EUROWATER

INSTALLATION AND OPERATING INSTRUCTIONS

AUTOMATIC BRINE MAKER

TYPE B2-2000 AND B2-3000

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PREFACE

The instructions are made so that they can be followed section by section. It is recommended to follow the instructions carefully since any service calls due to faulty installation, plant start, operation or insufficient maintenance are not covered by our guarantee.

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DATA

	B2-2000	B2-3000
Volume of brine maker tank	2 m^3	3 m^3
Max. salt per refilling	2 t	3 t
Water pressure	2-6 bars	2-6 bars
Connections	230 V, 50 Hz	230 V, 50 Hz.

DESCRIPTION

An automatic EUROWATER brine maker type B2 consists of two main parts:

1. Brine maker tank
2. Pump unit.

The brine maker tank consists of:

a. 2,000/3,000 l tank with cover
b. Draw system with level controls installed
c. Bottom distribution system.

OPERATION

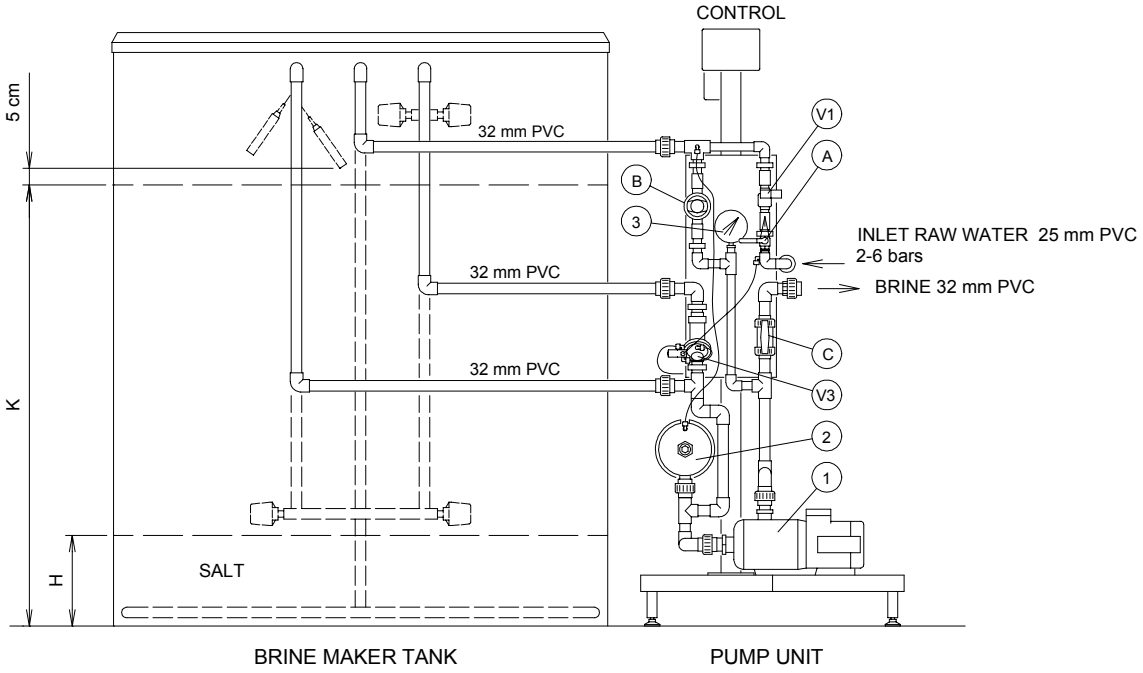

Fig. 1.

V1	Solenoid valve, water inlet
V3	Brine valve, lowering of the level
A	Manual valve, water inlet (regulating valve)
B	Manual valve, pressure regulation of brine
C	Manual valve, brine for softening plant
Item 1	Brine pump
Item 2	Protection against running dry of the brine pump
Item 3	Pressure gauge, brine pressure
H	Salt level before refilling (15-30 cm)
K	Max. salt level (5 cm under lower level switch)

A. BRINE MAKER type B2 for STFA softening plant (see Fig. 1)

By means of the water pressure (min. 2 bars g) the water is carried through valve V1 to the bottom distribution system of the brine maker tank and in an upward stream though the salt layer. Thereby the salt dissolves and turns into brine. The addition of water is controlled by the level controls in the brine maker tank. The pump runs throughout the regeneration cycle (the lamp marked **REG** on the control panel of the softener is on).

