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POLAND

TERM AGRO
HEATING UNIT

I. CONTACTS
II. ORIGINAL INSTRUCTION MANUAL
III. WARRANTY TERMS AND CONDITIONS
IV. UNIT STARTUP REPORT
V. INSPECTION AND MAINTENANCE DOCUMENT
VI. SERVICE NOTIFICATION
VII. LIST OF SUBASSEMBLIES INSTALLED IN THE UNIT

Please read this instruction manual carefully before beginning any work.

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I. CONTACTS

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II. ORIGINAL INSTRUCTION MANUAL

TERM AGRO
HEATING UNITS

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1. INTENDED USE

TERM AGRO heating units are designed to use in the agricultural facilities and in the facilities with high humidity and dusts.
The units are intended for the use in poultry houses, cowsheds, stables, pigsties etc.
Their use in the premises where the units are particularly exposed to corrosion is also advantageous.

The units should be used only according to the intended use.
The manufacturer is not liable for using the units against the intended use and for any damages arisen for this reason.

The compartment can be served by one or larger number of the units.

2. DESIGNATIONS

Heating unit TERM-AGRO

3. DEVICE DESCRIPTION

The units include:
» **AGRO-type axial fan;**

» **heating coil;**

The heating coil is made of epoxy-coated fins with spacing of 3mm in line with frames made of acid-resistant steel;

For the heating coil the maximum temperature of heating medium is up to 150°C and the maximum operational pressure is up to 1,5Mpa.

There is a risk of heating medium freeze in the heater in the compartments with the temperature below 0°C.

The risk can be reduced using an antifreeze thermostat (delivered at request), using antifreeze heating media or removing water from the unit.

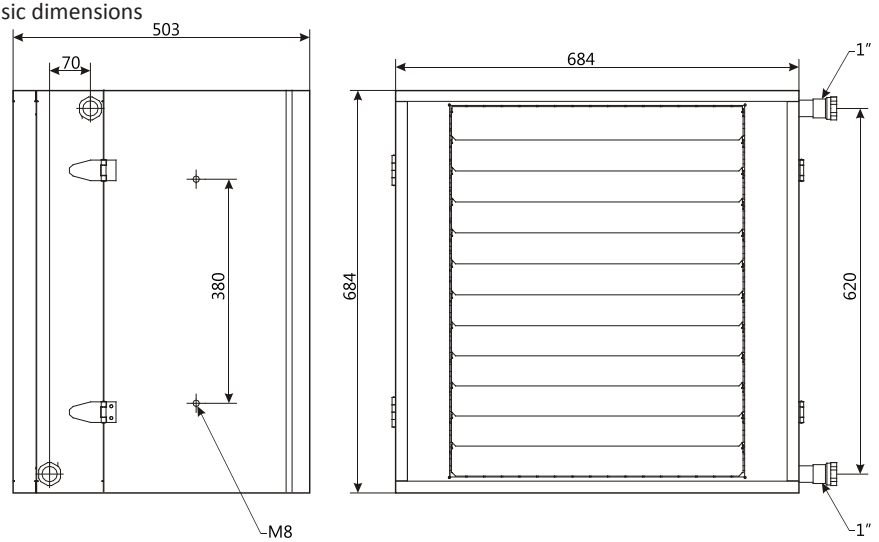
» **housing** made of galvanised steel, powder-coated outside and inside (epoxy powder) with a single-row outlet grid allowing adjusting a direction of supply air. The structure of grid blades protects against an automatic rearrangement of the blades.
The housing structure is practical for easy cleaning of unit interior (separate outlet grille, heating coil and fan with filter on the hinges).

» **mesh filter** with mesh size preventing solid particles from getting inside the unit.

The units can be delivered with five-stage controller of the rotational speed of the fans (the unit operates at the V, IV, III and II speed).

4. TECHNICAL DATA

Basic dimensions



Unit type	TERM AGRO
Weight [kg]	53
Fan specification	
Voltage [V]	230
Motor power [kW]	0,38
Current [A]	1,9
Speed [rpm]	1365
IP	54
Insulation class	F
Operating temperature [°C]	to +60

Unit noise level and isothermal air stream ranges

Unit type	TERM AGRO			
Selected speed	V	IV	III	II
Noise level [dB(A)]				
at the distance of 1m	67	63	55	49
at the distance of 3m	62	58	50	44
Air stream ranges [m] at Vk=0.5 m/s				
	27	24	18	14

Operational noise level – acoustic pressure level with taking into consideration directional coefficient Q=2 and compartment A=100m^2 absorption ability.

