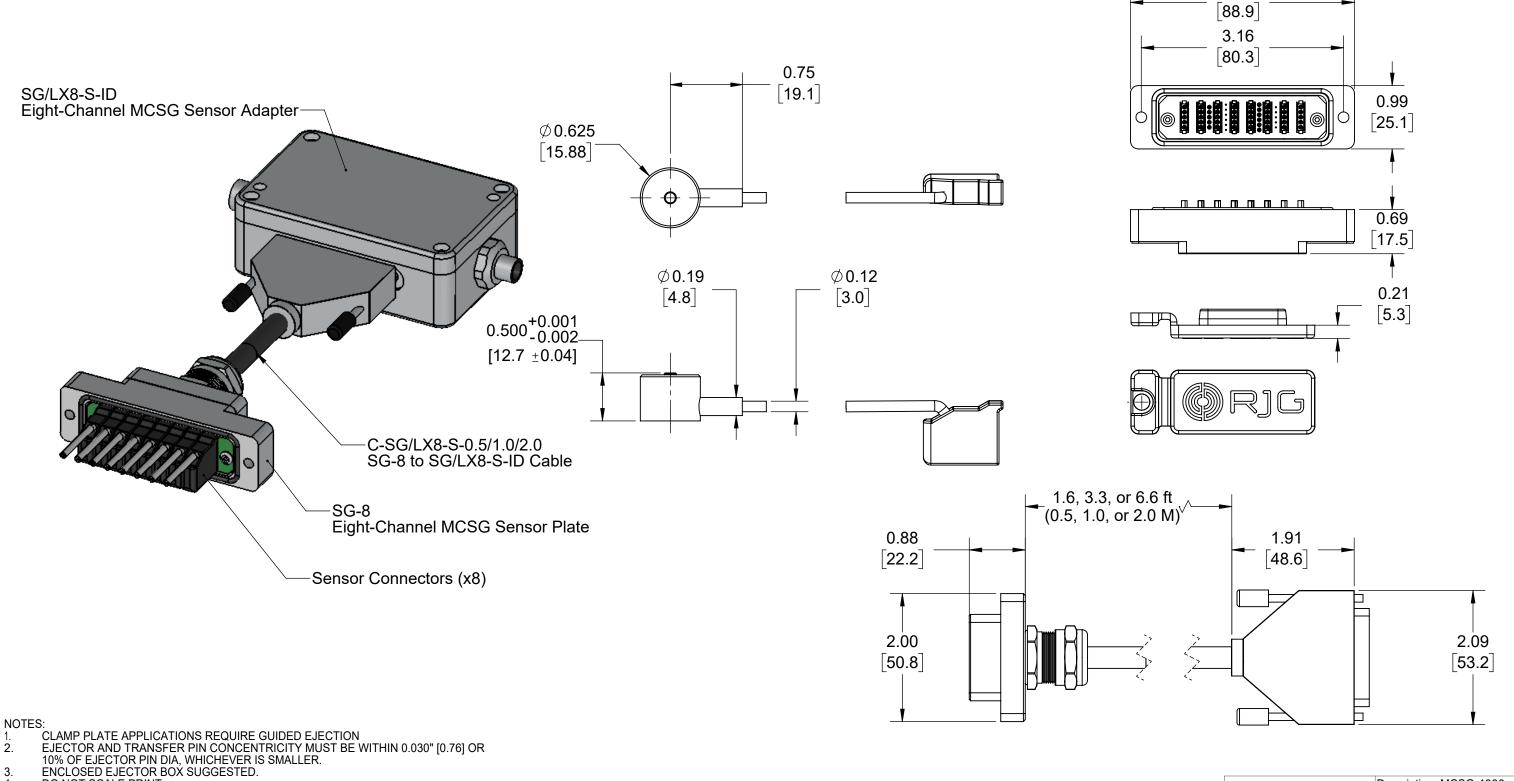
Multi-Channel Strain Gage 4,000 lb. Sensor (MCSG-4000) Installation—Sensor, Sensor Connector, and Sensor Cable Dimensions



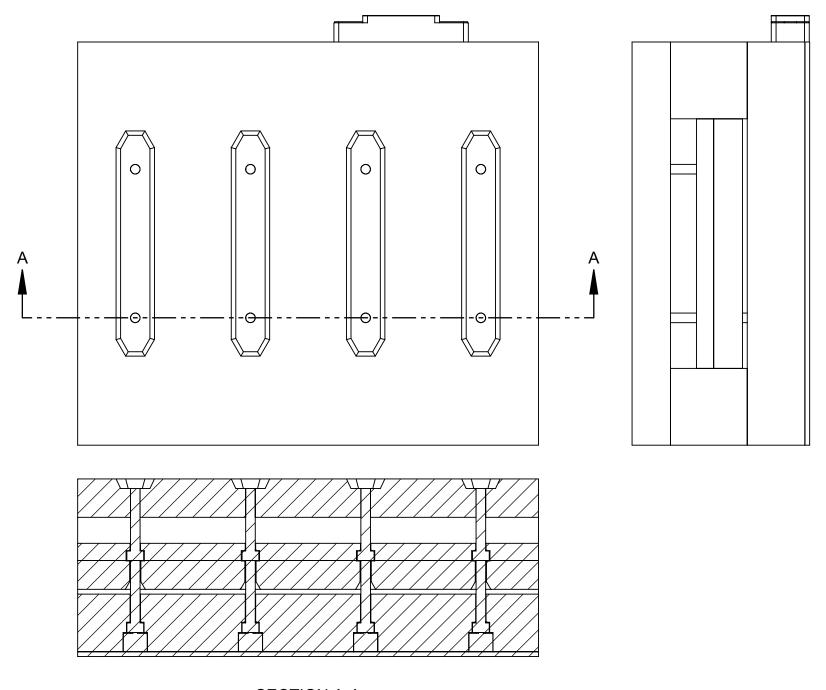
DO NOT SCALE PRINT
BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX
DIMENSIONS IN INCHES [MM], UNLESS NOTED
TOLERANCES UNLESS SPECIFIED:

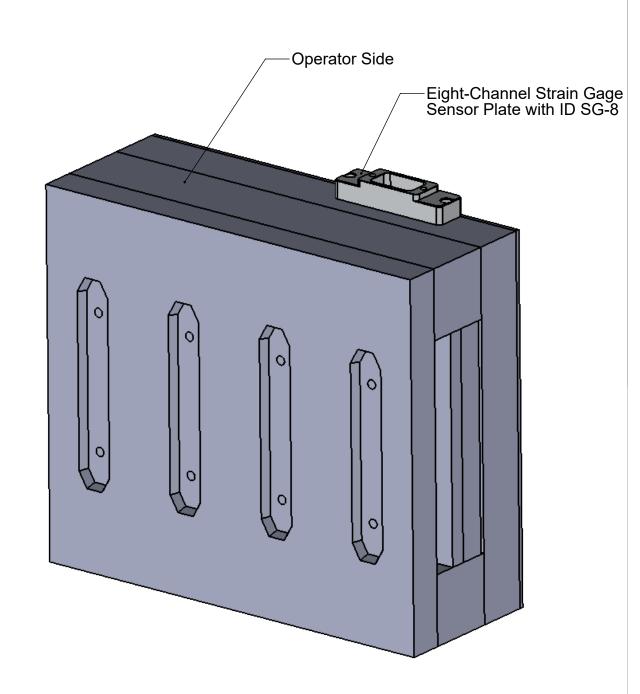
XXX = ±0.003 [0.08] XX = ±0.01 [0.3] ANGLES = ±3°30°



3.50

## Multi-Channel Strain Gage 4,000 lb. Sensor (MCSG-4000) Installation—Clamp Plate Installation





# SECTION A-A SCALE 1 : 2.5

#### NOTES:

CLAMP PLATE APPLICATIONS REQUIRE GUIDED EJECTION
EJECTOR AND TRANSFER PIN CONCENTRICITY MUST BE WITHIN 0.030" [0.76] OR
10% OF EJECTOR PIN DIA, WHICHEVER IS SMALLER.
ENCLOSED EJECTOR BOX SUGGESTED.

DO NOT SCALE PRINT
BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX
DIMENSIONS IN INCHES [MM], UNLESS NOTED
TOLERANCES UNLESS SPECIFIED:

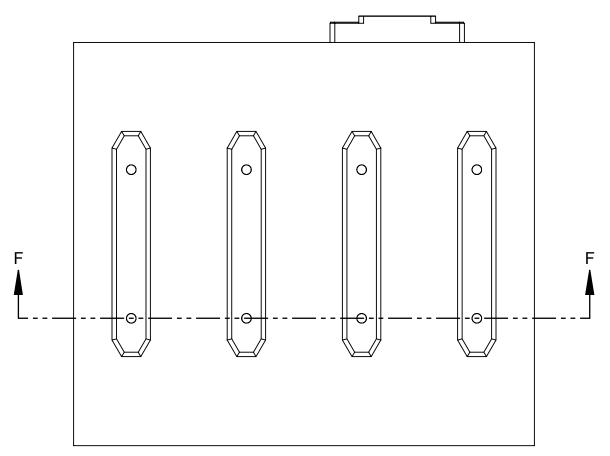
XXX = ±0.003 [0.08] XX = ±0.01 [0.3] ANGLES = ±3°30°

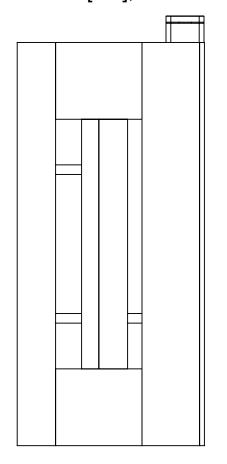


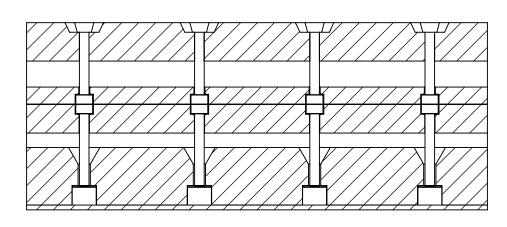
Description: MCSG-4000 Sensor Installation

