

Imperial

Single-Wall Stove Pipe

INSTALLATION, SAFETY, & MAINTENANCE



This document will focus on the installation, safety, and maintenance of single-wall stove pipe components on solid-fuel stoves, such as wood-burning stoves, in indoor environments. Users should always check and plan the installation activity per the appliance's manual and ensure local building codes are met.

What is single-wall stove pipe?

Single-wall stove pipe is used when setting up an indoor residential wood-burning stove. Its primary function is to provide venting from inside the home to the outdoors. This pipe is formed from heavy-duty, cold-rolled sheet metal and is finished with a protective, high-temperature paint.

Single-wall stove pipe components are for indoor use only, specifically in the room where the wood-burning stove is installed. These components should not be used inside walls or ceilings.

Stove Pipe

Imperial black matte stove pipe components feature:

- 24-gauge, cold-rolled steel construction for durability and lasting performance
- Black matte paint coating that resists heat, surface scratching, and chipping
- Paint coating that tolerates maximum continuous operating temperatures of 700° F, with short exposures up to 800°F
- Crimped male ends on most stove pipe components for snug pipe connections



Measure Outlets & Openings

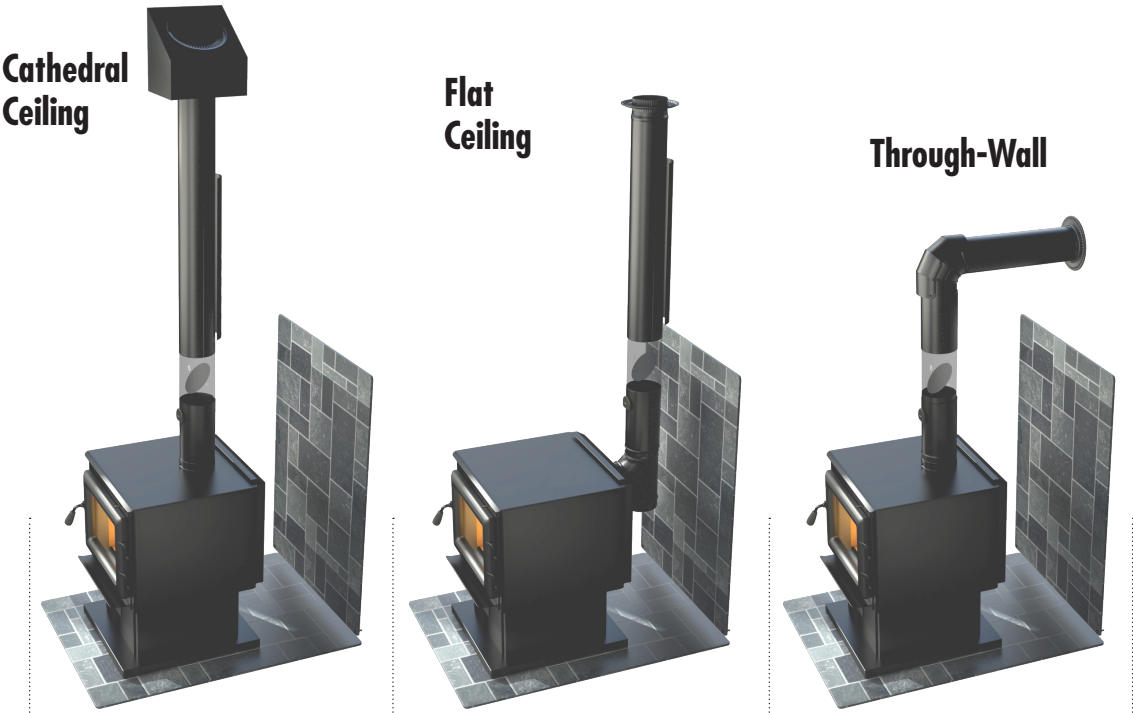
First, the installer must measure the diameter of the stove collar/outlet and the chimney opening. This diameter will determine the size of the stove pipe components needed for the installation. In general, the diameter of the stove outlet and chimney opening should match.

NOTE: Inconsistent stove pipe system diameters may cause draft issues and excessive creosote build-up within the pipe system that will reduce the efficiency of a wood-burning stove and cause a safety concern.

