

## Safety+PLUS ADVANTAGE®

### COATED STAINLESS STEEL GAS CONNECTORS INSTALLATION INSTRUCTIONS



For Residential  
and Commercial  
Gas Appliances

**⚠ CAUTION: DO NOT INSTALL THIS PRODUCT UNTIL YOU READ AND UNDERSTAND ALL INSTRUCTIONS. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY, PROPERTY DAMAGE OR PRODUCT FAILURE.**

The Safety+PLUS ADVANTAGE® coated stainless steel gas connector combines two state-of-the-art technologies to deliver an excellent gas connector for your home and family. Safety+PLUS ADVANTAGE gas connectors feature an advanced corrosion resistant coating called ProCoat®. A proprietary polymer coating, ProCoat is specially engineered to resist the corrosion from most harsh chemicals found in many household cleaning, plumbing repair and masonry products. Approved for indoor and outdoor use, ProCoat is formulated to resist the harsh effect of UV rays and salt.

Safety+PLUS® excess flow valves (EFV), an automatic safety valve for gas, utilize a patented excess flow technology. In the event of a gas line rupture or disconnection at the appliance, the Safety+PLUS valve immediately restricts gas flow to a non-hazardous level (a bypass flow) to avert the potential for a dangerous release of gas into the home. Only after the gas line has been properly repaired, the bypass flow automatically resets the valve, allowing gas flow to resume to the appliance.

- Use only on low pressure natural and LP gas piping systems. DO NOT USE on pipelines or piping systems that transfer or move liquids, including high-pressure liquid propane.
- Use only with gas line pressures at a minimum of 4 in. water column (W.C.) and not greater than 14 in. W.C. (1/2 psig) at the stub out.
- Use only in connection with residential and commercial gas appliances, where installation is immediately downstream of the gas supply stub out and manual gas shut-off valve.

#### Tools Needed for Installation:

- (2) 10 in adjustable wrenches
- Pipe dope or gas pipe thread tape
- Leak detection solution

#### -sizing the connector to the appliance

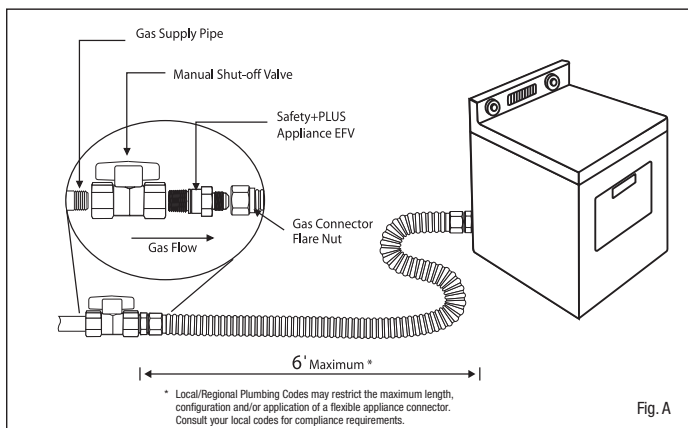
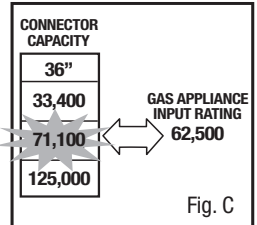
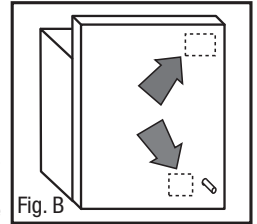
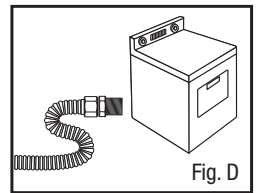


Fig. A

1. Measure the distance between the gas supply stub out and the appliance. Add 2 – 3 inches to the measured distance for appropriate connector length for the installation. (See Fig. A)
2. Identify the maximum (gas) input rating of the appliance (referred to as “input rating”). Manufacturer’s label, located near the gas inlet of the appliance will contain this information. (See Fig. B) Contact the appliance manufacturer if you are unsure of the correct rating for the appliance.
3. Using the chart, select the gas connector with the maximum flow capacity that is HIGHER than the input rating of the appliance. However, select the gas connector with the maximum flow capacity that is CLOSEST TO the input rating of the appliance. (Figure C)



