INSTALLATION AND MAINTENANCE INSTRUCTIONS

Explosion Isolation Valve - FAV

EXPLOSION PROTECTION SYSTEMS

Doc. 8.8503.00.9
Rev. April, 2018

Fike®

SOLUTIONS

- Fire Protection
- Explosion Protection
- Overpressure Protection
- Pressure Activation

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1. INTRODUCTION

1.1. Scope

This document is intended to provide information and assist with the maintenance of Fike Europe Fast Acting Valves (FAV). Individuals should read this manual carefully. Specific sections will be of particular interest depending upon specific responsibilities. This information shall be used in conjunction with the drawings and additional information provided for the specific application.

1.2. Fike Explosion Isolation Concept

The risk of an industrial explosion occurs in many stages of production, transport, and storage of combustible dusts and gases. Apart from all the known preventive measures to avoid conditions, in which explosions may occur, a large number of constructive protection measures can be taken.

Protective techniques are classified into explosion venting, suppression and isolation.

Explosion venting and explosion suppression are designed to protect process vessels from overpressurisation. Explosion isolation is intended to keep explosions from spreading throughout a process. By isolating the explosion, the effect of an explosion is limited to the equipment where the explosion initially occurred.

Responsive mechanical explosion isolation systems, commonly referred to as Fast Acting valves (FAV), are designed to act upon the detection at the incipient stage of combustion by mechanically isolating the combustion and preventing flame propagation.

The Fike Explosion Isolation System proceeds through 3 basic sequences to provide successful activation: detection, initiation and closure of the valve. The Fike Fast Acting valve is the critical element in the sequence of successful explosion isolation. The rapid closure provides the physical barrier which prevents flame propagation beyond the isolating valve location.

Refer to Fike documents X.2.32.01-x Fast Acting Valve - FAV, X.2.66.01-x FAV Reload Kit, and X.2.26.01-x Valve Actuator Assembly for detailed information.

1.3. Definitions

FAV: Fast Acting Valve

Explosion: The propagation of a flame in a premixed dispersion of combustible gases, dusts, mists or mixtures of these, in a gaseous oxidant such as air in a closed or substantially closed vessel.

Deflagration: Explosions which propagate because of heat transfer and having two distinctive and separate parts - a pressure wave and a flame. The deflagration type of explosion is generally referred to as a combustion reaction where the flame front burns into the unburned material at a velocity lower than the speed of sound. The Fike hardware is designed to provide protection against deflagrations only, not against detonations unless otherwise specified.

Explosion sensor: Device that is responsive to the changes of environmental parameters such as pressure caused by a developing explosion.

Activation pressure P_a: That pressure threshold, above the pressure at ignition of the reactants (Pi), at which a detection of the explosion is deemed to have occurred.

Explosion detector: Device or arrangement of apparatus, containing one or more explosion sensors, that responds to a developing explosion by providing an explosion detection signal.

Response time: The time necessary for actuation of the system after a detection of an explosion.

Active Explosion Isolation System: A system which is designed to be activated by a sensor/or a control and indicating equipment (CIE) and stop explosions from travelling through pipelines or limit destructive effects of the explosion.

Actuator: Initiating device, typically a gas generator (Valve Actuator Assembly – GCA).

Control and indicating Equipment (CIE): Equipment which records and monitors the signals transmitted by explosion pressure sensors / detectors spark and flame, temperature and other safety sensors. Depending on configuration, by interrogation and interpretation of the detector / sensor data the CIE selectively controls the actuation of Suppressors, extinguishing barriers, fast closing isolation valves, process equipment shut down, water spray or extinguishing release, and all audible and visual alarms. The CIE must be constructed according to special specifications.

Explosion Protection System Controller (EPSC): Fike equivalent name for CIE.

Armed: the EPSC is active and will process a detection signal.

Disarmed: the EPSC is inactive and will not process a detection signal.

Shutdown: Disarm action followed by the discharging of the capacitors of a CIE/EPSC. Consequently, the power to fire the actuator is no longer present. Therefore, shutdown is safer than DISARM. Shutdown must be used during maintenance to an area of plant, where people can enter the protected volume. Shutdown also guarantees a safe state of the circuitry for the operator or technician for maintenance or measurements.

Fike Service Sign: 

The sections marked with this icon require specialist assistance.
ONLY CERTIFIED FIELD SERVICE ENGINEERS SHALL PERFORM THE ACTIONS DESCRIBED IN THESE MARKED SECTIONS.

1.4. Service Qualifications

The information contained in this document is provided for reference purposes only. For further product information or ordering replacement parts, please contact your local Fike Branch Office or Representative (details of which can be found on the back page) or Fike Product Support by calling 816-229-3405 (fax: 816-229-0314) or Fike Europe Product Support at +32 14 21 00 31 (fax: +32 14 21 07 43).

