

# HE3 Series Specifications

## MECHANICAL (X & Y AXES)

ANGLE OF MOVEMENT	40° (20° EACH DIRECTION)
EXPECTED CYCLE LIFE	5 MILLION
CENTERING	SPRING RETURN
MAX. APPLIED FORCE	150 lbf
MATERIAL	GLASS/MINERAL FILLED NYLON

## MECHANICAL (Z AXIS)

ANGLE	90° (45° EACH DIRECTION)
CENTERING	SPRING RETURN
MAX. APPLIED TORQUE	14 lbFin

## ELECTRICAL

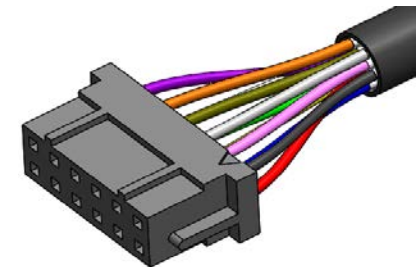
SENSOR TYPE	HALL EFFECT
RESOLUTION	12 BIT
SUPPLY VOLTAGE	5VDC ± 0.01VDC
OUTPUT VOLTAGE	SEE OPTIONS
RETURN TO CENTER VOLTAGE	± 50mV
OVERVOLTAGE MAX.	20VDC
REVERSE POLARITY MAX.	-25VDC

## ENVIRONMENTAL

OPERATING TEMPERATURE	-40°F TO 185°F
STORAGE TEMPERATURE	-40°F TO 185°F
IP SEALING ABOVE PANEL	IP67 STANDARD
EMC IMMUNITY LEVEL	EN61000-4-3 *Compliance to 30A/m
EMC EMISSIONS LEVEL	EN61000-6-3
ESD IMMUNITY LEVEL	EN61000-4-2 *Compliance to ±15kV/±8kV
VIBRATION TESTING	Per SAE J1455 Section 4.9 & MIL-STD810G 514.6
MECHANICAL SHOCK	Per SAE J1455 Section 4.10 & MIL-STD-202G

## HIROSE DF11-12DP-2DS(24) CONNECTOR (ANALOG)

PIN #	WIRE COLOR	DESCRIPTION
1	BLACK	GROUND
2	RED	+5V SENSOR A
3	PINK	X AXIS SENSOR B
4	BLUE	X AXIS SENSOR A
5	GREY	Y AXIS SENSOR B
6	YELLOW	Y AXIS SENSOR A
7	BROWN	Z AXIS SENSOR B
8	GREEN	Z AXIS SENSOR A
9	ORANGE	BUTTON 1
10	WHITE	BUTTON COMMON
11	VIOLET	BUTTON 2
12	YELLOW/WHITE	+5V SENSOR B



