# Technical Bulletin

# Installation

## BlazeCut Automatic Fire Suppression System

### *PNEUMATIC REMOTE ACTUATORS*

### ARA010        ARA020

# AUTOMATIC FIRE
## SUPPRESSION SYSTEMS

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# AUTOMATIC FIRE
## SUPPRESSION SYSTEMS

## 1 INTRODUCTION

### 1.1.1 MANUFACTURER INFORMATION

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### 1.1.2 INSTRUCTIONS FOR USE OF THE MANUAL

This manual is intended to supply technical information for trained and authorized personnel by BlazeCut Group. Any personnel performing installation, inspection, maintenance or replacement of components with the BlazeCut system shall have this manual available and proceed solely in accordance with it. Failure to follow the instructions in this manual and any other BlazeCut manuals may result in loss of warranty, a system malfunction, causing damage to the protected equipment and may present serious danger to the life and health of others.

### 1.1.3 SAFETY FIRST

Please read this manual in its entirety. Operation and installation instructions need to be fully understood before this BlazeCut product is installed. Failure to do so may void warranty. Your local governing regulations for safety and compliance must be followed**.**

### 1.1.4 WARNINGS AND CAUTIONS

⚠️ **This symbol within the manual represents warning of specific risks, dangers, or warning of described procedures. Failure to follow the instructions in the text marked with this symbol may result in loss of warranty, damage to property, threat to safety or life of persons performing the operation on the system or persons in the vicinity. Do not proceed without following the instructions marked with such symbols.**

### 1.1.5 FURTHER INFORMATION

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If any of the instructions in this manual are unclear or in case of further questions, contact the BlazeCut Team.

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| ⚠️ WARNING |
| --- |
| Please ensure that the safety instructions are fully understood before the equipment is put into service. |
| Do not modify any part of the BlazeCut components as this may cause serious injury or a failure of the system. |
| Always wear the appropriate protective equipment and clothing whilst installing or servicing. |

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## 2 BASIC INFORMATION ABOUT THE COMPONENTS

The remote pneumatic actuator is an optional component of the BlazeCut system. The actuator is using a unique double sealing mechanism on the internal shaft that keeps the pressure in the LOP line. It operates on the principle of manual release of pressure from the LOP line after breaking the seals when pressing the knob of the actuator. This results in opening of the piston of the cylinder valve, activating the suppression system and completely releasing the extinguishing agent. This is the same process as during disruption of the BlazeTube detection by effect of fire or heat. After activation, actuator`s pin can be easily reset with no need to replace a burst disc or similar.

The pneumatic remote actuator serves as an end-of-line device and comes with an adaptor G1/8"to M10x1 with internal Schrader valve, which can also be used to pressurize the LOP line. The M10x1 port comes with installed pressure gauge as standard.

Any instructions in this manual regarding the end-of-line adapter apply to remote actuator of the system.

⚠️ **The pressure gauge used on the pneumatic remote actuator must be the same type as the gauge used on the pressure cylinder with the extinguishing agent connected to the same LOP line.**

⚠️ **Do not press and pull the red knob with a sealing shaft installed in the actuator unless necessary. Excessive use may result in reduced sealing properties of the assembly.**

Remote pneumatic actuator ARA010 and ARA020 work on the same principle and are built from the same components, in addition the ARA020 has comes with a protective steel cover.

The remote actuators are supplied with plugged side ports as standard. To be able to connect the BlazeTube detection to the remote pneumatic actuator a suitable connector must be ordered Table 1.

Additional parts and replacement components for pneumatic remote actuator are listed in Table 3.

Actuator material: stainless steel body, powder coated steel case.
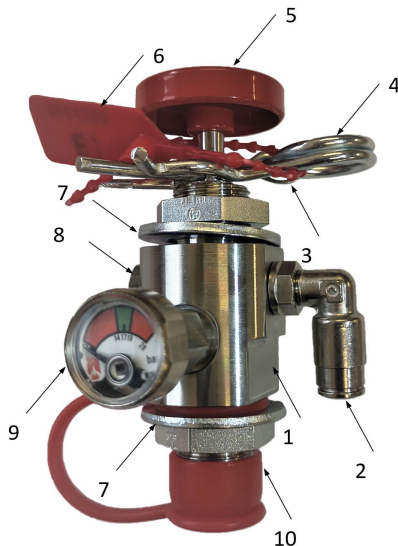
*Remote pneumatic actuator bulk ARA010*          *Remote pneumatic actuator boxed ARA020*

