

- NOTES: UNLESS OTHERWISE SPECIFIED
- DIMENSIONING AND TOLERANCING IS IN ACCORDANCE WITH ASME Y14.5M 1994.
  - SPLINE IN ACCORDANCE WITH TABLE 1. SPLINE ENGAGEMENT: .53 [13.5] MIN. POSITION TOLERANCE AT THE SPLINE PITCH DIAMETER:  $\oplus \ominus \varnothing .012 [0.3] A B M C M$  REF
  - GROUND CONNECTION CABLE 6 AWG MIN. CABLE, ATTACH WITH M8x1.25 SIZE FASTENER.
  - TORQUE MOUNTING FASTENERS TO 35-37.5 ft\*lb [47-51Nm].
  - ROTOR INERTIA 283 lb\*in<sup>2</sup> [83e3 kg\*mm<sup>2</sup>] (REF).
  - APPROX. ASSEMBLY WEIGHT: 110±5 lb [50±3 kg] MOTOR INERTIA: 1619 lb\*in<sup>2</sup> [475e3 kg\*mm<sup>2</sup>] (REF).
  - LOCATION OF CG ON SHAFT AXIS, AT DISTANCE SPECIFIED FROM DATUM A.
  - RUST PROTECTION APPLIED TO SHAFT PRIOR TO SHIPMENT.
  - ATTACH GROUND STRAP IN INDICATED LOCATION. TIGHTEN NUT TO 6.3-6.7 ft\*lb [8.6-9.1 Nm].
  - AC PHASE CABLE MINIMUM BEND RADIUS=R2.7.
  - SIGNAL CONNECTION CABLE MINIMUM BEND RADIUS=R3.1.
  - APPROXIMATE COOLANT VOLUME IN HOUSING IS 0.64 LITERS. IF FITTINGS ARE ROTATED RE-TORQUE NUT TO 40-43 FT-LBS.
  - DO NOT LOAD SHAFT IN AXIAL OR RADIAL DIRECTION, MAXIMUM SHOCK ACCELERATION NOT TO EXCEED 1.5G ALONG AXIS OF SHAFT.
  - ALLOW .01" MIN CLEARANCE IN FRONT OF SHAFT TO ALLOW FOR THERMAL EXPANSION. DO NOT CLAMP OR AFFIX SHAFT MOVEMENT ALONG AXIS.
  - CONNECT PHASE CABLE CONNECTIONS TO UQM CONTROLLER.
  - MAX OPERATING SPEED: 10,500 RPM.

