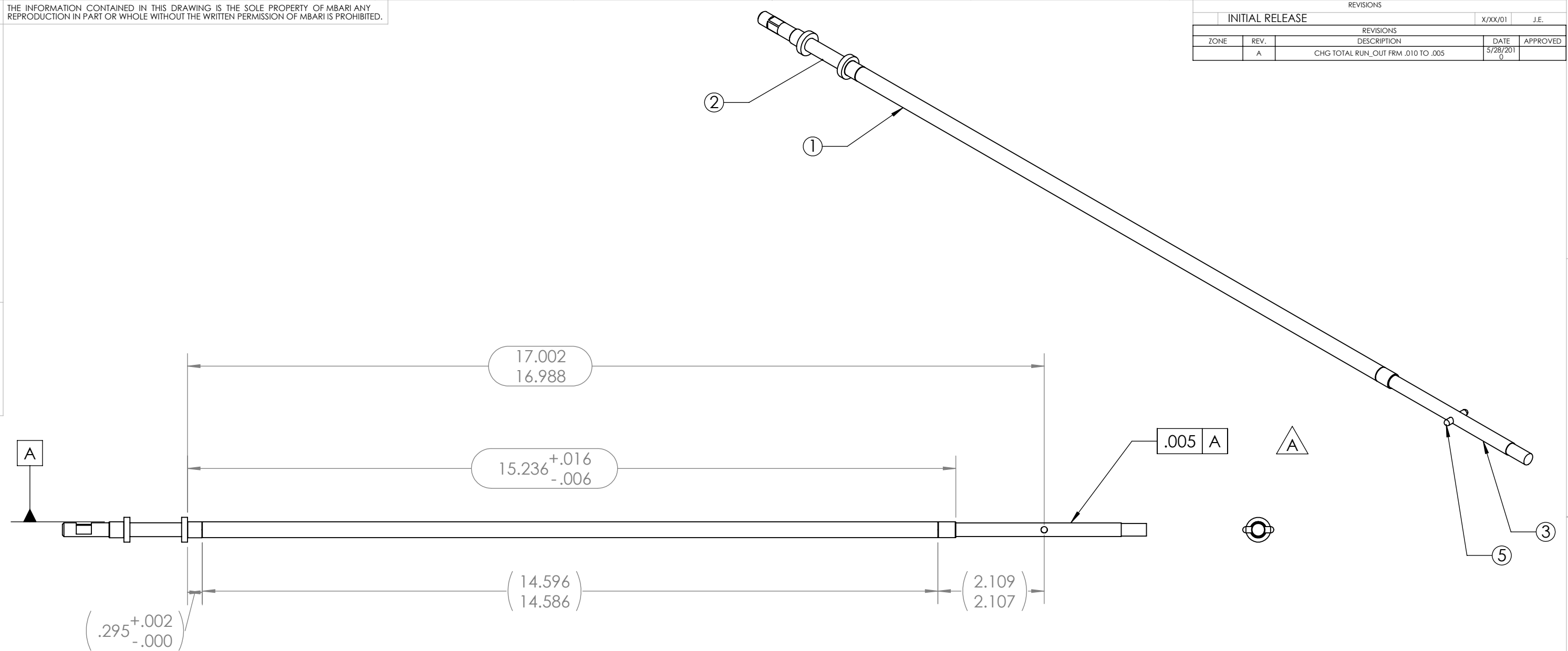


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REVISIONS				
INITIAL RELEASE			X/XX/01	J.E.
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	CHG TOTAL RUN_OUT FRM .010 TO .005	5/28/2010	



5	1	P-200574-08	Prop shaft Cross Pin	A	MBARI	6AL-4V Titanium
4	1	DP420	Devcon Epoxy		McMaster-Carr	
3	1	P-200568-08	Prop shaft AFT Journal	B	MBARI	6AL-4V Titanium
2	1	P-200566-08	Prop shaft FWD Journal	F	MBARI	6AL-4V Titanium
1	1	8668K11	Composite Tube	-	McMaster-Carr	G-10 Fiberglass Epoxy Laminate Sheet
ITEM NO.	QTY.	Part_Number	DESCRIPTION	Revision	Vendor	MATERIAL

