

# **SPECIFICATION NO. DPW** **STEAM JACKETED STATIC POT WITH INCLINED MIXER**

**MODEL: STATIC 450 ELECTRIC + INCLINED MIXER**

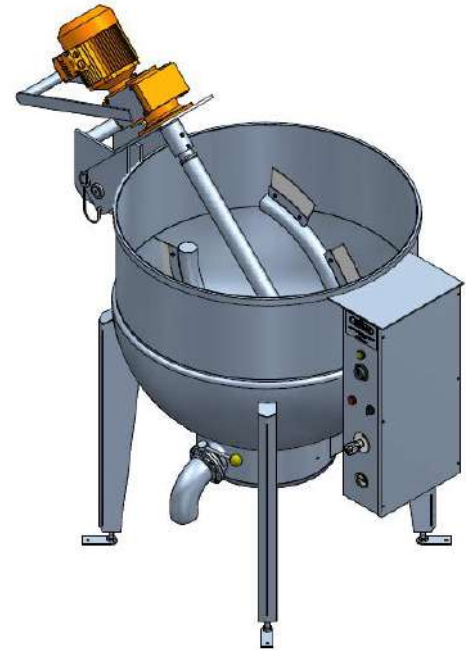
**CODE:** SP 450E + IM

Rev 1



**LOA Certificate No.**  
**000000072689/001**

**SABS IEC**  
**60 335-2-47**



## **General Features**

### **Construction**

The unit is a cooker-mixer consisting of a stainless steel boiling pot mounted on box type legs with bolt down adjustable feet. A inclined mixing apparatus is mounted to the side of the pot by means of a stainless steel bracket. The mixer unit is hinged and counter balanced for easy lifting and lowering into the pot. The mixer unit carries a variable speed electric gearbox that drives a main mixer/scraper fitted with thermoplastic scrapers. The speed of the mixers is controlled by means of a speed control toggle switch on the control box on the side of the pot. The main mixer speed varies from approximately 19 - 46rpm.

The pot is hemispherical shaped and the steam jacket is constructed of 3mm & 2.5mm thick 304 stainless steel. The pot has a reinforced rim with a welded-on, trough-shaped pouring lip and about 60% of the pot height is jacketed. The exterior of the pot is mirror polished and satin finished on the interior surfaces achieved by polishing with successive grits.

On top of the control box there is a chromed water valve for the pot water supply, with flow directed to a water outlet welded on the inside of the pot near the rim. The control box also houses the electric board with the controls fitted to the front. The electric board is fitted within a separate enclosure. The side cover of the control box permits easy access to the electric board during maintenance.

### **Controls**

Controls for the pot include a thermostatic temperature control and jacket pressure gauge mounted to the front of the control box. A factory-set jacket pressure switch and a tilt safety switch is mounted inside the arm. The control panel on the pedestal front includes a mixer start and stop switch, mixer speed control knob, tilt switches, heating on switches, emergency stop and pilot lights indicating heating activation and steam jacket low water level. Other controls include automatic safety stop of mixers when the mixer unit is lifted out of the pot whilst still turning.

### **Safety Features**

- Stainless steel pressure safety valve (factory-set) which releases steam if the design pressure is exceeded. The safety valve is sealed with a lead seal to prevent tampering with the valve set pressure. A special safety cap prevents tampering with the steam release lever by un-authorized persons.
- Weld-on sight glass with vacuum-proof seals for easy monitoring of jacket water level.
- The water level is measured with a low level probe situated inside the element box to protect the elements.
- Pressures switch which cuts off the electrical power supply to the elements when the jacket pressure reaches the factory set maximum operating pressure.
- A thermostat to control the temperature/pressure inside the jacket.
- Mixer limit switch – Stops mixer when lifted out of the pot.

### **Electric Heating – Specific Features**

### Heating Elements

Steam is generated within the jacket by 3 off 8kW geyser type, Incoloy-sheathed, heating elements. These elements are controlled by a thermostat sensor mounted in the steam jacket with a range of 30°-150°C allowing control of the steam temperature.

### Steam Jacket

The steam jacket provides a closed steam generating system. The jacket is factory-filled with a chemically treated water solution to the required level. The pot is fitted with a weld-on sight glass assembly. A ½” filler plug on the jacket permits topping up of the steam jacket with tap water when necessary. This plug is fitted at a specific height to prevent overfilling.

The steam jacket is designed for a pressure of 100 kPa (1.0 bar), and has been tested at the factory to 1.5 times this pressure (a Test Certificate is issued with each pot). The pot has been designed and constructed generally in accordance with ASME VIII code Division 1: Boilers & Pressure Vessels Code and conforms to the requirements of the “Pressure Equipment Regulations, No. R. 734 2009” of the Occupational Health and Safety Act (Act No. 85 of 1993). The pot is categorized and classified in terms of Figure 1, Graph for vessels – Dangerous gasses of SANS 347:2010 as a Hazard Category I. A certificate of conformity will be supplied with the equipment from the manufacturer.

The closed jacket system does not generate steam continuously and has no steam generating capacity provided the following conditions are maintained:

- The pot must not be modified or converted to a STEAM GENERATOR for external steam supply.
- The pot must not be connected to a water supply to fill-up the jacket continuously with water in-order to supply steam continuously.