1. Body of the remote actuator
2. BlazeTube Connector FBT2BP026-A
3. Securing wire
4. Safety pin
5. Red knob with a label ALA009
6. Plastic lock seal ALS001
7. Mounting nut and washer
8. Pressure gauge mounted on an adaptor FVABM0210

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9. G1/8" outlet with a valve plug FVP1B02 as standard – can be ordered with different BlazeTube connectors for the side ports (see Table 1)
10. Dust cap on a vent

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**IMPORTANT!**

**Do not remove the dust cap (10.) from the actuator`s body.**

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**NOTE**

\* When using a single pneumatic remote actuator on a LOP line, use standard configuration with one BlazeTube connector and the other outlet plugged. For serial connection of multiple actuators, occupy both outlets with BlazeTube connectors or use one Tee connector FBT3PBP6026-A.

**Table 1: Remote pneumatic actuator connectors**

| Part № | Description | Working temperature | Working pressure | Material |
|---|---|---|---|---|
| FBT1BP026-A | outlet connector for BlazeTube Ø 6 mm, G1/8" | | | body and gripper: nickel-plated brass |
| FBT2BP026-A | elbow connector 360° rotation for BlazeTube Ø 6 mm, G1/8" | -30 to +80 °C | 0.9 – 60 bar | |
| FBT3PBP6026-A | Tee connector 360° rotation for BlazeTube, Ø 6 mm, G1/8" | | | seals: EPDM |
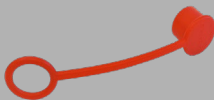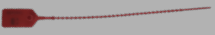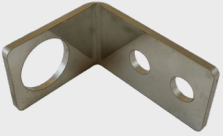
*FBT1BP026-A*   *FBT2BP026-A*   *FBT3PBP6026-A*

**Table 2: Recommended connector combinations for remote pneumatic actuators**

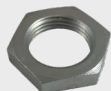| № | Suitable for | Left port | Right port | Connection type |
|---|---|---|---|---|
| 1. | ARA010 | FBT1BP026-A | FBT1BP026-A | passthrough |
| 2. | ARA010 | FBT1BP026-A | Plug | end-of-line |
| 3. | ARA010 | Plug | FBT1BP026-A | end-of-line |
| 4. | ARA010 | FBT1BP026-A | FBT2BP026-A | passthrough |
| 5. | ARA010, ARA020 | FBT2BP026-A | FBT2BP026-A | passthrough |
| 6. | ARA010, ARA020 | FBT2BP026-A | Plug | end-of-line |
| 7. | ARA010, ARA020 | Plug | FBT2BP026-A | end-of-line |
| 8. | ARA010 | FBT3PBP6026-A | Plug | passthrough |
| 9. | ARA010 | Plug | FBT3PBP6026-A | passthrough |

**Table 3: Remote pneumatic actuator accessories**

| Part № | Description | Comment | Material |
|---|---|---|---|
| FVP1B02 | | Remote actuator side plug G1/8" | stainless steel sealing |
| ANC002 | | Cap for remote actuators ARA010/ARA020, -40°C to 180 °C, ID 17 mm | silicone |

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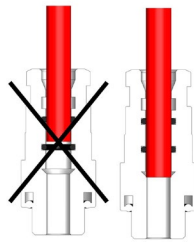| | | | |
|---|---|---|---|
| APR002 | | Safety pin for remote actuator | galvanized steel |
| ALS001 | | Lock seal for remote actuator and ball valve anti tamper security lock | plastic |
| ANB001 | | Bracket for firm fixing of remote actuator | stainless steel |
| AWR001 | | Flat washer for remote actuator and nozzle assembly, M20 | galvanized steel |
| ANR001 | | Nut for remote actuator for bulkhead mounting, M20 | galvanized steel |
| ALA009 | | Ø 33 mm label for remote actuator "PULL PIN FIRE STRIKE KNOB" | - |
| ALA010 | | 90 x 80 mm label for pneumatic remote actuator box, includes 3 x overlay stickers for agents (foam, powder, gas) "In case of fire • Remove safety pin • Strike knob firmly" | - |

# 3   INSTALLATION OF THE REMOTE ACTUATOR

Always place the remote actuator in the proximity of the protected enclosure so that it is easily accessible when necessary. Do not place it in the area of expected fire, where manual activation after the fire has started, is not possible.