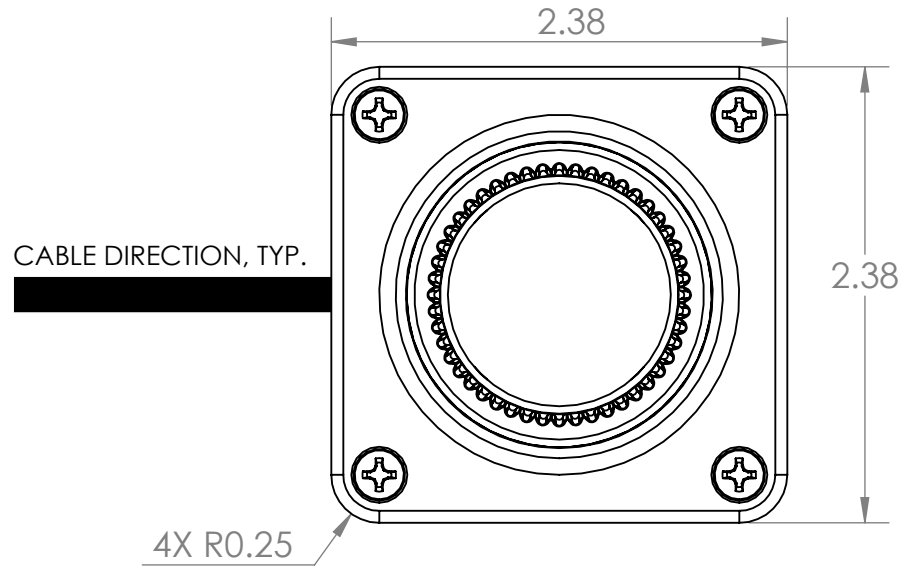
10" CABLE PROVIDED

\*Extended Testing Levels

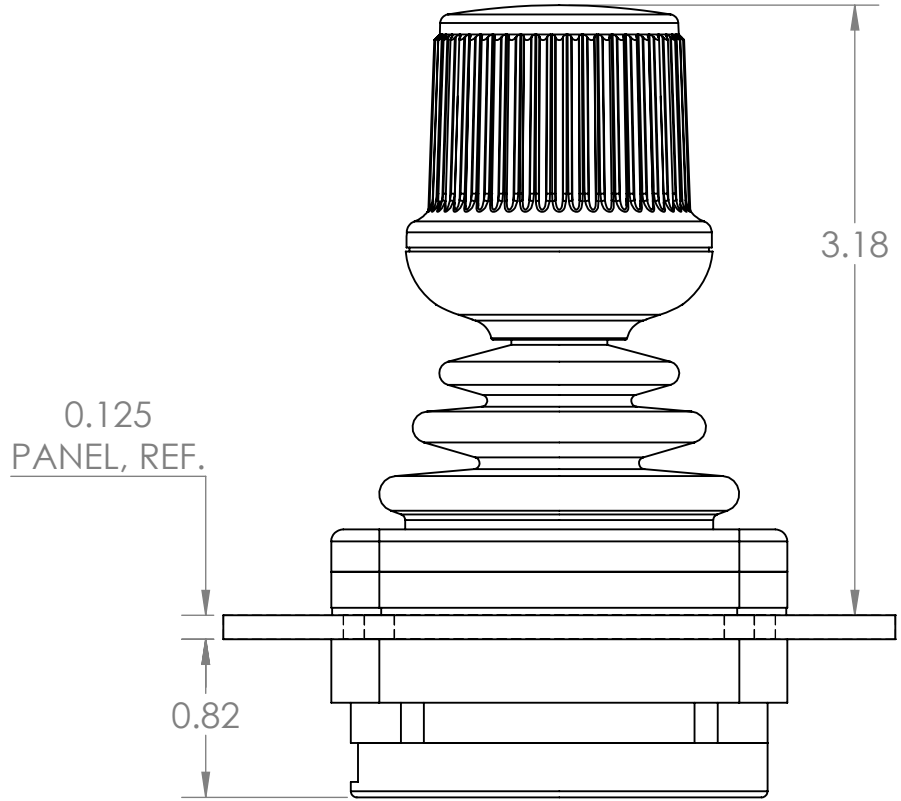
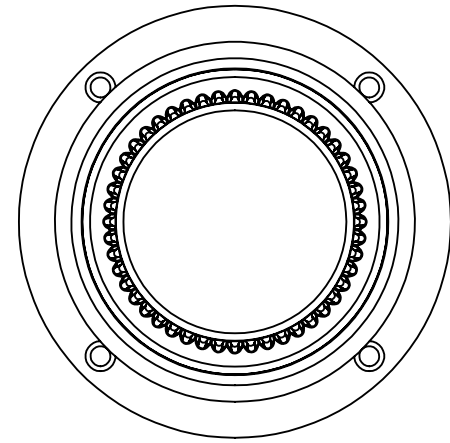
# HE3 SERIES - HANDLE OPTIONS

