INCH-POUND

A-A-59863
1 April 2010

COMMERCIAL ITEM DESCRIPTION

LINEAR AND ROTARY ELECTRO-MECHANICAL ACTUATOR TEST STAND (LREATS)

The General Services Administration has authorized the use of this commercial item description (CID), for all federal agencies.

1. Scope. This commercial item description covers a permanent back shop test stand designed to check the function of linear and rotary electro-mechanical actuators. The test stand should be capable of interfacing with 42 different actuators from seven different aircraft (C-5, C-141, F-15, F-16, KC-135, T-38, and T-39). The LREATS should be capable of accommodating the size, stroke length, physical mounting interface, and electrical connectors of each actuator. The LREATS should also be able to supply the correct power input type and the precise amount of resistance to motion required for each individual actuator.

2. SALIENT CHARACTERISTICS.

2.1 Design. The LREATS design shall consist of a linear test stand (LTS), an instrument test stand (ITS), and a rotary test stand (RTS).

2.1.1 Linear test stand (LTS). The LTS shall be designed with a hydraulic load cylinder and an adjustable mounting platform with mounting positions that will accommodate the load and stroke of the unit(s) under test (UUT). The LTS shall contain two sections; 0-5000 pounds of force (lbf) for high rated actuators and 0-1000 lbf for low rated actuators. The LTS shall contain a hydraulic system capable of supplying hydraulic pressure to the load cylinder.

2.1.1.1 LTS physical characteristics (nominal).

Length	128 inches
Width	88 inches
Height	63 inches
Weight	3500 lbs

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2.1.1.2 LTS power requirements. The LTS hydraulic system shall be powered by 3 phase, 220 VAC, 60 Hz power. The LTS control panel shall be powered by 1 phase, 120 VAC, 60 Hz power.

2.1.1.3 LTS performance characteristics (nominal).

Speed of travel	5.5 inches per second
Speed indicator	10 inches per second (maximum)
Load Range	2 to 5000pounds (lbs).
Stroke	24 inches (maximum)
Max Actuator Length	53 inches
Low force load cell	2 to 1000 lbs @ +/- 0.05%
High force load cell	10 to 5000 lbs @ +/- 0.05%

2.1.1.4 Hydraulic system particulars (nominal).

Hydraulic fluid	MIL-PRF-5606
Capacity	30 gallons
Supply flow and pressure	5 gallons per minute (gpm) @ 825 pounds per square inch gauge (psig) (1000 psig max) 13.5 gpm @ 175 psig
Operating temperature	100 – 165 degrees F
Electric motor rating	5 HP @ 1800 revolutions per minute (rpm)
Electric motor power	220/440 VAC, 60 Hz, 3 phase

2.1.2 Rotary test stand (RTS). The RTS shall be designed with an independent control panel which will be mounted onto a swing arm and shall provide the means to control and monitor the operation of each load system as well as torque and speed of the UUT. The RTS shall be designed with a rotary test load fixture that includes two adjustable mounting facilities to test rotary devices. One of the two lighting facilities shall be capable of applying and measuring a 5 inch-pound torque (in-lbf) load and 0 - 25.000 rpm input. The second mounting facility shall be

capable of applying and measuring a 200 in-lbf load and 0 - 2,000 rpm input. The RTS shall be designed to test one rotary device at any given time. The UUTs utilized with the rotary test load fixture must interface with the instrument test stand (ITS).

2.1.2.1 RTS physical characteristics (nominal).

Length	38 inches
Width	46 inches
Height	72 inches
Weight	600 lbs.

2.1.2.2 RTS performance characteristics.

Speed Range	0 to 25,000 rpm
Load Range	0-200 inch lbs (in-lbf)
High Load Cell	0 to 200 in-lbf and 0-2000 rpm
Low Load Cell	0 to 5 in-lbf and 0 to 25,000 rpm
High Load Transducer	200 in-lbf and 7,000 rpm
Torque Break (low load)	0 to 5 in-lbf and 25000 rpm input capability
Torque Break (high load)	0 to 200 in-lbf and 0 to 200 rpm

2.1.3 Instrument test stand (ITS). The ITS shall provide complete instrumentation for reading the results of the RTS and LTS. The ITS shall interface with the RTS and the LRS. The ITS shall provide means of energizing or de-energizing the system panels. The ITS shall provide complete instrumentation for controlling and monitoring the LTS and the RTS. The ITS shall have a 28 volts direct current (DC) section and connection in order to provide power to UUT when required. The DC section shall have display that will indicate when the DC circuit is activated, as well as display voltage and current reading. The ITS shall have an alternating current (AC) section and connection provide 208VAC, 400 Hertz (Hz) power to the UUT. The ITS shall have the ability to adjust the AC voltage to the desired levels by the operator. The AC section shall have a display that will indicate AC voltage, current and power to the user. The AC sections shall allow for forward, reverse, and limiting actuator motion controls. The AC section shall provide indicator information for the UUT phase characteristics.

