

# ALPHA 15-55 SUC HWR-D Comfort

Installation and operating instructions



**x 2**



**x 4**

<b>Original installation and operating instructions</b>	<b>12. Technical data . . . . . 21</b>
<b>Table of contents</b>	12.1 Operating conditions . . . . . 21
<b>1. Limited warranty. . . . . 3</b>	<b>13. Disposing of the product . . . . . 22</b>
<b>2. General information . . . . . 3</b>	
2.1 Hazard statements . . . . . 3	
2.2 Notes . . . . . 3	
<b>3. Product introduction . . . . . 4</b>	
3.1 Product description . . . . . 4	
3.2 Intended use . . . . . 4	
3.3 Accessories . . . . . 4	
3.4 Pumped liquids . . . . . 5	
3.5 Identification. . . . . 5	
3.6 Approvals for Comfort valves. . . . . 5	
3.7 Approvals for ALPHA 15-55 HWR-D. . . . . 6	
<b>4. Receiving the product. . . . . 7</b>	
4.1 Inspecting the product . . . . . 7	
4.2 Scope of delivery . . . . . 7	
<b>5. Installation requirements . . . . . 8</b>	
5.1 Location . . . . . 8	
5.2 Tools . . . . . 8	
<b>6. Mechanical installation . . . . . 9</b>	
6.1 Insulating the pump housing . . . . . 9	
6.2 Installing the pump . . . . . 9	
6.3 Changing the pump head position . . . . . 10	
6.4 Installing the push-button. . . . . 11	
6.5 Installing the repeater. . . . . 11	
6.6 Installing the Comfort valves . . . . . 12	
<b>7. Electrical connection . . . . . 13</b>	
7.1 Connecting the line cord . . . . . 14	
7.2 Removing the line cord . . . . . 14	
<b>8. Starting up the product . . . . . 14</b>	
8.1 Venting the system . . . . . 14	
8.2 Starting the pump. . . . . 14	
<b>9. Control functions . . . . . 15</b>	
9.1 Pump display . . . . . 15	
9.2 Push-button LED . . . . . 16	
9.3 Repeater LED. . . . . 16	
9.4 Performance curve . . . . . 17	
<b>10. Servicing the product . . . . . 18</b>	
10.1 Maintaining the product. . . . . 18	
<b>11. Fault finding the product . . . . . 19</b>	
11.1 The pump does not start . . . . . 19	
11.2 The pump does not start . . . . . 19	
11.3 The pump does not start . . . . . 19	
11.4 The pump does not start . . . . . 19	
11.5 There is a noise in the hydraulic system . . 20	
11.6 There is noise in the circulator pump. . . . 20	

## 1. Limited warranty

Products manufactured by Grundfos Pumps Corporation (Grundfos) are warranted to the original user only to be free of defects in material and workmanship for a period of 30 months from date of installation, but not more than 36 months from date of manufacture. Grundfos' liability under this warranty shall be limited to repairing or replacing at Grundfos' option, without charge, F.O.B. Grundfos' factory or authorized service station, any product of Grundfos manufacture. Grundfos will not be liable for any costs of removal, installation, transportation, or any other charges that may arise in connection with a warranty claim. Products which are sold, but not manufactured by Grundfos, are subject to the warranty provided by the manufacturer of said products and not by Grundfos' warranty. Grundfos will not be liable for damage or wear to products caused by abnormal operating conditions, accident, abuse, misuse, unauthorized alteration or repair, or if the product was not installed in accordance with Grundfos' printed installation and operating instructions and accepted codes of good practice. The warranty does not cover normal wear and tear. To obtain service under this warranty, the defective product must be returned to the distributor or dealer of Grundfos' products from which it was purchased together with proof of purchase and installation date, failure date and supporting installation data. Unless otherwise provided, the distributor or dealer will contact Grundfos or an authorized service station for instructions. Any defective product to be returned to Grundfos or a service station must be sent freight prepaid; documentation supporting the warranty claim and/or a Return Material Authorization must be included if so instructed. Grundfos will not be liable for any incidental or consequential damages, losses, or expenses arising from installation, use, or any other causes. There are no express or implied warranties, including merchantability or fitness for a particular purpose, which extend beyond those warranties described or referred to above. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages and some jurisdictions do not allow limitations on how long implied warranties may last. Therefore, the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from jurisdiction to jurisdiction. Products which are repaired or replaced by Grundfos or authorized service center under the provisions of these limited warranty terms will continue to be covered by Grundfos warranty only through the remainder of the original warranty period set forth by the original purchase date.