ALL HANDLES AVAILABLE WITH ANY MOUNTING OPTION UNLESS OTHERWISE SPECIFIED

SCALE 1:1

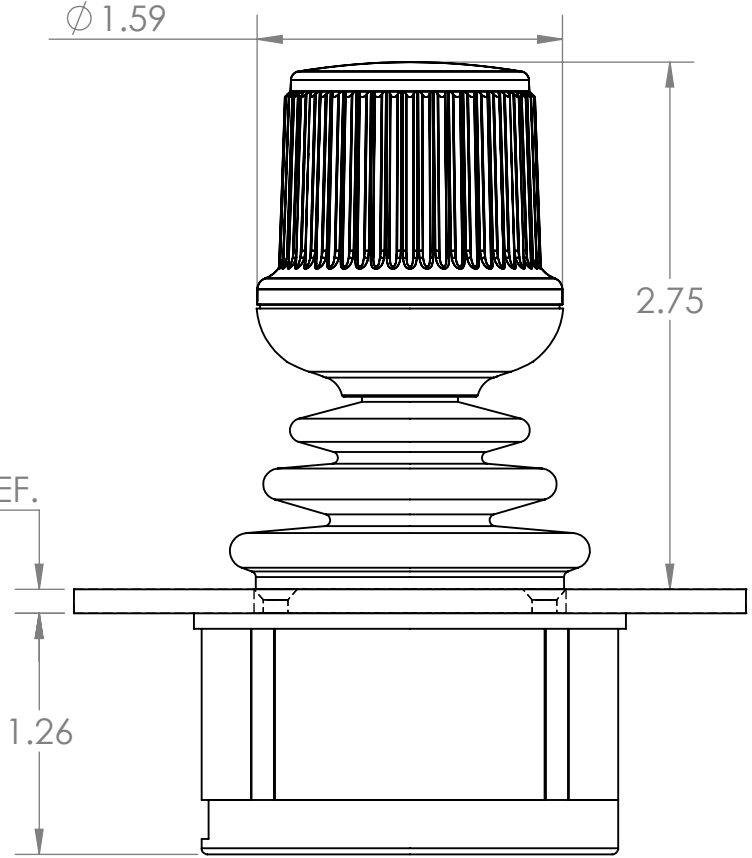


CABLE DIRECTION, TYP.  
[Black arrow pointing left]



HE3-20-x-A-x-x-x  
HE3-30-x-A-x-x-x

(NO BUTTON HANDLE)