Unit heat output at V, IV; III and II speeds of the speed controller of the fan

Unit type		TERM AGRO											
Water capacity [dm³]		3,2											
Selected speed		V			IV			III			II		
Air flow [m³/h]		5800			5100			3900			3000		
Water temp.[°C]	Inflow air temp. [°C]	Heat output [kW], outflow air temperature [°C] and resistance of water flow [kPa]											
		kW	°C	kPa	kW	°C	kPa	kW	°C	kPa	kW	°C	kPa
90/70	5	58,2	33	7,6	54,1	35	6,6	46,5	38	4,8	39,8	42	3,5
	10	53,4	36	6,4	49,6	38	5,5	42,6	41	4,1	36,5	45	3,0
	15	48,7	39	5,3	45,2	41	4,6	38,9	44	3,4	33,3	47	2,5
80/60	5	49,1	29	5,4	45,7	30	4,7	39,3	33	3,5	33,7	36	2,6
	10	44,5	32	4,4	41,4	33	3,8	35,6	36	2,8	30,5	39	2,1
	15	39,9	35	3,6	37,1	36	3,1	31,9	39	2,3	27,4	42	1,7
70/50	5	40,2	24	3,6	37,4	26	3,1	32,3	28	2,3	27,8	31	1,7
	10	35,8	27	2,9	33,3	28	2,5	28,7	31	1,9	24,7	33	1,3
	15	31,3	31	2,2	29,2	32	1,9	25,2	34	1,4	21,7	36	1,1
60/40	5	31,6	20	2,2	29,5	21	1,9	25,5	23	1,5	21,9	26	1,0
	10	27,3	23	1,7	25,4	24	1,5	22,0	26	1,0	19,0	28	0,9
	15	23,0	26	1,2	21,5	27	1,1	18,6	29	0,9	16,1	30	0,7

The heaters of the TERM AGRO units should be supplied with water meeting the conditions specified in the Standard PN-93/C-04607

WATER QUALITY PARAMETERS IN CENTRAL HEATING INSTALLATIONS

Kind of materials used in installation	Water quality parameters							
	for installation filling and refilling					installation water		
	Installation system	General hardness mval/l (mmol/l)	Aggressive ion content mg/l	Ammonia nitrogen content mg/l (N_{NH4+})	Inhibitor concentration	Reaction pH	Oxygen content mg/l O_2	Inhibitor concentration
Steel / cast iron	open	≤4,0 (≥2,0)	≤50 ∑ (Cl^-+SO_4^{2-}) including <30 Cl^-	x	x	8,0-9,5	≤ 0,1	x
			>50 ∑ (Cl^-+SO_4^{2-})		acc. to manufacturer's recommen--dations	x	x	acc. to manufacturer's recommen--dations
	closed		≤150 ∑ (Cl^-+SO_4^{2-}) including <100 Cl^-		x	8,0-9,5	≤ 0,1	x
			>150 ∑ (Cl^-+SO_4^{2-})		acc. to manufacturer's recommen--dations	x	x	acc. to manufacturer's recommen--dations
Steel / copper	closed	≤4,0 (≥2,0)	≤50 ∑ (Cl^-+SO_4^{2-}) including <30 Cl^-	≤0,5	x	8,0-9,0	≤0,1	x
Copper	open or closed	≤4,0 (≥2,0)	-	≤0,5	x	8,0-9,0	≤0,1	x
Steel / alumi-nium	open	≤4,0 (≥2,0)	≤50 ∑ (Cl^-+SO_4^{2-}) w tym <30 Cl^-	x	x	8,0-8,5	≤0,1	x
	closed		≤150 ∑ (Cl^-+SO_4^{2-}) including <100 Cl^-					
Plastic	open or closed	≤4,0 (≥2,0)	-	x	x	x	x	x

5. TRANSPORT

The delivered units are completely assembled, protected from outside by polyethylene foil against pollution and weather impacts.
The Product Manual is delivered along with the unit.
The automatics elements delivered at the customer's request are packed separately.

The units should be transported in one layer in a way preventing mechanical damages.

6. SAFETY RECOMMENDATIONS

Solutions minimizing a possibility of hazard to persons and property were applied when designing and manufacturing the units. However, it does not eliminate all possible risks.

The heating and ventilation units should be used only in compliance with the instruction manual.

The start-up, mounting, connection, inspections and repairs of the unit should be executed by an authorized installer, the electric works should be executed by a person having required certificates authorized to carry out electric works.
All service and repair works should be executed when voltage is off.

In case of the unit failure it is necessary to switch off the power supply to the electric motor of the fan and close the heating medium supply to the heater immediately.