## 2. General information

### 2.1 Hazard statements

The symbols and hazard statements below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.



#### DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious personal injury.



#### WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious personal injury.



#### CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate personal injury.

The hazard statements are structured in the following way:



#### SIGNAL WORD

##### Description of the hazard

Consequence of ignoring the warning

- Action to avoid the hazard.

### 2.2 Notes

The symbols and notes below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.



Observe these instructions for explosion-proof products.



A blue or gray circle with a white graphical symbol indicates that an action must be taken.



A red or gray circle with a diagonal bar, possibly with a black graphical symbol, indicates that an action must not be taken or must be stopped.



If these instructions are not observed, it may result in malfunction or damage to the equipment.



Tips and advice that make the work easier.

### 3. Product introduction

#### 3.1 Product description

The ALPHA 15-55 SUC HWR-D Comfort valve system is intended for domestic hot-water recirculation. When you activate the system with the HWR-D push-button, the pump brings hot water in an instant to the hot-water faucets in your home.

Since the system utilizes the existing cold-water return line in the home, no separate new return line is required. No electrical power is required under the sink. The ALPHA 15-55 SUC HWR-D Comfort valve system includes a circulator pump that you install on the water heater in your home and four valves, which you install at your furthest tap/faucets. The direction of flow moves from the water heater through the recirculation pump, through the hot-water supply line, and then back to the water heater through the existing cold-water return line.

In large households, one Comfort valve is to be installed in each hot water string at your furthest tap/faucets. If you are using a tankless water heater system, use all four valves.

#### 3.2 Intended use

ALPHA 15-55 SUC HWR-D Comfort is intended for domestic hot-water recirculation. When you activate the system with the HWR-D push-button, the pump starts circulating hot water using your cold-water lines. The cold water in your hot-water lines is pushed back to the water heater. The bypass valve under the sink will close when 95 °F water reaches the valve. The pump will shut off after 5 minutes of operation. The pump will not operate more than 15 minutes in a single hour.

### 3.3 Accessories



T1005453

Pos.	Description
1	<p>Push-button HWR-D</p> <p>One push-button is included in the delivery. Additional push-buttons may be purchased as accessories.</p>
2	<p>Repeater HWR-D</p> <p>A repeater is not included but may be purchased as an accessory to increase the range of communication between the push-button and the pump.</p>

### 3.4 Pumped liquids

#### CAUTION



##### Chemical hazard

- Minor or moderate personal injury
- Do not use the pump for flammable liquids, such as diesel or gasoline.

#### WARNING



##### Biological hazard

- Death or serious personal injury
- In domestic hot-water systems, the temperature of the pumped liquid must always be above 122 °F (50 °C) due to the risk of legionella.

#### WARNING



##### Biological hazard

- Death or serious personal injury
- In domestic hot-water systems, the pump is permanently connected to the main water supply. Therefore, do not connect the pump by a hose.

#### WARNING



##### Hot water

- Death or serious personal injury
- If the hot-water temperature is too high, it can cause severe burns or scalding.
  - Ensure that the temperature of the hot-water source is not high enough to cause burns or scalding.

#### CAUTION



##### Corrosive substance

- Minor or moderate personal injury
- Do not use the pump for aggressive liquids such as acids or seawater.

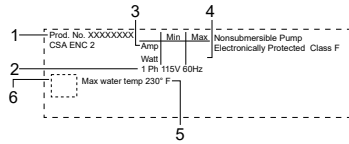
The pump is suited for domestic hot water.

Maximum hardness	14 °dH
Maximum temperature	149 °F (65 °C)
Maximum temperature peak	158 °F (70 °C)

For water with a higher degree of hardness, contact Grundfos.

### 3.5 Identification

#### 3.5.1 Nameplate for ALPHA 15-55 HWR-D



TMB72175

##### Nameplate

Pos.	Description
1	Product number
2	Voltage [V]
<b>Rated current [A]:</b>	
3	Min.: Minimum current [A] Max.: Maximum current [A]
<b>Input power [W]:</b>	
4	Min.: Minimum power [W] Max.: Maximum power [W]
5	Maximum liquid temperature [°F]
6	FCC and IC ID

### 3.6 Approvals for Comfort valves



**WATER QUALITY**  
 Drinking water system component  
 NSF/ANSI 61  
 NSF/ANSI 372

TMB70008

### 3.7 Approvals for ALPHA 15-55 HWR-D

#### Approval marks



#### FCC sections

##### Section 15.19 (a) 3

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

##### Section 15.21

Any changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

##### Section 15.105 (b)



This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment should be installed and operated keeping the radiator at least 8 in (20 cm) or more away from person's body.

