

Superseding
MIL-J-5251(USAF)
12 December 1949

MILITARY SPECIFICATION

JACK U-82/U

This specification has been approved by the Departments of the Army, the Navy, and the Air Force.

1. SCOPE

1.1 This specification covers one type of jack, designated Jack U-82/U, which incorporates a pushbutton microphone switch and a means for attaching the jack to clothing or parachute harness.

2. APPLICABLE SPECIFICATIONS, STANDARDS, DRAWINGS, AND PUBLICATIONS

2.1 The following specifications, standards, and drawings, of the issue in effect on date of invitation for bids, form a part of this specification to the extent specified herein:

SPECIFICATIONS

Federal

QQ-M-151 Metals; General Specification for Inspection of

Military

MIL-E-5400 Electronic Equipment, Airborne, General Specification For
JAN-B-121 Barrier-Materials; Greaseproof
JAN-M-745 Moisture-Resistance Test, For Material Items Used
in Electronic, Communication, and Electrical
Equipment

U. S. Air Force

7200 Electronic Equipment; Aircraft, Preservation, Pack-
aging, Packing and Marking for Shipment of
32549 Switch; Microphone Pushbutton, Type L-1 (Aircraft)

STANDARDS

MIL-STD-129 Marking of Shipments

DRAWINGS

U. S. Air Force

49D15039 Jack U-82/U - Assembly
49B15042 Clip Assembly - Jack

(Copies of specifications, standards, and drawings required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 General.- The material and workmanship and the general requirements of Specification MIL-E-5400 are applicable as requirements of this specification. Additional requirements shall be as specified herein.

3.2 Design.- The jack shall be fabricated in accordance with Drawing 49D15039.

3.3 Weight.- The weight of the jack shall not exceed 2-1/2 ounces.

3.4 Humidity.- There shall be no serious deterioration of parts, and the jack shall otherwise meet the requirements of this specification, after subjection to humidity cycling.

3.5 Salt spray.- The metal parts of the jack shall not exhibit excessive corrosion as a result of exposure to salt spray.

3.6 Insertion and withdrawal force.- The following requirements shall apply when the jack is tested for insertion and withdrawal forces.

3.6.1 The force required for insertion and withdrawal of the jack with its mating plug, or plugs, prior to the life test shall be in accordance with the following table:

<u>Jack and mating plug combination</u>	<u>Insertion force in pounds</u>	<u>Withdrawal force in pounds</u>
U-82/U and U-75/U	10 maximum	8 ±2
U-82/U and PJ-292	5 maximum	4 $\begin{matrix} +2 \\ -1 \end{matrix}$
U-82/U and PJ-054R (or PJ-054B)	5 maximum	3 ±1

3.7 Dielectric strength.- The jack shall be capable of withstanding a 500-volt breakdown test without flash-over or damage.

3.8 Insulation resistance.- The following requirements shall apply when the jack is tested for insulation resistance.

3.8.1 The insulation resistance shall be greater than 100 megohms under normal atmospheric conditions.

3.8.2 The insulation resistance shall be greater than one megohm within 1 hour after completion of the humidity exposure.

3.9 Contact resistance.- The potential drop between the contacts of the jack and its mating plug, or plugs, shall be less than 0.002 volt dc.

3.10 Life.- The jack shall be capable of withstanding a 5,000-cycle life test. The force required to separate the jack from its mating plug, or plugs, upon completion of the life test, shall be greater than 60 percent of the separation force measured prior to the life test.

3.11 Temperature cycling.- The jack shall be capable of withstanding 10 temperature cycles without cracking or warping of the phenolic, loosening of metal parts, or any other significant damage.

3.12 Pushbutton switch.- The pushbutton switch shall be in accordance with Specification 32549.

3.13 Clip.- The metal clip shall be in accordance with Drawing 49B15042.

3.14 Identification of product.-

3.14.1 Use of AN or MIL designations.- AN or MIL designations shall not be applied to a product, except for Qualification test samples, nor referred to in correspondence, until notice of approval has been received from the activity responsible for qualification, or from the Aeronautical Standards Group.

3.15 Government-loaned property.- When provided for in the contract or purchase order, the following items will be furnished by the Government to the contractor upon his request:

Plug Connector U-75/U
 Plug PJ-292
 Plug PJ-054R (or Plug PJ-054B)

4. SAMPLING, INSPECTION, AND TEST PROCEDURES

4.1 Classification of tests.- The inspection and testing of the jack shall be as follows:

- (a) Qualification tests: qualification tests are those tests accomplished on samples submitted for qualification as a satisfactory product.
- (b) Inspection tests: Inspection tests are those tests accomplished on jacks manufactured and submitted for acceptance on the contract.

4.2 Test conditions.- Unless otherwise specified, the tests on the jack shall be made under any combination of conditions within the ambient ranges indicated below:

<u>Condition</u>	<u>Range</u>
Temperature	20 to 30°C
Relative Humidity	20 to 80 percent
Barometric Pressure	24 to 31 inches of mercury

4.3 Qualification tests.-

4.3.1 Prior qualification.- Unless otherwise specified by the procuring activity, jacks which have not previously passed a Qualification test, or which have passed the Qualification test and have been modified in any manner, shall satisfactorily pass a Qualification test prior to the acceptance of any jacks.

4.3.2 Sampling instructions.- Qualification test samples shall consist of 10 jacks. Samples shall be identified as required, and forwarded to the activity responsible for qualification designated in the letter of authorization from the qualifying activity. (See paragraph 6.2.)

