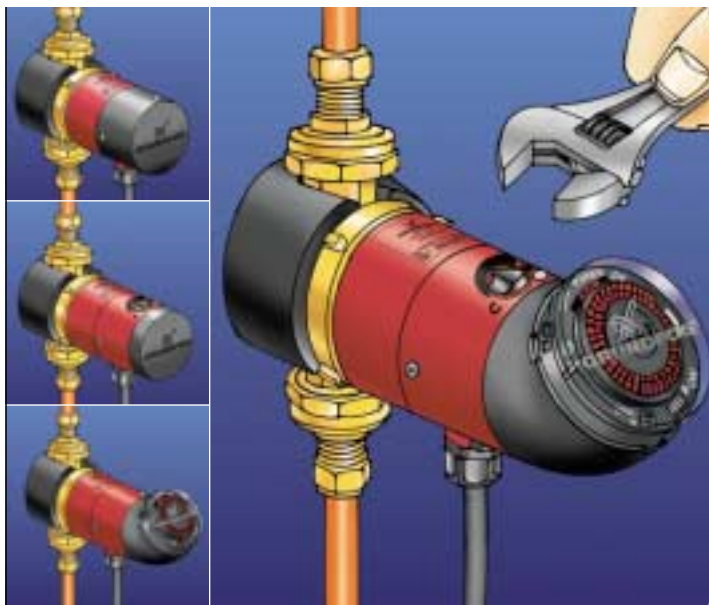
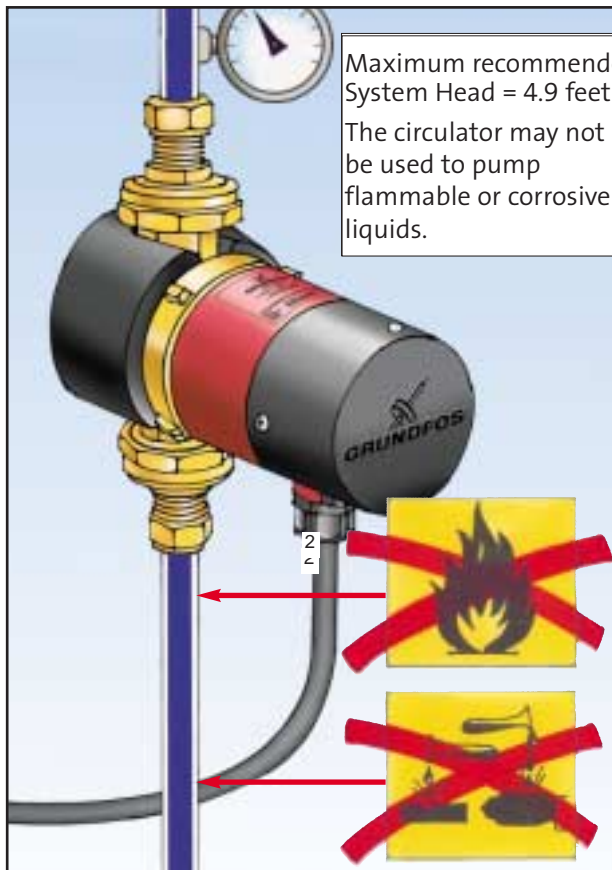


