ACCESSORIES & HEATING INSTALLATIONS AE- FLOOR STANDING TANKS

The heating internals and accessories offered by our company are particularly suitable for installation in our floor-standing storage series as well as in double-jacketed units. Due to their special design, however, the units can also be installed in other makes of enamelled, plastic-coated or hot-dip galvanised boilers. A combination with CrNi (NIRO) boilers is problematic and therefore not recommended.

For installation in glass lined boilers, our built-in heaters, screw-in heaters and built-in finned tube heat exchangers are designed with insulated heating elements or finned tube heating bundles in connection with a protective current leakage resistor and thus correspond to the latest state of the art, especially with regard to corrosion protection of glass lined boilers. All heating installations are designed for pressure-resistant operation and heating of drinking and heating water up to a max. operating pressure of 10 bar.

HOT WATER CONSUMPTION-OVERVIEW

Hot water consumption in the household depends on the number of people, the sanitary equipment, the flat or house and the individual habits of the consumer.

The following table gives some guidelines on consumption figures. The temperature of the cold water required for mixing to the specified hot water temperature has been assumed to be approx. 12° C. It goes without saying that all electrical components are ÖVE-tested. An Austria-wide service by our factory customer service is guaranteed.

HOT WATER CONSUMPTION COMPARISON

Type of consumption	Hot water demand in l		Required storage water quantity in l	
	at 37°C	at 50°C	at 80°C	at 60°C
WASH				
Full bath	150 - 180	-	55 - 66	78 - 94
Shower bath	30 - 50	-	11 - 18	16 - 26
Hand washing	3 - 6	-	1 - 2	1,6 - 3,1
Head wash (short hair)	6 - 12	-	3 - 4,4	4,2 - 6,3
Head wash (long hair)	10 - 18	-	3,7 - 6,6	5,2 - 9,4
Use of bidet	12 - 15	-	4,4 - 5,5	6,3 - 7,8
DISHWASHING				
for 2 persons per day	-	16	10	14
for 3 persons per day	-	20	13,5	18
for 4 persons per day	-	24	15,2	21,5
RESIDENTIAL CARE				
per bucket of cleaning water	-	10	6,3	9

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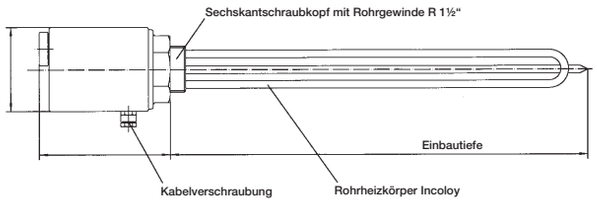
Screw-in heating element
TYPENREIHE SH

tips from the expert

For additional heating or emergency heating of water in closed containersn



The screw-in heaters of the SH type series are designed for additional heating or emergency heating of water in closed containers. As the main electrical heater, you should use an electric built-in heater with a flange of the type series „R“. A combination with CrNi (NIRO) boilers is problematic and therefore not recommended. When using a screw-in heater as the main electric heater in water containing lime at temperatures above 65 °C, cleaning (decalcification) must be expected at appropriate intervals. Operating pressure max. 10 bar. Version for heating water with insulated Incoloy tubular heating elements with protective current leakage resistance. MS screw head R 1½“. Easy retrofitting of water heaters with screw-in sockets: 1½“ (or 2“ with reduction). Simple temperature preselection by means of the thermostat which can be operated from the outside. Setting range 15 - 75 °C. Care must be taken that no temperature increase above 90 °C occurs due to the influence of external energy sources. All-pole safety temperature limiter with restart lock. Black plastic protective cap, rotatable. Installation seal enclosed, sealing with hemp or Teflon tape is possible.

ELECTRICAL CONNECTION

The built-in control elements switch directly at ~ 230 V up to 3 kW, at 3 ~ 400 V up to 9 kW.

