

DIRECT FIRED IMPULSE ACTUATOR (DFIA) KIT

General Description

The Direct Fired Impulse Actuator (DFIA) Kit includes the primary components required to actuate Fike's Impulse Valve clean agent containers from a compatible releasing panel or device. The kit's primary component is the DFIA, which provides both an automatic and manual means of activating the valve it is connected to. Automatic activation of the DFIA is accomplished by applying 24 VDC power from the host releasing control panel or releasing device to the DFIA. This will cause the DFIA's firing piston to extend and open the valve's rupture disc, allowing the agent to be released from the container. Manual activation of the DFIA can be accomplished by striking the RED button on the DFIA itself.

The kit also includes an Impulse Valve Operator Supervisor (IVOS) that when installed monitors the connection of the DFIA to the impulse valve itself. When the IVOS is removed, it will cause a "Supervisory event" at the releasing control panel indicating that the DFIA has been disconnected from the valve, essentially disabling the suppression system.

Compatibility Requirements

The Notifier® FCM-1-REL releasing control module has been compatibility tested for use in activating the DFIA. Maximum one DFIA per module. In addition, the FCM-1-REL module provides the required supervision of the releasing circuit wiring (open and ground fault conditions) from the impulse valve clean agent container to the compatible releasing panel. Refer to Notifier's Device Compatibility document number 15378 for DFIA compatibility.

Before Installing

Remove the DFIA from its packaging and thoroughly inspect it for signs of damage. Do not attempt to install the DFIA if any sign of damage is found. Return the DFIA to Fike® for repair or replacement. These instructions must be read and completely understood in order to prevent inadvertent operation of the suppression system during installation. Do not connect the DFIA's to the suppression containers until after the detection and control system has been thoroughly tested for proper operation and is without faults.

Kit Components

DIRECT FIRED IMPULSE ACTUATOR (DFIA) KIT (P/N 70-342-1)	
Part Number	Description
02-14554-1	Direct Fired Impulse Actuator (DFIA)
02-14263	Impulse Valve Operator Supervisor (IVOS)
02-13130	Cotter Pin
02-2213	Security Tie
02-12925	Black Plastic Cap

Specifications

DFIA (P/N 02-14554-1)	
Supply Voltage	24 VDC nominal (15.6 – 29.5 VDC range)
Current Consumption	Alarm = 420 mA maximum Standby = Consult Notifier's FCM-1-REL documentation
Electrical Connection	Cable whip and ½" NPT for conduit connection
DFIA Material	Stainless Steel (Body) Brass (End Cap)
Temperature Range	32° F to 130° F (0° C to 54.4° C)
Listings & Approvals	UL / ULC Listed & FM Approved
IVOS (P/N 02-14263)	
Switch	Normally Closed (Black) / Normally Open Contacts (White) / Common (Red)
Electrical Connection	0.25" ID SST Flexible Conduit 34.75" (88 cm) long with 1/2" knockout connector
Wire Leads	22 AWG, 44" (112 cm) long

Wiring

Use the following instructions to connect the DFIA and the IVOS to the compatible Notifier interface modules.

1. Connect the DFIA wire leads to the Notifier FCM-1-REL releasing control module as shown in Figure 1. The DFIA is not polarity sensitive. Refer to the installation instructions supplied with the Notifier module for correct terminal connections.

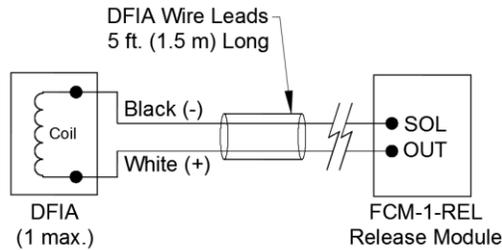


Figure 1 DFIA Wiring

Note: All wiring must conform to applicable local codes, ordinances, and regulations.

2. Connect the IVOS wire leads to the Notifier FMM monitor module as shown in Figure 2. Refer to the installation instructions supplied with the Notifier module for correct terminal connections.

