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I. INTRODUCTION

Groth Corporation's flame checks are designed to inhibit flame propagation in gas piping systems and to protect low pressure tanks containing flammable liquids. They protect low flash point liquids from externally caused sources of heat and ignition, providing increased fire protection and safety.

The flame check products consist of two main components, the arrester body and the flame element. The body serves as the connecting interface to the piping system. In the event that a flame front is traveling through the pipe, the flame element is instrumental in stopping the flame passage. The geometry of the flame element absorbs the heat from the vapor flow, cooling the vapor to prevent auto-ignition on the protected side.

The flame element is comprised of small wafers of wire mesh and perforated plates aligned so that an approaching flame front is slowed down and then quenched before it can propagate to the protected side of the device. The small perforated wafers layered with wire mesh are used to promote heat absorption and turbulence and are constructed of corrosion resistant materials. The assembly as a whole, is also engineered for minimum pressure drop.

A flame arrester should be treated as a safety device and maintained by a knowledgeable repair technician. Carefully read and understand this manual before installing or servicing this product.

For information not contained in this manual, please contact:

Groth Corporation
13650 N. Promenade Blvd.
Stafford, TX, 77477 USA
Phone: 281-295-6800
Fax: 281-295-6999
www.grothcorp.com

II. INSPECTION AND INSTALLATION

All Groth Corporation's flame checks are bi-directional and the installation on a tank or piping system depends to a great extent on the design of the system. Groth model 7622B flame check may be installed in any orientation (horizontal, vertical, etc.). This product is used in gas lines where flow can be easily shut off. They are normally supplied with either threaded or flanged connections. As with any new equipment, prior to installation, an inspection should be made to ensure all thread protectors and packing materials are removed. Also inspect the unit to ensure the unit is not damaged due to rough handling during shipment or job site accident. All connections should be tight.

Note: This series of flame arresters has ANSI FNPT threaded connections or can be coupled with ANSI 150#, PN 10 OR PN 16 flanges. Each unit is pneumatically leak tested to 15 PSIG at the factory.

The following application guidelines should be observed at installation:

Table 1

FNPT Size	Gas Type(IEC)	Gas Group(NEC)	Max Run Up Length (Pipe diameters =L/D)	Max Pre-ignition Pressure (PSIA)
½"	IIA or IIB3	D or C	50	23.2
¾"	IIA or IIB3	D or C	50	23.2
1"	IIA or IIB3	D or C	50	23.2
1 ½"	IIA or IIB3	D or C	50	23.2
2"	IIA or IIB3	D or C	50	23.2

Note: Groth Corporation's flame arresters have been tested by a 3rd party ATEX approved test facility. This device is considered an integral part of a "Shut Down Operation" system and is therefore not designed for stabilized burn.

1. Remove any flange protectors and discard all packing material. Inspect flange faces and flame element for damage or contamination.
2. If flange option is used, inspect the gasket seating surface of the tank nozzle or piping. It must be clean, flat, free of scratches, corrosion and tool marks.
4. Teflon tape is recommended for installation due to the possible clogging of the flame element when pipe sealant or paste is used.
5. Set the arrester between the mating pipe or flanges and ensure there will not be too much stress on the flame check body.
6. Make up the final torque and check that all connections are tight and that the body of the flame check is secure as well.

WARNING: After installation, all connections should be inspected for vapor leakage. This may be accomplished by static pressure test, gas detector, or "bubble" test using a liquid leak detector.

III. MAINTENANCE

For maximum operating efficiency, the element of a flame arrester must be inspected for clogging at regular intervals. Frequency of inspection and maintenance should be based on the experience gained in each application. For servicing this unit, the flame check should be removed from the line. It is recommended that the arrester be removed for inspection of the element at least once per year or any time that one of the following conditions occurs:

- **Excessive pressure drop is encountered at a known flow rate.**
- **A flame front is detected.**

1. Purge the line or tank with an inert gas before attempting to remove the arrester for maintenance.

CAUTION: The connecting pipeline must be free of all hazardous or flammable vapors before inspection procedures begin. Before disassembling consult Material Safety Data Sheets (MSDS) for all products that were exposed to in service. The components should be cleaned according to MSDS procedures. Take appropriate safety precautions regarding eye protection, skin contact & respiration.