INSTALLATION INSTRUCTIONS

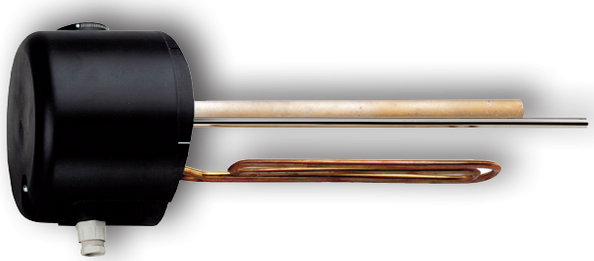
- **During operation, the radiator and sensor protection tube n must be sufficiently surrounded by water on all sides. The n thermally induced water flow must not be obstructed.**
- **Installation position - horizontal, whereby the 6/4“ socket may be max. 100 mm long. A n n space - installation length + 50 mm - must be kept free in front of the installation sleeve for assembly, etc.**

TECHNISCHE DATEN

2 YEARS WARRANTY

Type	Article.no.	Connection power in kW	Supply voltage in V	Installation depth from sealing ring in mm	unheated zone in mm	Horizontal mounting position
SH - 2,0	A 907 22	2,0	3 ~ 400 Reversible ~ 230	320	100	X
SH - 2,5	A 907 23	2,5	3 ~ 400 Reversible ~ 230	390	100	X
SH - 3,0	A 907 24	3,0	3 ~ 400 Reversible ~ 230	390	100	X
SH - 3,8	A 907 25	3,75	3 ~ 400	430	100	X
SH - 4,5	A 907 26	4,5	3 ~ 400	470	100	X
SH - 6,0	A 907 27	6,0	3 ~ 400	620	100	X
SH - 7,5	A 907 28	7,5	3 ~ 400	720	100	X
SH - 9,0	A 907 29	9,0	3 ~ 400	780	100	X

Built-in heaters
TYPE SERIES R, K UND T



The built-in heaters of the type series R, K and T are suitable for a max. operating pressure of 10 bar and, depending on the capacity, consist of a corresponding number of high-quality tubular heating elements mounted on a flange plate by means of an insulated protective current discharge resistor. An externally adjustable thermostat controls the heating power.

Furthermore, each built-in heater is equipped with a safety temperature limiter which switches off the heating power at all poles if the temperature controller fails. The complete wiring, control elements and terminals are covered by a black plastic protective cap. Based on the desired output and installation position, the available installation length and the required heating groups, the necessary installation heater type can be selected from the tables overleaf. A combination with CrNi (NIRO) boilers is problematic and therefore not recommended.

INSTALLATION INSTRUCTIONS

- During operation, the radiator and sensor protection tube must be sufficiently surrounded by water on all sides. The thermally induced water flow must not be obstructed.
- Observe the installation position
- The flange frame must not be longer than max. 130 mm so that the temperature sensor and radiator still protrude sufficiently into the boiler.
- The built-in heater must be installed as far down in the boiler as possible in order to heat the entire boiler content evenly. It is not essential that the heating elements extend over the entire available installation depth.
- A space - installation length + 100 mm - must be kept free in front of the boiler flange for installation, etc.
- Limescale formation impairs the function. If the water has a high lime content, take appropriate precautions: e.g. lower the temperature, install a softening system, remove the limescale.
- In the case of enamelled boilers (from other manufacturers) without a standard protective anode or if the anode is mounted on the blind flange, which is replaced by the built-in heater, the anode protection must be carried out according to the manufacturer‘s instructions.
- Care must be taken to ensure that the effect of external energy sources does not result in a temperature rises above 95 °C due to the influence of external energy sources.

VERSIONS

Flange diameter 180 mm

(REU 18, RDU 18, RSW 18, RUL 18, KDW 1, TDW 1)

Flange diameter 240 mm, only for horizontal installation (RDW 2, RSW 2)

Height of protective cap: 150 mm for diameter 240 mm, 120 mm for diameter 180 mm

Drip-proof design. Setting range of the temperature selector: infinitely variable from 15 °C to approx. 85 °C. The corresponding flange gasket is enclosed.

