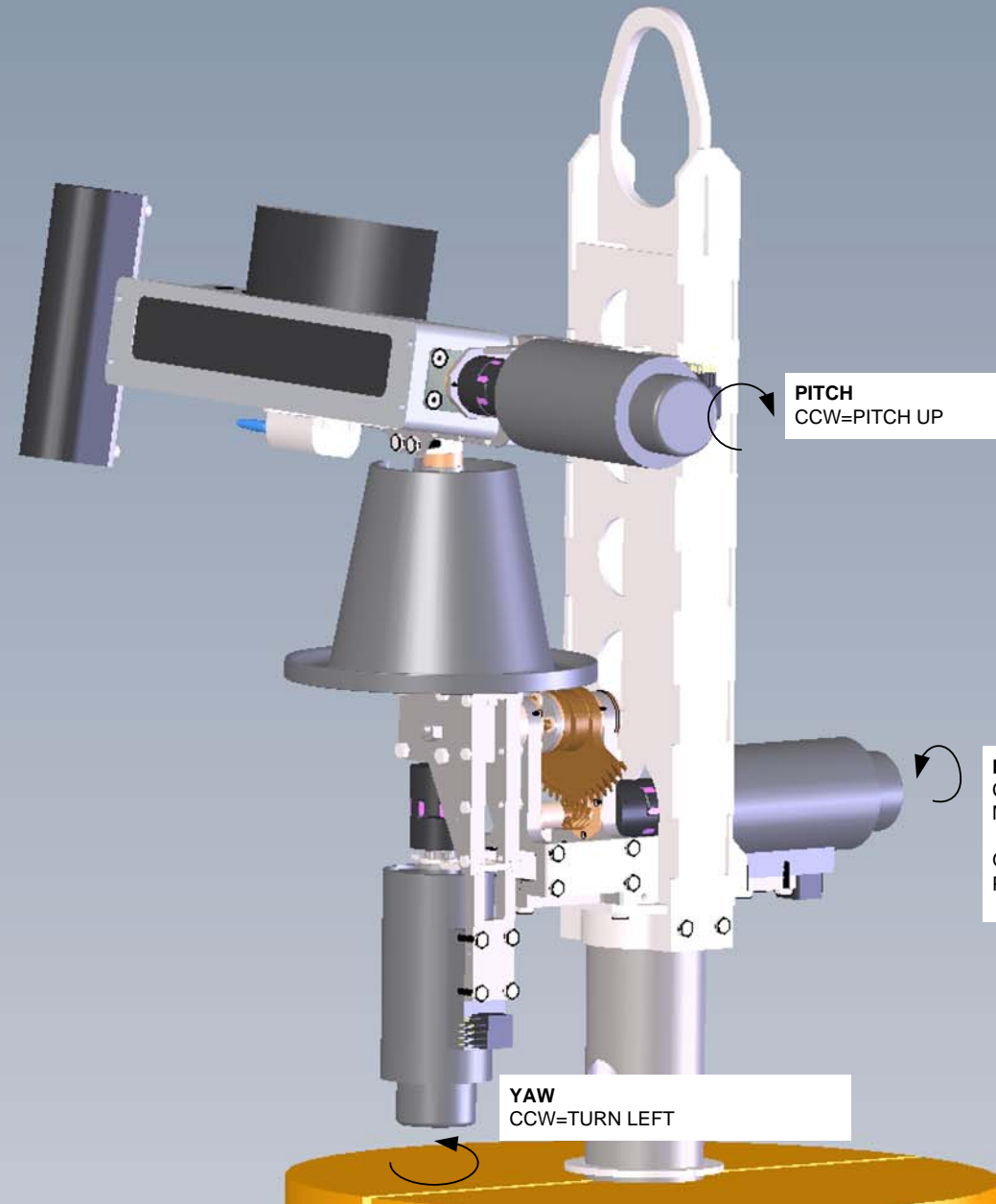



**CONVENTIONS**  
 1) CONVENTIONS BASED ON AIRPLANE TERMINOLOGY  
 2) REFERENCE MOVEMENT AS IF AIRPLANE PILOT  
 3) FACE OF SONAR IS NOSE OF AIRPLANE  
 4) CCW AND CW REFER TO MOTOR OUTPUT SHAFT ROTATION DIRECTION AS VIEWED FROM FRONT OF SHAFT



