Installation and Maintenance guide

GJPACW1V-15/20/30/40/60
GJPACW1-15/20/30
Congratulations on your purchase of a pool heat pump from Gullberg & Jansson AB. We hope it meets your expectations and provides you with many years of energy efficient heating.

In this Installation and Maintenance Guide you can read how installation, operation, service and maintenance are to be performed to ensure correct function. It is therefore important that you read through the manual carefully before starting or serving the unit. Gullberg & Jansson can not be held responsible for damage resulting from incorrect installation, incorrect fault tracing or incorrect maintenance.

Yours sincerely,

Gullberg & Jansson AB

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**FOR YOUR OWN RECORDS**
Please complete the details below. Keep these close to hand should anything happen.

<table>
<thead>
<tr>
<th>Product:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed by:</td>
</tr>
<tr>
<td>Serial number:</td>
</tr>
<tr>
<td>Date of installation:</td>
</tr>
</tbody>
</table>

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The proof of installation for registration at Gullberg & Jansson AB is enclosed with the installation. It is important that this is completed and posted at the earliest possible date!

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Subject to possible misprints and design alterations. Gullberg & Jansson AB is not responsible for misinterpretations, any obvious misprints and consequences resulting from these.
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1 General information

This chapter provides background information about the pool heat pumps covered in this Installation and Maintenance Guide. Important information, guarantee conditions and safety instructions are also presented here. This chapter is intended for both users and installation engineers.

Product description

The models GJPACW1-15/20/30 and GJPACW1V-15/20/30/40/60 are a range of specifically developed air/water heat pumps designed for energy efficient heating of swimming pools or spa pools. The models have been developed and designed for the Scandinavian climate by Gullberg & Jansson AB. The pool heat pumps are designed to work with good efficiency and a low noise level.

All models feature:
- Titanium heat exchangers resistant to chlorine and salt water
- Environmentally friendly and effective coolant (R410a)
- Digital LED control with timer
- Dynamic defrosting function for an extended pool season
- Flow switch and union couplings for safe operation and easy installation
- Stainless steel casing

Functional principle

The pool heat pumps GJPACW1-15/20/30 and GJPACW1V-15/20/30/40/60 are primarily used for heating, but can also be used for cooling. The models are controlled via a flow switch and in order to work the pool’s circulation pump must be running.

The pool heat pump works with the greatest energy efficiency when there are small differences in temperature between the inlet and outlet. The recommendation is 1-2 degrees difference between the inlet and outlet. The water flow is regulated via a bypass coupling. Read more about the bypass coupling in section 2 – Installation.

All models are developed to guarantee good efficiency in the Nordic climate. However, it is important to be aware that the degree of efficiency is dependent on the surrounding outdoor temperature and the temperature of the pool water. The heat pump can be seen to perform with different efficiency during different parts of the year depending on the outdoor conditions. At the start of the season, when the water in the pool is cold, the heat pump needs to work continuously for a long period to produce the right temperature in the pool. When the pool water has reached the required temperature, the heat pump automatically stops and starts as required. It is always cost-effective to cover the pool when not in use, especially at night. Approximately 60 – 70 % of the heat disappears from the water surface of the pool. Covering also reduces the heat pump’s running time.

A Gullberg & Jansson heat pump must always be installed outdoors, as it collects its energy from the surrounding air. It must be well ventilated and must not be enclosed or in any other way shielded so the air circulation is impaired. The circulation of the air between the intake and exhaust impairs efficiency. Avoid installation close to sensitive walls, for example, bedroom rooms.

Frost or ice can form on the heat pump’s evaporator. This is completely normal. An automatic defrosting cycle will start to melt the ice. After the defrosting cycle the heat pump starts its standard program and continues to heat the pool. The models are designed for pool heating during May to September, which can be considered as a normal pool season. The swimming pool heat pump normal working condition is between 5 and 40 °C ambient temperature and between 15 and 40 °C inlet water temperature.

Outline diagram for installation of GJPACW1(V)-XX.
General information

Component part and accessories
1. Main unit – GJPACW1(V)-XX
2. Installation accessories
   • Installation instructions
   • Union couplings
   • Damping rubber blocks
   • Winter cover

Use and operation
The parameters on the display are set at the factory and do normally not need to be adjusted. The temperature is set to 27 °C. If you wish to increase the temperature, check first to ensure that your wishes of a high temperature do not contravene any guarantees concerning the general pool construction.

Maintenance procedures
It is important to drain the water from the pool heat pump before the winter. The material guarantee does not cover damage due to freezing on account of insufficient maintenance. The heat exchanger can also be flushed out to remove any remaining deposits ahead of winter drainage. Read more about drainage in section 4 - Maintenance, service and fault tracing.

Perform regular checks to ensure that the inlet grille is not blocked by leaves, snow, etc. In addition, make sure that excessive frost or ice does not build up below the unit during cold weather conditions.

