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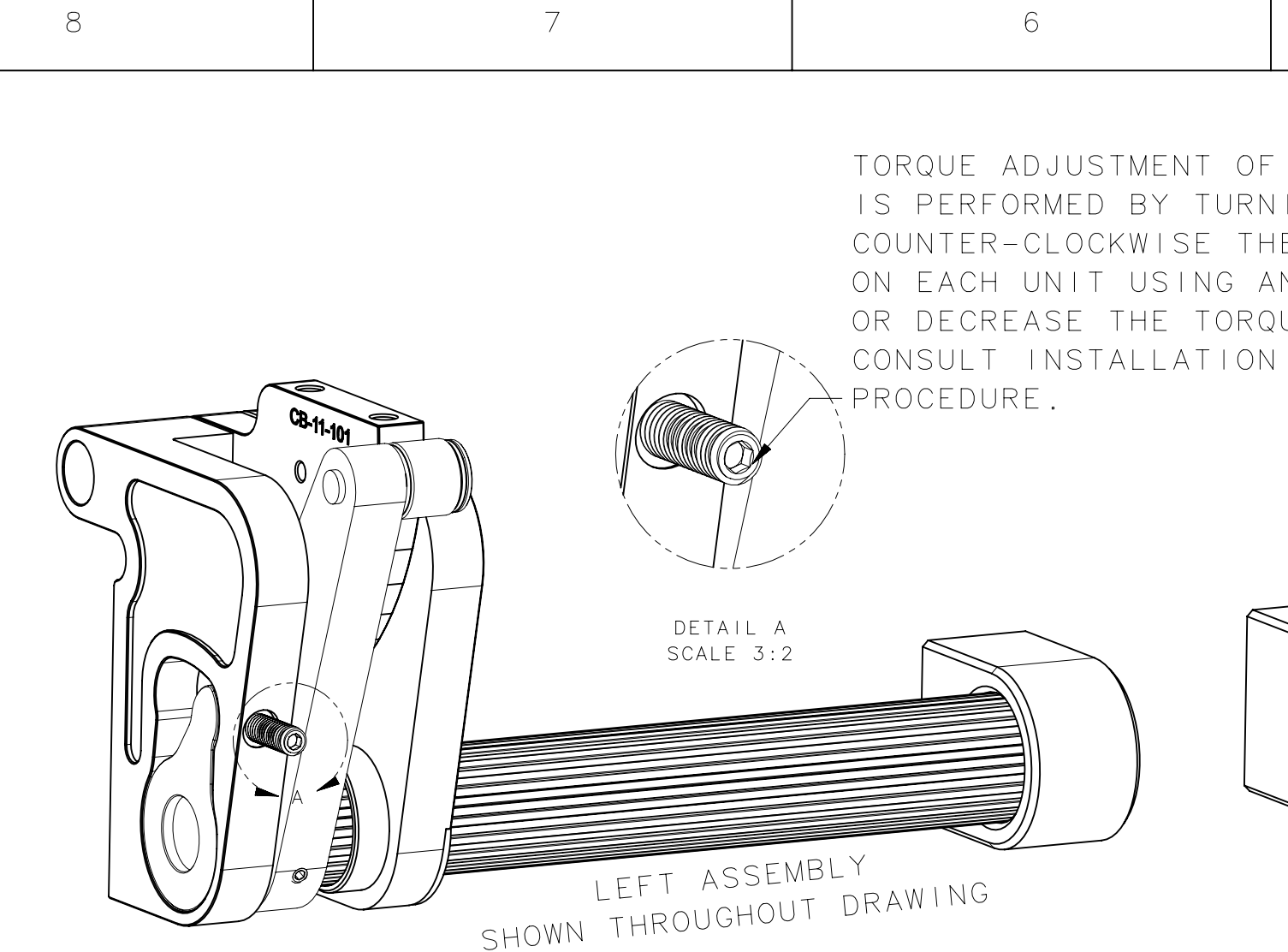
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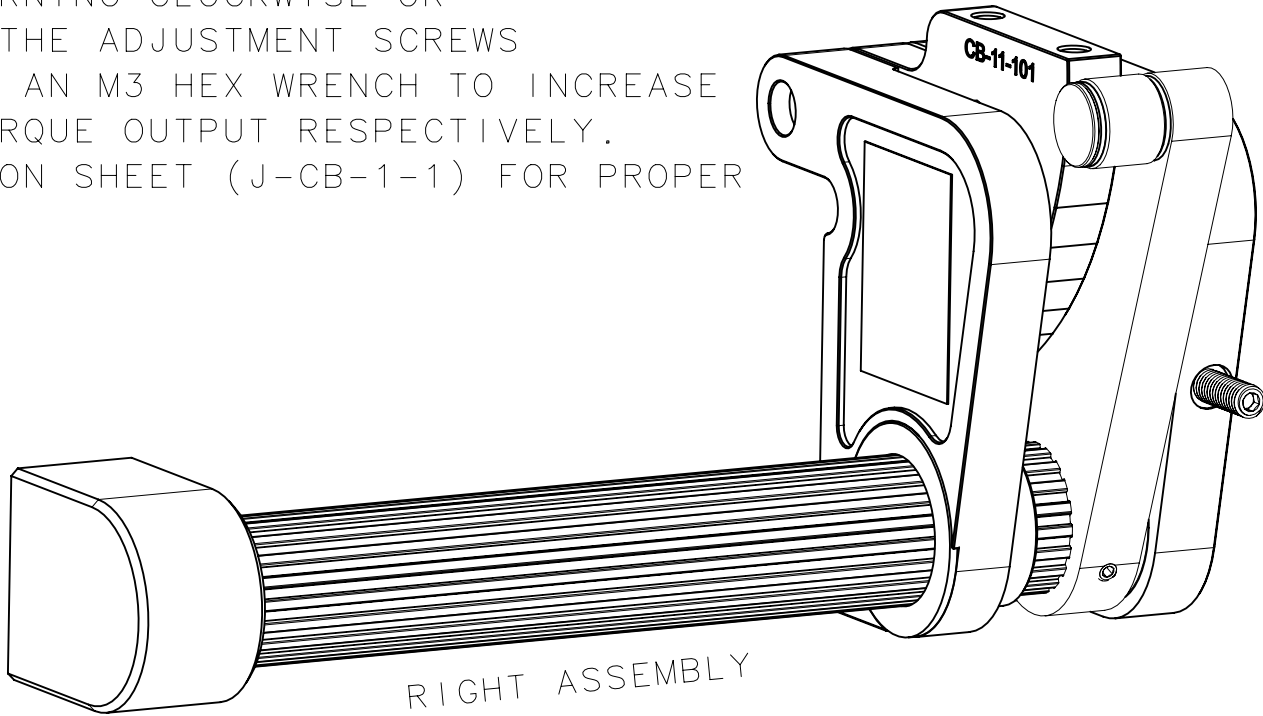
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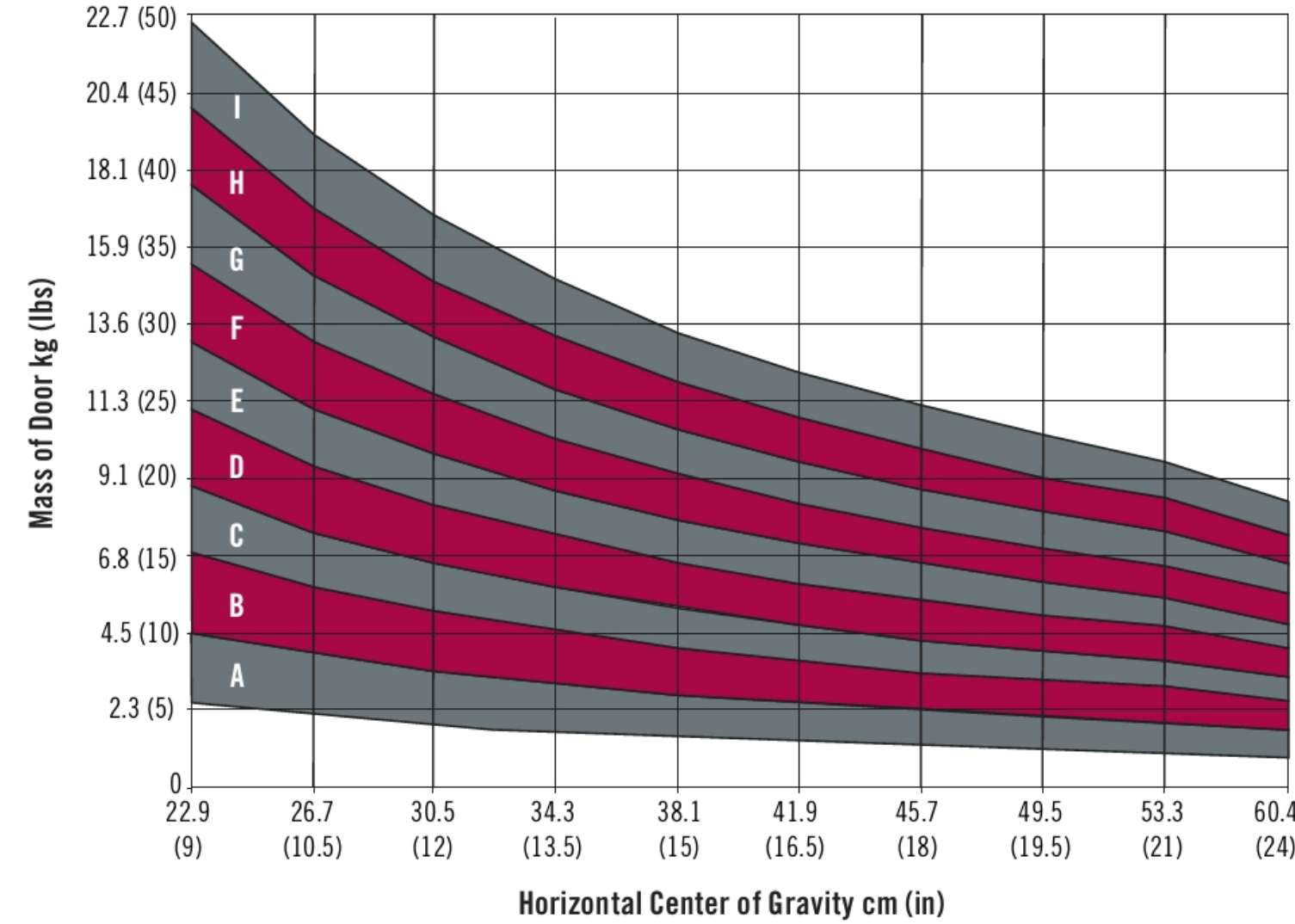
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TORQUE ADJUSTMENT OF THE CB MECHANISM IS PERFORMED BY TURNING CLOCKWISE OR COUNTER-CLOCKWISE THE ADJUSTMENT SCREWS ON EACH UNIT USING AN M3 HEX WRENCH TO INCREASE OR DECREASE THE TORQUE OUTPUT RESPECTIVELY. CONSULT INSTALLATION SHEET (J-CB-1-1) FOR PROPER PROCEDURE.