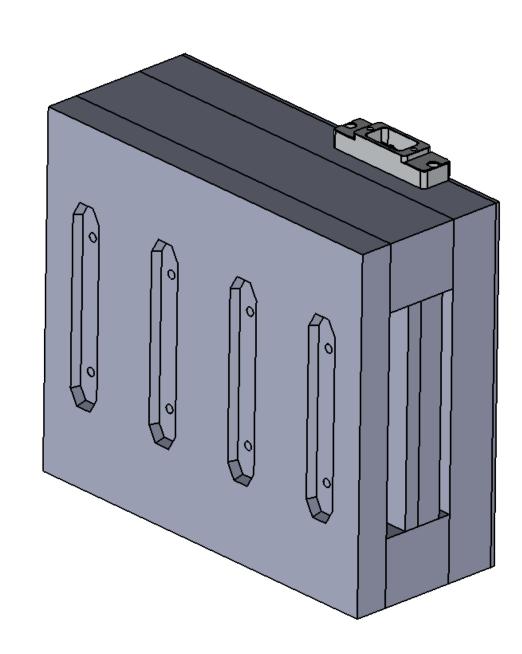
#### Drawing Title: MCSG-4000-03 Multi-Channel Strain Gage 4,000 lb. Sensor (MCSG-4000) Installation—Clamp Plate Installation \*\*CLAMP PLATE INSTALLATION FOR PINS ≤ Ø0.25 [7.0]; PINS > Ø0.25 [7.0] USE HÉAD-TO-HEAD INSTALLATION ON SHEET MCSG-4000-04 & -05.\*\* 0.02 MIN [0.5 MIN] -B-Plate or Cavity Insert Standard Fit Per Side Part Thickness < 0.05 [1.5], 1/5 of Thickness Part Thickness > 0.05 [1.5], 0.01 [0.3] TABLE D Ejector Pin Installed with Ejector Pin Ø Chamfer Length Normal Slip-fit Tolerances 0.04-0.08 [1.0-2.0] 0.01 [0.3] H7/g6 0.10-0.20 [2.5-5.0] 0.02 [0.4] 0.01 MIN 0.24-0.40 0.025 [6.0] [6.0-10.0] 0.3 MIN Counterbore in Ejector Plate Ejector Retainer Plate 45° Transfer Pin Flush with Eiector Plate **REFER TO** TABLE D Counterbore $\emptyset$ = Pin Head $\emptyset$ + 0.04 [1.0] MIN Ejector Plate 30° Chamfer Depth Equal to Pin Ø If Pin $\emptyset$ < 0.12 [3.0], $\emptyset$ + 0.04 [1.0] If Pin $\emptyset > 0.12 [3.0]$ , + 0.06 [1.5] DETAIL B SCALE 2 : 1 tejector Pin Shoulder Ø and Transfer Pin Ø Equal 0.010 MIN 0.25 MIN Е -H7/g6 0.50 MIN [12 MIN] Fit Must be 1/3 of Pin Length, Else \*\*Consider Head-to-Head Installation\*\* 0.001 | [0.03] | E 0.001 [0.03] $0.500^{+0.002}_{-0.001}$ Clamp Plate $[12.7 \pm 0.04]$ Cover Plate 32HRC 0.25 MIN [6.0 MIN] $0.635^{+0.005}_{-0.000}$ CLAMP PLATE APPLICATIONS REQUIRE GUIDED EJECTION EJECTOR AND TRANSFER PIN CONCENTRICITY MUST BE WITHIN 0.030" [0.76] OR 10% OF EJECTOR PIN DIA, WHICHEVER IS SMALLER. ENCLOSED EJECTOR BOX SUGGESTED. .45° REFER TO TABLE D $[16.13 \pm 0.1]$ DO NOT SCALE PRINT BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX DIMENSIONS IN INCHES [MM], UNLESS NOTED TOLERANCES UNLESS SPECIFIED: Description: MCSG-4000 Sensor Installation **DETAIL C** Drawn: K.J.Brettschneider $XXX = \pm 0.003 [0.08]$ SCALE 2.5:1 $XX = \pm 0.003 [0.0]$ $XX = \pm 0.01 [0.3]$ ANGLES = $\pm 3^{\circ} 30^{\circ}$ 9111 Park Street Traverse City, MI 45696 Check: M.Groleau Date: 04.02.2025

Multi-Channel Strain Gage 4,000 lb. Sensor (MCSG-4000) Installation—Head-to-Head Installation
\*\*CLAMP PLATE INSTALLATION FOR PINS ≤ Ø0.25 [7.0]; PINS > Ø0.25 [7.0] USE HEAD-TO-HEAD INSTALLATION.\*\*









# SECTION F-F SCALE 1: 2.5

NOTES:

CLAMP PLATE APPLICATIONS REQUIRE GUIDED EJECTION
EJECTOR AND TRANSFER PIN CONCENTRICITY MUST BE WITHIN 0.030" [0.76] OR
10% OF EJECTOR PIN DIA, WHICHEVER IS SMALLER.
ENCLOSED EJECTOR BOX SUGGESTED.

