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Telecommunications
Engineers***

**ENGINEERING COMMITTEE
Interface Practices Subcommittee**

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**Test Method for
Cantilever Force, Female “F” Port**

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1. Introduction

1.1. Executive Summary

High cantilever forces on “F” ports can damage them. This test procedure specifies a way apply a cantilever force on ports and inspect them for damage.

1.2. Scope

This test procedure is used to evaluate the mechanical strength of female “F” ports on passive or active devices when a cantilever force is applied to the port.

1.3. Benefits

This procedure is needed to determine whether a “F” port is strong enough to withstand high cantilever forces without damage.

1.4. Intended Audience

This is a laboratory test intended for engineers to evaluate product performance.

2. Normative References

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- No normative references are applicable.

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3.2. Standards from Other Organizations

- No informative references are applicable.

3.3. Published Materials

- No informative references are applicable.

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5. Abbreviations

SCTE	Society of Cable Telecommunications Engineers
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6. Equipment

Tensile force testing machine (Instron Model 1122 or equivalent) with a recording device. It may be desirable to have an automatic cut off feature which can be activated by a maximum excursion limit setting and/or maximum force limit.

Mounting stand to secure the sample to the Instron base with the sample test port perpendicular to the axis of applied force. A possible configuration is shown in the accompanying drawing (Figure 1).

Cantilever test fixture (Figure 2) that goes over the port to be tested.

Mounting fixture to attach the test fixture to the Instron moving cross head. A pin through the test fixture 0.25 inch hole allows it to swivel as the cross head moves up.

7. Test Samples

A minimum of five samples of each device shall be used for testing.

8. Testing Method

1. Calibrate the tensile test fixture per the manufacturer's recommendations.
2. Secure the device with the female "F" port to be tested to the mounting base.
3. Install the cantilever test fixture onto the female "F" port to be tested and zero out the force gauge.
4. The female "F" port under test shall be pulled to the specified limit or until failure at a cross head speed of 2 inches per minute. Failure is defined as any part of the port breaking, cracking or bending when inspected with the naked eye.
5. Record the maximum measured tensile force on the attached Report Form.
6. Calculate cantilever failure force applied to the tip of the female "F" port using the following formula:

$$\text{Cantilever Force} = \text{Tensile Force} * 7.5$$

Note: The factor 7.5 is the ratio of the test fixture length, 2.25", to the port bore depth, 0.30".

