

2000 SERIES SUBSEA LINEAR ACTUATOR

General Specifications:

- Rated Output Force: 125 lbf
- Rated Output Speed: 2.4 in/s (at 24VDC)
- Peak Output Force: 225 lbf
- Stroke Length: 2 inch and 4 inch standard options. Custom stroke lengths available.
- Integrated Servo Control and Motor Driver
- Internal Pressure Compensator
- 8-pin micro wet-mate connector standard
- Communication physical layer options: RS-232, RS-485, CAN, Ethernet, analog voltage control, and analog current control

Operating Environment:

- Designed for mission-critical subsea use
- IP69K sealed housing
- Corrosion resistant material options†
 - 316 stainless steel, passivated
 - 6061-T6 aluminum, hardcoat anodized
 - Grade 5 titanium
- Maximum Operational Depth: 6500 meters
- Operating Temperature Range: -20°C to 65°C
- Storage Temperature Range: -30°C to 85°C
- Operating voltages between 12-120 Volts DC‡.

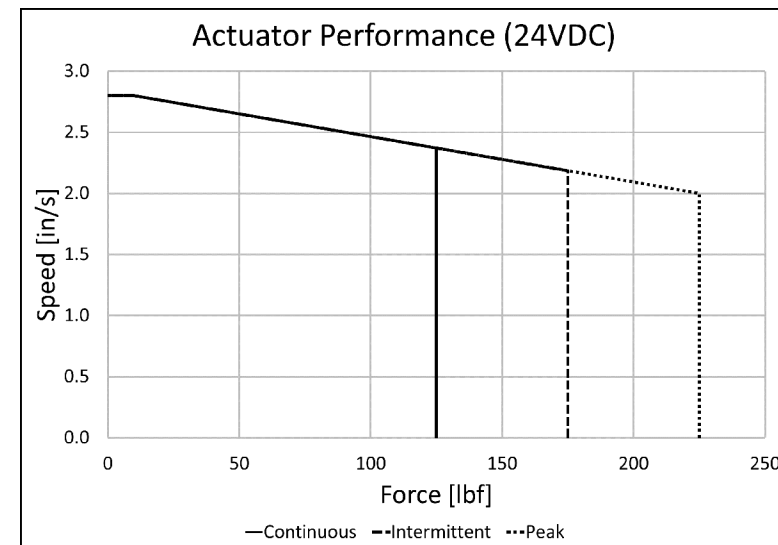
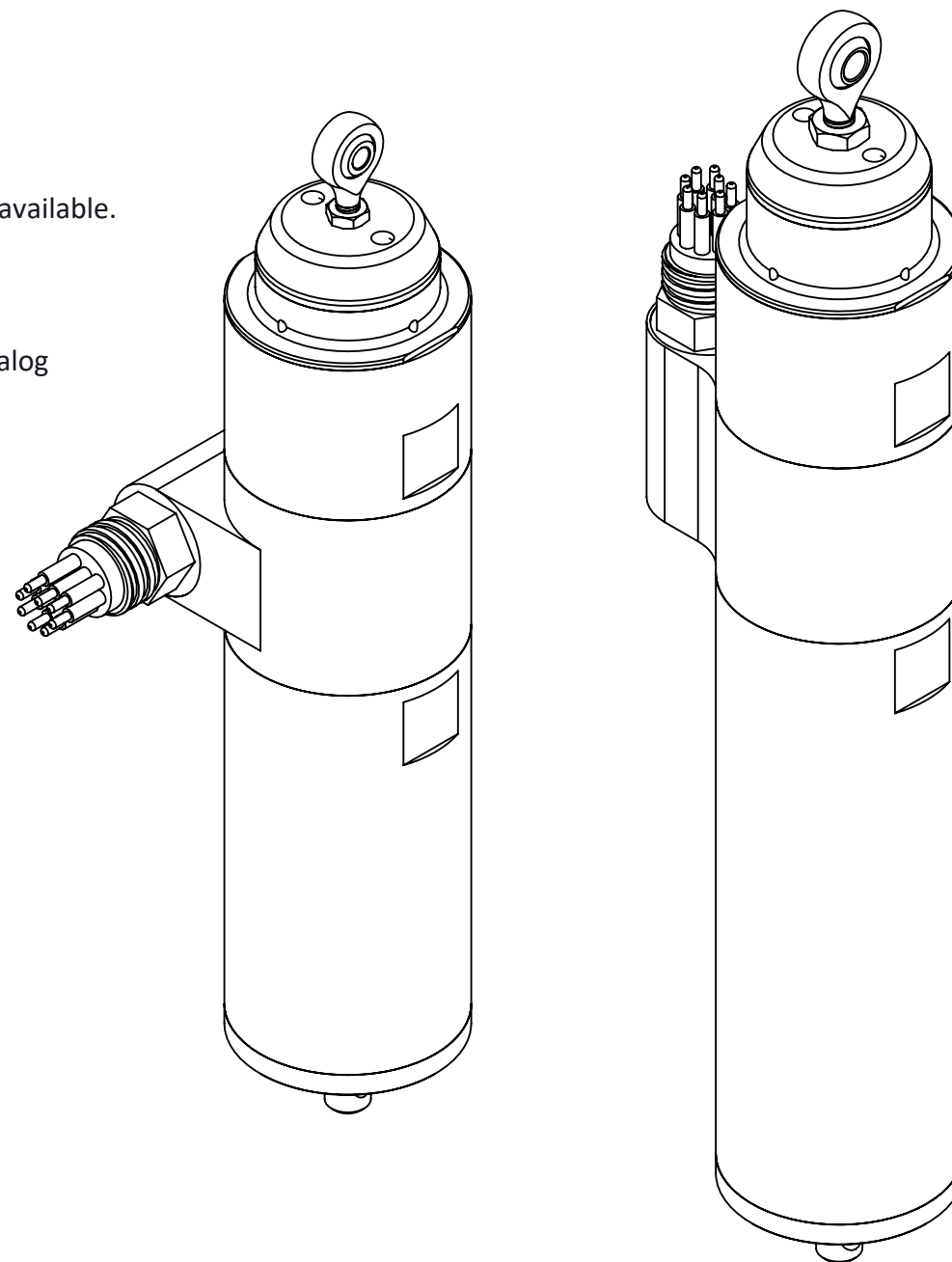
Onboard Motor Driver and Servo System:

