

Use and Maintenance Manual



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Clean Agent (FK 5-1-12) Portable Fire Extinguishers – Stored Pressure

FILE NAME: FK_1_ENG

Maintenance periods for efficiency guarantee, methods and subjects accredited for maintenance

1) GENERAL REQUIREMENTS

All Fire Fighting Fire Extinguishers produced by Emme Antincendio must be installed, inspected and maintained in accordance with the following manual and with the rules in force in the country of destination.

All fire extinguishers must be recharged after partial use with original spare parts.

Every ordinary / extraordinary maintenance operation must be carried out using original spare parts and compliant with the declared certified prototype. The described below maintenance operations must be carried out by recognized personnel qualified by the company Emme Antincendio.

Fire extinguishers are classified into two categories that provide for specific construction standards:

- portable fire extinguishers: fire extinguishers designed to be transported and operated by hand, with a mass not exceeding 20 kg under operating conditions. Reference standard: EN 3-7.
- wheeled fire extinguishers: wheel fire extinguishers designed to be transported and operated by hand, with a mass greater than 20 kg. Reference standards: EN 1866-1.

Moreover, in relation to the extinguishing agent contained in them, they are identified in:

- water based fire extinguishers including foam extinguishers;
- powder fire extinguishers;
- carbon dioxide fire extinguishers;
- clean agent extinguishers

2) REFERENCE RULES

Fire Extinguishers produced by Emme Antincendio are manufactured in compliance with the following rules:

- EN 3-7: 2008 Portable fire extinguishers;
- EN 1866-1: 2008 Wheeled fire extinguishers;
- PED Directive 2014/68/EU pressure equipment;
- MED Directive 2014/90/EU devices for marine use

(only for products bearing the relative MED certification mark, see pag 1 of this document).

3) INSTALLATION

- 1) Install the fire extinguisher with the appropriate bracket, with the handle at a maximum recommended height of 110 cm.
- 2) When installed in a vehicle the fire extinguisher must be held in a specific truck bracket.
- 3) Do not expose the fire extinguisher to the atmospheric agents or chemicals agents.
(Note: in these cases protect the fire extinguisher with a special cabinet or protective cover.)
- 4) Do not expose the fire extinguisher to the direct sunlight.
- 5) Verify that the gauge pressure indicator is inside the green area.
- 6) Keep children away from fire extinguisher.
- 7) For Marine equipment or outdoor installation we recommend the use of cover or box.

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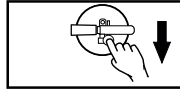
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4) MODALITY AND PRECAUTIONS FOR THE USE

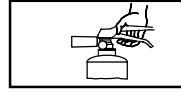
Follow the operating Instructions printed on the main fire extinguisher label.

Generally, the correct steps for use the fire extinguisher are as below:

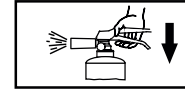
FIRE EXTINGUISHERS
WITHOUT
DISPENSING HOSE



1) REMOVE SAFETY PIN

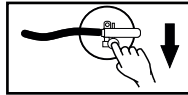


2) AIM AT BASE
OF FIRE



3) SQUEEZE
GRIP LEVER

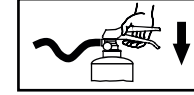
FIRE EXTINGUISHERS
WITH
DISPENSING HOSE



1) REMOVE SAFETY PIN



2) HOLD THE HOSE AND
AIM AT BASE OF FIRE



3) SQUEEZE
GRIP LEVER

- Do not through the fire extinguisher on to the direct flames.
- This fire extinguisher is a pressurized vessel and must not be pierced, dented or subjected to external damage.
- Do not direct the jet on the people.

5) STEPS AND FREQUENCY RELATED TO MAINTENANCE OPERATIONS

*NOTE : Check and comply to the dispositions in force in use and destination country.
The subsequent activities in order of time includes already the previous activities.

Table 1

	Step	Periodicity	Reference	Type of Activity
5.1	Periodic Check	1 Year	From commissioning date	Pressure check
5.2	Revision	5 Years	From manufacturing date indicated on declaration of conformity	Replace extinguishing agent, check status of cylinder and valve
5.3	Hydrostatic Test	10 Years	From date marked on cylinder	Hydraulic test of cylinder and replace valve ⁽¹⁾
5.4	Life Time	20 Years ⁽²⁾	From manufacturing date indicated on declaration of conformity	Is recommended to replace the fire extinguisher

Note: (1) Replacement of valve: only for valves with safety device.

(2) Life time : If fire extinguisher is located in particular environments the time can be reduced.
(Is recommended 10 years)

5.1) Periodic Check

1	If necessary remove the extinguisher from the support and check the condition of the fastening support. Check the condition of the marking label, replace if necessary.
2	Check the correct internal pressure using the pressure gauge installed on fire extinguisher or use an independent tool.
3	Check the status of safety seal and safety pin.
4	Check that discharge devices (hose, nozzle) are without damage signs or obstruction, if necessary remove devices and check the correct internal passage with compressed air.
5	Record the inspection activity on the maintenance tag and on the fire protection register.