The outer case can be cleaned using a damp cloth if necessary. Take care not to scratch the unit. To minimize ageing of the surface, it’s recommended to apply wax at least once every year.

Service and support
GJPACW1-15/20/30 and GJPACW1V-15/20/30/40/60 are designed for reliable operation and a long life. If a fault should occur you should always contact the installation engineer who carried out the installation. If the installation engineer in turn considers it to be a question of a material or manufacturing fault, he/she will contact us for inspection and action to rectify the problem. Always state the product’s manufacturing number. The number can be found on the rating plate below the LED display. A basic guide to fault tracing is presented in section 4 - Maintenance, service and fault tracing.

Miscellaneous
The unit may only be repaired by a qualified installation engineer or an accredited workshop. Original spare parts must be used for repairs.

Solar collectors and heat pumps can be combined, however, please contact the dealer or G & J regarding any uncertainty with the installation. It is important to avoid connecting the hot solar collector water directly to the pool heat pump. If the solar collector water becomes too hot you risk damaging the heat pump beyond repair.

The proof of installation for registration at Gullberg & Jansson AB is enclosed with the installation. It is important that this is completed and posted at the earliest possible date!
Checklist installation

The following checklist provides a general description of how the installation is carried out.

- Place the heat pump on a firm and horizontal surface. Make sure that the area is well drained and supply enough air for the evaporator.
- Open the service hatch and remove the enclosed installation kit. Ensure that all component parts have been delivered.
- Mount the heat pump, with a bypass, in series after the sand filter. Exercise care to ensure the inlet and outlet are installed correctly.
- Connect the electricity.
- Operating mode Check carefully to ensure there is sufficient circulation before start up.
- Adjust the flow to the pool heat pump to the right level
- Check the settings

Read more about the installation in section 2.

Guarantee conditions

The component parts of the system must be transported, stored, installed and used in accordance with the provisions set out in the manual.

Repairs must be carried out by an accredited installation engineer. Original parts must be used for repairs.

The guarantee becomes void if the conditions above are violated.

Safety Regulations

It is especially important to take into account the following safety instructions when handling, installing and using the heat pump:

- Only qualified persons may work on the product's cooling system.
- Always disconnect the power supply before working on the system.
Installation

A comprehensive installation description is provided in this chapter. This chapter is primarily intended for installation engineers, but can also be read by the end user to increase his/her knowledge.

Outline diagram

Refer to the labels on the unit before connecting the inlet and outlet.

Positioning the unit

The pool heat pump will work ideally under the following conditions:

- Access to fresh air.
- High enough water circulation.
- Correct electrical installation.

In principle the pool heat pump can be placed anywhere outdoors. However, do not place the pool heat pump enclosed with restricted access to the air intake and air exhaust (see the figure below). A structure with a roof is not necessary. If you want to build in the heat pump, remember that exhaust air must be ventilated properly!

See the illustration below for horizontal and vertical fan models.

Set up

The pool heat pump must be placed on a firm, horizontal base and should not be placed next to or be installed with brackets on sensitive walls with a lightweight structure. The unit must be placed so that noise from the compressor and fan disturb the surroundings as little as possible.

The unit must stand firmly, straight and raised from ground level. Ensure a firm and flat surface is provided, for example, garden slabs, concrete bed, Leca blocks or similar.

Large amounts of melt and condensation water can be discharged during defrosting and operation. Consequently, it is important to provide good drainage and run-off. Up to 10 litres of condensation water per hour can form during operation.

The outdoor section must be placed so that the air supply to the evaporator coil is sufficient. Otherwise the power output and efficiency will be impaired.
Installation

Distance to the pool

The pool heat pump is normally installed in connection to the pool’s purification system to minimise pipe routing. If the pipes are insulated heat loses will be minimal provided that the overall pipe length is less than 30 metres (pool water in and pool water return). An approximate estimation of the heat loses over an overall pipe length of 30 metres is 0.6 kW per hour for each 5 degrees of temperature difference between the pool water and the air surrounding the pipes. This is equivalent to an increased running time for the heat pump of 3-5 %.

Leading off condensation water

Outdoor air is cooled in the evaporator by approximately 5-10 degrees. The water vapour then condenses on the evaporator coil fins. If the air humidity is high this can result in many litres of water per hour. To counter this, there are several drainage holes in the base plate to lead off the water. It is important to consider the position of the unit so that the condense water can be led off correctly.

Pipe connections

The pool heat pump is connected to the pool’s circulation system with the help of the supplied 50 mm union couplings. Screw connections to the heat exchanger must be tightened by hand.

A bypass coupling must be fitted to adjust the right partial flow to the pool heat pump, and to simplify service.

Bypass coupling

We recommend that a bypass coupling is fitted to all installations in order to adjust the right partial flow to the pool heat pump. The right partial flow results in balanced operation and reduced wear on the heat pump’s most expensive section, the heat exchanger.