As the pump is working during regeneration there will be a constant internal circulation of brine in the brine maker together with pumping out to the softener where the brine suction is controlled automatically by the brine system.

INSTALLATION

The installation is made according to Fig. 1 that shows dimensions and connections.

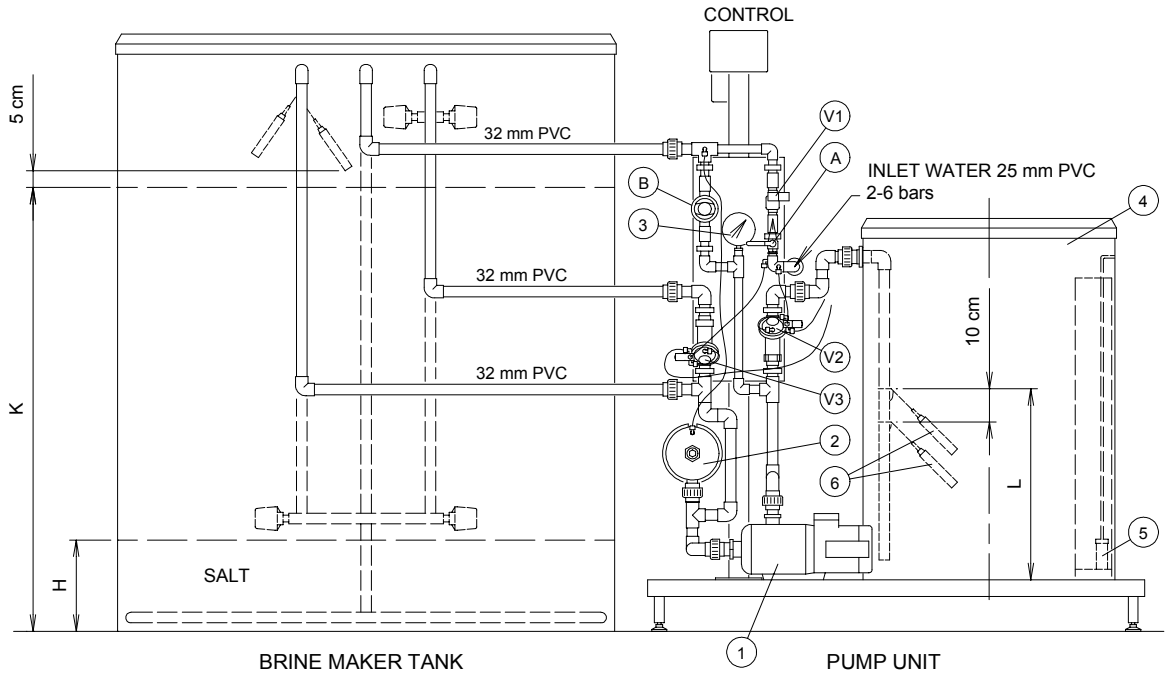

Fig. 2.

V1	Solenoid valve, water inlet
V2	Brine valve, to measuring tank
V3	Brine valve, lowering of the level
A	Manual valve, water inlet (regulating valve)
B	Manual valve, pressure regulation of brine
Item 1	Brine pump
Item 2	Protection against running dry of the brine pump
Item 3	Pressure gauge, brine pressure
Item 4	Measuring tank for brine, volume: 400 l (4 l/cm) (replaces the brine tank of the softener)
Item 5	Air check (see section regarding brine tank in the instructions for the softener)
Item 6	Level switch
H	Salt level before refilling (15-30 cm)
K	Max. salt level (5 cm under lower level switch)
L	Brine level in the measuring tank (see adjustment of level switches in the measuring tank)

B. **BRINE MAKER WITH MEASURING TANKS** for softening plant SFB/SFHB/SMH/SML (Fig. 2)

By means of the water pressure (min. 2 bars g) the water is carried through valve V1 to the bottom distribution system of the brine maker tank and in an upward stream through the salt layer. Thereby the salt dissolves and turns into brine. The addition of water is controlled by the level controls in the brine maker tank. The pump runs throughout the regeneration cycle (the lamp marked **REG** on the control panel of the softener is on).