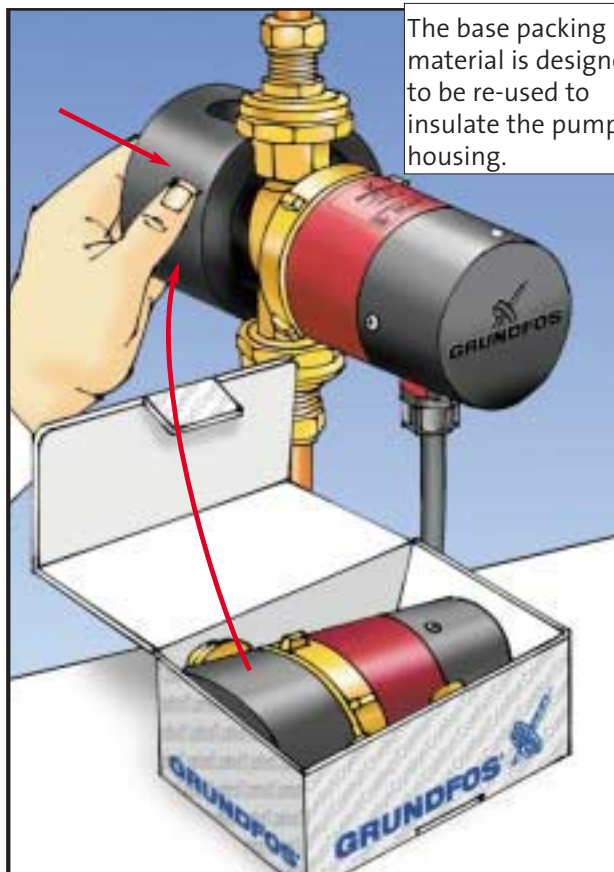
COMFORT PUMP



COMFORT PUMP



COMFORT PUMP



COMFORT PUMP

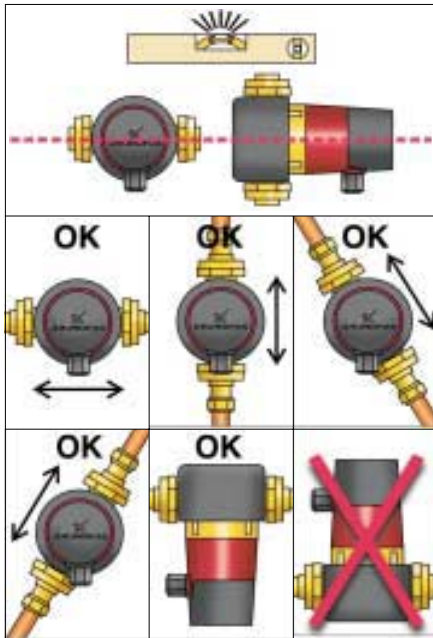
The diagram shows a Grundfos Comfort Pump installed in a pipe. A callout bubble points to the pump body with the text "Class TF95". A thermometer icon is labeled t_2 . The condition $t_1 \geq t_2$ is indicated. Below the pump are two tables showing the relationship between liquid temperature (t_1) and maximum allowed ambient temperature (t_2).

		C°					
t_1	2	20	40	65	80	95	
t_2	0	20	40	40	40	40	

		F°					
t_1	36	68	105	150	175	204	
t_2	32	68	105	105	105	105	

The liquid temperature must always be greater than the ambient temperature to avoid condensation. The table shows the maximum allowed ambient temperature for a given liquid temperature. The maximum allowable fluid temperature is 204 deg F.

CAUTION: During operation the pump may be too hot to touch.



It is preferred that the circulator always remains in a horizontal position. It is acceptable for the circulator to be mounted under the piping in a vertical position. The circulator cannot be mounted over the piping in a vertical position.

It is also preferred that the power cord be located under the circulator.

COMFORT PUMP

If it is necessary to rotate the circulator head to relocate the power cord under the circulator, please follow the steps below.

1. Isolate the circulator from the system water pressure by closing the valves on either side of the circulator. If the circulator cannot be isolated, it will be necessary to turn off the main water supply.

2. CAUTION: If operated recently the circulator body may be hot. Check before touching.

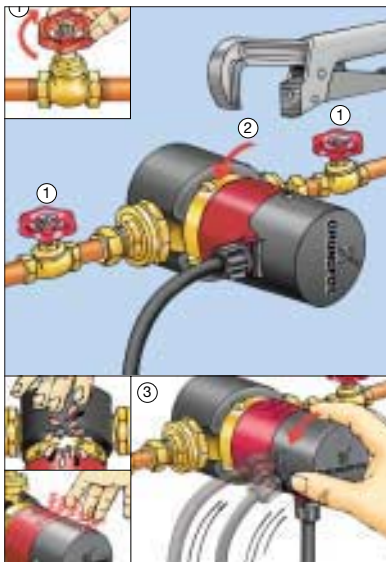
3. CAUTION: If the water supply is not turned off or the circulator is not isolated from the system, water damage may occur when proceeding with the next step.