Adjusting the bypass

Correct adjust of the bypass can be done in different ways. One of the easiest ways can be summarized as follows:

1. Open all the valves
2. Check parameter A and b, see section 3.
3. If the difference is above 2 degrees, gradually close the bypass valve until the difference is between 1-2 degrees

If the display shows EE03 this means that the flow switch in the system receives insufficient water, so the bypass valve must be closed more to increase the flow through the pool heat pump.

Electrical installation

The electrical connection is made to the pool heat pump’s junction box located behind the front panel. A working switch (with or without a fuse) must be connected and be positioned fully visible next to the unit. The working switch protects against unintentional starting, for example, when servicing the unit. Even if the heat exchanger is electrical isolated from the remainder of the system and separates the pool water from the electricity, the unit must be connected to earth to provide satisfactory short-circuit protection.

There is an additional connection on the terminal block, 1 and 2. This connection can be used if you wish to connect a separate circulation pump to the pool heat pump.

See the wiring diagram in section 5 for more detailed information about the electrical connection.

Starting up the unit

In order to heat the pool or spa water, the pool’s circulation pump must start and water needs to circulate through the heat exchanger. The following procedure should be followed when starting the pool heat pump for the first time:

1. Start the pool’s circulation pump. Check for any leakage and that there is a flow to and from the pool.
2. Switch on the supply voltage and check the current running settings.
3. Press ON/OFF on the display, the unit should start after a few seconds.

4. After a few minutes, check that the exhaust air is colder than the outdoor air temperature (5-10 °C).

5. Stop the pool’s circulation pump and make sure that the pool heat pump stops automatically.

6. Let the system run around the clock until the required temperature is reached. The pool heat pump will know when the temperature has been reached, but will not switch off until the required temperature has been exceeded by 1º. The pool heat pump will then start again when the temperature in the pool drops by 1º below the required temperature.

Flow switch: The pool heat pump is equipped with a flow switch that prevents starting in the event of insufficient water flow.

Time delay: The compressor will start after a delay of approximately 1 minute to prevent repeated restarts and compressor wear. Even a brief power failure activates the start delay of 1 minute.
3 Use and operation

Description of LED controls

A description of the LED display is given below. All parameters are set at the factory and do not need to be adjusted before start up. During operations, press \( \uparrow \downarrow \) to check the current status of the unit. Here the set parameters; incoming water / outgoing water / evaporator / ambient temperature, can be checked. If no buttons are pressed within 5 seconds the LED display shows the incoming water temperature. When the unit is in standby mode, it shows the current time.

**How to change operating parameters**

1. Put the unit to standby mode by pressing the ON/OFF-button. The clock is shown.
2. Select a parameter between 0-9 by pressing the arrows.
3. Press in MODE while at the same time pressing ON/OFF.
4. When the parameter value flashes the setting can be made by pressing the arrows.
5. After 5 seconds the clock is shown and the setting is accepted.
6. Check the setting by using the arrows.
7. Start the unit again by pressing ON/OFF.

| Parameter 0: Required pool temp. in cooling mode. (8 - 28 °C) |
| Parameter 1: Required pool temp. in heating mode. (15 - 40 °C) |
| Parameter 2: Time between defrosting. (30 - 90 min) |
| Parameter 3: Start temperature for defrosting. (-30 - 0 °C) |
| Parameter 4: Stop temperature for defrosting. (0 - 30 °C) |
| Parameter 5: Maximal defrosting time (0 - 15 min) |
| Parameter 6: Quantity system. NOTE! Not to be changed! |

Note that the unit must be in standby mode in order to change any parameters.
Use and operation

Parameter 7: Automatic restart on power failure. (0 = No / 1 = Yes)

Parameter 8: (0 = Cooling mode / 1 = Heating mode or cooling mode / 2 = Not used / 3 = Heating mode)

Parameter 9: External pump. (0 = Always running / 1 = Running at the same time as the compressor)

How you select the operating mode

1. Press ON/OFF to start the heat pump. The display shows the inlet temp. and the operating mode during normal operations.

2. If parameter 8 is set to 1 it is possible to switch between cooling and heating modes by pressing MODE.

Operating mode set to heating

Operating mode set to cooling

Explanation of sensor values

Inlet temperature

Outlet temperature

Temperature of the evaporator coil

Discharge temperature

Ambient air temperature
Setting the time

1. Press CLOCK. Current time is shown in the display.
2. Press CLOCK. The hours will start blinking, and can be adjusted with the arrows.
3. Press CLOCK again. The minutes will start blinking, and can be adjusted with the arrows.
4. Press CLOCK again to set the time.

Timer setting and activation

The heat pump can be started and shutdown using a timer. The LED above the button indicates an active timer.