2. Refer to Fig. 1 which illustrates a typical flame check element assembly.

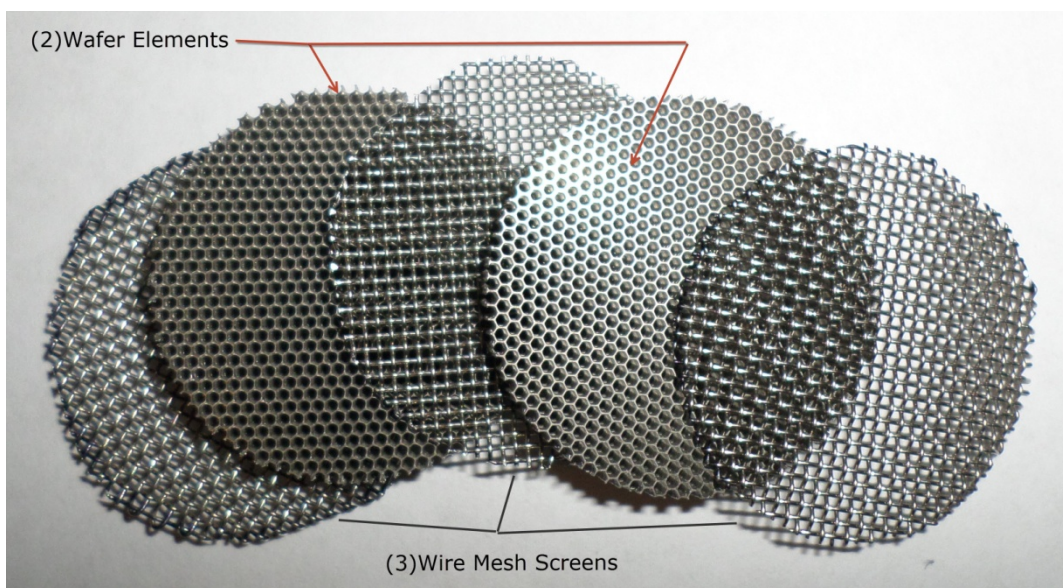


FIGURE 1 - TYPICAL MODEL 7622B FLAME CHECK ELEMENT

3. Loosen the piping connections and withdraw the FULL housing.

WARNING: Failure to replace a damaged or clogged flame element can render the flame arrester ineffective

WARNING: The full housing must be removed from the line because the wafers will tend to come out of alignment and cause the unit to lose its seal and become ineffective if the housing is separated in the horizontal position.

4. Verify that the element openings are not clogged by viewing a light source through the element passages. If the flame element is dirty or clogged it can be cleaned by one of the following methods:
 - Compressed air
 - High pressure steam or water purge
 - Solvent wash followed by compressed air

WARNING: Never try to clean the element by inserting a sharp tool or probe into the orifices. Any damage to the integrity of these passages can render the flame arrester ineffective.

CAUTION: If compressed air, steam, or high pressure water jet is used to clean clogged element passageways, restrict access to the area to prevent injury from blown debris exiting the element. Use appropriate personal safety equipment for the cleaning method used.

TIP: The best method of cleaning and frequency should be based on the experience gained in each application.

5. Inspect the sealing gasket for damage and replace if necessary.(See Table 2 for replacement kit part numbers.)
6. Install a gasket in the counter bore of the coupling. Position the element housing to align with the counter bore. Make sure the flame elements are centered while the coupling halves are screwed together. **Improper alignment of the element wafers during the reassembly process may render the unit ineffective at stopping the flame and could cause a leak path.**
7. If the arrester is in high temperature service or stainless steel mating components are used, apply an anti-seize compound such as moly-disulfide to the threaded connections. Use this anti-seize sparingly and do not allow excess compound to clog the flame bank.
8. Make up the final torque and check that all connections are tight and that the flame check body is secure.