- Closed-loop position control with PID tuning
- Configurable limits for current, power, velocity, and acceleration
- Configurable motion profile generator
- Contactless non-wearing absolute position sensor
- Does not require homing
- 0.010" Accuracy, 0.001" Resolution
- Standard Protocol: MODBUS
- Standard Baud Rate: 115200

†Materials for all wetted components except:

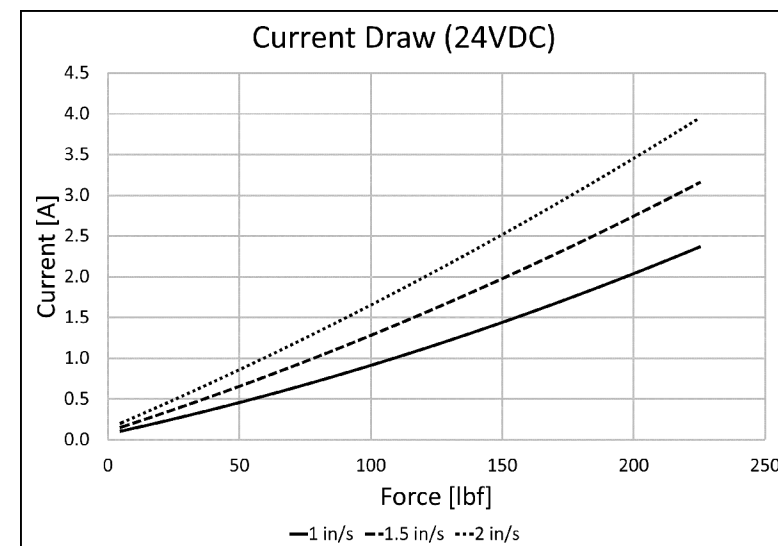
- Stainless: austenitic or duplex pushrod, 300 series fasteners, 300+400 series rod ends, 300 series compensator spring. All stainless steel components are passivated for increased corrosion resistance.
- Aluminum: stainless hardware, including austenitic or duplex pushrod, 300 series fasteners, 300+400 series rod ends, 300 series compensator spring. All stainless steel components are passivated for increased corrosion resistance.
- Titanium: fasteners, compensator spring, connector, pushrod, and rod ends may be grade 5 titanium or an alternate. All titanium components are passivated to remove contaminants from the manufacturing process.