The unit can be used only when electric safety devices operate correctly.
It must be permanently connected to the electric installation equipped with protective (earth) terminal, residual current device and service switch.
It is necessary to pay attention not to change the protection lead to the power lead.

The operation of the unit with the fan without a protective net is forbidden.

The heaters of the units can be supplied with water of very high temperature (up to 150^{o}C) what forces the users to be particularly carful.

A correct selection of fittings (including drain valves) by the designer of the installation is a condition of safe operation of the steam heater.

Only original spare parts should be used.

Note for the user! The mounting or use of the heating unit against the instruction manual makes the threat of unit damage, creates the hazard to persons and property and causes the loss of warranty.

Due to the structure the unit does not emit harmful radiation.
Although the unit was designed and manufactured in compliance with the requirements of the standards, according to their state at the moment of production launch, a probability of injury or health loss when using the unit is not to be avoided. This probability is connected with a frequency of access to the unit in the course of its use, cleaning or repair, presence of persons within a dangerous zone, acting against the safety rules specified in the instruction manual.

The gravity of body injury or deterioration of health condition depends on many factors that often can be foreseen only partially, taking them into consideration in the structure of the unit, specifying them and warning against them in the instruction manual.
Therefore there is a **residual risk** when the operator does not observe the recommendations and guidelines included in the instruction manual.

7. MOUNTING

The walls, ceilings or constructional elements of the object to which the unit supports or suspensions are fixed should have proper strength.
It should be consulted with the designer of the object.

The bearing structures of the units or for the units with intake boxes can be freely designed observing the strength requirements.

When it is necessary to locate the unit by a partition, e.g. made of steel sheets, stiffening profiles should be used to avoid vibrations of the partition generated by the unit operation and the noise level increase in the compartment.

Is necessary to ensure uniform air distribution over the entire volume of the heated room.

Outlet grid should be set so that the air was directed into zone occupied by people or animals.

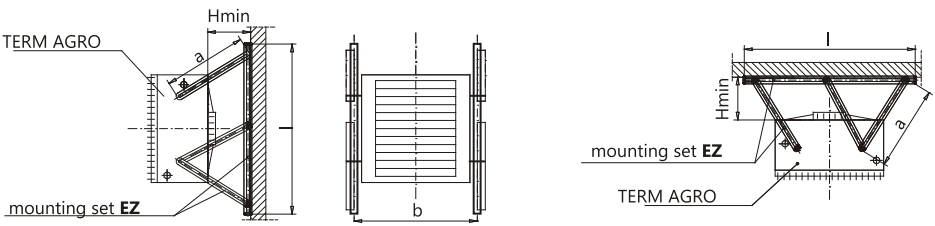
The heating unit should be mounted in such a way as not to restrict the flow of supply air.

Do not mount the unit on the wall with an outlet directed along the wall to avoid the „stick" effect of air flow to the wall.

SUSPENSIONS FOR TERM AGRO UNITS
Wall and ceiling units - set of suspension elements EZ

A set of elements to suspend the unit includes:
- » angle sections fastened to the construction partition - 2pcs.
- » channel sections to suspend the unit - 6 pcs.

The wall unit can operate in the vertical position or in the position inclined from the plumb line up to 20°.



Unit size	a [mm]	b [mm]	l [mm]	Hmin [mm]
TERM AGRO	575	740	1140	230

8. WATER INSTALLATION

It is recommended:

» to connect the unit to the heating network by means of the lower spout of the heater and the return of the heating medium by means of the top spout;

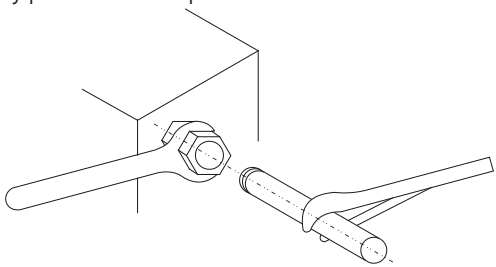
» to use cut-off valves upstream and downstream the unit to enable its dismounting without the necessity to drain the supply installation.

The venting and draining of the heaters of the units is foreseen centrally in the network.
The vents and drain valves located in the installation outside the unit should be used.

The imprecise venting of the heater can be a reason for which the unit does not reach planned parameters.

The weight of installation pipes should not rest on the spouts of the heater.

When connecting the heater to the heating network the spouts of the heater should be protected against breaking in a way presented in the picture.



The heater damages arisen for the afore-mentioned reason are not covered by the warranty.