- ⚠ WARNING:** The maximum gas input rating of the appliance must be within the flow capacity range of the connector. If the Safety+PLUS gas connector is not properly sized to the application, the Safety+PLUS connector may not activate in the event of a gas line rupture or disconnection. If the Safety+PLUS gas connector is under sized for the appliance, may activate prematurely restricting gas flow during normal operation of the appliance.
4. Finally, select the connector with the end fittings that match the outlet of your manual gas shut-off valve and the gas inlet to the appliance. (Figure D)



Gas Connector Maximum Flow Capacity										
Part #	ID Color Code		12 in	18 in	24 in	30 in	36 in	48 in	60 in	72 in
<b>Gas Connector with Standard Fittings</b>										
CSSL	1/4	BTU's	48,000	43,800	40,000	36,400	33,400	28,300	24,900	23,100
	Purple	Watts	14,067	12,837	11,723	10,668	9,789	8,294	7,297	6,770
CSSD	3/8	BTU's	102,000	93,100	85,000	77,100	71,100	60,500	53,200	49,100
	Green	Watts	29,893	27,285	24,911	22,596	20,837	17,731	15,591	14,390
CSSC	1/2	BTU's	180,000	164,200	150,000	136,000	125,000	106,000	93,200	86,000
	Gold	Watts	52,752	48,122	43,961	39,858	36,634	31,066	27,314	25,204
<b>Safety+Plus® (Gas Connector with Excess Flow Valve Attached)</b>										
CSSL	1/4	BTU's	42,000*	37,400*	36,800*	36,400	33,400	28,300	24,900	23,100
	Purple	Watts	12,308*	10,960*	10,784*	10,668	9,789	8,294	7,297	6,770
CSSD	3/8	BTU's	102,000	93,100	85,000	77,100	71,100	60,500	53,200	49,100
	Green	Watts	29,893	27,285	24,911	22,596	20,837	17,731	15,591	14,390
CSSC	1/2	BTU's	122,000*	118,000*	115,000*	111,000*	107,000*	106,000	93,200	86,000
	Gold	Watts	35,754*	34,581*	33,702*	32,530*	31,358*	31,066	27,314	25,204

\*Note: Connecting the safety valve lowers these values below the Z21.24/CSA 6.10 and Z21.75/CSA 6.27 standards

#### Listings & Certifications:

Components CSA listed to ANSI Z21.24 / CSA 6.10 standard “Connectors for Gas Appliances”

Components CSA listed to ANSI Z21.75 / CSA 6.27 standard “Connectors for Outdoor Gas Appliances & Manufactured Homes”

**NOTE:** This connector meets or exceeds the minimum allowable capacity as determined under test conditions specified in ANSI Z21.24 • CSA 6.10. Straight length capacity rated in BTU per hr. using: 0.64 SP. Gr., 1000 BTU per Cu Ft. Gas at 0.50 inch Water Column Pressure Drop. The capacity at 50 Pa (0.2 inch water column) pressure drop can be determined by multiplying the BTU per hr. listed in the table above by 0.632.

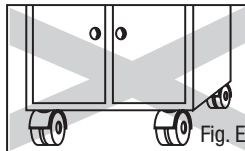
#### INSTALLATION INSTRUCTIONS

#### SAFETY PRECAUTIONS:

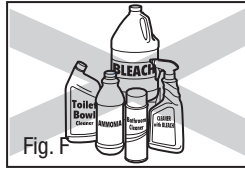
**⚠ WARNING:** Read and follow all installation instructions carefully. When in doubt, call a licensed plumber or your local gas company.

**⚠ WARNING:** DO NOT reuse the gas connector or fittings. The connector, fittings and valve are designed for use on original installation only. Removal of connector and additional handling may have damaged connector making it unsafe for reuse.