‡See sheet 4 for voltage range options. Contact 2G for other voltages.



Actuator Rated Life (L₁₀):

- Continuous duty: 50,000 inches of travel.
- Intermittent duty: 20,000 inches of travel.
- Inspect seal every 5000 inches of travel.



APPROXIMATE WEIGHTS (LBS)	STAINLESS	ALUMINUM	TITANIUM
2 INCH STROKE	4.35 DRY 3.45 WET	2.55 DRY 1.65 WET	3.05 DRY 2.15 WET
4 INCH STROKE	5.30 DRY 4.15 WET	3.00 DRY 1.85 WET	3.80 DRY 2.65 WET

MATERIAL	UNLESS OTHERWISE SPECIFIED: - DIMENSIONS ARE IN INCHES - DIMENSIONS IN [] ARE IN mm - TOLERANCES: DECIMALS: .X ±.05 .XX ±.015 .XXX ±.005 ANGULAR: MACHINED: ±0.5° OTHER: ±2° - THREAD DEPTHS ON TAPPED HOLES ARE MINIMUMS - TAP DRILL DIAMETERS ARE REFERENCE - MAX FILLET RADIUS ON INSIDE SHARP CORNERS: 0.005 - BREAK ALL SHARP EDGES 0.010 MAX AND REMOVE BURRS - SURFACE FINISH: ≤63 Ra (µin)	INITIALS	DATE
MATERIAL & FINISH COMMENTS:		DRAWN DJF	08/17/2022
		APPROVED DJF	08/17/2022
		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF 2G ENGINEERING. ANY DISTRIBUTION OR REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF 2G ENGINEERING IS PROHIBITED.	
		INTERPRET GEOMETRIC DIMENSIONING & TOLERANCING PER ASME Y14.5-2009	

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TITLE: 2000 SERIES LINEAR ACTUATOR

