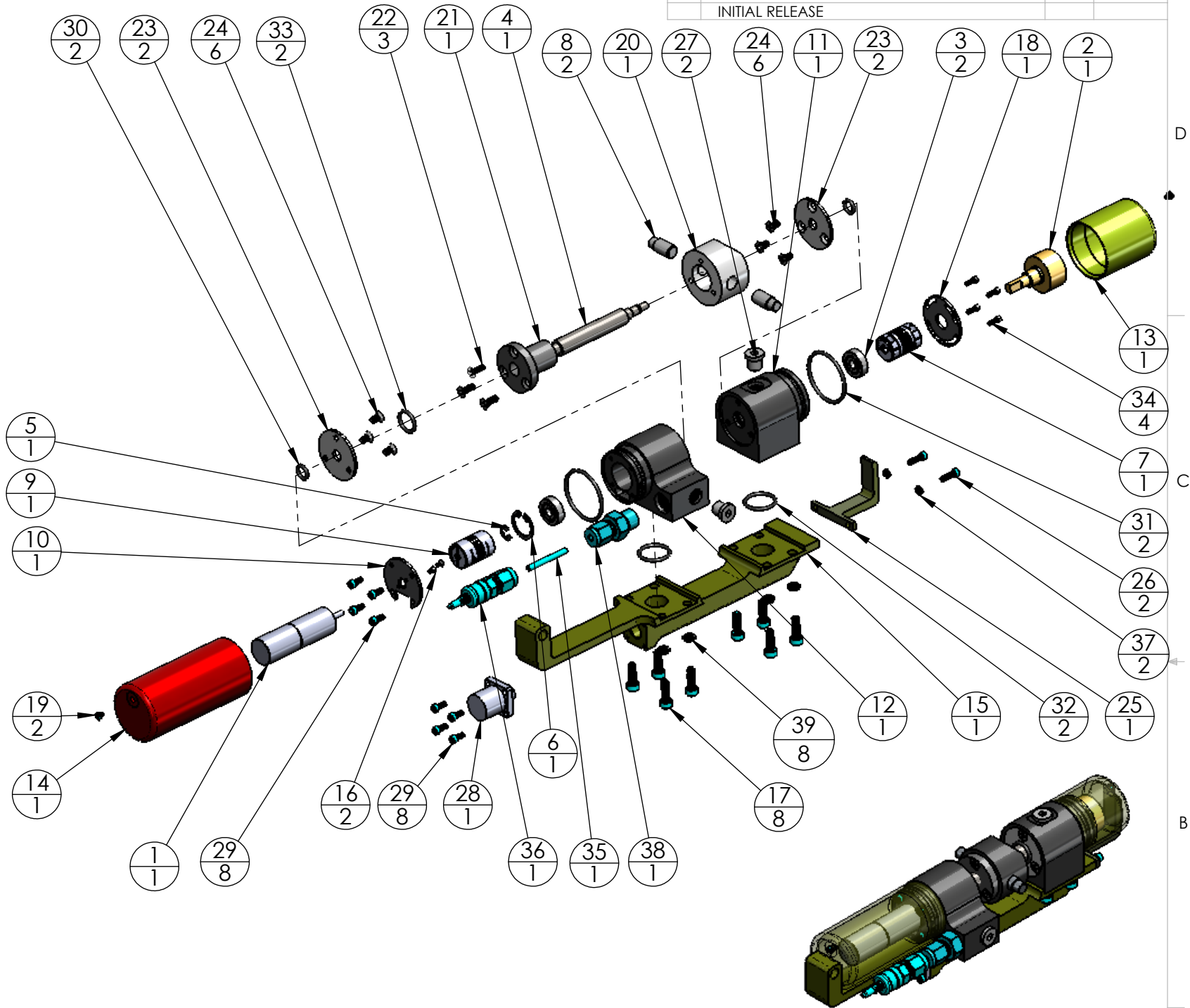
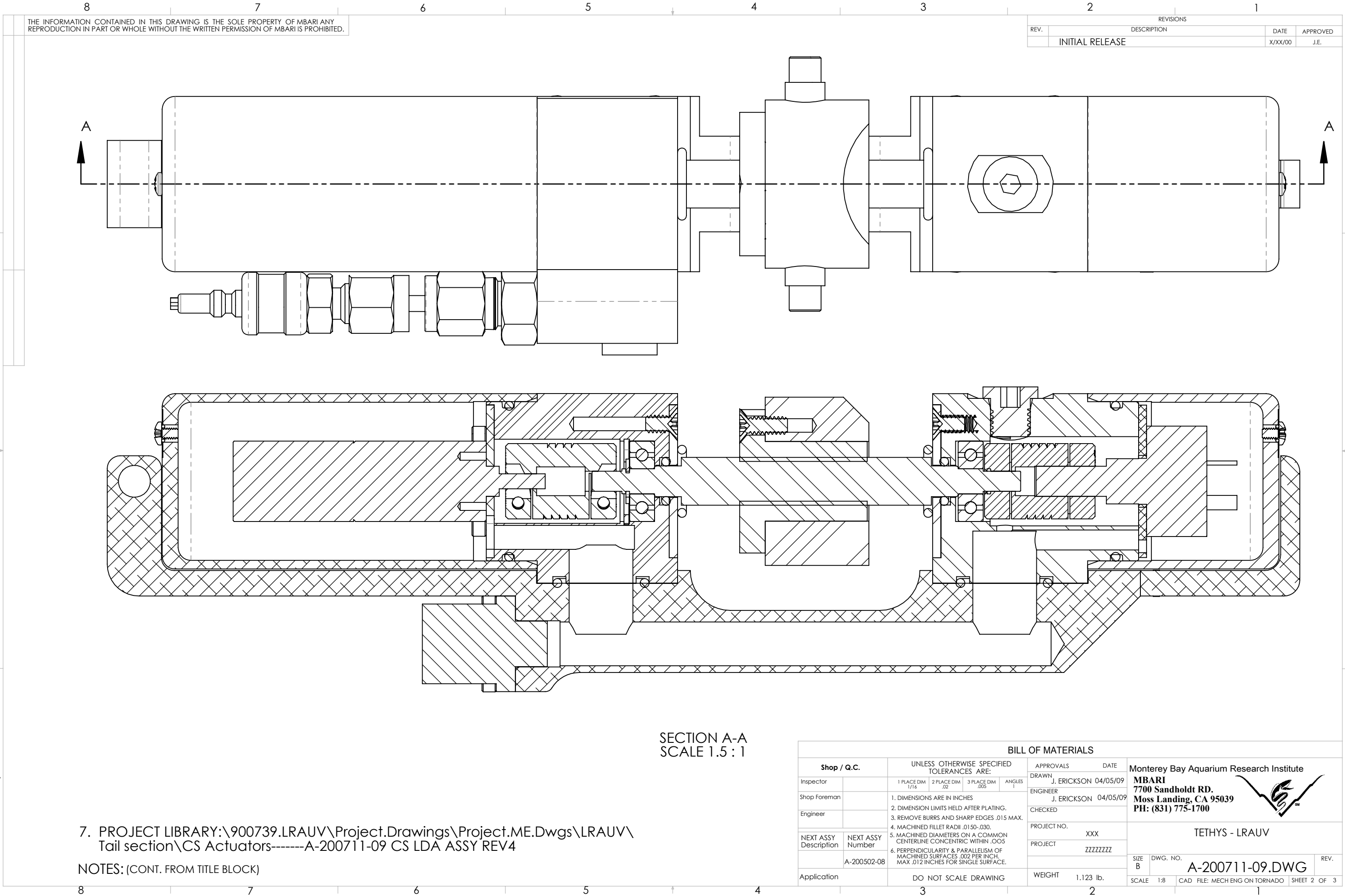


