

Gas Equipment

Flashback arrestors & quick
release couplings



Flashback Arrestors & Quick Release Couplings

Core to the Afrox gas equipment safety offering is the Afrox flashback arrestor range. Afrox flashback arrestors are precision-manufactured, assembled and individually tested to the most stringent worldwide manufacturing standards. The superior quality of Afrox flashback arrestors makes them one of our most widely used products.

A flashback is a flame travelling at supersonic speed in the opposite direction to normal gas flow in oxy-fuel gas equipment.



The backfeeding of gases, that promotes flashbacks is generally caused by one of the following:

- Excessive pressure. If the flow rate exceeds the nozzle capacity, the gas at the higher pressure then flows into the lower-pressure gas line. This will occur if incorrect pressures are used or if nozzles, cutting attachments and welding torches are incompatible.
- Lighting up incorrectly with both torch control valves open but one cylinder closed. In spite of better equipment, flashbacks remain a problem in oxy-fuel gas systems. There are many reasons for this, including the growing use of welding and cutting equipment by unskilled or semi-skilled persons who sometimes short-cut safety procedures in order to save time.
- A drop in pressure of either gas due to leaks in the regulator, hose or connections. This results in backfeeding into the low pressure line.
- The reverse flow of gases during temporary storage or shutdown, incorrect closedown procedures or malfunctioning valves or regulators.

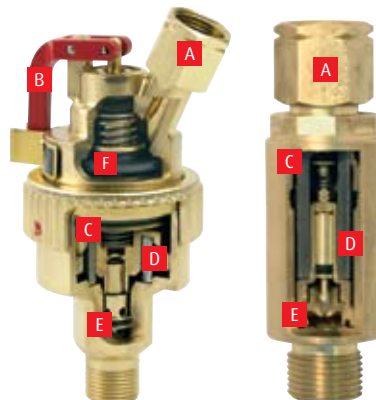
Features

- A** Inlet filter – a large stainless steel surface made from wire mesh to prevent foreign matter entering the unit
- B** Signal lever (resettable), drop-down shroud (premier)
- C** Non-return valve (NV) – a spring loaded valve preventing backfeed of gas upstream of the flashback arrestor

- D** Flame arrestor (FA) – a large sintered stainless steel element for repeatedly arresting flames
- E** Temperature-activated cut-off valve (TV), a valve that cuts off gas supply in the event of sustained, multiple flashbacks or a flame being held in the device. Once activated, this cannot be reset and the unit must be replaced (regulator mounted flashback arrestors only)

The Afrox resettable and premier flashback arrestors also feature

- F** A pressure-sensitive cut-off device (PV) – this valve isolates the gas supply if a backfeed of gas is detected. When this valve is activated, the signal lever B is raised or the shroud drops to alert the user to a potentially dangerous situation. Once the cause of the backfeed has been corrected, the flashback arrestor can be reset, and the user can continue in safety



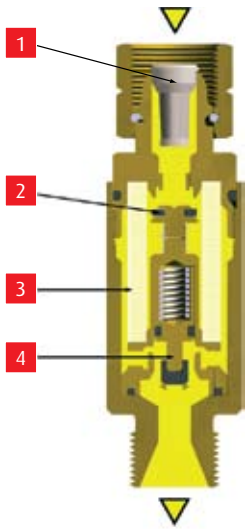
Caution: Flashback arrestors will contribute to significant pressure drop in a system, causing reduced flow. Pressure increase may be required to maintain equivalent flow rates after installing a flashback arrestor in an oxy-fuel system.

Maximum Working Pressures

Acetylene	150 kPa
LPG	500 kPa
Hydrogen	500 kPa
Air/Oxygen	2 000 kPa

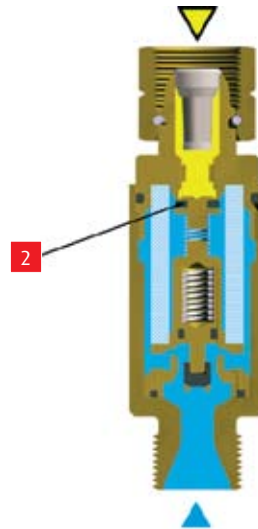
How Does An FBA Work?

