LIGO

California Institute of Technology
Massachusetts Institute of Technology

Document Change Notice (DCN)

DCN No. E040345-00-K

Sheet 1 **of** 2

DOCUMENT No.	TITLE	NEW REV
D040296-A-K	**BOTTOM BLADE SPRINGS**	**B**
D040297-A-K	**MIDDLE BLADE SPRINGS**	**B**
D040298-A-K	**TOP BLADE SPRINGS**	**B**

NOTE: - Blades released to an A revision with E040312-00-K

CHANGE DESCRIPTION (FROM / TO):

Release level change FROM A TO B
Holes in blade tip reoriented FROM across the blade tip TO along the blade tip
Blade tip narrowed FROM 15mm TO 10mm
Date format changed FROM DD/MM/YY TO DD/MMM/YY
Next assy changed FROM Upper TO Top Mass (D040297)

CONTINUED ON PAGE 2 of 2

REASON FOR CHANGE: Blade tip needed to be narrower on bottom blades in order to avoid an interference. This required the holes to be re-oriented. The other two blades were changed to match and to build on experience with that orientation on the 2001 prototype and the Blade test facility. Title changed to reflect agreed naming convention. Notes on drawing changed as per advice from blade committee.

ACTION: ☒ **Incorporate Change** ☐ **Attach DCN to Drawings** ☐ **Other Action (specify):**

DISPOSITION OF HARDWARE (IDENTIFY SERIAL NUMBERS)	
☒	**No hardware was affected (record change only):**
☐	**List S/Ns which comply already:**
☐	**List S/Ns to be reworked/scrapped:**
☐	**List S/N's to be built with this change:**
☐	**List S/Ns to be retested per this change:**
☐	

DCN DISTRIBUTION

Barish	**Coyne**	**Fritschel**
Giaime	**Lazzarini**	**Lindquist**
Raab	**Shoemaker**	**Sibley**
Sigg	**Tyler**	**Weiss**
Whitcomb	**Worden**	**Hough**
Cantley	**Greenhalgh**	**Strain**
N. Robertson		

J. Romie

SAFETY, COST, SCHEDULE, REQUIREMENTS IMPACT? ☒ **NO** ☐ **YES (If YES, enter CR (CCB) or TCP (TRB) #)**

APPROVALS:	**DATE**	**OTHER APPROVALS (SPECIFY)**		**DATE**
ORIGINATOR: I Wilmut	20JUL04	**COG. SCI.**:	NA -- record change only	
PROJECT MANAGER: NA -- record change only		**COG. ENG. (US):**	Calum I. Torrie	23JUL04
P. INVESTIGATOR: NA -- record change only		**SUS LEADER & S.E.:**	Dennis Coyne 2004.08.05 14:48:46 -07'00'	
DCC RELEASE:		**P.M. (US):**	NA -- record change only	

DOCUMENT No. TITLE NEW REV

CHANGE DESCRIPTION (FROM / TO):

CONTINUED FROM PAGE 1 of 2: -

Notes changed to incorporate recommendations from Ed Jasnow, Calum and Janeen and the blade committee. In short we re-ordered the notes and specified the machining process as follows: -

FROM

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. REMOVE ALL SHARP EDGES, R.02 MIN.
2. DO NOT SCALE FROM DRAWING.
3. ALL MACHINING FLUIDS SHALL BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE AND SILICONE, SUCH AS CINCINNATI MILACRON'S CIMTECH 410 (STAINLESS STEEL)
4. SCRIBE, ENGRAVE OR STAMP DRAWING PARTNUMBER ON NOTED SURFACE OF PART AND A THREE DIGIT SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST PART AND PROCEED CONSECUTIVELY. USE .07" HIGH CHARACTERS. EXAMPLE: D020188- 001. A VIBRATORY TOOL MAY BE USED.
5. INTERPRET DIMENSIONS PER: ANSI Y14.5 1982
6. PRIOR TO DELIVERY HARDEN BY HEAT TREATMENT AT 435°C FOR 100 HOURS AND AIR COOL
7. DURING HEAT TREATMENT THE PART MUST BE SUPPORTED SO THAT IT DOES NOT CHANGE RADIUS DUE TO SELF WEIGHT

TO

1) DO NOT SCALE DRAWING.
2) INTERPRET DIMENSIONS PER ANSI Y14.5 1982
3) ALL MACHINING FLUIDS .....
4) FABRICATE FROM SHSEET MATERIAL; FORM RADIUS BY ROLLING.
5) REMOVE ALL SHARP EDGES, R.02 MIN.
6) SCRIBE, ENGRAVE...
7) AFTER PARTS ARE ROLLED TO RADIUS, HARDEN FOR HEAT TREATMENT AT 435 DEG C FOR 100 HOURS AND AIR COOL. PARTS MUST BE SUPPORTED WITH TOOLING DURING HEAT TREATMENT TO AVOID RADIUS CHANGE DUE TO SELF WEIGHT. TOOLING FOR HEAT TREATMENT MAY BE A "BIKE RACK" TYPE OF TOOL THAT WILL ALLOW THE PARTS TO BE MOUNTED ON THEIR SIDES. PARTS MAY BE ROLLED AGAIN AFTER HEAT TREATMENT TO ADJUST RADIUS TO SPECIFICATION.