		8		7		6			
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39	8	95630A240	#8 Nylon Flat Washer		McMaster0Carr	Nylon			
38	1	SS-200-1-4ST	1/8 Tube - SAE#4		Swagelok	S.S 316			
37	2	90295A340	Nylon Washer		McMaster-Carr	Nylon 6/10			
36	1	SS-QM2-D-200	QM Series Quick Disconnect		SWAGelok	AISI 316			
35	1	SS-T2-S-028	1/8 x .028 S.S. Tube		Swagelok	AISI 316			
34	4	92185A077	2-56 x 1/4 SHCS		McMaster				
33	2	#2-013-70-N	O-RING			BUNA - N			
32	2	#2-016-70-N	O-RING			BUNA - N			
31	2	#2-024-70-N	O-RING			BUNA - N			
30	2	#2-010-70-N	O-RING			BUNA - N			
29	8	92185A106	#4-40 x 1/4 Soc Hd Screw		McMaster-Carr	AISI 316			
28	1	MKS-310-FCR	10 pin Bulkhead Electrical Connector		Teledyne Impulse	0.010			
27	2	SS-2-HPST	SAE-2 Solid Plug	00	Swagelok				
26	2	92185A108	#4-40 x 3/8 Soc Hd Cap Screw		McMaster-Carr	AISI 316			
25	1	P-200952-10	Tethys LDA Encoder Cap Retainer		MBARI	6061-T6 (SS)			
24	6	93085k144	6-32x1/4 100 deg flat head screw		McMaster				
23	2	P-200710-09	Oring Cap	A	MBARI	Black Delrin			
22	3	93085A146	6-32x3/8 100 degree Flat Head		McMaster				
21	1	Acme Nut 6350K36	3/8-5 Five Start Acme Nut		McMaster	Delrin AF			
20	1	P-200706-09	CS LDA Nut		MBARI	Black Delrin			
19	2	90825A120	18-8 S.S. Sealing Pn Hd Phil Screw Buna-N O-Ring, 2-56 Thrd, 1/8" L		McMaster-Carr	AISI 304			
18	1	P-200713-09	Encoder Torque Arm	B	MBARI	6061-T6 AL			
17	8	92185A194	8-31 x 1/2 SST SHCS		McMaster	AISI 316			
16	2	92125A050	M2 x 4 mm FH screws		McMaster				
15	1	P-200708-09	CS LDA Strong Back	C	MBARI	6061-T6 Alloy			
14	1	P-201087-11	LRAUV CS Motor Cap	A	MBARI	6061-T6 AL Clear Hard Anodize			
13	1	P-201532-13	Encoder Cap		MBARI	6061-T6 AL Clear Hard Anodize			
12	1	P-200705-09	CS LDA Motor Body	D	MBARI	Black Delrin			
11	1	P-201091-11 Rev E	CS Actuator Encoder Body	E	MBARI	Black Delrin			
10	1	P-200712-09	Motor Mount Plate		MBARI	6061-T6 AL			
9	1	WAC-15 3mm-4mm # 2105	3-4 mm Flex Shaft Coupling		Helical	7075-T6 Aluminum			
8	2	P-200707-09	CS LDA Pivot Pin		MBARI	316 SST			
7	1	WAC15 4mm-6mm #2112	4mm-6mm Flexible Shaft Coupling		Helical	7075-T6 Aluminum			
6	1	98394a431	16mm Internal Snap Ring		McMaster				
5	1	98317a214	6mm shaft externa snap ring		McMaster				
4	1	P-200704-09	CS LDA Leadscrew	C	McMaster 6350K16	303 SST			
3	2	6153K113	Open Ball Bearing for 5mm Shaft		McMaster				
2	1	RP-20-500	P3 Ameriac RP-20 500Ohm Potentiometer		P3 America				
1	1	305844	ECmax-16 5w Motor 283828-157:1 Gearbox-118186		MAXON				
ITEM NO.	QTY.	Part_Number	DESCRIPTION	Revision	Vendor	MATERIAL			



