



Vacuum Degasser User Guide



Project :
Customer :
Serial No :
Year :

The information contained in this document is based on the most up-to-date information and production materials available at the time of publication. Therefore, due to rapid developments in this field, we are not responsible for any changes in technical specifications that may affect the content of this document.

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1. Terms of Liability and Warranty

Tanpera Vacuum Degasser is a package type technological device that allows the removal of dissolved gases that may damage the installation in heating, cooling and industrial process installations from the installation by gas separation principle under vacuum.

- ➔ The responsibility of the operator begins with the delivery of the device.
- ➔ The assembly and user manual should be read before delivery.
- ➔ The assembly and user manual should be kept near the control unit and in a visible location.
- ➔ The environmental conditions should be checked by paying attention to the items related to Transportation, Storage, and Placement written in Section 5.
- ➔ Mechanical and electrical assembly procedures should be carried out only by authorized and informed individuals or companies, taking into account the environmental and fluid conditions specified in Section 6.
- ➔ After the assembly procedures are completed, TANPERA should be contacted to request the pre-commissioning control form for the product.
- ➔ The commissioning control items for the product should be fully ensured for all products, and then TANPERA should be contacted to request commissioning.
- ➔ During the commissioning phase, it should be ensured that authorized personnel or individuals appointed by the user accompany, take delivery of the product, and benefit from the user training provided.
- ➔ Do not interfere with the device before commissioning; our company will not be responsible for any damages that may occur, and the given warranty terms will be invalid.
- ➔ The warranty period for the products is valid for 2 years from the invoice date.

2. Safety



The Hot Surface symbol, along with the word, indicates that the surface to be contacted is above 60°C and that failure to comply with the safety information may result in severe (irreversible) injuries.



The Danger symbol, along with the word, indicates an imminent hazard; failure to comply with the safety information may result in death or severe (irreversible) injuries.



The Electricity symbol, along with the word, indicates that failure to comply with the safety information may result in electric shock, death, or severe (irreversible) injuries.

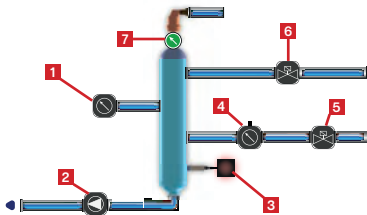


During the commissioning or maintenance of the device, general occupational safety measures must be taken.

Notes:

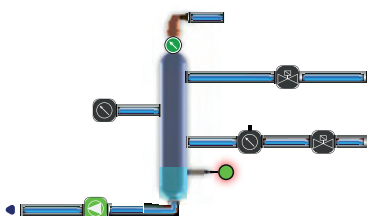
- The device contains high-pressure hot water during operation. During maintenance or disassembly, ensure that the device is deactivated and the system is depressurized.
- The device components are heavy loads. Please take the necessary safety precautions during transportation and handling of the device.
- The device should be used in a fixed system.
- The device is not suitable for outdoor use.
- The device is not suitable for use in flammable environments or with mineral oils.
- It should be operated with clean, particle-free potable water.

3. Operation Principle



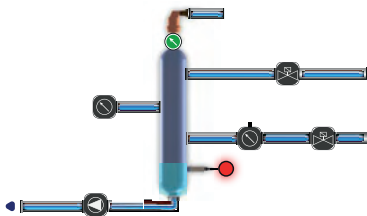
1. Status

The tank is full and positive pressure at standby.



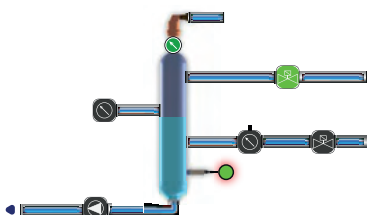
2. Status

The pump starts to work and reduces the pressure in the tube to negative and creates a vacuum in the tube. Water starts to boil under the vacuum created. The pump runs until a signal is received from the level sensor.



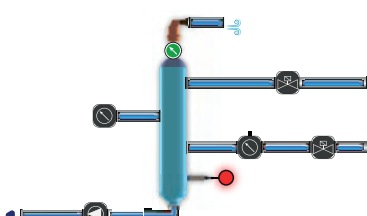
3. Status

The pump rotation stops and the water remains under vacuum for 15 seconds to separate the dissolved air in the water. During this time, the dissolved air separates and accumulates towards the top of the tank.



4. Status

The solenoid valve opens and water starts to fill the tube under vacuum. As the tank fullness increases, the amount of vacuum decreases and positive pressure is created.



5. Status

When the condition reaches positive pressure, the dissolved air in the tube is discharged through the purifier.