Cet équipement est conforme aux limites d'exposition aux rayonnements définies par la norme FCC / IC pour un environnement non contrôlé et est conforme aux directives d'exposition de la FCC en matière de radiofréquences et la norme RSS-102, des règles d'exposition aux radiofréquences (RF) de l'IC. Cet équipement doit être installé et utilisé en maintenant le radiateur à au moins 8 in (20 cm) du corps de la personne.

#### Canadian ISED information

These devices (ALPHA 15-55 HWR-D, Push-button HWR-D and Repeater HWR-D) contain license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions: 1. This device may not cause interference. 2. This device must accept any interference, including interference that may cause undesired operation of the device. Innovation, Science and Economic Development Canada ICES-003 Compliance Label: CAN ICES-3(B)/NMB-3(B).

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : 1. L'appareil ne doit pas produire de brouillage; 2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement. Étiquette de conformité à la NMB-003 d'Innovation, Sciences et Développement économique Canada : CAN ICES-3(B)/-3(B).

These devices (ALPHA 15-55 HWR-D, Push-button HWR-D and Repeater HWR-D) comply with Industry Canada RSS-247 and license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Ce dispositif est conforme à la norme CNR-247 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet

aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

## 4. Receiving the product

### 4.1 Inspecting the product

- Make sure that the delivered product corresponds to the order.
- Make sure that the supply voltage and frequency correspond to the values stated on the product nameplate.



Take care when handling the product.  
Do not drop the product.

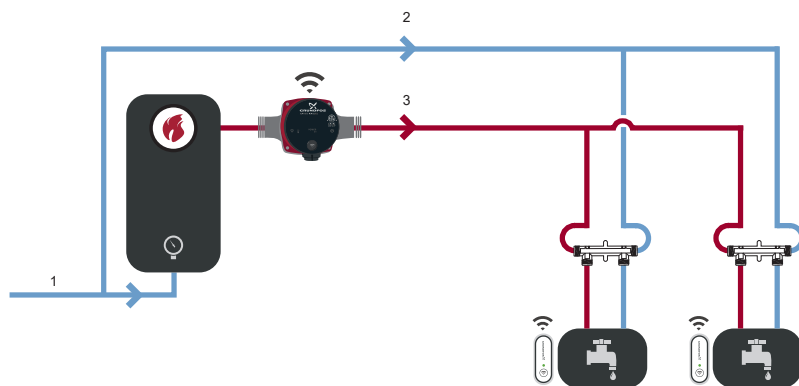
### 4.2 Scope of delivery

The box contains the following items:

Quantity	Description
1	ALPHA HWR-D pump
1	Line cord
2	3/4" adapters
2	Push-button HWR-D
1	Check valve
1	"Check valve installed" sticker
4	Comfort valve kits, 1/2" NPSM
8	Flex hoses, 1/2" x 3/8"
1	Installation and operating instructions

## 5. Installation requirements

### 5.1 Location



TMR0642

*Location of the pump and accessories*

Pos.	Description
1	Water supply
2	Cold-water supply
3	Hot-water supply

The system is intended for indoor use only in areas protected from droplets and splashes. Maximum ambient temperature is 104 °F (40 °C).

#### **Push-button HWR-D**

Do not install the push-button HWR-D in a shower or under the tap or faucet where it could be exposed to water. Mount it at a suitable height out of reach of small children and pets.

#### **Repeater**

This repeater is only for use with the ALPHA 15-55 HWR-D system and is intended for indoor installation only in areas safe from droplets and splashes.

For optimum use, place the repeater between the ALPHA 15-55 HWR-D pump and the push-button located furthest away from the pump.

### 5.2 Tools


You will need the following tools to install the system:

- Hexagon key 4 mm
- Pipe wrench



## 6. Mechanical installation

### 6.1 Insulating the pump housing

 Do not insulate the control box. Do not cover the operating panel.



Insulating the pump housing

TM071424

### 6.2 Installing the pump

When making pipe connections, follow the pipe manufacturer's recommendations and all code requirements for the pipe material.

#### WARNING



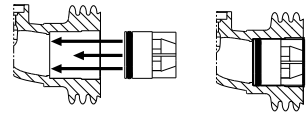
##### Pressurized system

Death or serious personal injury  
- Do not hold the pump in place with tools while tightening the nuts on the pump housing.