Normal flow conditions



- 1 Inlet filter
- 2 Non-return valve
- 3 Flame arrester
- 4 Temperature sensitive cut-off valve

Reverse flow occurring

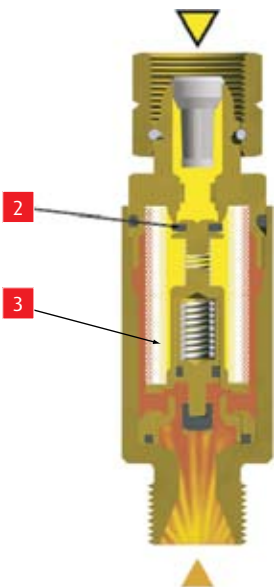


- 2 Non-return valve closed

Non-return valve

Prevents the mixing of gases upstream of the FBA, thereby helping to prevent conditions conducive to a flashback occurring.

Flashback occurring

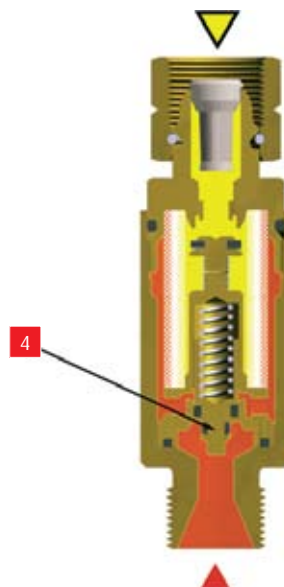


- 2 Non-return valve closed
- 3 Flame arrester

Flame arrester

The flame arrester (sintered element) is one of the key components of the FBA. It has very high thermal conductivity that quickly removes the heat from the flame - extinguishing it.

Sustained backfire occurring



- 4 Temperature sensitive cut-off valve

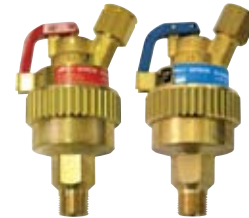
Thermal cut-off

As a final fail-safe in the event of repetitive flashbacks or sustained backfire, the thermal cut-off is activated and permanently cuts the flow of gas.

Cartridge & Automatic Arrestors



Model	Gas	Inlet Connection	Outlet Connection	Description	Item Number
Afrox Super 90	Fuel Gas	3/8" BSP	3/8" BSP	Afrox Regulator Mount	W012020
Afrox Super 90	Oxygen	3/8" BSP	3/8" BSP	Afrox Regulator Mount	W012021



Model	Gas	Inlet Connection	Outlet Connection	Description	Item Number
Afrox F5	Fuel Gas	3/8" BSP	3/8" BSP	Afrox Regulator Mount	W012028
Afrox F5	Oxygen	3/8" BSP	3/8" BSP	Afrox Regulator Mount	W012029



Model	Gas	Inlet Connection	Outlet Connection	Description	Item Number
Afrox PortaPak®	Fuel Gas	1/4" BSP	1/4" BSP	PortaPak® Regulator Mount	W012017
Afrox PortaPak®	Oxygen	1/4" BSP	1/4" BSP	PortaPak® Regulator Mount	W012016



Model	Gas	Inlet Connection	Outlet Connection	Description	Item Number
Afrox 85-10	Fuel Gas	3/8" BSP	3/8" BSP	Afrox Regulator Mount	W012011
Afrox 85-10	Oxygen	3/8" BSP	3/8" BSP	Afrox Regulator Mount (Extra high flow)	W012012



Model	Gas	Inlet Connection	Outlet Connection	Description	Item Number
Afrox F7	Fuel Gas	8 mm Hose	3/8" BSP	Afrox Universal® and Type 2 Torch Mount	W012030
Afrox F7	Oxygen	8 mm Hose	3/8" BSP	Afrox Universal® and Type 2 Torch Mount	W012031