17 CABLE LENGTH OPTIONS ARE LISTED IN TABLE 2.

REVISIONS			
LTR	DESCRIPTIONS	DATE	APPR
A	RELEASED PER ECN 844	09JUL13	IVC/JML
B	CHANGES PER ECN 1285	07MAY18	RJR/IVC

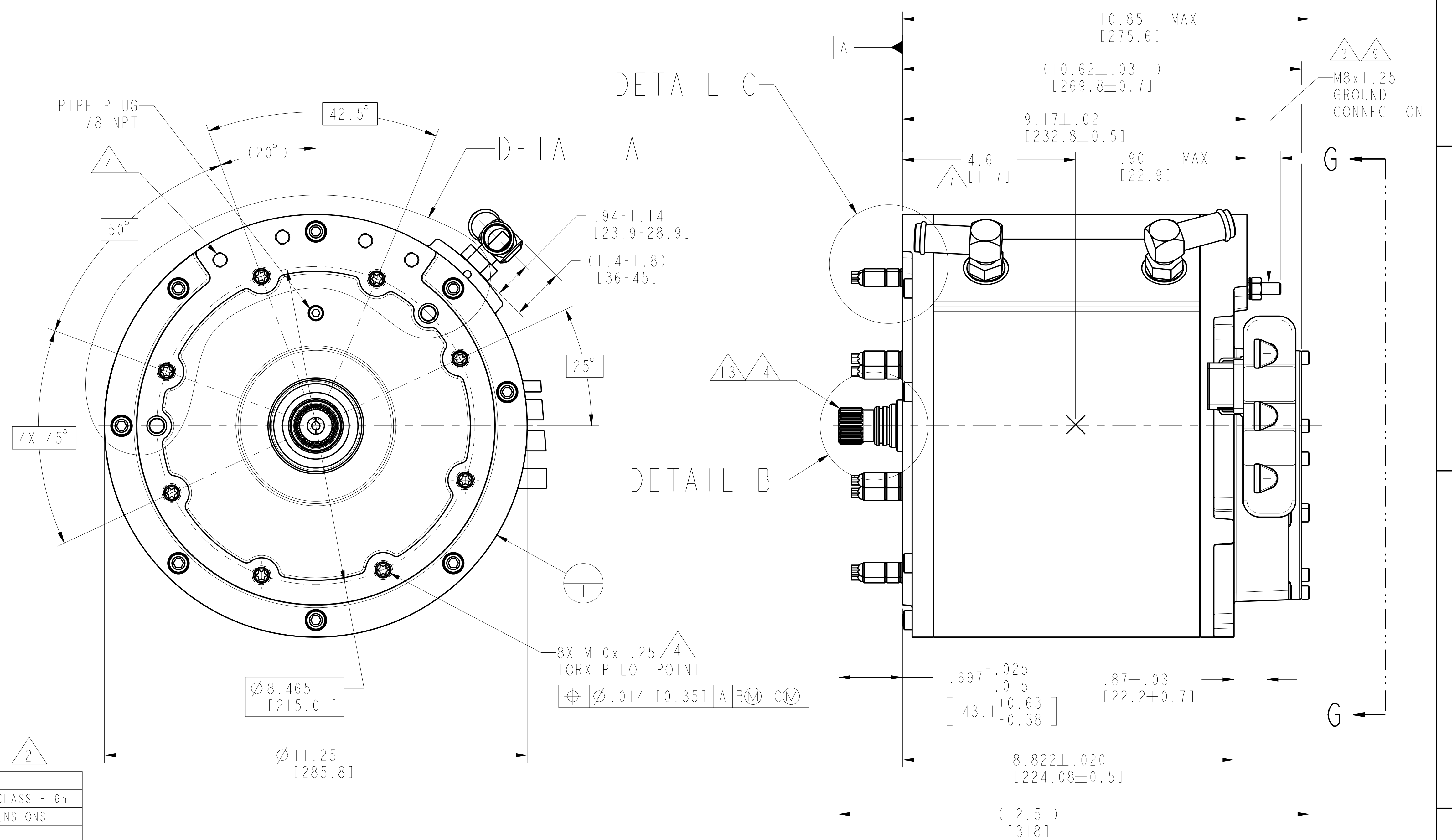
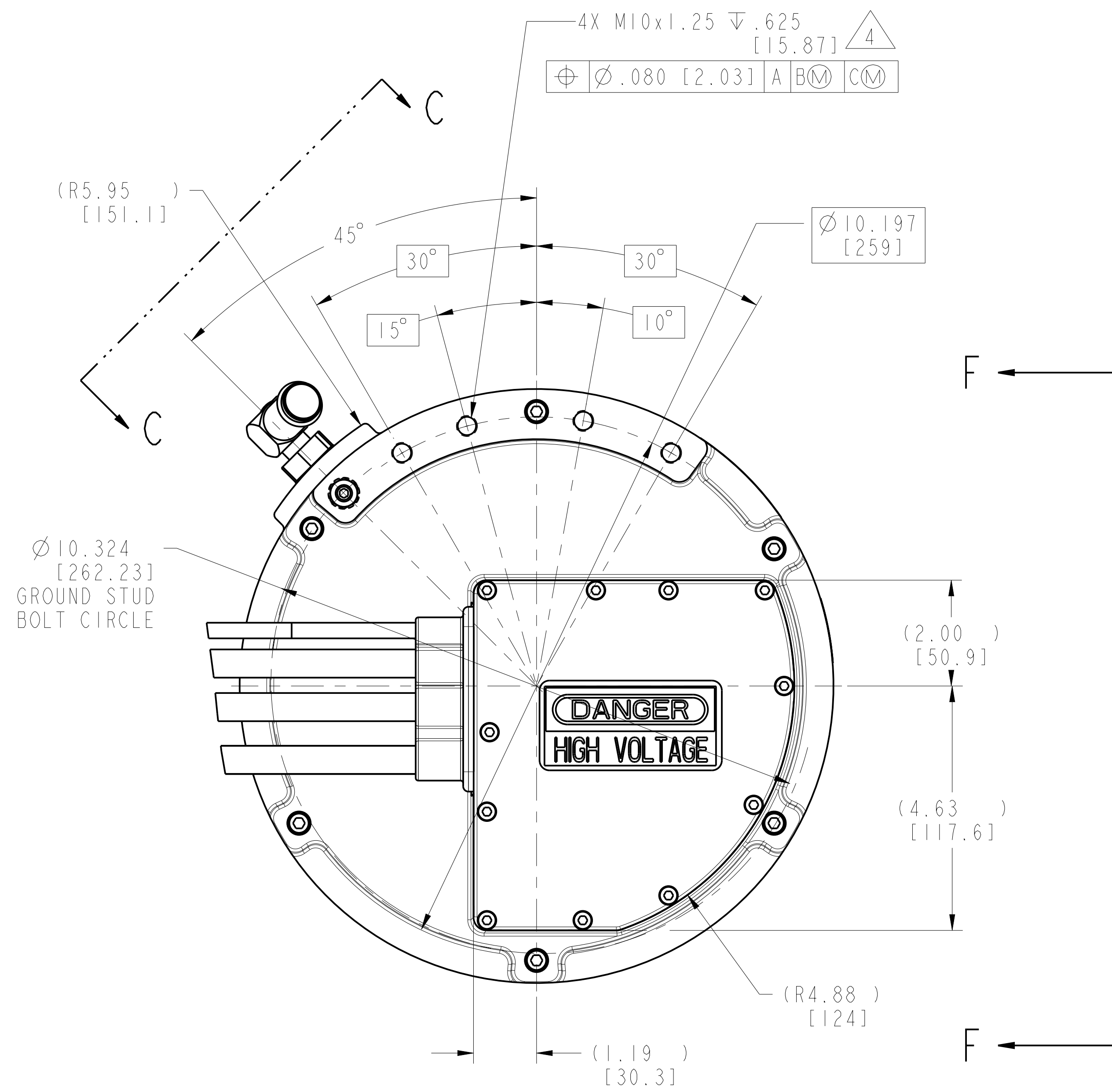


