT500

6"
ACT600

Fittings

Y-CONNECTORS

Allows three pieces of hose to be connected to make a "Y" assembly for use with dual exhaust vehicles. Our hoses thread into the connectors.

Rubber

- RY20 (2" hose)
- RY25 (2.5" hose)
- RY30 (3" hose)

Aluminum

- AY40 (4" hose)



DOOR PORTS

Door ports are installed by putting one piece on each side of the door and then connecting them with included screws. Fits 1" doors out-of-the-box. Use threaded rod and nuts (not included) for thicker doors.

Rubber

- DF25 (2.5" hose)

Aluminum

- ADF30 (3" hose)
- ADF40 (4" hose)



OVERHEAD CONNECTORS

Connects Crushproof® hose to overhead ductwork "T".

- OC30 (3" hose)
- OC40 (4" hose)
- OC50 (5" hose)

- OC50-D (w/damper)
- AC60-OC (6" hose)



ELBOWS

Rubber elbows connect to underfloor systems. Aluminum elbows connect two hoses for overhead pulley systems. Fits hose size shown below.

Rubber

- EB25 (2.5")
- EB30 (3")

Aluminum

- AEL25 (2.5")
- AEL30 (3")
- AEL40 (4")
- AEL50 (5")
- AEL60 (6")



Rubber

Aluminum

SPLICES

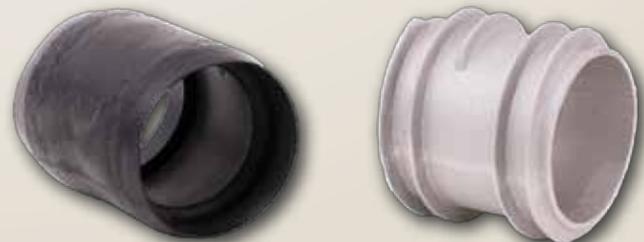
Connect two hoses together. Aluminum has external threads; rubber internal. Rubber splices are crush-proof.

Rubber

- SP25 (2.5" hose)
- SP30 (3" hose)
- SP40 (4" hose)

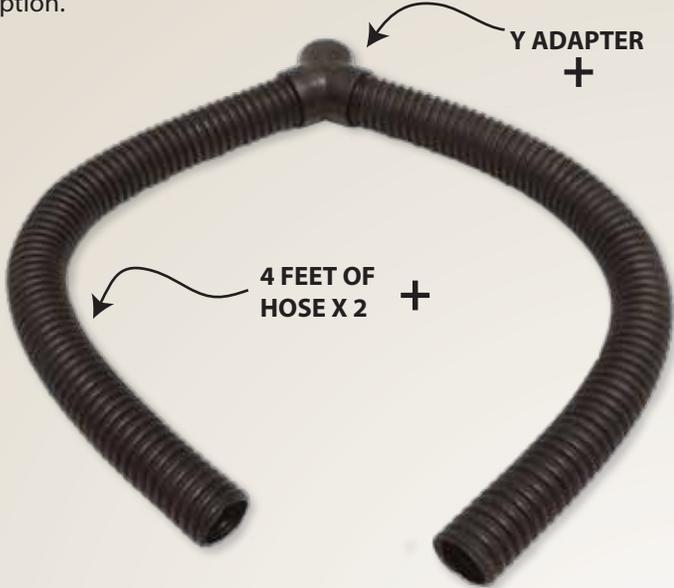
Aluminum

- AC30 (3" hose)
- AC40 (4" hose)
- AC50 (5" hose)
- AC60-OC (6" hose)



Y-Assemblies

Designed to convert a single exhaust hose into dual kit for servicing many of today's most popular cars and trucks. These come at a savings versus buying everything separately. Below we show you what Y adapter, short hose section, and pair of tailpipe adapters come in each kit option.



