

6100 SERIES
SUBSEA ROTARY ACTUATOR

GENERAL SPECIFICATIONS:

- OUTPUT TORQUE: UP TO 2000 ft-lbf (T6 FRAME SIZE)
- OUTPUT SPEED: UP TO 2500 RPM (T1 FRAME SIZE)
- INTEGRATED SERVO CONTROL AND MOTOR DRIVER
- INTERNAL PRESSURE COMPENSATOR
- OPTIONAL SPRING-ENGAGED, POWER-OFF BRAKE
- LED SHAFT POSITION INDICATOR RING
- STANDARD CONNECTORS:
 - 9-PIN LOW-PROFILE POWER CONNECTOR
 - 13-PIN LOW-PROFILE COMMS CONNECTOR
- 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 HOUSING MATERIAL OPTIONS
 - STAINLESS STEEL, PASSIVATED
 - ALUMINUM, HARDCOAT ANODIZED
 - TITANIUM
- OPERATIONAL DEPTH RATING: >6000 METERS SEAWATER
- DESIGN PRESSURE: 10,000 psi
- OPERATING TEMPERATURE RANGE: -20°C TO 65°C
- STORAGE TEMPERATURE RANGE: -30°C TO 85°C
- OPERATING VOLTAGES BETWEEN 12-400 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
- 0.002° RESOLUTION, 0.2° PRECISION, 1° ACCURACY
- STANDARD PROTOCOL: MODBUS
- DEFAULT BAUD RATE: 115200

*2G ENGINEERING CAN CUSTOMIZE ANY ACTUATOR TO SUIT YOUR APPLICATION. CERTAIN OPTIONS MAY IMPACT DIMENSIONS, PERFORMANCE, AND LEAD TIME. CONTACT 2G TO VERIFY DIMENSIONS.

T4S FRAME SIZE

CORROSION-RESISTANT
HOUSING MATERIALS

9-PIN POWER CONNECTOR

13 PIN COMMS CONNECTOR

MOUNTING FLANGE
COMPATIBLE WITH
ISO 5210/5211

T6B FRAME SIZE

OPTIONAL FAIL-SAFE BRAKE

LED SHAFT POSITION INDICATOR

INTERNAL PRESSURE
COMPENSATOR

RATED TORQUE

FRAME SIZE	CONTINUOUS	INTERMITTENT	PEAK
-	ft-lbf [Nm]	ft-lbf [Nm]	ft-lbf [Nm]
T1	3.0 [4.1]	4.5 [6.1]	6.0 [8.1]
T2	25 [34]	35 [47]	45 [61]
T3	150 [203]	200 [271]	250 [339]
T4	300 [407]	400 [542]	500 [678]
T5	600 [813]	800 [1085]	1000 [1356]
T6	1200 [1627]	1600 [2169]	2000 [2712]

MATERIAL:

MATERIAL COMMENTS:

FINISH:

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

DRAWN

DJF

10/01/2024

APPROVED

xx/xx/xxxx

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SIZE

B

THIRD ANGLE
PROJECTION



INTERPRET GEOMETRIC DIMENSIONING & TOLERANCING PER ASME Y14.5-2009



2G ENGINEERING

WWW.2G-ENG.COM

608-825-4799

TITLE: 6100 SERIES ROTARY
ACTUATOR

DWG. NO.

6100R

REV.

