



Tooling Needed For Proper Servicing of LTV Series Ventilators

The following general tools are required to perform the various service procedures on the LTV® Series of Ventilators. These will not be needed for every repair/service and are not available from CareFusion:

- Allen Wrench, 7/64" and 3/32"
- Dental Pick
- Drill with Drill Bit, 3/16"
- Digital Multi-meter (must register Voltage, Amperage and Hertz; 3 digits past decimal)
- Nut Drivers (3/16", ¼", ½", and 13mm adapters for torque wrench)
- Torque Wrench (0-120 in/oz, with Phillips Screwdriver tip)
 - Must be able to set wrench to 20, 40, 60, and 120 in/oz
- Oxygen Analyzer*
- Oxygen High Pressure Hose with DISS connector (may need NIST adapter for int'l markets)
- O2 Source (with 0-80 PSI gauge/regulator; LTV1000 and 1200)
- Needle Nose Pliers
- Pinch Clamps
- Pop Rivet Tool
- Pressure Manometer (0-100 cmH₂O)*
- Screwdriver (Phillips/Cross Tip)
- Screwdriver (Straight Tip)
- Spirometer*
- Stopwatch
- Test Lung (2 liter or 2 x 1 liter or greater, in parallel)
- Cable Tie Tool
- Variable 10 Amp DC Power Supply
- Wrist Strap, grounded, anti-static
- Y-Connector for test lungs (if needed)

*Items needed such as the Manometer, Spirometer, and O₂ analyzer can or may be substituted with items such as the VTplus or VTMobile (Fluke Biomedical), Certifier-FA (TSI, Inc.), RT-200 (Timeter), PF-300 (IMT Medical), PTS-2000 (Covidien), or equivalent. These devices will be able to measure/analyze volumes, pressure and oxygen concentrations quickly and accurately. Costs for these devices range from approximately \$3,700 – \$10,000 USD. These items are not available from CareFusion.

Unique Tools:

The following unique tools are also needed to perform various procedures on the LTV® Series of Ventilators. These are available separately, or as part of the Maintenance and Calibration Kit, P/N 11566 from CareFusion;

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| • Calibration Syringe Assembly | P/N 11471 |
| • DISS to NIST fitting for High Pressure O ₂ Port | P/N 10702 |
| • Torque Driver (dial indicator, range 0-96 cmH ₂ O) | P/N 11574 |
| • External Battery Test Cable | P/N 11474 |
| • Internal Battery Test Cable | P/N 11472 |
| • Flow Valve Insertion Tool | P/N 14206 |
| • Lubricant, Silicone Compound | P/N 10123 |
| • O ₂ Sampling Tube | P/N 10544 |
| • Patient Assist Cable, Normally Closed | P/N 10779 |
| • Patient Assist Cable, Normally Open | P/N 10780 |
| • Pinch Clamp | P/N 11529 |
| • Power PCB Removal Tool | P/N 11599 |
| • Service Cable Assembly | P/N 11485 |
| • Stepper Motor Calibration Tool | P/N 10871 |
| • Patient Circuit Adapter, 22mm | P/N 10696 |
| • Turbine Pressure Test Adapter Assembly | P/N 11567 |