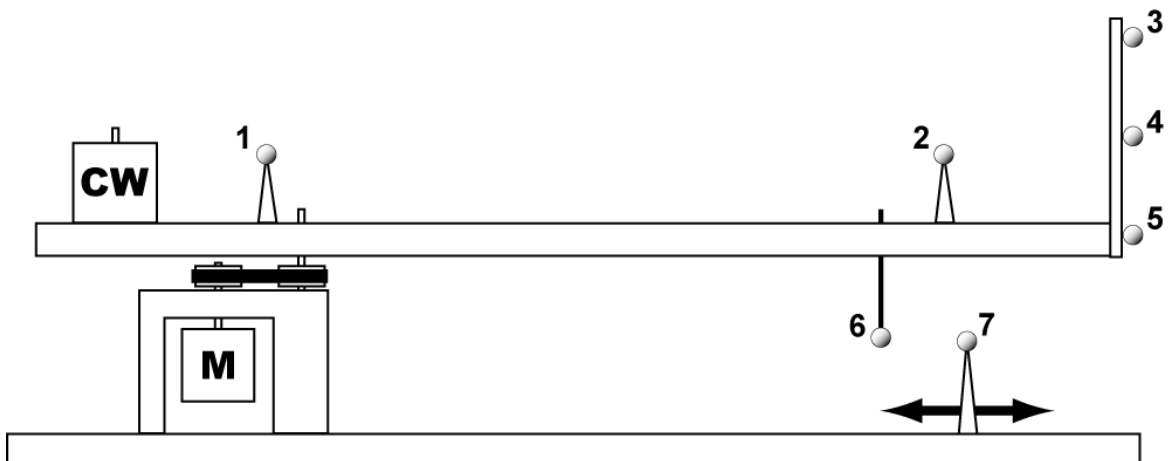


GCMAS Standard Assessment for Motion System Accuracy (SAMSA)

Device Plans

Notes:

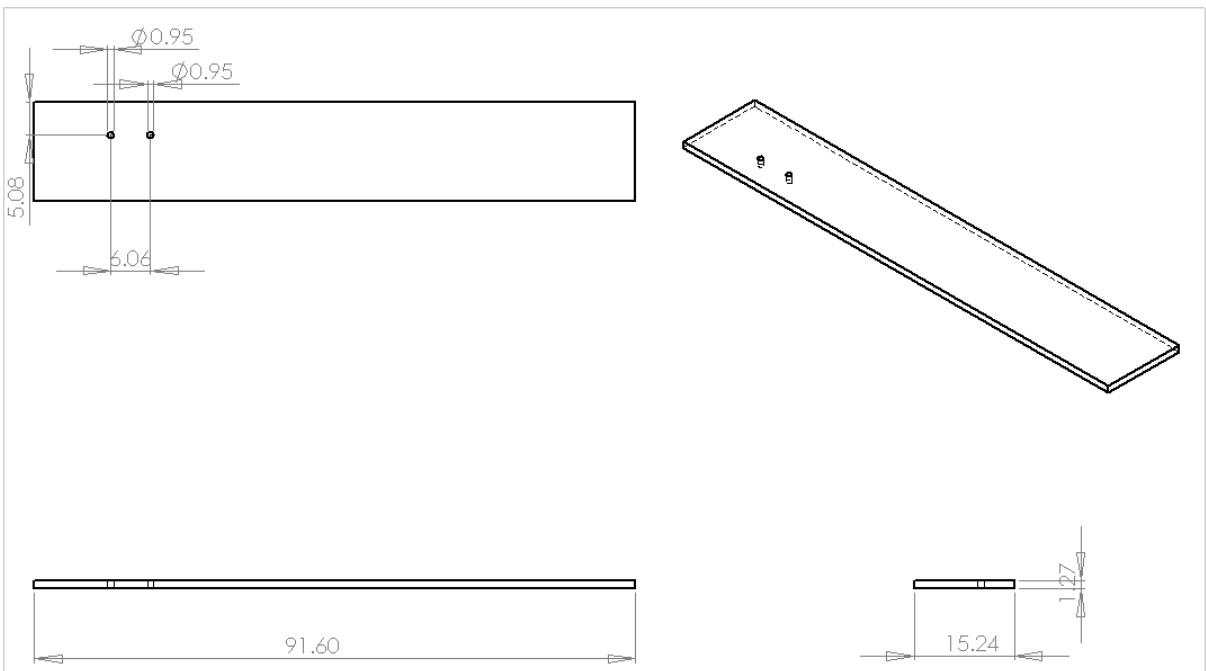
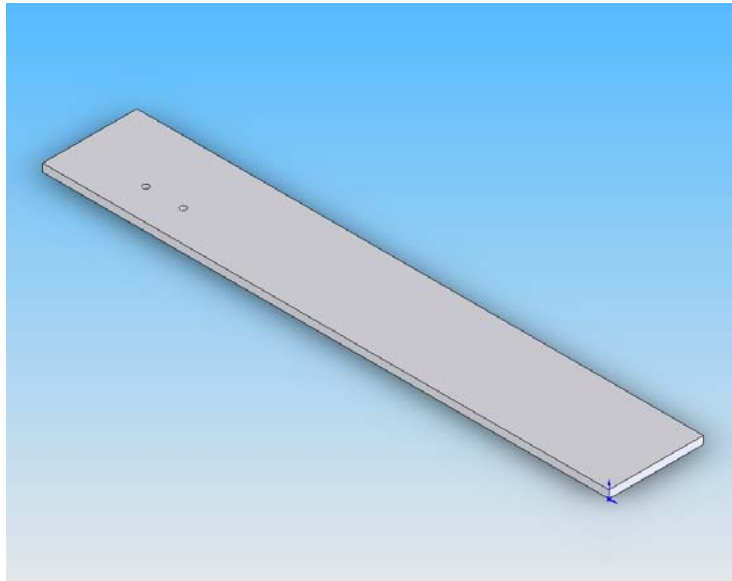
1. All dimensions are given in centimeters.
2. The motor housing and transmission may vary; any arrangement that produces 60 rpm rotation of the beam with respect to the base is acceptable. Parts used in the prototype are listed on the next page.
3. The mass and placement of your counterweight should be selected such that the beam is balanced about the point where the shaft attaches.
4. Aluminum was used for the prototype, with “80/20” extruded aluminum (<http://industrialerecortset.com/>) used for the beam.
5. Markers 0.5 in (12.7 mm) diameter were used with the prototype; you should use the same size markers that you test with in your laboratory.



