

Technical Bulletin

Filling and Charging ILP Cylinders with HFC

BlazeCut Automatic Fire Suppression System

For C Series Indirect Clean Agent Systems

CEA200

CEA210



1 INTRODUCTION

This Technical Bulletin is applicable to BlazeCut C Series ILP valve and cylinder combinations:

- 201, 202 series pneumatic valves
- 211, 212 series electric valves

2 DISASSEMBLY

IMPORTANT!

Before starting the disassembly, make sure that the cylinder is unpressurized!

1. Firmly fasten the cylinder assembly to a clamping device, so that the cylinder is firmly fastened but not damaged.
2. Use a spanner size 46 to unscrew the valve.
3. Remove the valve with a dip tube attached.

Assembly of the valve using a torque wrench



3 ASSEMBLY

1. Firmly fasten the cylinder assembly to a clamping device, so that the cylinder is firmly fastened but not damaged.
2. Screw in the valve with dip tube to the cylinder first by hand.
3. Use a torque wrench to tighten the valve on the cylinder, size 46. Do not overtighten the valve. Use a 50 Nm torque to tight the valve on the cylinder.

4 FILLING WITH EXTINGUISHING AGENT

IMPORTANT!

Filling procedure of cylinders with HFC gas agent requires use of specialised equipment: vacuum pump, HFC filling machine with a scale, and in case of refilling partially emptied cylinder, a HFC gas extractor.

Follow steps in Chapter [ASSEMBLY](#).

IMPORTANT!

Before filling, make sure the cylinder inside is clean, dry and there is no moisture. If there is any residual moisture, dry the inside of the cylinder using air compressor or similar tool.

1. Use a vacuum pump to

Use a filling funnel to fill the extinguishing agent FK-5-1-12. The amount of FK-5-1-12 depends on volume of the cylinder. Always check your system specifications on the cylinder label before proceeding.

System model: CFK2xx
 System kit: CFK2xx-xx-2-x-x
 Amount of agent: 2 kg
 Cylinder volume: 2.4 L
 Serial number: 0000001
 Production date: 01-2022

Volume of the cylinder Litres	Standard amount of HFC-227ea agent [kg]
1.2	1
2.4	2
5	4
7.8	6
13	10
16	12

2. Pour in an exact amount of the extinguishing agent FK-5-1-12.
3. Follow steps in Chapter [ASSEMBLY](#).

5 PROCEDURE OF PRESSURIZATION FOR VALVES 201 AND 202



Proceed carefully and strictly follow the following steps. Fasten the connectors of the tubes, charging adapter and BlazeTube detection firmly and inspect. Their accidental disconnecting during pressurization would release the extinguishing agent into the system.



Never connect or disconnect the charging adapter to the BlazeTube detection if the ball valve of the outlet of the BlazeTube detection on the cylinder valve is open.



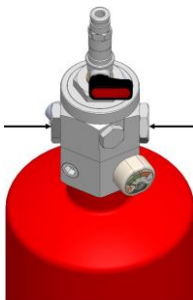
Due to risk of activation during pressurization of the system it is necessary to seal the outlets of the discharge networks on the cylinder valve. Remove the discharge networks and seal the outlets with the G3/8" valve plugs.

Proceed according to instructions in this chapter to pressurize the cylinder only. For pressurization of BlazeTube detection follow instructions in the ILP CLEAN AGENT MANUAL or ILP POWDER MANUAL.

Procedure for valves 211-01 and 212-01 is described in Chapter [6](#), for valves 211-30 and 212-30 (without BlazeTube outlet) in Chapter [7](#).

NOTE:

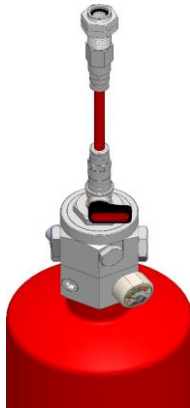
Always charge the cylinder through the BlazeTube push-in connector on the valve.



Step 1:

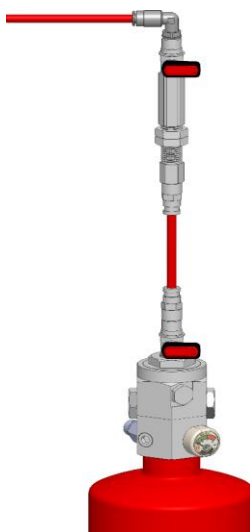
Make sure that the discharge ports are plugged with valve plugs FVP1B06, to avoid loss of agent in case of an accidental discharge when pressurizing.

Make sure that the ball valve on the cylinder valve is closed.