### TECHNICAL DATA

Working Volume:	450 litres
Effective Volume:	479 litres
Design Pressure:	100 kPa / 120.4°C (1.0 bar)
Max. Operating Pressure:	90 kPa / 118.8°C (0.9 bar)
Test Pressure:	315 kPa (3.15 bar)
Steam Jacket Volume:	0.0489 m <sup>3</sup> each
Power Requirements:	3 x 400 V AC + N + E, 50 Hz
Power Rating:	Max 50 kW (76 A) per Phase
Water Supply Connection:	15mm Copper Pipe (MAX 6 bar)
Approx. Shipping Dimensions:	1.9m (L) x 1.25m (W) x 2.0m (H) palletted and crated
Approx. Shipping Weight:	750 kg

### **NCRS: Letter of Authority**

SABS IEC 60 335-2-47

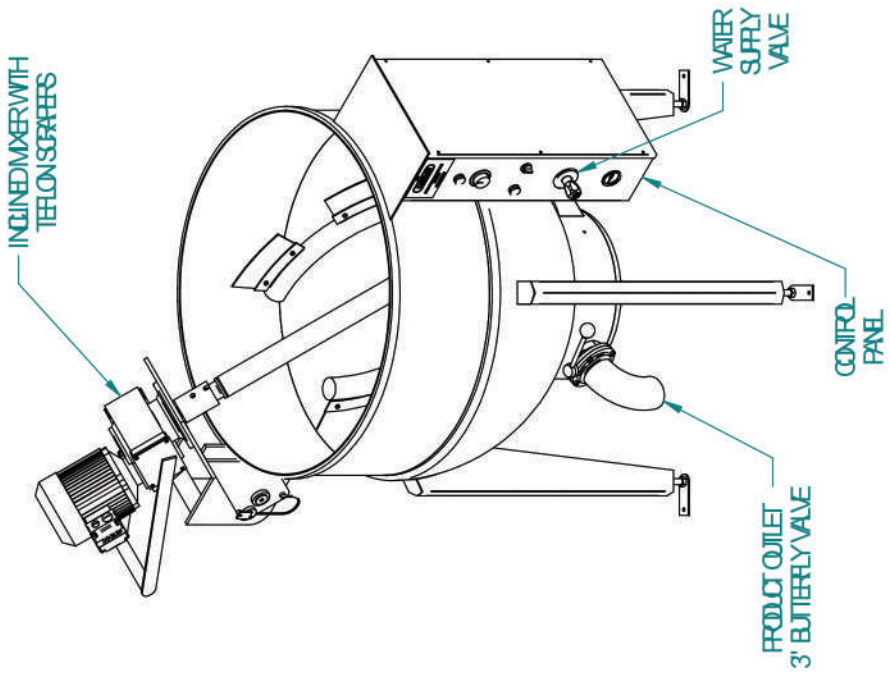
Letter Of Authority Certificate No. - 00000072689/001

### **Public Works Specifications**

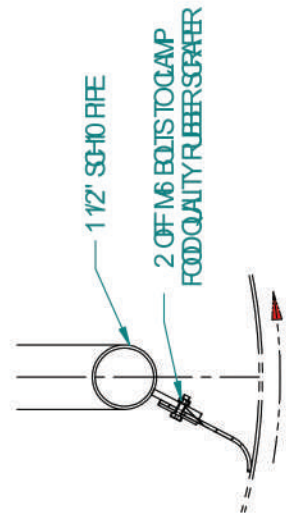
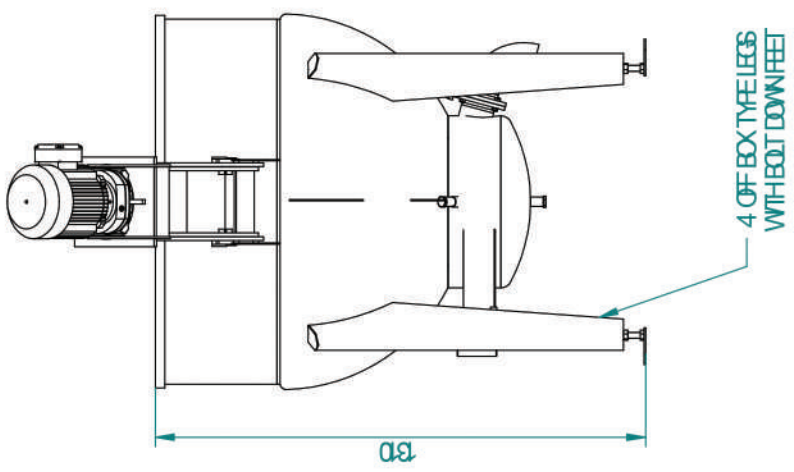
- A shunt tripping mechanism with a 100 Ampere Triple Pole main circuit breaker.
- Two auto reset pressure switches are fitted onto the pot. One to control i.e. energize/de-energize the contactors and the second pressure switch to control a shunt trip that is mechanically linked with the main breaker. The shunt trip will trip the main circuit breaker and must be manually reset.
- The safety valve will be tamper proof.

### **Optional Extras**

- Lid fixed to mixer base to cover pot when mixing.



- NOTES**
1. POT ID - 0970mm
  2. DESIGN PRESSURE - 100kPa (1204°Q)
  3. MAX OPERATING PRESSURE - 90kPa (1888°Q)
  4. TESTING PRESSURE - 36kPa
  5. JACKET VOLUME - 48.9L
  6. HAZARD CATEGORY - I (Figure 1 Dangerous Gas)
  7. ELECTRICAL LOADING - 50kW/76A/1P-AE, 3PH(400V)



**SCRAPER DETAIL**