4. Loosen the brass ring holding the circulator head to the pump housing. Be careful a small amount of hot water may still leak from the connection.

5. Rotate the circulator head until the power cord is directly below it.

6. Re-tighten the brass ring.

7. Turn the water back on or open the valves on either side of the circulator.



When the circulator is operating properly it is almost noiseless.

An integrated power indicator (green LED) identifies when power is supplied to the circulator.

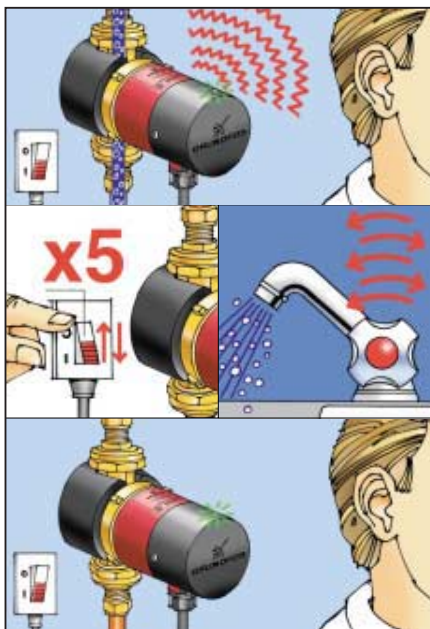
The circulator is on when the green LED is illuminated.

If the circulator is noisy there may be air trapped in the system.

To purge the air from the circulator turn the circulator off and on five times.

To purge the air from the system open a faucet until all the air in the line has escaped.

The circulator should now run quietly.



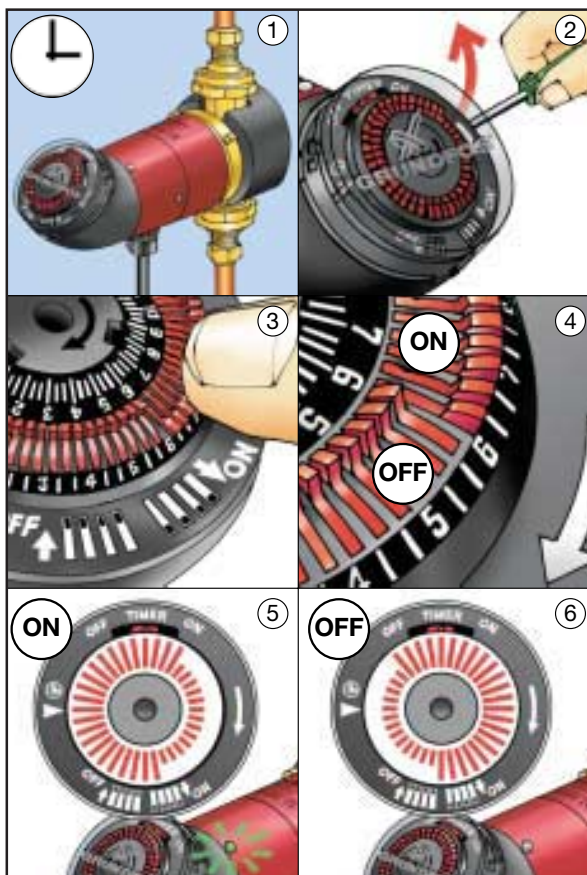
COMFORT PUMP

The timer is a 24-hour AM/PM timer with 20-minute interval. For ease of programming the timer head can be swiveled stop to stop almost 360 degrees.