BILL OF MATERIALS

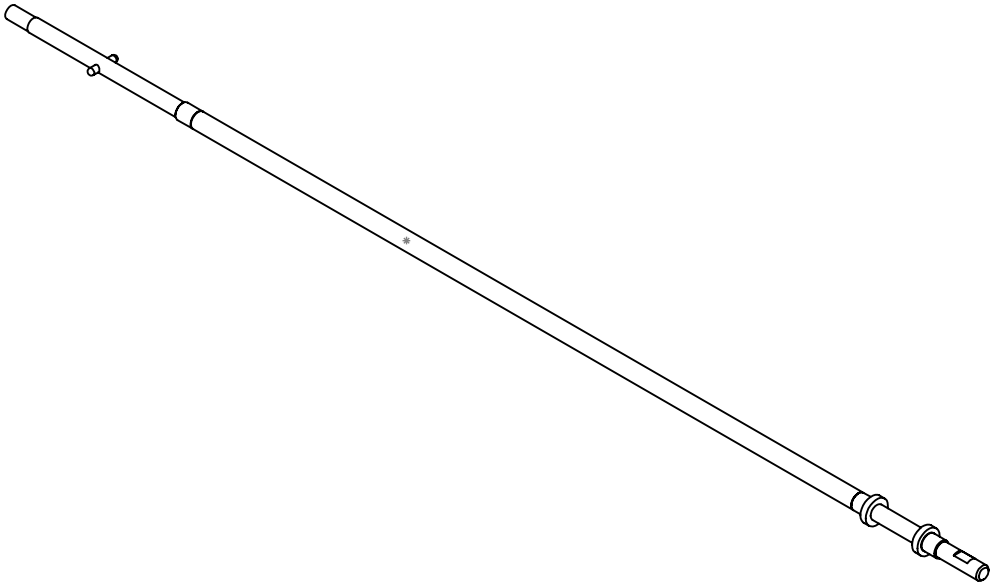
Shop / Q.C.		UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:				APPROVALS		DATE		Monterey Bay Aquarium Research Institute					
Inspector		1 PLACE DIM 1/16	2 PLACE DIM .02	3 PLACE DIM .005	ANGLES 1	DRAWN	J. ERICKSON		7/16/08		 MBARI 7700 Sandholdt Rd. Moss Landing, CA 95039 PH: (831) 775-1700				
Shop Foreman		1. DIMENSIONS ARE IN INCHES 2. DIMENSION LIMITS HELD AFTER PLATING. 3. REMOVE BURRS AND SHARP EDGES .015 MAX. 4. MACHINED FILLET RADII .0150-.030. 5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005 6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE.				ENGINEER	J. ERICKSON		7/16/08						
Engineer						CHECKED	J.S.		2/28/17						
NEXT ASSY Description	NEXT ASSY Number					PROJECT NO.		900739							
	A-200503-08	PROJECT		LRAUV		TETHYS - LRAUV Composite Propeller Shaft									
Application		DO NOT SCALE DRAWING				WEIGHT		0.06 lb.		SIZE B		DWG. NO. A-200567-08.DWG		REV. A	
										SCALE 1:4		CAD FILE: MECH ENG ON TORNADO SHEET 1 OF 3			

9. SEE NOTE ABOUT WHOI (BUILD5) VEHICLE

8. BOND BOTH ENDS (PART #2, 3) TO SHFT W/ SCOTCHWELD DP420.

7. PROJECT LIBRARY:\900739.LRAUV\Project.Drawings\
Project.ME.Dwgs\LRAUV\ThrusterAssembly\Propeller Shaft

NOTES: (CONT. FROM TITLE BLOCK)



BONDING SET-UP (EACH END).