SIZE B THIRD ANGLE PROJECTION DWG. NO. 2100L REV B

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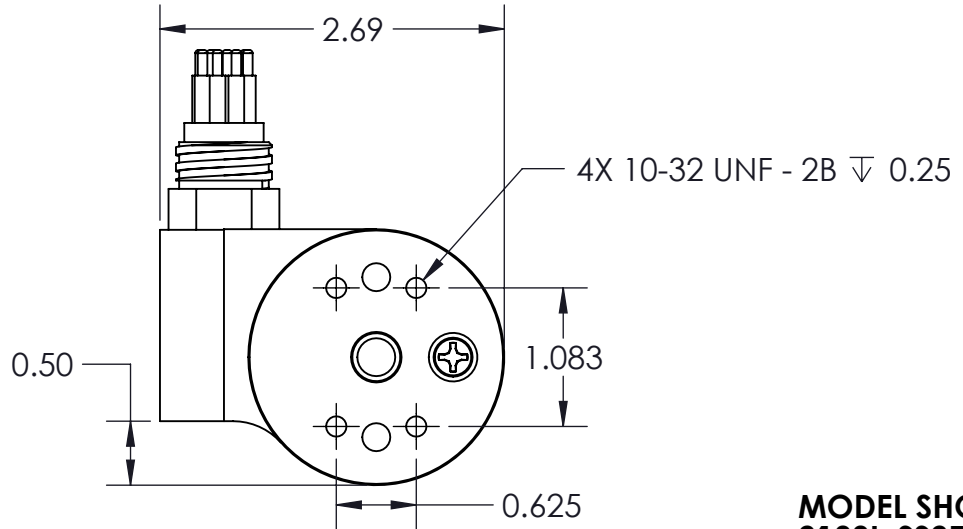
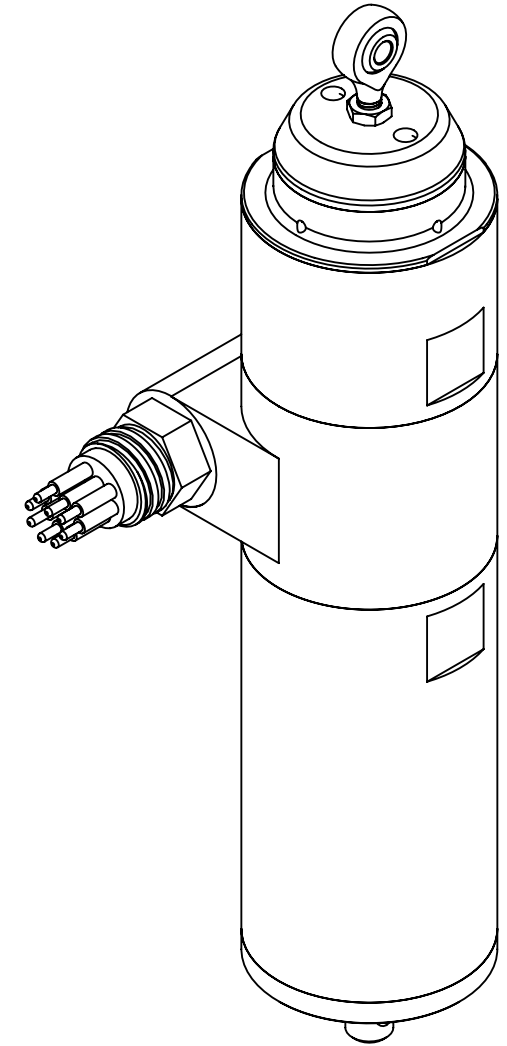
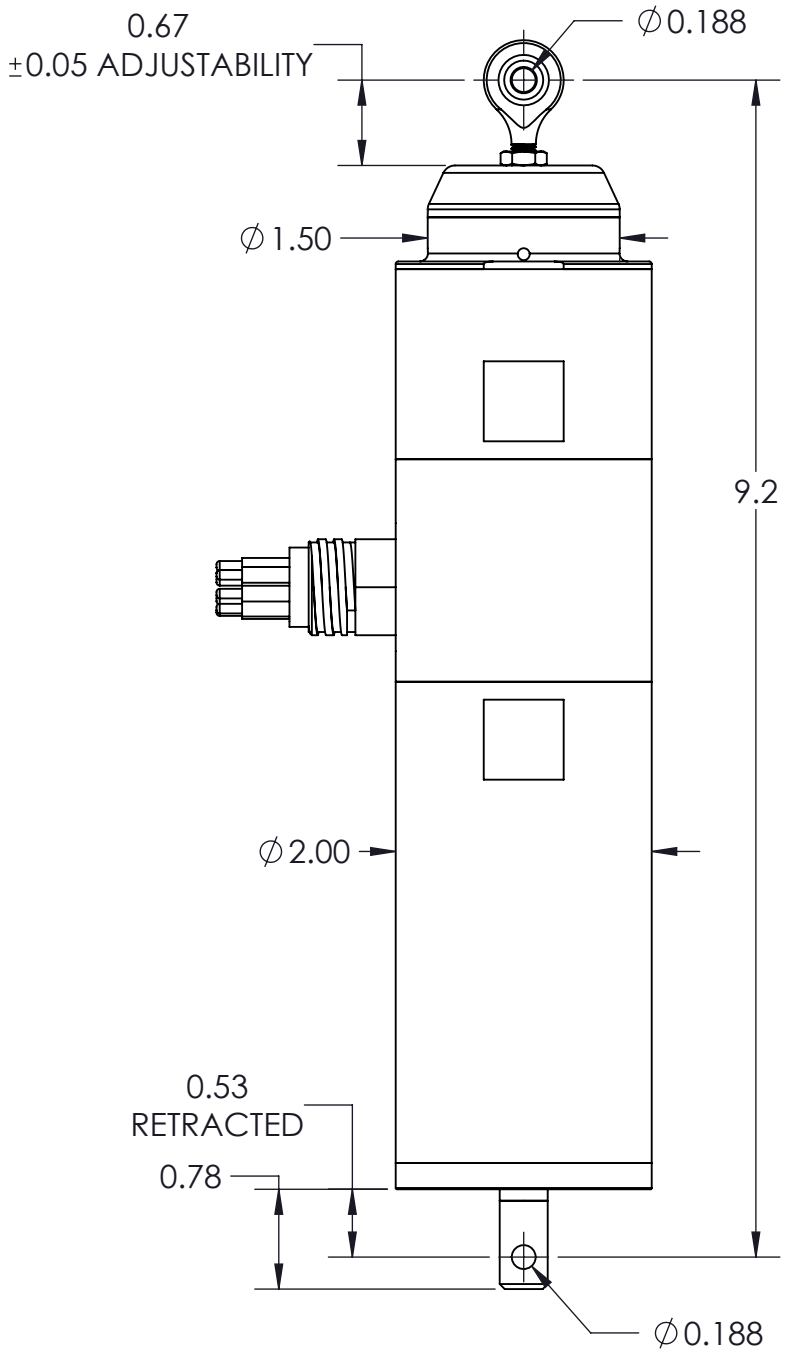