Label the remote actuator visibly with the corresponding label ALA007.

The pneumatic actuator ARA010 is suited for mounting onto a custom bracket, cover, dashboard or wall using the included fastening nuts and washers (see Chapter 3.1).

The pneumatic actuator ARA020 with a cover is suited to wall mounting through mounting holes. Use suitable and durable screws to firmly secure the cover for the manual actuator (see Chapter 3.2).

The BlazeTube detection is mounted onto the BlazeTube connector on the remote actuator by slotting into the outlet and pushed by hand all the way in. Always make sure after slotting that the tube is firmly fastened by pulling it gently.

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*Detail of slotting the BlazeTube detection to the end-of-line adapter*

## 3.1 INSTALLATION OF ARA010

If the supplied configuration isn't convenient, it is possible to change the position of the BlazeTube connector or add an additional one in the place of the FVP1B02 plug. Just unscrew the plug FVP1B02 from the actuators body and screw in the chosen BlazeTube connector.

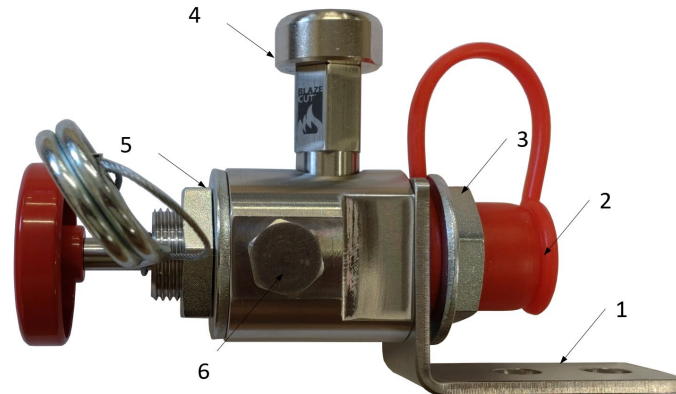This operation has to be done before installation of the actuator to the desired location.
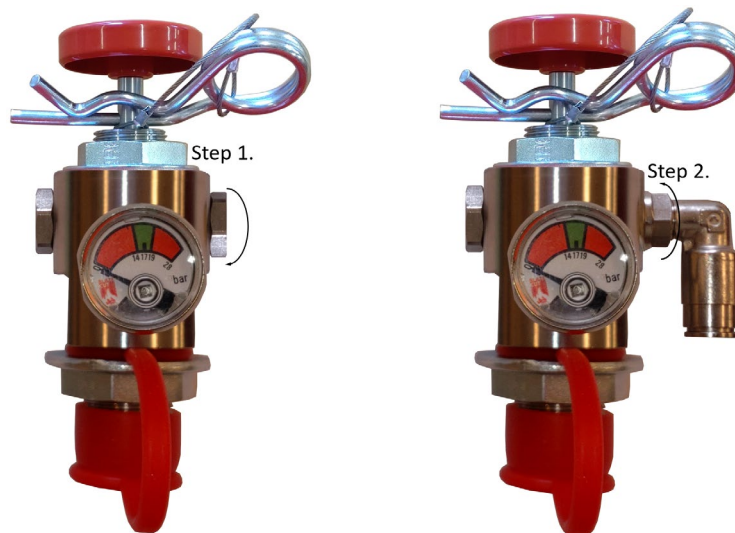


Step 1: Unscrew the plug FVP1B02 from the actuators body;
Step 2: Screw in the chosen connector for BlazeTube and tighten it with a 12 mm torque wrench to 10 Nm.

To install the actuator ARA010 onto a custom bracket, cover, wall etc., follow the installation figures below.