SCALE: 1:4

SHEET 1 OF 10

D

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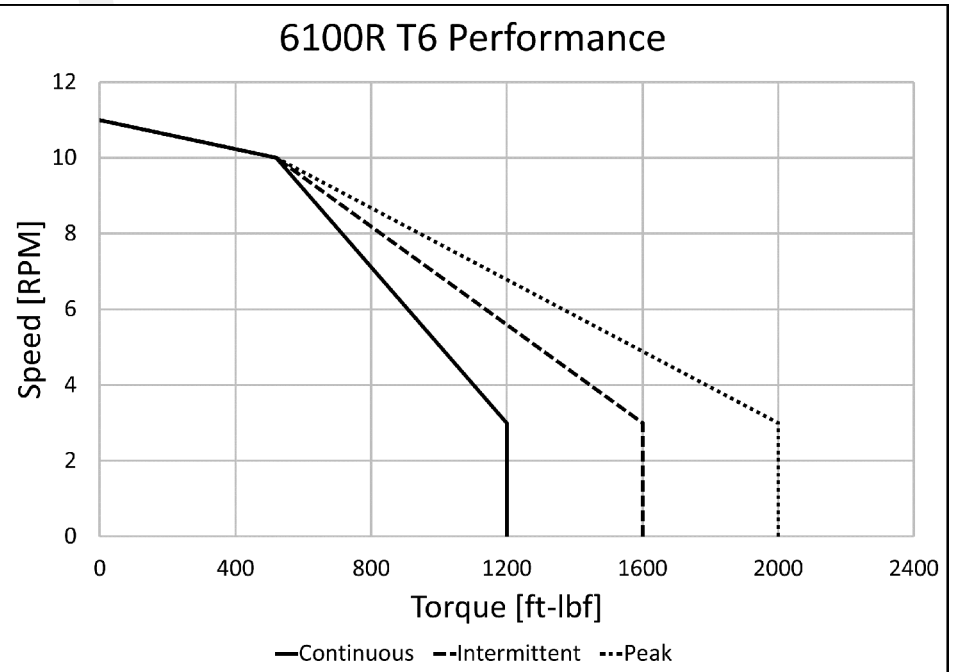
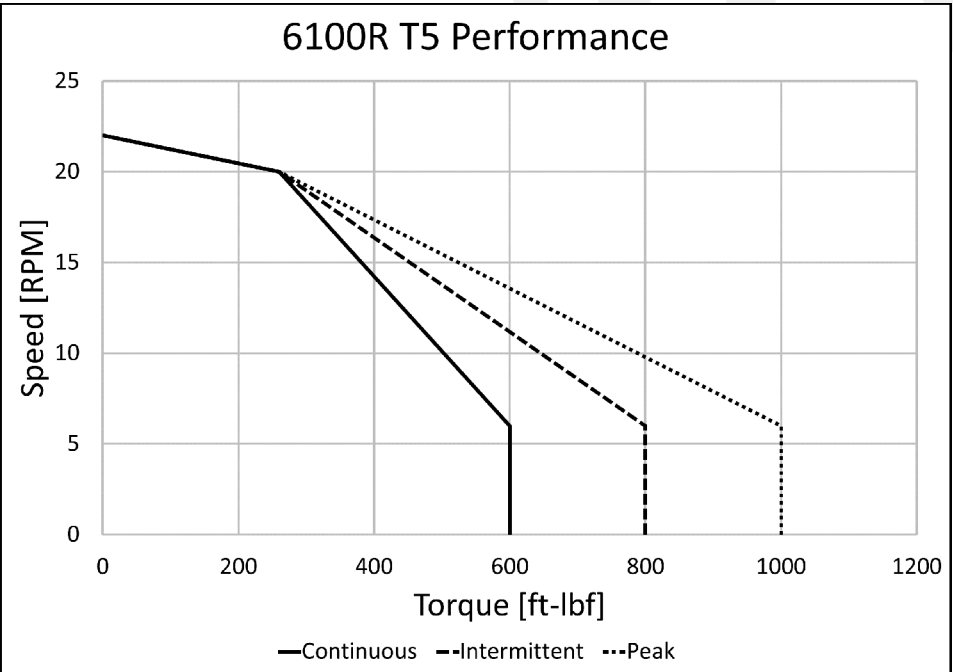
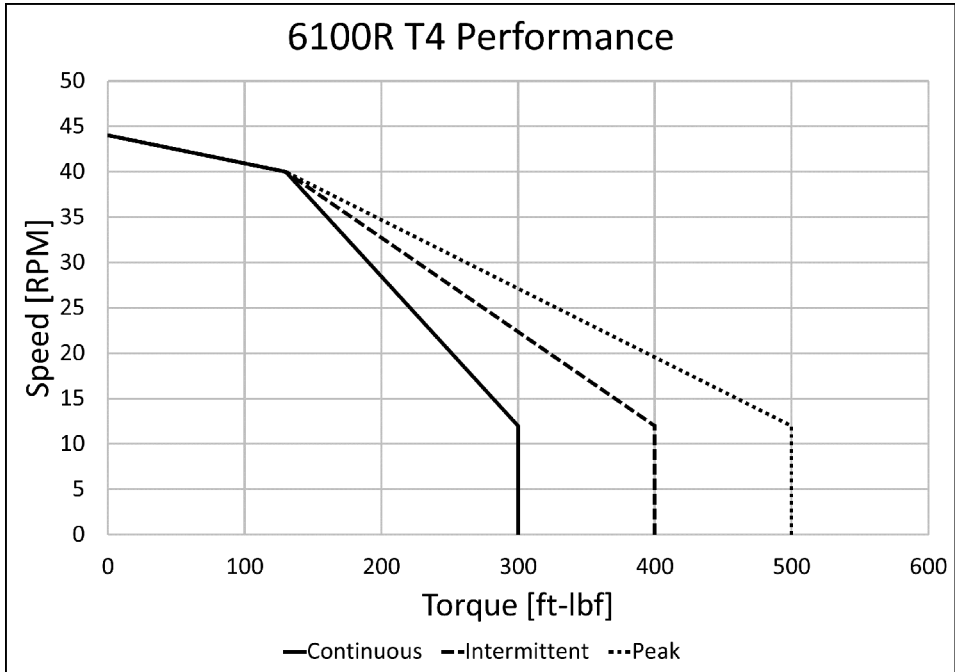
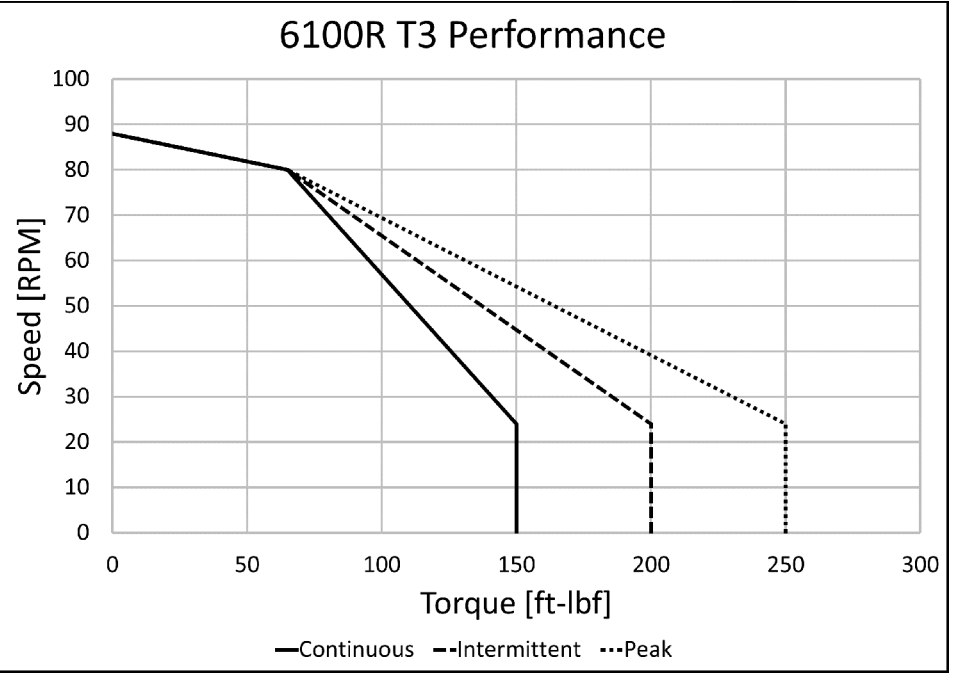
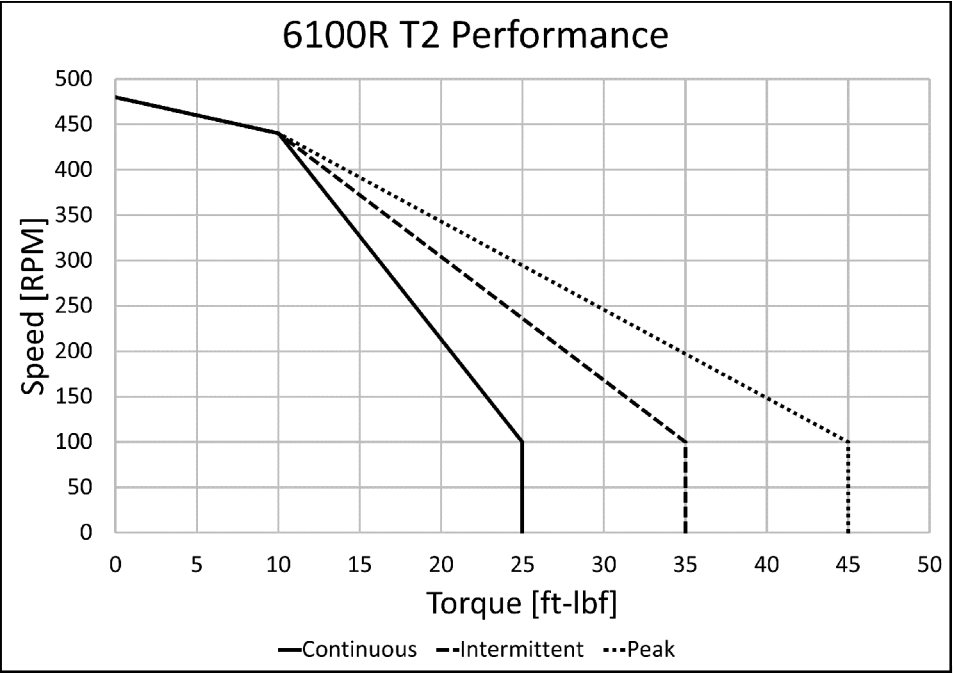
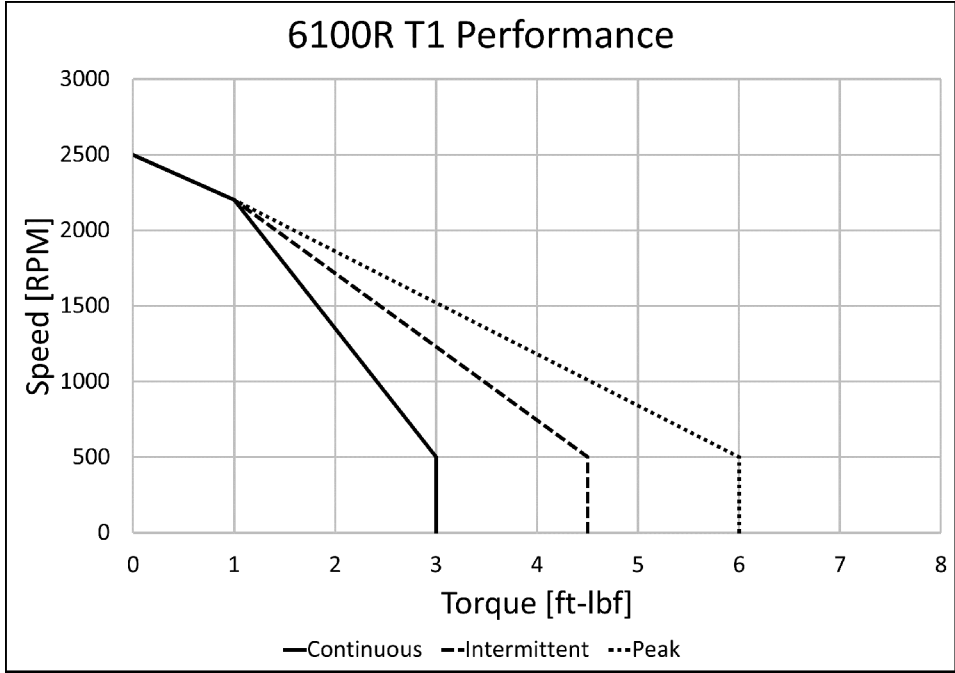
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DRAWN	DJF	10/01/2024
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SIZE B	THIRD ANGLE PROJECTION	
INTERPRET GEOMETRIC DIMENSIONING & TOLERANCING PER ASME Y14.5-2009		