Motor and Transmission Parts List:

1. Gearmotor
Hurst Manufacturing (PB3204-024) 60 RPM, 115 VAC, Full Load Torque 2.6 In-Lbs; available from Grainger Industrial Supply (6A179)
2. Ball Bearings (2)
Double-sealed, 0.5 in shaft dia; available from McMaster-Carr (60355K36)
3. Gearbelt Pulleys (2)
Browning (15XLB037); available from Grainger Industrial Supply (2L518)
4. Gearbelt
Browning (80XL037) ; available from Grainger Industrial Supply (2L558)

Base



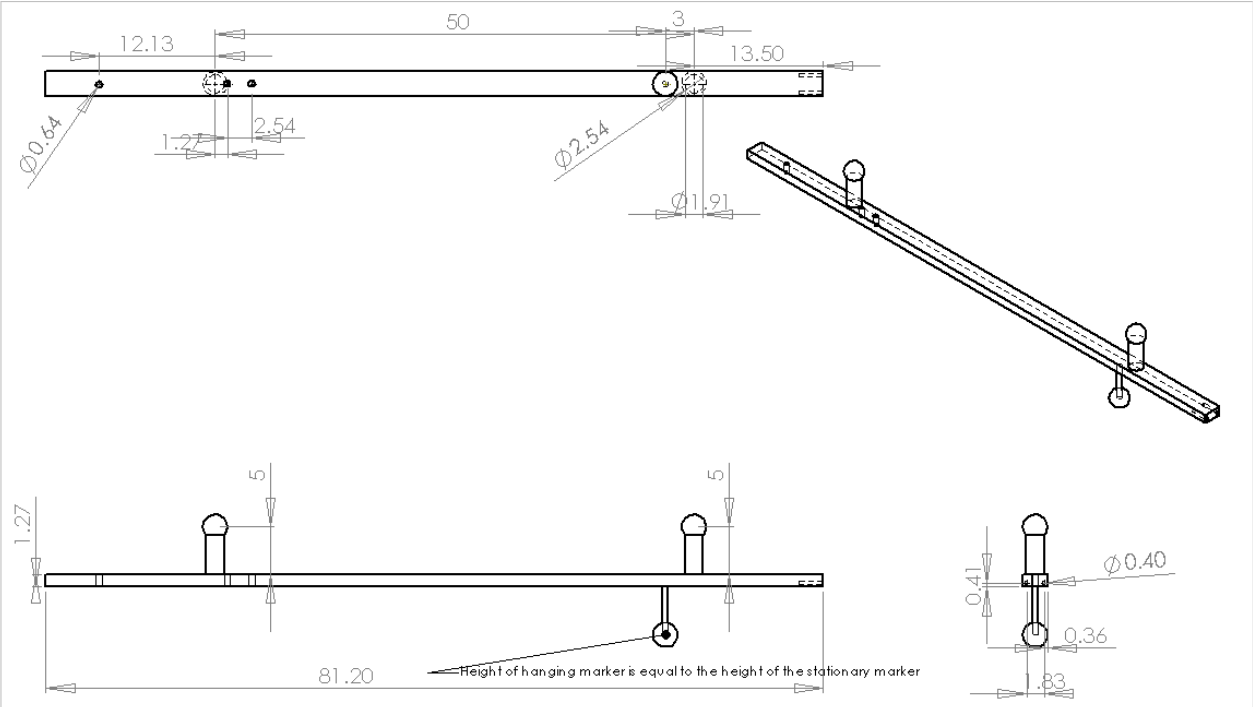
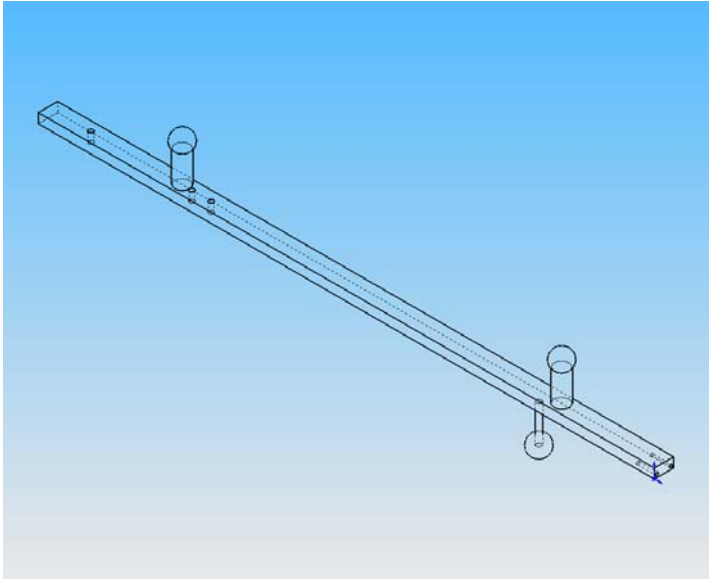
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		TOLERANCES:	CHECKED		
		FRACTIONAL ±	ENG APPR.		
		ANGULAR DIMENSIONS BEND ±	MFG APPR.		
		TWO PLACE DECIMAL ±	Q.A.		
		THREE PLACE DECIMAL ±	COMMENTS:		
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL:			
		FINISH:			

