## Maass & Co. A/S



# Church-heating

Dansk / Nordisk Kirkevarme



| Watt | Length:<br>mm. | Diam. mm. |
|------|----------------|-----------|
| 100  | 400            | 90        |
| 200  | 750            | 90        |
| 300  | 1050           | 90        |
| 400  | 1300           | 90        |
| 500  | 1500           | 90        |
| 600  | 1800           | 90        |
| 700  | 2000           | 90        |
| 800  | 2300           | 90        |
| 900  | 2500           | 90        |
| 1000 | 2750           | 90        |

Pipe Owen R22 is used especially for fixing under church benches. Further more it is very suitable for many purposes where it is whished to have an even heat release, for to control draught fallout and condensed water near large windows. In special deliveries we have delivered stainless Owens to ferries and warm electroplated wash down safe Owens for green houses.

The Owens is very robust, manufactured in 90 mm steel pipes.

As standard it is delivered in powder enamelled in your choice of RAL colours.

The pipe Owen can be fixed standing or hung. Hanging plates in 50 mm or 100 mm is delivered with the Owen. The Owen can also be delivered with special manufactured plates so that the can be adjusted to the specific conditions.

Maass & CO. A/S has manufactured pipe Owens over the past 20 years, and have great experience with pipe Owen heat systems.

Delivered with prefixed 400 mm supply cable. All as 400 volt/2



|      | Watt | Length | Wide | Height |
|------|------|--------|------|--------|
|      |      | mm     | mm   | mm     |
|      | 500  | 680    | 45   | 200    |
| P22L | 750  | 890    | 45   | 200    |
|      | 1000 | 1100   | 45   | 200    |
|      | 1200 | 1250   | 45   | 200    |
|      | 1500 | 1510   | 45   | 200    |
|      | 500  | 530    | 45   | 300    |
|      | 750  | 700    | 45   | 300    |
| P22H | 1000 | 870    | 45   | 300    |
|      | 1200 | 1000   | 45   | 300    |
|      | 1500 | 1200   | 45   | 300    |
|      | 1700 | 1350   | 45   | 300    |

For fixing on/along walls the air flow Owen in delivered in 2 standard design: P22H and P22L.

The Owen is of the air flow type, manufactured in 1 mm alder wood electroplated steel plates. As a standard it is powder enamelled white RAL 9016. Other RAL colours can, if wished, be delivered against a fee.

As a standard the Owen air is conducted horizontally out and there by soothing on the walls avoided. But all design can be delivered with vertical out conduction. Delivered with pre fixed wall plates.

As acceories, legs for free standing fixing in single, double or triplelegs can bee delivered.

Delivered with pree fixed supply cable and switch off.

The Owen is mending for external regulation but can also be delivered provided with individual thermostat for use in smaller individual room.

All as 400 volt/2 pipe







For lowering into wooden or tile floor the air flow Owen is delivered with matching box and grill P22K Air flow Owen is a variant of the P22 plan Owen. The Owen is manufactured in 1 mm. Alder wood electroplated steel plate. Powder enamelled black.

The Owen is particularly robust and soundless in operation. It is delivered with legs welted on as well as it is prey fixed suply cable.

The Owen is mend for extend regulating but provident with adjustable Temperature restriction and overheating safeguard

400 volt/2. But the 127mm Owen is 400 volt/3.

The depth of the trench <u>under</u> the grating is for all Owens, 205 mm, with level solid foundation. By the gratins/frame is 25 mm thick, so total depth of trench = 230 mm.

| Watt | Length mm | Wide mm | Height mm | Min grill/trenchsize |
|------|-----------|---------|-----------|----------------------|
| 500  | 640       | 50      | 175       | 240 x 790            |
| 1000 | 640       | 85      | 175       | 340 x 790            |
| 1500 | 640       | 127     | 175       | 440 x 790            |
| 750  | 850       | 50      | 175       | 240 x 1000           |
| 1500 | 850       | 85      | 175       | 340 x 1000           |
| 2250 | 850       | 127     | 175       | 444 x 1000           |
| 1000 | 1060      | 50      | 175       | 240 x 1210           |
| 2000 | 1060      | 85      | 175       | 340 x 1210           |
| 3000 | 1060      | 127     | 175       | 440 x 1210           |
| 1200 | 1209      | 50      | 175       | 240 x 1359           |
| 2400 | 1209      | 85      | 175       | 340 x 1359           |
| 3600 | 1209      | 127     | 175       | 440 x 1359           |
| 1500 | 1470      | 50      | 175       | 240 x 1620           |
| 3000 | 1470      | 85      | 175       | 340 x 1620           |
| 4500 | 1470      | 127     | 175       | 440 x 1620           |



The temperature organ lamp has been especially developed for use on an organ. It double function as a note lighting and heat source.

The air temperature over the manual is kept comfortably heated; also meaning that at practise lessons with reduced heating a good working climate can be obtained for the organist.

The lamp it self is made by solid brushed brass. It is a bit bigger than most of the existing note lamp, but other wise appears as the lamps traditionally used on many organs all over the country. In the development of the lamp is has been essential for us, that it doesn't appear as an appliance but as a classic lamp made in the best craftsmanship.

The temperature lamp is delivered complete including electronic adjustment for installation in/behind the organ, service box plus all necessary cables. Heat and light is individual, continuously variable. Here by it is always possible to obtain a suitable temperature over the manual also to dim the light during the services while having a powerful working light when rehearsing.

Variable as well as the lamp is provided with an electronic temperature surveillance plus safety timer.

The lamp is fully adjustable end is delivered including installation bushing in brass. The surface treatment prevents tarnishing and encores that the lamp keeps its appearance without pososhing it.

It connects to plug M earth; all other connections are low current and are assembled with pree installed sockets.