Step 2:

Connect a BlazeTube with end-of-line adapter AEA006 to the BlazeTube push-in connector on the cylinder valve.



Step 3:

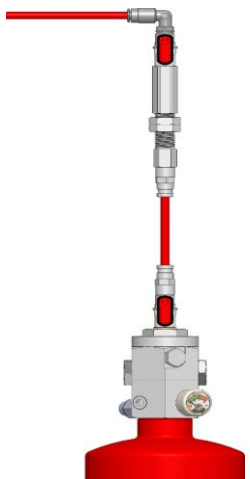
Make sure the ball valve on the charging adapter is closed.

Mount by hand the charging adapter ATC001 to the end-of-line adapter's M10x1 port by rotating it clockwise. Hold the end-of-line adapter to push counter-clockwise while tightening. Tighten the charging adapter properly.



Step 4:

Set the regulator on the source of N₂ to the desired value (**17 bar for Powder and 15 bar for FK-1-1-12 at 20 °C ± 3 °C ambient temperature**). Open the regulator valve.



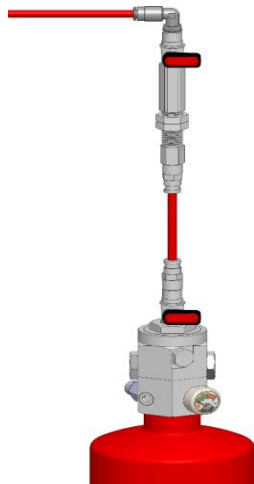
Step 5:

Slowly open the ball valve on the charging adapter first and then on the cylinder valve. Pressurize the cylinder.

During pressurization hissing can be heard, the cylinder may jump once and a bang can be heard. When the hissing stops, keep the ball valves open for at least 30 seconds to stabilize the pressure.

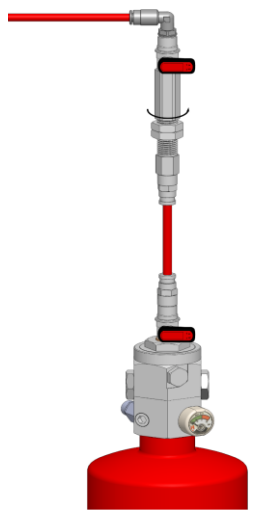
Close the ball valve on the cylinder valve, shake the cylinder several times and repeat Step 5 until the pressure stabilises at the desired value.

AUTOMATIC FIRE SUPPRESSION SYSTEMS



Step 6:

Close the ball valve on the cylinder valve.

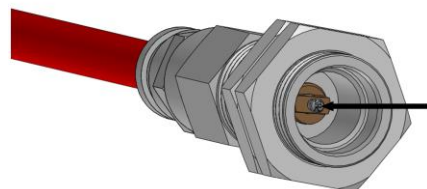


Step 7:

Close the ball valve on the charging adapter.

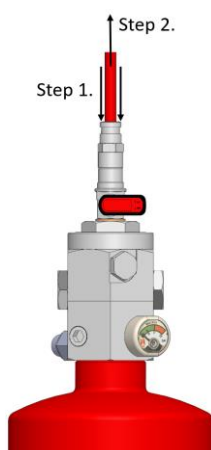
Step 8:

Unscrew the charging adapter from the M10x1 port of the end-of-line adapter (with size 16 spanner). You can use size 14 spanner on the valve adapter to push clockwise while unscrewing the charging adapter.



Step 9:

Push in the integrated Schrader valve inside the end-of-line adapter AEA006, to release pressure from the BlazeTube.



Step 10:

Disconnect the BlazeTube from the push-in connector on the cylinder valve.

Follow additional steps from Chapter [8](#).

6 PROCEDURE OF PRESSURIZATION FOR VALVES 211-01 AND 212-01



Proceed carefully and strictly follow the following steps. Fasten the connectors of the tubes, charging adapter and BlazeTube detection firmly and inspect. Their accidental disconnecting during pressurization would release the extinguishing agent into the system.



Never connect or disconnect the charging adapter to the BlazeTube detection if the ball valve of the outlet of the BlazeTube detection on the cylinder valve is open.



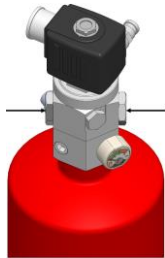
Due to risk of activation during pressurization of the system it is necessary to seal the outlets of the discharge networks on the cylinder valve. Remove the discharge networks and seal the outlets with the G3/8" valve plugs.

Proceed according to instructions in this chapter to pressurize the cylinder only. For pressurization of BlazeTube detection follow instructions in the ILP CLEAN AGENT MANUAL or ILP POWDER MANUAL.