- F250 (X2)
2.5" hose  = YA250
- F300 (X2)
3" hose  = YA300
- F575 (X2)
3" hose  = YA575
- F675 (X2)
F675-SC (X2)
3" hose  = YA3675
YA675-SC
- F350 (X2)
4" hose  = YA400

YA4475D

OVERSIZED DIESEL TAILPIPE ADAPTER

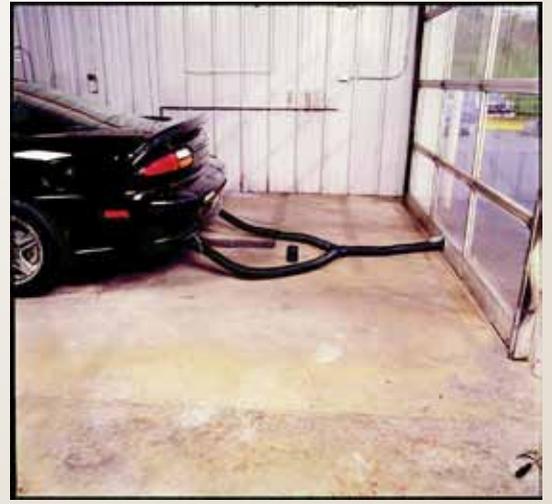
Components: 4" DYNO hose, F475D adapters, and AY40



This oversized adapter is designed to fit over twin tailpipe assemblies that are too large for a traditional adapter. This includes most 2008 or newer Ford® diesels. It is not approved for regeneration cycles.

Dealer/Service Station Kits

Exhaust kit in a box with a savings over buying the parts separately. All kits include (1) six foot and (2) four foot lengths of hose, a Y connector and splice connector, and (2) adapters.



	DSS25	DSS30	DSS40	DSS675SC
HOSE I.D.	2.5"	3"	4"	3"
Y	RY25	RY30	AY40	RY30
SPLICE	SP25	SP30	SP40	SP30
ADAPTERS	F250	F300	F400	F675-SC

Dyno Hose

Crushproof® Dyno hose (**ACT400DYNO**) is 4" I.D. x 11' long and is designed for use with dynamometers and in high performance applications. It will withstand exhaust temperatures of up to 700°F when used with a fan assisted system, it will survive where other hoses cannot. There are two special adapters designed out of the same material; the **F475DYNO** and **F350DYNO**. Both adapters come with a hole in them for sensors or probes to be inserted during dyno testing.



F350-DYNO

ACT400-DYNO

F475-DYNO

Reel Hose

Crushproof® Reel Hose is tough and versatile. The standard length is 25', but custom lengths are available. The first 20' is a fabric and wire hose and the last 5' is our solid rubber Crushproof® hose. That means you get the long-lasting durability of rubber with the weight and easy-reeling performance of fabric and wire hose, all in one product! Each size comes with an adapter, as noted in the chart below. The 4" size can be used with a Y-assembly for servicing dual exhaust vehicles.



Reel Not Included.

PART NUMBER	ACT SIZE	ADAPTER
CPRH400	4" X 5'	DSR600
CPRH500	5" X 5'	DSR600
CPRH600	6" X 5'	DSR600-6

Telescoping

The **LS643** is a 19 lb out-of-the-box solution for many basic overhead systems. It can service most cars and light trucks and can be fitted with a 3" Y-assembly if needed. We also offer the 31 lb all rubber **TE6000** version as well.



Connects to 5" overhead duct.

6" I.D. X 5' 6" high-temp fabric and wire hose.

Hooks (shown below) connect to a metal ring (shown above) to hold the unit up when not in use.

4 1/2" I.D. x 5' 6" Crushproof® Garage Exhaust Hose.

3" I.D. x 5' 6" Crushproof® Garage Exhaust Hose.

RA300 Universal Adapter will fit all single and most twin tailpipe configurations. Three locking snaps allow unit to be shut off. Will not damage any vehicle and is 100% Crushproof®.