Counterbalance Hinge Selection Guide



SELECTION GUIDE LEGEND			
A	CB-1X-101-00-10	E	CB-2X-101-00-10
B	CB-1X-102-00-10	F	CB-2X-102-00-10
C	CB-1X-103-00-10	G	CB-2X-103-00-10
D	CB-1X-104-00-10	H	CB-2X-104-00-10
		I	CB-2X-105-00-10

-MODEL SELECTION CHART SHOULD BE USED TO SELECT CORRECT UNIT FOR BALANCING PANELS OUTSIDE OF THE NOMINAL TORQUE OUTPUT

-ALL TORQUE VALUES SHOULD BE CALCULATED USING:
TORQUE = HORIZONTAL CG * PANEL WEIGHT

-‘PER HINGE’ DESIGNATION INDICATES DUAL ASSEMBLIES WILL OUTPUT ‘PER HINGE’ TORQUE * 2

PANEL MOTION THROUGH OPENING ANGLE

TORQUE ADJUSTMENT:

PANEL DRIFTS DOWNWARDS IN NEUTRAL BALANCE RANGE
IF UNDESIRABLE, RAISE PANEL TO VERTICAL POSITION, INCREASE TORQUE BY TURNING ADJUSTMENT SCREW CLOCKWISE. CYCLE AND RECHECK BALANCE. IF ADJUSTMENT SCREW REACHES MAXIMUM POSITIVE TRAVEL AND PANEL CONTINUES TO DRIFT DOWNWARDS, TORQUE SELECTION SHOULD BE REVIEWED.

PANEL DRIFTS UPWARDS IN NEUTRAL BALANCE RANGE
IF UNDESIRABLE, RAISE PANEL TO VERTICAL POSITION, DECREASE TORQUE BY TURNING ADJUSTMENT SCREW COUNTER-CLOCKWISE, CYCLE AND RECHECK BALANCE. IF ADJUSTMENT SCREW REACHES MAXIMUM NEGATIVE TRAVEL AND PANEL CONTINUES TO DRIFT UPWARDS, TORQUE SELECTION SHOULD BE REVIEWED.

PANEL POPS UPWARDS IN 0-15° RANGE
IF UNDESIRABLE, RAISE PANEL TO VERTICAL POSITION, DECREASE TORQUE BY TURNING ADJUSTMENT SCREW COUNTER-CLOCKWISE, CYCLE AND RECHECK BALANCE. IF ADJUSTMENT SCREW REACHES MAXIMUM NEGATIVE TRAVEL AND PANEL CONTINUES TO POP UPWARDS, TORQUE SELECTION SHOULD BE REVIEWED.

PANEL DRIFTS DOWNWARDS IN 65-80° RANGE
IF UNDESIRABLE, RAISE PANEL TO VERTICAL POSITION, INCREASE TORQUE BY TURNING ADJUSTMENT SCREW CLOCKWISE, CYCLE AND RECHECK BALANCE. IF ADJUSTMENT SCREW REACHES MAXIMUM POSITIVE TRAVEL AND PANEL CONTINUES TO DRIFT DOWNWARDS, TORQUE SELECTION SHOULD BE REVIEWED.

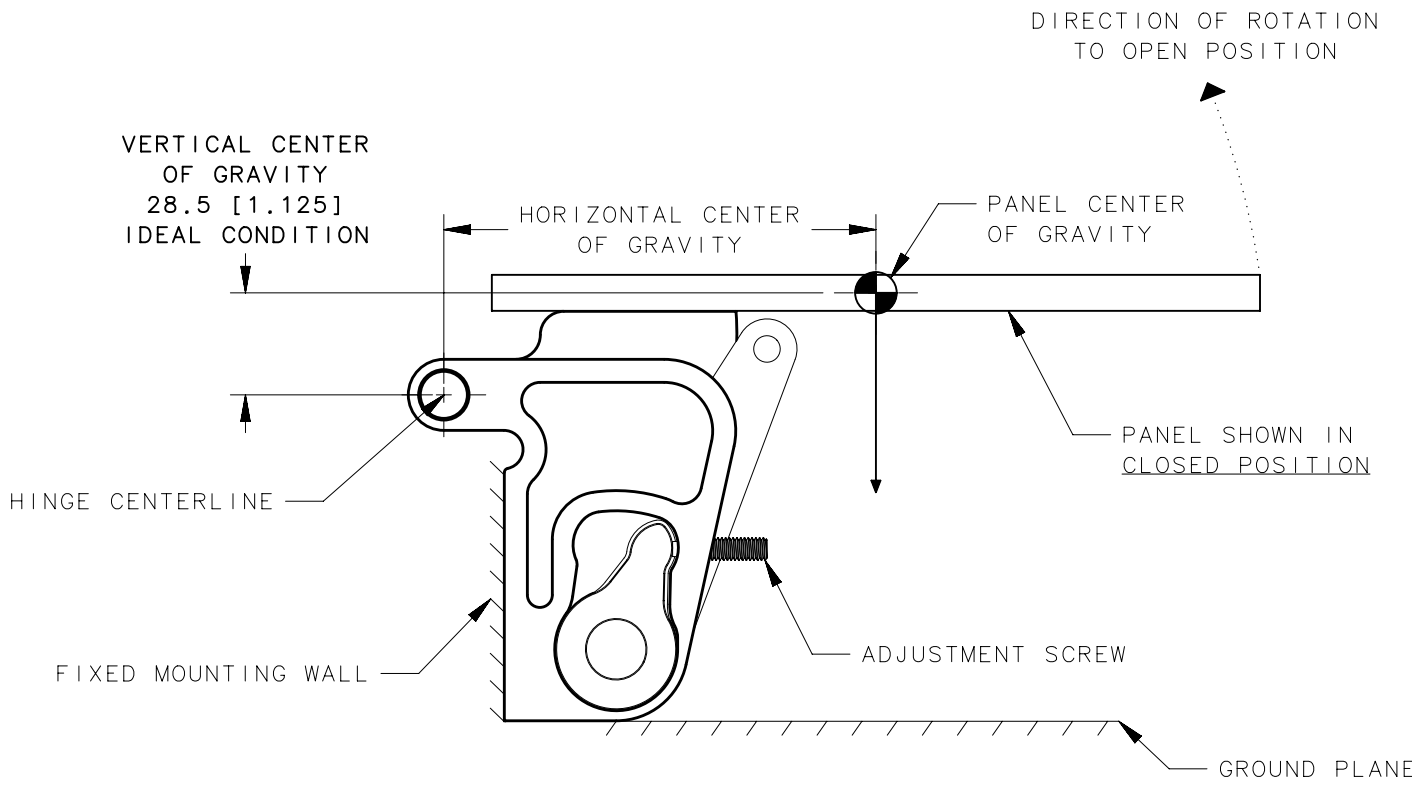
NOTE:

PER THE FIGURE ABOVE, SOME DRIFT UPWARDS IN THE 65-80° RANGE AND DOWNWARD IN THE 0-15° IS EXPECTED. HAVING DRIFT IN THESE AREAS OF TRAVEL ASSURES THE PANEL STAYS IN POSITIVELY IN THE OPEN AND CLOSED POSITION OVER VARIATIONS IN WEIGHT AND CENTER OF GRAVITY.

NOTE:

THE CB COUNTERBALANCE HINGE IS DESIGNED TO OPERATE FROM 0° HORIZONTAL AND OPEN TO 80° FROM HORIZONTAL AS WELL AS UNDER THE NOMINAL TORQUE CONDITIONS SPECIFIED IN TABLE 1.1, COLUMN 2 AND AT THE IDEAL CENTER OF GRAVITY IN THE Y-DIRECTION SHOWN BELOW. DEVIATIONS FROM NOMINAL CAN BE MADE WITHIN THE TORQUE LIMITS SPECIFIED IN TABLE 1.1, COLUMNS 3 & 4, HOWEVER PERFORMANCE CHANGES SUCH AS PANEL DRIFT AT THE 0-15° AND 65-80° ANGLES OF ROTATION MAY EXIST.

THE RANGE CHART BELOW REFLECTS THE TOTAL AVAILABLE TORQUE RANGE (LOW TO HIGH) OF EACH AVAILABLE SPRING. NOMINAL CONDITIONS ARE AVAILABLE IN TABLE 1.1, COLUMN 2. PLEASE CONTACT SOUTHCO FOR ASSISTANCE IN DETERMINING THE PERFORMANCE OF YOUR APPLICATION.



ASSEMBLY PART NUMBERING

1
CB-2X-10X-00-10

ASSEMBLY SIDE
1 - LEFT
2 - RIGHT

TORQUE OUTPUT
PER TABLE 1.1

PART NUMBERING EXAMPLE:

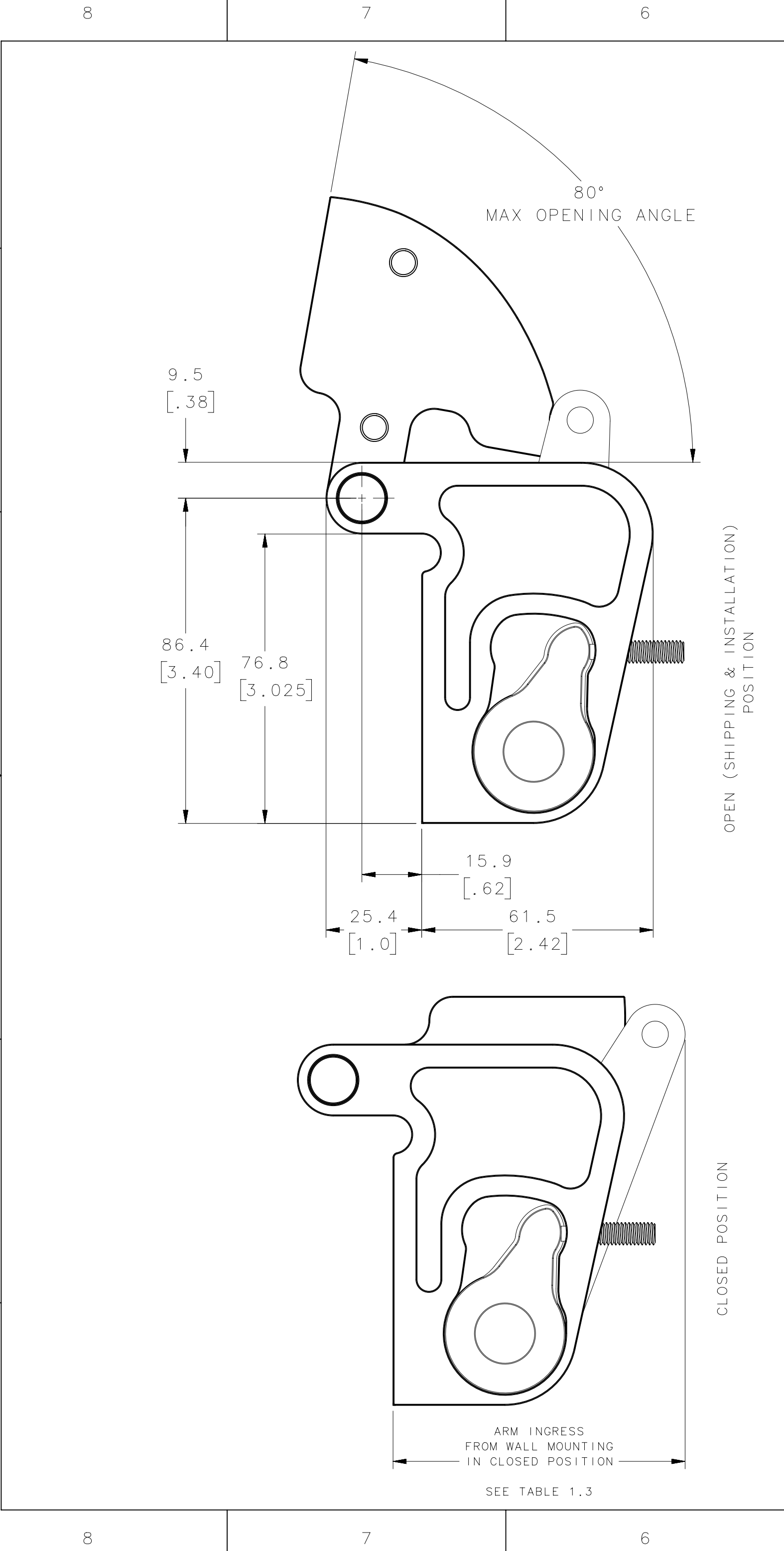
PANEL WEIGHT: 26.8LB
HORIZONTAL CG: 12IN
TORQUE = PANEL WEIGHT * CG
= 321 LBF-IN
TORQUE PER SIDE = 160.5 LBF-IN