9. ELECTRICAL INSTALLATION

The electric installation and the connection of power to the unit must be executed according to the relevant requirements of the standards and construction regulations.

The electric connections, start-up, inspections and electric repairs may be executed only by an electrician who has required certificates to carry electric works and got acquainted with the instruction manual.

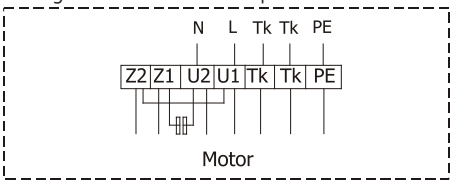
Before the connection it is necessary to make sure whether the voltage value and power system frequency are compliant with the data specified on the rating plates of the units. In case of noncompliance the unit should not be connected.

The units are equipped with single (1~230 V/50 Hz) motors with internal thermal contacts TK. The units should be powered from the main switchboard equipped with a main switch, differential protection device, protective (earth) terminal and overload and short-circuit protection devices (motor switches). The setup of overload protection cannot be higher than rated current of the motor (specified on the rating plate of the motor of the unit).

The lack of required motor safety devices and non-connection of thermal contact TK to the control circuit cause the loss of warranty.

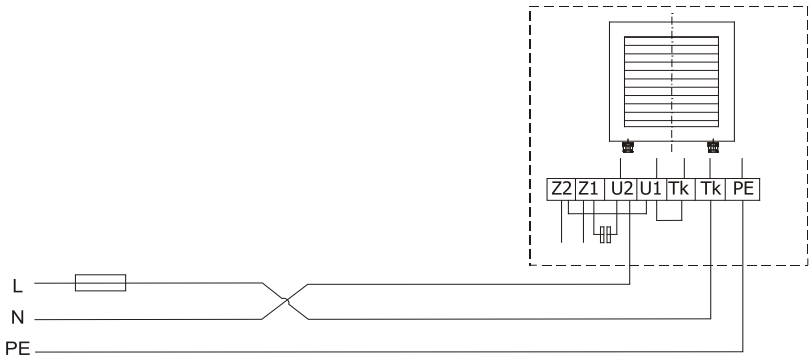
The lead powering the motor of the fan should be inserted to the terminal box and fastened to the protective net or fan supports by means of clamp bands. The thermal contact (TK or TP) of the fan should be connected to the circuit that controls the power supply of the fan.
The electric connection of the motor must be compliant with the electric diagrams located on the terminal box. (Fig. 1)

Fig. 1. Motor connection plate: TERM AGRO

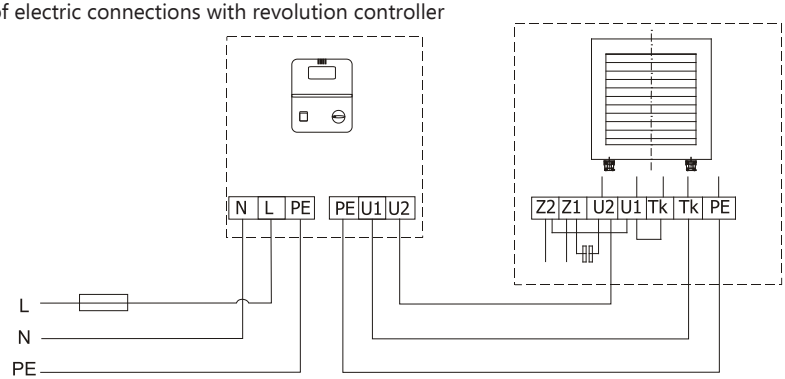


Exemplary electric diagrams of TERM AGRO unit connections and control

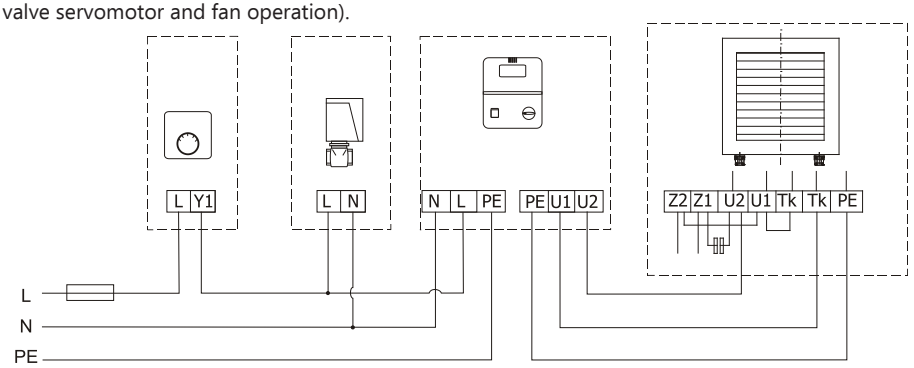
1. Diagram of electric connections without automatics



2. Diagram of electric connections with revolution controller



3. Diagram of electric connections with automatics (thermostat controls the revolution controller, valve servomotor and fan operation).