Procedure for valves 201 and 202 is described in Chapter [5](#), for valves 211-30 and 212-30 (without BlazeTube outlet) in Chapter [7](#).

NOTE:

Always charge the cylinder through the BlazeTube push-in connector on the valve.



Step 1:

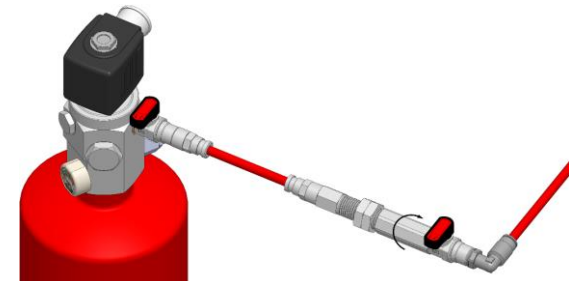
Make sure that the discharge ports are plugged with valve plugs FVP1B06, to avoid loss of agent in case of an accidental discharge when pressurizing.

Make sure that the ball valve on the cylinder valve is closed.



Step 2:

Connect a BlazeTube with end-of-line adapter AEA006 to the BlazeTube push-in connector on the cylinder valve.



Step 3:

Make sure the ball valve on the charging adapter is closed.

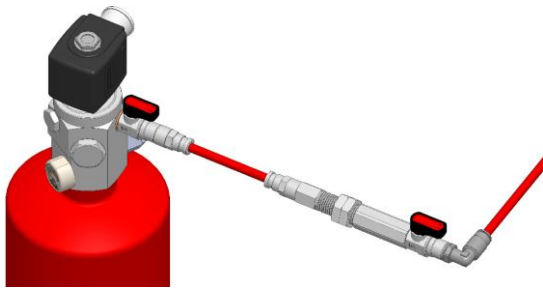
Mount by hand the charging adapter ATC001 to the end-of-line adapter's M10x1 port by rotating it clockwise. Hold the end-of-line adapter to push counter-clockwise while tightening. Tighten the charging adapter properly.

AUTOMATIC FIRE SUPPRESSION SYSTEMS



Step 4:

Set the regulator on the source of N₂ to the desired value (**17 bar for Powder and 15 bar for FK-1-1-12 at 20 °C ± 3 °C ambient temperature**). Open the regulation valve.

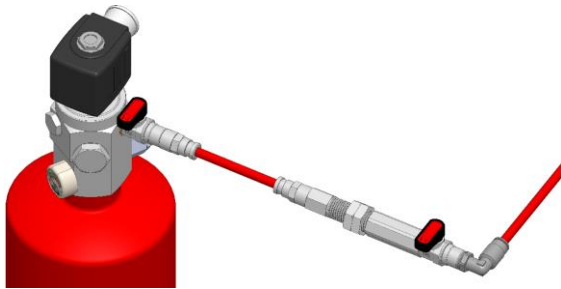


Step 5:

Slowly open the ball valve on the charging adapter first and then on the cylinder valve. Pressurize the cylinder.

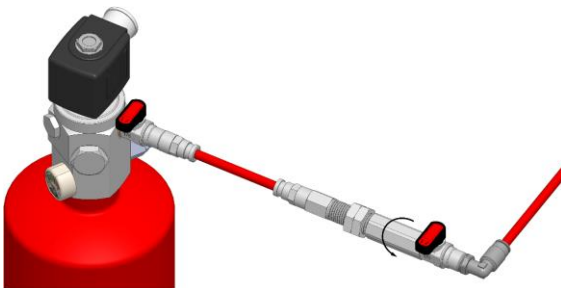
During pressurization hissing can be heard, the cylinder may jump once and a bang can be heard. When the hissing stops, keep the ball valves open for at least 30 seconds to stabilize the pressure.

Close the ball valve on the cylinder valve, shake the cylinder several times and repeat Step 5 until the pressure stabilises at the desired value.



Step 6:

Close the ball valve on the cylinder valve.

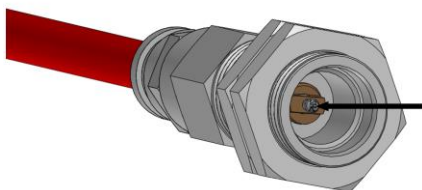


Step 7:

Close the ball valve on the charging adapter.