*Pneumatic actuator ARA010 – back mounting*

1. Bracket (e.g., ANB001) or a solid wall with a hole of Ø 21 mm
2. Dust cap ANC002
3. Nut with a washer – keep the order of components as shown on the figure
4. Pressure gauge – should be positioned so it is easy to read
5. Spare nut and washer – used for other mounting option
6. Plugged outlet for BlazeTube connector

## IMPORTANT!

**Before mounting in the following position, partial disassembly is required. For the assembly and disassembly of the actuator do not use other tools than mentioned in the procedure, as they can damage functional surfaces of the components.**
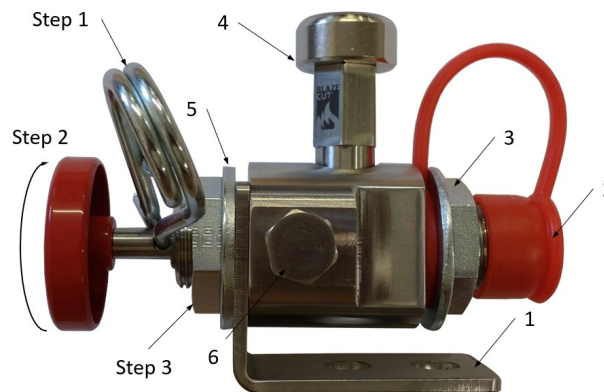


*Pneumatic actuator ARA010 – front mounting*

1. Bracket (e.g., ANB001) or a solid wall with a hole of Ø 21 mm
2. Nut with a washer – keep the order of components as shown on the figure
3. Nut and washer for the dust cap fixture
4. Pressure gauge
5. BlazeTube connector
1. Step 1: Put your finger into the safety pin, to use it as a lever;
2. Step 2: Grab the red knob with hand and unscrew it;
3. Step 3: Remove the safety pin, securing wire, nut and washer;
4. Step 4: Install the actuator to the bracket;
Step 5: Reinstall the washer and nut, and tighten them with a 27 mm spanner;
Step 6: Reinstall the securing wire and safety pin;
Step 7: Put your finger into the safety pin, grab the red knob with hand and screw it on the shaft;
Step 8: Install the bundled plastic lock seal ALS001.

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## 3.2 INSTALLATION OF ARA020

ARA020 is designed for a wall mount installations, for fixed installations in interior to mobile equipment in harsh environment due to its robust construction and stainless-steel materials.

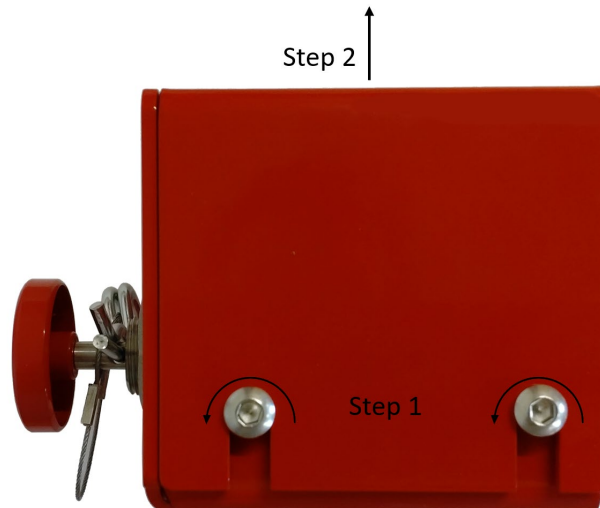Before installation of the actuator to the desired location, partial disassembly is required.
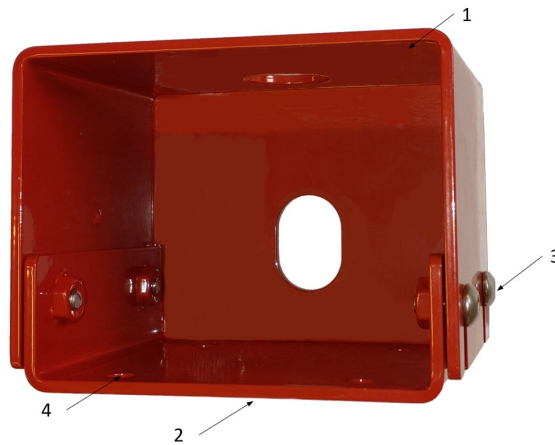


*Steel cover of the Actuator ARA020*

1. Top cover
2. Bottom cover
3. Fasteners for the cover
4. Mounting holes Ø 7 mm (mounting screws are not included)

**IMPORTANT!**

**When following Step 3, Step 4 and Step 5, for assembly or disassembly, do not use any tools as they can damage functional surfaces of the components.**



Step 1: Loosen the four screws on the actuator steel cover;
Step 2: Remove the top cover;