2. WARNINGS

WARNING: ISOLATION SYSTEM PARTS ARE NOT DESIGNED TO BE EXPOSED TO VIBRATIONS. FOR MORE DETAILS OR IN CASE OF DOUBT CONTACT FIKE.

WARNING: ONLY QUALIFIED FIKE PERSONNEL HAVE THE AUTHORITY TO INSTALL / REMOVE ACTUATORS.

WARNING: IN MANY COUNTRIES THE TRANSPORT, STORAGE AND USE OF ACTUATORS ARE CONTROLLED BY GOVERNMENT RULES AND OFFICES. THE LOCAL AUTHORITIES MUST BE CONSULTED BEFORE TRANSPORT, USE OR INSTALLATION OF THESE DEVICES AND THE RELEVANT PERMITS OBTAINED

WARNING: ACTUATORS ARE PYROTECHNIC DEVICES THAT CAN CAUSE BODILY INJURY AND / OR EQUIPMENT DAMAGE IF NOT HANDLED CORRECTLY. ONLY AUTHORIZED PERSONS SHALL WORK WITH THESE DEVICES AND MUST BE FAMILIAR WITH AND UNDERSTAND THE RELEVANT PROCEDURES.

WARNING: TO PREVENT POSSIBLE INJURY, THE ACTUATOR MUST BE DISCONNECTED AND SHUNTED WHENEVER PERFORMING ANY OF THE REFURBISHMENT AND REBUILD PROCEDURES.

WARNING: IN NORMAL CIRCUMSTANCES, ACTUATORS ARE THE LAST PART TO BE INSTALLED AND MAY ONLY BE INSTALLED WHEN EQUIPMENT AND SYSTEM HAVE BEEN CHECKED.

WARNING: ALL MAINTENANCE WORK SHOULD BE EXECUTED BY CERTIFIED FIELD SERVICE ENGINEERS.

ONLY COMPONENTS SUPPLIED BY FIKE i.e. RELOAD KITS, SPARE PARTS ETC., SHOULD BE USED TO REFURBISH THE CONTAINERS.

FIKE SHALL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES TO FIKE ASSEMBLIES, COMPONENT PARTS OR HARM TO PERSONNEL IF WORK TO THE FIKE EQUIPMENT IS CARRIED OUT BY NONE FIKE CERTIFIED ENGINEERS.

THE SECTIONS MARKED WITH THIS ICON REQUIRE SPECIALIST ASSISTANCE. PLEASE CONTACT FIKE FOR INFORMATION, ASSISTANCE OR SERVICE TRAINING PROGRAMS.

WARNING: FOR THE USE OF THE EQUIPMENT ON DUST, IGNITION HAZARDS RELATED TO STATIC ELECTRICITY NEEDS NO ADDITIONAL MEASURES. THE ATEX APPROVALS DOES NOT COVER GASES.

3. FAST ACTING VALVE

3.1. Description

The Fike Mechanical Explosion Isolation system typically comprises an EPC controller, explosion pressure detectors of type UC2 and explosion isolation valves (EIV or FAV) eventually combined with chemically isolation containers depending the nature of the explosion hazard. Explosion isolation system as a protection system, suitable for use on process equipment containing dust atmospheres without external hazardous gas atmosphere areas.

The Fike Explosion Isolations Valves are designed to act upon the detection at the incipient stage of a combustion, and mechanically isolate the combustion. The system suitable for dust –air mixtures with a deflagration index or equivalent Kst less than 330 bar*m*s^{-1} (DN50-DN250) or 200 bar*m*s^{-1} (DN300-DN400) and maximum explosion overpressure Pmax <12 barg.

The following valve sizes are covered: DN50, DN80, DN100, DN150, DN200, DN250, DN300, DN350, DN400

Minimum distances X_{min} and Maximum distances X_{max} of the valve in meters from protected vessel.

Protection method for connected	**Containment**		**Venting or suppression**	
P_{max}, $P_{red\ max}$	12 barg		3-4 barg	
DN of the isolation valve in mm	X_{min}	X_{max}	X_{min}	X_{max}
50 to 100	To be calculated by IsolCalc.	75 x Dia	To be calculated by IsolCalc.	75 x Dia
150 to 250		50 x Dia		50 x Dia
300 to 400		1.5 x X_{min}		2 x X_{min}

On detection of an incipient explosion, the CIE (control and indicating equipment) activates the explosion isolation system and initiates alarm systems. Control and detection of the combustion may be done by one of the following devices in combination with CIE type EPC.

The FAV is in compliance with: EN 1127-1, EN 13463-1:2009 & EN 15089:2009.

3.2. Identification

To identify the FAV and order replacement parts, the FAV and its driving container have been permanently labeled. The FAV is tagged with a name sticker (fig. 1).

Figure 1 - Sticker Fast Acting Valve (FAV)

The CE name plate on the valve body contains among other following information: Model, Serial No, Size and Date of Manuf. (fig. 2).