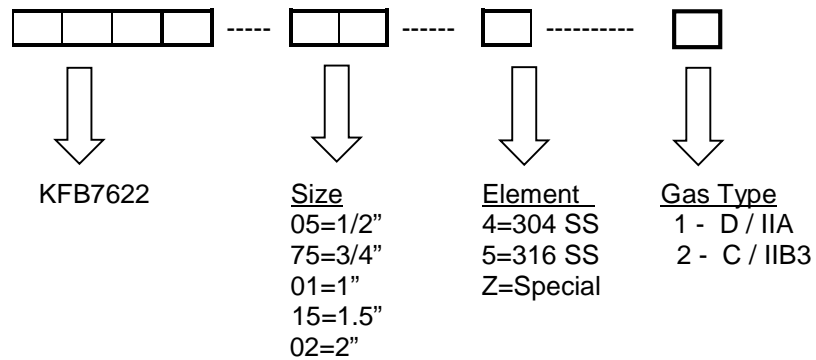
IV. SPARE PARTS

Flame Bank Kits are available upon request. Kits include the flame arrester element assembly and one non-asbestos gasket. Kits are based on Model Number, Size, Material and Gas Group. To procure the appropriate kit, please contact Groth Corporation with the Serial Number, Model Number, Size, Material and Gas Group.

V. TABLE 2 – FLAME BANK ASSEMBLY KITS

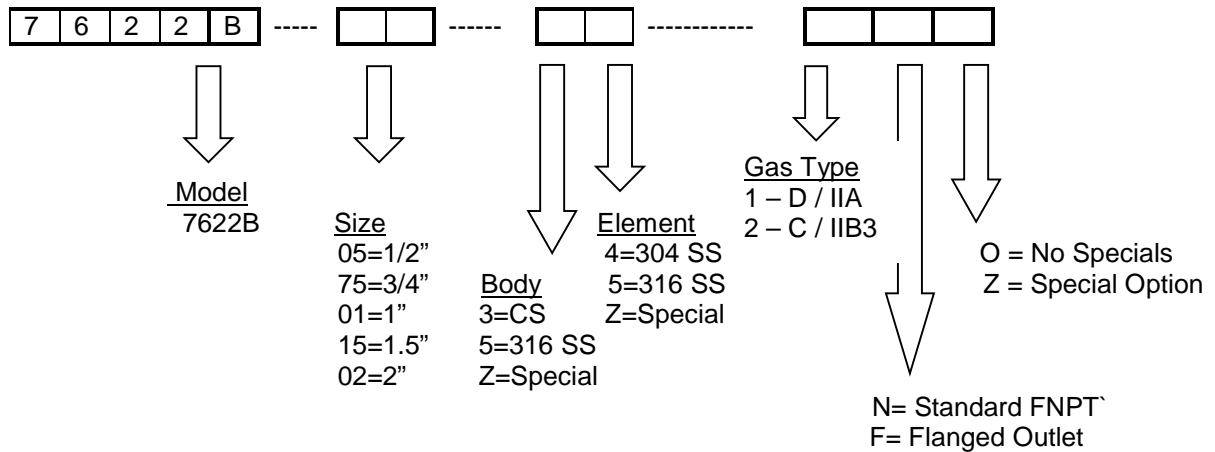
Size	Element Material	Gas Group(NEC/ATEX)	Kit P/N
1/2"	304 SS	D Gas / IIA	KFB76220541
3/4"	304 SS	D Gas / IIA	KFB76227541
1"	304 SS	D Gas / IIA	KFB76220141
1 1/2"	304 SS	D Gas / IIA	KFB76221541
2"	304 SS	D Gas / IIA	KFB76220241
1/2"	316 SS	D Gas / IIA	KFB76220551
3/4"	316 SS	D Gas / IIA	KFB76227551
1"	316 SS	D Gas / IIA	KFB76220151
1 1/2"	316 SS	D Gas / IIA	KFB76221551
2"	316 SS	D Gas / IIA	KFB76220251
1/2"	304 SS	C Gas / IIB3	KFB76220542
3/4"	304 SS	C Gas / IIB3	KFB76227542
1"	304 SS	C Gas / IIB3	KFB76220142
1 1/2"	304 SS	C Gas / IIB3	KFB76221542
2"	304 SS	C Gas / IIB3	KFB76220242
1/2"	316 SS	C Gas / IIB3	KFB76220552
3/4"	316 SS	C Gas / IIB3	KFB76227552
1"	316 SS	C Gas / IIB3	KFB76220152
1 1/2"	316 SS	C Gas / IIB3	KFB76221552
2"	316 SS	C Gas / IIB3	KFB76220252