AXIS	MOTOR S/N	ROTATION	MOVEMENT	MOTOR SENSOR	ATTITUDE SENSOR	USER LIMITS (A/D COUNTS = DEG)	'ZERO' POSITION
PITCH	6111	CW	PITCH DOWN	INCREASING	PITCH DECREASING	CW LIMIT 498 = 185 DEG	130 DEG SONAR LEVEL
		CCW	PITCH UP	DECREASING	PITCH INCREASING	CCW LIMIT 195 = 70 DEG	
ROLL	6109	CW	ROLL RIGHT	INCREASING	ROLL INCREASING	CW LIMIT 916 = 335 DEG	180 DEG SONAR LEVEL
		CCW	ROLL LEFT	DECREASING	ROLL DECREASING	CCW LIMIT 86 = 25 DEG	
YAW	6110	CW	TURN RIGHT	INCREASING	HEADING INCREASING	TBD	180 DEG SONAR STRAIGHT FORWARD
		CCW	TURN LEFT	DECREASING	HEADING DECREASING	TBD	

NOTES  
 1) SOFTWARE USER LIMITS SET FOR PITCH/ROLL IN FEB 2010

CONTRACT NO.		 APPLIED PHYSICS LABORATORY UNIVERSITY OF WASHINGTON SEATTLE WASHINGTON	
DRAWN BY LIGHT		SONAR HEAD TRANSLATION SYSTEM CONVENTIONS, REFERENCE, COVIS	
FILENAME COVIS ORIENTATION CONVENTIONS REV1.05.VSD	SIZE B	CAGE CODE 98514	DWG NO XXXXXX
DATE 12FEB10	SHEET 1 OF 1		REV

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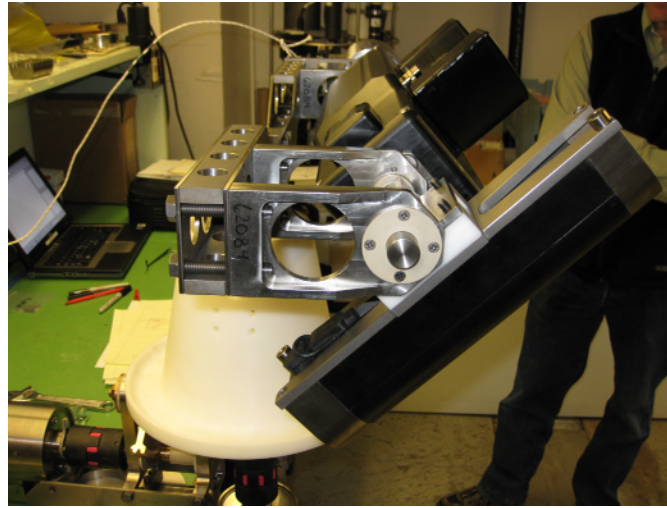
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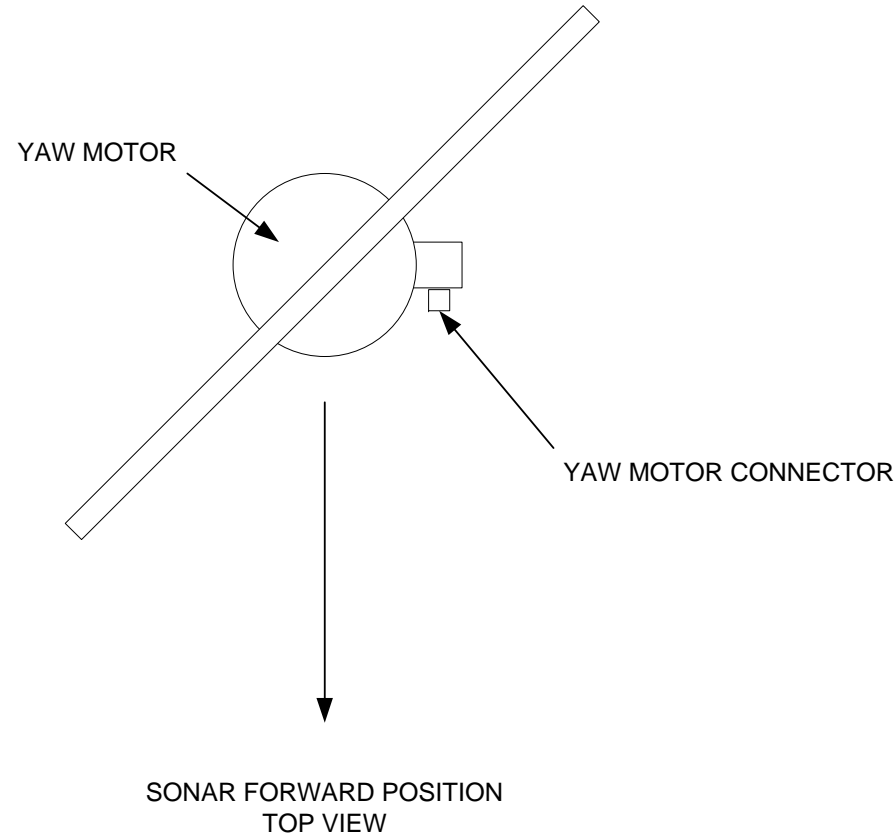
**PITCH MOTOR**

