

THE TESTING OF OXYFUEL FLASHBACK ARRESTORS AND CHECK VALVES

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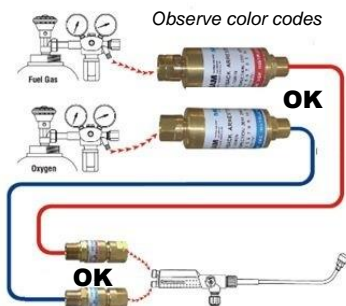
CHECK VALVE:

Most torches and certain flashback arrestors have built in check valves. Consult manufacturer instructions on how to inspect and test check valves.

We all should know that hose line check valves and flashback arrestors are important safety devices for oxyfuel equipment that can prevent fires, explosions, injuries, fatalities and major property damage. Gas cylinder incidents can have devastating consequences!

OXYFUEL FLASHBACK ARRESTORS.

One arrestor will be marked Oxygen. The other will be marked fuel gas (female end is notched). Some manufacturers combine check valves with the arrestors. Arrestors must be properly installed, inspected, used, maintained and tested or replaced per manufacturers' instructions. Never use oil or lubricants on Oxygen service equipment.



VICTOR FLAMEBUSTER™ PLUS INSTRUCTION SHEET

The FLAMEBUSTER™ PLUS is a high flow, torch-mounted flashback arrestor with a replaceable reverse flow check valve. It is designed to prevent flashback flame and reverse flowing gases (into the torch) from burning or melting in the hose and gas supply system while providing for quick connection/disconnection of hoses and torch. The back pressure check valve stops reverse flow of gas and is very fine "filter-like" sintered stainless steel flame barrier which flashback flame.

Installation
Always tighten to make connector to torch and flashback arrestor/torch to hoses. Test all apparatus for leaks before use (see "Testing the KWIK CONNECTS").

NOTE
For maximum service life of the flashback arrestor and check valve, purge all supply lines/hoses before handling. This removes loose material that could restrict flow through the flashback arrestor and/or cause the check valve to leak.

WARNING
This product contains chemicals, including lead, or otherwise products (chemicals known to the State of California to cause birth defects and other reproductive harm). Wash hands after handling.

WARNING
Do not use KWIK CONNECT outside connections or couple with other brand quick release connections. Failure to comply with this requirement can lead to dangerous leaks or even reversed gas supply connection.

WARNING
Leaking gas may create fire and explosion. To reduce the possibility of gas leaks, never reuse the coupler (designed for an intended length of time) to prevent the accumulation of dangerous gases, never use or store the torch in a work area that does not have adequate ventilation. Always follow the torch manufacturer's operating instructions before using the torch. Always shut off gas at source when work is completed, at torch controls or acetylene.

CAUTION
KWIK CONNECTS and check valves are mechanical devices that can leak when dirty or if abused. They must be tested at least every 6 months. Careless use, dirt, and abuse will shorten their service life and require more frequent testing.

CAUTION
Always close hoses in well-ventilated areas away from any flames or other sources of ignition. The escaping gases create conditions for fire and explosion.

Connecting and Disconnecting

Connecting
Full back knurled sleeve and insert male connector into coupler. Release sleeve to complete connection.

Disconnecting
Full back knurled sleeve. Male connector will be released and gas flow automatically stops.

COVERS AND FLAMING COUPLER WITH OILY SLUIC

MALE CONNECTOR

Figure 1: Always inspect male connector for dirt or damage before inserting in coupler. Clean or replace before using.

Testing the KWIK CONNECTS

1. After assembly and connecting (as described above), close valves on torch and adjust both gas supply regulators to opening pressure.
2. Check all joints with an approved leak detector solution or soapy water. Tighten threaded joints if leaking. Leaks at plug-to-coupler union will require replacement of damaged or worn male connector or flashback arrestor/flashback.
3. Disconnect the coupler from the male connector and place the coupler underwater. Wait fifteen (15) seconds to trigger all air escape. If more than two (2) bubbles in ten (10) seconds are coming from inside the open end of the coupler, the shut-off valve is leaking and the flashback arrestor/coupler must be replaced.

Manufacturer written instructions will give details on proper installation, safe use, inspection, maintenance and testing or replacement. Are these instructions available for reference at your work site?

Do an audit and find out - you might be surprised at what you find.

There are instruments on the market that can be used to test oxyfuel safety devices. Check internet.

It is not enough to have these devices installed. To operate properly the devices must be routinely inspected and tested by a CP (Competent Person) in accordance with manufacturer instructions and statutory requirements. See references below for further information on how check valves and flashback arrestors operate and how they can prevent gas cylinder incidents.

QUESTIONS THAT NEED TO BE ASKED:

- Is a CP officially designated to provide oversight of oxyfuel operations in your organization? Does CP understand his/her responsibilities? Are written procedures in place covering proper use of oxyfuel?
- Does the CP maintain manufacturer literature for safety devices? Is inspection and testing performed per the instructions? Is supporting documentation maintained?
- How are check valves and flashback arrestors tested and at what frequency? Check valves normally require testing every 6 months. The testing of flashback arrestors can vary ranging from 6 months to yearly and replaced every 5 years (check manufacturer literature).

ARE YOU IN COMPLIANCE? ARE YOU SURE?

NOTE: THE AUTHOR OF THIS BULLETIN HAS MANY YEARS OF HEAVY CONSTRUCTION EXPERIENCE. DURING INSPECTIONS AND AUDITS HE HAS FOUND POOR COMPLIANCE TO GENERAL OXYFUEL PRECAUTIONS ESPECIALLY WITH SAFETY DEVICE TESTING REQUIREMENTS. LACK OF KNOWLEDGE WAS FOUND TO BE THE PRIME FACTOR IN FAILING TO COMPLY WITH TESTING PROTOCOLS.

USEFULL TRAINING REFERENCES:

- 1) <http://www.lincolnelectric.com/assets/US/EN/interactive/welding-safety/data/FACT-28.pdf>
- 2) <https://vimeo.com/74140690>
- 3) <https://www.aws.org/standards/page/ansi-z491> (OSHA Reference)
- 4) <https://www.youtube.com/watch?v=MP9zOsJzpwg>
- 5) <http://www.esabna.com/shared/documents/litdownloads/56-3260.pdf>
- 6) <http://oxyfuelsafety.com/blog-number-5-test>
- 7) <https://www.youtube.com/watch?v=5XEfDuhxR0A>
- 8) <https://www.youtube.com/watch?v=LBLq3TiaDLO>
- 9) https://en.wikipedia.org/wiki/Flashback_arrestor
- 10) <http://osha.oregon.gov/OSHARules/interps/valve.pdf>
- 11) https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9854
- 12) Do an internet search on this subject. A wealth of information is out there.

NEVER STOP LEARNING!