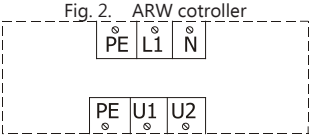
10. AUTOMATICS

We can deliver the following items to the units:

1. Revolution controllers (5-step) - voltage 1~230V

Controller type	ARW-3
Protection rating	IP21
Height [mm]	173
Width [mm]	90
Depth [mm]	89

Fig. 2. ARW cotroller



PE-L1-N Input voltage (230V AC)
PE,U1,U2 Output (control) voltage

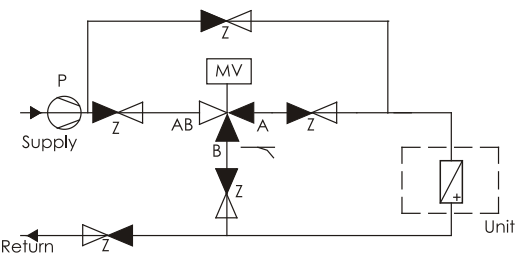
No more than one device should be connected to one revolution controller, remembering not to exceed rated currents of the specified controller because it can cause its damage.
The controllers should be powered with voltage from the main switchboard equipped with a main switch and residual current circuit breakers.

2. Three-way valves

The directional valves found a wide application in the units for the adjustment of heating medium flow through the heaters.
The used three-way valves can be divided into:
» directional valves with the connection with internal threads V20 (on/off). The valves should be installed in the supply line, the flow is admissible only in the marked direction AB->A or AB->B.

Symbol	DN	k_{VS}, m³/h	t[°C]	PN
V20	20	3,5	1...110	16

FITTINGS:
Z: cut-off valve: manual
P: circulating pump
MV: three-way control valve controlled by servomotor

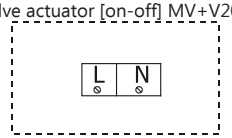


3. Valve actuators

The valve actuators that allow controlling the valves "continuous-0÷10V DC" (by means of controller RT) or "on-off" (by means of thermostat TP or TPP) are used for a direct installation on the valves. Therefore a position (protrusion) of the servomotor stem is proportional to the value of control signal from the controller or thermostat.

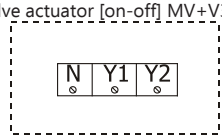
Servomotor type	on/off		continuous signal	
Supply voltage	230V AC		24V AC	
Closing / opening time	180 s		150 s	
Protection rating	IP40		IP43	

Fig. 3. Valve actuator [on-off] MV+V20; MV+V25



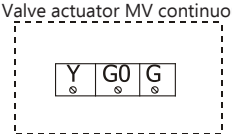
L-N Supply voltage 230V AC

Fig. 4. Valve actuator [on-off] MV+V32; MV+V40



N Supply voltage 230V AC
Y1 Control signal: open 230V
Y2 Control signal: close 230V

Fig. 5. Valve actuator MV continuous signal



Y Input control signal 0...10V DC
G0 System zero
G Phase, 24V AC

4. Room thermostat

A room thermostat (on-off) TP allows setting the required temperature in the room within the range of 8...30°C by means of a knob, however, the room thermostat (on-off) TPP allows setting the required temperature in the room within the range of 8...35°C in the day and night mode on the liquid-crystal display.

The loss of temperature in the room below the set value causes that the thermostat applies a signal to open the valves and switches on the fan. However, if the temperature in the room exceeds the set value then the thermostat toggles itself applying a signal to close the valves and switches off the fan. The thermostat can be used in the circulating and external air system.

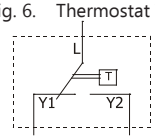
TP or TP/IP65 thermostat

Supply voltage	24..250V AC	24..250V AC	
Measurement range	8...+30°C	8...+35°C	
Contact rating	6(2)A	10(1,5)A	
Protection rating	IP30	IP65	

TPP thermostat with time programmer

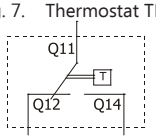
Supply voltage	2 batteries 1,5V
Measurement range	5...+35°C
Contact rating	5(2)A
Protection rating	IP30

Fig. 6. Thermostat TP



L-Y1 Heating
L-Y2 Cooling

Fig. 7. Thermostat TPP



Q11-Q14 Heating
Q11-Q12 Cooling

5. Antifreeze thermostat

The heater protection system against freezing (antifreeze thermostat) is a recommended part of the control system in the heating and ventilation units with the water heaters operating in the external air system.