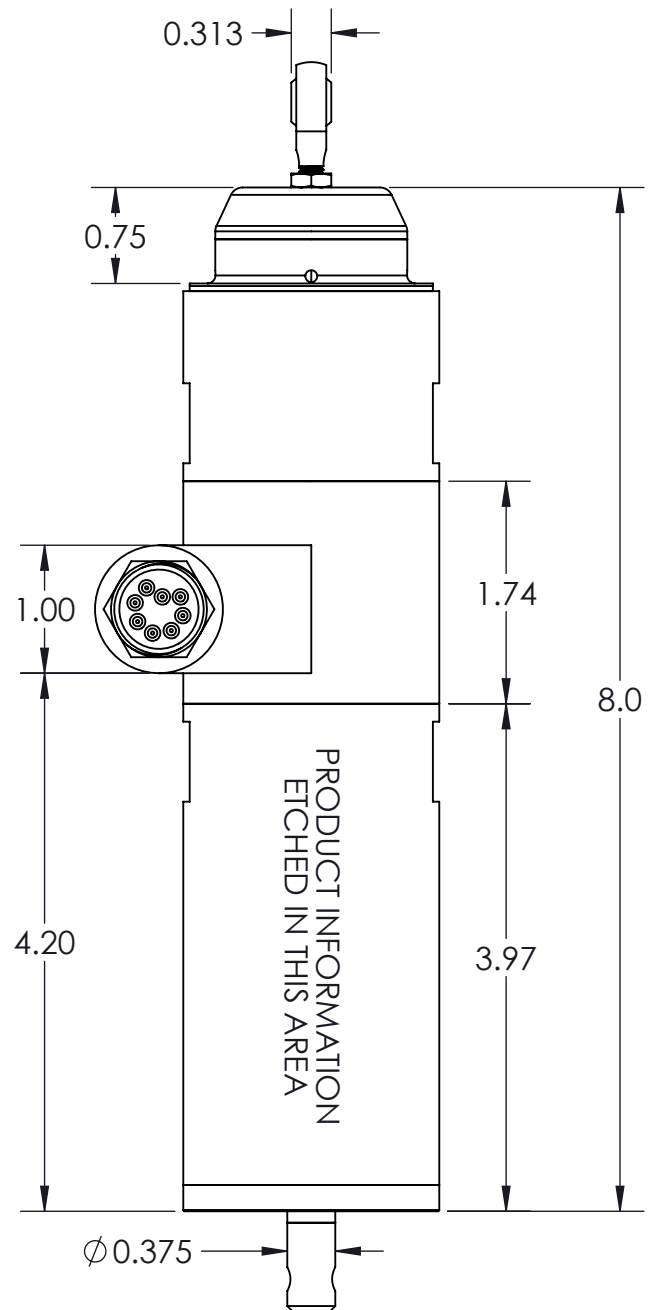
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- Notes:
1. Rod ends adjustable.
 2. Orientation of wrench flats on actuator body may vary.
 3. Orientation of nose mount screw holes may vary.

