TECHNICAL MANUAL

OPERATOR'S, AVIATION UNIT AND AVIATION INTERMEDIATE MAINTENANCE MANUAL, INCLUDING REPAIR PARTS AND SPECIAL TOOLS LISTS

HOSE TESTER
AVITECH MODEL 321
NSN 4940-01-064-5057

HEADQUARTERS, DEPARTMENT OF THE ARMY

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Technical Manual

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Operator's, Aviation Unit and Aviation Intermediate Maintenance Manual, Including Repair Parts and Special Tools Lists HOSE TESTER AVITECH MODEL 321 NSN 4940-01-064-5057

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual If you find any mistake or if you know of a way to improve the procedures, please let us know Mall your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, U S. Army Troop Support & Aviation Materiel Readiness Command, ATTN: DRSTS-MTT, 4300 Goodfellow Boulevard, St. Louis, MO 63120. A reply will be furnished directly to you

CHAPTER 1

INTRODUCTION

SECTION I. GENERAL INFORMATION

1-1. General. This manual provides the information necessary to install, operate and maintain the Model 321 Hose Tester designed and built by Avitech Inc. The Hose Tester has been assigned P/N 321A, NSN 4940-01-064-5057.

1-2. Scope. The test unit is suitable for conducting proof pressure and leakage test on aircraft and missile hose assemblies which conform to MIL-H-8788, MIL-H-8790, and MILH-8795.

SECTION II. DESCRIPTION AND LEADING PARTICULARS

1-3. Description. The P/N 321A Hose Tester consists of a five and one-half gallon oil reservoir, an air-operated pump, pressure gages, control valves, and adaptors interconnected to supply, measure, and control the delivery of high pressure oil to the hose under test. At the completion of the test the oil is returned to the reservoir for reuse.

1-4 Air-Operated Pump. The pressure of the oil discharged from the pump is directly proportional to the input pressure of the operating air. In this case, the ratio is 150:1. A shop air supply of 50 standard cubic feet per minute (scfm) at a gage pressure of 100 pounds per square inch (psig) must be available to operate the pump.

The input air is filtered through an air filter built into the Hose Tester and the pressure controlled by a pressure regulator. The air then passes through a lubricator before being directed to the pump. The air actuates a piston in the pump which in turn raises the pressure of the test oil to the desired level. The noise created by the air being exhausted from the pump is reduced to a reasonable level by a pneumatic muffler installed in the air exhaust port of the pump.

1-5. Reservoir. Test oil which conforms to MIL-H-5606 or MIL-H-82382 is stored in the five and one-half gallon aluminum reservoir. The 12-inch long x 9-inch wide x 12-inch high reservoir acts as a base for the Hose Tester, and all the other components are mounted to it. The reservoir is provided with a sight gage which shows the full level, and a fillvent strainer is mounted on the top surface. A 10-micron oil filter is installed within the reservoir on the oil supply line to the pump. The element of this filter is replaceable.

1-6. Instrumentation. The operating air pressure is measured by a 0 to 160 psi air gage connected in the air regulator outlet, prior to the lubricator. The test oil pressure

furnished by the pump is monitored by two oil gages mounted on a manifold attached to the pump outlet port. One gage with a scale marked from 0 to 15000 psi in 200 psi increments is used when high pressure testing is being performed. The other gage can be read in 50 psi increments to 3000 psi. This gage is protected from damage when high pressures exist in the manifold by a gage saver adjusted to 2800 + 100 psig. A sight gage installed in the oil return line allows the operator of the Hose Tester to observe the return flow of oil to the reservoir.

1-7. Controls. Two needle valves control the operation of the Hose Tester. One, installed in the line to the air input port of the pump, controls that input and hence the pump operation. The air pressure in this line is adjusted by means of the air regulator. The other valve is installed in the oil return line to the reservoir. This valve is closed during a test to pressurize the hose. When the test is complete it is opened to allow the test oil to return to the reservoir.

1-8. Adaptors. Sixteen adaptor fittings are furnished with the Model 321 Hose Tester. These adaptors, which fit into the oil supply port of the gage manifold and the oil return port on the oil control valve, enable the tester to accommodate all hose assemblies MS28741-3 through MS28741-16 and MS28762-3 through MS28762-16. Racks for storing the adaptors are integral parts of the tester.

SECTION III. TEST EQUIPMENT, SPECIAL TOOLS AND MATERIALS

1-9. No special tools or test equipment are required to operate or service the Model 321 Hose Tester. Test oil must conform to MIL-H-5606 or MIL-H-82382o Clean ,SAE-10 oil or lighter grade should be used in the lubricator unit.