- TEDVT: Single-phase version for direct connection ~ 230 volts with protective anode for installation in double-shell storage tanks
- REU: Single-phase version for direct connection ~ 230 volts with protective anode.
- RDU: Three-phase version for direct connection 3 ~ 400 volts with magnesium protective anode.
- RUL: For horizontal storage tanks with centre flange, Reversible version for direct connection with magnesium protective anode.
- RDW: Only for horizontal installation, three-phase current version for direct connection, with RDW 2-9 reversible heating outputs.
- KDW: Only for horizontal installation, three-phase version for direct connection current version for direct connection, terminal able heat outputs, for collar flange installation.
- TDW: For horizontal installation only, three-phase version for direct connection, reversible heating outputs version for direct connection, for pot flange installation.
- RSW: Only for horizontal installation, three-phase current version for contactor installation current version for contactor control 3 ~ 400 volts, reversible heating capacities.

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ACCESSORIES

- Boiler flange with frame raw Type
  KFZ 180 – 8
  KFZ 240 – 12
- Intermediate flange enamelled Type 8710
- Flange screw M12 x 25

ATTENTION IN THE ELECTRICAL CONNECTION!

2 YEARS WARRANTY

Type	Article.no.	Connection power in kW	Connection voltage in V	Circuit		Heating-body-number	Shift group			Installation length in mm	Mounting option			Flange diameter in mm
				direct	via external Protection		1 in kW	2 in kW	3 in kW		horizontal	Vertical from below	only in Horizontal storage	
REU 18 – 2,5	A 902 27	2,5	~ 230	•		1	2,5			445	•	•		180
REU 18 – 3,3	A 902 28	3,3	~ 230	•		1	3,3			445	•	•		180
RDU 18 – 2,5	A 902 29	2,5	3 ~ 400	•		3	2,5			445	•	•		180
RDU 18 – 3,0	A 902 30	3,0	3 ~ 400	•		3	3			445	•	•		180
RDU 18 – 3,8	A 902 31	3,8	3 ~ 400	•		3	3,8			445	•	•		180
RDU 18 – 5,0	A 902 32	5,0	3 ~ 400	•		3	5			445	•	•		180
RDU 18 – 6,0	A 902 33	6,0	3 ~ 400	•		3	6			445	•	•		180
RDW 18 – 7,5	A 902 34	7,5	3 ~ 400	•		3	7,5			445	•	•		180
RDW 18 – 10	A 902 35	9,9	3 ~ 400	•		3	9,9			445	•			180
KDW 1 – 4,0	A 902 61	4,0	3 ~ 400	•		3	2,0	2,7	4,0	375	•			180
KDW 1 – 6,0	A 902 62	6,0	3 ~ 400	•		3	3,0	4,0	6,0	375	•			180
KDW 1 – 8,0	A 902 63	8,0	3 ~ 400	•		3	4,0	5,0	8,0	440	•			180
KDW 1 – 10,0	A 902 64	10,0	3 ~ 400	•		3	5,0	6,5	10,0	530	•			180
RSW 1 – 12,0	A 902 36	12,0	3 ~ 400		•	3	12			530	•			180
RSW 18 – 15,0	A 902 37	15,0	3 ~ 400		•	3	15			630	•			180
RUL 18 – 2/5 Reversible version for direct connection	A 902 38	2,0 2,65 4,1 4,65	~ 230 ~ 230 3 ~ 400 3N ~ 400	• • • •		3 3 3 3				500 500 500 500	• • • •		• • • •	180 180 180 180
RDW 2 – 9 U Reversible version for direct connection	A 902 02	6,0 7,5 9,0	3 ~ 400 3 ~ 400 3 ~ 400	• • •		6 6 6				430 430 430	• • •			240 240 240
RSW 2 – 24 U Reversible version for contactor control	A 902 04	12,0 16,0 24,0	3 ~ 400 3 ~ 400 3 ~ 400		• • •	6 6 6	12 12 12	 4 12		530 530 530	• • •			240 240 240
RSW 2 – 45 U Reversible version for contactor control	A 902 05	20,0 30,0 35,0 45,0	3 ~ 400 3 ~ 400 3 ~ 400 3 ~ 400	• • • •		9 9 9 9	15 15 15 15	 15 15 15	5 5 15	630 630 630 630	• • • •			240 240 240 240