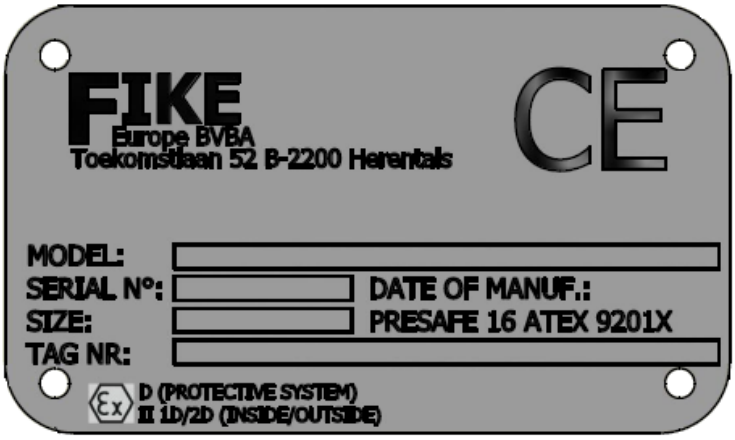

Figure 2 - Valve Identification Plate

Figure 3 shows the pinch point sticker (on the valve body) a warning against pinching or injury.

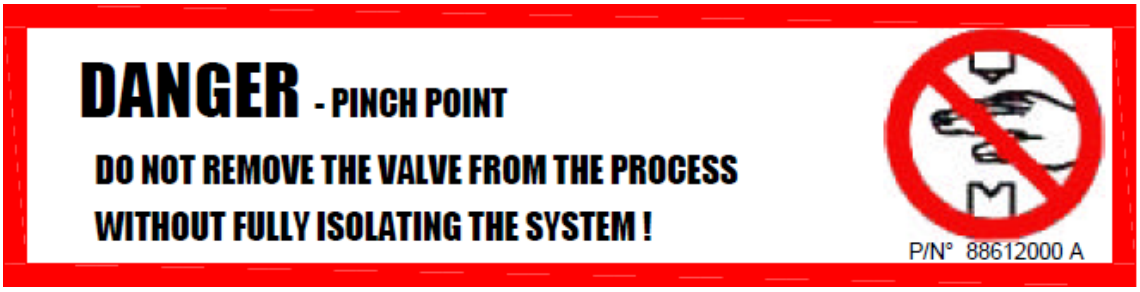

Figure 3 - Pinch Point Warning

3.3. Composing Parts

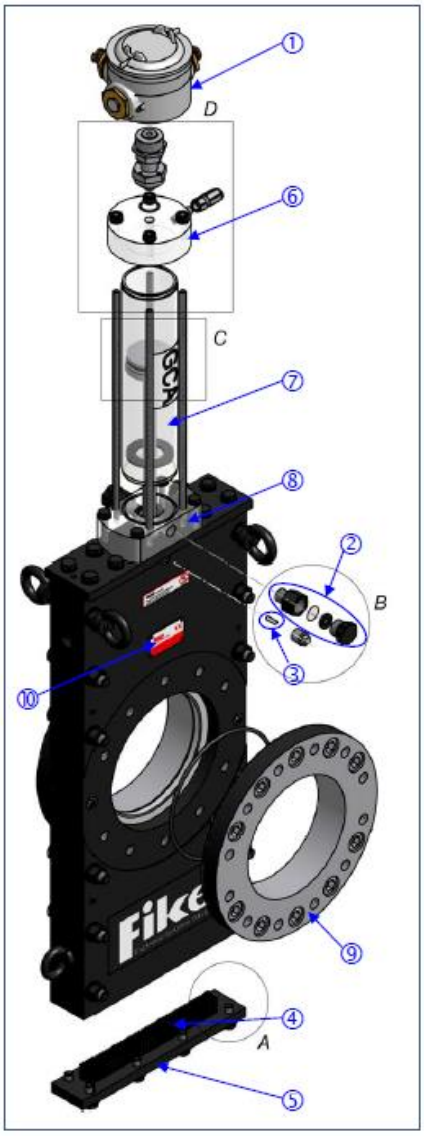

Figure 4 - FAV composing parts

Table 1 - Composing parts

N°	Description
①	Junction box (with Valve Actuator Assembly inside)
②	Exhaust valve (muffler)
③	Roll pin plug
④	Gate damper
⑤	Bottom cover plate
⑥	Upper end cap
⑦	Cylinder
⑧	Lower end cap
⑨	Flange
⑩	FAV identification plate