DO NOT SCALE PRINT
BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX
DIMENSIONS IN INCHES [MM], UNLESS NOTED
TOLERANCES UNLESS SPECIFIED:

XXX = ±0.003 [0.08] XX = ±0.01 [0.3] ANGLES = ±3°30°



Description: MCSG-4000 Sensor Installation

#### Drawing Title: MCSG-4000-05 Multi-Channel Strain Gage 4,000 lb. Sensor (MCSG-4000) Installation—Clamp Plate Installation \*\*CLAMP PLATE INSTALLATION FOR PINS ≤ Ø0.25 [7.0]; PINS >Ø0.25 [7.0] USE HEAD-TO-HEAD INSTALLATION.\*\* 45° Standard Fit **REFER TO** 0.02 MIN **TABLE J B-Plate or Cavity Insert** [0.5 MIN] Per Side Part Thickness < 0.05 [1.5], 1/5 of Thickness Part Thickness > 0.05 [1.5], 0.01 [0.3] TABLE J Ejector Pin Installed with Ejector Pin Ø Chamfer Length Normal Slip-Fit Tolerances H7/g6 0.04-0.08 [1.0-2.0] 0.01 [0.3] 0.10-0.20 [2.5-5.0] 0.02 [0.4] 0.24-0.40 Ejector Retainer Plate 0.025 [0.6] [6.0-10.0] 0.01 MIN 0.3 MIN **Ejector Plate** Counter Bore In Ejector Plate **REFER TO** Transfer Pin Flush with Ejector Plate TABLE J H7/g6 for 0.02 MIN 0.5 MIN [0.5 MIN] [12 MIN] **DETAIL G** Transfer Pin Ø Per Side SCALE 2.5:1 0.04 IF < 0.12 [1.0 IF < 3.0] Ejector Pin Shoulder Ø and Transfer Pin Ø Equal 0.06 IF > 0.12 [1.5 IF > 3.0]30°Chamfer Depth Equal to Pin Ø 0.01 MIN 0.3 MIN Clamp Plate

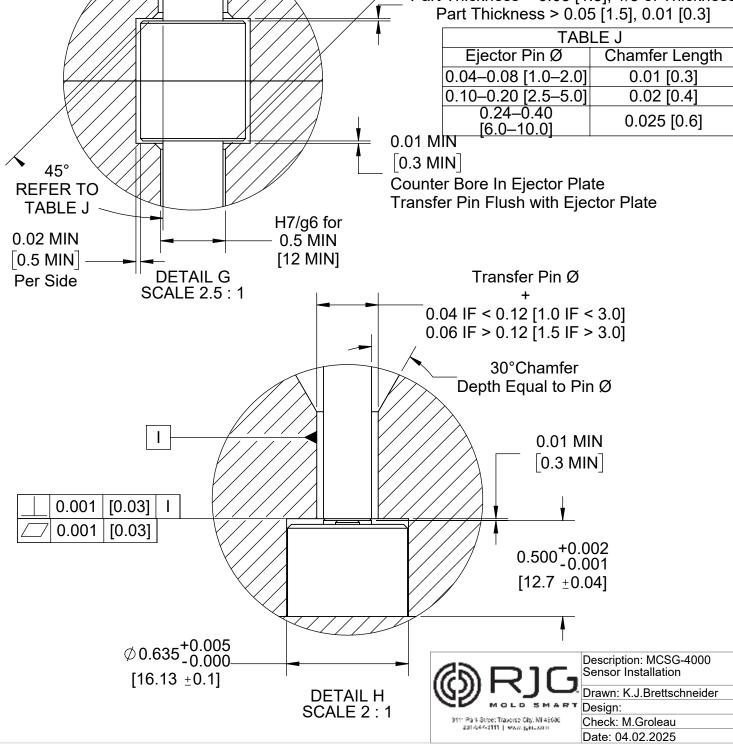


CLAMP PLATE APPLICATIONS REQUIRE GUIDED EJECTION
EJECTOR AND TRANSFER PIN CONCENTRICITY MUST BE WITHIN 0.030" [0.76] OR
10% OF EJECTOR PIN DIA, WHICHEVER IS SMALLER.
ENCLOSED EJECTOR BOX SUGGESTED.

Clamp Plate 32HRC 0.25 MIN [6.0MIN]