The thermostat has a capillary evenly unrolled along the field of the heater that – after the reduction of the air temperature (even on a short section of the capillary) below the boundary temperature (5°C) – transmits a signal to the supply and control box which – to the thermostat response – signalises the alarm state by the lamp "HEATER ALARM", switches off the fan, closes the external air throttle and opens completely the heating water valve of the heater. The system returns to the normal operational mode automatically when the heater temperature is increased.

The antifreeze thermostat TPZ1W is used in the system with the room thermostat TP(TPP), however, the antifreeze thermostat TPZ2 is used in the system with the temperature controller RT.

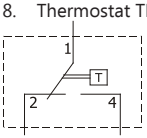
TPZ1 controller

Supply voltage	24...230V AC
Measurement range	-5...+15°C
Factory setting	5°C
Contact rating	10(2)A
Protection rating	IP54

TPZ2 controller

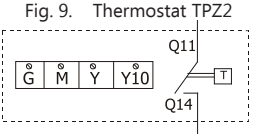
Supply voltage	24...230V AC
Measurement range	-5...+15°C
Factory setting	5°C
Contact rating	0...10V DC
Protection rating	IP42

Fig. 8. Thermostat TPZ1



1-2 Freeze alarm
1-4 Normal operational mode

Fig. 9. Thermostat TPZ2



G Supply voltage 24V AC
M Supply earth
Y Valve control signal input from controller RT, 0...10V DC
Y10 Valve control signal output from controller RT, 0...10V DC
Q11-Q14 Fan operation contact

6. WS Service switch

It is intended to switch off the fan motor in order to carry out service works. The use of the switch WS prevents an unexpected activation of the motor that could cause the risk during the service works.

Type	WS-3	WS-6
Main circuits: poles	3-pole	6-pole
Supply circuit switch	1- and 3-phase current	3-phase current
Rated continuous current	25A	25A
Protection rating	IP 65	IP 65

Fig. 10. WS-3 Service switch (3-pole)

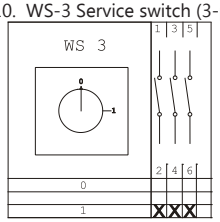
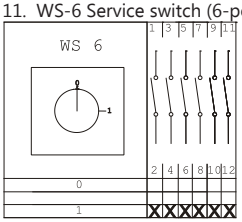


Fig. 11. WS-6 Service switch (6-pole)



7. Supply and control boxes

The supply and control boxes (equipped with a main switch, overcurrent circuit breakers, short-circuit protection devices, signalling lamps) are intended to cooperate and control the elements of automatics, as above.

One control box allows controlling a group of the units by means of single thermostat.

The single phase (1~230V/50Hz) power supply of the supply and control box should be from the main switchboard equipped with a main switch and differential protection device.

When the automatics are ordered with the unit the electric diagrams of the unit and automatics are delivered by the company as well.

11. DEVICE STARTUP

Prior to the startup it is necessary to:

- » check up the fastening state of the unit
- » check up the leak tightness of water connections
- » check up the supply voltage according to the electric plate
- » check up the additional protection of the fan and unit casing
- » check up the correctness of the electric connection of the motor
- » check up the revolution direction of the fan.

To switch on the unit it is necessary to:

- » open the valves of heating medium (the valve in the steam supply line should be opened gradually)
- » switch on the current supply to the electric motor
- » adjust the supply air stream direction and range by means of the outlet grid blades

To switch off the unit it is necessary to:

- » limit the heating medium flow to the water heater of the unit (or cut off the steam supply)
- » switch off the current supply to the electric motor of the fan

In case of long standstills of the unit or breaks of heating network operation the heater should be drained and the cut-off valves should be closed, if need be.

12. REPAIR, MAINTENANCE AND WITHDRAWAL FROM SERVICE

The applied rolling bearings of the fan do not require a periodical lubrication. However, it is recommended to check periodically a condition of the motor bearings (the rotor of the fan should rotate freely without excessive backlashes and knocks).
When the noise level of the unit operation is increased it is necessary to check up the correctness of fastenings of the fan and the whole unit (including the elements of additional equipment).
The rotor blades should be cleaned with a damp cloth after removing the protective net not to allow unbalancing the rotor.
In case of any disturbances in the unit operation it is necessary to contact with the installer or the service.

The use of high pressure washers to clean the fan is forbidden.