3.4. Dimensions

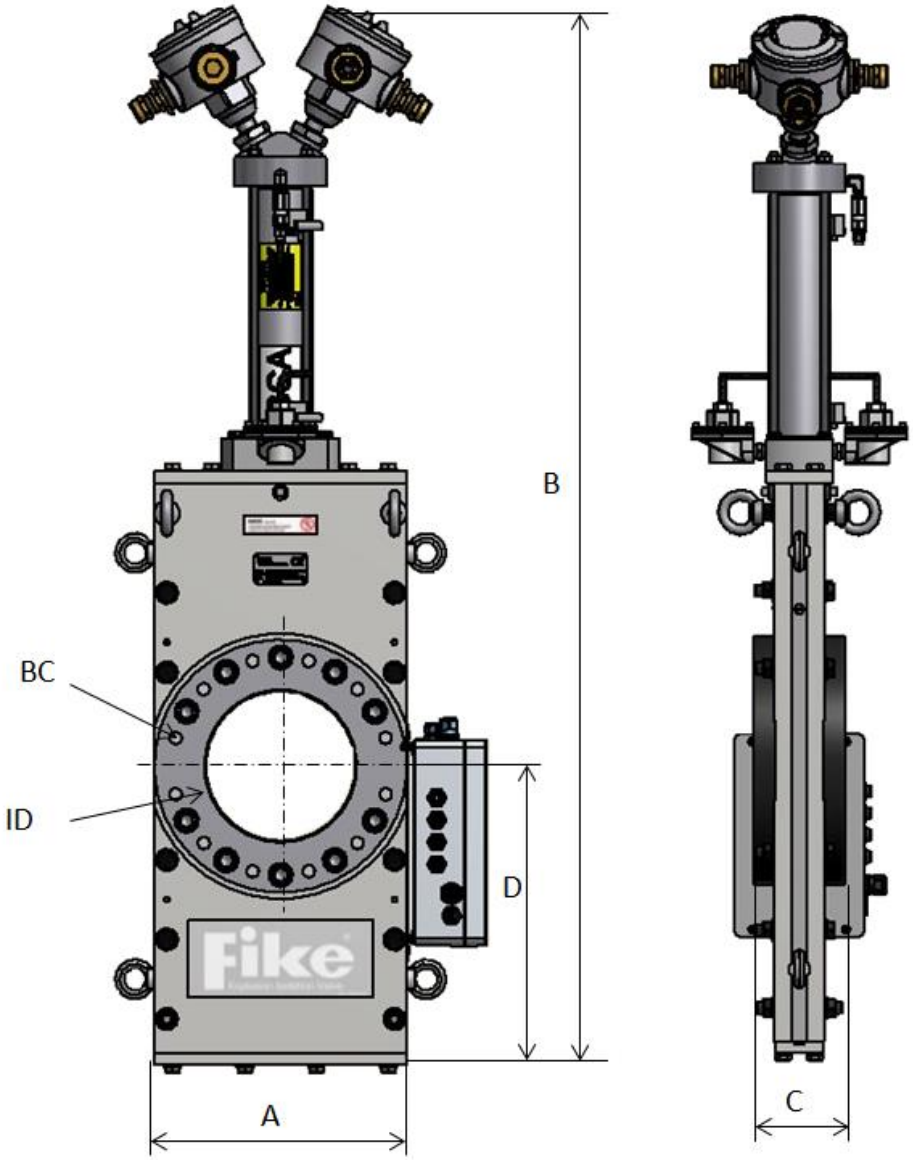

Figure 5 - Dimensions

Table 2 - Dimensions different sizes FAV

Valve Size	Valve Actuator Assembly Qty	ANSI bolting / DIN Bolting	Bolt diameter	Max. torque (Nm)	ID (mm)	BC (mm)	A (mm)	B (mm)	C (mm)	D (mm)	Weight (kg)
2"	1	150	5/8 –11 UNC	190	50.8	120.6	165	786	112	122	45
DN50		PN10/16	M16 x 2	195	50.8	120.6					
3"	1	150	5/8 –11 UNC	190	78.6	180.0	229	994	111	238	80
DN80		PN10/16	M16 x 2	195	82.5	180.0					
4"	1	150	5/8 –11 UNC	190	101.6	180.0	229	994	111	238	80
DN100		PN10/16	M16 x 2	195	101.6	180.0					
5"	1	150	¾ - 10UNC	360	131.7	210.0	285	1271	126	329	80
DN125		PN10/16	M20 x 2.5	380	152.4	240.0					
6"	1	150	¾ -10 UNC	360	152.4	241.4	285	1271	126	329	100
DN150		PN10/16	M20 x 2.5	380	152.4	240.0					
8"	2	150	¾ -10 UNC	360	202.7	298.4	343	1481	126	405	180
DN200		PN16	M20 x 2.5	380	203.2	295.0					
10"	2	150	7/8 –9 UNC	640	254.0	361.9	406	1679	126	483	220
DN250		PN16	M24	660	254.0	355.0					
12"	2	150	7/8 -9 UNC	640	304.8	410.0	533	1924	195	608	350
DN300		PN16	M24	660	304.8	410.0					
14"	2	150	1 – 8 UNC	809	356.0	476.2	584	2209	209	692	450
DN350		PN16	M24	617	356.0	470.0					
16"	2	150	1 – 8 UNC	809	356.0	476.2	635	2350	209	784	500
DN400		PN16	M27	960	406.4	525.0					
20"	2	150	1 1/8 -8UNC	1426	406.4	635.0	777	2939	210	942	700
DN500		PN16	M30	1200	492.0	650.0					

REMARK: Valve sizes **DN125** and **DN500** are outside the ATEX certification and do not bear CE marking. Therefore these sizes may not be installed within the EU.