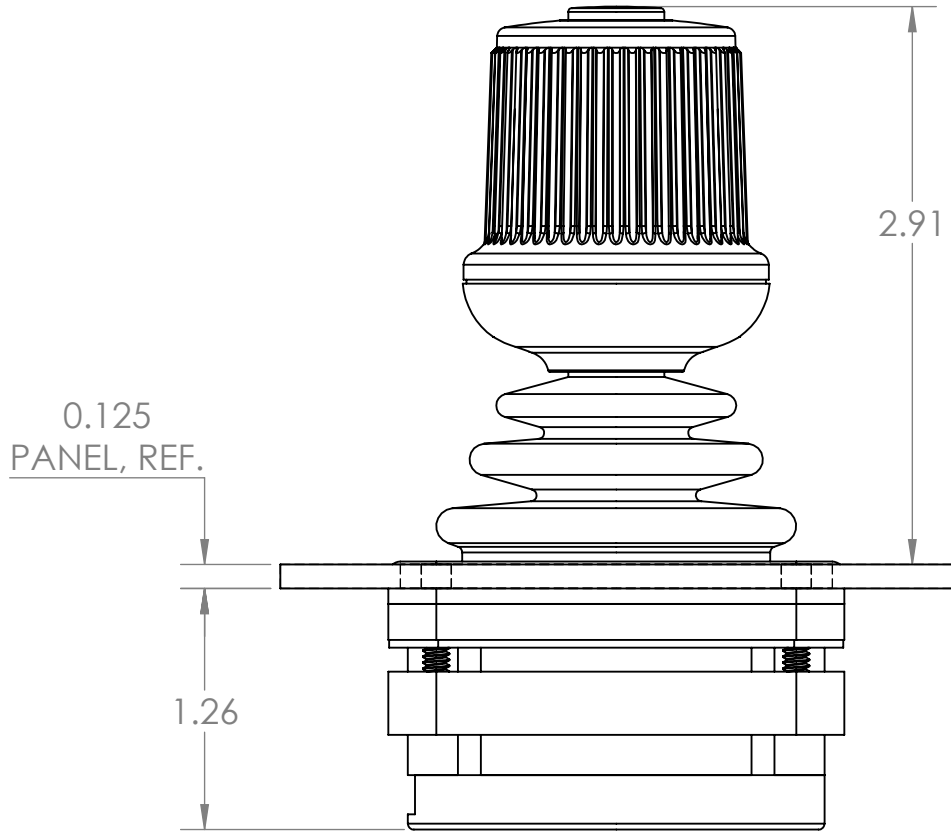
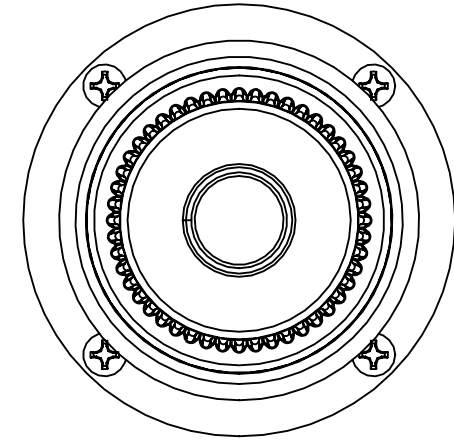
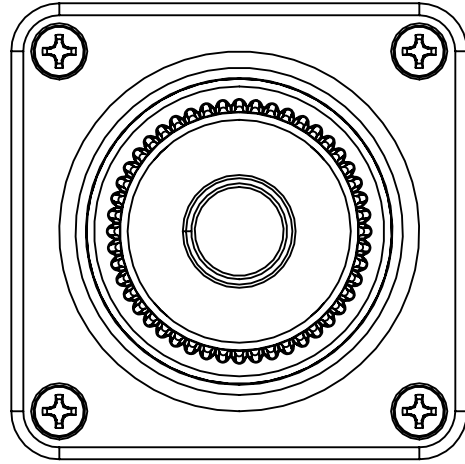


HE3-20-x-B-x-x-x  
HE3-30-x-B-x-x-x

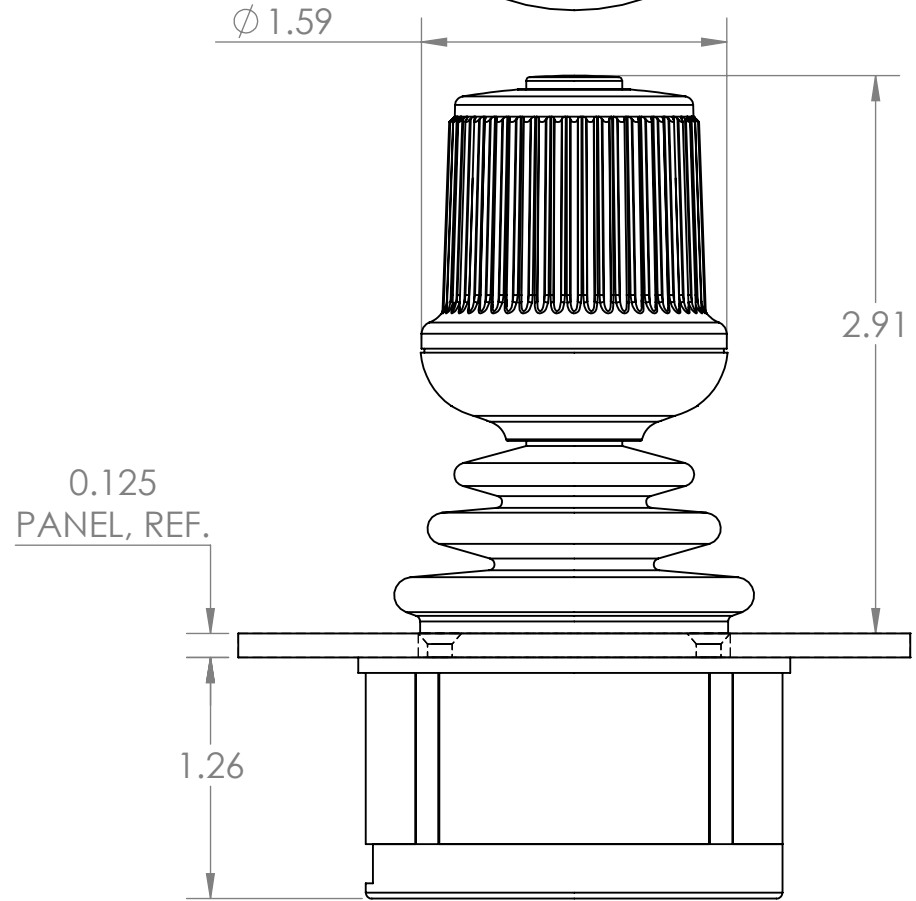
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SCALE 1:1



