Title: SPECIFICATION FOR ION PUMPS ACCEPTANCE TEST PROCEDURE

ACCEPTANCE TEST PROCEDURE FOR ION PUMPS FOR LIGO VACUUM EQUIPMENT

Hanford, Washington

and

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REV LTR	BY-DATE	APPD. DATE	DESCRIPTION OF CHANGE
0	F. Bark 5/2/96	R E B 5/2/96	RELEASED FOR FDR PER DEO # 160

PROCESS SYSTEMS INTERNATIONAL, INC.				SPECIFICATION	
INITIAL APPROVALS	PREPARED	DATE	Approved	DATE	Number: A V049-2-106 LIGO-E960173-00-V	Rev. 0
	F. Bark	5.2.96	R E B	5/2/96		

1.0 PURPOSE

The purpose of this Acceptance Test Procedure (ATP) is to define the overall plan for acceptance testing of main and annulus ion pumps and controllers in order to demonstrate that they meet 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 the stations. Slight differences among each station will be due to different vacuum equipment, size of the isolatable section sizes, surfaces, volumes, and quantities involved relating to instrumentation, equipment, etc.

2.2 Tests will be performed by PSI personnel, and will be witnessed by an agent designated by LIGO.

3.0 REFERENCE DOCUMENTS

The attached equipment acceptance test data/test verification form shall be filled out when performing the ATP and presented to LIGO.

4.0 RESPONSIBILITY

It shall be the responsibility of the project engineer assigned to this component or subsystem to ensure that all procedures required by this acceptance test procedure are performed, and that a person from LIGO designated as the witnessing agent, and who has signoff authority, shall sign 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 by someone designated by the PSI project manager. Any test listed in the data sheet which is not applicable to this component or subsystem shall be noted by writing "N/A" in the appropriate space. Any deviations from the test procedures or parameters shall be noted on this data sheet.

5.0 FIELD TEST PROCEDURE

5.1 Ion Pumps

5.1.1 Main Ion Pumps

a. Check for physical damage to the pump, controller and HV cables.

b. Prior to pump installation, verify that it still is under vacuum.

c. While still under vacuum,Install the controller, hook up control wires and HV cable(s) to the controller and feedthru(s). Then test controller functionality and all interlocks.

d. After pump installation, vacuum leak check it with isolation valve closed. Refer to PSI leak test procedure V049-2-014.

e. Speed test as documented in Specification V049-2-004 will be performed at the factory for only the first manufactured ion pump.

5.1.2 Annulus Ion Pumps

Refer to Section 5.1.1 (Main Ion Pumps).
Item e (speed test) is not applicable.

LIGO VACUUM EQUIPMENT ACCEPTANCE TEST DATA/TEST VERIFICATION

Equip. Tag (MAIN)_____ **S/N**_____

Type of Test	ATP Para.	ATP Req'ment/ Actual Data	Comments	LIGO Witness Sign./date	PSI Sign./date
Visual Inspection		PSI field check			
Labelling Verification		PSI field check			
Bakeout		Field. By PSI			
Leak rate		$<1X10^{-9}$ Torr-L/s			
Factory Endurance Test		N/A			
Factory Speed Test		Torino,Italy. PSI witness first only			
Functional Test		Torino,Italy. PSI witness first only. PSI, Field test all.			
Electrical continuity test		Field. By PSI			
System interlocks test		Field. By PSI			
Ultimate Pressure		$<1X10^{-9}$Torr			