4. VALVE ACTUATOR ASSEMBLY SAFETY PROCEDURES

WARNING: To prevent possible injury, the Valve Actuator Assembly must be disconnected and shunted when performing any of the following procedures.

WARNING: Valve Actuator Assemblies are thermo chemical devices that can cause bodily injury and equipment damage when improperly handled. All persons who may work with or come in contact with Valve Actuator Assemblies in any way shall read and understand the Valve Actuator Assembly Safety Procedures in this document.

Valve Actuator Assemblies employed in the Fike Explosion Protection System must be respected for their very fast response and the possibility of accidental initiation.

NOTICE: When Valve Actuator Assemblies are handled in accordance with all proper safety practices, accidental initiation should not occur. The Valve Actuator Assembly will not fire at current less than 0.2 Amps.

- Valve Actuator Assembly leads shall remain shunted at all times when electrically disconnected from the protection system and during Valve Actuator Assembly installation and removal.
- Always wear an electrically grounded wrist strap or other approved device when handling unpackaged Valve Actuator Assemblies.
- Always wear approved eye protection when handling or installing Valve Actuator Assemblies.
- Never handle or have on your person more than one unpackaged Valve Actuator Assembly at any time.
- Never handle Valve Actuator Assemblies while wearing static producing clothes or shoes.
- Remove the Valve Actuator Assembly from the shipping container only when installing into the FAV.
- Always handle the Valve Actuator Assembly by the wires and never by the threaded discharge end or case.
- The discharge end of the Valve Actuator Assembly shall be pointed down, away from the body and to the rear.
- Never expose Valve Actuator Assemblies to high heat sources. Exposure of Valve Actuator Assemblies to temperatures over 130°F may reduce the service life.
- Never check Valve Actuator Assembly continuity with any type of ohm meter or other unapproved device. Use only a Fike approved device.
- The device shall display a label marked “Approved device for measuring Valve Actuator Assembly continuity”.
- If a Valve Actuator Assembly is suspected of being defective, contact Fike. Refer to the Repair and Return Authorization section of this document for the return procedure.
- Never install Valve Actuator Assemblies if ground faults are present in the system.
- Never install Valve Actuator Assemblies if voltage is present on the conduit or equipment.
- Never install Valve Actuator Assemblies if radio transmitters are being used in nearby areas.
- Always hold the leads carefully so there is no tension where the leads connect to the case.
- Lead wires shall be straightened, as required, by hand. The leads shall not be thrown, waved in the air or uncoiled by snapping like a whip.
- Secure leads tightly in one hand just above the housing and draw the other hand across the leads to straighten.
- Do not allow the shunt to be removed from the leads.
- Connect Valve Actuator Assembly leads only after the Valve Actuator Assembly has been installed into a properly secured FAV.
- Refer to the Electrical Control Panel Manual (E06-051) for electrical connections.

- During connection of the Valve Actuator Assembly to the terminal strip, the Valve Actuator Assembly shall remain shunted until all Valve Actuator Assemblies are connected to the appropriate terminals.

5. FAST ACTING VALVE INSTALLATION

5.1. Mechanical Installation

The valve shall be positioned according to figure 6: The valve can be mounted from an upright vertical position to a horizontal position. It shall not be mounted at an angle below a horizontal position.

