



Dolphin

MICROPROCESSOR-CONTROLLED IBC HEATING SYSTEM

INTELLIGENT, FAST BATCH ELECTRIC HEATER THAT PROVIDES ACCURATE, INTERNAL HEATING OF INTERMEDIATE BULK CONTAINERS (IBCs) WITH SENSITIVE PRODUCT PROTECTION

The patented **Limpet** heating system consists of a range of electrical heaters for industrial process heating applications. The **Dolphin** is a unique approach to heating viscous foodstuffs and chemicals within IBCs (intermediate bulk containers). Instead of heating from the outside, it is inserted inside the container with the base of the heating unit next to the outlet valve. It is designed to protect sensitive products, such as syrups, honey, treacle, molasses, fats and other viscous products that are difficult to process. Most products can be batched within a relatively short time, increasing efficiency and reducing down time. The unit can have a set temperature up to 70°C and is available in 240Vac and delivers up to 2.4kW of power.

Applications

- Viscous products
- Fats
- Oils
- Sugars
- Honey
- Surfactants
- Chemicals

Advantages

- Rapid internal heating
- Accurate temperature control
- All energy is transferred to the product
- Will not burn the product (sensitive product protection)
- Cleaning option

DOLFIN FEATURES

The main features of the patented **Dolfin** heating system are as follows:

Operation:

- Designed for insertion into 1,000 litre cubic IBCs but can fit inside most IBC configurations.
- Adjustable temperature range from 0°C to 70°C or 90°C using a dial on the top of the heater.
- 230/ 240 Volts ac; up to 2.4kW power output.
- Finned, food safe, finned heating element that is inserted into the IBC, thereby heating the contents directly.
- Fast batching ability. Unique thermodynamic core that gives even temperature distribution along the heating extrusion, preventing thermal damage to the liquid contents of the IBC.
- Non-stick industrial strength Xylan coating on the finned extrusion for easy washdown.
- Carefully designed low Watt density to protect sensitive products.
- Lightweight with stainless steel handles for easy insertion and extraction.
- Coloured LED for power cycle and status indication.
- 16 Amp blue industrial power plug, domestic 13A plug or CEE 7/4 plug, as required.
- Protective sleeve between the base of the control unit and the neck of the IBC to prevent ingress of contaminants.

Robust Construction:

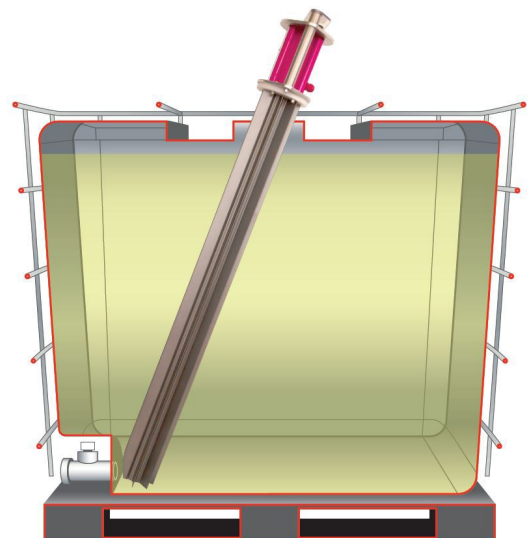
- IP67-rated control unit with potentiometer control mounted under protective see-through cover.
- IP68-rated finned extrusion.
- The product is sealed to ensure that all the connections and components are waterproof.
- Long life heating elements.
- Tough 3-core, 1.5mm, EPR (ethylene propylene rubber) orange mains flex (H07BQ-F).