All repair and maintenance works should be executed when voltage is off.
The unit should be protected against an accidental activation by other persons as well.

The heater contamination state should be checked up periodically. The contaminated heater should be blown through with compressed air.

The heater contamination reduces the air efficiency and heating power of the unit.

After withdrawal from service the unit should be passed over to the specialized collection point of recyclable materials.

13. TROUBLESHOOTING

Trouble description	Possible trouble cause	Troubleshooting
heat exchanger leakage	mechanical damage of heat exchanger (it may easy appear when the unit is connected to the installation without taking care	use a locking spanner to mount with the installation definitely
	exceedance of admissible heating medium parameters	connect the unit with the heating installation protected against the excessive pressure and temperature growth
	heat exchanger freeze	use an antifreeze thermostat, antifreeze heating fluids or remove water from the unit within the period of standstill and freeze risk
	use of the unit in the aggressive environment	
too load operation of the unit	minimum distance from the wall or ceiling is not maintained	use distances recommended in the instruction manual
	improper revolution direction	execute a proper electric connection
	improper parameters of the mains	use the unit only when the parameters of the mains and the unit are compliant
	air outlet is blocked by outlet grid louvres	avoid a significant closing of outlet grid louvres at high speed ratios
	fan vibrations, the blades rub against fixed elements	check up the correctness of the fan and fastening reliability of other elements of the unit
	not centric fastening of the fan in its bearing plate	
fan does not work	incorrect or unreliable electric connections	check up or correct: 1) compliance of electric connections according to the diagrams specified in the instruction manual 2) reliability of connections on electric terminals 3) parameters of the mains
	improper parameters of the mains (lack of three phases in three-phase motors)	
	fan motor is damaged	
	fan operation control elements are damaged	
Revolution controller ARW/RTRD does not work	correctness of electric connections (whether the leads are just clamped in the electric terminals)	check up or correct: 1) compliance of electric connections according to the diagrams specified in the instruction manual 2) reliability of connections on electric terminals 3) parameters of the mains
	only 1 controller can be connected to 1 unit	
Servomotor does not open the valve	correctness of thermostat operation (characteristic "tick" when switching)	check up or correct: 1) compliance of electric connections according to the diagrams specified in the instruction manual 2) reliability of connections on electric terminals 3) parameters of the mains 4) whether the servomotor reacts to an electric pulse. If the servomotor damage is stated, the damaged element should be claimed.
Room thermostat does not apply the signal	more than one unit is connected directly to the thermostat (larger number means the thermostat overload)	check up or correct: 1) compliance of electric connections according to the diagrams specified in the instruction manual 2) reliability of connections on electric terminals 3) parameters of the mains 4) if there is no characteristic "tick", the thermostat is mechanically damaged and should be claimed.
	mounting place of the thermostat in the room	

14. INFORMATION

As to all issues concerning the TERM agro heating units please contact JUWENT Production Plant or Representatives

