Title:

SPECIFICATION FOR METAL O-RING LEAK TESTING

PROJECT ENGINEER
MANUFACTURING ENGINEER
QUALITY ASSURANCE ENGINEER
PROJECT MANAGER

NOV 0 3 1997

REV LTR	BY-DATE	APPD. DATE	DESCRIPTION OF CHANGE
Ø	SM 10/30/97	RGS	Released per DCO 0567

PROCESS SYSTEMS INTERNATIONAL, INC. — **SPECIFICATION**

INITIAL APPROVALS	PREPARED	DATE	Approved	DATE	Number:	Rev.
	SM	10/30/97	RGS	10/31/97	A V049-2-201 LIGO-E970156-00-V	Ø

LIGO PROJECT METAL O RING LEAK TEST sm metalo_r.xls

Metal O ring Leak Test Procedure Using Two 60" Doors as the Test Fixture

1.0 Scope

1.1 The procedure outlined in paragraph 2.0 is to be performed two times to verify results. These two test sets will require a total of 2 metal o rings, 2 UHV Viton and 4 atmos Viton o rings. All testing is to be done within a cleanroom environment.The doors are cleaned for final assembly.

1.2 Major Components

1.2.1 Doors:Flat faced V049-4-014 ; Grooved faced V049-4-A4

1.2.2 Leak Detector:Balzers HLT 160

1.2.3 Turbo:Edwards Main Turbo Cart for LIGO

1.2.4 Viton o rings:Atmos - V049M022V ; UHV - V049M023V

1.2.5 Metal o rings (by LIGO) :Advanced Seal, John Stofira, 203-985-3121

1.2.6 He and clean air supply

1.2.7 Strip chart recorder

2.0 Procedure

2.1 Install new baked Viton o rings in both the atmos and UHV grooves.

2.2 Pump the annulus with the leak detector backing the turbo.

2.3 He leak check the atmos o ring using a "bag" fixture to flood the outside of the flange assembly with He for 2 minutes.

2.4 Record data on the attached metal o ring leak test data sheet every _____ seconds.*

2.5 Vent the annulus with clean air.

2.6 Pump the chamber with the leak detector backing the turbo.

2.7 He leak check the UHV o ring by evacuating the annulus and backfilling with He to atmospheric pressure for 2 minutes.

2.8 Record data on the metal o ring leak test data sheet every _____ seconds.*

2.9 Replace the UHV Viton o ring with a new metal o ring following the manufacturer's instructions for installation.Replace the atmospheric o ring with a new Viton o ring.

2.10 Repeat steps 2.2 thru 2.8.

*Use a strip chart recorder at 30cm/min. to record the measured leak rate vs. time.

Title

LIGO PROJECT - METAL O RING LEAK TEST DATA SHEET sm metalo_r.xls

TEST NO.: DATE: TIME: BY:

O-RING TYPE: ATMOS. UHV:

DETECTOR:	
CALIBRATION (INTERNAL CALIBRATED LEAK):	
CORRECT. FACTOR:	
CALIBRATED LEAK (SYSTEM CALIBRATION):	
SENSITIVITY:	
TURBO PRESS.:	torr
FORLINE PRESS.:	torr

ATMOS - ANNULUS	PRESSURE	LEAK RATE	NOTES

ANNULUS - UHV	PRESSURE	LEAK RATE	NOTES

COMMENTS:

CALCULATIONS:

Number

Rev.

SPECIFICATION

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