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INDIRECT WATER HEATERS

Built-in heaters

TYPE SERIES
EBH WITH FLANGE

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Special design for heating water, CNF5 tubular heater. (Incoloy/Chromium-Nickel-Steel) mounted insulated on flange plate, with protective current leakage resistor, matt black protective cap, externally adjustable temperature controller, all-pole safety temperature limiter, flange gasket.

Type series EBH with flange D 180 mm (DN 110)

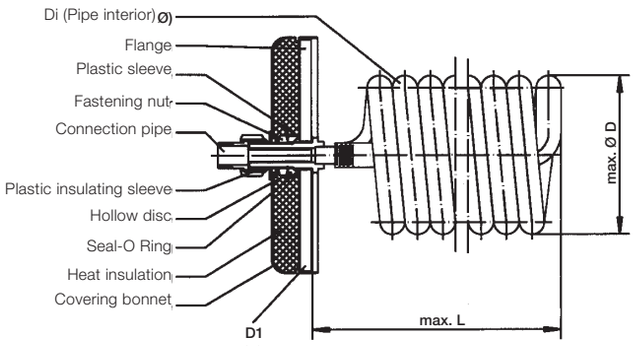
TECHNICAL DATA INSERT FOR EXTERNAL CURRENT ANODE

2 YEARS WARRANTY

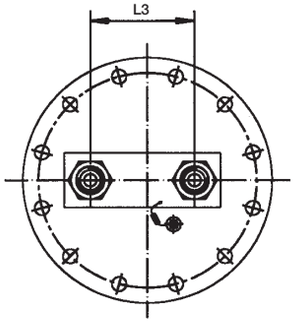
Type	Article.no.	Connection power in kW	Connection voltage in V	Storage volume	Flange diameter in mm	Installation length in mm
EBH 1,7 E (CNF-5)	A 902 48	1,70	~ 230	140-300*	180/8	375
EBH 2,5 E (CNF-5)	A 902 49	2,50	~ 230	140-300*	180/8	375
EBH-KDW1 4kW/U	A 902 61	2,00 2,70 4,00	~ 230 ~ 230 3 ~ 400	140-300*	180/8	375
EBH-KDW1 6kW/U	A 902 62	3,00 4,00 6,00	3 ~ 400 3 ~ 400 3 ~ 400	140-400*	180/8	375
EBH-KDW1 8kW/U	A 902 63	4,00 5,00 8,00	3 ~ 400 3 ~ 400 3 ~ 400	200-500*	180/8	430
EBH-KDW1 10kW/U	A 902 64	5,00 6,50 10,00	3 ~ 400 3 ~ 400 3 ~ 400	200-500*	180/8	530
EBH-KDUV 3/6 Switchable by means of a switch	A 903 35	3,00 6,00	3 ~ 400 3 ~ 400	200-500*	180/8	430
EBH RDUZ 2/6 Single or dual circuit version	A 902 70	2,0/6,0 3,0/6,0 4,0/6,0 6,0/6,0	3 ~ 400 3 ~ 400 3 ~ 400 3 ~ 400	200-500*	240 180/8	430

Built-in finned tube-Heat exchanger

TYPE SERIES RWT



View without cover



By using a built-in finned tube heat exchanger, it is possible to indirectly heat a storage tank with a flange and thus retrofit or convert it to a register storage tank. A combination with CrNi (NIRO) boilers is problematic and therefore not recommended.

The heating medium can be heating water from alternative energy sources such as solar systems and heat pumps, but also from district heating and conventional boilers.

By installing several - mutually independent finned tube heat exchangers or additional installation in tube register storage tanks - it is possible to build multivalent systems.