III. WARRANTY TERMS AND CONDITIONS

1. JUWENT Szymański, Nowakowski General Partnership, headquartered in Ryki at 31 Lubelska Str., hereinafter referred to as the Warrantor, grants the Customer a warranty of proper operation of the unit with reservation of the requirement of its use in accordance with the conditions determined in the instruction manual and the terms and conditions specified below.
2. The warranty has been granted for a period of 24 months from the purchase date demonstrated in this warranty document with a possibility of its special extension according to a separate agreement and specified in the Special Warranty Terms and Conditions.
3. The warranty covers the removal of technical defects of the unit arisen as a result of its use in accordance with the instruction manual, revealed within the warranty period. The warranty provisions are valid in the territory of the Republic of Poland.
4. By virtue of the granted warranty the Warrantor is not liable for the loss of expected profits and costs resulting from a periodical impossibility of the use of the unit incurred by the Customer.
5. To realize the Customer's rights resulting from the warranty it is required to deliver the claimed unit with the warranty document to the Warrantor at his expense.
6. The claimer delivers the unit in an original factory packing, in case there is no factory packing the claimed unit should be delivered by the Customer for the repair in a way ensuring a safe transport. The risk of accidental damage of the unit during the transport burdens always the party that dispatches the parcel.
7. The defects revealed with the warranty period will be removed by the Warrantor free of charge. A method selection of the realization of obligations resulting from the warranty granted to the Customer belongs to the Warrantor that may remove a defect by the repair or the replacement of the damaged subassembly or by the replacement of the unit. The property of the unit withdrawn from service and / or defective subassemblies is transferred to the Warrantor.
8. The warranty is extended by a period for which the Customer has been deprived of a possibility to use the unit.
9. The Warrantor will make efforts that the repair is executed without further delay within the time-limit of up to 14 working days from the delivery date of the unit. In reasonable cases of which the Customer will be informed by the Warrantor, this time-limit may be extended, e.g. by the time of provision import or when there is a necessity to execute an expertise or laboratory tests in specialized institutions.
10. The Warrantor is liable exclusively for the defects inherent in the sold unit. The damages arisen after its sale for other reasons are not covered by the warranty, in particular:
    a) mechanical damages (including also damages caused by microparticles occurring in the working environment of the unit), thermal damages, chemical damages and aleatory damages or damages caused by the atmospheric factors,
    b) damages occurred as a result of non-observance of typical rules or the rules required by the instruction manual related to the operation and mounting of the unit or the use of the unit against the intended use and other damages caused by the Customer's activity or omission,
    c) damages being a result of defective operation of the system in which the unit has been built or used,
    d) damages occurred as a result of non-execution of the actions to which the Customer has been obliged in accordance with the instruction manual, e.g. periodical cleaning, maintenance, adjustment, etc.,
    e) damages occurred due to the use of materials or parts subject to a normal operational wear other than the materials recommended by the Warrantor in the instruction manual,
    f) damages being a result of use of power supply of the unit (of the system in which this unit functions) incompliant with the standard, and in case the unit is also supplied with water, damages being a result of use of water (supply water and / or boiler water) with parameters other than the parameters foreseen in the valid standard (PN-93/C-04607),
    g) damages occurred as a result of operation and / or maintenance of the unit in a way incompliant with the instruction manual and / or executed by the unauthorized persons.
11. The warranty does not cover as well:
    a) activities executed by the Customer in accordance with the recommendations included the instruction manual of the unit within the framework of normal maintenance and inspections,
    b) travel and work costs of the Warrantor's service or an entity delegated by the Warrantor in case when a warrant call turns out to be groundless.
12. An annotation made by a trained employee in the Inspection and Maintenance Document of the unit is a confirmation of time--limit holding and range of activities foreseen for the maintenance of the unit.
13. The Warrantor is not liable for damages incurred by the Customer or third parties caused the run of the unit occurred in particular as a result of non-observance of the afore-mentioned terms and conditions by the Customer.
14. In case the service works are executed by the Warrantor at the place where the unit is mounted, the Customer will make available a free access to the rooms where the units are located to the Warrantor.
15. In case the units are mounted at the height making an access from the floor surface impossible, the Customer will ensure the scaffolding compliant with the OHS regulations or mobile lifting platforms and vertical transport equipment.
16. The equipment from the electric and / or hydraulic system is disassembled by the Customer.
17. The claims should be lodged at the Warrantor's address in writing / by fax / email using a service notification form.
18. The Warrantor refuses to execute the warranty activities (periodical service works or repair) in case the price for the unit or previous service work is not paid for the benefit of the Warrantor.

DATE OF SALE **STAMP AND SIGNATURE**

Special Warranty Terms and Conditions:

Warranty period extension up to ..... months.

Other:

STAMP AND SIGNATURE

TYPE OF UNIT:	
FACTORY NUMER:	
YEAR OF PRODUCTION:	

IV. UNIT STARTUP REPORT

Date of startup	**Executor of startup** stamp / name and signature	**Motor current [A]**	**User's representative** stamp / name and signature	**Remarks**

V. INSPECTION AND MAINTENANCE DOCUMENT

Date of inspection	**Executor of inspection** stamp / name and signature	**Service activity range**	**Remarks**

* Inspection of the unit in accordance with the section "Repair and Maintenance" in the instruction manual

VI. SERVICE NOTIFICATION

Date:

Notification type WARRANTY ☐ POST-WARRANTY ☐ PAID ☐

Unit's user (name)	
Contact person	
User's address	
Phone, fax. and email	
Type of unit	
Factory No.	
Year of production	
Startup executed by	

Description of defect:

NOTE: AFTER COPYING AND FILLING IN SEND THE NOTIFICATION BY FAX OR EMAIL TOGETHER WITH A COPY OF THE STARTUP REPORT.
JUWENT Company accepts notifications filled legibly and completely.
When the lodged claim is not justified, the claimer will be burdened with service costs.

Date of warranty issue Order No. (company's stamp)

....

VII. LIST OF SUBASSEMBLIES INSTALLED IN THE UNIT

No.	Name of subassembly	*)
1	Axial fan with single-phase motor	
2	III-row fin heating coil	

*) - mark proper box corresponding with the equipment variant