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5.2) Revision

1	Remove the extinguisher from the support and check the condition of the support. Check the condition of the marking label, replace if necessary.
2	Discharge the fire extinguisher, comply at rules for a correct disposal.
3	Screw off and extract the dispensing valve.
4	Check internally the cylinder and make sure that are no signs of corrosion. Moreover for carbon steel cylinder with inside plastic coating (this specification is indicated in technical manual of device) check that this protection is intact.
5	Check that discharge devices (hose, nozzle) are without damage signs or obstruction, if necessary remove devices and check the correct internal passage with compressed air.
6	Recharge fire extinguisher with new extinguishing agent, use the type indicated in technical manual of specific product (in this phase the extinguishing agent is at liquid state) .
7	Check the status of dispensing valve, if necessary replace with a new one. Screw back the valve with a tightening torque as indicated in table 2 at page 5.
8	Pressurize the fire extinguisher at value indicated in technical manual and then check if there are losses. Wait 1 hour and check that pressure is correct.
9	Reinsert the safety pin and its relative seal, reinsert the dispensing devices (hose, nozzle).
10	Record the inspection activity on the maintenance tag and on the fire protection register.

5.3) Hydrostatic Test

At least every 10 years from the production date the fire extinguisher must be overhauled by a hydraulic pressure test in accordance with the pressure values "PT" stamped on the cylinder.


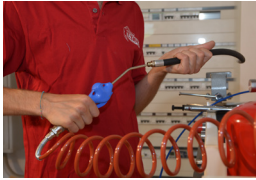




1	Remove the extinguisher from the support and check the condition of the support. Check the condition of the marking label, replace if necessary.
2	Discharge the fire extinguisher, comply at rules for a correct disposal.
3	Screw off and extract the dispensing valve.
4	Check internally the cylinder and make sure that are no signs of corrosion. Moreover for carbon steel cylinder with inside plastic coating (this specification is indicated in technical manual of device) check that this protection is intact.
5	Hydraulic test with special machinery: keep the hydraulic pressure at the "PT" value for 30 seconds and proceed with debrusserization. Check the cylinder general condition.
6	Proceed with rinsing/removal of any residuals and then dry the inside of cylinder with specific tool.
7	Check that discharge devices (hose, nozzle) are without damage signs or obstruction, if necessary remove devices and check the correct internal passage with compressed air.
8	Recharge fire extinguisher with new extinguishing agent, use the type indicated in technical manual of specific product (in this phase the extinguishing agent is at liquid state).
9	Replace the dispensing valve with a new one (this is request only for valves equipped with safety device). Screw back the valve with a tightening torque as indicated in table 2 at page 5.
10	Pressurize the fire extinguisher at value indicated in technical manual and then check if there are losses. Wait 1 hour and check that pressure is correct.
11	Reinsert the safety pin and its relative seal, reinsert the dispensing devices (hose, nozzle).
12	Record the inspection activity on the maintenance tag and on the fire protection register.

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Executive details Revision and Hydrostatic Test

	<p>Remove the fire extinguisher from the bracket and check: stability of the bracket, cleaning and general conditions. Check marking label and replace it if damaged.</p>	<p>Discharge completely the fire extinguisher, comply at local rules for the correct disposal.</p>
 	<p>Screw off and remove the valve.</p>	  <p>Check the inside of the tank with the appropriate inspection lamp. Also check that the hose/ nozzle are not obstructed, checking the correct passage of compressed air inside it, if necessary replace it with a new one. Replace o-ring, clean and grease the parts.</p>
	<p>Hydraulic cylinder test: maintain hydraulic pressure at "PT" for 30 seconds and proceed with depressurization.</p>	 <p>Proceed with the cleaning and removal of any residues, so dry the inside of cylinder with specific tool.</p>
	<p>Recharge the fire extinguisher with extinguishing agent.</p>	 <p>Reinstall the dip tube and dispensing valve. Perform the operation with suitable torque wrench, be sure you to have set the correct tightening torque.</p>
 	<p>Pressurize the fire extinguisher with a suitable pneumatic gripper and check for any pressure loss using a "leak detector". Reinstall safety pin and safety seal. Wait 1 hour and check that pressure is correct.</p>	 <p>Screw back the dispensing hose or nozzle, check for the correct pressure gauge reading.</p>
	<p>Record the inspection activity on the maintenance tag and on the fire protection register.</p>	

Note : images are for illustrative purpose only

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5.4) End Life Time

At End of life, fire extinguishers must be disposed in accordance with local waste management rules. Before disposal or disassembly, the fire extinguisher MUST BE DEPRESSURIZED by a qualified technician. Fire extinguishers should always be disposed of through an approved disposal company and in accordance with applicable local and national codes.

* If the fire extinguisher is located in particular environments, the "life time" timing can be reduced. (see table 1 at point 5.4)

6) SPARE PARTS LIST AND MAINTENANCE TOOLS

6.1) Spare parts list

For the list of spare parts and component, check the technical manual of specific product. For more details visit web site www.emme-italia.com

6.2) Inspection/Maintenance Tools

For a complete list of recommended tools see web site www.emme-italia.com. It is recommended to use instruments with controlled calibration and periodically verified (at least every 12 months) with certified sample instrument.

Table 2 Tightening Torques

Use the below table as reference for the correct torque of valve and accessories, for installation and maintenance activity. Use only compliant and calibrated torque wrench.

Check on the specific technical manual of fire extinguisher the valve and cylinder type

Valve Type	Cylinder Type	Torque	
		Min.	Max.
M. 30x1.5, brass body	Steel Alloy	45 Nm	68 Nm
M. 30x1.5, aluminum body	Steel Alloy	35 Nm	55 Nm
M. 58x2, aluminum body	Steel Alloy	40 Nm	60 Nm

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