Dimensions in cm
 Aluminum

TITLE:	SIZE	DWG. NO.	REV
	A	Base	

Beam

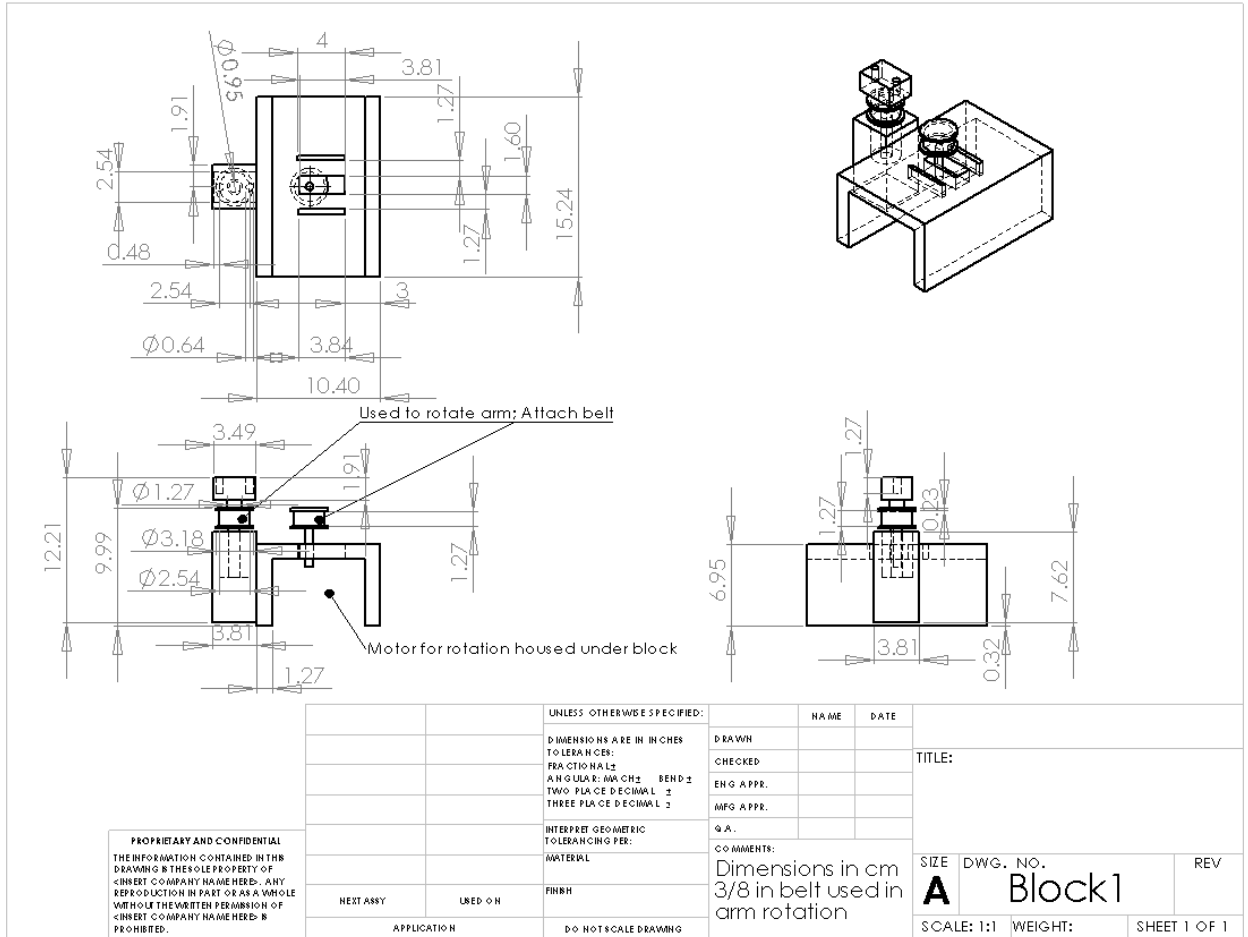
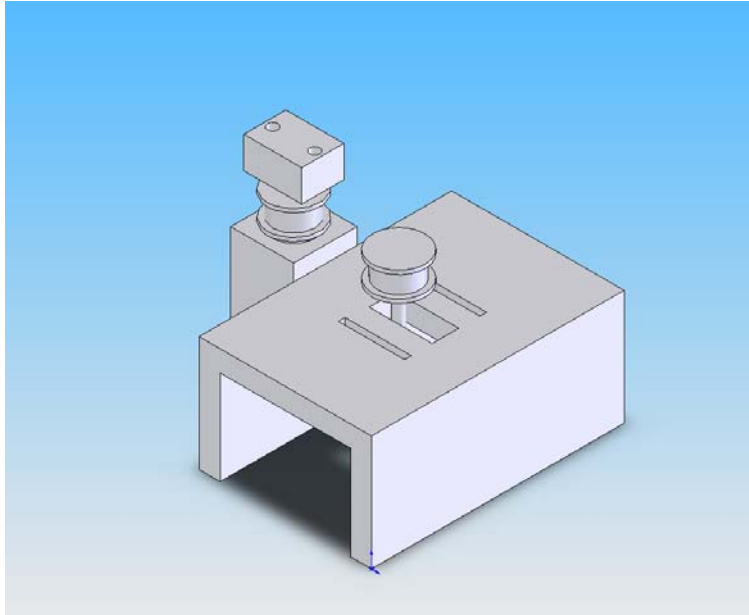