TABLE 1 2

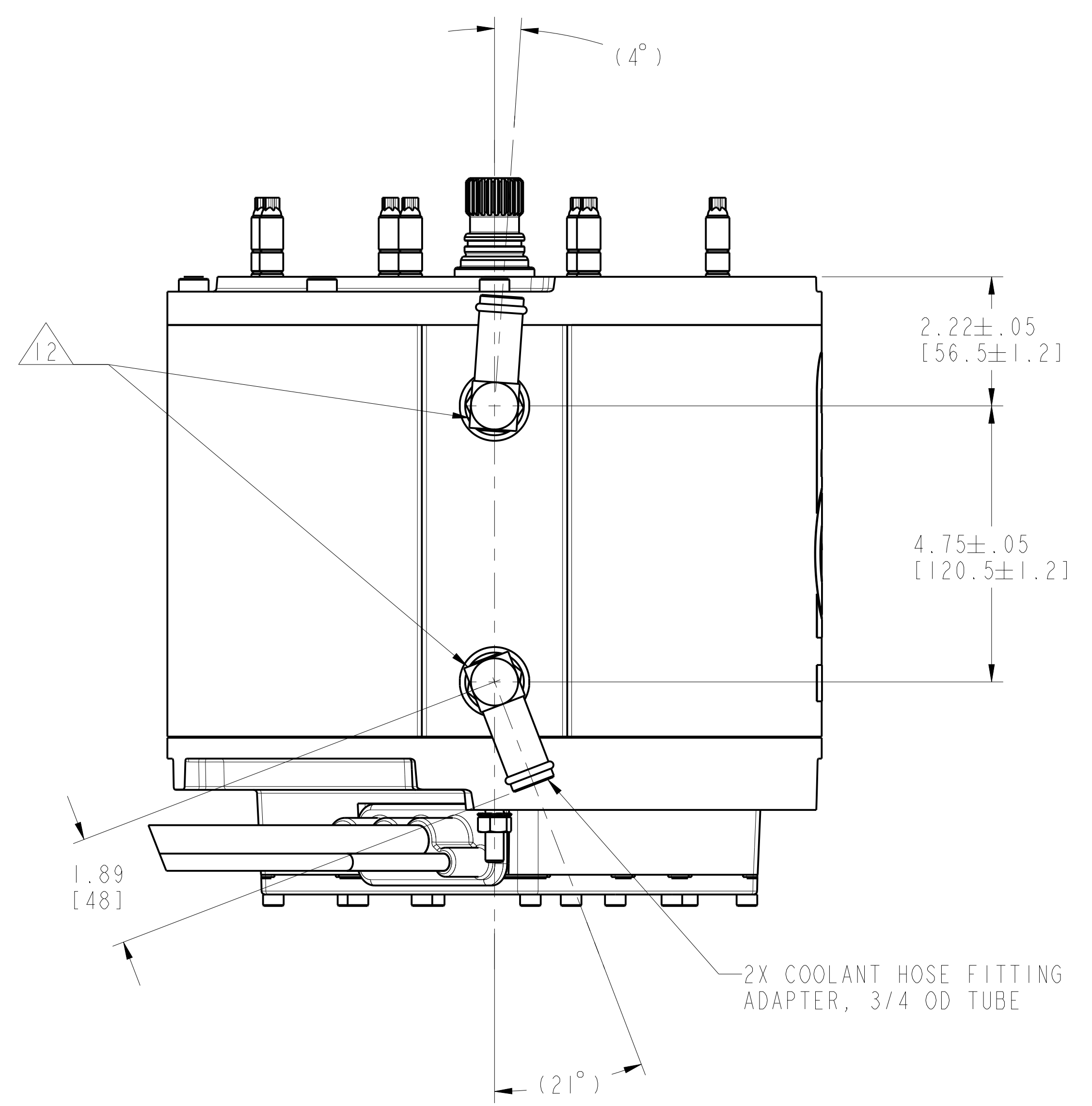
EXTERNAL INVOLUTE SPLINE DATA		
ANSI B92.2M-1980 (R1989)	FLAT ROOT SIDE FIT	TOLERANCE CLASS - 6h
	METRIC DIMENSIONS	INCH DIMENSIONS
NUMBER OF TEETH	24	24
MODULE	1.0000	1.0000
PRESSURE ANGLE	30.0°	30.0°
PITCH DIAMETER (REF)	24.000 $\nearrow .08$ A-B	.9449 $\nearrow .003$ A-B
BASE DIAMETER (REF)	20.785	.8183
MAJOR DIAMETER	25.00-24.75	.9843-.9744
MINOR DIAMETER	22.50-22.26	.8858-.8764
FORM DIAMTER (MAX)	22.89	.9012
CIRCULAR TOOTH THICKNESS	1.571 MAX EFFECTIVE 1.485 MIN ACTUAL	.0619 MAX EFFECTIVE .0585 MIN ACTUAL
MEASUREMENT OVER PINS (REF)	27.479-27.399	1.0819-1.0787
PIN DIAMETER	2.120	.0835
TOOTH PARALLISM	// .025 A-B	// .001 A-B

QTY	75010-294	ASSEMBLY, MOTOR, SPM195-114-3	ITEM
DRAWING NO. / VENDOR NO.		DESCRIPTION	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES		DATE: 13-May-13	 UQM TECHNOLOGIES, INC. 4120 SPECIALTY PLACE LONGMONT, CO 80504
TOLERANCES		13-May-13	
INCHES	METRIC	CHECKED: JML	TITLE
X ± .03	± .76	DESIGNED: IVC	ASSEMBLY, MOTOR, SPM195-114-3
XX ± .01	± .25	TREATMENT	N/A
XXX ± .005	N/A	FINISH	N/A
ANGULAR		APPROX. WT	110 lbs
X ± 1°		SCALE	5/8
X ± .5°		RELEASE DATE	TBD
DO NOT SCALE DRAWING		DWG NO.	20080-034
		SHEET	1 OF 5

