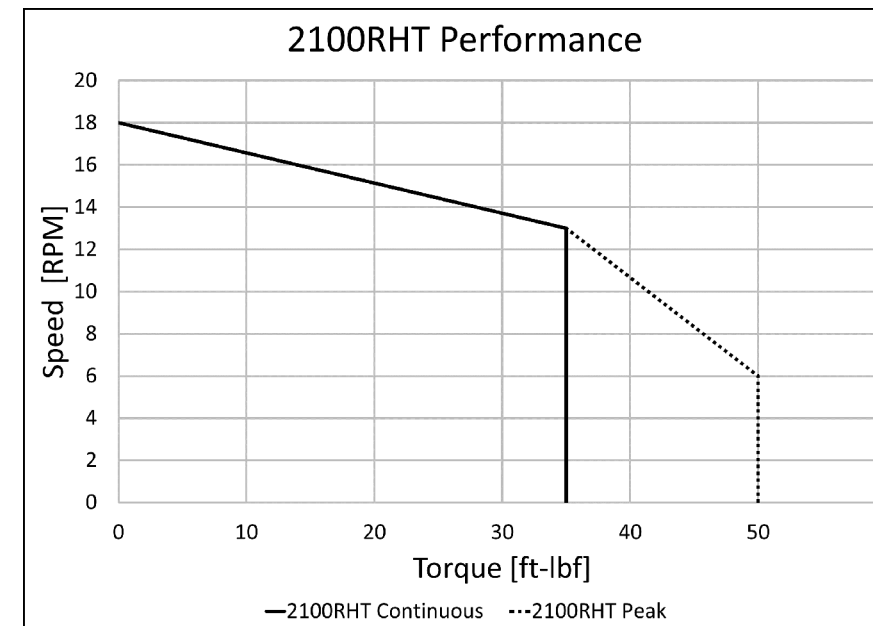
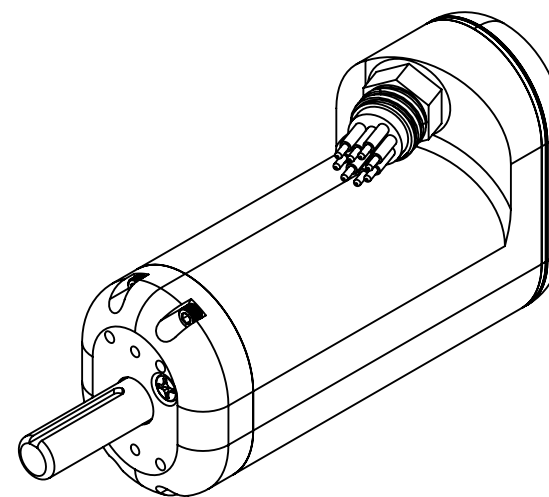


# 2000 SERIES SUBSEA ROTARY ACTUATOR

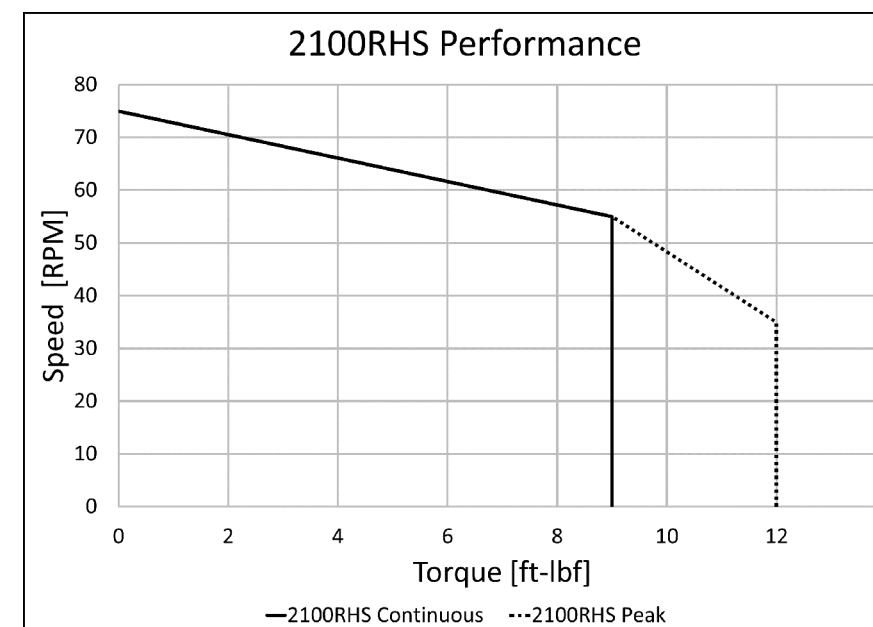
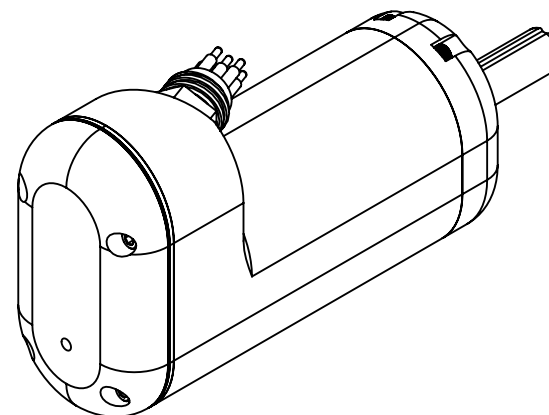
## General Specifications:

- High Torque model:
  - Maximum output torque: 50 ft-lbf
  - Maximum output speed: 18 RPM
  - Continuous duty: 35 ft-lbf @ 13 RPM
- High Speed model:
  - Maximum output torque: 12 ft-lbf
  - Maximum output speed: 75 RPM
  - Continuous duty: 9 ft-lbf @ 55 RPM
- 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
- Max radial load: 40 lbf (at end of 2.00" long shaft)
- Max axial load: 100 ft-lbf



## Operating Environment:

- Designed for mission-critical subsea use
- IP69K sealed housing
- Corrosion resistant material options
  - Stainless steel, passivated
  - Aluminum, hardcoat anodized
  - 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
- 0.002° Resolution, 0.2° Precision, 1° Accuracy
- Standard protocol: MODBUS
- Standard baud rate: 115200

APPROXIMATE WEIGHTS (LBS)	STAINLESS	ALUMINUM	TITANIUM
DRY/SURFACE	5.4	3.2	3.8
WET/SUBMERGED	4.4	2.2	2.8

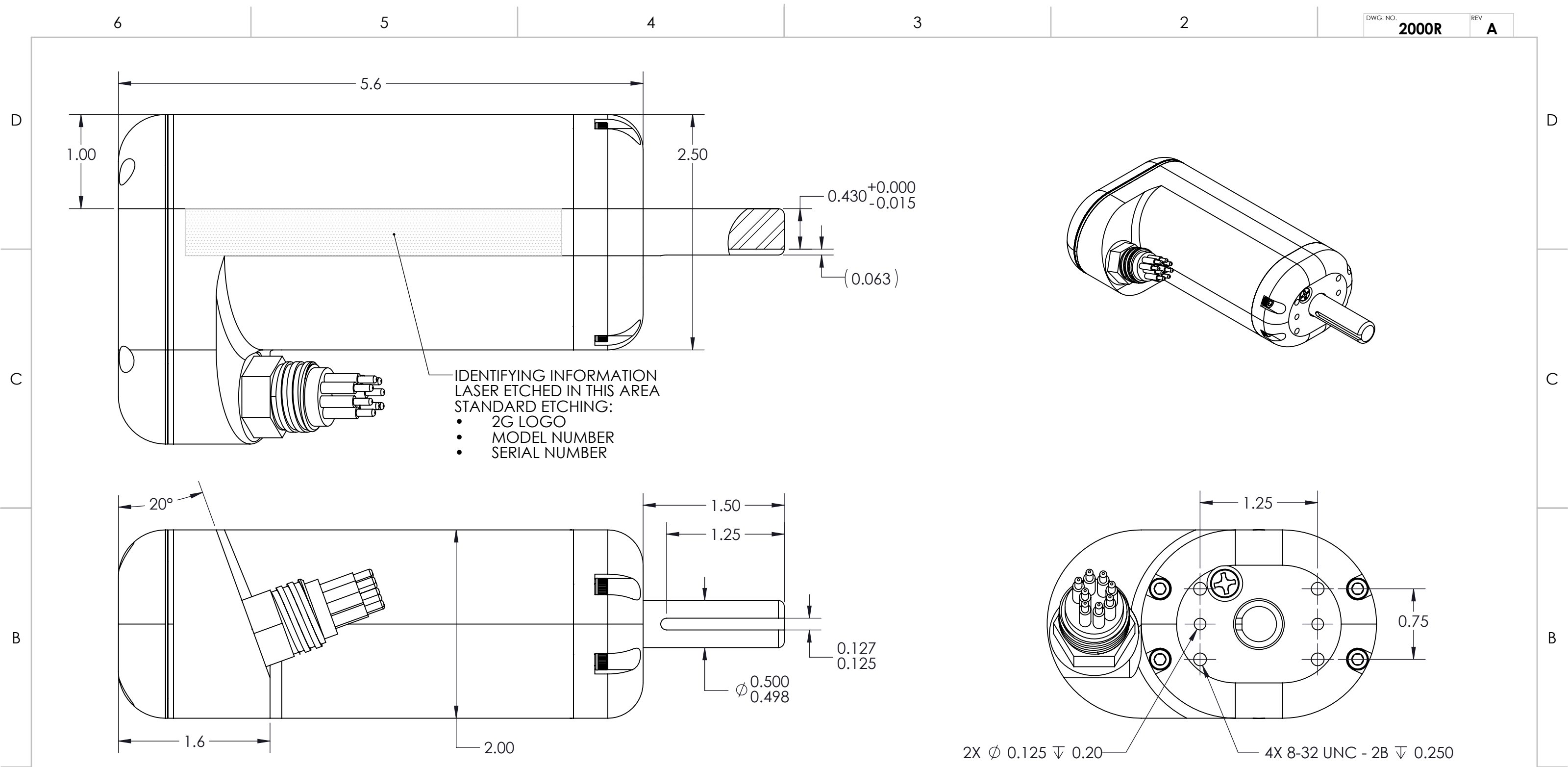