Confirm Type of Installation

The installer must then confirm the type of installation that is compatible with the user’s space.

There are many [types of wood-burning stove installations](#), and each may require different stove pipe components. Among the types of installation, the following are the most common in North America.



Main Components:

Stove Pipe	●	●	●
Stove Pipe Heat Shield	●	●	●
Stove Boards for wall and floor	●	●	●
Stove Pipe Elbow			●
Stove Pipe Elbow Heat Shield			●
Stove Pipe Tee & Cap (if rear outlet stove)		●	●
Cast Iron Damper	●	●	●
Thermometer	●	●	●
Wall Spacer Kit	●	●	●

Optional /as recommended for all installation types above:

Trim Collar, Burn Indicator, Reducer, Increaser, Half Joint Stove Pipe, Connector Drawband, Stove Top Drip-Free Adapter, Stove Pipe Connectors

NOTE: If possible, it is recommended to install a wood-burning stove with the stove pipe running straight up through the ceiling (i.e., Cathedral or Flat Ceiling Installation). Through-Wall Installations can be challenging and could create some venting constriction because of turns in the pipe.

Component Information

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Stove Pipe Assembly

The stove pipe should be assembled before use. Please use gloves when handling any stove pipe and other steel components.

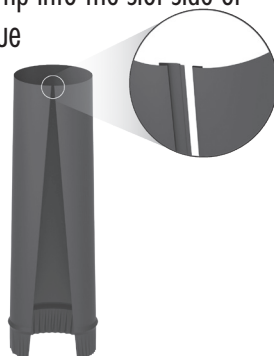
STEP 1

Align the top of the pipe.



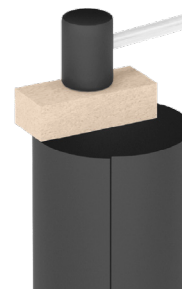
STEP 2

Assemble the pipe. Starting from the top — begin to snap the pipe together by sliding the hook-tip into the slot side of the lock. Continue snapping the full length of the pipe.



STEP 3

Skip this step if the top of the pipe is aligned. If the pipe top is not aligned, use a block of wood and tap down to align both sides of the pipe.



STEP 4

Inspect the finished product.

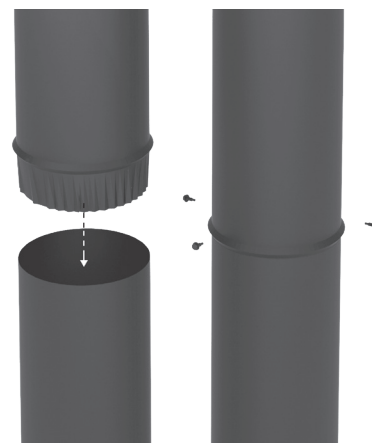
When completed, inspect the length of the snap-lock to ensure no space is open.



STEP 5

Install the connectors using three (3) Imperial 8-18 x 1/2" self-drilling stove pipe screws at each connection. The installation must show a clearance of 18-in minimum from wall, ceiling, and floor.

When making connections, the male or crimped end must point down toward the stove.



Black Matte Stove Pipe Components are especially made for solid-fuel stoves, such as wood-burning stoves, in indoor environments.

Installers should never use galvanized pipe in a wood-burning stove installation. Using galvanized pipe in place of black matte stove pipe or other stove pipe components may cause noxious fumes that can lead to health issues or injuries.

Continue to [Safety & Maintenance](#) for more information.

Perform Initial Burn

The installer/user must perform an initial burn. The paint on new black matte stove pipe components is not cured. Stove pipe components need to be cured before using the wood-burning stove in its full operation. This step is essential to prevent the protective high-temperature paint from melting or peeling. [See #7 under Safety & Maintenance for more information.](#)

Round Cast Iron Dampers

If the wood-burning stove appliance does not have built-in damper controls, a cast iron damper should be added to help control the fire and heat from the stove. A damper will assist in slowing down the process of wood combustion, which prevents the appliance from overheating.

Stove Pipe Union Connectors

A stove pipe union connector (crimped at both ends) is used to join two non-crimped ends of round pipe or fittings together.