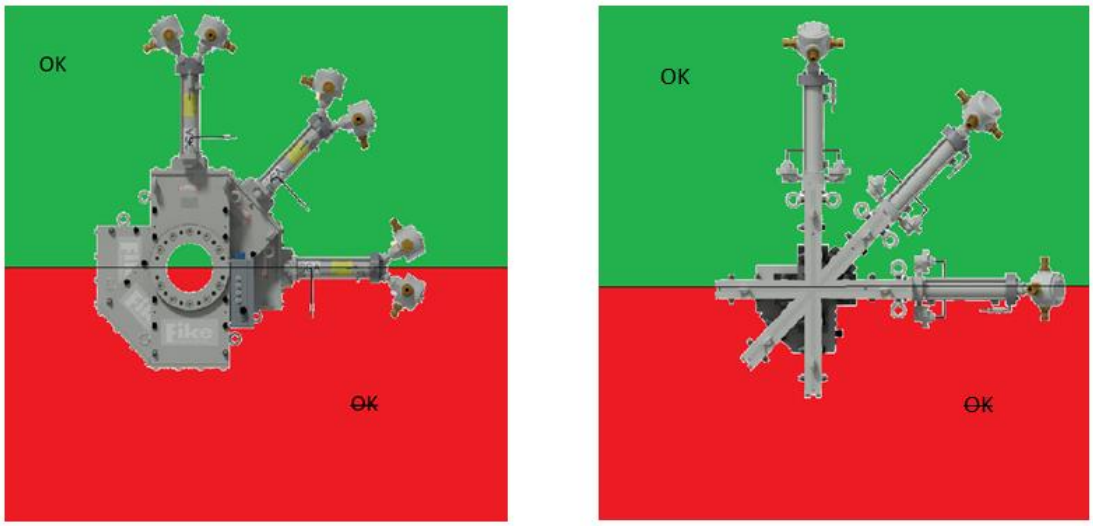

Figure 6 - Valve orientation options

5.2. Electrical installation

5.2.1. Electrical scheme open/close module (Optional)

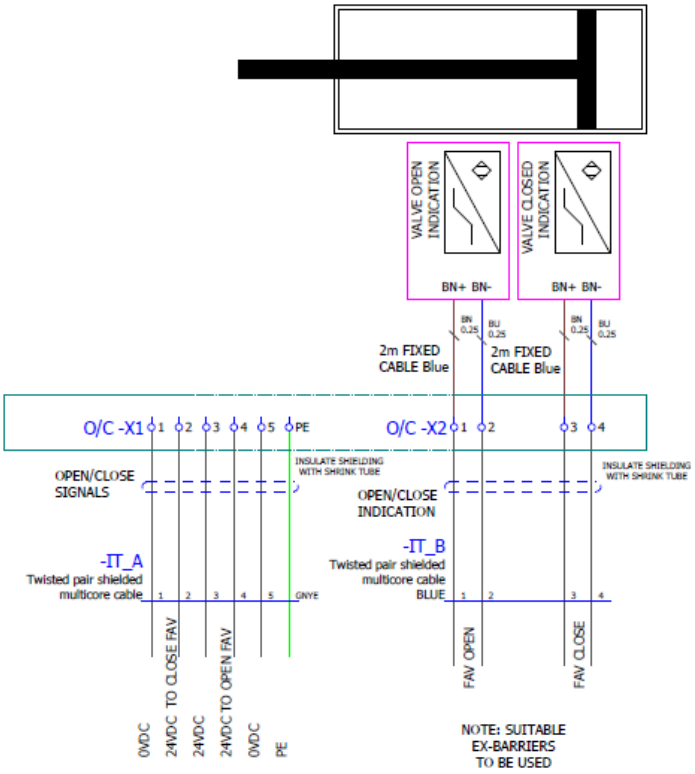

Figure 7 - Electrical scheme open/close module

5.2.2. Position indicators piston

The magnetic switches detect the opening and close position of the magnetic ring which is connected on the piston. Hereby, the system (PLC) can check if the valve is open or close.

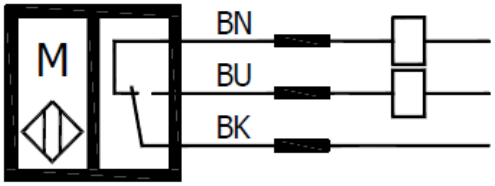

Figure 8 - Position indicator piston

5.3. Valve Actuator Assembly Installation Procedure

Step 1: Verify the control panel “Armed/Disabled” switch is in the “Disabled” position and sufficient time (15 minutes) has been allowed for capacitors in the system to dissipate their charge before proceeding.

Step 2: Verify that the power is off at the control panel and all electrical charges have been dissipated.

Step 3: Refer to the EPC Manual (doc. n° E06-051-X) for the remainder of this procedure. Also refer to Fike document X.2.26.01-x Valve Actuator Assembly.

5.4. Valve Actuator Assembly Removal Procedure

Step 1: Place the control panel “Armed/Disabled” switch in the “Disabled” position and allow sufficient time (15 minutes) for capacitors in the system to dissipate their charge before proceeding.

Step 2: Open the cover of the electrical connection junction box, remove the Valve Actuator Assembly lead wires from the screw terminals and immediately shunt the lead wires by twisting them together securely.

Step 3: Use care not to pinch or penetrate the insulation on the Valve Actuator Assembly lead wires, disconnect and remove the conduit on the Valve Actuator Assembly mounting boss.

Step 4: Remove the Valve Actuator Assembly leads from the conduit and remove the Valve Actuator Assembly from the Valve Actuator Assembly housing. If the Valve Actuator Assembly has not been activated, handle with care and follow all Valve Actuator Assembly Safety Procedures per Section 4.

6. VALVE REFURBISHMENT

6.1. Valve Actuator Assembly Handling Warning

WARNING: To prevent possible injury, the Valve Actuator Assembly shall be disconnected, shunted and removed from the FAV when performing any of the following procedures.