USER INSTRUCTIONS

- Ensure that the Dolfin is not connected to a power supply.
- Strap on the protective sleeve/gaiter at the top of the extrusion; this prevents debris from falling into the IBC.
- Stand on the opposite side of the IBC from the valve, insert the Dolfin heater and stand it vertically on the IBC base.
- If supplied with the Dolfin, secure the protective collar around the neck of the IBC port.
- The Dolfin can either remain vertical in the IBC or can be positioned so that the base of the heater slides into position at the rear of the IBC valve port, thereby accelerating the heating around the valve for fast-batch product extraction.
- Ensure that the temperature setting dial on the top of the Dolfin is set to 0°C and then connect it to a mains supply.
- Turn on the power supply.
- Watching the LED on the top nameplate of the Dolfin, checking that the start-up sequence is normal (i.e., the LED goes green-amber-red and then flashes green in 3 sequences of 6 flashes and then stays green).
- Then turn up the temperature of the IBC to the desired operating temperature. The LED should show amber after a few seconds.
- Depending upon the properties of the product and the desired operating temperature, the Dolfin can be expected to warm up the entire contents of the IBC within 48 hours, although it normally takes much less than that (typically about 24 hours).
- Once at the set operating temperature, the LED will flash amber and green.

TECHNICAL INFORMATION

- Dimensions:
 - Extrusion: 1,200mm long, 140mm wide, 110mm deep.
 - Control unit: 176mm long, x 220mm wide , 160mm deep.
 - Power lead: 3m (unless otherwise specified).
- Weight: 10.5kg.
- Voltage: 230/240Vac.
- Power rating: up to 2.4kW.



DOLFIN CLEANING TUBE

The **Dolphin Cleaning Tube** is used for cleaning a Dolphin after use and before inserting into an IBC holding a different product:

Main features:

- A 1.3m x 160mm diameter black PVC tube with a watertight base into which the Dolphin is inserted for cleaning.
- A web harness with two straps that fit over the cleaning tube and enable it to be suspended from the frame of a standard IBC. The straps are fitted with Delrin buckles so that the tube can be attached or removed quickly.

USER INSTRUCTIONS

- To prevent the risk of any cross-contamination, ensure that inside of the Cleaning Tube is cleaned thoroughly before use, using hot water. Make sure the tube is completely drained of any liquid.
- Attach the tube to the longer side of an IBC by looping the two web straps over the top steel rail of the IBC and connecting the Delrin buckles together. The assembly should sit at an angle of approximately 45° as shown in the photograph below.
- Once attached to the side of an IBC, the tube should be filled with approximately 22 litres of clean water. To accelerate the cleaning process, the water could be hot but this is not essential.
- Make sure that the Dolphin is not connected to a power supply. Remove as much remaining product from the Dolphin fins as is practically possible using disposable paper towels or by spraying with hot water. **If using a water spray, avoid wetting the top section of the Dolphin.**
- Insert the Dolphin into the top of the cleaning tube. The top section should sit at the top of the tube as shown below.
- Follow the Dolphin start-up sequence in the User Instructions on page 2 above.
- Then turn up the temperature of the Dolphin to 70°C using the dial on the top. The LED should show amber after a few seconds.
- Leave the Dolphin in the tube for several hours until the water in the tube is hot and the LED on the Dolphin is flashing green-amber constantly.
- Once satisfied that the desired temperature has been reached, turn the temperature dial on the Dolphin back to 0°C before switching off the mains supply.
- Using the two steel handles on the Dolphin, remove the unit, taking care not to touch the fins. However, if this is necessary, wear a pair of sterile gloves and be aware that it may still be very hot.
- Stand the Dolphin in a sterile place or insert into a new IBC, making sure that it is not too hot for the product in the IBC.
- Empty the water from the cleaning tube. There are several ways to do this, the best being to lift the bottom of the tube and tipping the water out into a suitable container (25 litres of more). Alternatively, the tube can be removed and then emptied but be aware that it will weigh around 25kg, so appropriate lifting precautions should be taken by the operator(s).
- Clean the inside of the tube using hot water. If desired, the Dolphin can be stored in a tube until further use.

TECHNICAL INFORMATION

- Dimensions: 1,300mm long, 160mm diameter.
- Weight: 3kg.
- Colour: Black.