1. Flush the system of debris before installation.
2. Insert the check valve if required.
3. Refer to the arrows on the pump housing indicating the direction of the liquid flow through the pump.
4. Install the pump with horizontal motor shaft.
5. Fit the two supplied adapters to the pump ends.

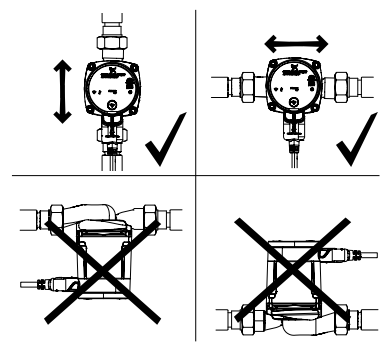


The pump must always pump away from the heat source.



TM072178

#### Check valve installation



TM072178

#### Installation positions

## 6.3 Changing the pump head position

### CAUTION

#### Hot surface

- Minor or moderate personal injury
- Position the pump so that persons cannot accidentally come into contact with hot surfaces.

### WARNING

#### Electric shock

- Death or serious personal injury
- Switch off the power supply before you start any work on the product. Make sure that the power supply cannot be switched on accidentally.

### WARNING

#### Pressurized system

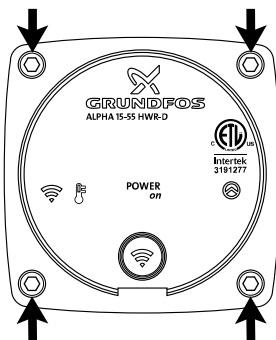
- Death or serious personal injury
- Before dismantling the pump, drain the system or close the isolating valve on either side of the pump before you remove the screws. The pumped liquid may be scalding hot and under high pressure.

If you change the position of the pump head, fill the system with the liquid to be pumped or open the isolating valves.

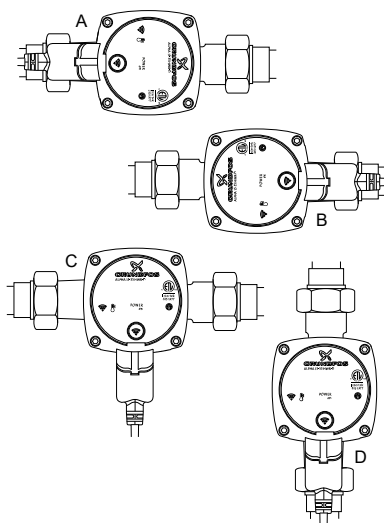
- Make any change to the pump head orientation before filling the system with liquid.
- You can turn the pump head in steps of 90°. See figure for permissible positions.
- Only use orientations C and D for CSA, enclosure type 2.

Proceed as follows:

1. If liquid is present, drain the liquid from the pump or isolate the liquid from the pump.
2. Remove the four socket head cap screws.
3. Turn the pump head to the desired position.
4. Cross-tighten the screws to: 7 ft-lbs torque.



Removing the four socket head cap screws on the pump head



Pump head positions

TM021713

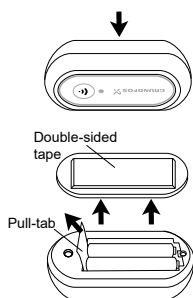
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## 6.4 Installing the push-button



Do not install the push-button in a shower or under the tap/faucet where it could be exposed to water. Mount it at a suitable height out of reach of small children and pets.

1. Remove the mounting bracket from the back of the push-button.
2. Remove the pull-tab from the end of the AAA batteries.
3. Use the included double-sided tape to fasten the mounting bracket to a surface or wall away from water droplets or splashes.
4. To pair the push-button with the pump: With the push-button near the pump, press and hold the connect button on the pump for 2 seconds. The blue connect symbol will flash. The connect symbol will stop flashing after 30 seconds if no device has been detected.
5. Press the button on the push-button for 2 seconds. The blue LED on the push-button will flash.
6. After successful pairing of the push-button and the pump, the blue light will be on continuously for 5 seconds on both devices.
7. If the pairing fails, the light will flash red for 5 seconds on both the pump and the push-button. Restart installation of the push-button.
8. To verify operation press the button on the push-button for less than 2 seconds. Check that the connect symbol on the pump is on and green for approximately 2 seconds and the pump turns on.
9. Replace the push-button on the mounting bracket.
10. If more than one push-button is used for the system, repeat the installation procedure.



*Removing the mounting bracket and the pull-tab*

## 6.5 Installing the repeater

1. Connect the included USB cable to the repeater.
2. Connect the other end of the USB cable to the included power adapter.
3. Fit the included plug adapter to the power adapter.
4. Plug the power adapter into a power outlet to power on the repeater.
5. The LED on the repeater will light green to indicate the repeater is in operation.