Kit Number Identification



VI. MODEL NUMBER IDENTIFICATION

The nameplate on the Flame Arrester contains the Model Number, Serial Number, operational, temperature, operational pressure, and Run up (L/D) distance. The Model Number contains additional information about materials of construction, soft goods and options. The following chart will assist in relating the Model Number to the characteristics of your valve:



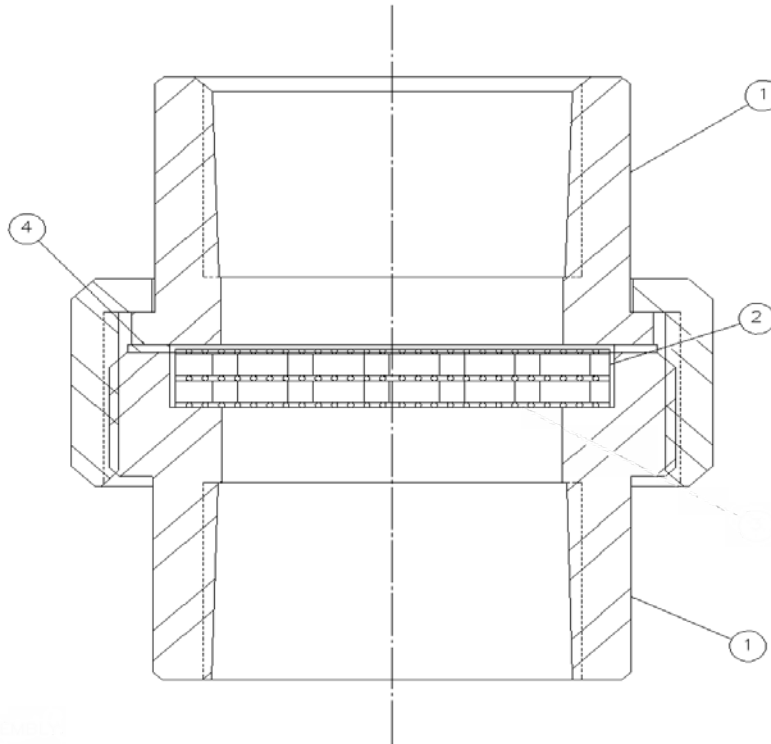
EXAMPLE: Model 7622B-01-35-1NO indicates a 1" Model 7622B with a CS Body and 316 SS flame element, D gas group, Standard FNPT inlet/outlet connections, and no special options.

Sample Explosion Groups

Inflammable material	IEC		NEC/CEC		
	Zone	Group	Class	Division	Group
Gas and Vapors					
Cyclopropane Ethyl Ether Ethylene Tetrafluoroethylene	0,1 or 2	II B	I	1 or 2	C
Acetone Benzene Butane Hexane Propane Paint solvents Gasoline Vapors Natural gas(Methane)	0,1 or 2	II A	I	1 or 2	D

* For a more extensive list of gases and group ratings, refer to appropriate standard.

APPENDIX A: Model 7622B Flame Check (1/2" - 2")



ITEM	DESCRIPTION	STD MATERIALS OF CONSTRUCTION	
1	COUPLING HOUSING	CS (WCB)	316 SS (CF-8M)
2	*FLAME ELEMENT ASSEMBLY	304 SS	304 SS
4	GASKET	NON-ASB	NON-ASB

* Recommended Spare Parts

Notice: Please specify model number, size and serial number as shown on the equipment tag when ordering replacement parts.

Groth Corporation has representatives throughout the world.
Contact Groth Corporation or visit us on the web for the authorized representative in your area.



GROTH CORPORATION

13650 N. Promenade Blvd.
Stafford, TX 77477 USA
Phone: (281) 295-6800
Toll Free: (800) 354-7684
Fax: (281) 295-6999
E-mail: sales@grothcorp.com
Website: www.grothcorp.com