4. Device View

- 1 Vacuum Pressure Sensor
- 1 Command Control Panel
- 2 Hydraulic Unit
- 3 Magnetic Level Switch
- 4 Flow meter
- 5 Automatic Filling Valve
- 6 Tank Filling Valve
- 7 Flowmeter Indicating the Amount of Air Exhausted



5. Product Label



TVD.. Series

Vacuum Degasser

Model	TVD/P 24/10-P2
Design Pressure	10 bar
Test Pressure	16 bar
Energy	400 V, 50 Hz - 1,5 kW
Working Temperature	80°C
Serial No	TVD0001

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6. Scope of Delivery

The scope of delivery is described in the delivery note. Immediately upon receipt, carry out the necessary checks for material, correctness and damage. Please report any transportation damage to us immediately

On Pallet;

- Command Control Panel and Hydraulic Unit
- Pressure Sensor and Connection Cable
- Weight Sensor and Connection Cable
- 2 pcs R1" 50cm Tank Connection Flexes
- Installation and Operation Manual Booklet

In addition;

- Command Control Panel and Hydraulic Unit

6.1. Transportation

During transportation, the products should be transported in such a way that they will not be overturned, crushed and wet.

6.2. Storage

- Products should be stored in a dry and airy environment.
- Precautions should be taken against tipping of the products due to possible earthquake or other reasons.
- Do not place any load on the products and they should be stored in such a way that no object falls on them.
- The product should be protected against water pressure and wetting from the top or sides.

7. Relocation and Removal Procedures

- In order to prevent electrical accidents, energy cutting operations must be performed by an authorized person.
- In mechanical dismantling operations, safety conditions must be observed if the operation is in operation.
- Water in the tank and hydraulic unit must be drained before mechanical dismantling.
- After mechanical dismantling operations, relocation should be carried out by paying attention to the transportation rules.

7.1. Environment Conditions

- Products should be stored in a dry and airy environment.
- Precautions should be taken against tipping of the products due to possible earthquake or other reasons.
- Do not place any load on the products and they should be stored in such a way that no object falls on them.
- The product should be protected against water pressure and wetting from the top or sides.

7.2. Fluid Conditions

- Products should be stored in a dry and airy environment.
- Precautions should be taken against tipping of the products due to possible earthquake or other reasons.
- Do not place any load on the products and they should be stored in such a way that no object falls on them.
- The product should be protected against water pressure and wetting from the top or sides.

Please review the form below for preparation before commissioning and installation.
Please review the form below before electrical and mechanical connections are made.
When the conditions are met, please contact our company for commissioning.

Page No: 11

9. Assembly

Electricity In order to make the electrical connections of the device, a 5 * 1,5mm² diameter three-phase electrical line and a panel with automatic switches are required. There is a residual current relay inside the device. For the electrical connections of the device, the electrical cable coming out of the PG25 gland from the back of the hydraulic unit must be properly entered into the panel. The control panel should not be opened and only the electrical cable left for installation should be connected.

Mechanical:



Rear view of the device

Connection No. 1

Water Supply Line Connection of the heating system to the return line, do not use a shut-off valve in between, and if used, prevent unauthorized use of the on/off switch by unauthorized persons. R1" up to 5 meters, R1 1/4" up to 15 meters, consult our company for longer and complex cases.

Connection number 2

Mains Water Connection, Conditioned according to heating water standard, minimum pre-pressure p=1 bar maximum pressure: 10 bar, connection diameter R 12"

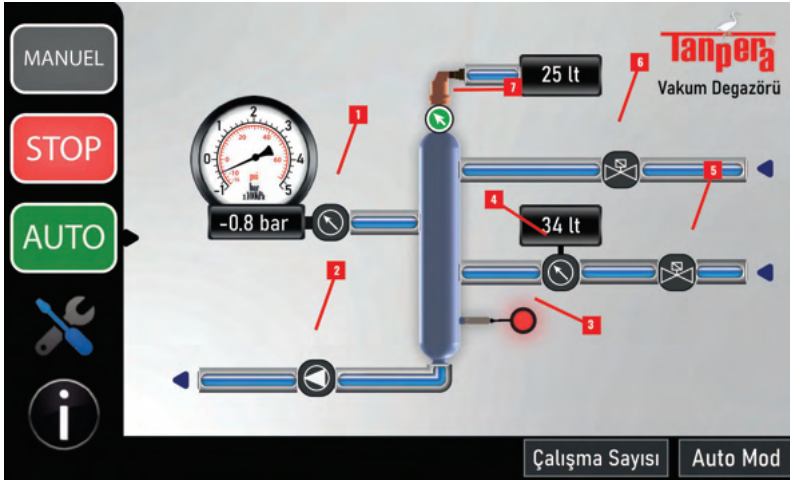
Connection No. 3

380 V electricity is connected to triphase connection.

Connection number 4

Water Return Line Connection to the return line of the heating system, do not use a shut-off valve in between, and if used, prevent unauthorized persons from using the on / off. R1" up to 5 meters, R1 1/4" up to 15 meters, consult our company for longer and more complex situations.