6.2. FAV Maintenance

6.2.1. Actuating Cylinder Rebuild

Step 1: Remove the two (2) muffler assemblies from the base of the FAV actuating cylinder.

Step 2: With the FAV in the closed position (down), remove the nuts and lock washers at the upper end of the actuating cylinder.

Step 3: Remove the upper end cap.

Step 4: Remove the actuating cylinder from the assembly.

Step 5: Remove the cylinder seals from the grooves of the upper and lower end caps.

Step 6: Clean Valve Actuator Assembly debris from the cylinder, piston and piston o-ring using a clean wiper.

Step 7: Remove the corrosion inhibitor pads from the piston and replace.

Step 8: Apply new vacuum grease to the cylinder, piston and piston o-ring.

Step 9: Install new cylinder seals into the upper and lower end caps.

Step 10: Reassemble the components and torque the bolts/nuts, in a star pattern, to the value specified in Table 2.

6.2.2. Gate Damper Replacement (DN50 – DN200 FAV)

Step 1: Thread a 1/2" NPT pipe plug in one of the muffler ports and attach shop air to the other port.

Step 2: Using shop air at a pressure of 3-4 barg, raise the gate to the full open position.

Step 3: With the FAV in the open (up) position, remove the bolts retaining the housing bottom.

Step 4: Remove the gate damper and use a light to inspect the gate to flange areas. If the flange o-rings have been damaged the flanges will have to be removed and the o-rings replaced. Refer to Section 6.4 for this procedure.

Step 5: Remove the corrosion inhibitor pads from the piston and replace.

Step 6: Insert a new gate damper in the lower housing.

Step 7: Remove excess gasket sealer from the housing and housing bottom and apply new gasket sealer (vacuum grease) to the sealing surface of the housing bottom.

Step 8: Assemble the housing bottom to the housing and torque the bolts/nuts, in a star pattern, to the value specified in Table 2.

6.2.3. Gate Damper Replacement (DN250 – DN500 FAV)

Step 1: Thread a 1/2" NPT pipe plug in one of the muffler ports and attach shop air to the other port.

Step 2: Using shop air at a pressure of 3-4 barg, raise the gate to the full open position.

Step 3: With the FAV in the open (up) position, remove the nuts retaining the housing bottom.

Step 4: Remove the housing bottom and gate damper and use a light to inspect the gate to flange areas. If the flange o-rings have been damaged the flanges will have to be removed and the o-rings replaced. Refer to Section 6.4 for this procedure.

Step 5: Remove the gate damper from the housing bottom and thoroughly clean the housing bottom internal surface using a solvent. Allow the solvent to dry completely.

Step 6: Remove the corrosion inhibitor pads from the piston and replace.

Step 7: The replacement gate damper has been shipped with an adhesive strip. The application temperature range for the adhesive is 20°C to 35°C. Remove the release paper from the new damper and center it on the housing bottom.

Step 8: Apply pressure on the top surface of the damper to provide a uniform bond. At room temperature full bond strength occurs in 72 hours. At a temperature of 65°C full bond strength occurs in 1 hour.

Step 9: Apply new gasket sealer (vacuum grease) to the sealing surface of the housing bottom.

Step 10: Assemble the housing bottom to the housing and torque the bolts/nuts, in a star pattern, to the value specified in Table 2.

6.3. Roll Pin Replacement

Step 1: Remove the roll pin access plugs or covers from both sides of the upper FAV housing. Using a punch and hammer, remove the roll pin from the gate and piston rod assembly.

Step 2: With the slit of the new roll pin oriented to the top or bottom of the FAV, use a punch and hammer to insert it into the assembly. Replace the roll pin access plugs or covers.

6.4. Flange O-Ring Replacement

NOTE: Flanges using a dovetail feature on the outside diameter of the o-ring groove do not require an adhesive. Remove the existing o-ring, clean the groove and press the o-ring into the groove to seat.

Step 1: If o-rings need replacing remove the pre assembly screws from the flanges.

Step 2: Remove the flanges from the FAV assembly. Keep the flange shims with each flange to maintain proper assembly clearances.

Step 3: Remove the o-rings and all adhesive from the grooves. Clean the grooves using a clean wiper and alcohol or acetone.

Step 4: Apply new gasket sealer (vacuum grease) to the O-Rings. Place the o-rings in the grooves and press into place to seat.

Step 5: Turn each flange over, with the o-ring down, and place on a clean flat surface.

6.5. Flange to FAV Assembly

Step 1: Using shop air move the gate to the open (up) position.

Step 2: Place the original Shims on each Flange.

Step 3: Assemble the Flanges to the FAV. Do not fully tighten the cap screws.

Step 4: Align the bore of each flange with the bore of the gate and torque the cap screws in one-third increments in a crisscross fashion.