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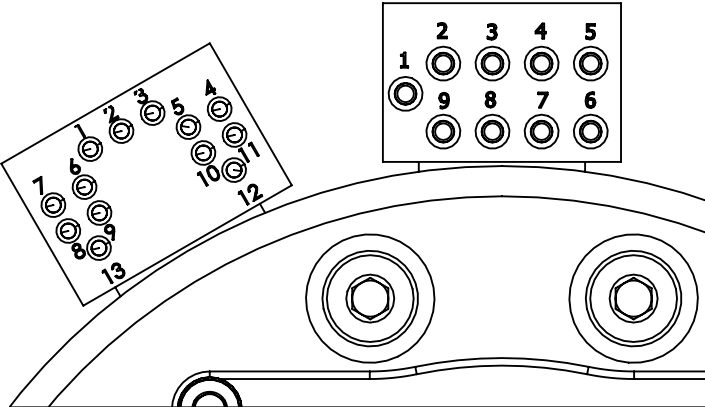
TITLE: 6100 SERIES ROTARY ACTUATOR

DWG. NO. 6100R

SCALE: 1:4

SHEET 2 OF 10

SERIES		FRAME SIZE		BRAKE*			HOUSING MATERIAL		OUTPUT SHAFT			COMMUNICATION		VOLTAGE		SOFTWARE	
6100R	SUBSEA	T1	F07 FLANGE DIRECT DRIVE	S	WITHOUT BRAKE		SS	STAINLESS STEEL	KA0070	T1, T2, T3 STANDARD		13S	RS-232, RS-485, ETHERNET, ANALOG VOLTAGE & CURRENT	01	48 VDC NOMINAL, 12-55 VDC RANGE	S	MODBUS/CANOPEN
		T2	F07 FLANGE SINGLE STAGE	B	WITH BRAKE	-	AL	ANODIZED ALUMINUM	KB0084	T4 STANDARD	-		09	96 VDC NOMINAL, 55-120 VDC RANGE	G	2G PACKETS/ RAW CAN FRAMES	
		T3	F07 FLANGE STANDARD		TI		TITANIUM	KC0102	T5 STANDARD	12			300 VDC NOMINAL, 120-400 VDC RANGE				
		T4	F10 FLANGE STANDARD				KD0128	T6 STANDARD									
		T5	F12 FLANGE STANDARD														
		T6	F14 FLANGE STANDARD														



PIN ASSIGNMENTS 13 PIN COMMS CONNECTOR MACARTNEY SUBCONN DLPBH13MSS	
PIN	13S
1	ANALOG INPUT
2	COMMS GND
3	ANALOG OUTPUT
4	RS-232 TX
5	RS-232 RX
6	RS-485 + (CAN HI)†
7	RS-485 - (CAN LO)†
8	ETHERNET TX+
9	ETHERNET TX-
10	ETHERNET RX+
11	ETHERNET RX-
12	COMMS SHIELD
13	COMMS SHIELD

PIN ASSIGNMENTS 9 PIN POWER CONNECTOR MACARTNEY SUBCONN LPBH9MSS	
PIN	ALL CONFIGURATIONS
1	CHASSIS GROUND
2	VIN -
3	VIN -
4	VIN -
5	VIN -
6	VIN +
7	VIN +
8	VIN +
9	VIN +

STANDARD SHAFT DIMENSIONS				
SIZE	CODE	DIAMETER	LENGTH	KEY WxHxL
T1, T2, T3	KA0070	22mm	70mm	6x6x32
T4	KB0084	28mm	84mm	8x7x40
T5	KC0102	36mm	102mm	10x8x50
T6	KD0128	48mm	128mm	14x9x70

* CERTAIN OPTIONS WILL IMPACT DIMENSIONS. CONTACT 2G FOR A CONFIGURATION-SPECIFIC DRAWING.
† SOFTWARE SELECTABLE. DEFAULT IS RS-485.

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SIZE B

THIRD ANGLE PROJECTION

INTERPRET GEOMETRIC DIMENSIONING & TOLERANCING PER ASME Y14.5-2009

2G ENGINEERING

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TITLE: 6100 SERIES ROTARY ACTUATOR

DWG. NO. 6100R

REV.

SCALE: 1:1

SHEET 3 OF 10

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DWG. NO.

6100R

REV

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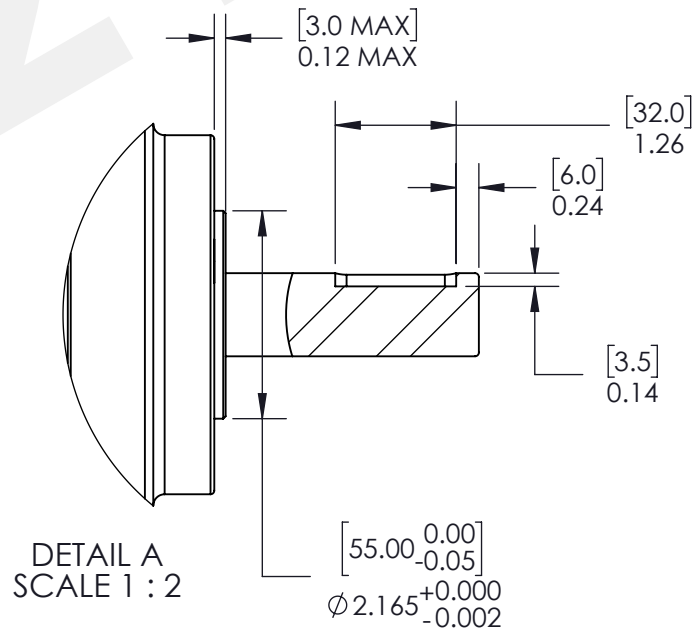
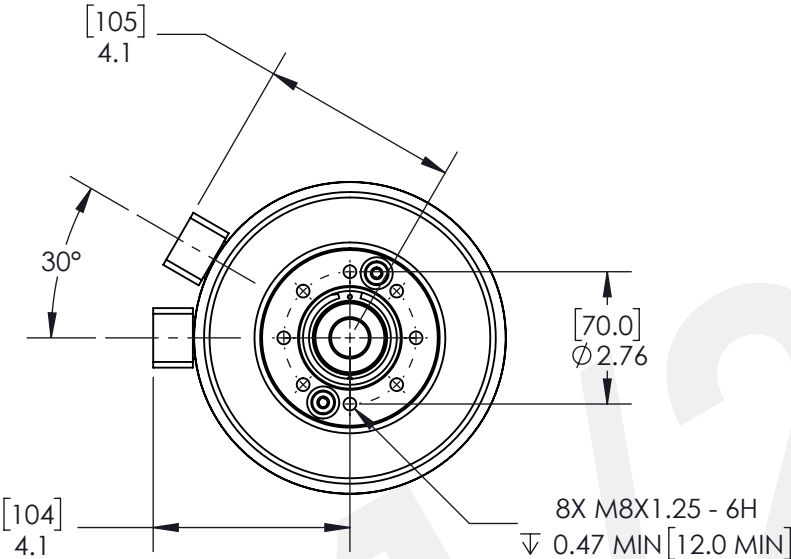
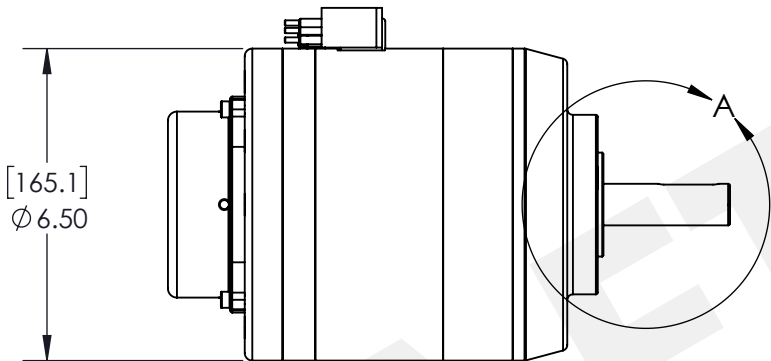
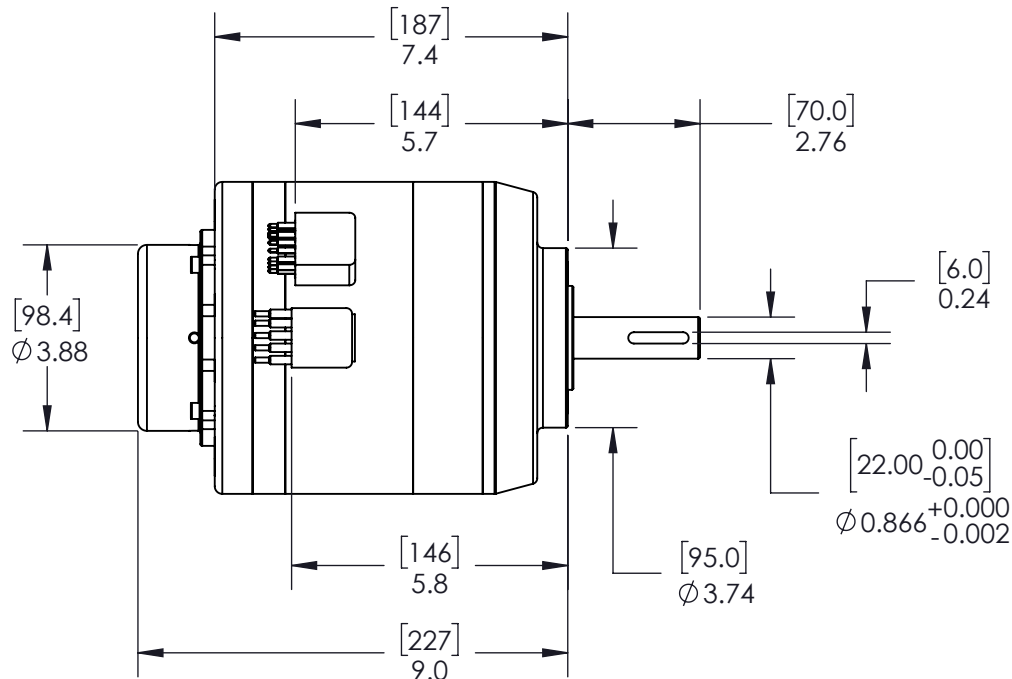
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**T1S FRAME SIZE
F07 FLANGE MOUNT
DIRECT DRIVE**