Stove Pipe Elbows

Depending on the stove pipe run, adjustable elbows are available in both 45° and 90° turns. Also available is a 90° corrugated elbow which offers a better solution to the potential for creosote leakage.

NOTE: No more than two (2) elbows should be used in an installation.

Telescopic Pipe

For ease of installation, a telescopic stove pipe or a slip connector may be used to achieve the desired length.

Increases and Reducers

While not ideal, using an increaser or a reducer is a way to adapt different sized flue openings, and an alternative to replacing/reconstructing an existing chimney pipe system (i.e., a newly purchased wood-burning stove appliance's outlet is bigger or smaller than the existing chimney opening).

NOTE: Reducers or increasers must not be connected directly to the stove collar. Increases or reducers should be connected as close as possible to the chimney opening.

Tees and End Caps

For stoves where the outlet is located at the back, a corrugated elbow—or as an option, a clean-out tee—could be attached in order to direct the exhaust upward. With its 90° arm, a single-wall

stove pipe system can be extended from its top opening. A round end cap can be used to close the bottom end of the tee. The cap can then be removed for quick access and to clean the pipe.

Heat Shield, Stove Boards, and Spacer Kit

To protect walls, floors, or the area surrounding a wood-burning stove, a heat shield for stove pipe or elbows and stove/wall boards should be used.

Heat shields (for stove pipe and elbows) safeguard walls and ceilings from the radiating heat of the stove vent system and can reduce the clearance of a stove from the wall by up to 67% - or from 18-in to 6-in. They can also reduce the space between a single-wall stove pipe system and a ceiling to 9-in.

Stove boards are non-combustible heat shields that protect floors from hot coals, embers, ashes, and soot. They also reduce clearances between wood-burning appliances and combustible materials.

Type 1 stove boards are primarily used underneath a wood-burning stove as an ember protector but can also be used to reduce clearances to combustible materials around any heating appliance. Type 2 stove boards have the same functionalities and features as Type 1, but it has a greater R-Value of 1.5 for appliances that require thermal protection.

NOTE: Wall mounting stove boards require 1-in clearance from walls and floor. An Imperial stove board spacer kit is available to create that needed air space between the wall/floor and stove board, which allows the reduction of clearance from the stove to the wall or floor.

Thermometer and Burn Indication

It is important not to forget the thermometer or burn indicator in a wood-burning stove installation. The thermometer or burn indicator is a visual aid used to track and monitor the stove's temperature before it reaches a dangerous level. Small and convenient, the magnetic design allows for easy attachment onto a single-wall stove pipe. For best results, the thermometer should be installed on the stove pipe at a distance of 18-in to 24-in above the stove.

As a general requirement, a minimum of 18-in clearance from combustible materials (walls and ceilings) should be observed when working on the installation of any solid-fuel stove, such as wood-burning stove. Additionally, when making connections, the male or crimped end must point down toward the stove. Installing the stove pipe components with the crimp down will prevent condensation or creosote leakage. It is recommended to secure stove pipe using a minimum of three (3) self-drilling Imperial stove pipe screws at each connection point.

Safety & Maintenance

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1 The continuous operating temperature of the paint on a new stove pipe component is 700° F, with tolerance to short exposures up to 800° F.

2 For unshielded single-wall stove pipe installation, there should be at least an 18-in clearance from combustible materials, subject to the local building code.

Proximity is an essential factor to consider when installing a wood-burning stove or any heating appliance. The radiating heat from a stove can reach a dangerous level that is hot enough for combustible materials to ignite and burn. Aside from walls, floors, and ceilings, other surfaces and items around a stove are at an increased risk of catching fire. The clearances required should always be followed per fire and safety regulations. **An installer/user should always check the wood-burning stove appliance's manual and local building codes.**

3 Use heat shields and stove boards to protect the surrounding areas of wood-burning appliances. Heat shields can be attached to stove components to protect walls, ceilings, and other surfaces from intense heat, while stove boards are non-combustible pads (aka hearth pads) that protect and insulate floors from hot coals, embers, ashes, and soot. Both can reduce clearances between wood-burning appliances and combustible materials. *See more about heat shields and stove boards on page 5.*

NOTE: It is standard practice to use a combination of stove boards and stove pipe/elbow heat shields in any wood stove installation. And when using stove boards to reduce clearances, they must be mounted with a Wall Spacing Kit.