To set the start timer follow the instructions below:
1. Press TIMER ON. Current timer setting is shown in the display.
2. Press TIMER ON again. The hours will start blinking and can be changed by using the arrows.
3. Press TIMER ON again. The minutes will start blinking and can be changed using the arrows.
4. Press TIMER ON again to set the timer.

To set the stop timer follow the instructions below:
5. Press TIMER OFF. Current timer setting is shown in the display.
6. Press TIMER OFF again. The hours will start blinking and can be changed by using the arrows.
7. Press TIMER OFF again. The minutes will start blinking and can be changed using the arrows.
8. Press TIMER OFF again to set the timer.

Deactivation of the timers

1. Press TIMER ON/OFF.
2. Press CLOCK. The LED above the timer button shouldn’t be lit and the timer is now deactivated.
Winter drainage

It is extremely important to remember to winter drain the machine before winter storage! The guarantee does not cover damage to the titanium heat exchanger due to freezing! Drainage is easy to perform, by unscrewing the pipe connections on the inlet and outlet pipes. Check that the machine is really drained. It is a good idea to flush out the heat exchanger in connection with winter drainage using, e.g. a garden hose to remove any chlorine residue.

In the event of any uncertainty before winter drainage, contact your dealer! An iced-up heat exchanger due to forgotten winter drainage is not covered by the guarantee!

Maintenance

- Clean the pool/spa filter regularly to ensure sufficient circulation.
- Check that the area surrounding the unit provides good drainage and ventilation.
- It is a good idea to clean the heat exchanger to promote good function and energy savings. This is easily done with winter drainage. Flush the heat exchanger using e.g. a garden hose and drain thoroughly. This will reduce the risk of chlorine deposit build up.
- Check the power supply and cable connections regularly. If the unit does not function as designed, shut it down and contact the installation engineer.
- Check that the evaporator is clean. Use a brush and vacuum to remove any dust or leaves. Don’t use a high pressure jet! Regular cleaning will guarantee maximum efficiency.
- Clean the surface using a sponge or the like. To minimize ageing of the surface, it’s recommended to apply wax at least once every year.
- Ahead of the winter – drain and cover!

Fault tracing

If a fault should occur you should always contact the installation engineer who carried out the installation. If he/she in turn considers it to be a question of a material or manufacturing fault, he/she will contact us for inspection and action to rectify the problem. Always state the product’s manufacturing number. Information can be gained from the following fault tracing guide. Frequently asked questions with answers are also presented in the section 6. Always read through this section before contacting your dealer.

Error code table

<table>
<thead>
<tr>
<th>Operating disturbance</th>
<th>Error message</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor error inlet (INWT)</td>
<td>PP01</td>
<td>Sensor not connected, broken cable or short circuit</td>
<td>Check or replace the sensor</td>
</tr>
<tr>
<td>Sensor error outlet (OUTWT)</td>
<td>PP02</td>
<td>Sensor not connected, broken cable or short circuit</td>
<td>Check or replace the sensor</td>
</tr>
<tr>
<td>Sensor error evaporator (PIPE1)</td>
<td>PP03</td>
<td>Sensor not connected, broken cable or short circuit</td>
<td>Check or replace the sensor</td>
</tr>
<tr>
<td>Sensor error hot gas sensor (PIPE2)</td>
<td>PP04</td>
<td>Sensor not connected, broken cable or short circuit</td>
<td>Check or replace the sensor</td>
</tr>
<tr>
<td>Sensor error outdoor sensor (ROOMT)</td>
<td>PP05</td>
<td>Sensor not connected, broken cable or short circuit</td>
<td>Check or replace the sensor</td>
</tr>
<tr>
<td>Too high temp. difference between inlet and outlet</td>
<td>PP06</td>
<td>Insufficient water flow, 12 degrees difference between inlet and outlet</td>
<td>Check the water flow</td>
</tr>
<tr>
<td>Anti-freeze protection</td>
<td>PP07</td>
<td>Inlet under 4 °C and outdoor air 0 °C or colder</td>
<td>Automatic heating mode</td>
</tr>
<tr>
<td>Flow switch</td>
<td>EE03</td>
<td>Low flow or no water in the system</td>
<td>Check the water flow, adjust the bypass, replace the flow switch</td>
</tr>
<tr>
<td>High pressure or low pressure pressostat</td>
<td>EE04</td>
<td>Gas quantity too high or low.</td>
<td>Contact installer.</td>
</tr>
<tr>
<td>Communication error</td>
<td>EE08</td>
<td>No contact with the control unit</td>
<td>Check the connection between the control unit and display</td>
</tr>
</tbody>
</table>
## Fault charting table