MATERIAL:

MATERIAL COMMENTS:

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SIZE

B

THIRD ANGLE PROJECTION



INTERPRET GEOMETRIC DIMENSIONING & TOLERANCING PER ASME Y14.5-2009



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TITLE: **6100 SERIES ROTARY ACTUATOR**

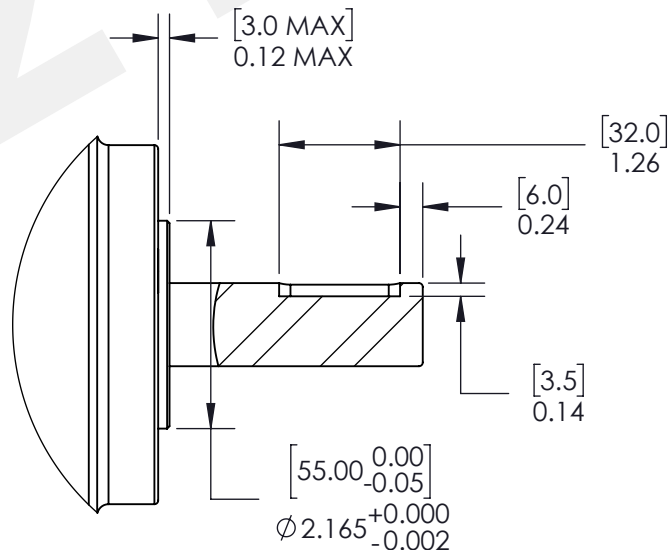
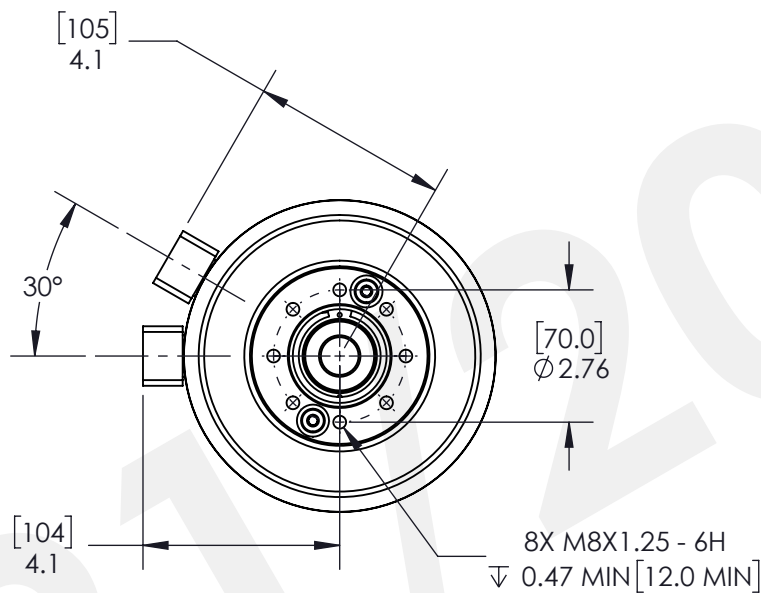
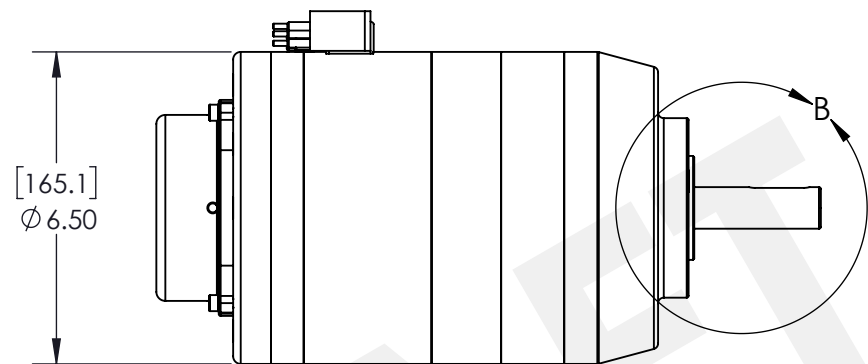
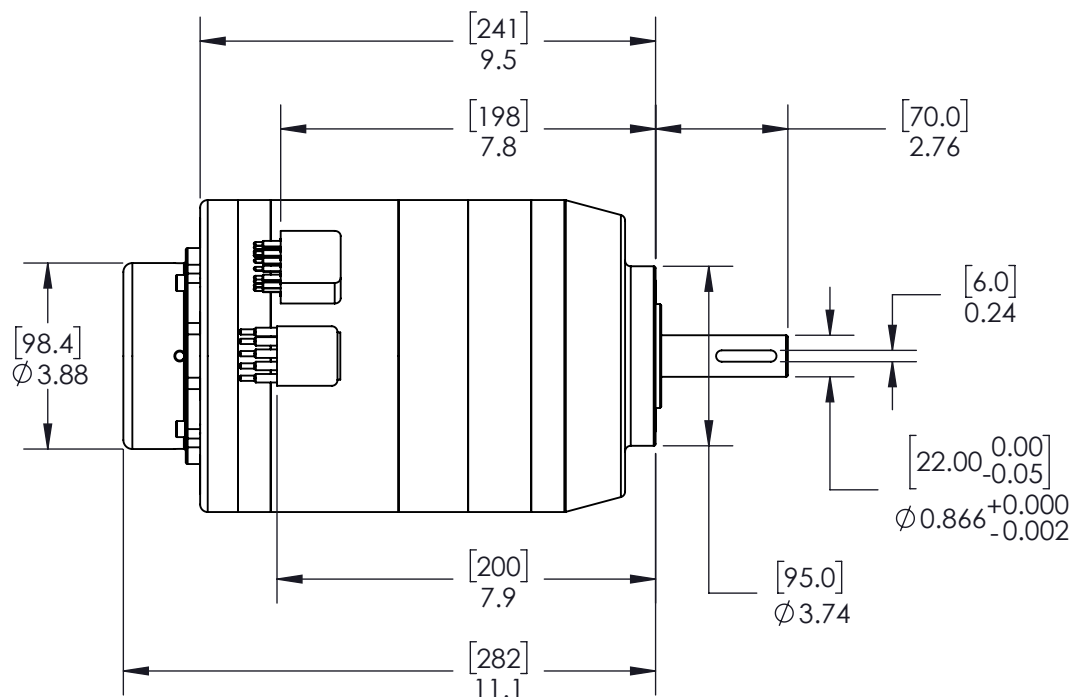
DWG. NO.