4.3.3 Tests.- The Qualification tests shall consist of the Inspection tests and the following tests.

4.3.3.1 Temperature.- The jack shall be subjected to the following temperature cycle, for a total of 10 cycles:

<u>Exposure in minutes</u>	<u>Temperature in degrees centigrade</u>
60	+85, ±3
0 to 3	+23, ±5
60	-65, ±3
0 to 3	+23, ±5

4.3.3.2 Humidity.- The jack shall be subjected to the Humidity test in accordance with Specification JAN-M-745 for a period of 30 days.

4.3.3.3 Salt spray.- The jack shall be subjected to the salt spray test in accordance with Specification QQ-M-151. The samples shall be exposed to the salt spray for a period of 96 hours.

4.4 Inspection tests.- The Inspection tests shall consist of Individual tests and Sampling tests.

4.4.1 Unless otherwise specified, contractor's records of all inspection work and tests, giving the results of tests required to determine compliance with the requirements and tests specified herein, shall be kept complete and shall be available to the Government representative at all times. The record or report of inspection and tests shall be signed or approved by a responsible person specifically assigned by the contractor. Contractors not having laboratory testing facilities satisfactory to the Government shall engage the services of a commercial testing laboratory capable of conducting tests to determine compliance with all the requirements and tests in the specification, and acceptable to the Government.

4.4.2 Individual Tests. Each jack shall be subjected to the following tests.

4.4.2.1 Examination of product.- The jack shall be subjected to visual and mechanical inspection to determine full and complete compliance with the requirements specified herein.

4.4.2.2 Insertion and withdrawal.- The mating plug, or plugs, shall be inserted into the jack under test. The force shall be applied in the direction along the axis of the plug and shall be increased gradually until the plug is completely inserted. To separate the plug from the jack the force shall be applied along the axis of the plug and shall be increased gradually until the plug is completely separated from the jack. The maximum force applied during the insertion shall be taken as the insertion force. The maximum force applied during the withdrawal shall be taken as the withdrawal force.

4.4.3 Sampling tests.- One jack shall be selected at random from each lot of 100 or fraction thereof on the order and subjected to the following Sampling tests. These tests shall be in addition to the Individual tests specified herein.

4.4.3.1 Electrical.- The jack shall be tested in accordance with the test conditions and test procedures described in the following subparagraphs.

4.4.3.1.1 Dielectric strength.- A 60-cycle a-c voltage of 500 volts, rms, shall be applied between mutually insulated terminals of the jack for a minimum of 2 seconds. When the potential is increased gradually from a low value, the specified voltage shall be reached in less than 5 seconds.

4.4.3.1.2 Insulation resistance.- The insulation resistance shall be measured between all mutually insulated terminals by means of a megohm bridge, megger, or other approved devices at a potential not to exceed 500 volts or not less than 100 volts dc.

4.4.3.1.3 Contact resistance.- The mating plug, or plugs, shall be inserted into the jack under test. The direct current through each contact shall be 100 milliamperes, derived from a source of potential, having a minimum open circuit voltage of 5 volts. The potential drop shall be measured across each contact between the jack and plug.

4.4.3.2 Life test.- The jack shall be subjected to 5,000 cycles of complete insertion of and withdrawal of its mating plug, or plugs, at a rate not to exceed 10 cpm in accordance with the following procedure.

4.4.3.2.1 The jack shall be measured for insertion and withdrawal force with its mating plug, or plugs.

4.4.3.2.2 Using another plug, or plugs, of the same type used to measure insertion and withdrawal force, the required 5,000 cycle life test shall be performed.

4.4.3.2.3 After completion of the 5,000 cycles, the force required for withdrawal shall be measured again, using the same mating plug, or plugs, used for the original measurement.

4.4.4 Rejection and retest.- Rejected jacks shall not be resubmitted for inspection without furnishing full particulars concerning previous rejection and measures taken to overcome the defects.

4.5 All parts, specimens, or assemblies destroyed in making tests required by this specification and drawings, to determine compliance with the specification and drawings, shall be in addition to the quantity specified in the contract or purchase order and shall be furnished without increasing the cost of the contract or order.

5. PREPARATION FOR DELIVERY

5.1 Packaging and packing.- The jack shall be packaged, packed, and marked for shipment in accordance with Specification 7200, method II, modified as follows.

5.1.1 Unit packaging.- Each jack shall be wrapped in grade A paper in accordance with Specification JAN-B-121 and placed in a greaseproof, waterproof, moisture-vaporproof envelope sealed in accordance with method 1A-8.

5.1.2 Intermediate packaging.- Ten unit packages shall be placed in an intermediate set-up or folding carton.

5.2 Marking of shipments.- Interior packages and exterior shipping containers shall be marked in accordance with Standard MIL-STD-125. The nomenclature shall be as follows: "Jack U-82/U, Specification MIL-J-5251A."

6. NOTES

6.1 Intended use.- Jack U-82/U terminates one end of a combination microphone headset extension cord. It is essentially a Jack U-61/U modified to include a push-button microphone switch and metal clip for attaching the jack to the clothing or parachute harness.

6.2 Provisions for Qualification tests.7 In the procurement of products requiring qualification, the right is reserved to reject bids on products that have not been subjected to the required tests and found satisfactory for inclusion on the Military Qualified Products List. The attention of suppliers is called to this requirement, and manufacturers are urged to communicate with the Commanding General, Wright Air Development Center, Wright-Patterson Air Force Base, Ohio; the activity responsible for qualification, and arrange to have the products that they propose to offer to the Army or the Air Force, tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. Information pertaining to qualification of products covered by this specification may be obtained from the above designated activity responsible for qualification.

NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specification, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

Custodians:

Army - Signal Corps
Air Force

Other interest:

Army - T