As the pump is working during regeneration there will be a constant internal circulation of brine in the brine maker. The brine is automatically pumped to the brine measuring tank after the completion of the regeneration cycle of the softener.

INSTALLATION

The installation is made according to Fig. 2 that shows dimensions and connections.

ADJUSTMENT OF LEVEL SWITCHES IN THE MEASURING TANK

The level switches in the measuring tank are adjusted according to the salt consumption of the actual softening plant (indicated in the instructions for the softening plant) by means of the level switches as shown in Fig. 2, height "L" [cm].

L is calculated as follows:

SFB AND SFHB PLANTS

L = 0.8 x M + 5 [cm] M = salt consumption (kg) of the softening plant.

Example:
If plant SFB 1201 consumes 21 kg of salt per regeneration, L must be:

L = 0.8 x 21 + 5 [cm] ⇒ L ≈ 22 cm

SMH AND SML PLANTS WITH REFILLING CONTROL 0.35 GPM ~ 1.32 l/min.

L = 0.8 x M + 5 + 0.33 x T [cm] M = salt consumption (kg) of the softening plant.
T = refilling time (2) in minutes of the softening plant.

Example:
If plant SMH 1202 consumes 33 kg of salt per regeneration and has a (2) time of 13 minutes, L must be:

L = 0.8 x 33 + 5 + 0.33 x 13 [cm] ⇒ L ≈ 36 [cm]

FILLING AND REFILLING OF SALT

When the salt level in the brine maker tank is reduced to a layer of 15-30 cm, the manual switch on the control panel's right side must be in the position **OFF**, see wiring diagram, item 6. Now the water admission through valve V1 is shut off and the following regenerations will lower the brine level. When the brine level has been reduced to 50-100 cm over the bottom of the brine maker tank refilling *must* take place.

NB: No refilling must result in a salt level higher than 5 cm below the nethermost level switch. If the level switches are covered by undissolved salt, they are inactivated.

NB: The brine level in the tank must not be lowered until the salt level in the brine maker tank is below 30 cm, otherwise, the salt will hinder the lowering.

After filling of salt activate the manual switch on the control panel's right side to the position **ON** to return the brine maker to normal operation with automatic water admission and brine production.

START-UP

1. Check that all pipes and wires are correctly connected (see Figs. 1, 2 and 3).

2. Open the manual valves A, B and C completely.

3. Wire 230 VAC, 50 Hz to the mains plug of the transformer and connect the regeneration signal of the softener (see instructions) to terminals 3 and 4 (see Fig. 3). The brine maker is now automatically filled up with water/brine until the maximum level is reached.

4. When the tank is filled up to the upper level control start a regeneration of the softener by pressing the button START on the control panel. If the pump does not work, loosen carefully the air relief screw on top of the pump housing until the water leaks out.

   NB: An air relief must only be carried out when the pump does not run.

5. When the softening plant has reached the brine cycle set the final brine pressure according to the pressure gauge reading to 1.5-2.0 bars by slowly adjusting valve B.

MAINTENANCE

As salt contains more or less insoluble particles sediments will gradually settle on the bottom of the tank. When they have grown to a layer of approximately 25 cm empty the plant of brine and salt and clean the bottom.

For emptying, carry through the usual lowering of the brine level with subsequent mud exhaustion.

