

Title: ACCEPTANCE TEST PROCEDURE FOR SMALL VALVES

ACCEPTANCE TEST PROCEDURE FOR
SMALL VALVES
FOR
LIGO VACUUM EQUIPMENT

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and
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Information contained in this specification and its attachments is proprietary in nature and shall be kept confidential. It shall be used only as required to respond to the specification requirements, and shall not be disclosed to any other party.

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PROCESS SYSTEMS INTERNATIONAL, INC.				SPECIFICATION		
INITIAL APPROVALS	PREPARED	DATE	APPROVED	DATE	Number	Rev.
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ACCEPTANCE TEST PROCEDURE FOR SMALL VALVES

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5.0 TEST

- 5.1 Each valve shall be inspected for cleanliness by black light. Valves shall be recleaned if any contamination is found. The vendor's standard inspections shall be performed.
- 5.2 All small vacuum valves shall be leak tested (using oil-free pumping equipment and leak detector). The vendor's standard leak checking procedures shall be used. Valve body and flange total leakage shall be measured to be less than 10^{-9} torr liter/sec of helium before shipment, or less if the vendor's standard is lower. Seat leakage shall be shown to be less than 1×10^{-9} torr liter/sec of helium, or less if the vendor's standard is lower.
- 5.3 Final acceptance will occur in the field. The field test will consist of a valve functional check and the leak test of the associated isolatable section of equipment.

6.0 DOCUMENTATION

The manufacturer's standard QA reports (including final functional test reports) will be submitted.

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1.0 PURPOSE

The purpose of this Acceptance Test Procedure (ATP) is to define the overall plan for acceptance testing of this component in order to demonstrate that it meets the requirements of the LIGO Vacuum Equipment Specification, LIGO-E940002-02-V, Revision 2, dated August 31, 1995.

2.0 GENERAL

- 2.1 The procedure applies to all of the stations. Differences between the stations will be due to different vacuum equipment, size of the isolatable sections, surfaces, volumes and quantities of instrumentation and equipment.
- 2.2 Tests will be performed by PSI personnel, and will be witnessed by an agent (with sign-off authority) designated by LIGO.

3.0 REFERENCE DOCUMENTS

The following documents shall be used in conjunction with this one for performing the ATP:

PSI Specification V049-2-059, Small Vacuum Valves

4.0 RESPONSIBILITY

It shall be the responsibility of the project engineer assigned to this component or subsystem to ensure that all of the procedures required by this ATP are performed and that the LIGO witness signs the data sheet/test certification (attached to this procedure) verifying that the procedures have been performed. The data sheet shall also be signed by the project engineer, or other PSI person designated by the project manager. Any test listed in the data sheet which is not applicable to this component or subsystem shall be noted by writing "NA" in the appropriate space. Any deviations from the test procedures or parameters shall be noted on the data sheet.

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LIGO VACUUM EQUIPMENT ACCEPTANCE TEST DATA/TEST VERIFICATION

Equip. Tag _____ S/N _____

Type of Test	ATP Para.	ATP Req'ment/ Actual Data	Comments	LIGO Witness Sign./date	PSI Sign./date
Visual Inspection	5.1				
Labelling Verification					
Bakeout					
Leak rate	5.2	1×10^{-9} torr l/sec He			
Factory Endurance Test	NA				
Factory Speed Test	NA				
Functional Test	NA				
RGA Test	NA				
Particle Count	NA				
Pumpdown	NA				