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SIZE **B** THIRD ANGLE PROJECTION DWG. NO. **2100L** REV **B**

MODEL SHOWN:
2100L-SS2EAE-8****

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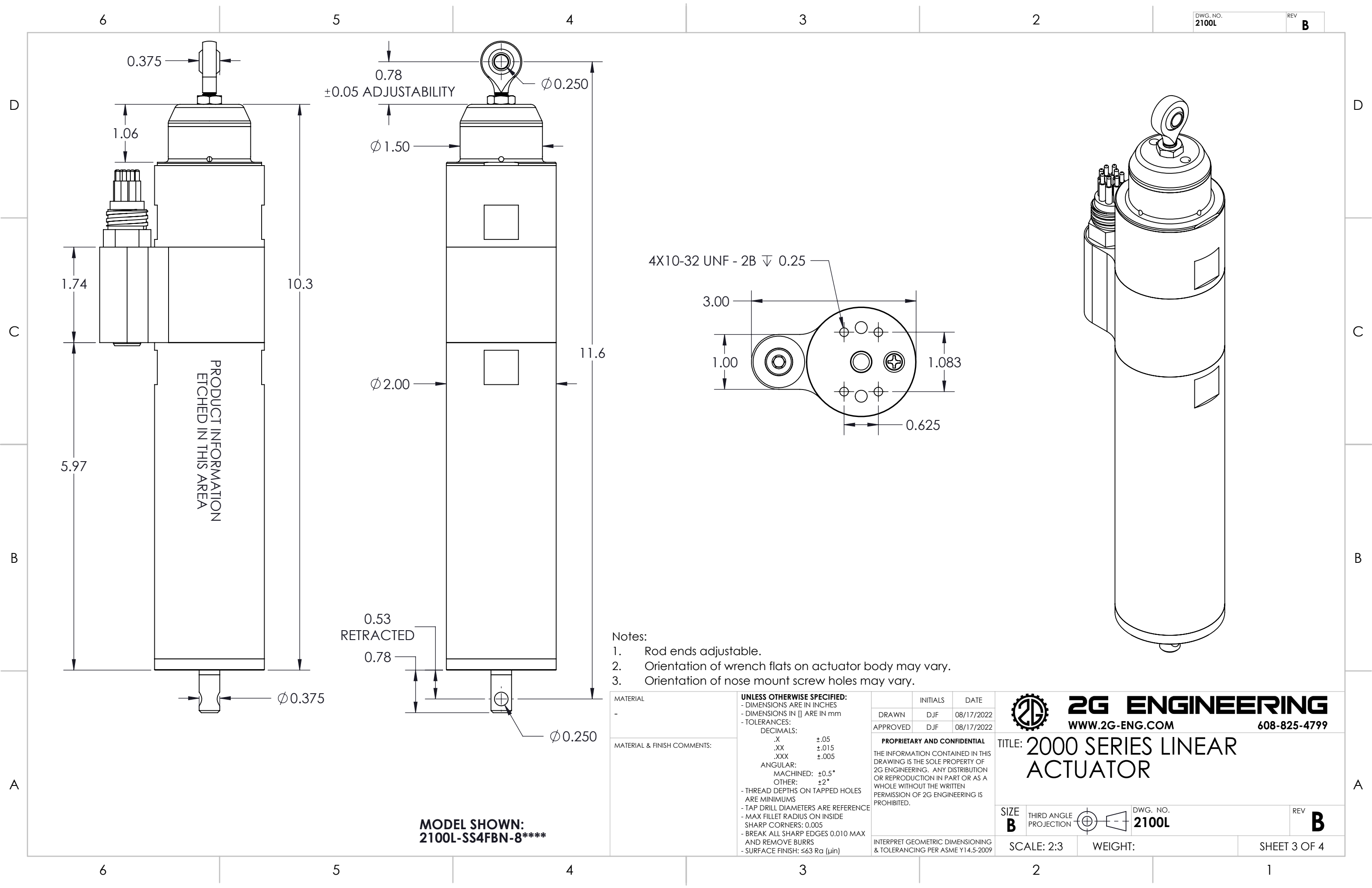
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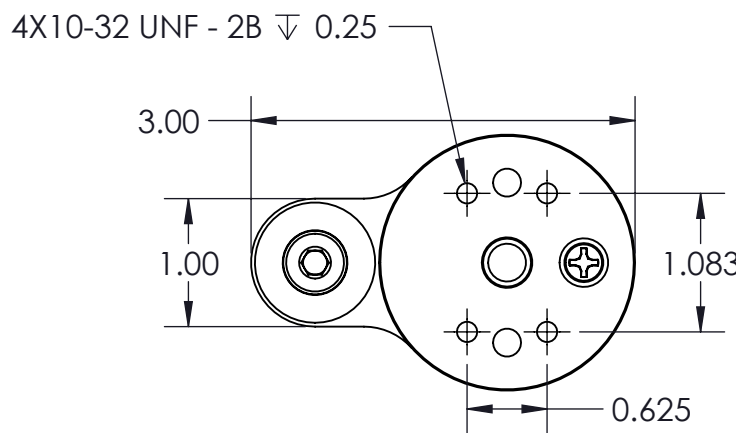
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PRODUCT INFORMATION
ETCHED IN THIS AREA



- Notes:
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 2. Orientation of wrench flats on actuator body may vary.
 3. Orientation of nose mount screw holes may vary.

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MODEL SHOWN:
2100L-SS4FBN-8****

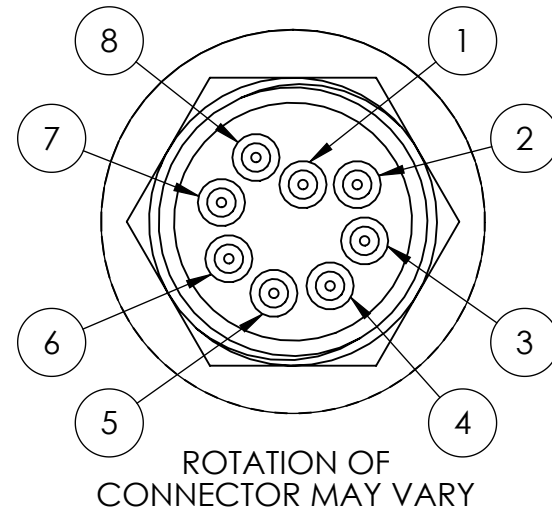
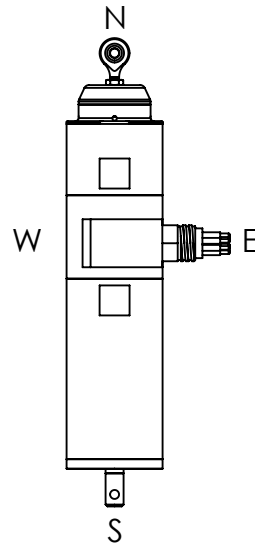
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SIZE B THIRD ANGLE PROJECTION DWG. NO. 2100L REV B