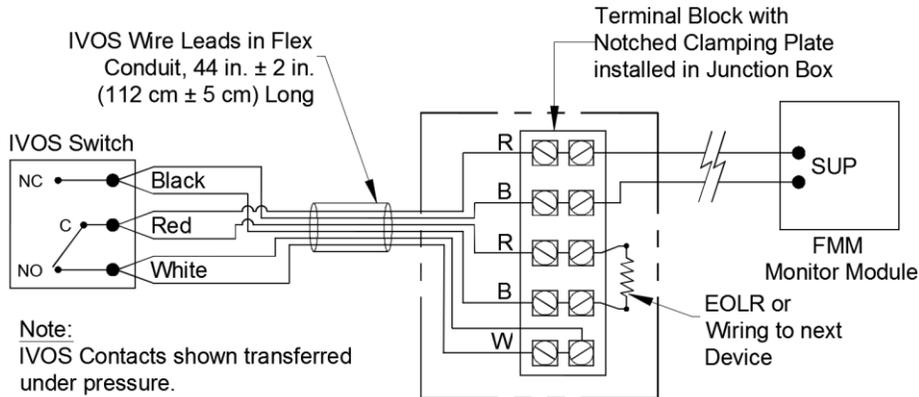


Figure 2 IVOS Wiring

Note: With the IVOS disconnected from the container, the IVOS switch will be active and should cause a "Supervisory" signal at the host control panel until it is attached to the container.

3. Visually verify that the DFIA firing pin is in the armed (retracted) state. Reset the DFIA if necessary following the instructions provided in this document.
4. With the DFIA removed from the container, perform a full functional test of the system operation verifying that the DFIA activates only when required. Test shall include manual activation of the DFIA by pressing the RED manual release button on the DFIA. Reset the DFIA after each activation.

Installation

CAUTION: Do not connect the DFIA to the suppression container until the system has been fully tested and is ready to be armed.

Refer to Figure 3 for kit component installation.

1. Install the Cotter (safety) Pin to the DFIA. Cotter pin prevents accidental activation of the manual release button.
2. Remove the plastic plug and retaining clip from the Impulse Valve actuator port.
3. Insert the DFIA into the Impulse Valve actuator port.

CAUTION: DO NOT attempt to install the DFIA into the actuator port if the firing pin is extended. This may cause accidental activation of the suppression container.

4. Secure the DFIA to the valve actuator port by inserting the IVOS retaining pins into the retaining clip holes in Impulse Valve actuator port.
5. Verify that the DFIA and IVOS are securely attached to the container.
6. Verify that the "Supervisory" signal that was caused by the IVOS disconnection clears at the host control panel.
7. The container is "**NOW ARMED**".

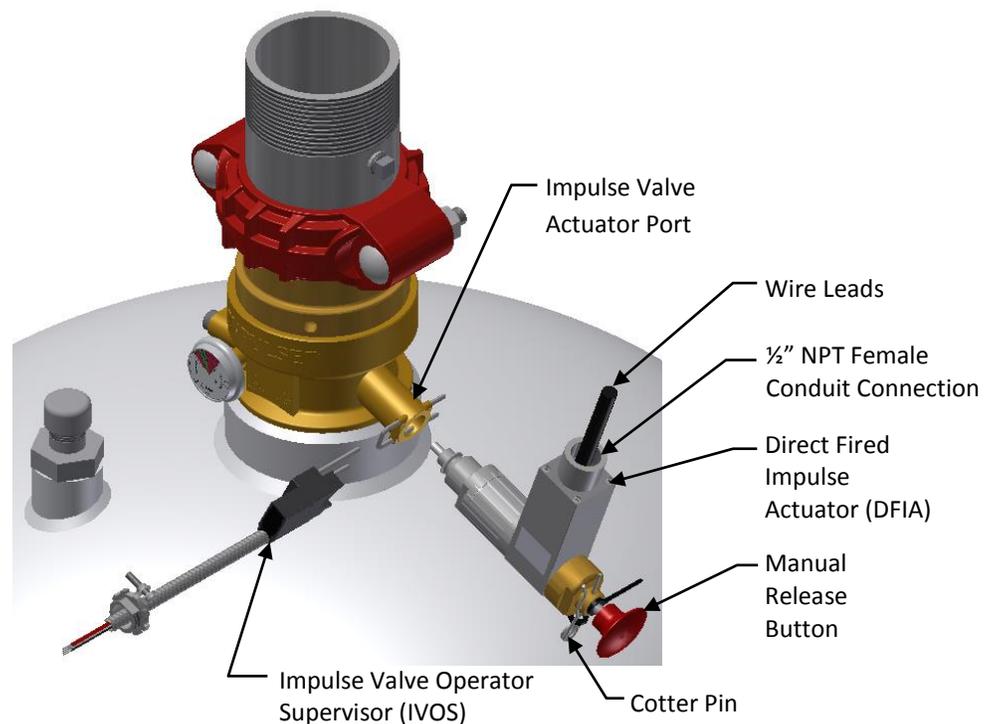


Figure 3 DFIA Kit Component Installation

DFIA Reset Instructions

After a system activation, the DFIA must be manually reset using the Reset Tool (P/N 02-14782). Use the following instructions to reset each activated DFIA.