<table>
<thead>
<tr>
<th>Operating disturbance</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
</table>
| **Set pool temperature not reached** | 1. The heat pump is in standby mode.  
2. The heat pump is in cooling mode.  
3. The heat pump is too small for the pool.  
4. The outdoor air temperature is too low.  
5. The pool’s insulation is not sufficient.  
6. The discharge gas temperature is too low. | 1. Press the ON/OFF button.  
2. Change the operating mode to heating mode as set out in the section 3.  
3. Larger heat pump required.  
4. The season is over. Larger heat pump required.  
5. The pool needs to be covered.  
6. The discharge gas sensor, parameter d, should show more than 45 °C. |
| **The heat pump ices up again.** | 1. Pool temperature is lower than 15 °C.  
2. Unusually high humidity.  
3. Ambient temperature is lower than 5 °C. | 1. Reset parameters for defrosting to a longer defrosting time and a higher stop temperature. If necessary run in cooling mode to melt the ice. See section 3. |
| **Flow switch generates EE03.** | 1. The flow is too low. | 1. Check that the purification system is running  
2. Check the sand filter and flush if necessary.  
3. Check the bypass setting. |
## Technical specification

Connection key Chiller 300.2

<table>
<thead>
<tr>
<th>No.</th>
<th>Designation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>AC-N</td>
<td>Neutral conductor (230 VAC)</td>
</tr>
<tr>
<td>4</td>
<td>AC-L</td>
<td>Phase conductor (230 VAC)</td>
</tr>
<tr>
<td>5</td>
<td>COMP1</td>
<td>Control signal to compressor relay (230 VAC)</td>
</tr>
<tr>
<td>6</td>
<td>COMP2</td>
<td>Control signal to compressor relay (230 VAC)</td>
</tr>
<tr>
<td>7</td>
<td>VAL1</td>
<td>Control signal to four way valve (230 VAC)</td>
</tr>
<tr>
<td>8</td>
<td>VAL2</td>
<td>Control signal to four way valve (230 VAC)</td>
</tr>
<tr>
<td>9</td>
<td>FAN</td>
<td>Control signal to fan motor (230 VAC)</td>
</tr>
<tr>
<td>10</td>
<td>PUMP</td>
<td>Control signal to circulation pump (230 VAC)</td>
</tr>
<tr>
<td>11</td>
<td>HEAT</td>
<td>Alarm signal (230 VAC)</td>
</tr>
<tr>
<td>12, 14</td>
<td>KYOUT/GND</td>
<td>On/Off switch (output signal, not connected)</td>
</tr>
<tr>
<td>13, 14</td>
<td>MDOUT/GND</td>
<td>Mode output (not connected)</td>
</tr>
<tr>
<td>15-17</td>
<td>NET/GND/12V</td>
<td>Display controller</td>
</tr>
<tr>
<td>18, 20</td>
<td>KYIN/GND</td>
<td>On/Off switch (input signal, not connected)</td>
</tr>
<tr>
<td>19, 20</td>
<td>MDIN/GND</td>
<td>Mode input (not connected)</td>
</tr>
<tr>
<td>21-22</td>
<td>WATER/GND</td>
<td>Flow switch (input signal)</td>
</tr>
<tr>
<td>23-24</td>
<td>FROST/GND</td>
<td>Defrosting signal (not connected)</td>
</tr>
<tr>
<td>25-27</td>
<td>SYS/GND/12V</td>
<td>Pressostat signal (input signal)</td>
</tr>
<tr>
<td>28</td>
<td>INTWT</td>
<td>Incoming water temperature (input signal)</td>
</tr>
<tr>
<td>29</td>
<td>OUTTWT</td>
<td>Outgoing water temperature (input signal)</td>
</tr>
<tr>
<td>30</td>
<td>PIPE1</td>
<td>Evaporator coil temperature (input signal)</td>
</tr>
<tr>
<td>31</td>
<td>PIPE2</td>
<td>Discharge gas temperature (input signal)</td>
</tr>
<tr>
<td>32</td>
<td>ROOMT</td>
<td>Ambient temperature (input signal)</td>
</tr>
</tbody>
</table>
Technical specification

Wiring diagram

One-phase connection

GJPACW1(V)-15/20/30/40

CHILLER 300.2

Gullberg Jansson

REMARKS:
C1: COMPRESSOR CAPACITOR
C2: FAN MOTOR CAPACITOR
CM: COMPRESSOR
COND: EVAPORATOR TEMP. SENSOR
DT: DISCHARGE TEMP. SENSOR
EXT: AMBIENT TEMP. SENSOR
FM: FAN MOTOR
HP: HIGH PRESSURE SWITCH
IN: WATER INLET TEMP. SENSOR
LP: LOW PRESSURE SWITCH
OUT: WATER OUTLET TEMP. SENSOR
RK1: COMPRESSOR RELAY COIL
RK4: WATER PUMP RELAY COIL
SW1: WATER FLOW SWITCH
Three-phase connection