To program the timer:

1. Using a small flatblade screwdriver remove the clear plastic cover from the timer.
2. The time of day is set by turning the programming ring in the direction of the arrow (clockwise) until the correct time is aligned to the arrowhead beneath the clock symbol.
3. Set the required "ON/OFF" times on the programming ring by pushing the programming tabs either away from or toward the center of the ring. Each tab represents a 20-minute time interval. Tabs pushed toward the center turn the circulator OFF and tabs pushed away from the center turn the circulator ON.
4. The timer function may be controlled using the OFF - TIMER - ON switch. Setting the switch to OFF switches the circulator off but does not affect the timer clock operation. The green LED will be off. Setting the switch to TIMER allows the circulator to Start/Stop according to the programming tabs. The green LED will be on or off according to the position of the programming tabs. Setting the switch to ON provides continuous circulator operation. The green LED is on.
5. In case of power outage the timer will not keep time. After power is restored the correct time of day must be reset.
6. After setting the timer re-install the clear plastic cover.

COMFORT PUMP



COMFORT PUMP

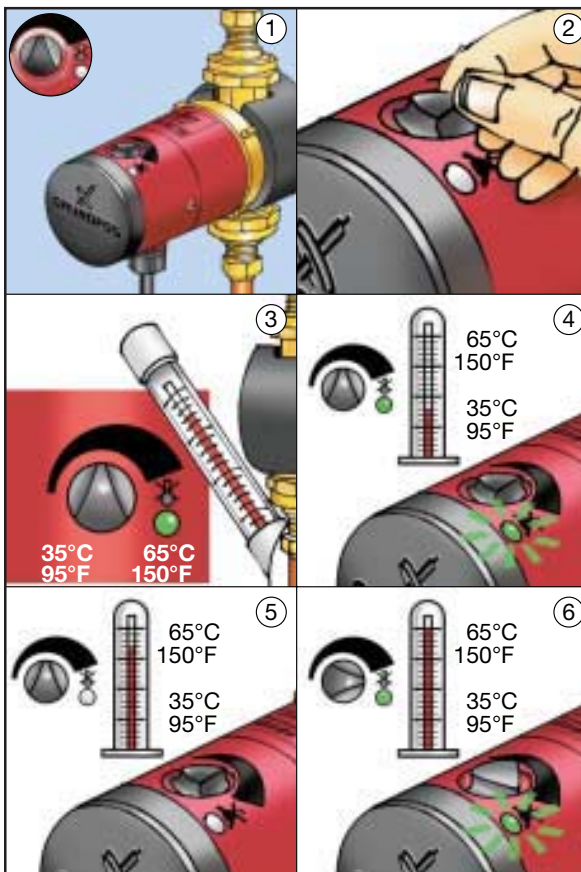
The aquastat is an integrated adjustable thermostat controlled by the temperature dial. The aquastat allows the circulator to automatically turn off (the green LED is off) when the water temperature passing through the circulator housing reaches the dial setting selected between 95 deg F and 150 deg F. The circulator will automatically turn back on (the green LED is on) when the water temperature cools down 12 deg F.

Setting the aquastat:

1. The factory preset dial position is 95 deg F.
2. To increase the temperature setting turn the dial clockwise.
3. Turning the dial fully clockwise to the stop defeats the aquastat function and the circulator will not shut off by water temperature. It is recommended that this setting only be used to sanitize/flush the hot water line.

Note: 140 deg F water is the maximum recommended fluid temperature to prevent calcium precipitation in the system.

WARNING: 120 deg F water is the maximum recommended fluid temperature to prevent scalding.