ITEM NO.	QTY.	PART NO.	DESCRIPTION	VENDOR	MATERIAL SPECIFICATION
BILL OF MATERIALS					
Shop / Q.C.		UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:		APPROVALS DATE	
Inspector		1 PLACE DIM 1/16	2 PLACE DIM .02	3 PLACE DIM .005	ANGLES 1
Shop Foreman		1. DIMENSIONS ARE IN INCHES 2. DIMENSION LIMITS HELD AFTER PLATING. 3. REMOVE BURRS AND SHARP EDGES .015 MAX. 4. MACHINED FILLET RADII .0150-.030.			DRAWN J. ERICKSON X/XX/00
Engineer		5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005 6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE.			ENGINEER J. ERICKSON X/XX/00
NEXT ASSY Description	NEXT ASSY Number				CHECKED
					PROJECT NO.
					900739
					PROJECT
					LRAUV
					WEIGHT
					0.06 lb.

Monterey Bay Aquarium Research Institute

MBARI
7700 Sandholdt RD.
Moss Landing, CA 95039
PH: (831) 775-1700



TETHYS - LRAUV
Composite Propeller Shaft

SIZE
B

SCALE 1:4

DWG. NO.
A-200567-08.DWG

CAD FILE: MECH ENG ON TORNADO

REV.

SHEET 2 OF 3

NOTES: (CONT. FROM TITLE BLOCK)

87654321

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE	X/XX/00	J.E.

SEE MS WORD--LRAUV PROPELLER SHAFT ASSEMBLY DOC FOR DETAILS

ASS'Y RUNOUT--TO ATTAIN DESIRED RUNOUT 0.005", THE G-10 SHAFTING ID NEEDS TO BE CIRCULARIZED AS MUCH AS POSSIBLE WITH A VERY SMALL BORING TOOL IN A LATHE, BRING ID TO 0.188-0.192", THIS WILL ALLOW A SMALL BONDING CLEARANCE. SOME SHAFTING JUST MAY BE UNSUITABLE, CHECK PIECES

JOURNAL ENDS--ABRAID AND CLEAN, USE A LATHE TO HOLD AND ALIGN ALL PARTS, A FLAT TABLE TOP IS NOT SUFFICIENT TO HOLD RUNOUT SPECS.

DP420--SLIDE PARTS TOGETHER SEVERAL TIMES TO GET ADHESIVE DISTRIBUTED UNIFORMLY, THE AIR TRAPPED INSIDE THE SHAFT MAY PUSH THE JOURNALS OUT, SO USING A LATHE BOTH ALIGNS AND ACTS AS A JIG TILL THE EPOXY SETS

BEARING SURFACES--THE AREAS ON THE JOURNALS MAY NEED TO BE CAREFULLY CLEANED, AFTER BONDING, TO ALLOW PROPER BEARING INSTALLATION

←WHOI VEHICLE ONLY--- WHOI IS USING THE ORIGINALLY SPECIFIED CERAMIC BEARINGS- THESE ARE MANUF. TO A HIGHER TOLERANCE THAN THE SUBSTITUTED GLASS/DELRIN BEARINGS MBARI HAS BEEN USING. THE PROP SHAFT JOURNALS AND THE THRUST BEARING MOUNT HAVE BEEN MODIFIED TO PROPERLY FIT THE CERAMIC BEARINGS. THE ID AND OD ARE .314 AND .866 " RESPECTIVELY, NOMINALLY 8 X 22MM.

Shop / Q.C.

Inspector

Shop Foreman

Engineer

NEXT ASSY Description

NEXT ASSY Number

Application

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:

1 PLACE DIM 1/16

2 PLACE DIM .02

3 PLACE DIM .005

ANGLES 1

1. DIMENSIONS ARE IN INCHES

2. DIMENSION LIMITS HELD AFTER PLATING.

3. REMOVE BURRS AND SHARP EDGES .015 MAX.

4. MACHINED FILLET RADII .0150-.030.

5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005

6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE.

DO NOT SCALE DRAWING

APPROVALS

DATE

DRAWN J. ERICKSON

ENGINEER J. ERICKSON

CHECKED

PROJECT NO. 900739

PROJECT LRAUV

WEIGHT lb.

Monterey Bay Aquarium Research Institute

MBARI

7700 Sandholdt RD.

Moss Landing, CA 95039

PH: (831) 775-1700



TETHYS - LRAUV

COMPOSITE PROP SHAFT ASSEMBLY NOTES

SIZE B

DWG. NO. .DWG

REV.

SCALE 1:4

CAD FILE: MECH ENG ON TORNADO

SHEET 3 OF 3

87654321