2.1.3.1 ITS physical and performance characteristics (nominal).

Height	71 inches
Width	31 inches
Depth	28 inches
Weight	300 lbs.
Power Requirements	230 VAC, 60 Hz, 3 Phase, 30 Amp 208 VAC, 400 Hz, 3 Phase, 25 Amp 120 VAC, 60 Hz, 1 Phase, 20 Amp 28 VDC, 25 Amp

2.1.4 Calibration. The repair set shall not require calibration more than once every year and it shall not require any special equipment, rooms or chambers to accomplish the calibration. Calibration standards shall be traceable to National Institute of Standards and Technology (NIST).

3. REGULATORY REQUIREMENTS.

3.1 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

3.2 Green Procurement Program. Green Procurement Program (GPP) is a mandatory federal acquisition program that focuses on the purchase and use of environmentally preferable products and services. GPP requirements apply to all acquisitions using appropriated funds, including services and new requirements. FAR 23.404(b) applies and states the GPP requires 100% of EPA designated product purchase that are included in the Comprehensive Procurement Guidelines list that contains recovered materials, unless the item cannot be acquired: a) competitively within a reasonable timeframe; b) meet appropriate performance standards, or c) at a reasonable price. The prime contractor is responsible for ensuring that all subcontractors comply with this requirement.

4.0 PRODUCT CONFORMANCE PROVISIONS

4.1 Product conformance. The products provided shall meet the salient characteristics of the CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices and be the same product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance. Proof of conformance may include, but shall not be limited to the performance of operational tests, lab tests, modeling and simulation and delivery of reports and data from these tests.

4.2 Records. Records of examinations and tests performed by or for the contractor shall be maintained by the contractor and made available to the Government upon the Government's request, at any time, during the performance of the contract and for a period of three years after delivery of the supplies to which such records relate.

5. PACKAGING.

5.1 Preservation, packing, and marking. Preservation, packing, and marking shall be as specified in the contract or order.

6. NOTES

6.1 Alternative offers. Dealers/distributors of below approved "suggested sources of supply" are also considered approved vendor sources of supply provided they certify they are proposing to supply the below approved CAGE/part number.

6.2 All other alternate offers:

a.) Not listed as a suggested source of supply below,

b.) Having a product that meets above salient characteristics, and

c.) Desiring to furnish product for USAF use shall submit technical specifications and certifications for technical evaluation/approval by the FSC 4920 cognizant engineer.

6.3 SUGGESTED SOURCES OF SUPPLY

The following table lists current sources:

MFG SOURCE(S) OF SUPPLY		
NAME & ADDRESS	**CAGE**	**PART NUMBER**
AAI/ALC Technologies INC. 404 Industrial Rd Suite One Choctaw, MS 39350	05172	9830-0051
AVITECH 225 East Industrial Park Drive Manchester, NH 03109	51314	2323

6.4 Source of documents.

6.4.1 Military Specifications, Standards, and Handbooks referenced herein may be obtained at https://assist.daps.dla.mil/online/ or available from the Standardization Documents Order Desk, 700 Robbins Ave, Bldg 4, Section D, Philadelphia, PA 19111-5094.

6.4.2 FAR and DFARS may be obtained from the Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Electronic copies of the FAR may be obtained from https://www.acquisition.gov/far/ . Electronic copies of the DFARS may be obtained from http://www.acq.osd.mil/dpap/dars/dfars/index.htm .

6.4.3 National Institute of Standards and Technology (NIST) standards may be obtained at http://www.NIST.gov or available from 100 Bureau Drive, Stop 1070, Gaithersburg, MD 20899-1070

6.5 Key Words

C-5 Aircraft
C-141 Aircraft
F-15 Aircraft
F-16 Aircraft
KC-135 Aircraft
T-38 Aircraft
T-39 Aircraft

MILITARY INTERESTS:

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