REVISIONS			
LTR	DESCRIPTIONS	DATE	APPR
	SEE SHEET 1		



VIEW G-G



VIEW C-C

<small>UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES</small>	<small>INCHES</small> X N/A X ± .03 XX ± .01 XXX ± .005	<small>METRIC</small> ± .76 ± .25 ± 1.3 N/A	<small>DATE:</small> 13-May-13	 UOM TECHNOLOGIES, INC. 4120 SPECIALTY PLACE LONGMONT, CO 80504
	<small>CHECKED:</small> JML	<small>DESIGNED:</small> LVC	<small>DATE:</small> 13-May-13	
	<small>TREATMENT:</small> N/A	<small>FINISH:</small> N/A	<small>TITLE:</small> ASSEMBLY, MOTOR, SPM195-114-3	
	<small>DO NOT SCALE DRAWING</small>	<small>APPROX. WT:</small> 110 lbs	<small>SIZE:</small> D SCALE 5/8 <small>RELEASE DATE:</small> TBD	
			<small>DWG NO.:</small> 20080-034 <small>REV.:</small> B	<small>SHEET:</small> 2 OF 5

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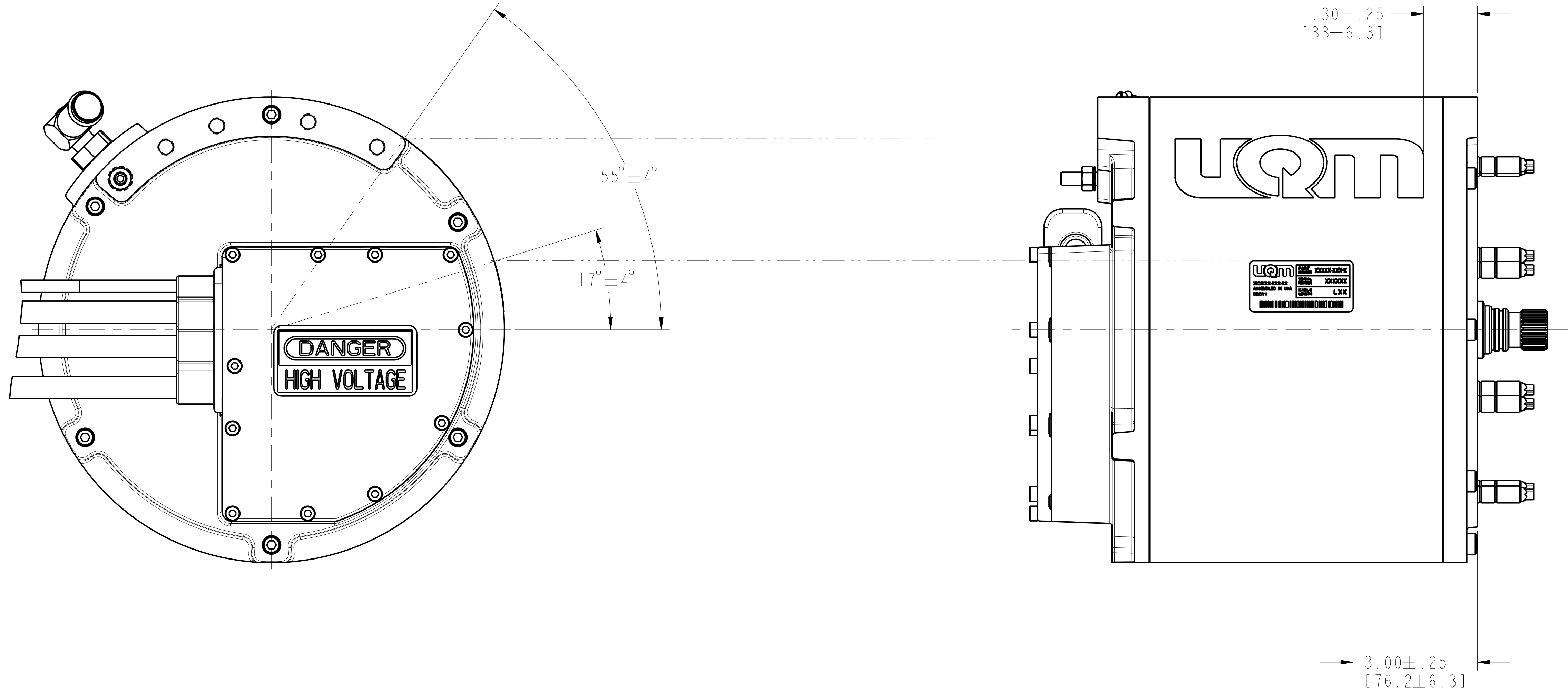
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REVISIONS			
LTR	DESCRIPTIONS	DATE	APPR
	SEE SHEET 1		



VIEW F-F

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES	DRAWN: LVC	DATE: 13-May-13	 UQM TECHNOLOGIES, INC. 4120 SPECIALTY PLACE LONGMONT, CO 80504
	CHECKED: JML	13-May-13	
	DESIGNED: LVC	13-May-13	
	TREATMENT: N/A		
INCHES: N/A	METRIC: ± .76	TITLE: ASSEMBLY, MOTOR, SPM195-114-3	DWG NO. 20080-034 SCALE: 5/8 SHEET 3 OF 5
X ± .03 ± .25	XX ± .01 ± 1.3	SIZE: D	
XXX ± .005 N/A		RELEASE DATE: TBD	
ANGULAR: X ± 1° X.X ± .5°	FINISH: N/A	APPROX. WT: 110 lbs	REV. B
DO NOT SCALE DRAWING			