CORRECT LEFT ASSEMBLY: CB-11-103-00-10
CORRECT RIGHT ASSEMBLY: CB-12-103-00-10

TABLE 1.1			
ASSEMBLY	NOMINAL TORQUE OUTPUT PER HINGE (N-M [LBF-IN])	MIN. TORQUE OUTPUT PER HINGE (N-M [LBF-IN])	MAX. TORQUE OUTPUT PER HINGE (N-M [LBF-IN])
CB-1X-101-00-10	8.8 (78)	5.7 (50)	10.2 (90)
CB-1X-102-00-10	13.5 (119)	10.2 (90)	15.5 (137)
CB-1X-103-00-10	18.2 (161)	15.5 (137)	19.8 (175)
CB-1X-104-00-10	22.8 (202)	19.8 (175)	24.9 (220)
CB-2X-101-00-10	27.7 (245)	24.9 (220)	29.4 (260)
CB-2X-102-00-10	32.2 (285)	29.4 (260)	34.5 (305)
CB-2X-103-00-10	37.3 (330)	34.5 (305)	39.5 (350)
CB-2X-104-00-10	42.4 (375)	39.5 (350)	44.6 (395)
CB-2X-105-00-10	47.5 (420)	44.6 (395)	50.3 (445)

CPB NUMBER 2017-0015		THIRD ANGLE PROJECTION	southco CONNECT • CREATE • INNOVATE	
		MILLIMETERS [IN]		
		TOLERANCES UNLESS OTHERWISE NOTED	DESCRIPTION COUNTERBALANCE HINGE OVERVIEW	
		ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.	SIZE A2	SYSTEM NX
PROPRIETARY ITEM EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCO, INC.		DWG NO. J-CB-1	SCALE NTS	SHEET 1 OF 3
PER ASME Y14.5M-1994		DRAWN BY CMG/JDS	DATE 10OCT2018	

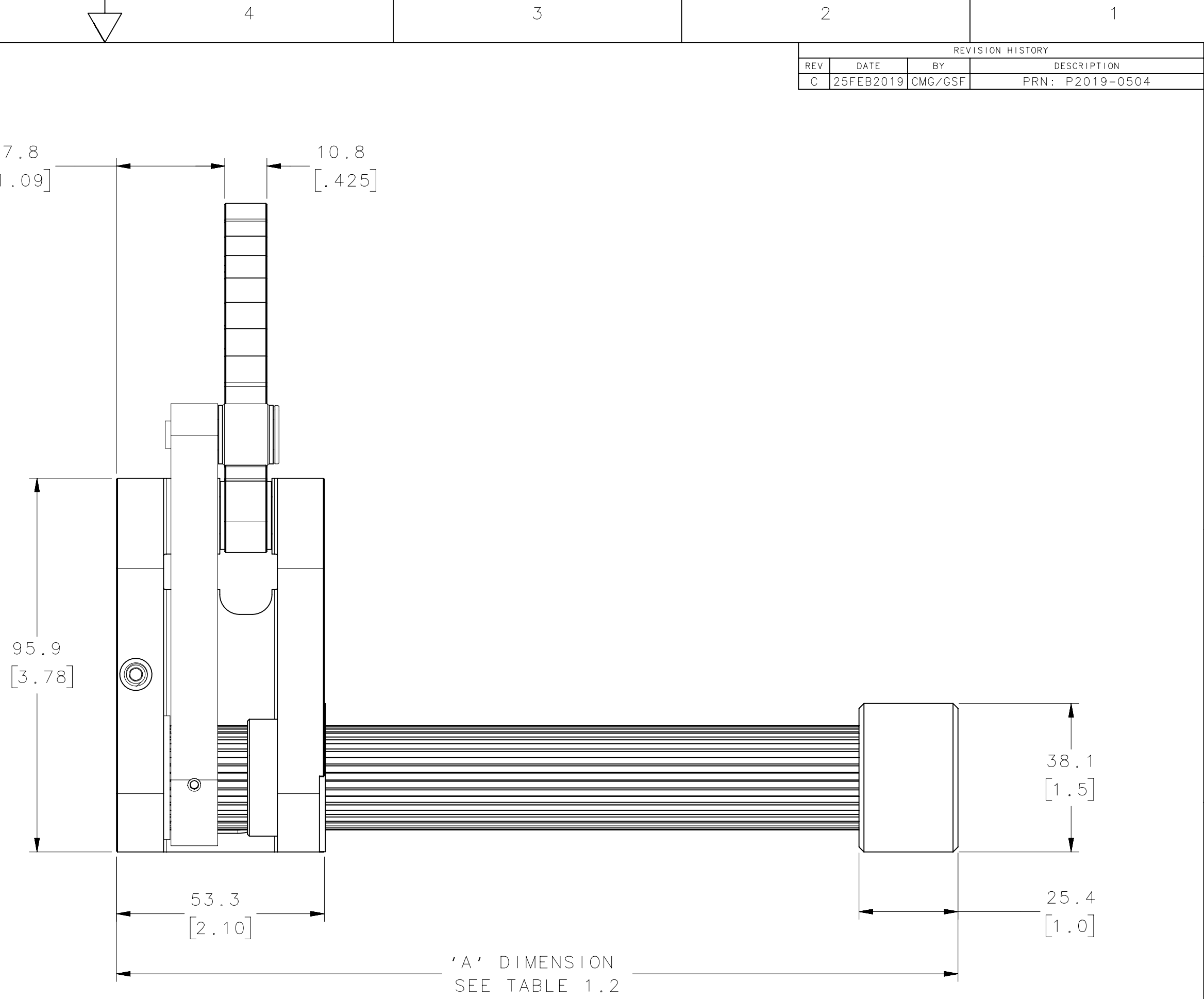
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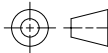
OPEN (SHIPPING & INSTALLATION) POSITION