The heating circuit medium (water or frost-proof heat transfer medium) flows through the finned tube from the heat source via the heating charge pump. Free convection occurs on the finned outside of the pipe. The finned tube heat exchangers are usually installed horizontally in the storage tank and are fully surrounded by the water to be heated.

The built-in finned tube heat exchangers type RWT are made of a seamless, helically wound SF-CU finned tube and are equipped with complete connection fittings. They are factory-mounted on an enamelled flange plate, electrically insulated, with insulating connection sleeves and a protective current leakage resistor. To reduce heat loss, a heat-insulated, matt black painted sheet steel cover is fitted to the flange plate and the connections. Permissible operating temperature max. 95 °C. Care must be taken that the temperature does not rise above the prescribed value (approx. 95 °C) due to the influence of external energy sources. If the water has a high lime content and the storage tank is operated above 60 °C, precautions must be taken in the form of descaling equipment or regular cleaning, as the heat transfer capacity is considerably reduced.

ACCESSORIES

- Insulation gland for 3/4“ and 1“
- Boiler flange with frame raw KFZ 180-8, KFZ 240-12
- Flange screws M12 x 35
- Intermediate flange enamelled Type 8710

Misprints and technical changes reserved!

TABLE VALUES FOR THE FINNED TUBE HEAT EXCHANGERS

Type	VL / BW in kW	560 l/h			680 l/h			680 l/h		
		in kW	in l/h	in mbar	in kW	in l/h	in mbar	in kW	in l/h	in mbar
RWT 1 – 140 D	90/45	27,2	670	100	30,4	748	150	34,2	842	200
RWT 1 – 140 D	80/45	20,7	510	100	23,7	583	150	27,2	670	200
RWT 1 – 140 D	70/45	14,8	364	100	16,8	414	150	18,7	460	200
RWT 1 – 140 D	60/45	9,2	226	100	10,7	263	150	11,8	290	200
RWT 1 – 140 D	50/45	4,4	108	100	5,3	130	150	5,7	140	200
RWT 1 – 140 D	90/60	20,9	360	100	24,1	415	150	27,9	481	200
RWT 1 – 140 D	80/60	14,2	245	100	16,5	284	150	18,4	317	200
RWT 1 – 140 D	70/60	7,8	134	100	9,2	159	150	10,4	179	200
RWT 1 – 110 D	90/45	21,5	528	100	24	590	150	27	663	200
RWT 1 – 110 D	80/45	16,3	401	100	18,7	460	150	21,5	528	200
RWT 1 – 110 D	70/45	11,7	288	100	13,3	327	150	14,8	364	200
RWT 1 – 110 D	60/45	7,3	179	100	8,5	209	150	9,3	229	200
RWT 1 – 110 D	50/45	3,5	86	100	4,2	103	150	4,5	111	200
RWT 1 – 110 D	90/60	16,5	284	100	19	327	150	22	378	200
RWT 1 – 110 D	80/60	11,2	193	100	13	224	150	14,5	250	200
RWT 1 – 110 D	70/60	6,2	107	100	7,3	126	150	8,2	141	200
		860 l/h			1 040 l/h			1 200 l/h		
RWT 2 – 180	90/45	28,5	708	75	33	815	110	37	910	155
RWT 2 – 180	80/45	21,5	535	75	25,5	630	110	28,5	705	155
RWT 2 – 180	70/45	16,2	400	75	18,5	460	110	21	510	155
RWT 2 – 180	60/45	9,5	235	75	11,5	285	110	12,6	310	155
RWT 2 – 180	50/45	4,5	112	75	5,3	130	110	6	150	155
RWT 2 – 180	90/60	21	361	75	24,6	425	110	28,2	485	155
RWT 2 – 180	80/60	14,5	250	75	17,2	300	110	20	340	155