## 6.6 Installing the Comfort valves



Do not use Teflon tape, pipe joint compound or pipe dope on the valve threads.



Tighten the flex hose connections, plus 1/4 turn with a wrench. Overtightening the flex hose connections can result in valve damage, causing the valve to leak and/or localized water damage.



When making pipe connections, be sure to follow the pipe manufacturer's recommendations and all code requirements for pipe material.



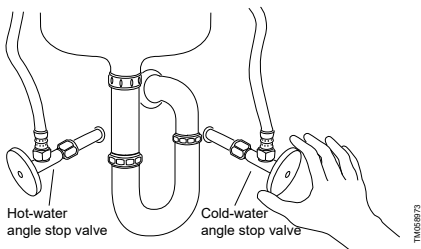
By plumbing convention, the hot water is on the left side and the cold water on the right side, when looking at the sink. Your pipes may be different.

### 6.6.1 Valve location

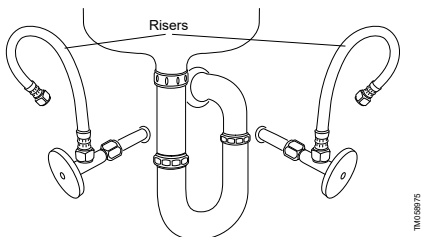
For the greatest effect, the comfort valve must be located at a faucet with the greatest pipe distance from the hot-water heater. If a household consists of more than one hot-water piping string, a comfort valve must be mounted in each string.

### 6.6.2 Disconnecting the risers

1. Close both the hot- and cold-water angle stop valves below the sink.



2. Disconnect the risers.

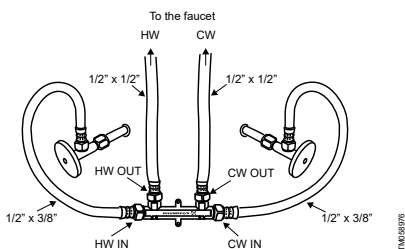


### 6.6.3 Installing the thermal bypass valve

Mounting hardware is not included.

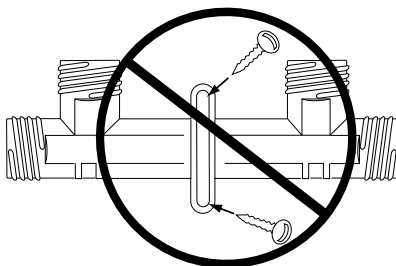
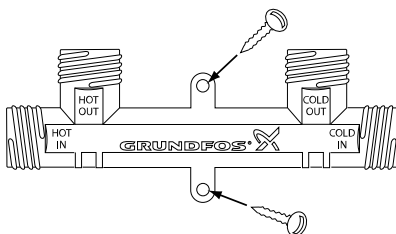
1. Connect the 1/2" x 1/2" flex hoses to the ports on the thermal bypass valve marked **HOT OUT** and **COLD OUT**.

2. Connect the 1/2" x 3/8" flex hoses to the ports on the thermal bypass valve marked **HOT IN** and **COLD IN**.
3. Connect the 1/2" hose fitting from the **HOT OUT** port on the thermal bypass valve to the left side of the faucet.
4. Connect the 1/2" hose fitting from the **COLD OUT** port on the thermal bypass valve to the right side of the faucet.
5. Connect the 3/8" hose fitting from the **HOT IN** port on the thermal bypass valve to the left angle stop valve.
6. Connect the 3/8" hose fitting from the **COLD IN** port on the thermal bypass valve to the right angle stop valve.
7. Open both hot- and cold-water angle stop valves. Check for leaks.



*Connection of thermal bypass valve, flex hoses, and fittings*

8. The thermal bypass valve may be mounted to the wall with screws if desired.



*Correct installation of thermal bypass valve (mounting hardware not included)*

9. For troubleshooting, see the section Fault finding the product.

#### 6.6.4 Checking for proper pump and bypass valve operation

After installing the pump and the bypass valve, connect the pump to the power supply and check the installation as follows:

1. Close the angle stop valve for the cold water below the sink.
2. Open the cold-water faucet.
3. Check that when you turn on the cold-water faucet, the flow of cold water gradually decreases and stops as the bypass valve closes.
4. Check that when you turn on the hot-water faucet, hot water will flow within seconds.
5. For troubleshooting, see the section Fault finding the product.