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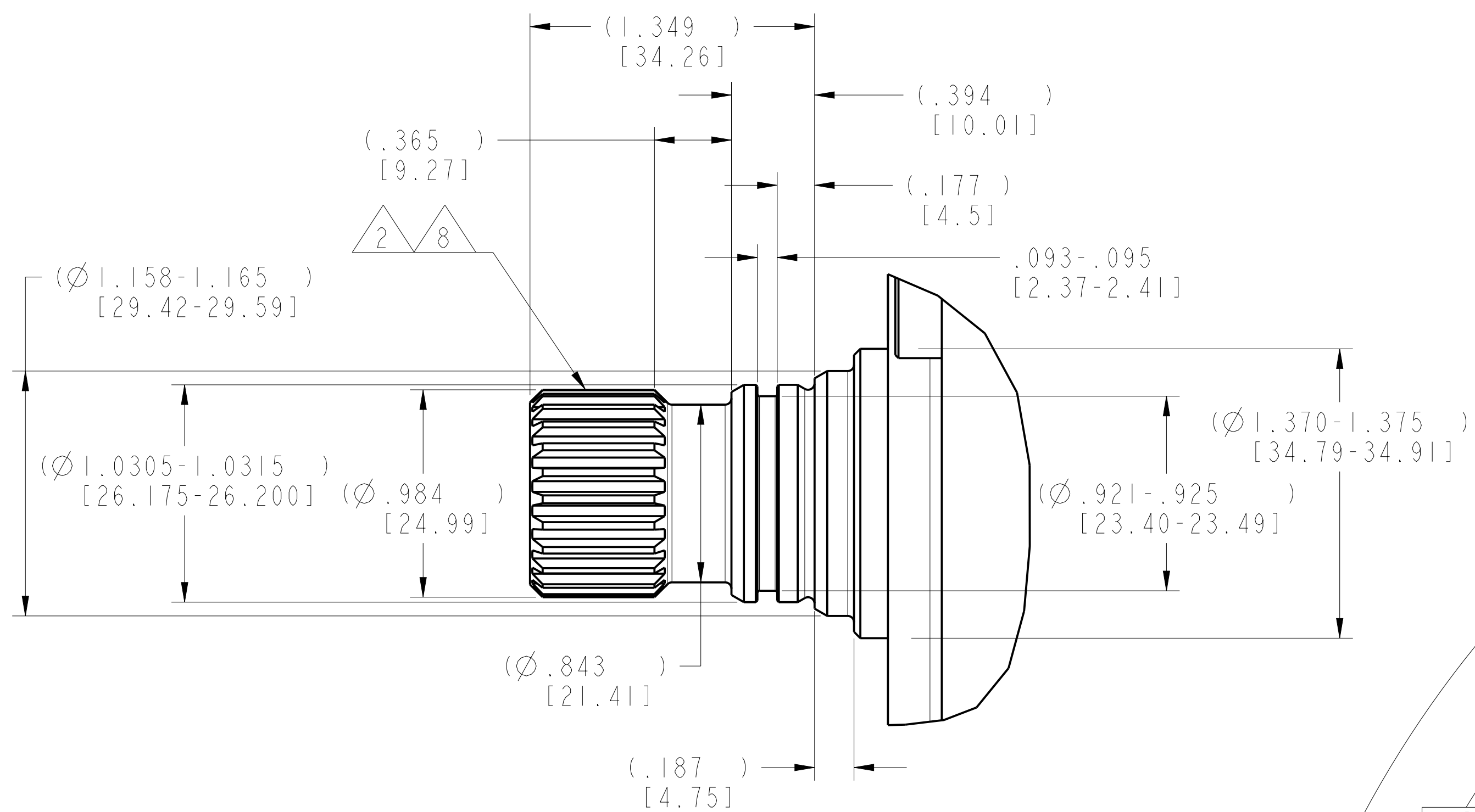
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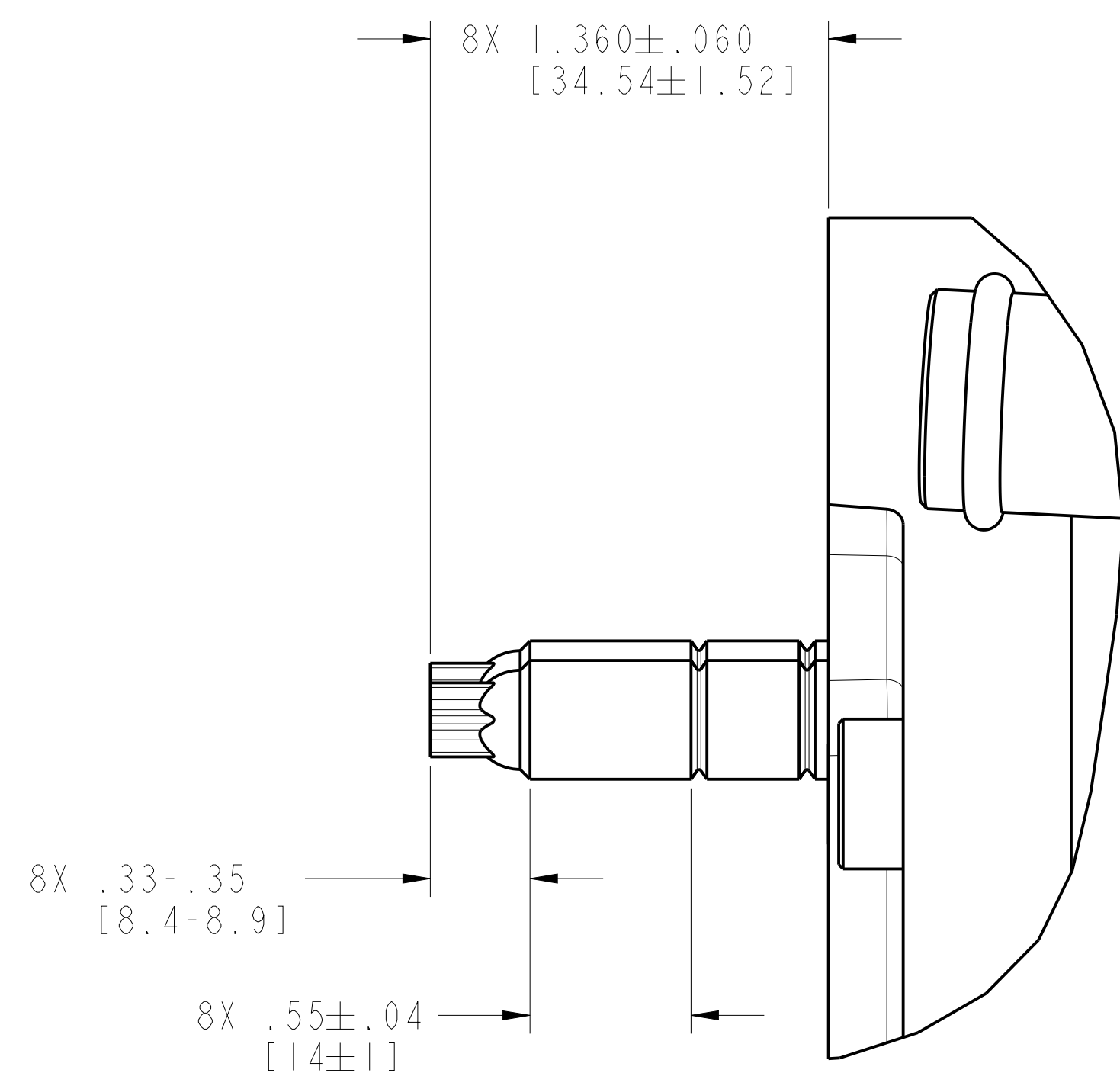
