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October 2014

T024. Minimum Equipment Required for BioTector Troubleshooting

## Minimum Equipment Required for BioTector Troubleshooting

- Safety equipment (e.g. gloves, safety glasses, and any other site specific safety equipment)
- pH paper
- 10 ml graduated cylinder
- 50 ml beaker
- DI Water
- TOC standard solution
- Ozone (O<sub>3</sub>) tester (free test kit supplied with every BioTector)
- Multi-meter
- Assorted hand tools
- Small flash light (torch)
- Troubleshooting check list
- BioTector user manual (*A printed copy of the user manual, which includes system specific drawings and factory configuration, are supplied with the BioTector. These documents are also available in electronic format inside the SD card, located on the motherboard, and in the CD supplied with the user manual.*)

## Additional and Recommended equipment:

- BioTector service kit
- NF300 Circulation Pump service kit
- Sample pump
- Sample (ARS) Valve
- The suggested tool kit for BioTector maintenance, which is listed in the following pages

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**Suggested tool kit for BioTector maintenance.**

- Set of flat screwdrivers, including terminal screwdrivers.
- Set of Philips screwdrivers.
- Set of jewellers screwdrivers.
- Pliers.
- Long nosed pliers.
- Side cutters.
- Stanley knife.
- Tube cutters.
- Set of metric spanners.
- Set of imperial spanners, including.
  - 7/16"
  - 1/2"
  - 2.no. 9/16"
  - 2.no. 5/8"
  - 11/16"
- Set of metric Allen keys.
- Set of imperial Allen keys.
- Nut driver, 8mm and 7mm.
- Inspection mirror.
- Hacksaw.
- Flat file.
- PTFE tape.
- Insulation tape.
- Cable ties.
  
- Graduated cylinder, 10 ml.
- Beaker, 50ml
- pH paper, 0-14 pH.
  
- Multi-meter, with AC / DC voltage (10 to 500 volts), Current (20mA to 10 A) and Resistance.
- Digital manometer, -1 to 2 bar gauge.
  
- Ozone tester (free test kit supplied with every BioTector) with instruction sheet "T006. Procedure to check the ozone level"

- BioTector tubing kit (Order Code: 19-PCS-047)
- Selection of Swagelok fittings, 1/4" and 3/16".
- Selection of EM Technik fittings, 1/8", 3/16", 1/4", 12mm.
- Grease for piston pump drive bearing (Heavy Duty Pump).
- Set of seals for piston pump (Heavy Duty Pump).
- Torque Screwdriver  
Example specifications and suppliers of the torque screwdriver are as follows:
  - Lindstrom adjustable torque driver, 40-200Ncm
  - Stanley Supply & Services, Inc.
  - <http://www.stanleysupplyservices.com/product-detail.aspx?pn=419-704>
  - RS Components Ltd.
  - <http://uk.rs-online.com/web/p/torque-drivers/3851794/>
- Safety glasses.
- Face shield.
- Overalls.
- Solvent resistant gloves.
- Box of disposable gloves.