RWT 2 – 180	70/60	7,4	125	75	8,7	150	110	10,2	174	155
RWT 2 – 230 D	90/45	37	909	100	42,5	1044	150	47,5	1167	200
RWT 2 – 230 D	80/45	28	688	100	33	811	150	37	909	200
RWT 2 – 230 D	70/45	21	516	100	24	590	150	27	663	200
RWT 2 – 230 D	60/45	12,5	307	100	15	369	150	16,5	405	200
RWT 2 – 230 D	50/45	6	147	100	7	172	150	8	197	200
RWT 2 – 230 D	90/60	27	464	100	32	550	150	36,5	628	200
RWT 2 – 230 D	80/60	19	327	100	22,5	387	150	26	447	200
RWT 2 – 230 D	70/60	9,7	167	100	11,5	198	150	13,3	229	200
		1.700 l/h			2.000 l/h			2.350 l/h		
RWT 2 – 310 D	90/45	48	1185		56	1382		64	1580	
RWT 2 – 310 D	80/45	40	988		48	1185		55	1357	
RWT 2 – 310 D	70/45	33	815		40	988		46	1135	
RWT 2 – 310 D	60/45	20	493		25	617		28	692	
RWT 2 – 310 D	50/45	8	198		9,5	235		12	296	
RWT 2 – 310 D	90/60	38	658		43	745		50	867	
RWT 2 – 310 D	80/60	30	520		34	598		40	693	
RWT 2 – 310 D	70/60	15	260		17,5	303		20	347	
		1.780 l/h			2.200 l/h			2.550 l/h		
RWT 2 – 360	90/45	63	1548	100	74	1818	150	82	2015	200
RWT 2 – 360	80/45	51,5	1265	100	60	1474	150	66	1622	200
RWT 2 – 360	70/45	37	909	100	42	1032	150	47	1155	200
RWT 2 – 360	60/45	23	565	100	27	663	150	29	712	200
RWT 2 – 360	50/45	11,5	282	100	13	319	150	14,5	356	200
RWT 2 – 360	90/60	47	808	100	57	980	150	65	1118	200
RWT 2 – 360	80/60	33	568	100	39	671	150	45	774	200
RWT 2 – 360	70/60	18	310	100	22	378	150	25	430	200
		1.600 l/h			1.950 l/h			2.250 l/h		
RWT 2 – 450	90/45	65	1597	100	76	1867	150	84	2064	200
RWT 2 – 450	80/45	52	1278	100	61	1499	150	67	1646	200
RWT 2 – 450	70/45	37,5	921	100	43,5	1069	150	48	1179	200
RWT 2 – 450	60/45	23,5	577	100	27,5	676	150	31,5	774	200
RWT 2 – 450	50/45	12	295	100	13,5	332	150	15,5	381	200
RWT 2 – 450	90/60	48	826	100	58	998	150	66	1135	200
RWT 2 – 450	80/60	34	585	100	41	705	150	46	791	200
RWT 2 – 450	70/60	19	327	100	23	396	150	26	447	200

The figures are given for different heating water flow rates.

VL Flow temperatures in l/h
BW Domestic hot water heating from 10 to 45 or 60 °C

Flow rates in kW
Hot water outputin l/h
Flow resistance in mbar

They depend on the installation situation and on the convection that occurs in the boiler. Since the common heating circulation pumps can overcome delivery heads up to a maximum of 450 mbar, the flow resistance in the built-in finned tube heat exchanger should not be selected higher than 200 to 250 mbar.

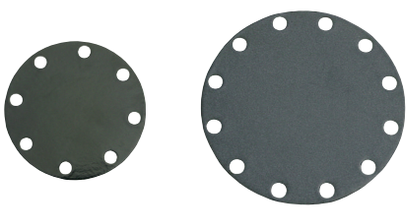
TECHNICAL DATA

2 YEARS WARRANTY

Type	Article.no.	Heating surface in m^2	Flange ø in mm / hole	max. Ø in mm	Installation length in mm	Connection G	L_3	Content in l
RWT 2 – 180	A 905 03	1,8	240 / 12 Loch	170	450	¾”	100	1,6
RWT 2 – 360	A 905 05	3,6	240 / 12 Loch	170	650	1”	100	3,0
RWT 2 – 450	A 905 06	4,5	240 / 12 Loch	170	790	1”	100	3,5
RWT 1 – 110 D*	A 906 10	1,1	180 / 8 Loch	110	370	¾”	60	0,8
RWT 1 – 140 D*	A 906 13	1,4	180 / 8 Loch	110	440	¾”	60	1,5
RWT 2 – 230 D*	A 906 15	2,3	240 / 12 Loch	165	450	¾”	100	1,9
RWT 2 – 310 D*	A 906 16	3,1	240 / 12 Loch	165	530	1”	100	2,5