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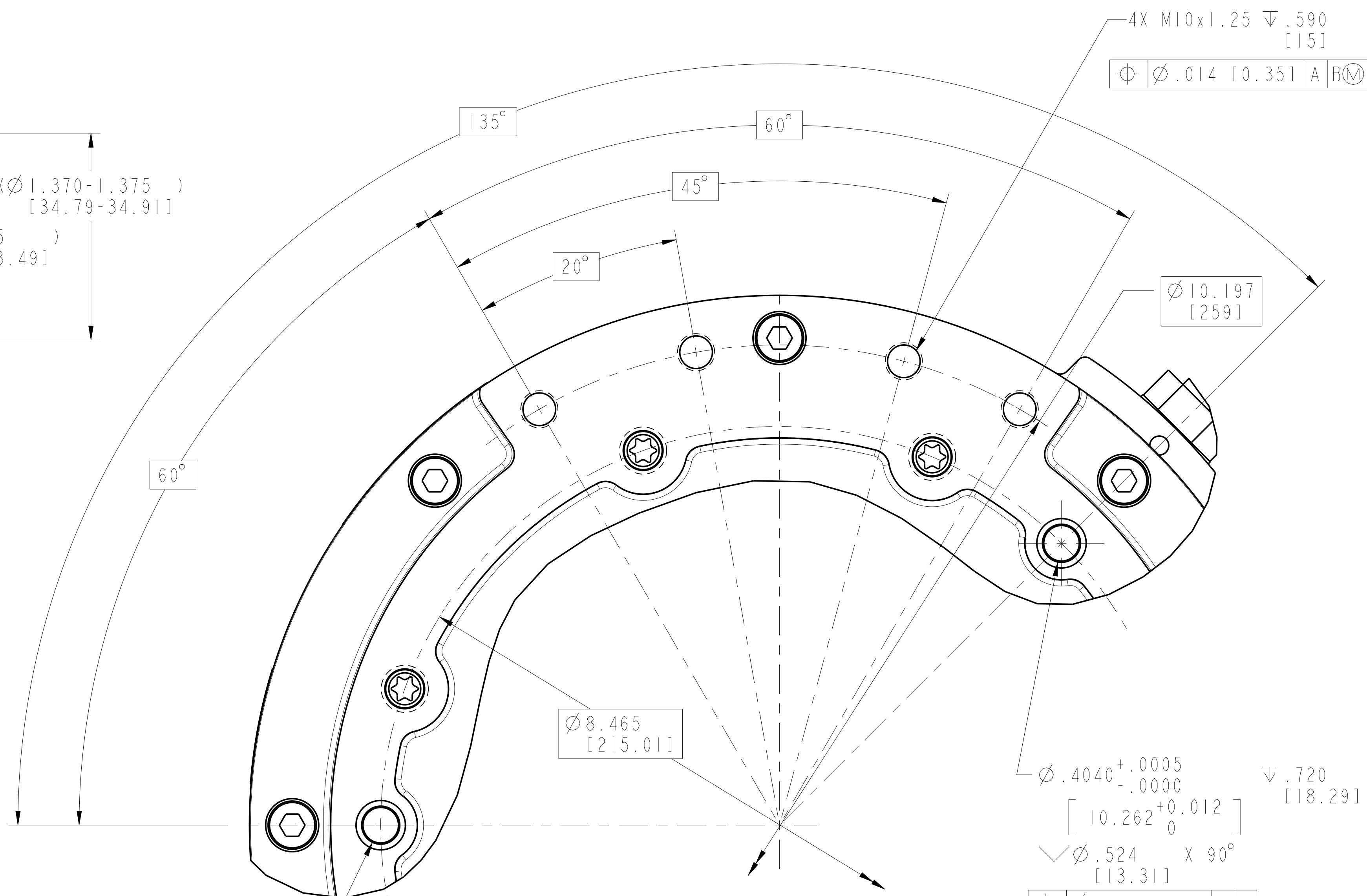
REVISIONS			
LTR	DESCRIPTIONS	DATE	APPR
	SEE SHEET 1		



