



**Hot Water Indirect Cylinder
and Accumulation Tank**

**Installation and User's
Manual**

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INTRODUCTION

First of all, thank you for your preference on ALARKO CARRIER.

You will find the operation and maintenance information of Konforal Alarko cylinders and accumulation tanks in this guide.

Please read this guide carefully for highly efficient and economic operation of your equipment for a long time without any problems. In addition to operation and maintenance information, the manual also presents descriptive and technical data of the equipment.

For more detailed information on your device, please consult ALARKO CARRIER authorized resellers and service shops when necessary.

Please keep this manual handy for your future reference when necessary.

Konforal Alarko cylinders and accumulation tanks operate with tank and panel heat exchanger. Therefore, you should obtain information on the heating system, panel heat exchanger capacity and cylinder capacity for installing and operating the equipment. This manual is sufficient for the installation and assembly of the equipment. However, if any question would arise, please consult to Alarko Carrier Authorized Services.

WARRANTY and SERVICE

This manual is for all types of Konforal Alarko brand cylinders and accumulation tanks. So long as the principles, notices and standards mentioned in this manual are abided by, Konforal Alarko cylinders are warranted by ALARKO CARRIER for 2 (two) years against material and manufacturing defects.

The warranty conditions are explained on the Warranty Certificate provided with the cylinders in accordance with the valid legal regulations. Please read that information carefully.

The Product's Warranty Certificate shall be filled in and sealed by the ALARKO CARRIER authorized reseller from whom you purchase the products, and you will also be required to sign the certificate. Then, a piece of the certificate will be handed over to you, while the other piece will be sent to ALARKO CARRIER, Directorate of Customer Services. Please save and make available your Warranty Certificate in order to present it to authorized service personnel for warranty transactions in case of service work.

Warranty conditions are only valid for the works to be performed by ALARKO CARRIER authorized services. The manufacturer and reseller are not responsible for unauthorized and unqualified interventions on the equipment. Therefore, please call your ALARKO CARRIER authorized service in case of even the smallest inconvenience on your product. Our service representatives are always ready to serve you.

Use a safety (discharge) valve on the installation in order to protect the cylinder and accumulation tank against extreme pressure. The installation diagrams show its installation. The warranty shall be void unless the installation has a safety valve.

The approximate lifetime of the magnesium anode of the devices is 1 to 2 years. The depletion rate of this material depends on the quality of water. It is not covered under the warranty.

Konforal Alarko brand cylinders and accumulation tanks have the superior technology and high quality materials to serve you free of problems for many years. The minimum lifetime identified by the Ministry of Industry and Commerce for these devices is 10 (ten) years. Further to the valid laws, the manufacturer and reseller guarantee to offer service work and spare parts for the cylinders and accumulation tank during this period.

The device is easy to maintain. Nevertheless, if you require authorized ALARKO CARRIER service for repair Works, you can find the nearest service in "ALARKO CARRIER Authorized Services Address List" booklet, which is provided together with your equipment.

The prices of handwork and spare parts of ALARKO CARRIER Authorized Services are provided in lists. You can inspect the lists during service operations.

Please call Customer Hotline no. 444 0 128 at local call cost from anywhere in Turkey, or contact Alarko Carrier Customer Services Directorate by e-mail at info@alarko-carrier.com.tr for any questions and inconveniences.

GENERAL NOTICE OF WARNING

- ✓ Read this manual carefully. The information provided herein covers the required issues for the fitters and users of the device during its installation, use and maintenance.



Please save the booklet carefully. You will need it for future reference.

- ✓ Konforal Alarko brand cylinders and accumulation tanks should be operated and maintained according to the principles listed in this booklet. Otherwise the entire responsibility shall belong to the operator.
- ✓ After unpacking the equipment, check it against any damages caused during transportation.
- ✓ The devices can only be used for their purpose of design. Other uses may cause to danger.
- ✓ The responsibility for intervention on the equipment by other parties than Alarko Carrier Authorized Services and the use of non-original spare parts belongs to the operator.

NOTE: The product is equipped with a magnesium anode rod. The rod will attract electrostatic charge in the system, it is decomposed to prevent the product from going into corrosion. Whether the rod is consumed away is controlled from the electronic test indicator. The consuming depends on the water quality. It is not covered by warranty. The rod should be controlled periodically by the customer. If the indicator shows red when pressed on the button, immediately contact an authorised service to replace the rod.