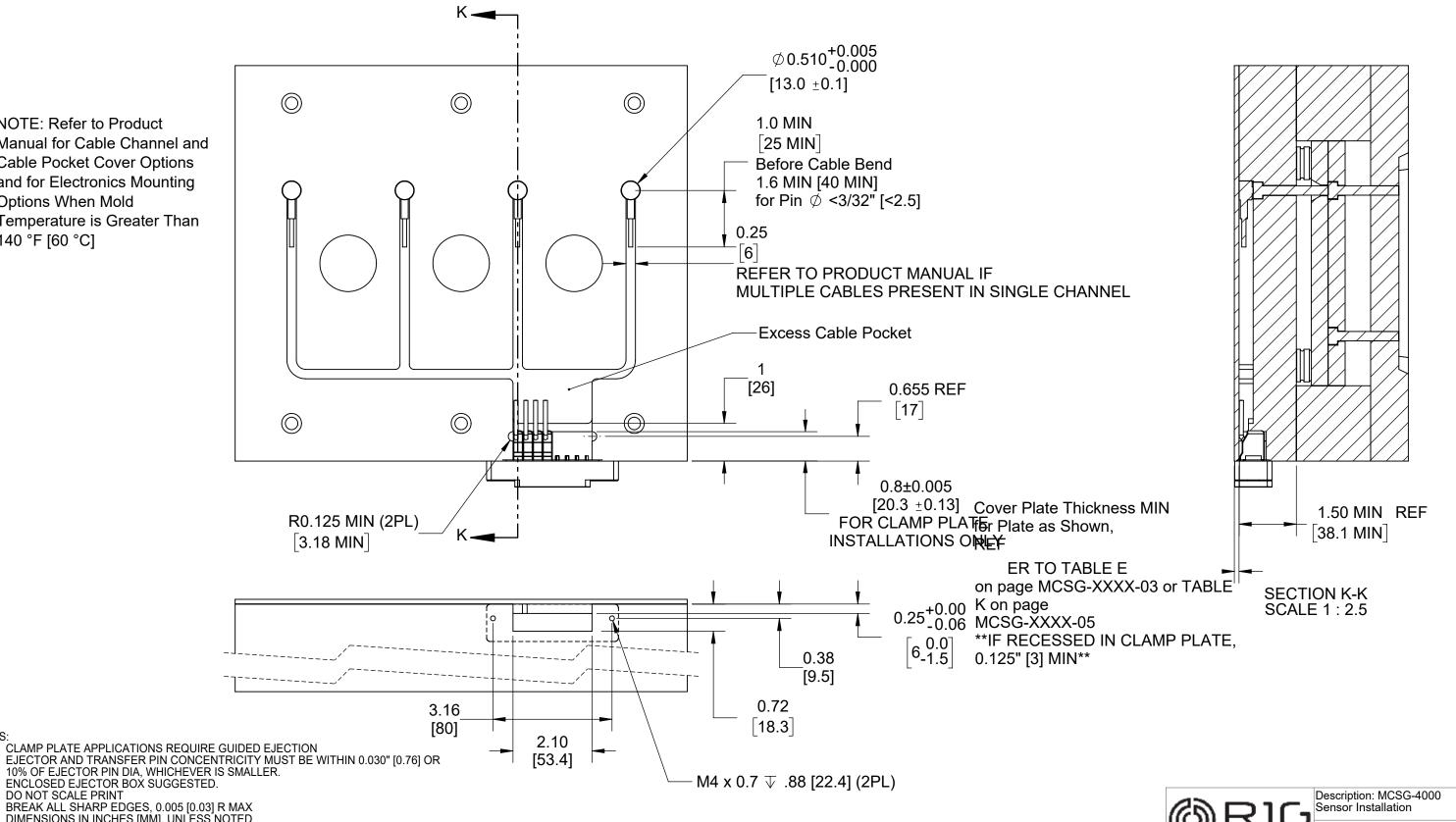
DO NOT SCALE PRINT
BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX
DIMENSIONS IN INCHES [MM], UNLESS NOTED
TOLERANCES UNLESS SPECIFIED:

 $XXX = \pm 0.003 [0.08]$  $XX = \pm 0.003 [0.0]$   $XX = \pm 0.01 [0.3]$ ANGLES =  $\pm 3^{\circ} 30^{\circ}$ 



## Multi-Channel Strain Gage Sensor (MCSG-XXXX) Installation—Clamp Plate/Head-to-Head Installation

NOTE: Refer to Product Manual for Cable Channel and Cable Pocket Cover Options and for Electronics Mounting Options When Mold Temperature is Greater Than 140 °F [60 °C]



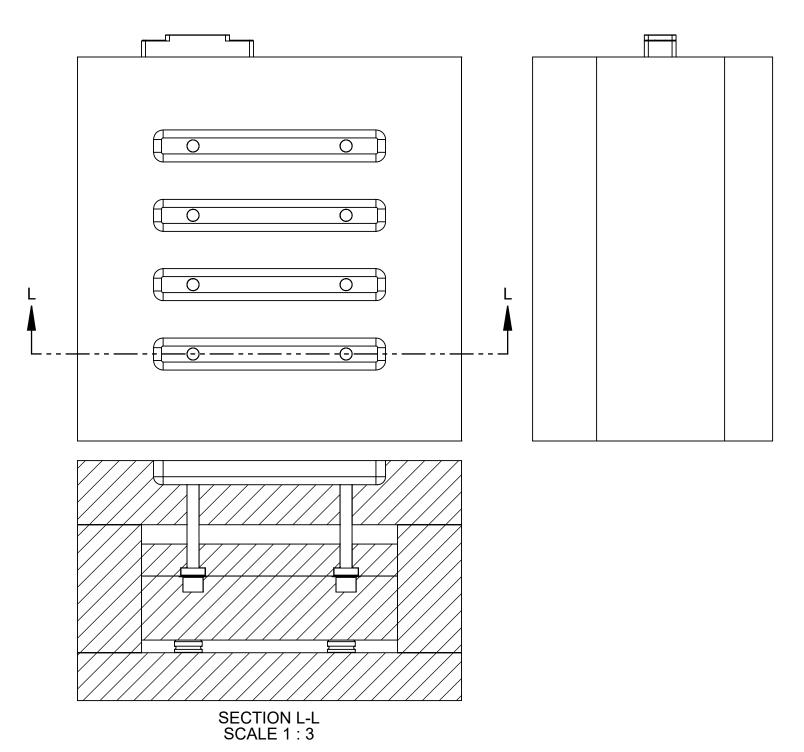
NOTES:

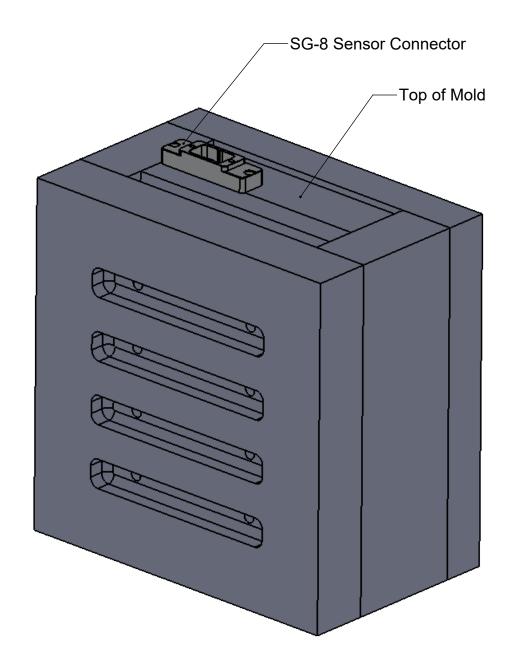
DO NOT SCALE PRINT
BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX
DIMENSIONS IN INCHES [MM], UNLESS NOTED
TOLERANCES UNLESS SPECIFIED:

 $XXX = \pm 0.003 [0.08]$  $XX = \pm 0.003 [0.0]$   $XX = \pm 0.01 [0.3]$ ANGLES =  $\pm 3^{\circ} 30^{\circ}$ 

9111 Park Street Traverse City, MI 48686.

## Multi-Channel Strain Gage 4,000 lb. Sensor (MCSG-4000) Installation—Ejector Plate Installation





- NOTES:

  1. CLAMP PLATE APPLICATIONS REQUIRE GUIDED EJECTION

  2. EJECTOR AND TRANSFER PIN CONCENTRICITY MUST BE WITHIN 0.030" [0.76] OR 10% OF EJECTOR PIN DIA, WHICHEVER IS SMALLER.

  3. ENCLOSED EJECTOR BOX SUGGESTED.

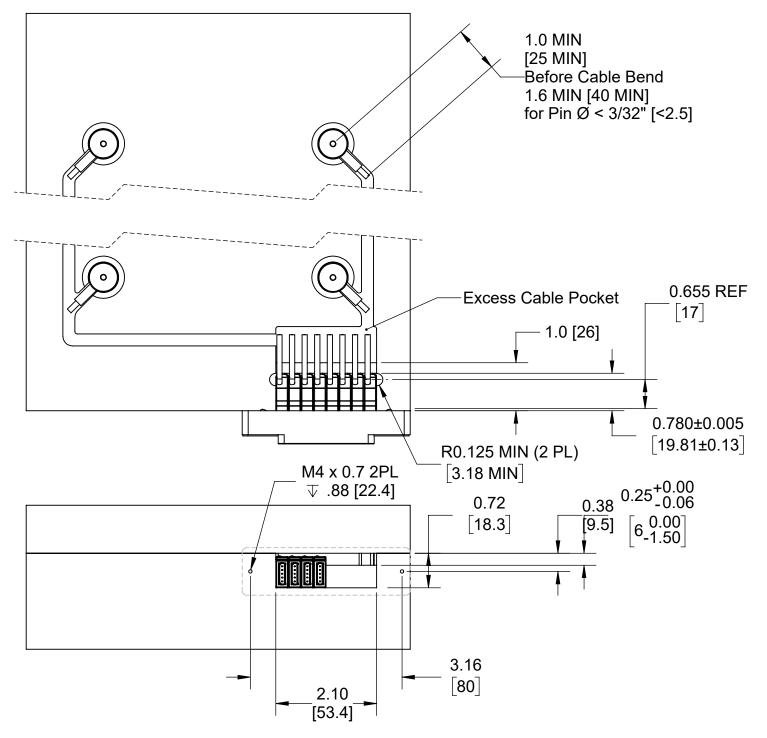
- DO NOT SCALE PRINT
  BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX
  DIMENSIONS IN INCHES [MM], UNLESS NOTED
  TOLERANCES UNLESS SPECIFIED:

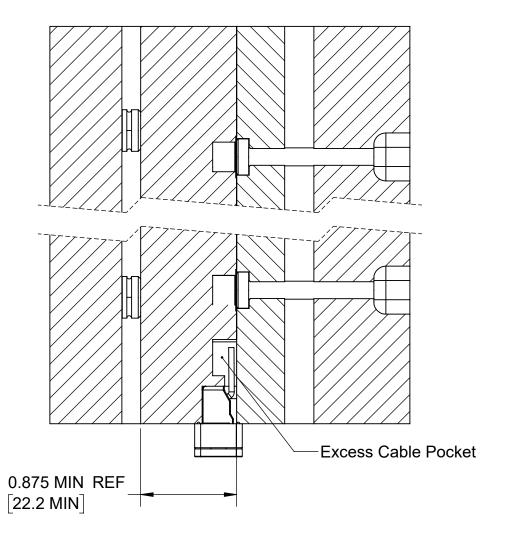
XXX = ±0.003 [0.08] XX = ±0.01 [0.3] ANGLES = ±3°30°