MATERIAL	<b>UNLESS OTHERWISE SPECIFIED:</b> - DIMENSIONS ARE IN INCHES - DIMENSIONS IN [ ] ARE IN mm - TOLERANCES: DECIMALS: .X ±.05 .XX ±.015 .XXX ±.005 ANGULAR: MACHINED: ±0.5° OTHER: ±2° - THREAD DEPTHS ON TAPPED HOLES ARE MINIMUMS - TAP DRILL DIAMETERS ARE REFERENCE - MAX FILLET RADIUS ON INSIDE 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	05/17/2023
		APPROVED DJF	05/17/2023
		<b>PROPRIETARY AND CONFIDENTIAL</b> 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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 WWW.2G-ENG.COM 608-825-4799

TITLE: **2000 Series High Torque Rotary Actuator**

SIZE **B** THIRD ANGLE PROJECTION  DWG. NO. **2000R** REV **A**

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



**MODEL SHOWN:**  
**2100RHT-SSKC1500-8R05S**

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
		DRAWN DJF	05/17/2023
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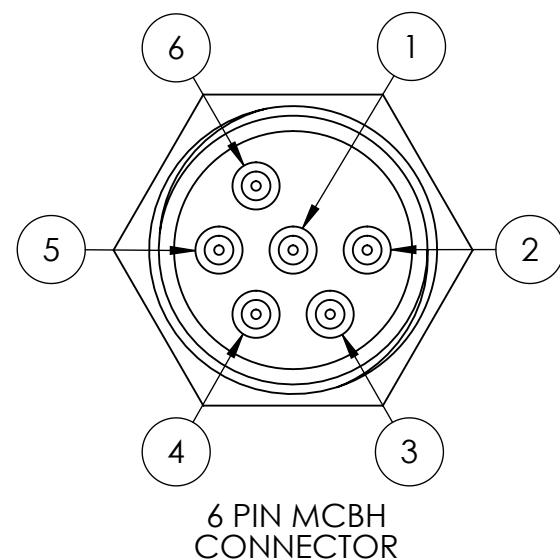
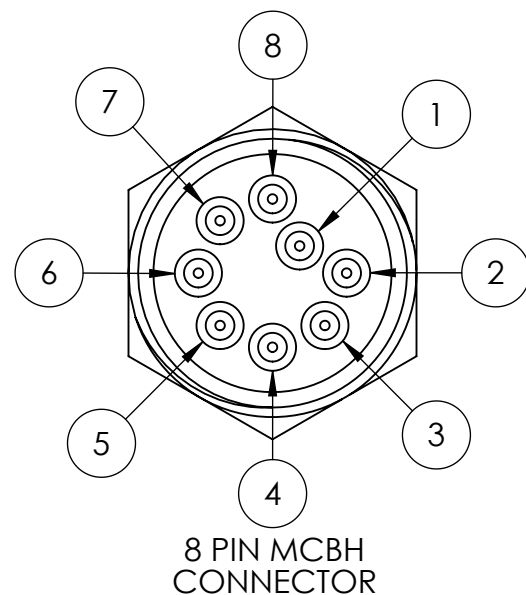
TITLE: **2000 Series High Torque Rotary Actuator**