FOR SAFE USE

- ✓ The equipment can be used at all hot water systems. However, in terms of capacity, it should be in accordance with the cylinders, panel heat exchanger and supply pump. Cylinders can provide the expected efficiency only with the tanks and suitable pumps in accordance with their capacities. Also, accumulation tanks can provide the expected efficiency only with the tanks, panel heat exchangers and pumps which are in accordance with their capacities.
- ✓ Regular maintenance by Alarko Carrier Authorized Services is required once a year.
- ✓ The connections to boiler and fixation should be made with the materials in accordance with TSE standards.

SITUATIONS THAT VOID THE WARRANTY:

1. Using against intentions and for purposes other than those written in the brochure and user manual
2. Faulty type selection
3. Maintenance and repairs performed in places other than Alarko Carrier services
4. Water mains pressure fluctuating and/or an automatic safety valve not being present on the product and/or the valve malfunctioning
5. Scaling, mud and deposit, humidity, exposure to frost, operating without water
6. Decrease or increase in voltage, using ungrounded socket, faulty electrical installation, operating without water
7. (In electrical products) Electrical equipment other than those covered under TS-EN 60204-1 (electrical panel) (resistance, thermostat)

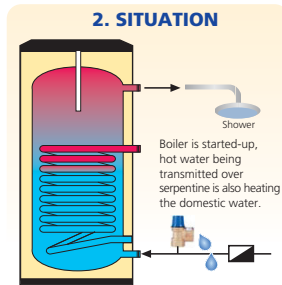
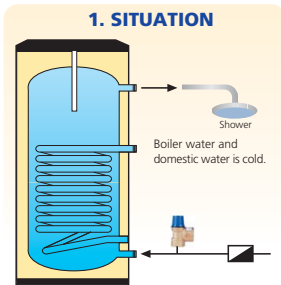
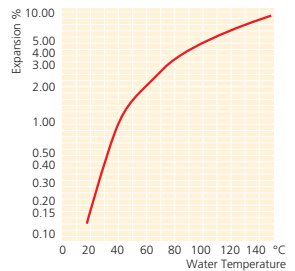
! ATTENTION: A RELIEF (SAFETY) VALVE MUST BE INSTALLED TO WATER SYSTEM.

The water expands when it is heated. Water expansion amount according to temperature is shown in the table. For example, in 50°C-increasing the volume of water is 1,19 %. This water has to be drained. The water is not like air and can not be pressed. If this expanded water could not be away from the cylinder, it will press to surfaces and explode the cylinder from the weakest point.

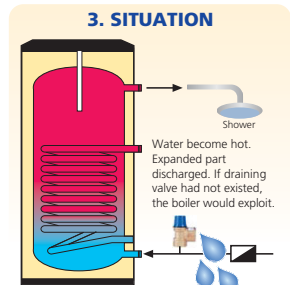
**EXPANSION FACTOR TABLE
ACCORDING TO HEAT DIFFERENCE**

T (°C)	d (kg/lt)	v (lt/kg)	%	e
0	0.9998	1.0002	0	0.0002
10	0.9996	1.0004	0.02	0.0004
20	0.9982	1.0018	0.16	0.0018
30	0.9956	1.0044	0.42	0.0044
40	0.9922	1.0079	0.77	0.0079
50	0.9880	1.021	1.19	0.0121
60	0.9832	1.071	1.67	0.0171
70	0.9777	1.0228	2.26	0.0228
80	0.9718	1.0290	2.88	0.0290
90	0.9635	1.0359	3.57	0.0359
100	0.9583	1.0435	4.33	0.0435
110	0.9519	1.0515	5.13	0.0515
120	0.9431	1.0603	6.01	0.0603

**WATER EXPANSION CURVE
ACCORDING TO TEMPERATURE DIFFERENCE**

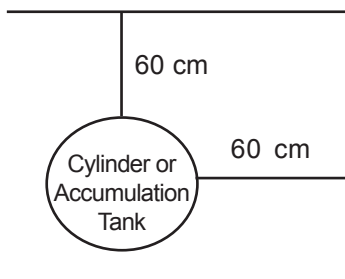


Hot and expanding domestic water can not move forwards because shower is off, and cannot move backwards because the check valve is on. It goes out from the draining valve, slowly.