**⚠ WARNING:** DO NOT use this gas connector on appliances equipped with rollers or casters. (Figure E) This connector is designed for limited movement after installation. Repeated bending, flexing or extreme vibration can cause metal fatigue. DO NOT repeatedly move appliance for cleaning once installed.

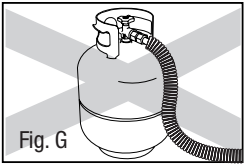


**⚠ WARNING:** AVOID connector contact with foreign objects such as wall studs, electrical wiring, copper or iron pipe, paneling sheet metal, etc. Gas systems should NOT be used as electrical grounds. Dissimilar metals should be isolated from each other.



**⚠ WARNING:** Keep cleaning solvents containing ammonia or chlorine away from uncoated gas connectors. (Figure F) DO NOT store these solutions in closets containing a water heater or furnace. Chlorine can corrode uncoated stainless steel.

**⚠ WARNING:** DO NOT use connectors to make a direct connection to L.P. gas containers. (Figure G) Connection MUST be made to the regulator device only.



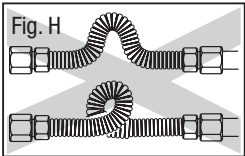
**⚠ WARNING:** DO NOT use connectors on appliances in moving vehicles such as RV's, trailers, etc. This does not include manufactured housing (permanent residence mobile homes).

#### INSTALLATION:

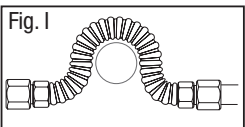
**⚠ WARNING:** DO NOT CONNECT Safety+PLUS EXCESS FLOW VALVE DIRECTLY TO THE APPLIANCE. The Safety+PLUS valve must be installed between the gas supply pipe and the flexible gas connector. If installed to the gas inlet of the appliance, the Safety+PLUS valve will not operate.

**⚠ WARNING:** DO NOT USE matches, candles, open flames or other sources of ignition during product installation. A spark or flame may ignite gas vapors causing property damage and/or personal injury including death. Extinguish all pilot lights within 50 ft. before proceeding with appliance installation.

**⚠ WARNING: DO NOT** stretch connector to make it fit. Connector should be at least 2 in. – 3 in. longer than the distance between the appliance and gas supply. Stretching the connector will stress the stainless steel which may cause cracks or breaks during appliance use or if accidentally hit.



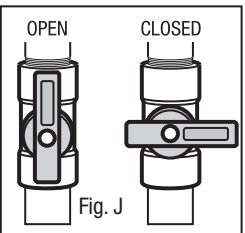
**⚠ WARNING: DO NOT** kink, twist or bend connector sharply – doing so will cause the connector to fail. Be careful when installing connector to avoid pinching or kinking the connector (Figure H).



**⚠ WARNING: DO NOT** allow connector to become trapped against sharp edges or corners.

**⚠ WARNING: DO NOT** use connector if bent tighter than 1-1/2 in. (the diameter of a golf ball). (Figure I)

**⚠ WARNING:** Turn off gas supply at the appliance before disconnecting old appliance. The manual gas shut-off valve, located near the appliance, is closed and gas is shut-off when valve handle is perpendicular to the valve body (Figure J). In absence of manual gas shut-off valve near appliance location, gas MUST be shut off at main valve, before the meter.

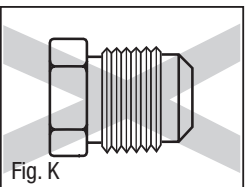


**NOTE:** The Fuel Gas Codes require installation of a manual gas shut-off valve in the same room, within easy reach of the appliance.

1. Clean ALL pipe threads with a wire brush and rag to ensure connections are free of any debris such metal shavings, rust, dirt, oil or water.

2. Apply pipe thread sealant to the male pipe threads.

**⚠ CAUTION:** DO NOT apply pipe thread sealant or tape to flare ends of fittings or valves (Figure K). Sealant and tape will prevent this connection from sealing properly.



3. If not already installed, thread a manual gas shut-off valve onto gas stub out. Using one adjustable wrench to stabilize the gas stub out, wrench tighten valve with second wrench.