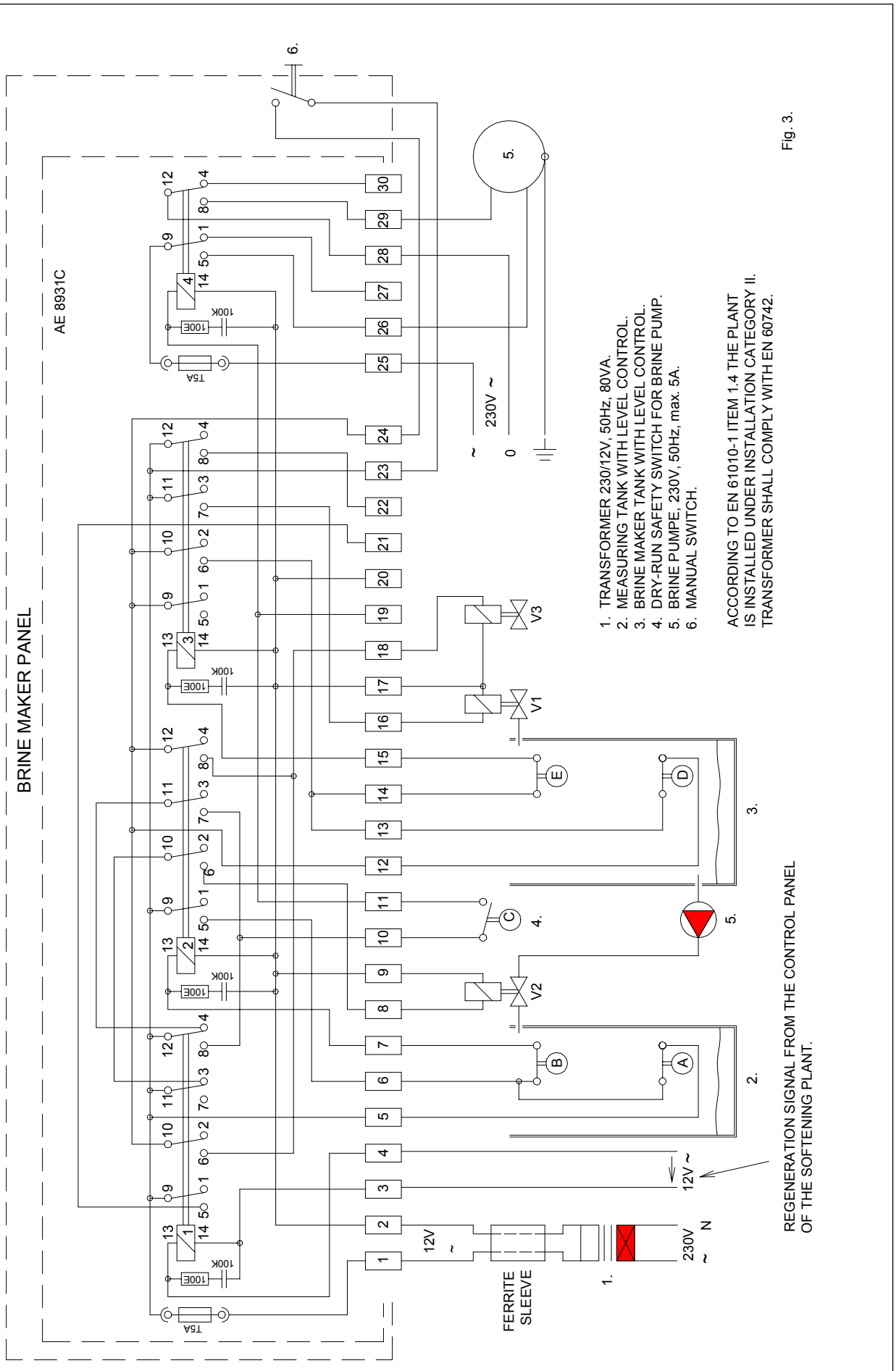
BRINE MAKER PANEL
AE 8931C
6.
5.
230V ~
0
~
1. TRANSFORMER 230/12V, 50Hz, 80VA.
2. MEASURING TANK WITH LEVEL CONTROL.
3. BRINE MAKER TANK WITH LEVEL CONTROL.
4. DRY-RUN SAFETY SWITCH FOR BRINE PUMP.
5. BRINE PUMPE, 230V, 50Hz, max. 5A.
6. MANUAL SWITCH.
ACCORDING TO EN 61010-1 ITEM 1.4 THE PLANT
IS INSTALLED UNDER INSTALLATION CATEGORY II.
TRANSFORMER SHALL COMPLY WITH EN 60742.
T5A
100K
100E
V3
V1
V2
A
B
C
D
E
1.
2.
3.
4.
5.
12V ~
230V ~
N
FERRITE SLEEVE
REGENERATION SIGNAL FROM THE CONTROL PANEL
OF THE SOFTENING PLANT.

Fig. 3.