10. Device Usage



- | | | |
|--------------------------|---------------------------|---|
| 1 Vacuum Pressure Sensor | 4 Flow meter | 7 Amount of Air Discharged Indicating Flowmeter |
| 2 Pump | 5 Automatic Filling Valve | |
| 3 Magnetic Level Switch | 6 Tank Filling Valve | |

There is a 4.3' touch screen on the control panel of the device. The explanation of the icons on the screen is given below.

Manual Mode: Kullanıcının isteğine bağlı olarak ekipmanları (solenoid vana, motorlu vana ve pompa) tek tek açılabilmesine olanak sağlamaktadır.

Auto Mode: The device continues to operate until the amount of air flow determined by the flow meter measuring the amount of air separated on the purifier of the device does not occur. When the specified air flow rate is reached, the device works 5 times a day to take water samples, and if a signal is received from the flow meter as a result of the sample taken, it automatically activates and provides air separation.

Stop Mode: It turns off all the equipment on the device safely and puts the device in standby mode.

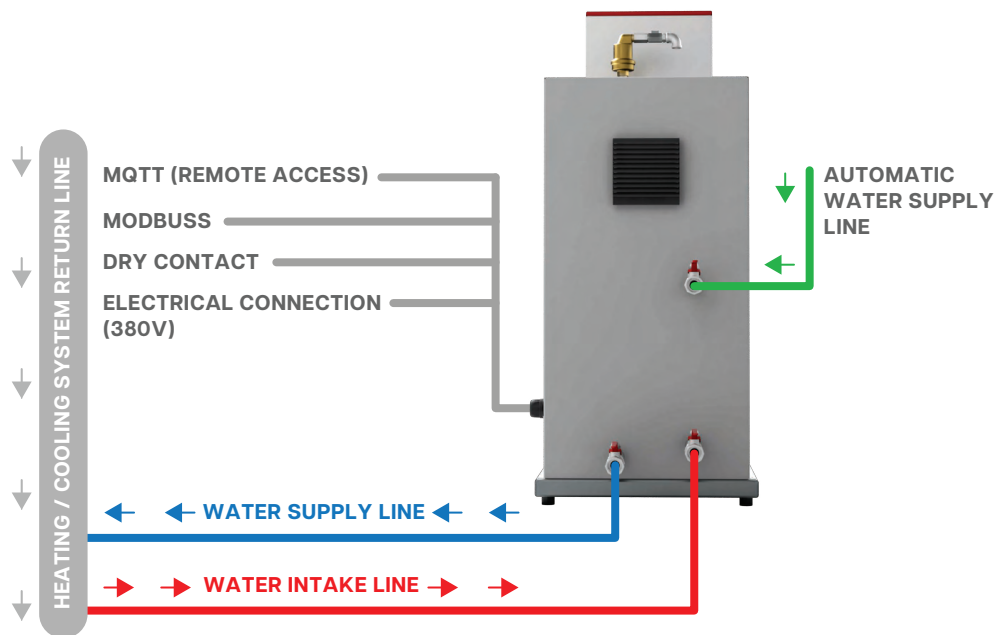
Operation Interval Mode: The device provides air separation by operating at daily or weekly programmed time intervals.

Information Menu: It is the section where information such as the location of the system, serial number of the system, code, operating conditions, etc. are located.

11. Error Codes

Error Code	Reason	Solution
Error Code 01	Pressure Sensor Error	Consult Our Company
Error Code 02	Solenoid Valve Not Working	Consult Our Company
Error Code 03	Pump Not Working	Consult Our Company
Error Code 04	Flow Meter Not Working	Consult Our Company
Error Code 05	Low System Pressure	Consult Our Company
Error Code 06	High System Pressure	Consult Our Company
Error Code 07	No Water in the Tank	Consult Our Company
Error Code 08	Increase in Water Loss/Leakage	Consult Our Company
Error Code 09	Repeated Water Loss/Leakage	Consult Our Company
Error Code 10	Automatic Water Supply System Not Working	Check the water line leading to the device. If the problem persists, consult our company.

12. Flow Diagram



 The distance between 2nd and 3rd connections must be at least 500mm!



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