Step 5: Using shop air, actuate the gate in both directions ten (10) times, to insure free movement. Pressure required will vary with valve size and flange bolts/nuts, in a star pattern compression.

6.6. Muffler Seal Replacement

Step 1: Remove the outlet from the body of the muffler assemblies located on the lower end cap of the actuating cylinder.

Step 2: Remove the ring and the seals from the body of the mufflers.

Step 3: Remove debris from the inside of the muffler bodies using a clean wiper.

Step 4: Insert new seals into the bodies.

Step 5: Insert the metal rings into the bodies. The curved surface of the ring should be placed on the seal surface.

Step 6: Assemble the outlets to the bodies and torque to 13.5 Nm. Excessive torque will damage the seals and allow moisture to enter the assembly.

6.7. Refurbish Kits

Refer to Fike document X.2.66.01-x FAV Reload Parts for contents of Refurbish Kits.

Contact your local Fike representative for information on availability, prices and delivery times.

7. SCHEDULED MAINTENANCE

All system components should be thoroughly inspected by factory trained personnel. Following are specific requirements. Additional maintenance may be required depending on process and environmental conditions.

7.1. Every Three (3) Months

- Visually inspect the system.
- Cycle the gate in both directions ten (10) times, to insure free movement using shop air.
- Inspect the Valve Actuator Assembly area for evidence of deterioration.

7.2. Every Ten (10) Years

- Refurbish the FAV system per specific instructions contained in this manual.
- Replace the Valve Actuator Assembly.

7.2.1. Service Environment

The ten (10) year replacement of the Valve Actuator Assembly is based on the combined shelf and service lives of the Valve Actuator Assembly. Replacement may be required sooner under the conditions described below.

The combined shelf and service lives of the Valve Actuator Assembly is ten (10) years from the date of manufacture, provided the Valve Actuator Assembly has not been exposed to temperatures less than -40°C or greater than 60°C.

8. DE-COMMISSIONING PROCEDURE / CHECK-LIST

The following procedure must only be performed by a Fike qualified Service Engineer, who has been assigned to prepare and complete the de-commissioning of the above referenced Explosion Protection System.

Each step in the listed procedure must be adhered to and completion/acceptance of this form is mandatory. The Service Engineer must check off each of the following steps. In the case of non-compliance, the observed discrepancy must be corrected before completion of the system de-commissioning.

	STEPS / DESCRIPTION			
1.	Use Fike system/project component location diagram to record and verify the locations of all Fike system components for each zone and system.	pass	fail	☐ Remark/ Note No.
2.	Control Panel to be Disarmed/Shutdown.	pass	fail	☐ Remark/ Note No.
3.	All Suppressor/Valve actuators to be shunted.	pass	fail	☐ Remark/ Note No.
4.	Power supply to the Control Panel to be Isolated by the Customer and disconnected to prevent accidental reconnection. Fike to Verify.	pass	fail	☐ Remark/ Note No.
5.	Control Panel battery to be disconnected and removed for disposal.	pass	fail	☐ Remark/ Note No.
6.	Each actuator is to be removed and placed in a storage boss, to be either stored on site or removed for disposal.	pass	fail	☐ Remark/ Note No.
7.	Verify that all Suppressor/valve gauges are reading zero, replace fill valve cap loosely	pass	fail	☐ Remark/ Note No.

ATTENTION: SYSTEM IS NOW DE-COMMISSIONED AND READY FOR DISMOUNTING BY THE CUSTOMER/OWNER.

9. REPAIR AND RETURN AUTHORISATION

Any component that is to be returned to Fike must be approved for return prior to shipment. In order for the returned component to receive the correct attention ≈ credit ≈ repair ≈ replacement ≈ either under warranty or at the owner's expense, a Material Return Authorization number must be assigned by Fike. A prearranged return authorization will expedite the business and corrective action measures taken upon receipt of the part(s).

A reference to the return authorization number should be inserted to the packing slip. If a packing slip is not used, then reference to the return authorization number should be made through alternate means. When preparing the component for shipment, please include your original Purchase Order Number, Invoice Number, or Fike Production Order Number. Include with the package the address you want the part shipped back to, shipment method, contact name, and telephone number.

A specific statement as the perceived defect or component failure will assist in examining the part(s). This statement should also address symptoms and an operation history of the system in which the component was installed.

In the event the suspect part is found within a larger top assembly component, the party assigning the Material Return Authorization Number (MRA) should be able to assist you as to whether the entire assembly must be returned or only the component in question.

Return Address:

Fike Europe B.V.B.A.
Toekomstlaan 52
B-2200 Herentals
BELGIUM
Tel. +32 14 21 00 31
Fax +32 14 21 07 43

Attention: Explosion Protection
MRA # _____

Fike®

CONTACT US

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2200 Herentals, Belgium
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For a list of contact information for Fike offices around the world, visit the Global Locations section of Fike.com