- 1) POSITION MOTOR TO 180 DEGREE POSITION
- 2) INSTALL MECHANICAL STOP PLATE ON MOTOR SO THAT TAB IS 45 DEGREES DOWN, SPECIAL TAB FOR PITCH MOTOR WHERE TAB IS OFFSET FROM BOLT PATTERN BY 45 DEGREES
- 3) INSTALL EM7200 WITH FACE DOWN AT 45 DEGREES, FACE SHOULD POINT IN SAME DIRECTION AS STOP PLATE TAB



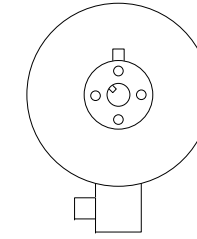
**YAW MOTOR**

- 1) POSITION MOTOR TO 90 DEGREE POSITION
- 2) INSTALL TRANSDUCER MOUNTING BRACKET 45 DEGREES FROM FORWARD POSITION PER DWG



**ROLL MOTOR**

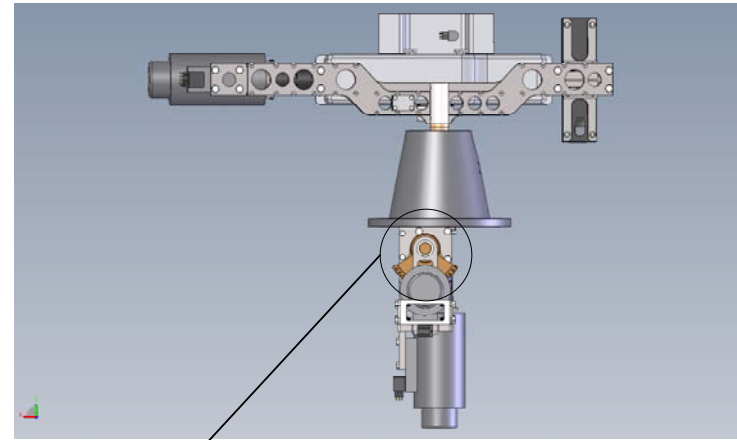
- 1) POSITION MOTOR TO 180 DEGREE POSITION
- 2) INSTALL MECHANICAL STOP PLATE ON MOTOR SO THAT TAB IS POINTING UP AT 180 DEGREE DIRECTION



ROLL MOTOR FRONT VIEW  
SHAFT BROCH 45 DEGREES CCW WITH MOTOR  
POSITIONED AT 180 DEGREES

- 3) INSTALL MOTOR ONTO ASSEMBLY WITH GEARS ENGAGED FOR ZERO ROLL.