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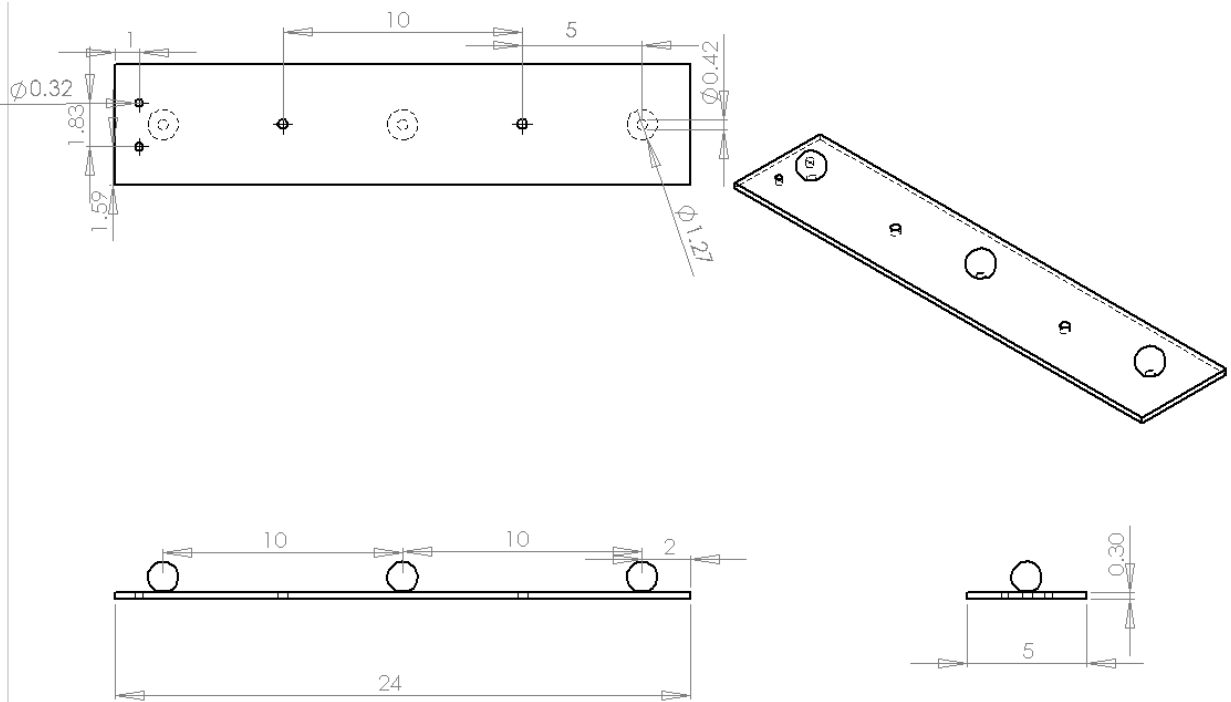
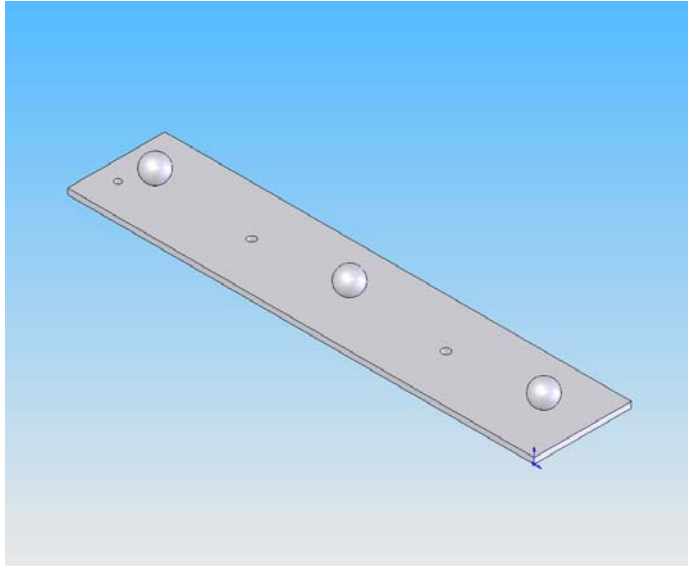
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		ANGULAR: $\text{MACH} \pm$ BEND \pm	MG APPR.	
		TWO PLACE DECIMAL \pm	Q.A.	
		THREE PLACE DECIMAL \pm	COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:	Dimensions in cm	
		MATERIAL	Based on .5 in markers	
		FINISH	Al from 80/20, Inc.	
NEXT ASSY	USED ON			