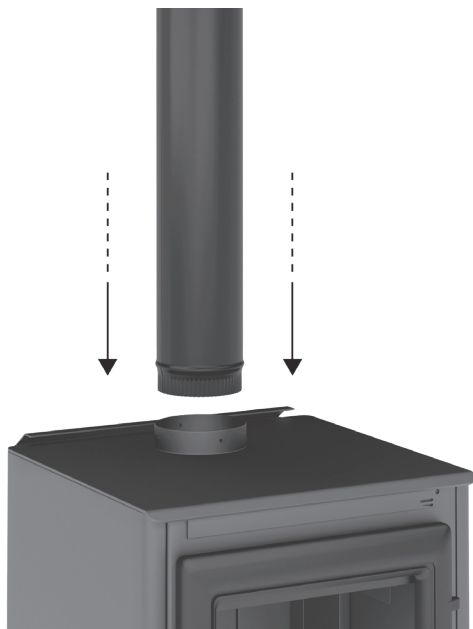
4 Wall and ceiling installation of stove boards requires an inch of clearance to the wall and floor for air convection to flow in between the combustible surface and board. That 1-in of space will prevent the stove's heat from reaching the surface behind the panel. Correctly mounting stove boards on a wall using the Imperial wall spacer kit allows the clearance to be reduced up to 67% (i.e., from 36-in to 12-in).



When using the stove board as a ceiling protector, a common minimum required distance from the top of the stove to the combustible ceiling is 48-in. This safety tip should be considered when installing a wood-burning stove in the basement of an older home, where the ceiling might be lower. An installer/user should always check the wood-burning stove appliance manual for additional safety reminders and instructions.



5 Stove pipe components should be installed with the crimped end toward the wood-burning stove. The crimped ends on single-wall stove pipe components help create a snug connection in a stove pipe system. It is necessary to have the stove pipe component's male (crimped) end point toward the stove to ensure condensation and creosote travel down within the pipe to prevent leakage.



Exposed creosote is not only unappealing; it is also a fire hazard and a health risk. Proper installation of stove pipe can prevent creosote leakage.



6 Stove pipe components should be secured with at least three (3) evenly-spaced Imperial self-drilling stove pipe screws at the connection where the two components meet. Refer to Step 5 of Stove Pipe Assembly.

7 The paint on new single-wall stove pipe components is not cured.

Stove pipe components should be cured during the first burn, under 475° F heat for 2-3 hours. This procedure will cause a non-toxic odor for the first hours of burning. The home should be well ventilated during the curing process (user should open windows, doors, etc.).



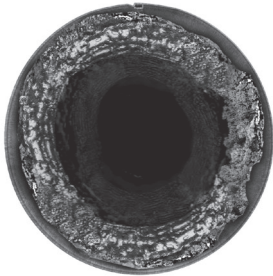
8 Annual professional inspection and cleaning of the entire stove and chimney pipe system is recommended to prevent fires and downdrafts, and to avoid toxic substances from entering the home. Although it is strongly recommended to seek a professional to inspect and clean the entire stove and chimney pipe system, Imperial offers products that can be used to do-it-yourself (DIY).

- Creosote is a more severe combustion byproduct than soot. It is tarry, thick, and sometimes flaky. The risk of chimney fire increases as the buildup gets thicker. Creosote should be cleaned as soon as buildup is identified.