## 7. Electrical connection

### DANGER

#### Electric shock

Death or serious personal injury

- All electrical work must be carried out by a qualified electrician in accordance with the latest edition of the National Electric Code and state, local codes and regulations.



### DANGER

#### Electric shock

Death or serious personal injury

- Switch off the power supply before starting any work on the product. Make sure that the power supply cannot be switched on accidentally.



### DANGER

#### Electric shock

Death or serious personal injury

- This pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle in accordance with the National Electric Code and any state, local governing codes and regulations.



### DANGER

#### Electric shock

Death or serious personal injury

- If national, state or local legislation requires a GFCI (Ground Fault Circuit Interrupter) or equivalent in the electrical installation, this must be type A or better, due to the nature of pulsating DC leakage current.



A Type-A GFCI is identified by this symbol:

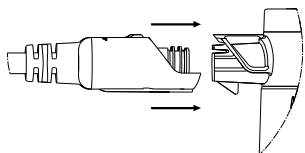


The motor is protected by the electronics in the control box and requires no external motor protection.

- Check that the supply voltage and frequency of the installation site correspond to the values stated on the pump.
- Only connect the pump to the power supply with the line cord supplied with the pump.
- Do not modify and only use the line cord supplied.

- The **POWER on** symbol indicates that the electrical supply has been switched on.

### 7.1 Connecting the line cord



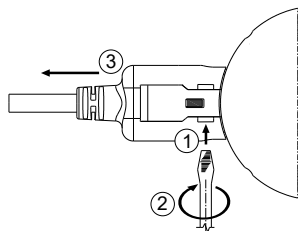
TM072125

*Inserting the line cord plug into the pump (side view)*

To connect the line cord with the pump:

1. Align the line cord plug with the pump.
2. Insert the line cord plug into the pump as shown.
3. Push the line cord plug into the pump.

### 7.2 Removing the line cord



TM072126

*Removing the line cord plug from the pump (bottom view)*

To remove the line cord from the pump:

1. Insert a 1/8 inch flat blade screwdriver into the slot.
2. Twist the screwdriver.
3. Pull the cord to remove it.

## 8. Starting up the product

### 8.1 Venting the system

#### WARNING

##### Hot water

Death or serious personal injury



- If the hot-water temperature is too high, it can cause severe burns or scalding.
- To prevent burns or scalding, be sure to limit the temperature of the hot-water source before you vent the system.

To vent the system:

1. Turn on the water supply to the hot-water source.
2. Verify that there are no leaks in any of the connections.
3. Turn on the tap or faucet furthest from the hot-water source until there is a steady stream of water with no evidence of air in the system.

### 8.2 Starting the pump

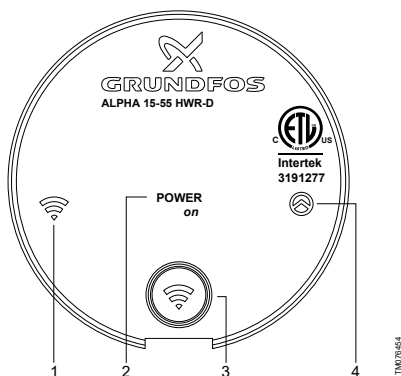
1. Connect the line cord to the power supply to start the pump.
2. The pump will run for approximately 5 seconds and then stop.  
If the water heater system is tankless, check that the heater turns on when connecting the power supply to the pump.
3. The green **POWER on** LED on the pump display will be lit when the power is on.

#### Related information

##### [9.1 Pump display](#)

## 9. Control functions

### 9.1 Pump display



LED symbols and buttons on the pump display

Pos.	Description
1	Connect LED
2	POWER on LED
3	Pairing button
4	Pump operation LED

Pump display symbol	Status	Explanation
POWER on	Green	The LED lights green when the pump is powered on.
Connect	Flashing blue	The LED flashes blue when the pump is ready for pairing with the push-button.
Connect	Blue	The LED lights blue for 5 seconds when pairing is successful between the pump and the push-button.
Connect	Flashing red (5 seconds) during installation	The LED flashes red for 5 seconds when pairing has failed with the push-button.

Pump display symbol	Status	Explanation
Connect	Flashing red (2 seconds) during normal operation	The LED flashes red for 2 seconds when the battery level in the push-button is at a critical level. Replacement of the batteries in the push-button is recommended.
Connect	Green	The LED lights green for 2 seconds when the push-button is activated during normal operation.
Pump operation	Green	The LED lights green when the pump circulates water during normal operation.
Pump operation	Yellow	The LED lights yellow when the pump has timed out. The pump does not circulate water.
Pump operation	Red	The pump is in an alarm state (see fault finding section).