## **Organist-Heater Mov**



| Footpe | edal-Owen |
|--------|-----------|
|        |           |

| Effekt: 140 watt 230V.    |
|---------------------------|
| Heater: 400 x 900 x 12 mm |

MOU organist heater is used as a local Heat source behind the organ bench.

Especially when the organist is rehearsing in the church outside regular church hours, it would be suitable to have a local heart source by the organ, without having to heat the entire church. Even though mordent heating systems gives you the option to use the Owen be the organ separately, there will often be problems with draft when only part of the room is heated. The

MOV organist heater is a vertical standing low temperature heating screen, that casts the heat forwards with the limited surfasetemperature and build in continuously variable steering a comfortable and safe heat ray is obtained.

The screen is provided with 2 heat zones, warmest at the legs where most heat is needed.

The organist header is also provided with wheels so it is easy to wheel out when it is needed and easy to store when not.

Connects to an ordinary plug/sucked.

Provided with an electronic regulator.

Effekt: 750 watt 230V.

Heater: 1200 x 1200 mm



Effekt: 125 Watt

230 V

The OV organ heater is used to secure the organ against swift temperature changes.

In most churches today periodic heating is used. This implies that the heating system is off outside service hours and the church is therefor cold. With the modern powerful heating system a comfortable air temperature can be reached in a very short amount of time, and for both economic and cut back reasons you will stride for the shortest possible heating time.

This way of heating implies sear ten problem for the organ, because the sort period of heating will heat the air put not the inner parts of the of the organ. Just as the sudden changes in temperature and humidity can cause problems. In order not to be forced to prolong the time of heating, it might be necessary to install a constant heater in the organ.

Earlier on an ordinary bold was often used; it was hung above the organ to keep it a bit warm when it was not used. But this is a very unsociable way of doing it. Because there is no way of managing the heat, a smaller neat source ha to be used to prevent drying of the organ – but in return it is not enough when it is needed.

The OV Heater is delivered in 2 versions – either provided with a thermostat or with a thermostat and hygrostat wits prevents drying damages.

Delivered with pre fixed supply cable and plum m earth.

The heater can also be delivered as several connectable unites depending on the job.

### Heat and climate control.

A middle-aged church has been without neat for centuries. This has/will cause small variations of temperatures and a constant high relatively humidity. The church could be experienced as "clammy", but the climate provided good conditions for the preservation of the historic furniture. In newer times, where neat has been installed in the churches this has in many cases changed.

The general high temperature has, in many places, resulted in a lowering of moist levels, this can be very unfortunate. Because the humidity drops with the heating of the church there should bean essential higher humidity in the cold church, at least 60%. If the humidity is lower, great care should be shown when heating the church, the time of heating should be kept as short as possible and possible be lowered a few degrees in particularly dry periods. That is way there should be at least 1 or 2 *hygrometer* and the thermometers in every church. There should be hung central in the building – not hidden away in a corner where the climate is different from the rest of the room. Placement on brickwork isn't good either, the best thing is to visualise/imagine that the instrument has to catch the same as the people present in the room. Often the messuringdevice is placed behind the alter or on the side of a bench.

#### <u>As a fundamental rule the humidity in the church should not be under 50% RF.</u> Most damaging on the historic woodwork is caused by drying not damp.

To prevent this, it is essential, to manage the heating in a way so that the building and furniture is affected as little as possible. Modern heating system has a relatively high effect. In this way you ensure, that you are able to, in the shortest time possible, perfumery in 3 to 4 hours, that the air in the church – so quickly that the heating – they don't "realise" the increasing in the temperature. After the service the heating is stopped immediately. In some churches however, the humidity gets so high, that it become a problem. But the powerful heading systems can be very affect full to control the damp. With constant high humidity it can sometimes be more efficient and financially correct to install ventilation. The managing of such a system will most often happen automatically over the heat managing. Hereby encoring that the system runs most effetely and only outside service hours.

We will be glad to assist with advice and experience in connection to ventilation projects, just as we make and deliver muffling ventilation's, grills, shape parts for fitting on exist. holes and so on.

The structure and running of heating systems for churches are very unlike other similar big heating systems and builds on a great source of experience in relations to draft, draugh fallout along the windows and vault and more. Just as the managing of such system is very special, and has to be adjusted to the conditions in every church. Maass & Co. A/S has over the past few developed a brand new module structured PLC based steering system for churches. Experiences from the hundreds of church heating systems we have constructed through the past 30 years have resulted in a steering system which can be adjusted precisely to the current situation in the church. Furthermore displaced lighting of the fire basic heating, special heating facilities when the organist is prattling and so on can be built in to the system. It is just as essential that the managing of the system is simple and clear for the user. Most often modern technology is so complicated to manage, that the person in change of everyday managing can't see through it. Through the years we have close contact with the user, the sextons in the churches and we make an effort to make our steering system as user friendly as possible. The modern technology makes it possible, to construct a steering system that is "complicated on the inside, but simple on the outside". So that the daily managing of heat systems isn't made unnecessary complicated.

In many cases it is necessary to furely registrant the climate conditions in the church, for example before investing in a new heating system or to clergy the cause of a high heat use. There fore Maass & CO. A/S offer to conduct a climate reading with computer scientists. In this way the temperature and humidity is reiterated automatically every hour over a longer period of time – most often 2-3 months. After wards the readings are printed out graphically, witch makes it possible to see how every heating has been, and how the indoor climate acts over a longer period of time. These kind of readings can be of great help to the church service to optimise the managing of heat system in the every day use – experience show, that there are even very big savings to be had, without affecting the comport of the churchgoers.

Ingeniørfirma B. Skou's Eftf.

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Planning and construction for heat systems and climate control for churches in Denmark, Sweden, Greenland and the Faroe Islands.