DETAIL B  
SCALE 2/1



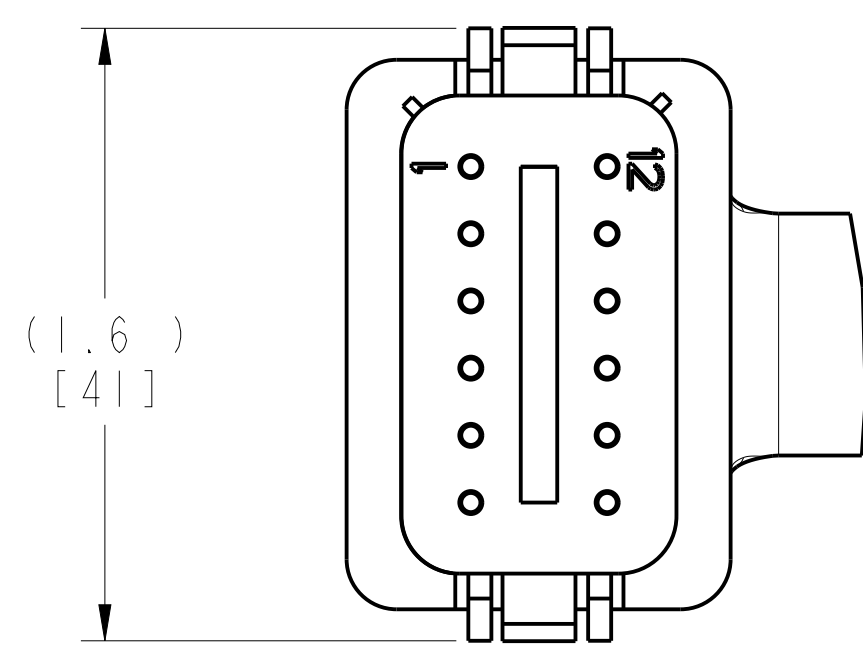
DETAIL C  
SCALE 2/1



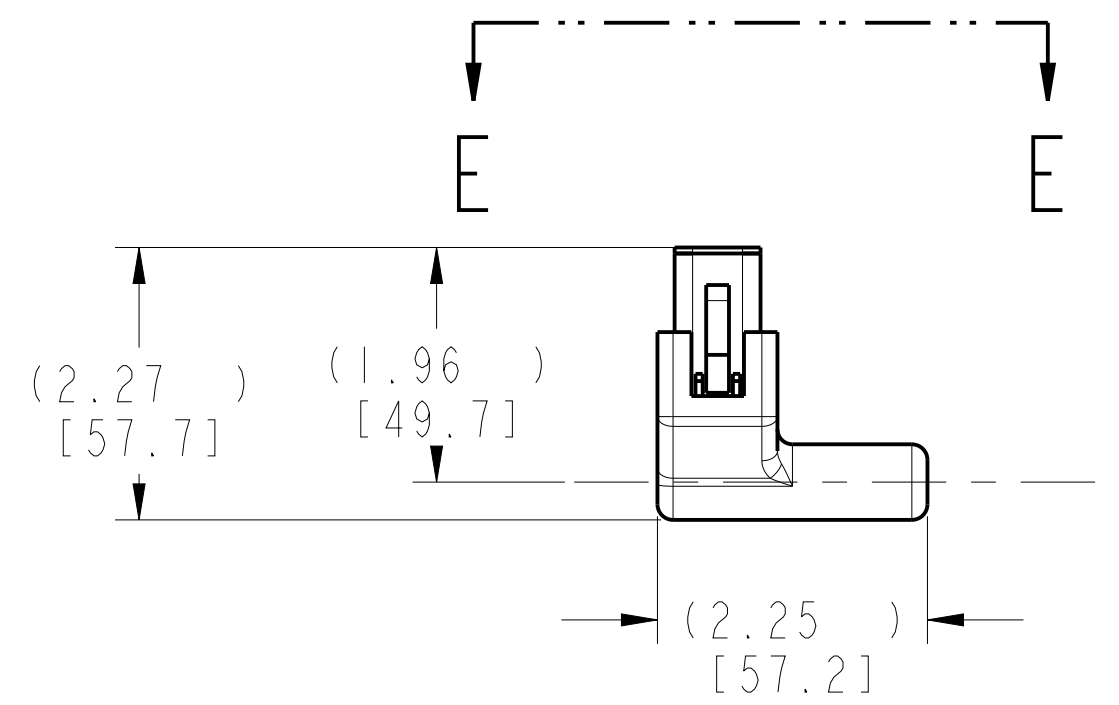
DETAIL A  
SCALE 5/4

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES	INCHES	METRIC	DATE:	UOM TECHNOLOGIES, INC. 4120 SPECIALTY PLACE LONGMONT, CO 80504
	X ± .03	± .76	13-May-13	
	XX ± .01	± .25	13-May-13	
	XXX ± .005	± .13		
ANGULAR	X ± 1°		TITLE	ASSEMBLY, MOTOR, SPM195-114-3
X.X ± .5°		TREATMENT	N/A	
		FINISH	N/A	
DO NOT SCALE DRAWING	APPROX. WT.	110 lbs	RELEASE DATE:	TBD
	DWG NO.	20080-034	REV.	B
	SHEET	4 OF 5		

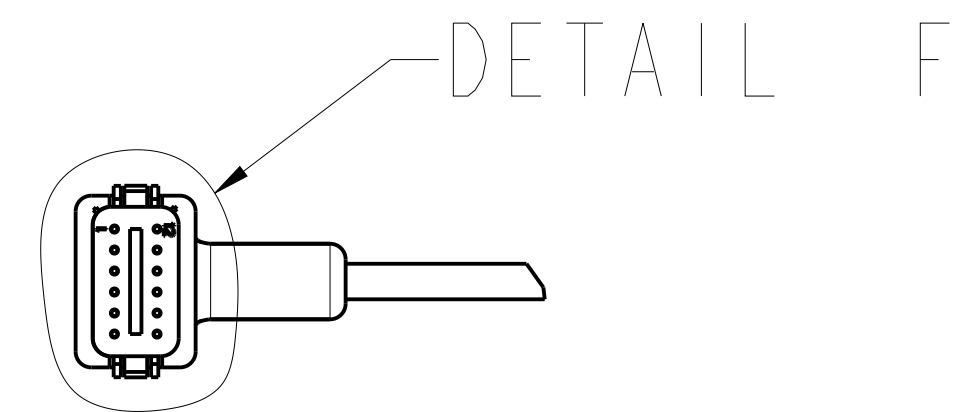
REVISIONS			
LTR	DESCRIPTIONS	DATE	APPR