CLOSED POSITION

8
7
6
5
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3
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1



ONLY LEFT ASSEMBLY SHOWN
ALL GEOMETRY MIRRORED FOR RIGHT ASSEMBLIES

TABLE 1.2											
ASSEMBLY					A' DIMENSION (CM [IN])						
CB-1X-101-00-10					21.6 (8.50)						
CB-1X-102-00-10					28.6 (11.13)						
CB-1X-103-00-10					34.3 (13.50)						
CB-1X-104-00-10					40.0 (15.75)						
CB-2X-101-00-10					29.2 (11.50)						
CB-2X-102-00-10					30.9 (12.17)						
CB-2X-103-00-10					34.1 (13.42)						
CB-2X-104-00-10					37.0 (14.54)						
CB-2X-105-00-10					40.8 (16.04)						
CPB NUMBER		2017-0015		THIRD ANGLE PROJECTION		 southco® CONNECT • CREATE • INNOVATE					
				MILLIMETERS [IN]		DESCRIPTION COUNTERBALANCE HINGE SPRING DETAIL					
				TOLERANCES UNLESS OTHERWISE NOTED							
				ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.		J-CB-1					
PROPRIETARY ITEM				PER ASME Y14.5M-1994		SIZE A2		SYSTEM NX		DWG NO.	
EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCOT, INC.						DRAWN BY CMG/JDS		DATE 10OCT2018		SCALE NTS	
								SHEET		2 OF 3	