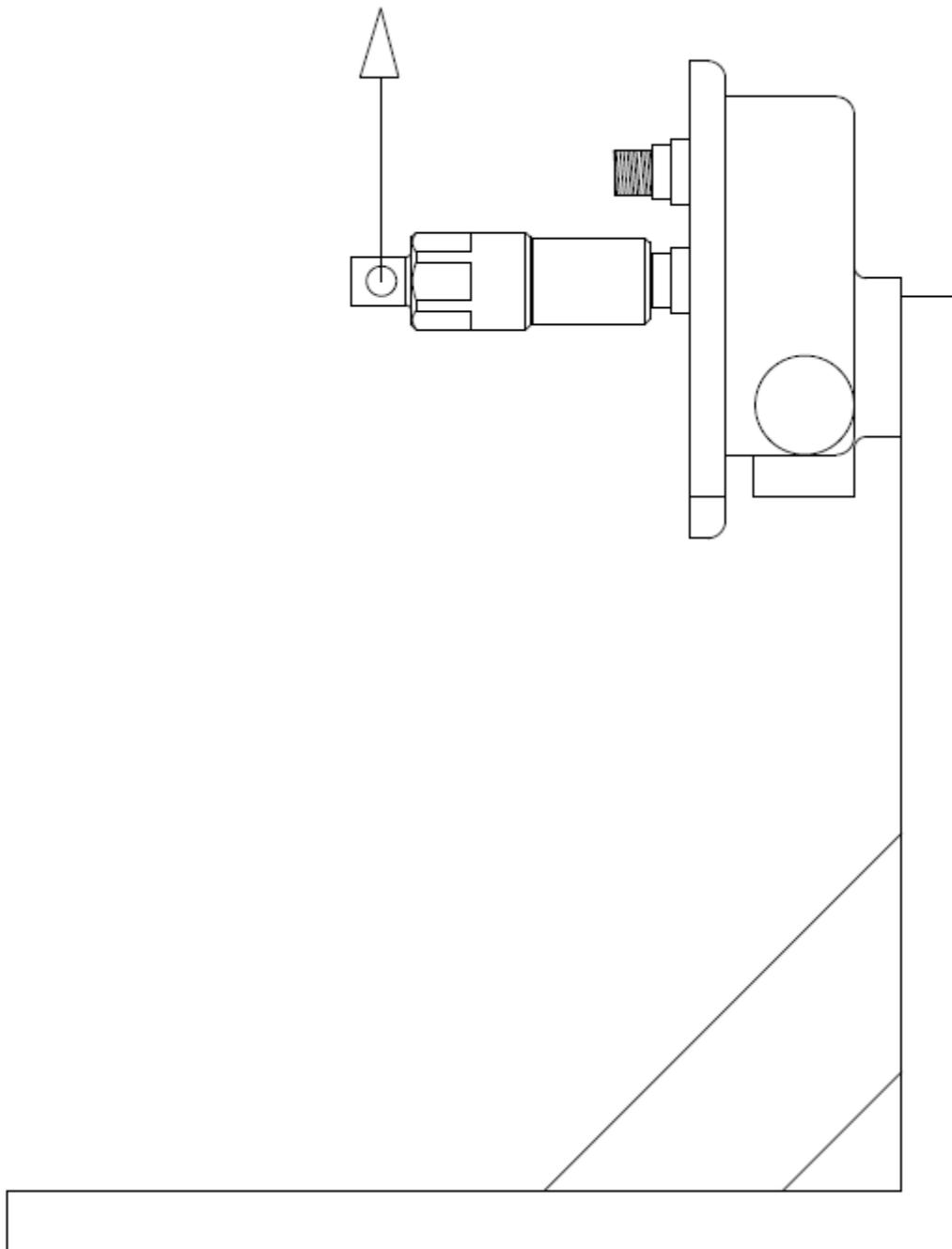


Figure 1 - Possible Mounting Stand With Device And Test Fixture Attached. Test Fixture To Be Pulled In The Direction Indicated By The Arrow.

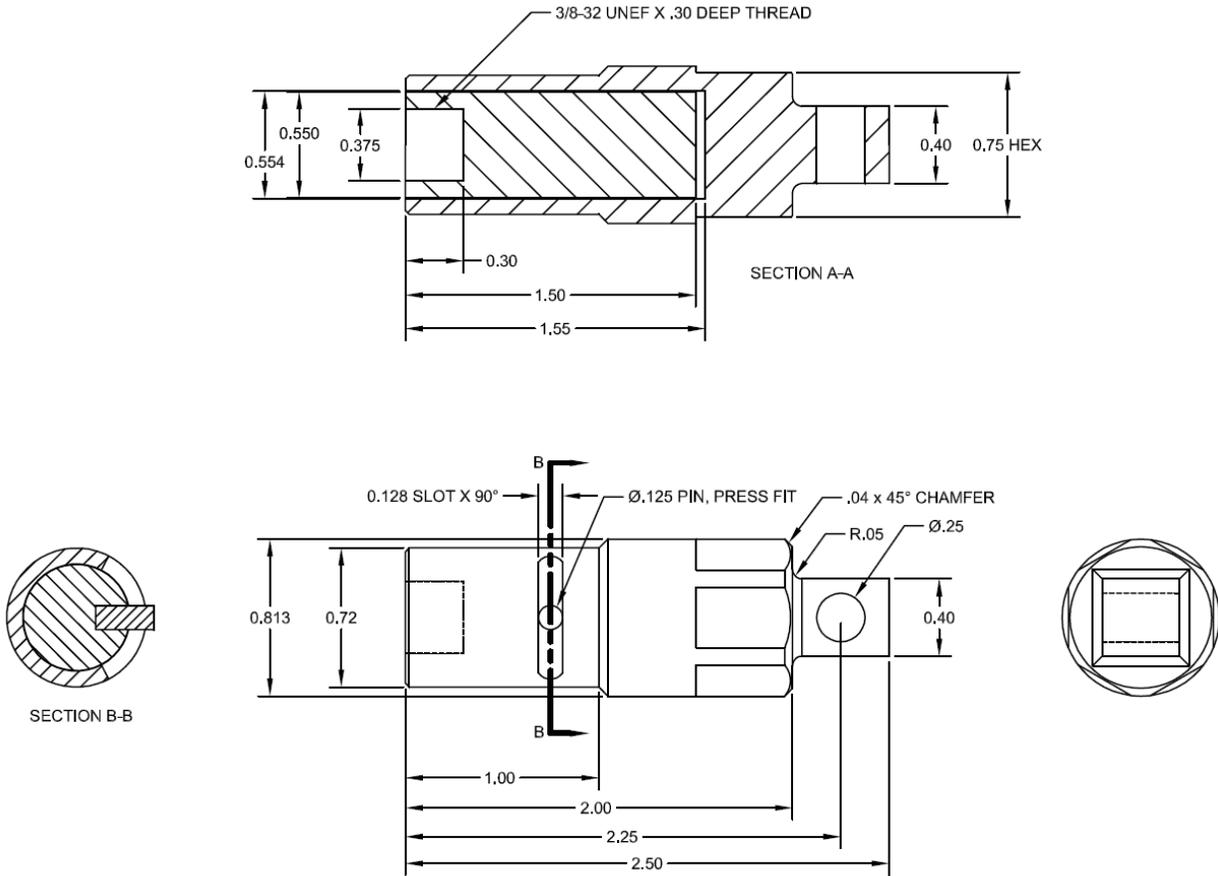


Figure 2 - Test Fixture Design

Appendix A: Report Form

Device Type			
Manufacturer			
Test Sample Number	Force Measured on Tensile Tester (lbf)	Cantilever Failure Force at Port Tip (lbf)	Comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			