



CALIFORNIA INSTITUTE OF TECHNOLOGY  
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DCN No. E010209-00-D

SHEET 1 OF 1

10/29/01

# DOCUMENT CHANGE NOTICE (DCN)

DOCUMENT No. (DOC-REV-GP. ID)	TITLE	NEW REV.
LIGO-E0000029-A-W	LOS Optic Process Traveler Form	B

**CHANGE DESCRIPTION (FROM/TO):**

Added Wire Specification Section.

**REASON FOR CHANGE:** Updated for Detector Installation/Documentation.

**ACTION:**  Incorporate change  Attach DCN to drawing(s)  Other action (specify):

DISPOSITION OF HARDWARE (IDENTIFY SERIAL NUMBERS)	DCN DISTRIBUTION (X=incl. docs)																					
<input checked="" type="checkbox"/> No hardware affected (record change only) <input type="checkbox"/> List S/Ns which comply already: <input type="checkbox"/> List S/Ns to be reworked or scrapped: <input type="checkbox"/> List S/Ns to be built with this change: <input type="checkbox"/> List S/Ns to be retested per this change: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<table> <tr> <td></td> <td>Barish</td> <td>Coles</td> </tr> <tr> <td>X Coyne</td> <td>Lazzarini</td> <td>Lindquist</td> </tr> <tr> <td>Raab</td> <td>Sanders</td> <td>Shoemaker</td> </tr> <tr> <td>Stapfer</td> <td>X Tyler</td> <td>Weiss</td> </tr> <tr> <td>Whitcomb</td> <td>Sokolowicz</td> <td></td> </tr> <tr> <td colspan="3">X J. Hazel Romie</td> </tr> <tr> <td colspan="3">X D. Cook</td> </tr> </table>		Barish	Coles	X Coyne	Lazzarini	Lindquist	Raab	Sanders	Shoemaker	Stapfer	X Tyler	Weiss	Whitcomb	Sokolowicz		X J. Hazel Romie			X D. Cook		
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**SAFETY, COST, SCHEDULE, REQUIREMENTS IMPACT?**  No  Yes (If yes, enter Change Request number )

APPROVALS:	DATE	OTHER APPROVALS (specify)	DATE
ORIGINATOR: B. Weaver	10/29/01		
TASK LEADER: B. Weaver			
GROUP LEADER: D. Coyne	10/29/01		
DCC RELEASE:	11-11-01		

Originator		Cognizant Engineer		Ext./Phone#
Optic Dwg/Part Number	Rev	Optic Description	Serial Number	

**Process Flow:** Any deviation from procedures must be approved and noted below.

SENSOR/ACTUATOR HEADS E970154 Section 3.2	1	Match 5 sensor/actuator heads.	Serial Number	Open Light Voltages	Resistance (~13ohms)	Initial and Date
			1.			
			2.			
			3.			
			4.			
			5.			
MAGNET PREPARATION E970154 Section 5.1	2	Match one set of 6 magnets (4 S, 2 N) in strength to within 5 percent of each other.	Which type of side standoff used: (RM or Reg.)	Polarity	Gaussmeter Strength	Initial and Date
				1.		
				2.		
				3.		
				4.		
				5.		
			6.			

N.B.: A copy of this traveler must be submitted to the DCC each time the original is shipped with the associated part(s) and when the traveler has been completed.

# LIGO PROCESS TRAVELER

DCC Number:

E\_\_\_\_\_ -00-X

Continue Section 5.1	3	Make up one set of magnets (2 S, 2 N, 2 S sides).	VacSeal Label Date	Cure Start date & time	Cure End date & time	Initial and Date
OPTIC PREPARATION E970154 Section 5.2.1.2	4	Clean optic as per LIGO-E990035.				Initial and Date
	5	Cement one guide rod and one wire standoff to optic.	VacSeal Label Date	Cure Start date & time	Cure End date & time	Initial and Date
	6	Remove fixture and inspect bond visually.				Initial and Date
APPLYING MAGNETS E970154 Section 5.2.2.2	7	Cement the 6 magnet/standoff assemblies from step 3 to the optic.	VacSeal Label Date	Cure Start date & time	Cure End date & time	Initial and Date
	8	Remove plungers after 2 hour elevated cure time and, after cool, perform the razor blade test on the bonded magnet assemblies.		Any bond failures?	Note the location of bond failures on Figure 1.	Initial and Date
OPTIC BALANCING E970154 Section 5.4.3.2 and 5.4.3.3	9	Wire Specification	Spool PO#:	Spool Lot#	Order Date:	Wire diam.:
	10	Suspend the optic in the LOS structure and balance it to its specific tilt angle - E000028.			Balance Angle	Initial and Date
	11	Cement the wire standoff used in balancing.	VacSeal Label Date	Cure Start date & time	Cure End date & time	Initial and Date

<b>Continued</b> <b>E970154</b> <b>Section 5.4.3.3</b>	12	Remove optic from LOS structure.				Initial and Date
	13	Air blow the optic with dry nitrogen and visually inspect it.				Initial and Date
	14	Load the optic into the vacuum bake oven and vacuum bake per E960022-06 (B. Rivera/K. Ryan).	VBO Load #____ Scan #_____	Director Signature _____	VBO Load #____ Scan #_____	Director Signature _____
			VBO Load #____ Scan #_____	Director Signature _____	VBO Load #____ Scan #_____	Director Signature _____
			VBO Load #____ Scan #_____	Director Signature _____	VBO Load #____ Scan #_____	Director Signature _____
<b>E970154</b> <b>Sec. 5.4.4</b>	15	Resuspend and verify balance.			Balance Angle	Initial and Date
<b>Sensor/Actuator Head Installation</b> <b>E970154</b> <b>Section 5.5</b>	16	Install sensor/actuator heads to 60% of their open light voltage.	Position	Voltage (near 60% of open light voltage)	Final voltage after installing PAMs	Initial and Date
			1.			
			2.			
			3.			
			4.			
			5.			

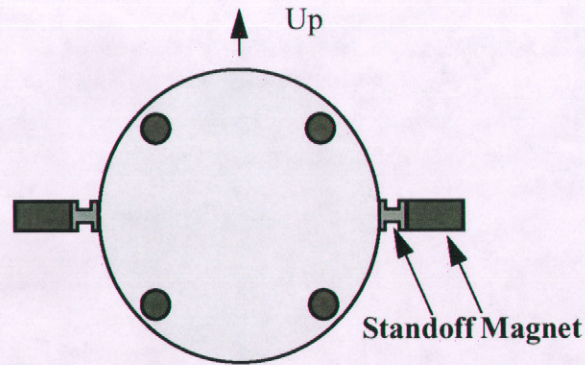
<b>Measuring Resonant Freq. E970154 Section 5.5.1</b>	17	Measure the resonant frequencies.	Pitch Yaw Pendulum Vertical Roll Violin		
	18	Install in chamber as per E000061 or E000062 installation documents.		Chamber location:	Initial and Date

**NOTES:**

Indicate location of failed bonds, if any.

As reference, indicate the position of the wire rod and wire standoff on Figure 1

Figure 1



# LIGO PROCESS TRAVELER

DCC Number: E\_\_\_\_-00-X

Note any all special actions and notes pertaining to this optic:

Table 1: Action Items

DATE	NAME	DESCRIPTION

**Table 1: Action Items**

<b>DATE</b>	<b>NAME</b>	<b>DESCRIPTION</b>