INSTALLATION AND ASSEMBLY PRINCIPLES

- ✓ The equipment (cylinder and accumulation tank) should be placed at a point which is protected against frost.
- ✓ When the device is disabled, precaution should be taken to prevent frost or its water should be discharged.
- ✓ In order to install the equipment, a flat support should be made which would carry the weight of the boiler.
- ✓ The connection of the boiler to the cylinder should be made according to the boiler connection schemes given in this manual. The materials should be in accordance with the standards and TSE.
- ✓ The connection of the accumulation tank to the panel heat exchanger should be made in accordance with the connection scheme given in this manual. The materials should be in accordance with the standards and TSE.
- ✓ The safety valve should be selected as 1 bar higher than the operating pressure, and its functionality should be checked through ventilation from time to time. If there is not a safety valve on the heater water or utility water installation, or if the safety valve is not operating properly, the problems that may arise on the equipment are not included in the scope of warranty.
- ✓ The minimum distances shown in the following figure should be taken into consideration for the installation, assembly and maintenance of the equipment.
- ✓ The discharge line should not have a bend in order to allow cleaning accumulated slurry when necessary.
- ✓ Pipe coupling should be used on the connection pipes of the equipment.



ACTIVATION

- ✓ Check if the cylinder and accumulation tank are full, and if the cold water entrance is free.
- ✓ Check the water tightness of all connections and pipes.
- ✓ When the cylinder is being activated, first cold fluid and then hot fluid should be given in the circuit, and the discharge of air in the device should be enabled.
- ✓ When the cylinder is to be disabled, first hot fluid and then cold fluid should be taken out of the circuit.

ELECTRICAL WIRING CONNECTION

- ✓ Utility voltage of the electrical heater with thermostat is 220 volt ac.
- ✓ If the power of the fuse the boiler is connected to is less than 16 Ampere, replace the fuse.
- ✓ Have the electrical connection made by a certified electrician.
- ✓ Remember to make grounding. Our company is not responsible for damages and failures due to poor grounding.

MAINTENANCE

- ✓ Whether the components on the installation of the device (cylinder or accumulation tank) are sound, should be frequently controlled. (Thermometer, if there is a thermostatic valve etc.) The damaged ones should be repaired or replaced.
- ✓ The discharge valve of the equipment should be opened once a month and the residues on the base should be cleaned.
- ✓ The device should receive maintenance once a year. In the cases when the quality of the water is not suitable (hard water and very hard water) and under high temperatures, the maintenance should be made with much shorter intervals.
- ✓ The following operations are applied during maintenance.
- ✓ Hot water circuit will be operated. The circuit and hot water production is controlled.
- ✓ Whether there is a water leakage from the equipment or its connections is controlled.
- ✓ The safety valve is controlled.
- ✓ Whether the temperature indicator of the device works is controlled, and it is changed if it does not work.
- ✓ The pump is controlled on whether it works.
- ✓ If there is, whether the thermostat of the device works is controlled, and it is changed if it does not work.
- ✓ During maintenance, the discharge valve is uninstalled and the water in the device is discharged.
- ✓ During discharge, the drainage of the device should be connected to a discharge, and filling water to
- ✓ Cylinder chamber should be prevented.
- ✓ Whether there is a residue in the device is controlled. If there is residue, the cleaning flange of the device is opened and it is cleaned with water jet.
- ✓ Magnesium anode is controlled. The button on the electronic anode tester is pressed, if the indicator is in the red zone that means its lifetime is over and it should be replaced. The depletion rate depends on the water quality, and it is a consumable. It is not covered under warranty.



Alarko Carrier services are authorized for maintenance and repairs. The seller company is not responsible for the operations of unauthorized people. Original spare part should be used for maintenance and repairs.

FAILURE FIRST CHECK AND PRECAUTIONS

In case of a failure, please implement the following “Failure First Check” before contacting Alarko Carrier Authorized Service.

1) If hot water is not coming from the tap;

- ✓ The public water is cut. Wait for the water to flow.
- ✓ Cylinder hot water outlet valve or cold water inlet valve is closed. Open the valve.
- ✓ The filter may be filled. Uninstall and clean it.

2) Water flows from the tap but if it is cold water;

- ✓ The heater installation (burner) is not operating. Enable it.
- ✓ The heater installation is enabled, but the circulation pump is disabled. Enable it.
- ✓ Collector pump is disabled. Enable it.
- ✓ The thermostat is set to low temperature. Increase the degree of temperature to use.

3) If the electrical heater does not run,

- ✓ Power may be out.
- ✓ The switch may be off.
- ✓ The building mains switch may be blown.

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 **ALARKO**



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