6100R

REV.

SCALE: 1:4

SHEET 4 OF 10



DETAIL B
SCALE 1 : 2

**T2S FRAME SIZE
F07 FLANGE MOUNT
SINGLE STAGE GEARBOX**

MATERIAL:

MATERIAL COMMENTS:

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SIZE B THIRD ANGLE PROJECTION

INTERPRET GEOMETRIC DIMENSIONING & TOLERANCING PER ASME Y14.5-2009



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TITLE: **6100 SERIES ROTARY ACTUATOR**

DWG. NO.

6100R

REV.

SCALE: 1:4

SHEET 5 OF 10

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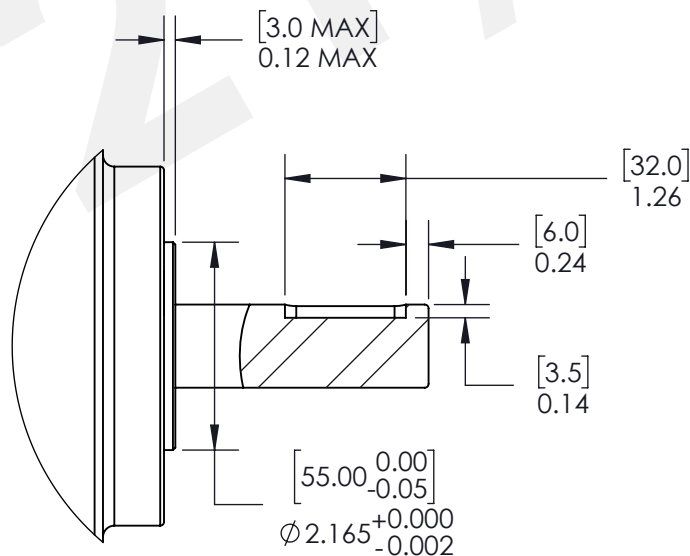
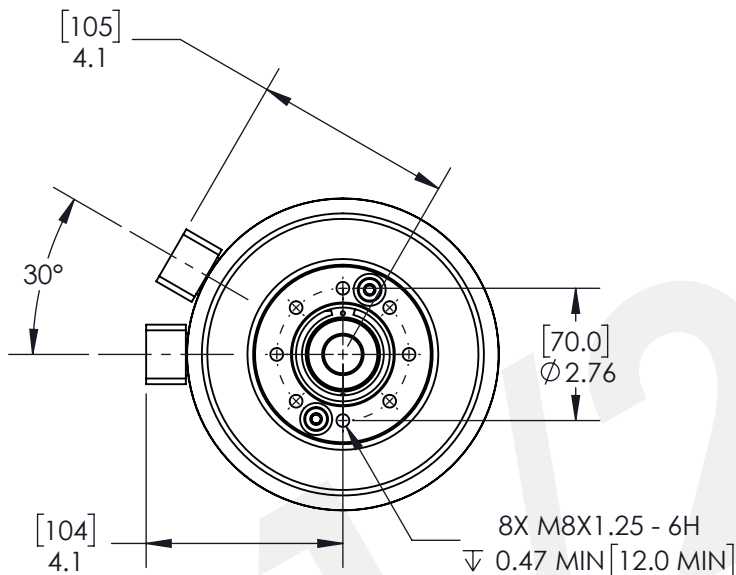
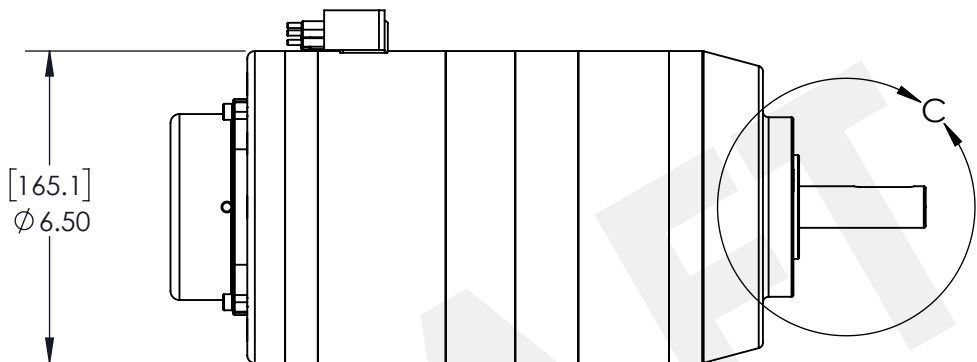
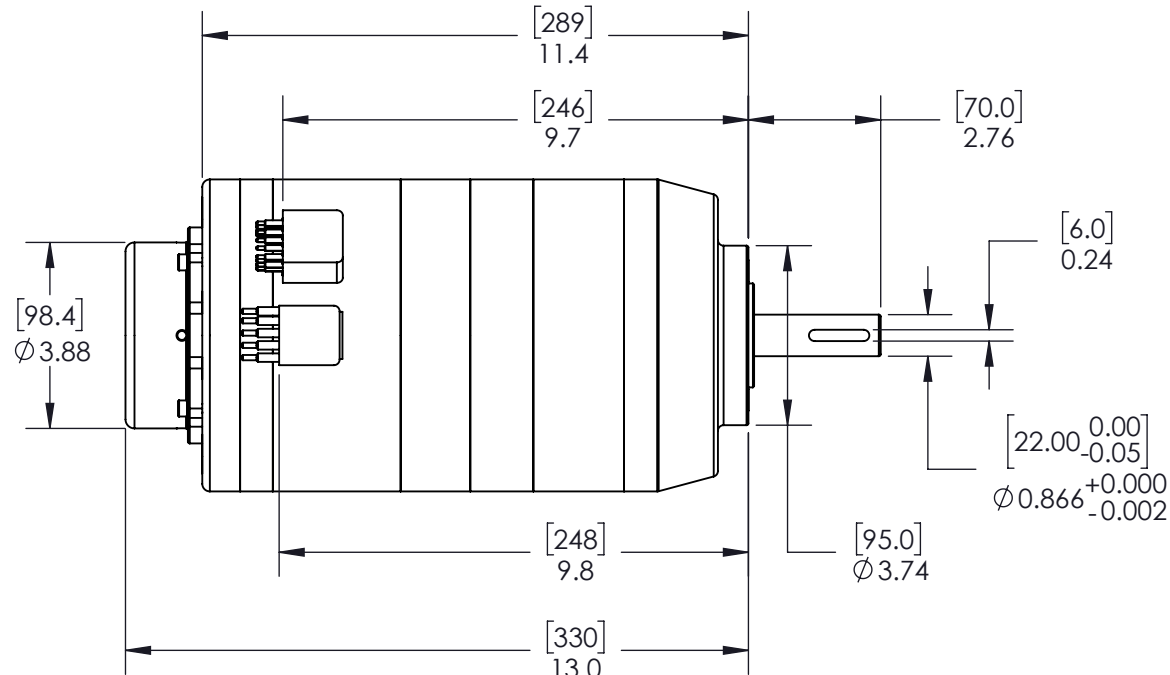
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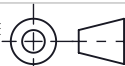
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DETAIL C
SCALE 1 : 2