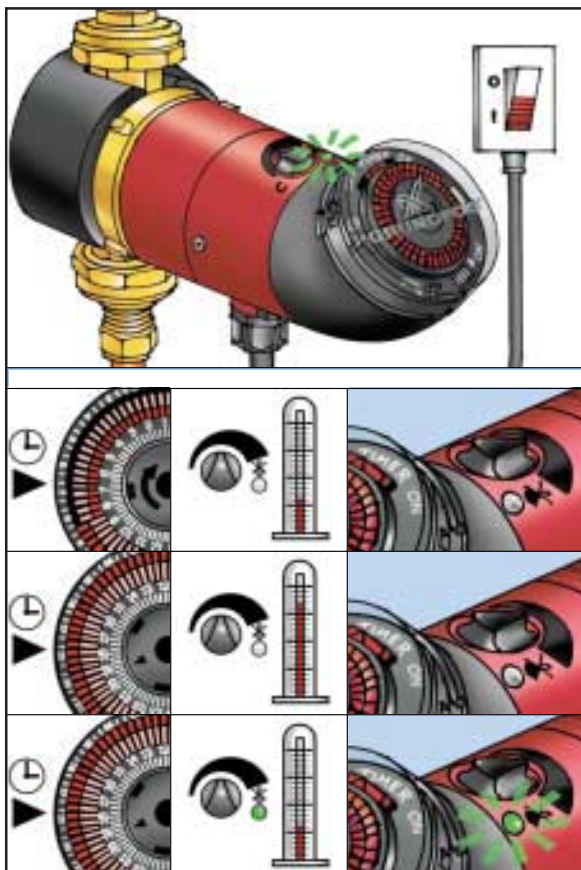


When the timer and thermostatic controls are used together, the circulator operates **ONLY** at the programmed timer settings **AND ONLY** when the temperature conditions of the aquastat have not been met.

Examples:

With the timer programming tabs in the off position the circulator is off (green LED is off) regardless of the system temperature and aquastat function.

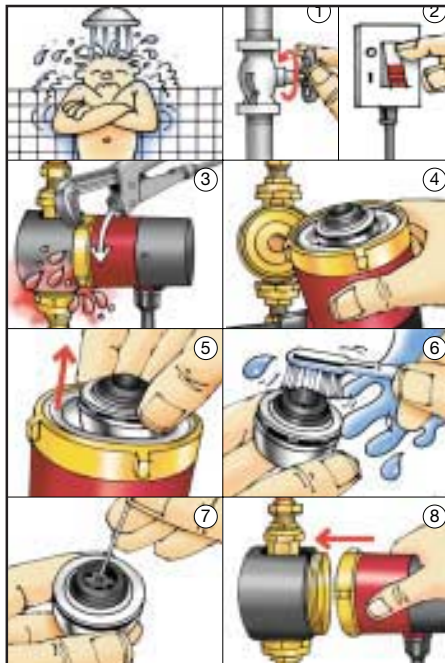
With the timer programming tabs in the on position **AND** the water temperature at the selected dial setting the circulator is off (green LED is off). With the timer programming tabs in the on position **AND** the water temperature below the selected dial setting the circulator is on (green LED is on).



COMFORT PUMP

In the unlikely event that instant hot water is not available, the circulator impeller may be blocked by calcium/sediment deposits. Follow these steps to clean the impeller:

1. Isolate the circulator from the system water pressure by closing the valves on either side of the circulator. If the circulator cannot be isolated, it will be necessary to turn off the main water supply.
2. Turn off the power supply.
3. Loosen the brass ring holding the circulator head to the pump housing. Be careful a small amount of hot water may still leak from the connection
4. Remove the circulator body from the pump housing.
5. Remove the impeller assembly from the circulator body by pulling gently upward.
6. Clean the impeller assembly using water and a brush.
7. Remove calcium/sediment deposits from the impeller passages.
8. Re-assemble the circulator by reversing steps 1-5 above.



Sound pressure level
The sound pressure level of the pump is lower than 43 dB(A).

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 24 months from date of installation, but not more than 30 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 which 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 operation instructions.

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 the GRUNDFOS factory or authorized service station for instructions. Any defective product to be returned to the factory or service station must be sent freight prepaid; documentation supporting the warranty claim and/or a Return Authorization must be included if so instructed.

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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.

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