1. Remove the IVOS from the valve actuator port. Verify that a supervisory signal is received at the host control panel indicating that the DFIA is disconnected.
2. Remove the DFIA from the valve actuator port.

3. Remove the Cotter Pin from the DFIA. See Figure 4.

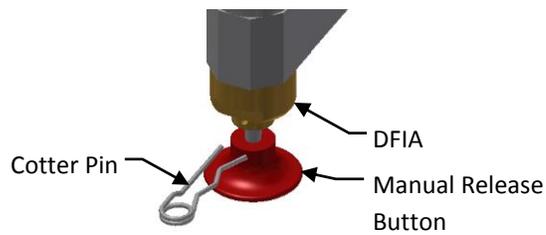


Figure 4 Manual Release Button Reset

4. Pull the Manual Release button until it resets. An internal click should be heard.
5. With the Reset Tool in hand, align the forked end of the tool around the grooved end of the DFIA operator tip as shown in Figure 5.

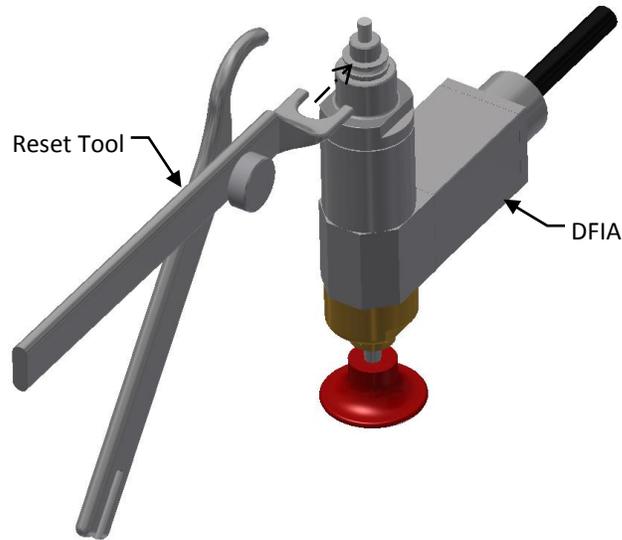


Figure 5 Reset Tool Alignment

6. Squeeze reset tool handles together until the firing pin resets (clicks into place) as shown in Figure 6. The face of the firing pin should be flush or slightly recessed with the DFIA operator tip once reset.

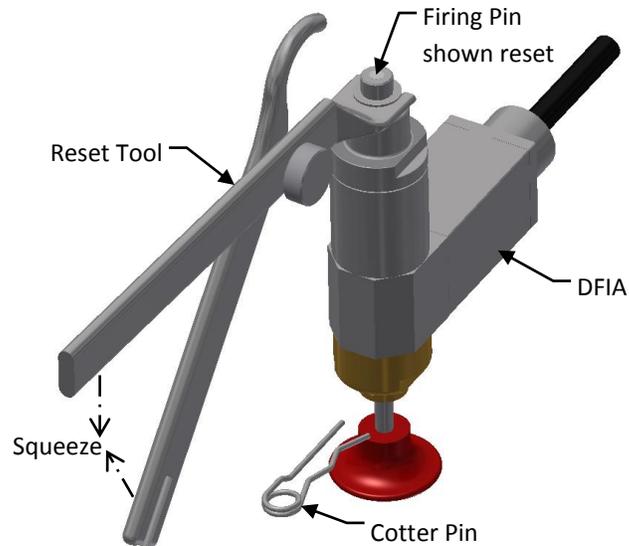


Figure 6 DFIA Reset

7. Reinstall the Cotter Pin into the DFIA.
8. The DFIA is now reset and can now be reattached to the suppression container.