**T3S FRAME SIZE
F07 FLANGE MOUNT
2 STAGE GEARBOX**

MATERIAL:	<div>UNLESS OTHERWISE SPECIFIED:</div> <div>- DIMENSIONS ARE IN INCHES</div> <div>- DIMENSIONS IN [] ARE IN mm</div> <div>- TOLERANCES:</div> <div>DECIMALS:</div> <div>.X ±.05</div> <div>.XX ±.015</div> <div>.XXX ±.005</div> <div>ANGULAR:</div> <div>MACHINED: ±0.5°</div> <div>OTHER: ±2°</div> <div>- THREAD DEPTHS ON TAPPED HOLES ARE MINIMUMS</div> <div>- TAP DRILL DIAMETERS ARE REFERENCE</div> <div>- MAX FILLET RADIUS ON INSIDE SHARP CORNERS: 0.005</div> <div>- BREAK ALL SHARP EDGES 0.010 MAX AND REMOVE BURRS</div> <div>- SURFACE FINISH: ≤63 Ra (µin)</div>	INITIALS		DATE	<div></div> <div>2G ENGINEERING</div> <div>WWW.2G-ENG.COM</div> <div>608-825-4799</div>
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	SIZE B	<div>THIRD ANGLE PROJECTION</div> 			
	INTERPRET GEOMETRIC DIMENSIONING & TOLERANCING PER ASME Y14.5-2009			DWG. NO. 6100R	REV.
				SCALE: 1:4	SHEET 6 OF 10

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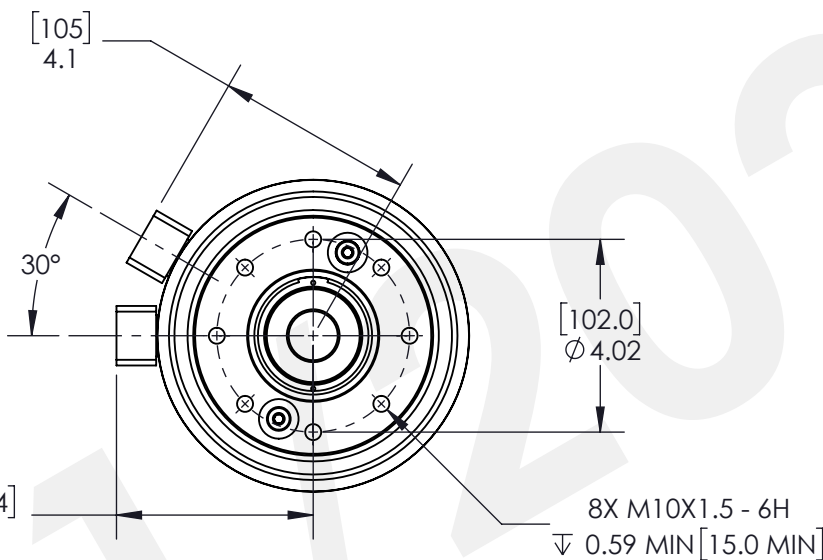
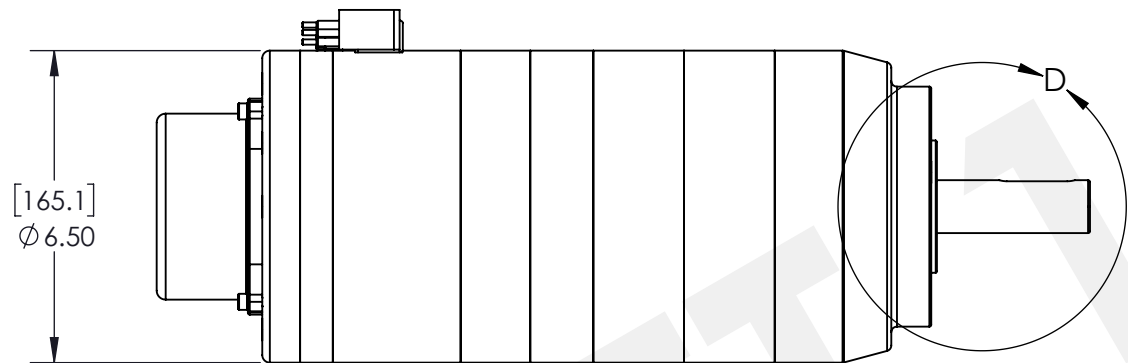
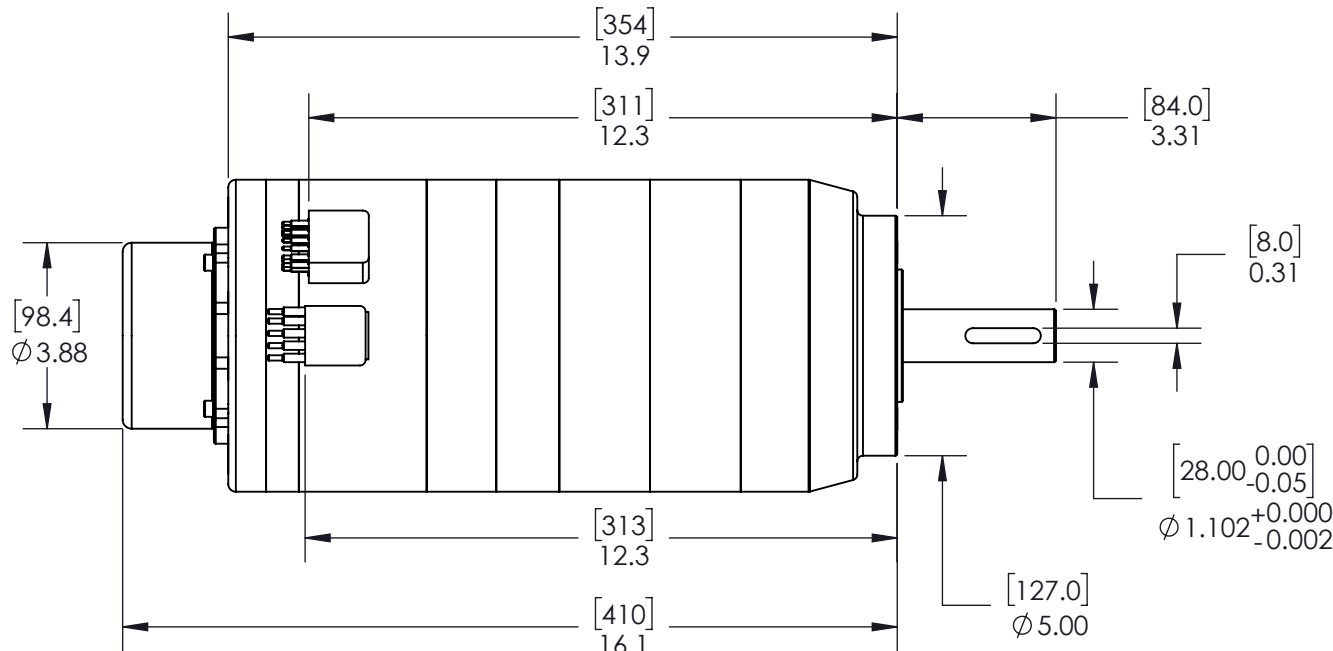
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DETAIL D
SCALE 1 : 2

T4S FRAME SIZE
F10 FLANGE MOUNT
3 STAGE HS GEARBOX

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DWG. NO.