### Drawing Title: MCSG-4000-08 Multi-Channel Strain Gage 4,000 lb. Sensor (MCSG-4000) Installation—Ejector Plate Installation Ejector Pin Ø + 0.125 [3] IF Ø ≥0.50 [12.7] 0.01 MIN B-Plate or Cavity Insert **→**[0.3 MIN] Per Side \_0.635<sup>+0.005</sup> -0.000<del>-</del> $[16.13 \pm 0.1]$ Part Thickness < 0.05 [1.5], 1/5 of Thickness Ejector Pin Installed with Normal Slip-Fit Tolerances H7/g6 Part Thickness > 0.05 [1.5], 0.01 [3.0] N Ejector Retainer Plate 0 0.02 MIN [0.5 MIN] 0.001 | [0.03] | N 0.001 [0.03] -Ejector Plate $0.500^{+0.002}_{-0.001}$ $[12.7 \pm 0.04]$ 0.001 [0.03] O 0.001 [0.03] Clamp Plate 45° **REFER TO** TABLE P R0.005 $\begin{bmatrix} 0.1 \end{bmatrix}$ **DETAIL M** NOTES: TABLE P CLAMP PLATE APPLICATIONS REQUIRE GUIDED EJECTION EJECTOR AND TRANSFER PIN CONCENTRICITY MUST BE WITHIN 0.030" [0.76] OR 10% OF EJECTOR PIN DIA, WHICHEVER IS SMALLER. ENCLOSED EJECTOR BOX SUGGESTED. SCALE 3:1 Ejector Pin Ø Chamfer Length 0.04-0.08 [1.0-2.0] 0.01 [0.3] DO NOT SCALE PRINT BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX DIMENSIONS IN INCHES [MM], UNLESS NOTED TOLERANCES UNLESS SPECIFIED: Description: MCSG-4000 0.10-0.20 [2.5-5.0] 0.24-0.40 [6.0-10.0] 0.02 [0.4] Sensor Installation 0.025 [0.6] Drawn: K.J.Brettschneider XXX = ±0.003 [0.08] XX = ±0.01 [0.3] ANGLES = ±3°30° 9111 Park Street Traverse City, MI 48686. Check: M.Groleau Date: 04.02.2025

## Multi-Channel Strain Gage 4,000 lb. Sensor (MCSG-4000) Installation—Ejector Plate Installation





NOTES:

0.030" [0.76] OR 10% OF EJECTOR PIN DIA, WHICHEVER IS SMALLER. ENCLOSED EJECTOR BOX SUGGESTED. DO NOT SCALE PRINT BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX DIMENSIONS IN INCHES [MM], UNLESS NOTED TOLERANCES UNLESS SPECIFIED:  $XXX = \pm 0.003 \ [0.08] \\ XX = \pm 0.01 \ [0.3] \\ ANGLES = \pm 3° 30°$ 

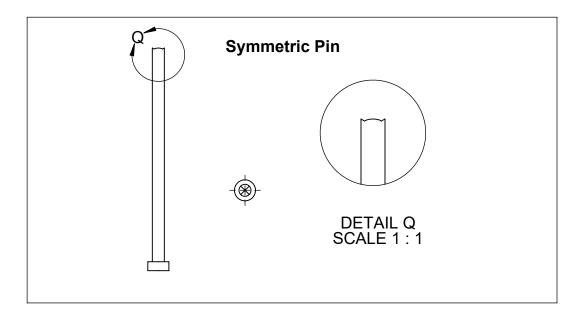


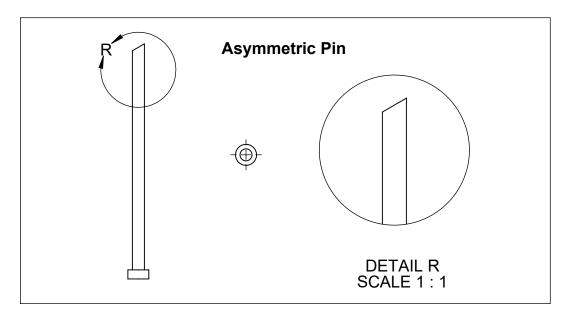
Description: MCSG-4000 Sensor Installation

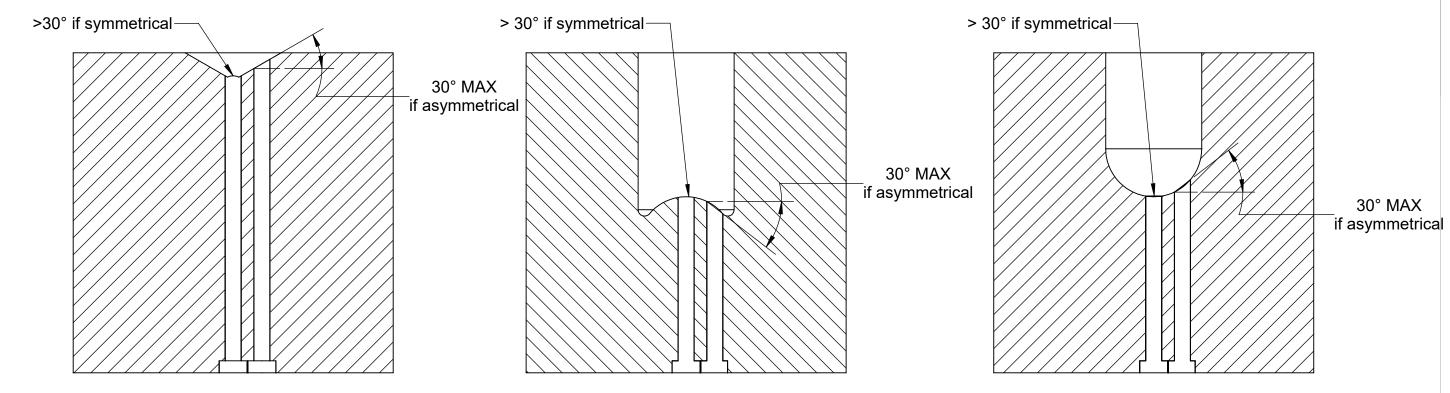
Check: M.Groleau

## Multi-Channel Strain Gage 4,000 lb. Sensor MCSG-4000 Installation—Contoured Pin Angle Specification

NOTE: Contoured/angled pins (asymmetric) not to exceed 30° MAX unless pin design is symmetrical to provide even, downward pressure across pin surface to loading of sensor. Contact RJG Customer Support for assistance in verification of contoured/angled pin use.