LENGTH
16'9" extended
7' retracted

UniHose® & SuperFlex

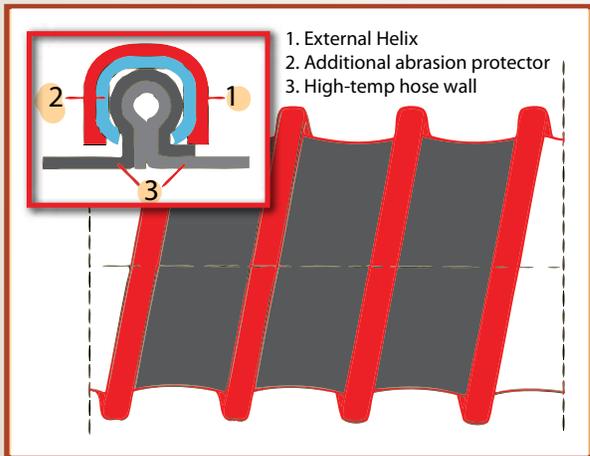
UniHose® combines the features of our standard FlareLok® hose and a straight tailpipe adapter into one continuous length. Great for simple applications where the same general size of tailpipe will be used.

SuperFlex hose has an accordion-like design that prevents kinking on tight bends and is great for overhead applications. Our standard adapters will not fit this hose well due to the tight convolution spacing.

UNH2500	2.5" I.D. x 11' for most cars
UNH3000	3" I.D. x 11' for most cars and gas trucks
UNH4000	4" I.D. x 11' for all gas cars and trucks
40-20SF	4" I.D. x 12' that extends out to 20'
50-12SF	5" I.D. x 8' that extends out to 12'



CF Hose

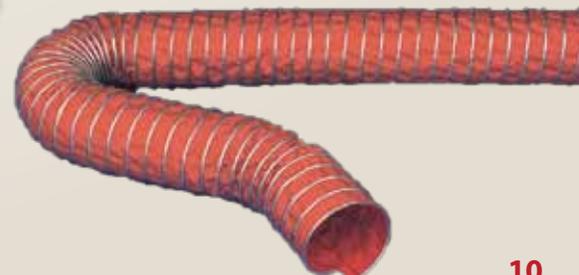


The Crushproof® CF is a super lightweight, flexible exhaust hose with 1:5 compressibility and a small bend radius. It is resistant to mechanical load, abrasion, and vibration. It can handle exhaust temps up to +570°F when used with proper adapters, so it works well with diesel engines. It is a great choice for reels as well. The chart below shows our size options and basic specifications. **HOSE MUST BE USED WITH A FAN.**

I.D.	O.D.	Bend Radius, in.	Weight (lbs./ft.)
4	4.68	2.4	0.81
5	5.68	3	0.9
6	6.68	3.6	1.044
7	7.68	4.6	1.17
8	8.68	5.6	1.305

High-Temp Solutions

High-temp applications are demanding, and we have flexible hose options that can handle exhaust temps up to 2000°F with a proper fan system in place. They must be used with a fan-assisted system and will not hold up to floor traffic.



Diesel Solutions

Crushproof offers both rubber and wire reinforced fabric hose options (see p. 10 for details) for removing diesel exhaust. All of our rubber and reinforced fabric tubes will accept our stack adapters, but the connectors and elbows are only for our rubber hoses. Our stack adapters will cover stacks from 5" to 8.5" O.D. All diesel installations should include an overhead ducting system due to the temperature and volume of air that is generated.

Regeneration: All diesel engines made after 2008 have a government-mandated regeneration cycle that cleans it's exhaust system. This process should *never* happen when the vehicle is connected to exhaust hose or ducting of any kind, only while driving. The temperatures produced could damage or destroy that equipment.



TK05002 KIT (One each of:)

ACT500
ACT500W11
DSR600
AEL50
OC50

5": ACT500
6": ACT600



5": AEL50
6": AEL60



TK06002 KIT (One each of:)

ACT600
ACT600W11
DSR600-6
AEL60
AC60-OC

5": ACT500W11
6": ACT600W11



5": AC50
6": AC60-OC*



*Use for duct also

TK08600 KIT (One each of:)

ACT600
ACT600W11
DSR8600
AEL60
AC60-OC

6": DSR600-6 9": DSR9600
8": DSR8600



5": OC50
6": Use AC60-OC