6100R

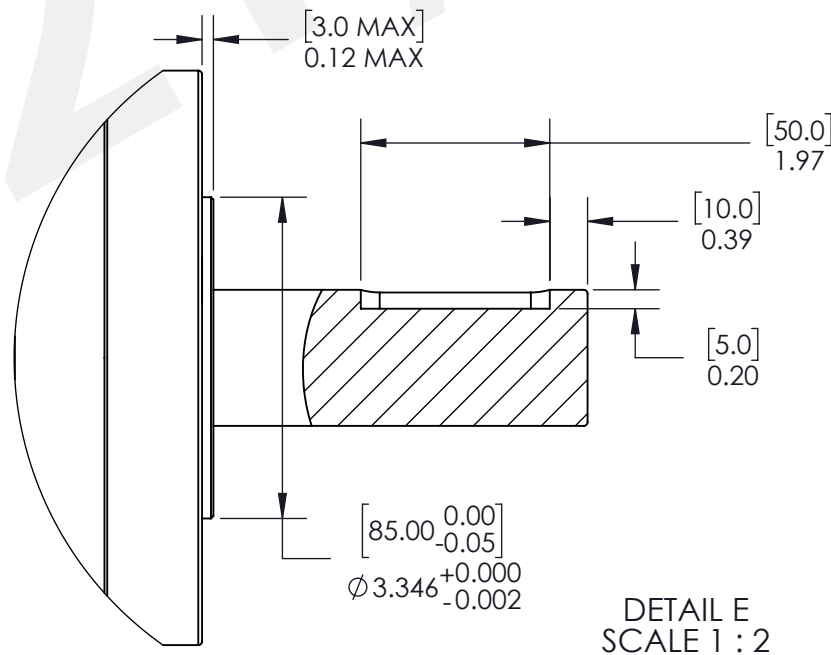
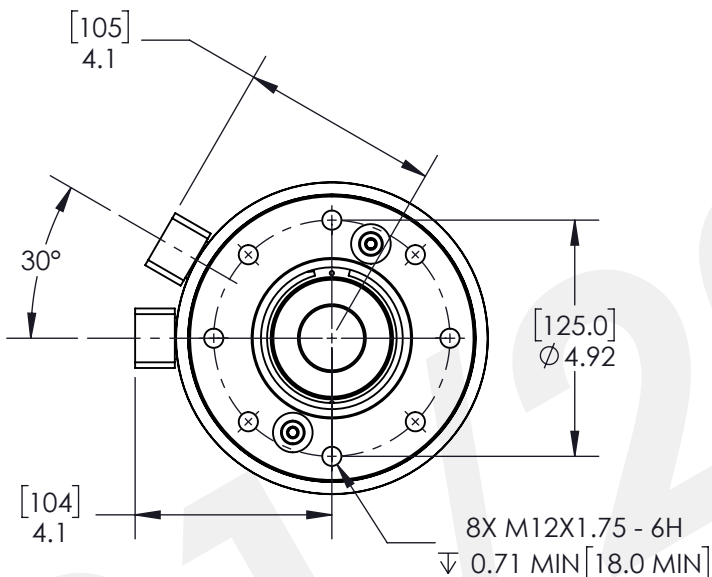
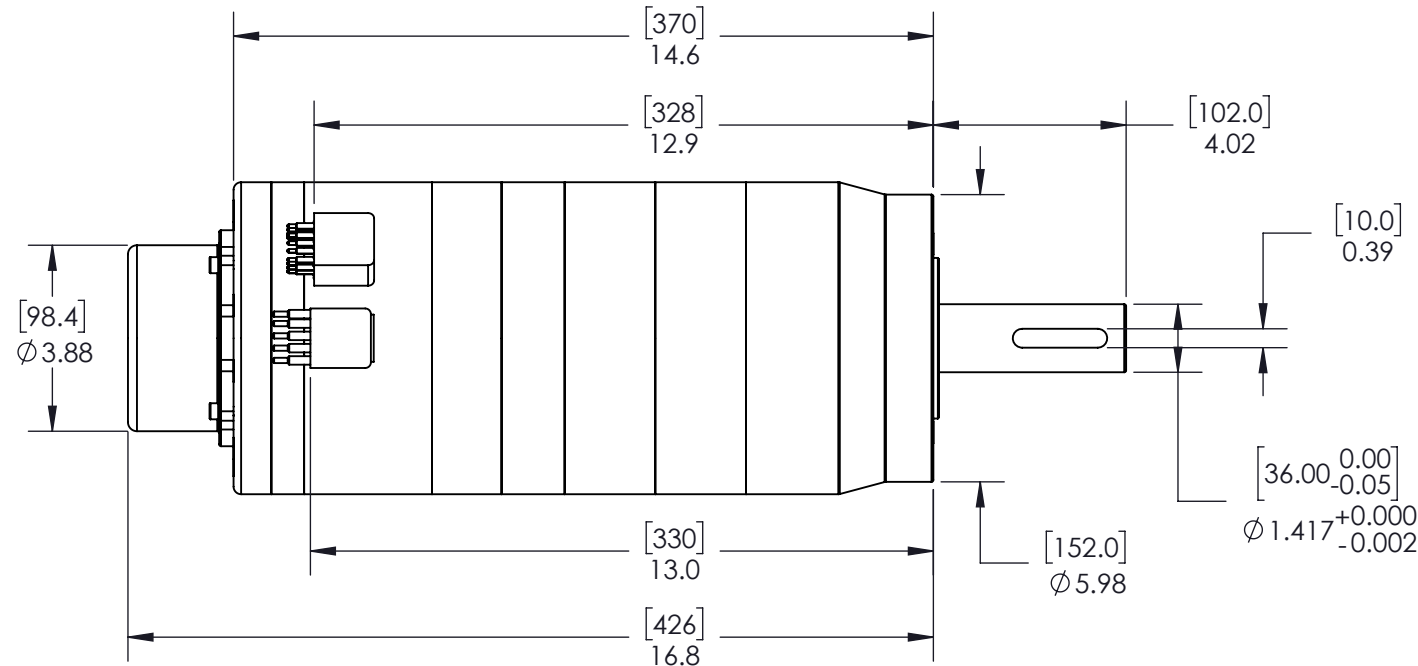
REV

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**T5S FRAME SIZE
F12 FLANGE MOUNT
3 STAGE HT GEARBOX**

MATERIAL:

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THIRD ANGLE
PROJECTION



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DWG. NO.

6100R

SCALE: 1:4

REV.

SHEET 8 OF 10

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DWG. NO.