7. PROJECT LIBRARY:\900739.LRAUV\Project.Drawings\Project.ME.Dwgs\LRAUV\Tail section\CS Actuators-----A-200711-09 CS LDA ASSY REV4

BILL OF MATERIALS													
NEXT ASSY Description	NEXT ASSY Number	UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:				APPROVALS		DATE					
		1 PLACE DIM 1/16	2 PLACE DIM .02	3 PLACE DIM .005	ANGLES 1	DRAWN	7/9/13	Monterey Bay Aquarium Research Institute MBARI 7700 Sandholdt RD. Moss Landing, CA 95039 PH: (831) 775-1700 					
THIRD ANGLE PROJECTION 		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					B. Hobson		
						CHECKED		J.S.		2/23/17			
						PROJECT NO.		9001110		LRAUV CS Actuator Assembly SIZE B DWG. NO. A-200711-10 REV.			
PROJECT													
		DO NOT SCALE DRAWING				Material <not specified>							
						SCALE		1:4		CAD FILE:		SHEET 1 OF 3	



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

HELICAL COUPLINGS- THESE USE M2 x 0.4mm METRIC ALLEN HEAD SCREWS, VERY IMPORTANT TO USE PROPER 1.5mm METRIC ALLEN KEY WRENCH. THESE SCREWS NEED TO BE FIRMLY TIGHTENED, ANY DAMAGE TO THE SCREW BY IMPROPER ALLEN KEY (LOOSE FITTING AMERICAN SIZE) WILL MAKE FUTURE DISASSEMBLY ALMOST IMPOSSIBLE

LEAKS--IF SLOW LEAK IS TRACED TO THE SHAFT SEAL (#28, 010 "), ESPECIALLY ON THE RESOLVER END, A SUBSTITUTE ORING WITH A TIGHTER FITMENT TO THE SHAFT HAS PROVEN EFFECTIVE- 1.9mm X 5.8mm, BUNA-N, 70. P/N N1.9 X 005.8, THE ORING STORE

OIL FILL-- CARE MUST BE TAKEN TO SLOWLY FILL THE SYSTEM, ON END, SO AIR CAN ESCAPE.

See LRAUV CS (fin) ACTUATORS- A-200711-10
900739\LRAUV\PROJ DOCS\OPERATIONS\OPER MANUALS\SUB ASS'Y

NOTES: (CONT. FROM TITLE BLOCK)

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	DRAWN	J. ERICKSON	Monterey Bay Aquarium Research Institute 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		
Engineer						CHECKED			
NEXT ASSY Description	NEXT ASSY Number					PROJECT NO.	900739		
		PROJECT	LRAUV					TETHYS - LRAUV CS ACTUATOR ASSY - NOTES	
Application		DO NOT SCALE DRAWING	WEIGHT	lb.			SIZE B		
		SCALE	1:4	CAD	FILE: MECH ENG ON TORNADO	SHEET	3	OF	3

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