SERIES		HOUSING MATERIAL		STROKE LENGTH		PUSHROD MOUNT		FIXED END MOUNT		CONNECTOR ORIENTATION		COMMUNICATION		VOLTAGE		SOFTWARE	
2100L	SUBSEA	SS	316 STAINLESS STEEL, PASSIVATED	2	2 INCH	A	Ø 3/16" ROD END	A	Ø 3/16" ROD END	N	TOWARD FIXED END	8R	RS-232 AND RS-485	01	12-60VDC OPERATIONAL RANGE	S	MODBUS, 115200 BAUD RATE
2110L	SUBSEA ACME SCREW	AL	6061-T6 ALUMINUM, BLACK HARDCOAT ANODIZED	4	4 INCH	B	Ø 1/4" ROD END	B	Ø 1/4" ROD END	S	TOWARD PUSHROD	8V	RS-232 AND 0-10V ANALOG VOLTAGE CONTROL	08	50-120VDC OPERATIONAL RANGE	G	2G PACKETS, 115200 BAUD RATE
		-	TI	GRADE 5 TITANIUM			C	Ø 5/16" ROD END	C	Ø 5/16" ROD END	E	90° CW FROM FIXED END	-	8A	RS-232 AND 4-20mA ANALOG CURRENT CONTROL		
							D	Ø 3/8" ROD END	D	Ø 3/8" ROD END	W	270° CW FROM FIXED END		8C	RS-232 AND CAN		
							E	Ø 3/16" CLEVIS	E	NOSE MOUNT	8E	ETHERNET					
							F	Ø 1/4" CLEVIS			6L	NON-ISOLATED RS-232 AND RS-485					

CONNECTOR ORIENTATION
SHOWN: E (90° CLOCKWISE FROM FIXED END)



PIN ASSIGNMENTS						
PIN	8R	8V	8A	8C	8E	6L
1	VIN -	VIN -	VIN -	VIN -	VIN -	RS-232 TX
2	VIN +	VIN +	VIN +	VIN +	VIN +	RS-232 RX
3	N/C	N/C	N/C	N/C	RS-232 TX	RS-485 -
4	COMMS GND	COMMS GND	COMMS GND	COMMS GND	RS-232 RX	VIN +
5	RS-232 TX	RS-232 TX	RS-232 TX	RS-232 TX	ETHERNET TX+	VIN -
6	RS-232 RX	RS-232 RX	RS-232 RX	RS-232 RX	ETHERNET TX-	RS-485 +
7	RS-485 +	0-10V ANALOG INPUT	4-20 mA ANALOG INPUT	CAN HI	ETHERNET RX+	N/A
8	RS-485 -	0-10V ANALOG OUTPUT	4-20mA ANALOG OUTPUT	CAN LO	ETHERNET RX-	N/A

[Click here for user manual and communication protocol information.](#)

2G ENGINEERING CAN CUSTOMIZE ANY ACTUATOR TO SUIT YOUR APPLICATION.

EXAMPLES:

- EXTERNAL COMPENSATOR
- CUSTOM CONNECTOR
- CUSTOM PUSHROD AND END MOUNTS
- NON-COMPENSATED/INDUSTRIAL UNITS
- SELF-LOCKING ACME SCREW

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