GJPACW1(V)-30/60

CHILLER 300.2

REMARKS:
- C: FAN MOTOR CAPACITOR
- CM: COMPRESSOR
- COND: EVAPORATOR TEMP SENSOR
- DT: DISCHARGE TEMP SENSOR
- EP: EXHAUST TEMP SWITCH
- EXT: AMBIENT TEMP SENSOR
- FM: FAN MOTOR
- HP: HIGH PRESSURE SWITCH
- IN: WATER INLET TEMP SENSOR
- K1: COMPRESSOR CONTACTOR
- K4: WATER PUMP CONTACTOR
- LP: LOW PRESSURE SWITCH
- OUT: WATER OUTLET TEMP SENSOR
- RA: WATER PUMP CONTACTOR COIL
- SW1: WATER FLOW SWITCH

Gullberg Jansson
Technical specification

GJPACW1V-15/20/30/40/60

Component placement

1 Protective net
2 Evaporator
3 Electronic box
4 Fan motor bracket
5 Fan motor
6 Impeller
7 Stainless steel casing - top
8 Protective fence
9 Stainless steel casing - right
10 LED-controller
11 Protective plate
12 Compressor capacitor
13 Compressor relay
14 Fan motor capacitor
15 Connection terminal
16 Chiller 300
17 Electronic box - lid
18 Stainless steel casing - front
19 Flow switch
20 PVC through-connection
21 PVC-cross
22 PVC-plate (80×80 mm)
23 PVC-pipe
24 PVC-bend
25 Four-way valve
26 Chassis
27 Stainless steel casing - left
28 Compressor
29 Heat exchanger
Technical specification

### Technical data

<table>
<thead>
<tr>
<th>Model</th>
<th>GJPACW1V-15</th>
<th>GJPACW1V-20</th>
<th>GJPACW1V-30</th>
<th>GJPACW1V-40</th>
<th>GJPACW1V-60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating output²</td>
<td>kW</td>
<td>6.8</td>
<td>9.2</td>
<td>13.8</td>
<td>18.2</td>
</tr>
<tr>
<td>Input power</td>
<td>kW</td>
<td>1.2</td>
<td>1.7</td>
<td>2.6</td>
<td>3.5</td>
</tr>
<tr>
<td>Heating capacity³</td>
<td>m³</td>
<td>20 - 35</td>
<td>30 - 50</td>
<td>40 - 80</td>
<td>60 - 110</td>
</tr>
<tr>
<td>Operating voltage</td>
<td></td>
<td>230 VAC 1-phase 50 Hz</td>
<td>400 VAC</td>
<td>230 VAC</td>
<td>400 VAC</td>
</tr>
<tr>
<td>Operating current</td>
<td>A</td>
<td>5.23</td>
<td>7.50</td>
<td>11.4</td>
<td>4.47</td>
</tr>
<tr>
<td>Fuse size</td>
<td>A</td>
<td>10</td>
<td>16</td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td>Compressor</td>
<td></td>
<td>Rotary compressor</td>
<td>Scroll compressor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refrigerant amount (R410a)</td>
<td>kg</td>
<td>0.9</td>
<td>1.0</td>
<td>1.2</td>
<td>1.3</td>
</tr>
<tr>
<td>Fan consumption</td>
<td>W</td>
<td>50</td>
<td>75</td>
<td>120</td>
<td>200</td>
</tr>
<tr>
<td>Rated air flow</td>
<td>m³/h</td>
<td>1600</td>
<td>2300</td>
<td>2300</td>
<td>4800</td>
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<tr>
<td>Noise level (1 m)</td>
<td>dB(A)</td>
<td>47</td>
<td>51</td>
<td>54</td>
<td>56</td>
</tr>
<tr>
<td>Water connection</td>
<td>mm</td>
<td></td>
<td></td>
<td></td>
<td>50 mm</td>
</tr>
<tr>
<td>Rated water flow</td>
<td>m³/h</td>
<td>2.2</td>
<td>3</td>
<td>4.5</td>
<td>6</td>
</tr>
<tr>
<td>Pressure drop at rated flow</td>
<td>bar</td>
<td>0.12</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
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<tr>
<td>Pressostat break value HP</td>
<td>bar</td>
<td></td>
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<td></td>
<td>44</td>
</tr>
<tr>
<td>Pressostat break value LP</td>
<td>bar</td>
<td></td>
<td></td>
<td></td>
<td>0.2 bar</td>
</tr>
<tr>
<td>Height</td>
<td>mm</td>
<td>725</td>
<td>750</td>
<td>750</td>
<td>880</td>
</tr>
<tr>
<td>Width</td>
<td>mm</td>
<td>525</td>
<td>580</td>
<td>580</td>
<td>720</td>
</tr>
<tr>
<td>Depth</td>
<td>mm</td>
<td>490</td>
<td>545</td>
<td>545</td>
<td>660</td>
</tr>
<tr>
<td>Weight</td>
<td>kg</td>
<td>50</td>
<td>61</td>
<td>60</td>
<td>80</td>
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</tbody>
</table>

¹ GJPACW1V-30 can be either 1-phase or 3-phase.
² Heating output measured at 24 °C / 19 °C outdoor temperature, DB / WB (Dry bulb / Wet bulb). Incoming water temperature 27 °C.
³ Heating capacity should be seen as guide values for an insulated pool covered at night. The models are designed for use during the period May - September (normal pool season).