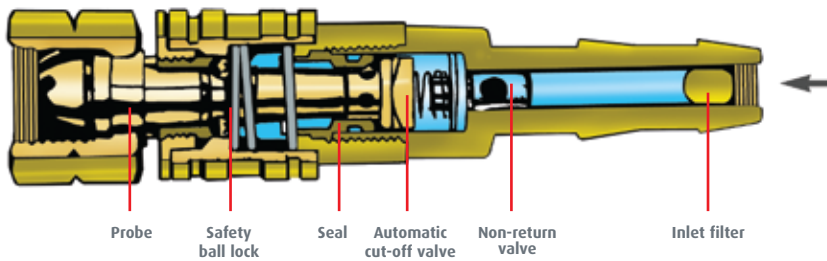
Model	Gas	Inlet Connection	Outlet Connection	Description	Item Number
Afrox F8	Fuel Gas	5 mm Hose	1/4" BSP	Afrox LC or DH Torch Mount	W012032
Afrox F8	Oxygen	5 mm Hose	1/4" BSP	Afrox LC or DH Torch Mount	W012033



Model	Gas	Inlet Connection	Outlet Connection	Description	Item Number
Afrox F9	Fuel Gas	3/8" BSP	3/8" BSP	Afrox Cutting Machine Torch Mount	W012007
Afrox F9	Oxygen	3/8" BSP	3/8" BSP	Afrox Cutting Machine Torch Mount	W012008



Quick Release Couplings



Quick release couplings make the connecting and disconnecting of hoses and regulators easy and quick. Safety is improved by incorporating non-return valves to prevent gases backfeeding and causing flashbacks.

Instant connection and disconnection of equipment provides added security and also saves time and money by avoiding lengthy changeover times.

Allows easy extension of hoses in a totally safe manner.

Non-interchangeable probes – absolutely impossible to mix hoses or gases.

Instant shut-off of gas when disconnected, even at maximum working pressures.

Non-return valves prevent any backfeeding of gases – providing greater safety.

Includes flashback arrestors for torch or regulator mount if required.

Conforms to DIN 8544 and ISO 7289 and carries approvals.

Maximum Working Pressure	
Oxygen	2 000 kPa
Acetylene	150 kPa
Other Flammable Gases	1 000 kPa

Complete Kits for 8 mm Hose					
Model	Description	Gas	Inlet Connection	Outlet Connection	Item Number
RF 53 NSK	Regulator to 8 mm hose with flashback arrestor. These probes are approved to the new ISO 7289 standard and are not interchangeable with current items	Oxygen	3/8" RH	8 mm Hose Nipple	W012120
		Acetylene/LPG	3/8" LH	8 mm Hose Nipple	W012121
CPN 460	8 mm hose to 3/8" torch with flashback arrestor	Oxygen	3/8" RH	8 mm Hose Nipple	W012088
		Acetylene/LPG	3/8" LH	8 mm Hose Nipple	W012089

Test Equipment

WITT Test Panel

For annual testing of flashback arrestors and non-return valves.

Item Number W012212

The following tests can be carried out:

1. Leak tightness to atmosphere.
2. Test of non-return valve against low and high back pressure.
3. Operating pressure of pressure-sensitive gas cut-off valve.
4. Leak tightness of pressure-sensitive gas cut-off valve.
5. Measurement of flow capacity.



Safety Equipment & Accessories

- Uvex Welders' Goggle - W053729
- Welding Goggles Lift-front (Shade 4) - W012257
- Blue Welders' Gloves (20 cm cuff) - W053066
- Dust Mask Valve FF2 (Pack of 10) - W053716
- Leather Apron (90 X 60 cm) - W053076
- Standard Leather Spats - W053071
- Multi-purpose Spanner - W012590
- Triple Flint Spark Lighter - W012621
- Afrox Saffire® Nozzle Cleaners - W012174
- Afrox Saffire® Standard Nozzle Cleaners - W012172
- Afrox Saffire® Safetest Leak Detection Solution - W012045



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