4. Inspect the valve before installing to be certain it has not been damaged. Thread brass Safety+PLUS valve to manual gas shut-off valve. Using one adjustable wrench to stabilize the manual gas shut-off valve, wrench tighten Safety+PLUS valve with second wrench. Tighten all connections in the same manner.

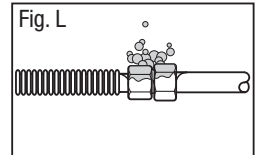
5. Thread steel gas fitting to gas inlet on appliance. Wrench tighten.

6. Thread flare nuts of gas connector onto Safety+PLUS valve and steel fitting. Wrench tighten both connections.

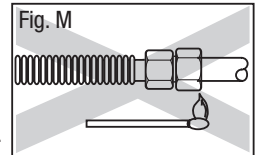
7. SLOWLY open the manual gas shut-off valve to allow gas to enter the system. The valve is open and gas is flowing when the valve handle is parallel to the valve body (Figure H). NOTE: If gas enters system too quickly, the Safety+PLUS valve may activate pre-maturely. If this occurs, the Safety+PLUS valve will re-open in less than 60 seconds (you will hear a soft "click").

**⚠ WARNING:** DO NOT TURN ON APPLIANCE UNTIL ALL CONNECTIONS ARE LEAK TESTED!

8. Leak test all connections with a clear soap and water solution or leak detection solution; bubbles will indicate a leak in the connection. (Figure L) If a leak is detected, turn off gas supply before further tightening connections.



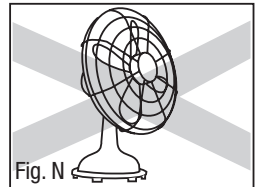
**⚠ WARNING:** DO NOT USE matches, candles, open flames or other sources of ignition to leak test connector or fittings. A spark or flame may ignite gas leaks potentially causing property damage and/or personal injury including death. (Figure M)



**⚠ CAUTION:** DO NOT rinse connector with water and towel dry after leak testing connections. Soap and test solutions may cause an uncoated connector to corrode.

9. Wait at least 10 minutes to light pilot(s) once you have leak tested all connections and have found no leaks, to be certain that all vapors have dissipated.

**⚠ WARNING:** DO NOT USE motorized equipment or other sources of combustion to dissipate gas vapors. Motorized equipment can ignite gas vapors causing fire or explosion which may result in property damage and/or personal injury including death. (Figure N)



**⚠ DANGER:** Fuel gases are colorless, tasteless and in its pure state, odorless. They are odorized (rotten egg smell) so that their presence can be detected. LP gases are heavier than air and dissipate slower than natural or manufactured gases. LP gas, if released in quantity, will accumulate in low-lying areas such as a basement or crawl space.

**THIS SAFETY+PLUS EXCESS FLOW VALVE (included with the connector) IS NOT DESIGNED TO ACTIVATE IF ANY OF THE FOLLOWING CONDITIONS ARE PRESENT:**

- There are small leaks such as pin hole leaks or lesser leaks caused by cracks or loose connections that do not increase the gas flow above normal operating capacity of the appliance.
- The gas appliance malfunctions or the user fails to shut off gas burners.
- There is foreign matter, such as pipe thread sealant, lodged in the valve.
- The manual gas shut-off valve is partially opened, or there is a pipe break or damage that has occurred upstream of the Safety+PLUS valve excess flow valve, that prevents sufficient gas flow through the valve.
- There is an insufficient gas flow from an improperly sized gas piping system upstream of the Safety+PLUS valve.
- The gas flow through the valve is in the wrong direction. The excess flow valve responds to gas flow in one direction only (see product label). The valve must be installed so that the arrows point in the direction of gas flow.
- The Safety+PLUS valve is damaged, exposed to fire or improperly installed.

**⚠ WARNING:** Replace the Safety+PLUS valve if it has been damaged or exposed to fire.

Excess Flow Valve



Gas Connector



**BrassCraft®**

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Manufacturer assumes no responsibility for failure due to improper installation.

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