### Dimensions and connections

![Diagram of the equipment showing dimensions and connections]

<table>
<thead>
<tr>
<th>Dim.</th>
<th>Model</th>
<th>GJPACW1V-15</th>
<th>GJPACW1V-20/30</th>
<th>GJPACW1V-40/60</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td>490</td>
<td>545</td>
<td>650</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td>265</td>
<td>317</td>
<td>400</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>523</td>
<td>557</td>
<td>720</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>545</td>
<td>580</td>
<td>740</td>
</tr>
<tr>
<td>E</td>
<td></td>
<td>725</td>
<td>750</td>
<td>880</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td>115</td>
<td>115</td>
<td>110</td>
</tr>
<tr>
<td>G</td>
<td></td>
<td>92.5</td>
<td>92.5</td>
<td>120</td>
</tr>
</tbody>
</table>
## Component placement

<table>
<thead>
<tr>
<th>Number</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stainless steel casing - top</td>
</tr>
<tr>
<td>2</td>
<td>Protective net - back</td>
</tr>
<tr>
<td>3</td>
<td>Stainless steel casing - left</td>
</tr>
<tr>
<td>4</td>
<td>Fan motor bracket</td>
</tr>
<tr>
<td>5</td>
<td>Protective net - left</td>
</tr>
<tr>
<td>6</td>
<td>Fan motor</td>
</tr>
<tr>
<td>7</td>
<td>Impeller</td>
</tr>
<tr>
<td>8</td>
<td>Stainless steel casing - front</td>
</tr>
<tr>
<td>9</td>
<td>Protective fence</td>
</tr>
<tr>
<td>10</td>
<td>Chassis</td>
</tr>
<tr>
<td>11</td>
<td>Mid plate</td>
</tr>
<tr>
<td>12</td>
<td>Four-way valve</td>
</tr>
<tr>
<td>13</td>
<td>Heat exchanger</td>
</tr>
<tr>
<td>14</td>
<td>Electronic box</td>
</tr>
<tr>
<td>15</td>
<td>Stainless steel casing - front</td>
</tr>
<tr>
<td>16</td>
<td>Compressor</td>
</tr>
<tr>
<td>17</td>
<td>High pressure switch</td>
</tr>
<tr>
<td>18</td>
<td>Low pressure switch</td>
</tr>
<tr>
<td>19</td>
<td>Flow switch</td>
</tr>
<tr>
<td>20</td>
<td>Stainless steel casing - right</td>
</tr>
<tr>
<td>21</td>
<td>LED-controller</td>
</tr>
<tr>
<td>22</td>
<td>Evaporator</td>
</tr>
<tr>
<td>23</td>
<td>Fan motor capacitor</td>
</tr>
<tr>
<td>24</td>
<td>Connection terminal</td>
</tr>
<tr>
<td>25</td>
<td>Compressor capacitor</td>
</tr>
<tr>
<td>26</td>
<td>Fan relay</td>
</tr>
<tr>
<td>27</td>
<td>Compressor relay</td>
</tr>
<tr>
<td>28</td>
<td>Chiller 300</td>
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</table>
## Technical data

<table>
<thead>
<tr>
<th>Model</th>
<th>GJPACW1-15</th>
<th>GJPACW1-20</th>
<th>GJPACW1-30¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating output²</td>
<td>kW</td>
<td>6.8</td>
<td>9.2</td>
</tr>
<tr>
<td>Input power</td>
<td>kW</td>
<td>1.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Heating capacity³</td>
<td>m³</td>
<td>20 - 35</td>
<td>30 - 50</td>
</tr>
<tr>
<td>Operating voltage</td>
<td></td>
<td>230 VAC 1-phase 50 Hz</td>
<td>400 VAC</td>
</tr>
<tr>
<td>Operating current</td>
<td></td>
<td>A 5.23</td>
<td>7.50</td>
</tr>
<tr>
<td>Fuse size</td>
<td></td>
<td>A 10</td>
<td>16</td>
</tr>
<tr>
<td>Compressor</td>
<td></td>
<td>Rotary compressor</td>
<td>Scroll</td>
</tr>
<tr>
<td>Refrigerant amount (R410a)</td>
<td>kg</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Fan consumption</td>
<td>W</td>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>Rated air flow</td>
<td>m³/h</td>
<td>1600</td>
<td>2300</td>
</tr>
<tr>
<td>Noise level (1 m)</td>
<td>dBA</td>
<td>47</td>
<td>51</td>
</tr>
<tr>
<td>Water connection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated water flow</td>
<td>m³/h</td>
<td>2.2</td>
<td>3</td>
</tr>
<tr>
<td>Pressure drop at rated flow</td>
<td>bar</td>
<td>0.12</td>
<td>0.10</td>
</tr>
<tr>
<td>Pressostat breaking value HP</td>
<td>bar</td>
<td>44 (makes again at 32 bar)</td>
<td></td>
</tr>
<tr>
<td>Pressostat breaking value LP</td>
<td>bar</td>
<td>0.2 (makes again at 1.5 bar)</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>mm</td>
<td>550</td>
<td>650</td>
</tr>
<tr>
<td>Width</td>
<td>mm</td>
<td>970</td>
<td>985</td>
</tr>
<tr>
<td>Depth</td>
<td>mm</td>
<td>310</td>
<td>420</td>
</tr>
<tr>
<td>Weight</td>
<td>kg</td>
<td>50</td>
<td>61</td>
</tr>
</tbody>
</table>