TITLE:		SIZE	DWG. NO.	REV
A		A	Beam 1	

Motor Housing



Plate

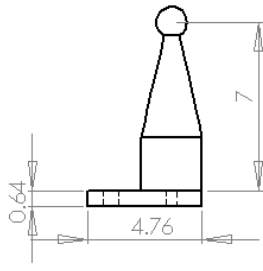
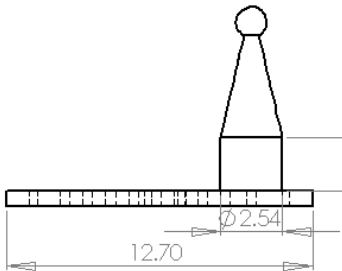
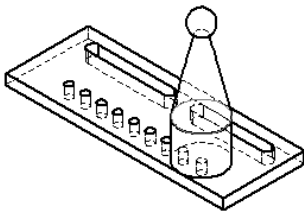
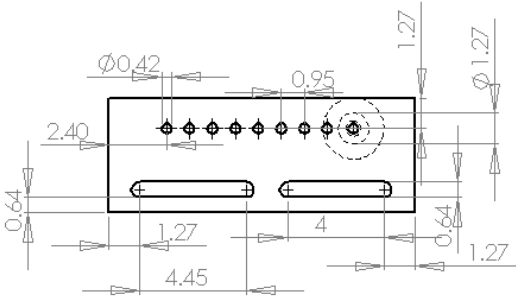
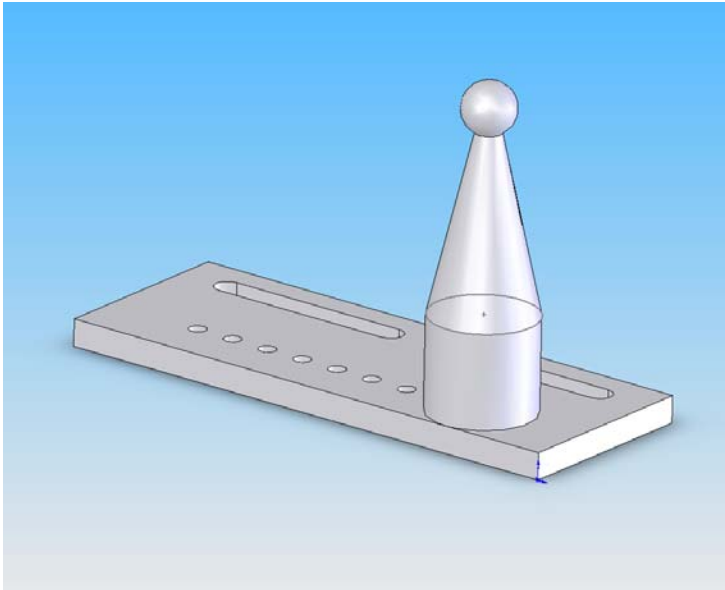


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TOLERANCES:		CHECKED	
FRACTIONAL \pm		ENG APPR.	
ANGULAR: \pm 0.001		MFG APPR.	
TWO PLACE DECIMAL \pm		Q.A.	
THREE PLACE DECIMAL \pm		COMMENTS:	
INTERPRET GEOMETRIC TOLERANCING PER:		Dimensions in cm	
MATERIAL		.5 in dia markers	
FINISH		Aluminum	
NEXT ASSY	USED ON		
APPLICATION		DO NOT SCALE DRAWING	

TITLE:		SIZE	DWG. NO.	REV
		A	Endplate1	
SCALE: 1:1		WEIGHT:		SHEET 1 OF 1

Stationary Marker Mount



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		TOLERANCES:	CHECKED	
		FRACTIONAL ±	ENG APPR.	
		ANGULAR: MAJOR ± BEND ±	MFG APPR.	
		TWO PLACE DECIMAL ±	Q.A.	
		THREE PLACE DECIMAL ±	COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:	Dimensions in cm	
		MATERIAL	.5 in dia marker	
		FINISH	Aluminum	
		DO NOT SCALE DRAWING		

TITLE:		SIZE	DWG. NO.	REV
		Astaticmarker		
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1		