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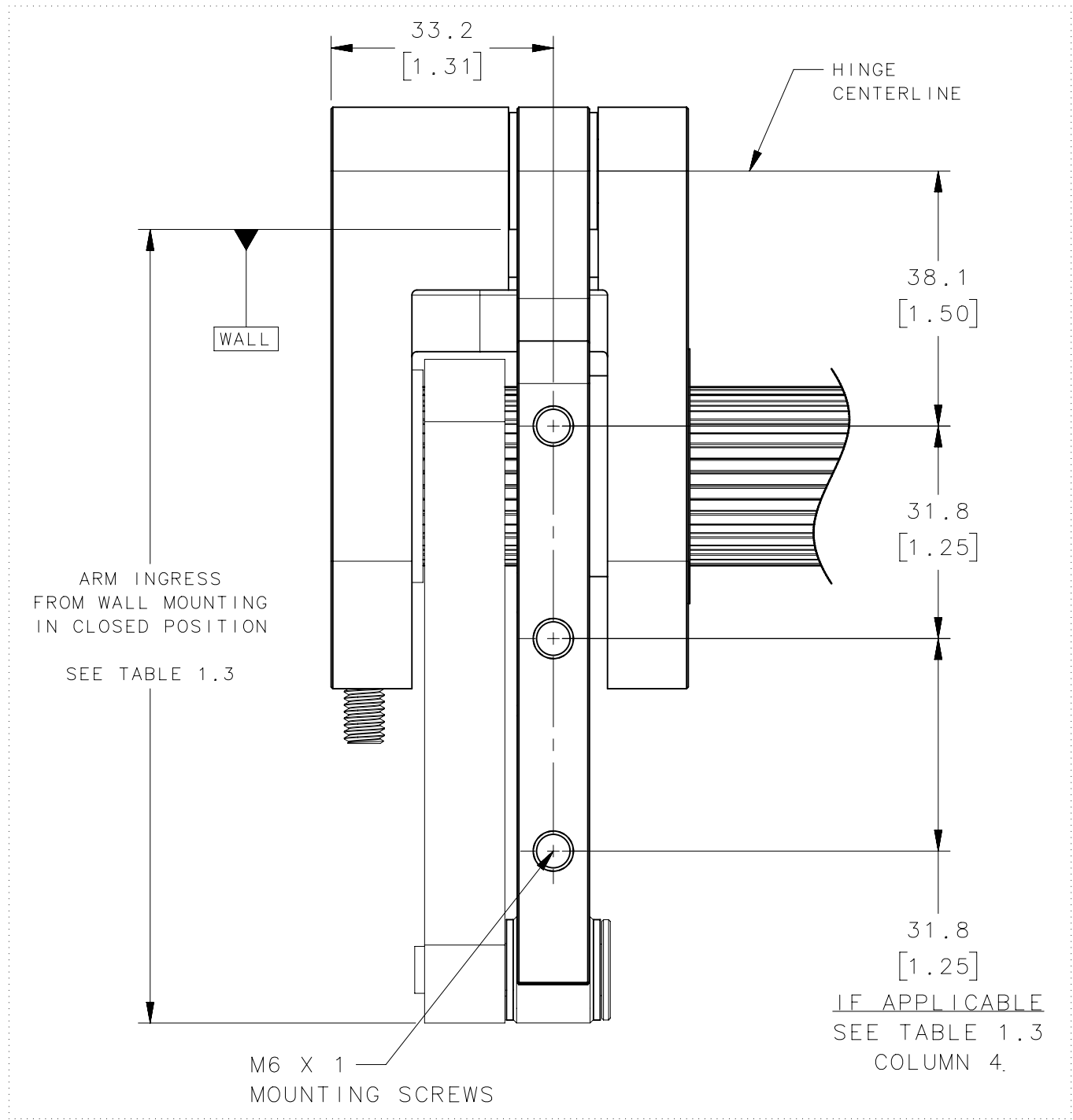
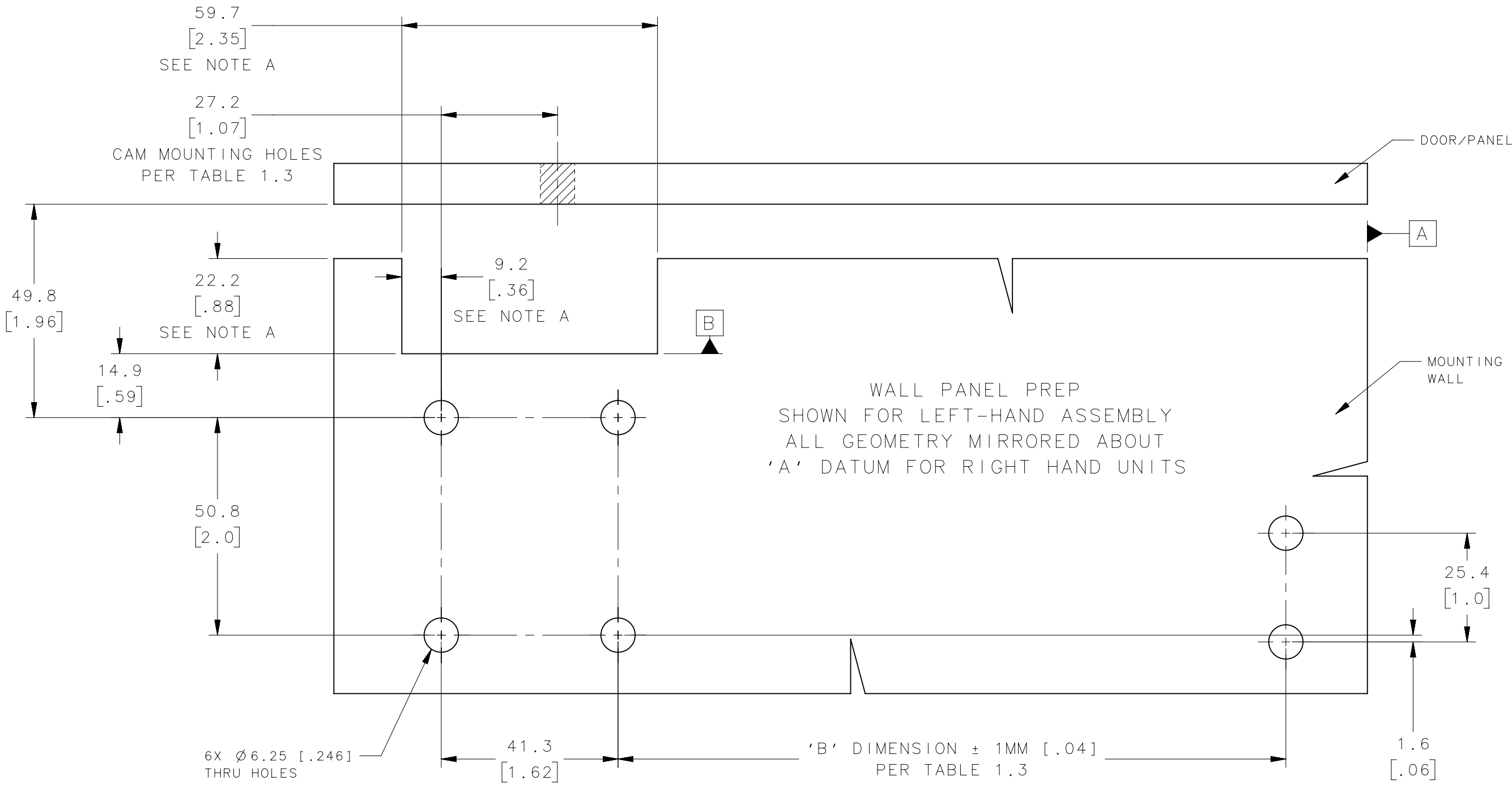
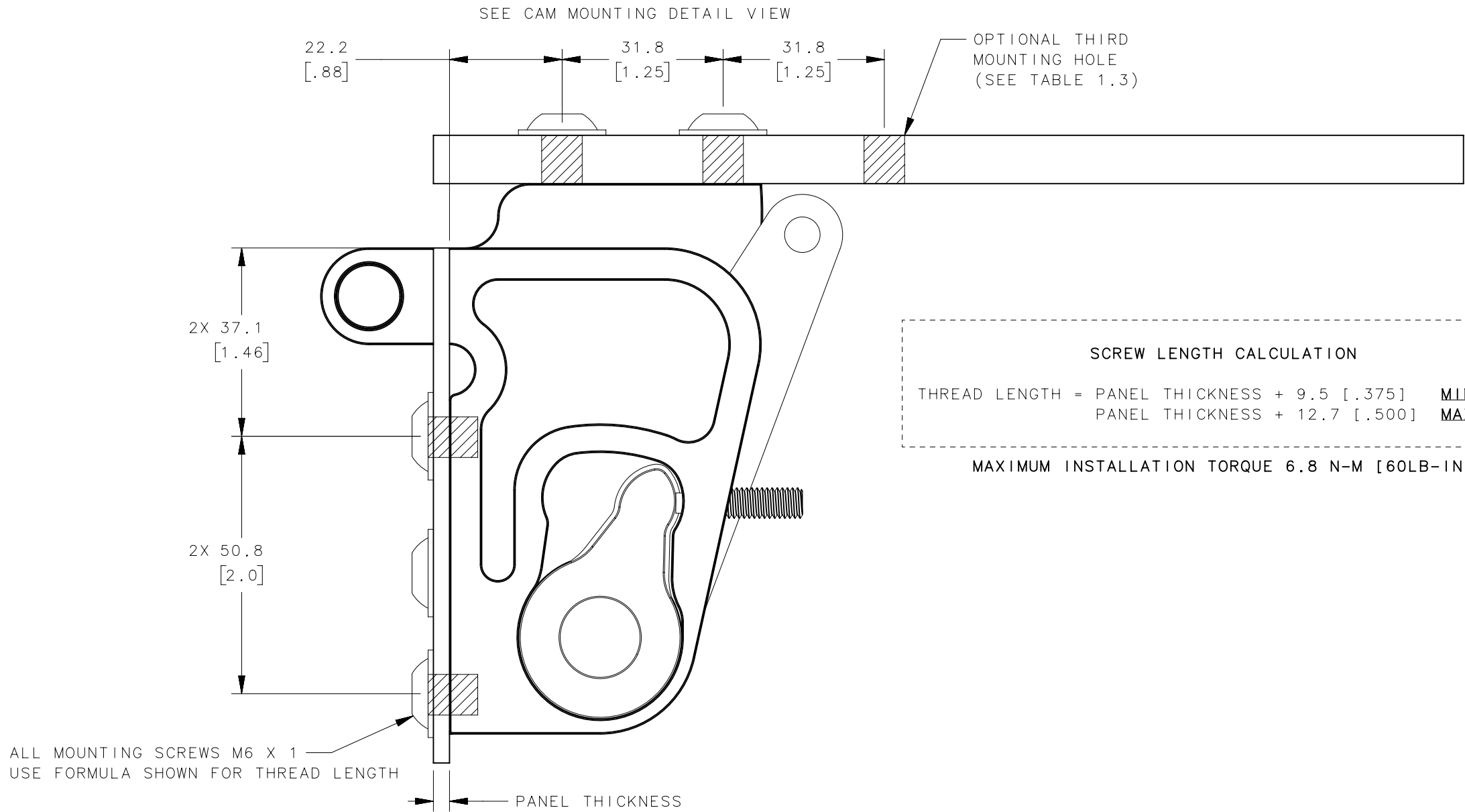
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REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
C	25FEB2019	CMG/GSF	PRN: P2019-0504