3 STAGES OF CREOSOTE BUILDUP:



First stage — creosote looks dusty, flaky and can be removed by a chimney brush



Second stage — creosote is thicker, starts to form layers, and looks more like tar than soot

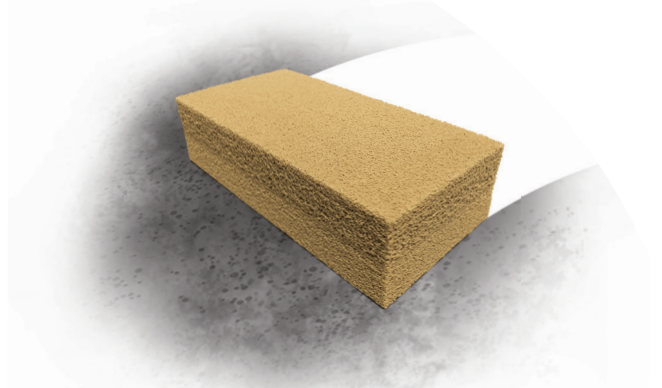


Third stage — a large amount of creosote/tar is encrusted on the pipe lining. It is highly recommended to hire professional at this stage.

- When cleaning a chimney or stove pipe components of soot and minor creosote buildups, a soot remover powder, creosote conditioner or creosote treatment may be used to loosen the buildup (depending on the creosote stage). The correct chimney brush should be used to sweep the soot or loose

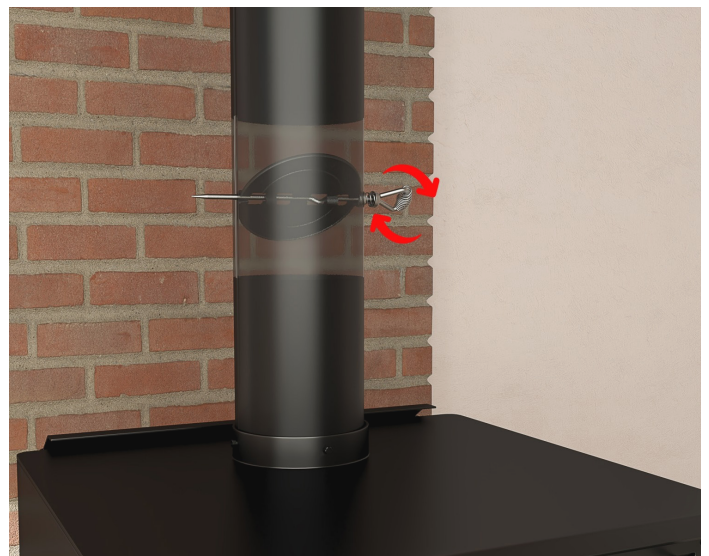
creosote out of the stove and chimney pipe. A pellet stove brush and rod can be used for pellet stove vent cleaning.

NOTE: The use of a chemical treatment should never be intended as a replacement for a physical chimney inspection and cleaning.



- A soot remover dry sponge can be used to easily and quickly clean soot from exposed surfaces. Always use this sponge dry; do not wet.
- Users should always wear protective gloves and make sure to only use cleaning and maintenance products on cooled-down surfaces or at required temperature conditions.

9 Older wood-burning stove models almost always require a heat-resistant metal damper. If an installation requires a damper, it must be installed in a fully assembled stove pipe first before the rest of the stove pipe components are put together. The installer should be sure to use the correct size damper and can refer to the instruction sheet for more details.



Wood-burning stove maintenance does not stop at the stove pipe system. Optimal efficiency of a wood-burning stove is essential for the overall performance of an entire heating system.



- Users should consider replacing the gasket around wood-burning stove doors annually to prevent leakage and overheating.
- The chimney should also be cleaned, using the correct chimney brush and rods to clean the creosote buildup. Depending on the chimney system, additional tools other than the rod may be required (i.e., pull ring, weights, etc.).
- Firebricks should be replaced as needed. Users can insulate the firebox by properly lining the interior with firebricks. This will keep the heat from escaping the stove, protect the inside of the metal casing from intense heat, and help make the wood-burning stove surface cooler.
- If air leaks are identified, Imperial sealants can help seal the source. Depending on the stove's heat temperature rating, a general purpose, high-temperature silicone sealant or cement may be used.

IMPORTANT: Failure to follow all instructions and guidelines may result in PROPERTY DAMAGE OR SERIOUS INJURY.

Imperial Manufacturing Group Inc. is the single source for all your heat care needs.
For more details about Imperial single-wall stove pipe components and stove and fireplace maintenance products, visit

<https://www.imperialgroup.ca/product/stove-fireplace>