6100R

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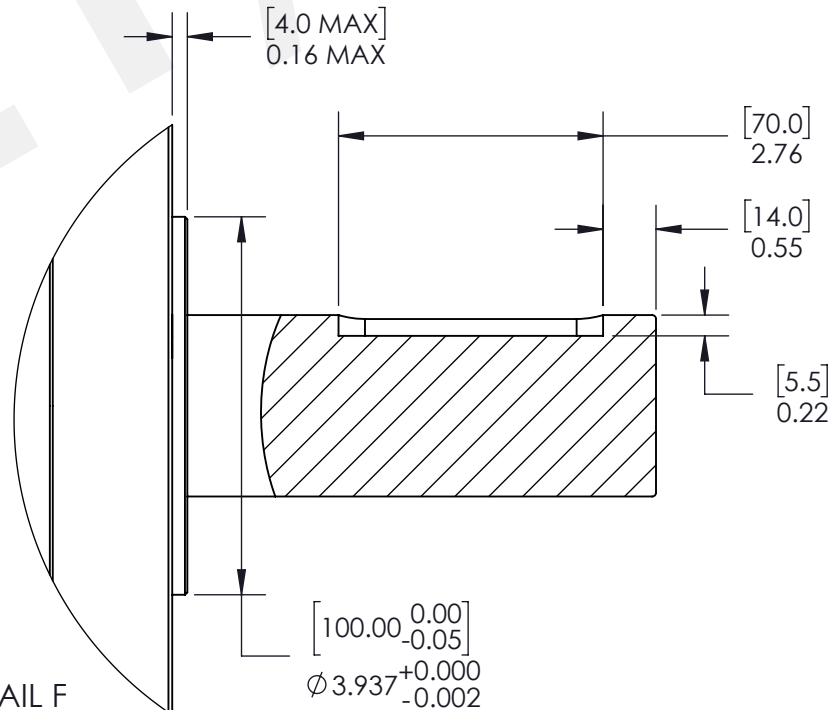
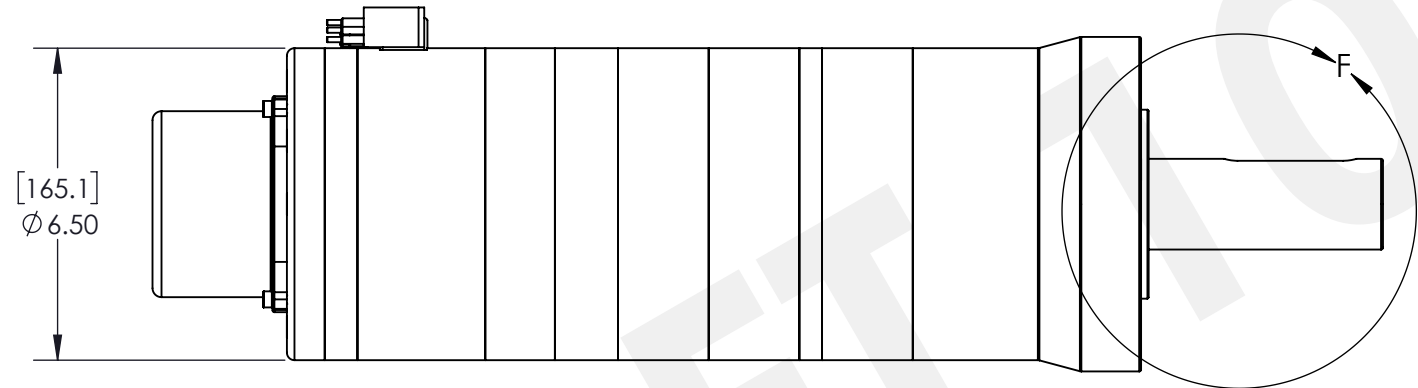
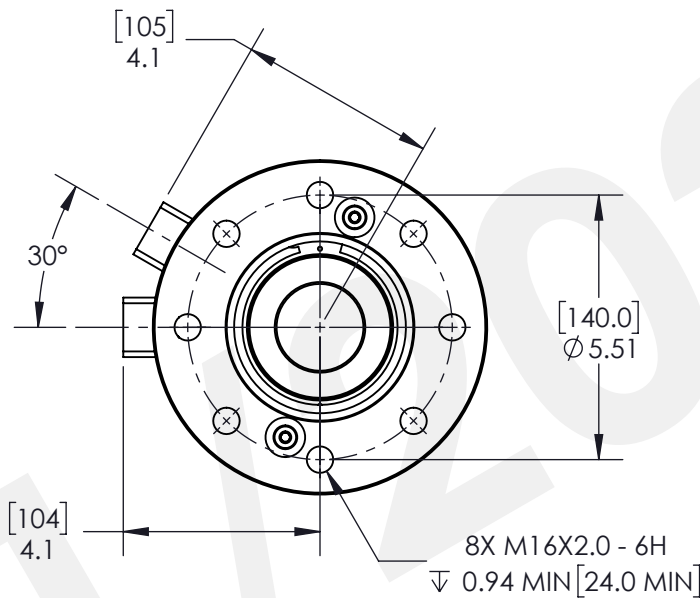
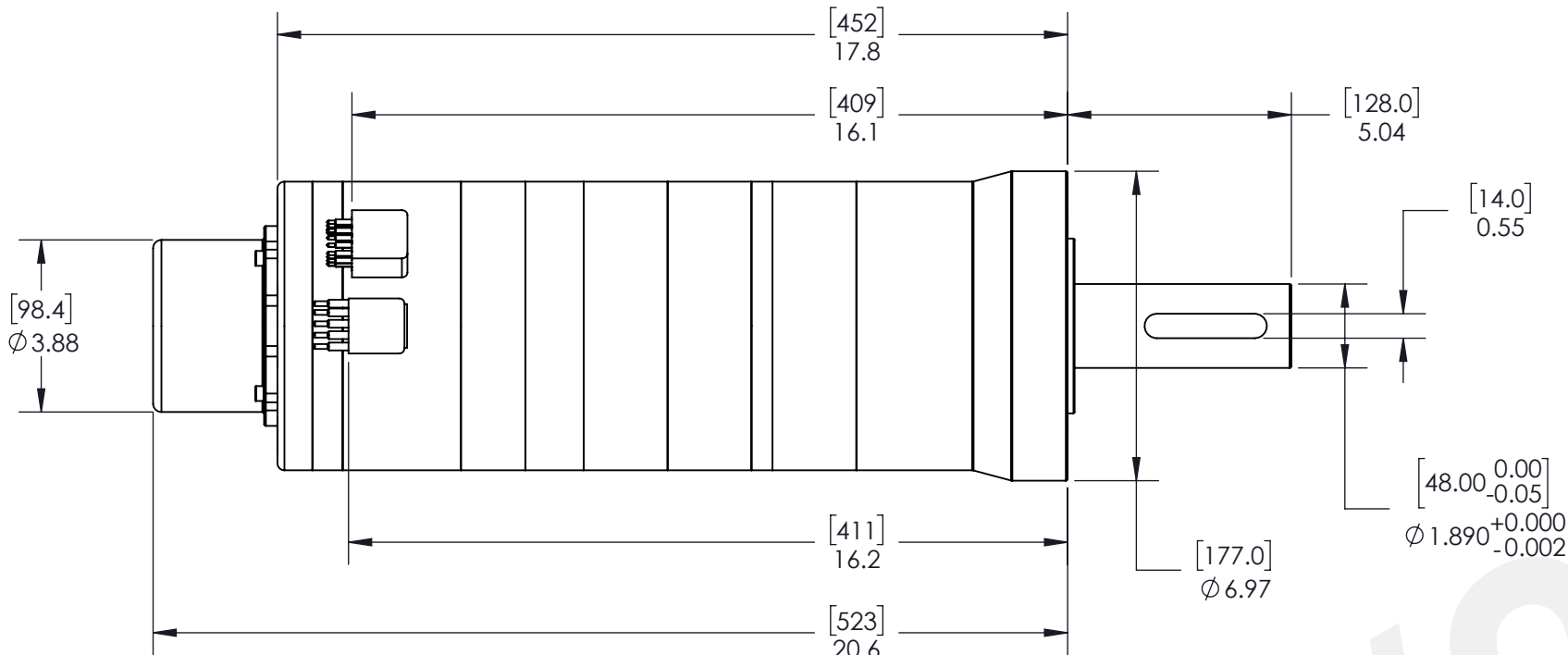
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DETAIL F
SCALE 1 : 2

**T6S FRAME SIZE
F14 FLANGE MOUNT
4 STAGE GEARBOX**

MATERIAL:

MATERIAL COMMENTS:

FINISH:

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

DRAWN

DJF

10/01/2024

APPROVED

xx/xx/xxxx

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SIZE

B

THIRD ANGLE

PROJECTION



INTERPRET GEOMETRIC DIMENSIONING & TOLERANCING PER ASME Y14.5-2009



2G ENGINEERING

WWW.2G-ENG.COM

608-825-4799

TITLE: **6100 SERIES ROTARY ACTUATOR**

DWG. NO.

6100R

REV.

SCALE: 1:4

SHEET 9 OF 10