CAM MOUNTING DETAIL

NOTES:

A. CUTOUT GEOMETRY PROVIDED FOR CASES IN WHICH THE REQUIREMENT IS TO CONCEAL THE HOUSING AND FLUSH-MOUNT THE TOP FACE TO ALIGN WITH THE TOP OF THE REAR MOUNTING PANEL. CONCEALMENT IS NOT A REQUIREMENT AND DIMENSIONS CAN BE IGNORED FOR MOUNTING ON REAR PANELS ALONG THE 'B' DATUM.

TABLE 1.3			
ASSEMBLY	B' DIMENSION (CM [IN])	ARM INGRESS (CM [IN])	# MOUNTING HOLES
CB-1X-101-00-10	15.59 (6.14)	7.76 (3.05)	2
CB-1X-102-00-10	22.25 (8.76)	9.28 (3.66)	2
CB-1X-103-00-10	28.29 (11.13)	10.31 (4.06)	3
CB-1X-104-00-10	34.00 (13.39)	11.14 (4.39)	3
CB-2X-101-00-10	22.04 (8.68)	8.75 (3.44)	2
CB-2X-102-00-10	24.89 (9.80)	9.45 (3.72)	2
CB-2X-103-00-10	28.07 (11.05)	9.95 (3.92)	2
CB-2X-104-00-10	30.93 (12.18)	10.5 (4.13)	3
CB-2X-105-00-10	34.74 (13.68)	10.96 (4.32)	3
CPB NUMBER 2017-0015	THIRD ANGLE PROJECTION		
	MILLIMETERS [IN]		
	TOLERANCES UNLESS OTHERWISE NOTED		
	ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.	DESCRIPTION COUNTERBALANCE HINGE ATTACHMENT DETAIL	
PROPRIETARY ITEM EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCO, INC.	SIZE A2	SYSTEM NX	DWG NO. J-CB-1
PER ASME Y14.5M-1994	DRAWN BY CMG/JDS	DATE 10OCT2018	SCALE NTS
		SHEET 3 OF 3	