



### Features

- Designed to demonstrate Reverse Osmosis process used in distillation of water.
- Corrosion resistant components used in the trainer.
- Comprehensive Instrumentation Panel with all necessary measuring instruments & Safety Devices.

Tesca Reverse Osmosis Unit is designed to demonstrate water distillation using Reverse Osmosis Technique. The setup consists of a raw water tank fitted with stirring machine. A pump draws salty water from the raw water tank to the spiral wound membrane module. The distilled water & concentrated salt solution are separated & can be collected separately or discharged in to the raw water tank. A distilled water tank is provided for flushing the system. Conductivity sensors are provided to measure the salt concentration at different points. Measuring instruments are provided to measure flow rate & pressure at different locations.

Detailed Operation & Maintenance Manual is provided along with the trainer.

### Specifications

- Removal of solvent from a salt solution using reverse osmosis
- Polyamide spiral wound membrane module
- Piston pump with pulsation damper for pressure generation
- Overflow valve to adjust the pressure upstream of the membrane module
- Valve to adjust the retentate flow rate
- Raw water tank with stirring machine to prepare a salt solution

Note: Specifications are subject to change.

### Tesca Technologies Pvt. Ltd.

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension,  
Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,  
Tel: +91-141-2771791 / 2771792; Email: info@tesca.in, tesca.technologies@gmail.com  
Website: www.tescaglobal.com

- Tank for distilled water to flush through the spiral wound membrane module
- Tank to collect the permeate
- Safety cut out to protect the pump against dry running
- Spiral wound membrane module
- Active area: 1.2m<sup>2</sup>
- Raw water flow rate max.23L/min
- Length: Approx. 500mm
- Diameter approx. 60mm
- Piston pump
  - Max. flow rate approx. 425L/h
  - Max head: approx. 700m
- Stirring machine
  - Power consumption: 140W
  - Speed 30.. 1000 min<sup>-1</sup>
- Tanks
  - Raw water (salt solution): approx. 110 L
  - Distilled water approx. 110L
  - Permeate approx. 5L
- Measuring Instruments
  - Retentate flow rate 0,2 ... 6.0L/min
  - Permeate flow rate 0.05.. 1.8L/min
  - Temperature 3 x 0.. 50°C
  - Pressure 2 x 0 .. 120bar
  - Conductivity: 0... 200mS/cm

### Experiment Capabilities

- Fundamental principle of reserve osmosis, Van't Hoff's law
- Permeate quantity and salt concentration in the permeate and retentate dependent on pressure and salt concentration in feed
- Determination of membrane constants and retention

### Services Required

- Electric Supply 230 V AC, Single Phase, Earthed.
- Tap water supply & Drain.