HE3-21-x-A-x-x-x  
HE3-31-x-A-x-x-x



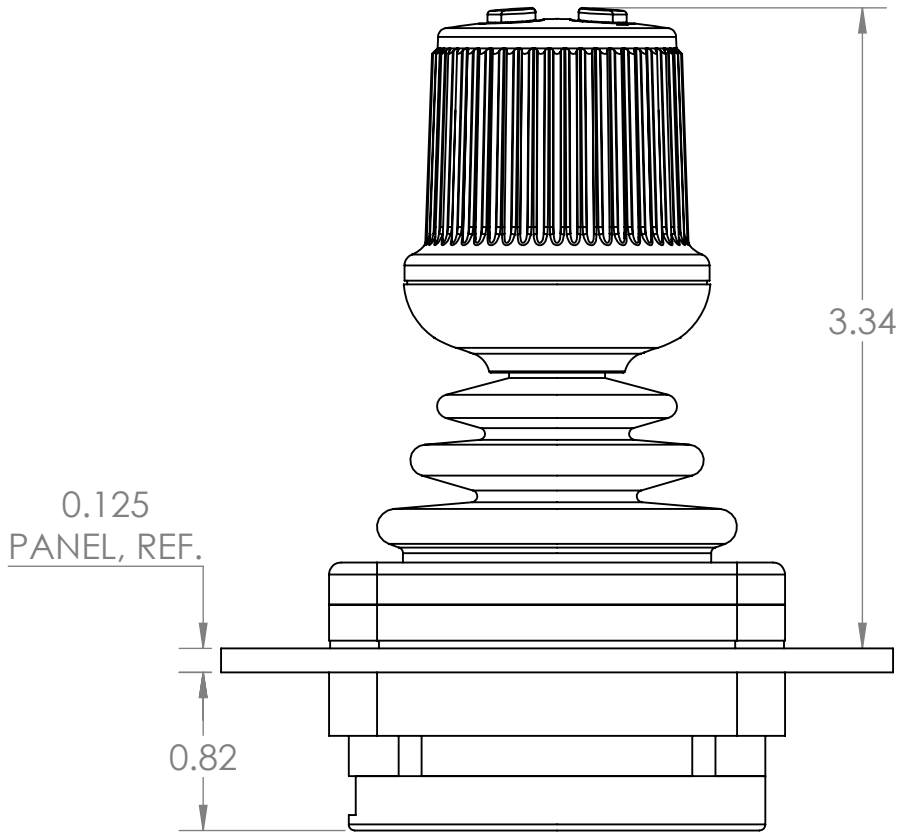
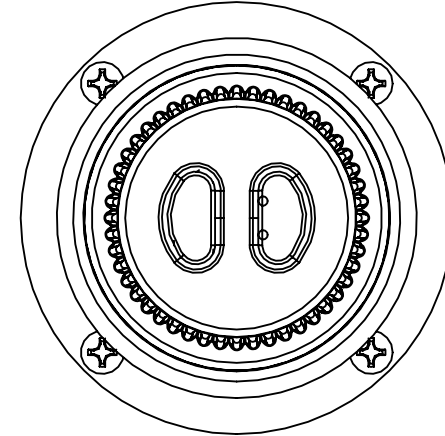
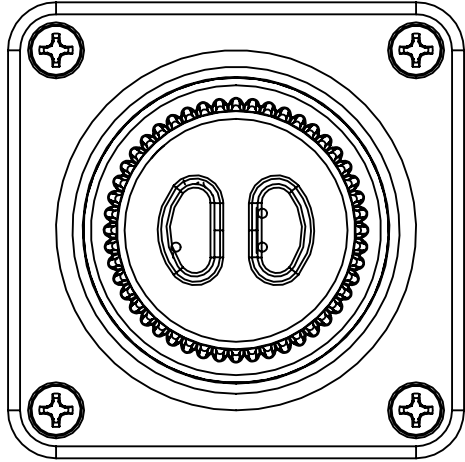
(1 BUTTON HANDLE)