#### Related information

[8.2 Starting the pump](#)

## 9.2 Push-button LED

LED status	Explanation
Flashing blue	The LED flashes blue when the push-button is ready for pairing with the pump.
Blue	The LED lights blue for 5 seconds when pairing between the push-button and the pump has succeeded.
Flashing red (5 seconds) during installation	The LED flashes red for 5 seconds when pairing between the push-button and the pump has failed. Restart of the installation procedure is recommended.
Flashing red (2 seconds) during normal operation	The LED flashes red for 2 seconds when the battery level in the push-button is at a critical level, and the push-button is activated. Replacement of the batteries in the push-button is recommended.
Green	The LED lights green for 2 seconds when the push-button is activated during normal operation.

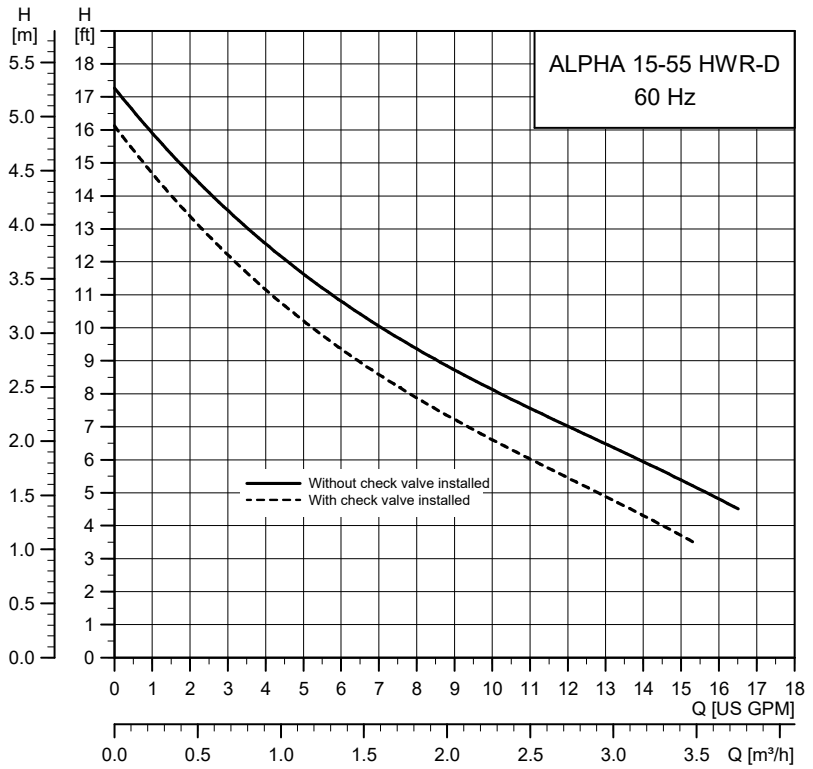
## 9.3 Repeater LED

The LED on the repeater will light green when the repeater is in operation.



### 9.4 Performance curve

The pump runs at constant speed and consequently on a constant curve. The pump is set on the maximum curve under all operating conditions.



Performance curve, ALPHA 15-55 HWR-D

TM072901

## 10. Servicing the product

### 10.1 Maintaining the product

The ALPHA HWR-D pump is maintenance-free.

If the pump is damaged, for example with fractures or dents, replace the pump.

#### 10.1.1 Battery replacement

### WARNING

#### Biological hazard

Death or serious personal injury

- Keep batteries out of reach of small children, the elderly, and pets. Batteries can cause permanent injury if ingested or placed in the nose, mouth, or ears.
- Immediate emergency room treatment is required for anyone who ingests a battery. In addition, in the US, consult the 24-hour National Battery Ingestion Hotline at 800-498-8666 for assistance.



### CAUTION

#### Corrosive substance

Moderate to minor personal injury and risk of property damage

- The push-button HWR-D must be replaced if battery leakage occurs.



### CAUTION

#### Flammable material

Minor or moderate personal injury

- Do not attempt to recharge non-rechargeable batteries.



To clean the push-button, wipe it with a clean, damp cloth.

Ensure that disposal of old batteries is in accordance with local regulations. Recycle old batteries where possible.

#### 10.1.2 Replacing the battery of the push-button

The push-button uses AAA 1.5 V alkaline batteries. To change the battery in the push-button, follow these steps:

1. Remove the push-button from the mounting bracket on the back of the push-button.
2. Remove the old batteries.
3. Insert the two new batteries.
4. Replace the push-button on the mounting bracket.