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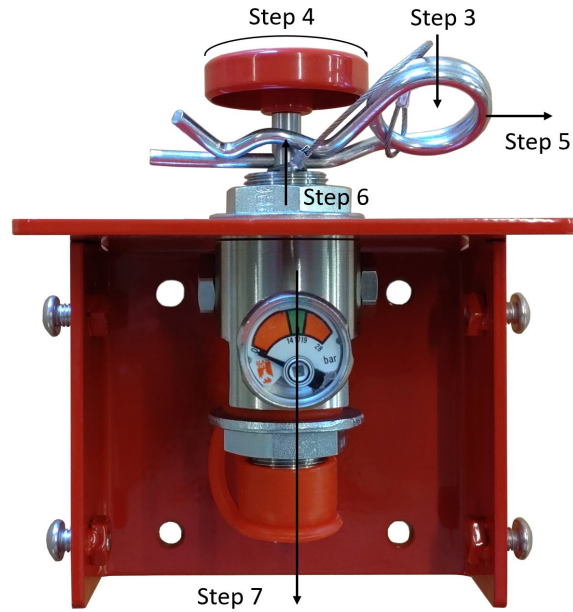
Step 3: Put your finger into the safety pin, to use it as a lever;
Step 4: Grab the red knob with hand and unscrew it;
Step 5: Remove the safety pin and securing wire;
Step 6: Remove the nut and the washer;
Step 7: Take out the actuator body from the cover;

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**Note**

Steps 8 and 9 are not necessary if configuration supplied is satisfactory.
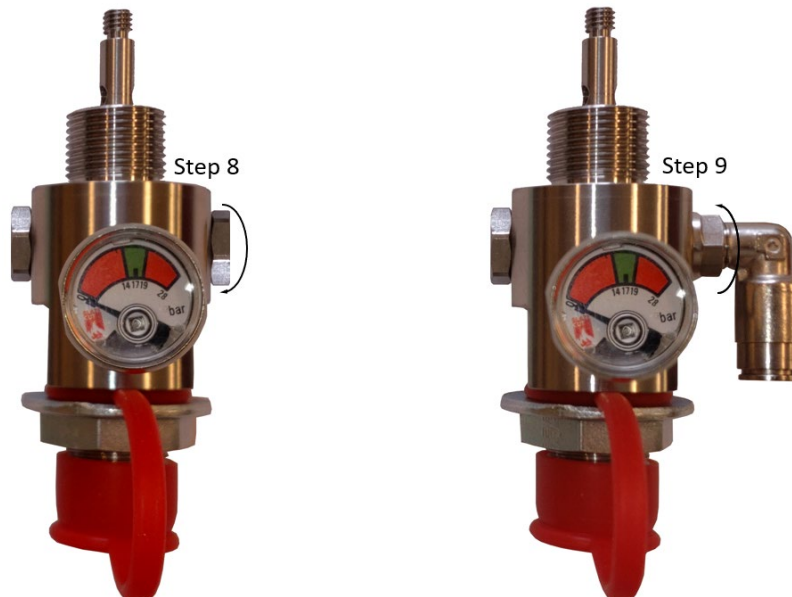


Step 8: Unscrew the plug FVP1B02 from the actuators body with 14 mm spanner;
Step 9: Screw in the chosen connector for BlazeTube and tighten it with a 12 mm spanner;
Step 10: Make holes to the wall on the desired location, following the pattern on the bottom cover;
Step 11: Secure the bottom cover to the wall (mounting screws are not included);

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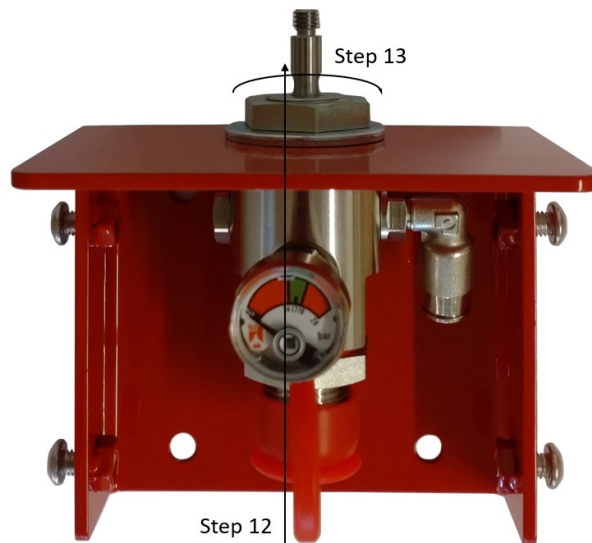
Step 12: Put the actuator body back to the cover;
Step 13: Reinstall the washer and nut, and tighten them with a 27 mm spanner
Step 14: Reinstall the securing wire and safety pin;
Step 15: Put your finger into the safety pin, grab the red knob with hand and screw it on the shaft;
Step 16: Put on the top cover and tighten the for screw on the cover;
Step 17: Install the bundled plastic lock seal ALS001.