HE3-21-x-B-x-x-x  
HE3-31-x-B-x-x-x

# HE3 SERIES - HANDLE OPTIONS

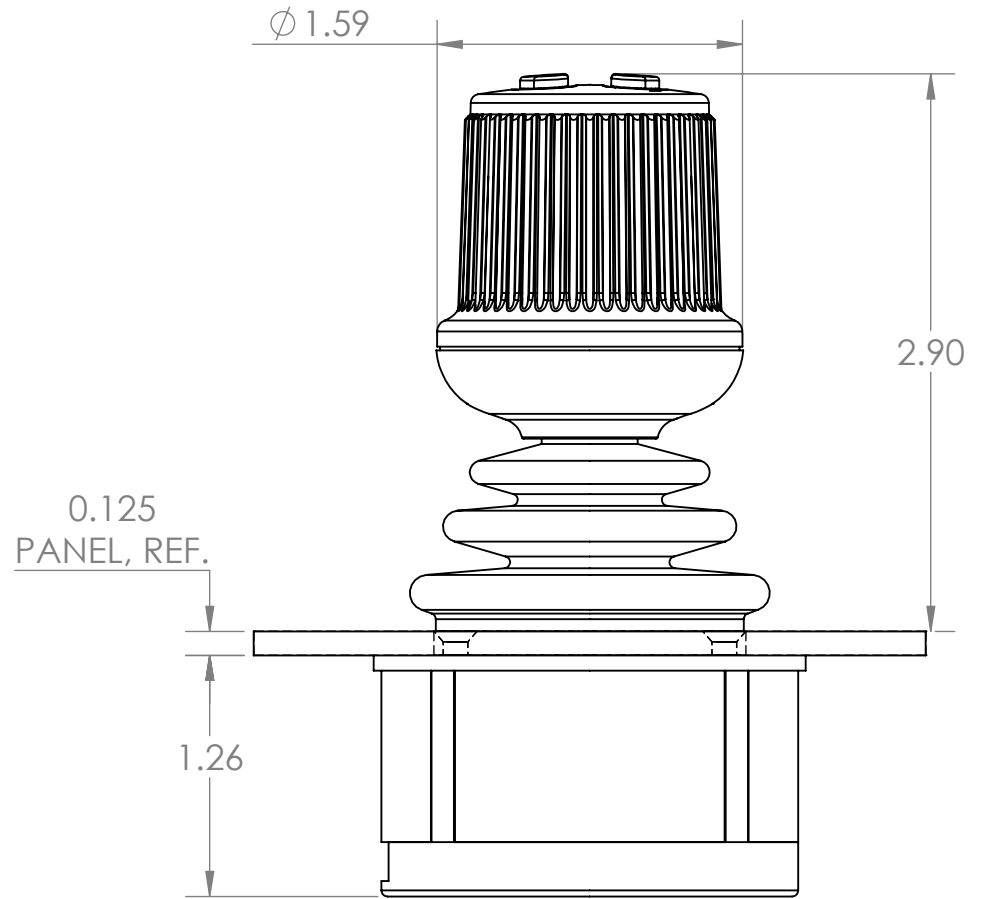
ALL HANDLES AVAILABLE WITH ANY MOUNTING OPTION UNLESS OTHERWISE SPECIFIED

SCALE 1:1



HE3-22-x-A-x-x-x  
HE3-32-x-A-x-x-x

(2 BUTTON HANDLE)