## 11. Fault finding the product

### 11.1 The pump does not start

**POWER on** LED on the pump control panel is not lit.

#### Cause

The pump is not connected to the power supply.

#### Remedy

- Make sure the power supply is switched on.
- Check if external protection has tripped.
- Make sure the cables and connections are free from defects and connected securely.

### 11.2 The pump does not start

The **POWER on** LED on the pump control panel is green. The **Pump Operation** LED is red.

#### Cause

The pump is in an alarm state.

#### Remedy

- Contact your local Grundfos representative.

### 11.3 The pump does not start

The **Power On** LED on the pump control panel is green, but the pump does not start when the push-button is activated.

#### Cause

If the **Pump Operation** LED on the pump control panel is yellow, the pump has timed out.

#### Remedy

- Wait until the yellow **Pump Operation** LED turns off.

#### Cause

The push-button is not paired with the pump.

#### Remedy

- Follow the pairing procedure for the push-button.

#### Cause

The push-button batteries need replacing.

#### Remedy

- Replace the batteries in the push-button.

#### Cause

The push-button is out of range.

#### Remedy

- Use the Repeater HWR-D accessory to increase the range of wireless signals.

### 11.4 The pump does not start

After installing the repeater, the **Power On** LED on the pump control panel is green, but the pump does not start when the push-button is activated.

#### Cause

The push-button is out of range, and the pump does not receive the repeater's wireless signal.

#### Remedy

- Relocate the repeater within the house for an optimum range of wireless signals.

**11.5 There is a noise in the hydraulic system**

There are no indicators lit on the pump or accessories.

**Cause**

Air in the system

**Remedy**

- Open a faucet or tap to let trapped air escape.

**11.6 There is noise in the circulator pump.**

There are no indicators lit on the pump or accessories.

**Cause**

Air is trapped in the pump.

**Remedy**

- Open a faucet or tap to let trapped air escape.

**Cause**

There is no water in the pump

**Remedy**

- Ensure there is liquid in the hot water supply source.

## 12. Technical data

### 12.1 Operating conditions

Supply voltage	
- Pump	1 x 115 V, +10 % / -10 %, 60 Hz
- Repeater with USB plug	5 V DC, +10 % / -10 %
- AC power adapter for repeater	100-240 V AC, +10 % / -10 %, 50/60 Hz
Motor protection	The pump requires no external motor protection.
Enclosure class	Indoor use only, IP42. CSA enclosure type 2.
Insulation class	F.
Relative humidity	Maximum 95 %.
Max. outlet pressure	150 psi (10.34 bar)
Sound pressure level	43 dB (A).
Ambient temperature	34 to 104 °F (1 to 40 °C)

#### Thermal bypass valve

Max. ambient temperature	170 °F (76 °C)
System installation type	Open — residential potable
Max. working pressure	145 psi (10 bar)
Max. liquid temperature	150 °F (66 °C)
Min. liquid temperature	36 °F (2 °C)
Connections	1/2" NPSM

#### Inlet pressure

Liquid temperature	Min. inlet pressure
167 °F (75 °C)	0.75 psi (0.05 bar)
194 °F (90 °C)	4.06 psi (0.28 bar)
230 °F (110 °C)	15.7 psi (1.08 bar)

#### Liquid temperature

36 °F (2 °C) to 230 °F (110 °C)



In domestic hot-water systems, keep the liquid temperature below 149 °F (65 °C) to eliminate the risk of lime precipitation.

To avoid condensation in the control box and stator, the liquid temperature must always be higher than the ambient temperature.

Ambient temperature [°F (°C)]	Min. liquid temperature [°F (°C)]	Max. liquid temperature [°F (°C)]
34 (1)	36 (2)	230 (110)
50 (10)	50 (10)	230 (110)
68 (20)	68 (20)	230 (110)
86 (30)	86 (30)	230 (110)
95 (35)	95 (35)	194 (90)
104 (40)	104 (40)	158 (70)

#### Approximate power usage

Minimum	2 W
Maximum	45 W

### 13. Disposing of the product

#### CAUTION

##### Magnetic field

Minor or moderate personal injury

- Persons with pacemakers disassembling this product must exercise care when handling the magnetic materials embedded in the rotor.



This product or parts of it must be disposed of in an environmentally sound way:

1. Use the public or private waste collection service.
2. If this is not possible, contact the nearest Grundfos company or service center.

See also end-of-life information at [www.grundfos.com/product-recycling](http://www.grundfos.com/product-recycling).

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