¹ GJPACW1-30 can be either 1-phase or 3-phase.

² Heating output measured at 24 °C / 19 °C outdoor temperature, DB / WB (Dry bulb / Wet bulb).

²² Incoming water temperature 27 °C.

³ Heating capacity should be seen as guide values for an insulated pool covered at night. The models are designed for use during the period May - September (normal pool season).

## Dimensions and connections

### Diagram

<table>
<thead>
<tr>
<th>Dim.</th>
<th>GJPACW1-15</th>
<th>GJPACW1-20/30</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>286</td>
<td>390</td>
</tr>
<tr>
<td>B</td>
<td>600</td>
<td>694</td>
</tr>
<tr>
<td>C</td>
<td>900</td>
<td>905</td>
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<td>D</td>
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<td>E</td>
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<td>G</td>
<td>175</td>
<td>255</td>
</tr>
<tr>
<td>H</td>
<td>92.5</td>
<td>100</td>
</tr>
</tbody>
</table>
6 Appendices

Questions and answers

1. How do I set the temperature?

Answer:
   a. Switch off the unit.
   b. Select parameter 1
   c. Press in MODE while at the same time pressing ON/OFF.
   d. When the preset temperature flashes, you can change the temperature by pressing the arrow keys.

2. Why is the temperature difference between the inlet/outlet water so small?

Answer: The heat pump works with small differences in temperature, but circulates the entire pool volume several times a day. We recommend 1-2 degrees difference between the inlet and outlet.

3. Why does it take “so long” to heat a pool?

Answer: This is because a tremendous amount of energy is stored in the water and this energy can not be generated quickly with a heat pump without it being extremely powerful and expensive. Calculate with 7-10 days to raise the temperature a corresponding number of degrees. If you require quicker heating you should invest in a larger model than what is normally recommended.

4. Why is it so difficult to heat up the pool if it is cold outside, for example, 10 °C?

Answer: This is because the leakage up to the air is extremely large and if the insulation around the pool is inadequate the ground and groundwater will cool the pool even more. Finally the heat pump has a lower output the colder the outdoor temperature. A rule of thumb is that you can usually increase the temperature in the pool by 10 degrees compared with the average day temperature.

5. Why do I receive a flow switch error warning?

Answer: The most likely cause is that the water flow to the heat pump is too small due to an incorrect bypass setting. Otherwise it may be due to dirt particles blocking the inlet or damaging the flow switch (unusual).

6. How long will it take for the pool to be warm?

Answer: You usually calculate with about a 1-2 degree increase in the temperature per day. However, if you require faster heating you can always choose a larger model. If you have a non-insulated pool and at great deal of groundwater at the same time as you do not cover the pool at night heating can stop completely.

7. What should I think about ahead of winter storage?

Answer: Most important is to drain the pump! Drainage takes place by loosening the inlet and outgoing water pipes and in this way the water can drain out of the heat exchanger. If you are uncertain please contact us via mail at: support@gullbergjansson.se. It may also be a good idea to cover the heat pump during the winter to protect it from external influences.

8. What maintenance does the pool heat pump need?

Answer: It is a good idea to continuously check the condition of the intake section. Clean using a sponge or the like. Regular maintenance guarantees optimal efficiency.

9. How large should the difference between the incoming and outgoing water really be?

Answer: We recommend 1-2 degrees (read off the difference between parameters A and b).

10. What do I do if I experience problems with my heat pump?

Answer: Contact the dealer from whom you purchased your pool heat pump and they will, or with our help, rectify your problem. However, the manual provides information (about e.g. error codes) that can make the work easier. An error code will be shown on the display if a real fault occurs and this can be interpreted by looking in the manual. Finally, if you have any questions that your dealer finds difficult to answer please do not hesitate to contact us at: support@gullbergjansson.se.