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SERIES		OUTPUT		HOUSING MATERIAL		SHAFT TYPE		SHAFT DIAMETER*		SHAFT LENGTH		COMMUNICATION		VOLTAGE		SOFTWARE	
<b>2100R</b>	SUBSEA	<b>HT</b>	HIGH TORQUE	<b>SS</b>	STAINLESS STEEL	<b>K</b>	KEYED	<b>A</b>	1/4"	<b>0500</b>	0.50"	<b>6L</b>	RS-232 AND RS-485, NON-ISOLATED	<b>01</b>	12-30 VDC RANGE	<b>S</b>	MODBUS/ CANOPEN
		<b>HS</b>	HIGH SPEED	<b>AL</b>	ALUMINUM	<b>S</b>	SQUARE	<b>B</b>	3/8"	<b>0830</b>	0.83"	<b>8L</b>	RS-232, RS-485, AND 0-10V ANALOG VOLTAGE CONTROL, NON-ISOLATED	<b>05</b>	20-55 VDC RANGE	<b>G</b>	2G PACKETS/ RAW CAN FRAMES
			<b>TI</b>	TITANIUM	<b>F</b>	FLAT	<b>C</b>	1/2"	<b>1000</b>	1.00"	<b>8M</b>	RS-232, CAN, AND 0-10V ANALOG VOLTAGE CONTROL, NON-ISOLATED	<b>09</b>	55-120 VDC RANGE			
									<b>1500</b>	1.50"	<b>8R</b>	RS-232 AND RS-485					
								<b>2000</b>	2.00"	<b>8V</b>	RS-232 AND 0-10V ANALOG VOLTAGE CONTROL						
										<b>8C</b>	RS-232 AND CAN						
										<b>8E</b>	RS-232 AND ETHERNET						

PIN	NON-ISOLATED AVAILABLE WITH ANY VOLTAGE OPTION.				ISOLATED AVAILABLE WITH -05 AND -09 VOLTAGE OPTIONS ONLY.			
	6L	8L	8M	8R	8V	8C	8E	
1	RS-232 TX	VIN -	VIN -	VIN -	VIN -	VIN -	VIN -	
2	RS-232 RX	VIN +	VIN +	VIN +	VIN +	VIN +	VIN +	
3	RS-485 -	0-10V ANALOG INPUT	0-10V ANALOG INPUT	N/C	N/C	N/C	RS-232 TX	
4	VIN +	0-10V ANALOG OUTPUT	0-10V ANALOG OUTPUT	COMMS GND	COMMS GND	COMMS GND	RS-232 RX	
5	VIN -	RS-232 TX	RS-232 TX	RS-232 TX	RS-232 TX	RS-232 TX	ETHERNET TX+	
6	RS-485 +	RS-232 RX	RS-232 RX	RS-232 RX	RS-232 RX	RS-232 RX	ETHERNET TX-	
7	N/A	RS-485 +	CAN HI	RS-485 +	0-10V ANALOG INPUT	CAN HI	ETHERNET RX+	
8	N/A	RS-485 -	CAN LO	RS-485 -	0-10V ANALOG OUTPUT	CAN LO	ETHERNET RX-	

STOCKED SHAFT OPTIONS*			
CODE	STYLE	DIAMETER	LENGTH
FC1500	FLAT	0.500"	1.500"
KC1500	KEYED	0.500"	1.500"
KC2000	KEYED	0.500"	2.000"
SB0830	SQUARE	0.375"	0.830"



\*HIGH TORQUE UNITS REQUIRE A SHAFT DIAMETER OF AT LEAST 0.500" OR 0.375" SQUARE, AND A LENGTH OF AT LEAST 0.830".

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SCALE: 2:1 WEIGHT: SHEET 3 OF 3