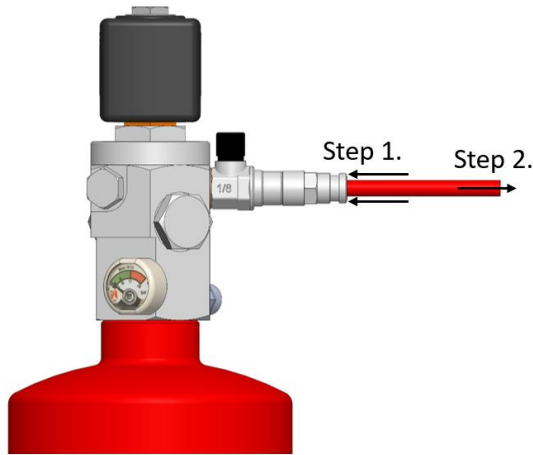
Step 8:

Unscrew the charging adapter ATC001 from the end-of-line adapter (with size 16 spanner). Hold the end-of-line adapter to push clockwise while unscrewing the charging adapter.



Step 9:

Push in the integrated Schrader valve inside the end-of-line adapter AEA006, to release pressure from the BlazeTube.



Step 10:

Disconnect the BlazeTube from the push-in connector on the cylinder valve.

Follow additional steps from Chapter [8](#).

7 PROCEDURE OF PRESSURIZATION FOR VALVES 211-30 AND 212-30



Proceed carefully and strictly follow the following steps. Fasten the connectors of the tubes, charging adapter and BlazeTube detection firmly and inspect. Their accidental disconnecting during pressurization would release the extinguishing agent into the system.



Never connect or disconnect the charging adapter to the BlazeTube detection if the ball valve of the outlet of the BlazeTube detection on the cylinder valve is open.



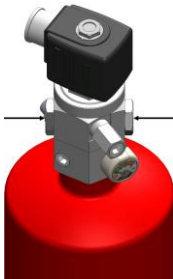
Due to risk of activation during pressurization of the system it is necessary to seal the outlets of the discharge networks on the cylinder valve. Remove the discharge networks and seal the outlets with the G3/8" valve plugs.

Proceed according to instructions in this chapter to pressurize the cylinder only. For pressurization of BlazeTube detection follow instructions in the ILP CLEAN AGENT MANUAL or ILP POWDER MANUAL.

Procedure for valves 201 and 202 is described in Chapter [5](#), for valves 211-01 and 212-01 is described in Chapter [6](#).

IMPORTANT!

Always charge the cylinder through the valve adapter's M10x1 port.



Step 1:

Make sure that the discharge ports are plugged with valve plugs FVP1B06, to avoid loss of agent in case of an accidental discharge when pressurizing.



Step 2:

Remove the M10x1 plug FVP1M10 from the valve adapter FVABM0210 using a size 4 hex key.



Step 3:

Make sure the ball valve on the charging adapter is closed.

Mount the charging adapter ATC001 to the valve adapter's M10x1 port by rotating clockwise. Tighten the charging adapter properly



Step 4:

Set the regulator on the source of N₂ to the desired value (**17 bar for Powder and 15 bar for FK-1-1-12 at 20 °C ± 3 °C ambient temperature**). Open the regulator valve.



Step 5:

Slowly open the ball valve on the charging adapter and pressurize the cylinder.

During pressurization hissing can be heard, the cylinder may jump once and a bang can be heard. When the hissing stops, keep the ball valves open for at least 30 seconds to stabilize the pressure.

Close the ball valve on the cylinder valve, shake the cylinder several times and repeat Step 5 until the pressure stabilises at the desired value.



Step 6:

Close the ball valve on the charging adapter.



Step 7:

Unscrew the charging adapter from the M10x1 port of the valve adapter FVABM0210 (with size 16 spanner). You can use size 14 spanner on the valve adapter to push clockwise while unscrewing the charging adapter.



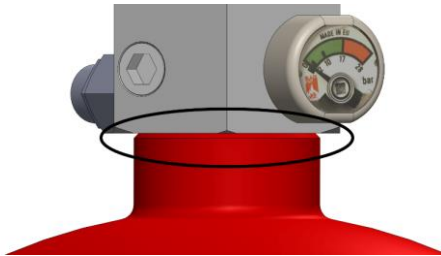
Step 8:

If no continuous hissing can be heard, screw in the M10x1 plug FVP1M10 and tighten it using a size 4 hex key.

Follow additional steps from the Chapter [8](#).

8 ADDITIONAL STEPS AFTER PRESSURIZATION

Observe the value on the cylinder valve's pressure gauge and check the system components for leaks. If pressure is decreasing, the BlazeTube detection may not be connected properly or some component may not be mounted tightly. Also check the connection between the cylinder neck ring and the cylinder valve using a foaming solution. Observe if no bubbles are formed due to loss of pressure through the connection.



Connection between the cylinder neck ring and the valve.

IMPORTANT!

Never install the cylinder assembly if any leak is detected!