	SEE SHEET 1		



DETAIL F  
SCALE 2/1



VIEW D-D



VIEW E-E

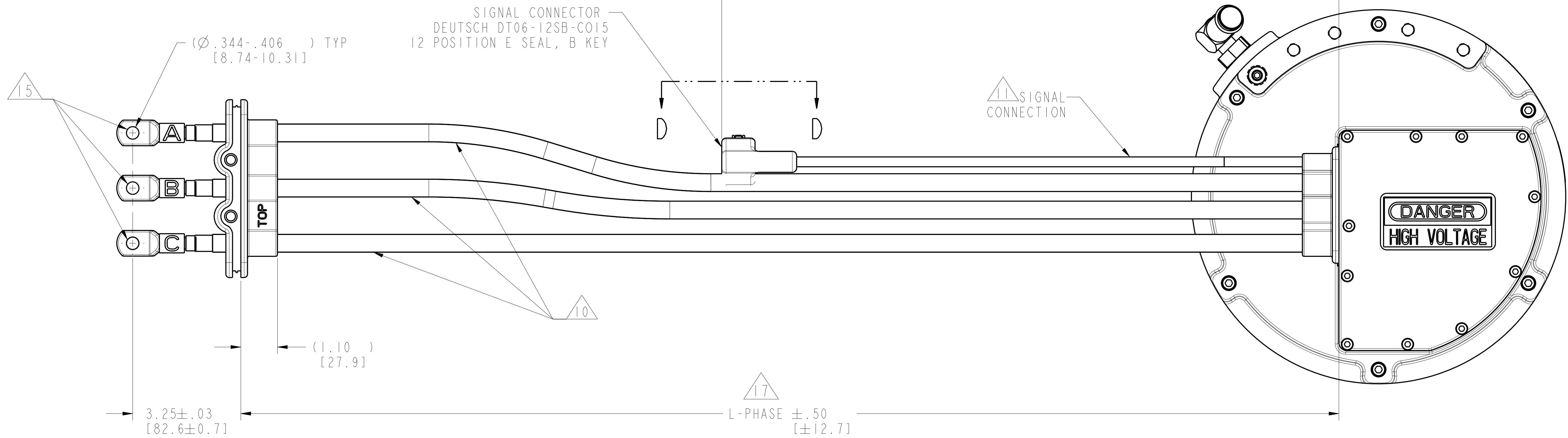


TABLE 2  $\triangle 17$

PART NUMBER FOR MOTOR	L-PHASE	L-SIGNAL
20080-034-L01	33.00±.5 [838.3±12.7]	18.55±.75 [471.1±19]
20080-034-L02	78.74±.5 [2000±12.7]	78.74±.75 [2000±19]

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES	DRAWN: LVC	DATE: 13-May-13	UOM TECHNOLOGIES, INC. 4120 SPECIALTY PLACE LONGMONT, CO 80504
	CHECKED: JML	13-May-13	
	DESIGNED: LVC	13-May-13	
	TREATMENT: N/A		
FINISH: N/A	APPROX. WT: 110 lbs	RELEASE DATE: TBD	TITLE: ASSEMBLY, MOTOR, SPM195-114-3 SIZE: D SCALE: 5/8 DWG NO: 20080-034 REV: B SHEET 5 OF 5