

# MINIMUM SPECIFICATIONS FOR SPIROMETRY EQUIPMENT IN THE NAVY OCCUPATIONAL HEALTH PROGRAM

## (SPIROMETER AND MICROPROCESSOR/COMPUTER SYSTEMS)

1. Spirometers must meet or exceed the OSHA requirements for spirometers as specified in Appendix D of 29 CFR 1910.1043 ([Cotton Dust Standard](#)) and the American Thoracic Society publication: "Standardization of Spirometry" 1994 ([ATS Spirometry Standards](#)).
2. Spirometers may be portable and must have access to computer and printer resources.
3. The microprocessor/computer must be capable of accepting patient identification data (i.e. age, race, height, sex, date and temperature) via a keyboard. The microprocessor/computer must also print out the patient data in addition to the pulmonary function tests results at the conclusion of the a test.
4. Test results must be stored and available for recall and must be of sufficient size that hand measurements may be made for quality assurance. Test results must be suitable for permanent health record entry and not be degraded by other entries. (No pressure sensitive, carbon paper or chemical paper in the health record.)
5. The microprocessor/computer must have a digital sensor compatible with the volume displacement spirometer or pneumotachometer (flow spirometer).
6. The spirometer must be capable of manual start and stop independent of patient, without aborting the pulmonary function test (the microprocessor/computer must not be flow or volume triggered).
7. The microprocessor/computer must provide instructions to the technicians on procedures to follow for each patient in order to ascertain the validity of the test being run.
8. The instrument must provide a tracing or display of either flow vs. volume or volume vs. time during the entire forced expiration.
9. It is to contain an automatic temperature sensor with calculations as specified in requirement (1) above for conversion from ATPS to BTPS.
10. All computerized calculations must be in accordance with Appendix D of 29 CFR 1910.1043 ([Cotton Dust Standard](#)). Knudson Predicted values (1976) are to be used.