SABRE SAFETY LTD

DATA SHEET

Technology for today	The FitTester 3000 is a highly specialized instrument which utilizes the Scientifically proven and patented “CNP” (Controlled Negative Pressure) Technology to measure respirator leakage directly. The FitTester 3000 is now written into the Federal Regulations governing fit testing [29 CFR 1910.134].
More Health Protective	Peer-reviewed scientific studies have shown that the FitTester 3000 produces much more conservative, more health protective, and more believable fit test results than aerosol-based systems. The FitTester 3000 directly measures facepiece leakage instead of estimating leakage by trying to count fractions of a particle/cc in a mask environment that is strongly affected by in-mask sampling biases. FitTester measured known respirator leaks with less than 5% error, while aerosol-based measurements of those same leaks had errors up to 80%.
More Rigorous Test	The use of ambient air as a standard (non-varying), gaseous challenge agent that provides a more rigorous test of mask fit than does an aerosol agent. If air c a n leak into a respirator, a particle or vapor might leak into the mask; if air can not leak into the mask, a particle or vapor can not leak into the mask. With aerosol-based systems, you can’t be sure what can and can’t leak into the respirator in the actual workplace.
The Elimination of Aerosol Lung Deposition Losses	The elimination of aerosol lung deposition losses and/or lung- generated particle contribution to test aerosol count. This is possible since negative pressure inside the mask equilibrates at sonic velocity and does not rely on the quality of in-mask mixing.
Enhanced Fit Test Precision	
Precise Test Challenge Pressure	The FitTester has the ability to precisely set and control the test challenge pressure, which allows respirator fit to be tested at inspiratory pressures. A variety of challenge pressures can be used to simulate a variety of work and breathing rates ranging from rest to maximal exertion.
Ability to be NIST-Calibrated	The ability to calibrate the CNP system with generally available primary calibration systems assures a higher standard of test results (NIST traceable standard) .

Easier to Maintain

There are no messy alcohol wicks which need to be periodically changed. There are no internal optics which require cleaning once contaminated. Also, condensation droplets inside the sampling tubing cannot effect the accuracy of its measurements.

Easier to Use

The FitTester 3000 is extremely easy to set up and use. There is no instrument warm-up period to worry about, and the on-screen prompting of the instrument guides the user effortlessly through the QNFT test protocol. If you have a poor mask fit, you know it in a matter of seconds.

Less Environmentally Dependent

The testing environment is much less critical, and results (including the ability to actually get a result) are not dependent upon testing location. This is because the FitTester 3000 measures leakage directly by using CNP technology and does not rely upon minimum threshold level of ambient air particle concentration for proper operation. Advantages of the controlled negative pressure method relative to the current standard generated aerosol methods include:

FitTester 3000 Specifications

Selectable Test Model Parameters

Equivalent Fit Factors are calculated from actual respirator measured leak rates, based on the following “modeled” test parameters which are user selectable:

Inspiratory Work Rate

Measurement of energy expended by test subject in
the normal working environment; indicated in thousands of calories per hour (K-Cal/hr). Selections include:

- 100 (light activity)
- 200 (moderate activity)
- 300 (heavy activity)
- 350 (extreme activity)

Mask Type

Selections for full-face or half mask respirator types.

Cartridge Type

Selections for low, medium, or high density cartridge types.

Subject Gender

- Selections for male & female test subject gender.
- Selection choices effect modeled CNP challenge pressure levels.
- Selection choices affect modeled respiratory inspiration volume.

Dynamic Range

- Leak Test Measurement 2 - 4500 cc/min
- Fit Factor Computation 10 - 53,000

Pressure Sensor Parameters

- Pressure Range 0 - 10 inches H20
- Accuracy +/- 0.5% full scale
- Over-Pressure Limit =/- 5%

Instrument Accuracy

- Challenge Pressure +/- 5%
- Leak Rate Measurement +/- 3% or +/- 3 ml/min (from 10 - 4500 cc/min)

Liquid Crystal Display

- Alphanumeric Mode 8 lines x 40 characters
- Graphics Mode 64 vertical x 250 horizontal dot matrix. Backlight with view angle

adjustment.

Digital Interface	One RS-232 serial port and one Centronics-compatible parallel interface standard.
FitTrack™ - Software for Windows 95/98/ME/NT/2000	• Minimum Requirements o Digital Interfaces One standard RS-232 port required for interfacing with FitTester 3000. o Monitor/Display VGA or better. o Hard Disk 25 MB or greater recommended. Actual requirements depend on file sizes and record quantities. o Printer For various reports a printer supported by your operating system is required.
Windows 95™/98/ME	Pentium 75 MHz or better, 32 MB RAM or greater.
Windows NT™	Pentium 75 MHz or better, 64 MB RAM or greater.