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## 3.3   INSTALLATION OF ARA010 OR ARA020 INTO A SYSTEM

The remote pneumatic actuator can be installed in several ways to work in the desired configuration. It can be installed as an end-of-line device, or in between the end-of-line device and the cylinder valve. Using multiple actuators in series and combination of ARA010 with ARA020 is possible.

**Table 4: Remote pneumatic actuator configurations**

| Configuration № | Valve type | Number of LOP lines | Number of pneumatic actuators | Method of connection between pneumatic actuators |
|---|---|---|---|---|
| 1. | 20x | 1 | 1 | - |
| 2. | 20x | 2 | 1 | - |
| 3. | 20x | 1 | 2 | serial |
| 4. | 20x | 2 | 2 | separate |
| 5. | 21x-01 | 1 | 1 | - |
| 6. | 21x-01 | 1 | 2 | serial |
| 7. | 21x-01 | 2 | 2 | separate |
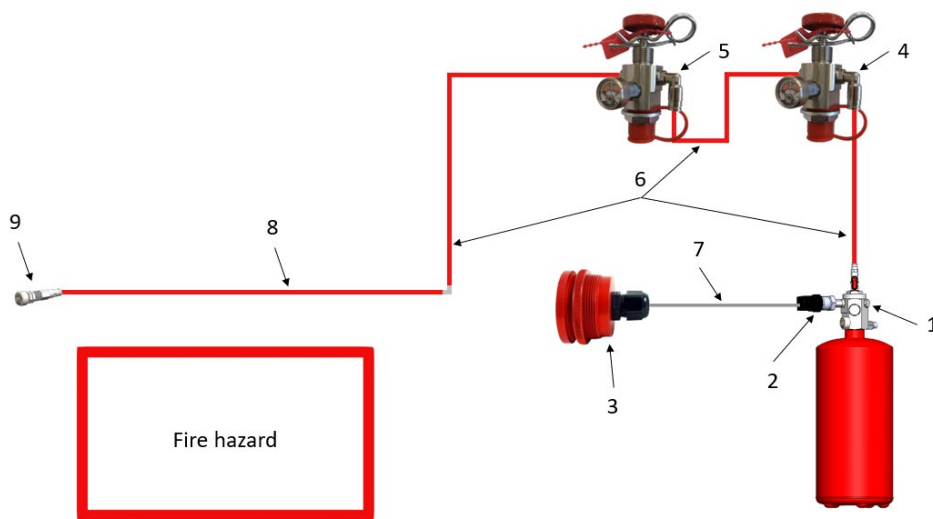


*Configuration № 3 of a detection system with pneumatic actuators*

1. BlazeCut C Series system with 20x valve
2. Pressure Switch APS001/Pressure Transducer APT100
3. Alarm panel CAP200
4. Pneumatic actuator ARA010 or ARA020
5. Optional secondary Pneumatic actuator ARA010 or ARA020
6. BlazeTube and BlazeTube connectors outside the fire hazard area
7. Electrical cable
8. BlazeTube monitoring the fire hazard
9. End-of-line adapter AEA006 or Pneumatic actuators ARA010 or ARA020

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## 4  ACTIVATION OF THE REMOTE ACTUATOR

The remote actuator activates the system by releasing pressure from the LOP line after breaking the seals maintaining pressure in the LOP line when pressing the knob of the actuator. Description of the activation is shown on the figure below.



*Procedure of manual activation*

**Step 1**: Firmly pull the safety pin and tear the plastic lock seal;
**Step 2**: Strike the red knob.

⚠ **Do not manually activate the system without reason. Use manual activation only in case of reasonable suspicion of fire in the protected enclosure.**

⚠ **Do not manually activate the system if persons are present in the protected enclosures.**

⚠ **If the system is activated wait for its activity to finish. Do not enter the protected enclosures and do not open the covers of the protected enclosure during the activity of the system.**

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