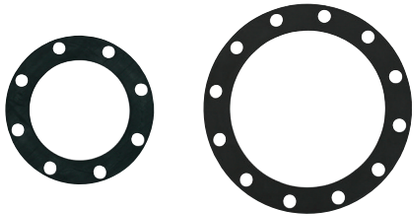
* Immersion sleeve mounted (control option)

ACCESSORIES FOR HOT FIXTURES AND FLOOR STANDING TANKS



BLIND FLANGE:
180 mm – 8 Hole and 240 mm – 12 Hole

SCREW PLUG 6/4“:
for closing the radiator sleeve.



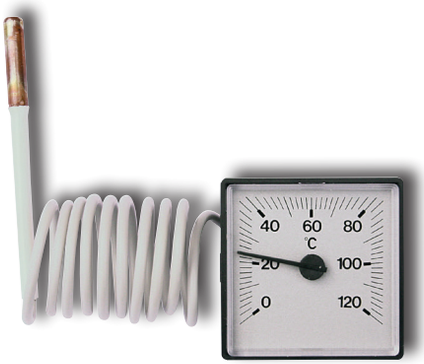
FLANGE GASKET:
180 mm and 240 mm

INTERMEDIATE FLANGE:
from 240 - 12 hole and to 180 - 8 hole

BOILER FLANGES:
with raw frame (total length KFZ 180 - 8:130 mm, KFZ 240 - 12: 125 mm)

INSULATING BONNET:
180 mm plastic and 240 mm sheet steel black/Pu for insulating the blind flanges.

Misprints and technical changes reserved!



CULTIVATION THERMOMETER: (FIG. TYPE ATH)

EXTERNAL CURRENT ANODE ½‘:

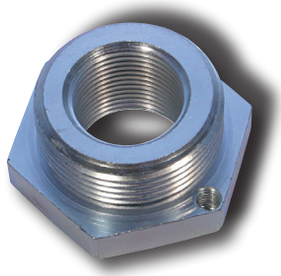
Maintenance-free electronically controlled external current anode with non-consumable titanium anode. Supply voltage ~230 v, connection in earthed socket, connection cable 2 m, rated current 100 mA, rated power 0.24 VA. 160-500 litres A 291 11; from 500 litres A 291 20

CULTIVATION THERMOMETER: (FIG. TYPE ATR)

for storage tank series and double jacket storage tank.

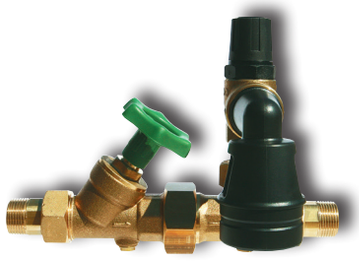
Charge pump controller combination for storage tank series and double jacket storage tank Charge pump controller:

Contacts: 1-pole change-over contacts, electrical switching capacity 16 a/230 v, temperature setting range 30 °C - 85 °C. Thermometer: see ath. The two capillary tube sensors of the controller and the thermometer are designed for the double sensor channels of the storage tank series. Thermometer and controller are built into a matt black plastic housing.



REDUCTION FITTING 11/4“ - ½“:

For the installation of the external current anode in the floor storage series: as a replacement for the standard magnesium anode.



SAFETY GROUP SG ¾“, 6 BAR:

Safety group with av, rv, in ms including drip cup to ssP and standing storage tank up to 1000 litres capacity.

* Immersion sleeve mounted (control option)