#### NOTES:

CLAMP PLATE APPLICATIONS REQUIRE GUIDED EJECTION
EJECTOR AND TRANSFER PIN CONCENTRICITY MUST BE WITHIN 0.030" [0.76] OR
10% OF EJECTOR PIN DIA, WHICHEVER IS SMALLER.
ENCLOSED EJECTOR BOX SUGGESTED.

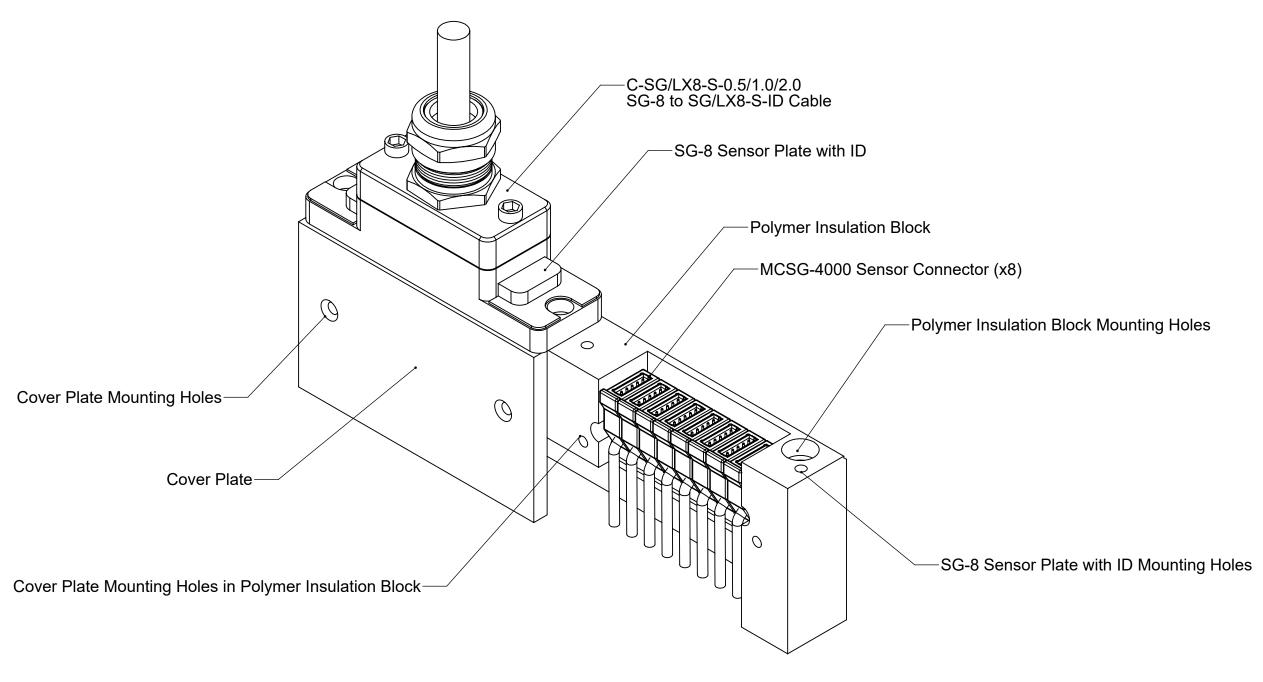
DO NOT SCALE PRINT
BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX
DIMENSIONS IN INCHES [MM], UNLESS NOTED
TOLERANCES UNLESS SPECIFIED:

XXX = ±0.003 [0.08] XX = ±0.01 [0.3] ANGLES = ±3°30°



### Multi-Channel Strain Gage 4,000 lb. MCSG-4000 Sensor Installation—High Temperature Installation

NOTE: The sensor electronics must be kept below 140 °F (60 °C) for all MCSG-4000 sensor models. Refer to the drawing below as a guide; RJG does NOT provide polymer assembly pictured below—polymer assembly and design is responsibility of customer. Contact RJG Customer Support for assistance with high-temperature sensor protection designs.



CLAMP PLATE APPLICATIONS REQUIRE GUIDED EJECTION
EJECTOR AND TRANSFER PIN CONCENTRICITY MUST BE WITHIN 0.030" [0.76] OR
10% OF EJECTOR PIN DIA, WHICHEVER IS SMALLER.
ENCLOSED EJECTOR BOX SUGGESTED.

DO NOT SCALE PRINT
BREAK ALL SHARP EDGES, 0.005 [0.03] R MAX
DIMENSIONS IN INCHES [MM], UNLESS NOTED
TOLERANCES UNLESS SPECIFIED:

XXX = ±0.003 [0.08] XX = ±0.01 [0.3] ANGLES = ±3°30°



Description: MCSG-4000 Sensor Installation