ENGAGE GEARS SO THE BROCHE IN MOTOR COUPLING  
SHAFT IS AT 45 DEGREES AS SHOWN IN DETAIL



REAR VIEW

DETAIL



MOTOR COUPLING SHAFT



D

C

B

A

D

C

B

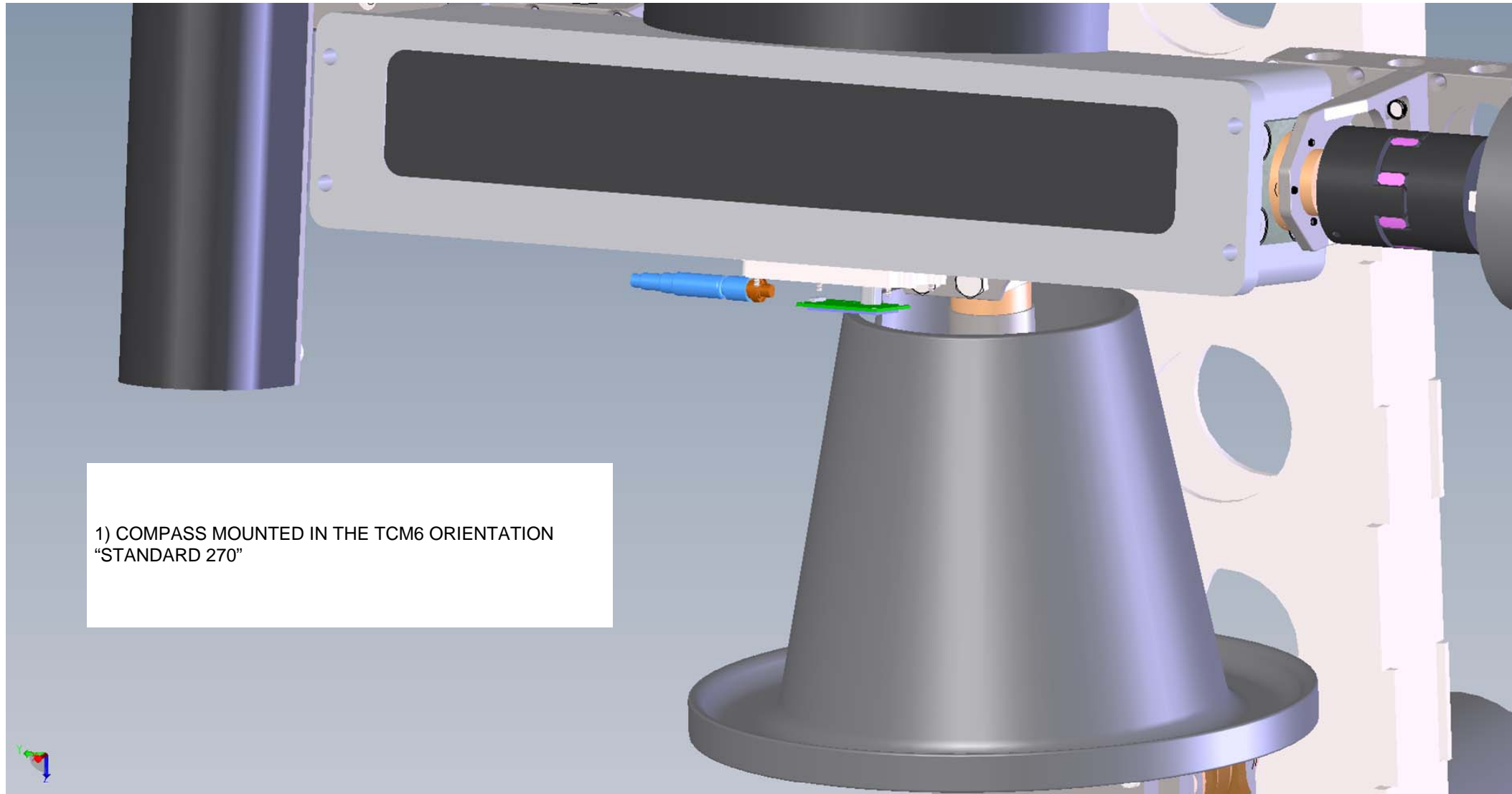
A

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3

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1



1) COMPASS MOUNTED IN THE TCM6 ORIENTATION  
"STANDARD 270"

CONTRACT NO.		 APPLIED PHYSICS LABORATORY UNIVERSITY OF WASHINGTON SEATTLE WASHINGTON		
DRAWN BY LIGHT		ATTITUDE SENSOR MOUNTING ORIENTATION, REFERENCE, COVIS		
FILENAME COVIS ORIENTATION CONVENTIONS REV1.05.VSD	SIZE B	CAGE CODE 98514	DWG NO XXXXX	REV
DATE 07JAN10	SHEET		1 OF 1	