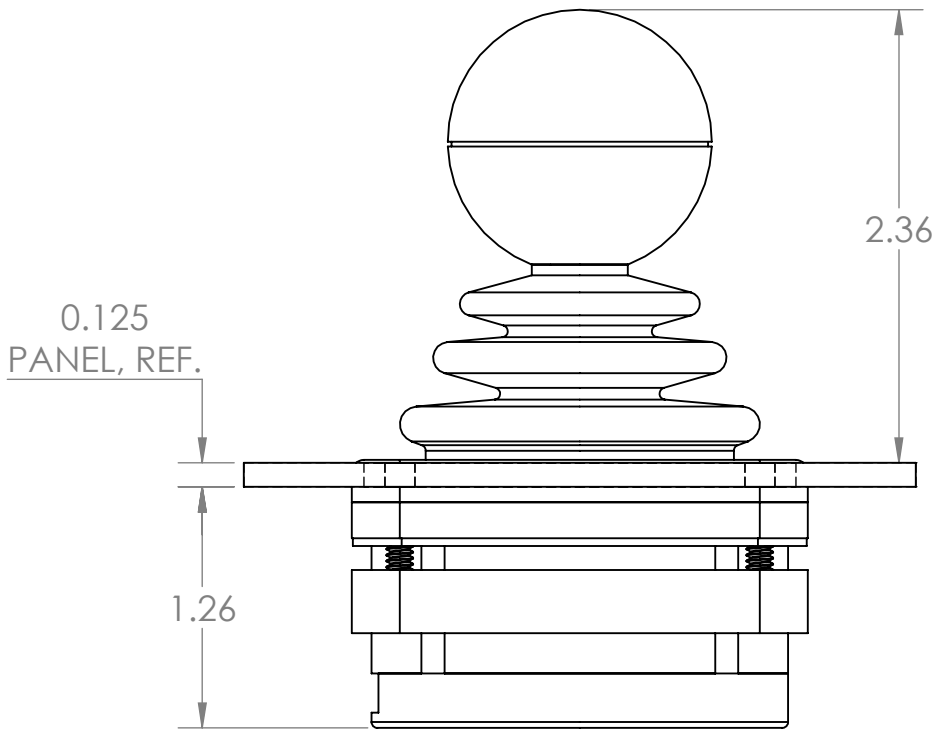
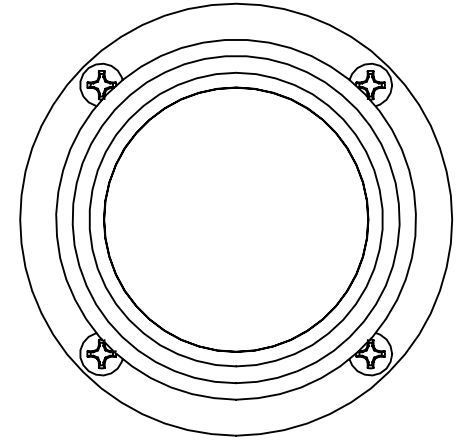
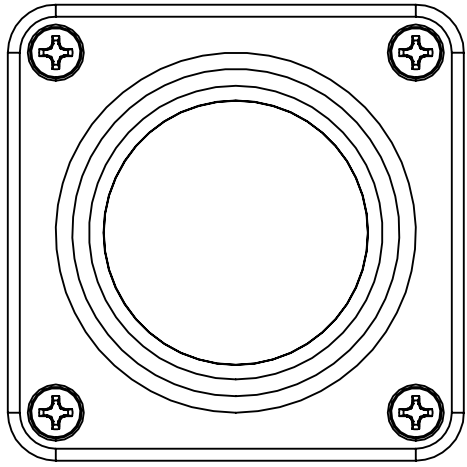


HE3-22-x-B-x-x-x  
HE3-32-x-B-x-x-x

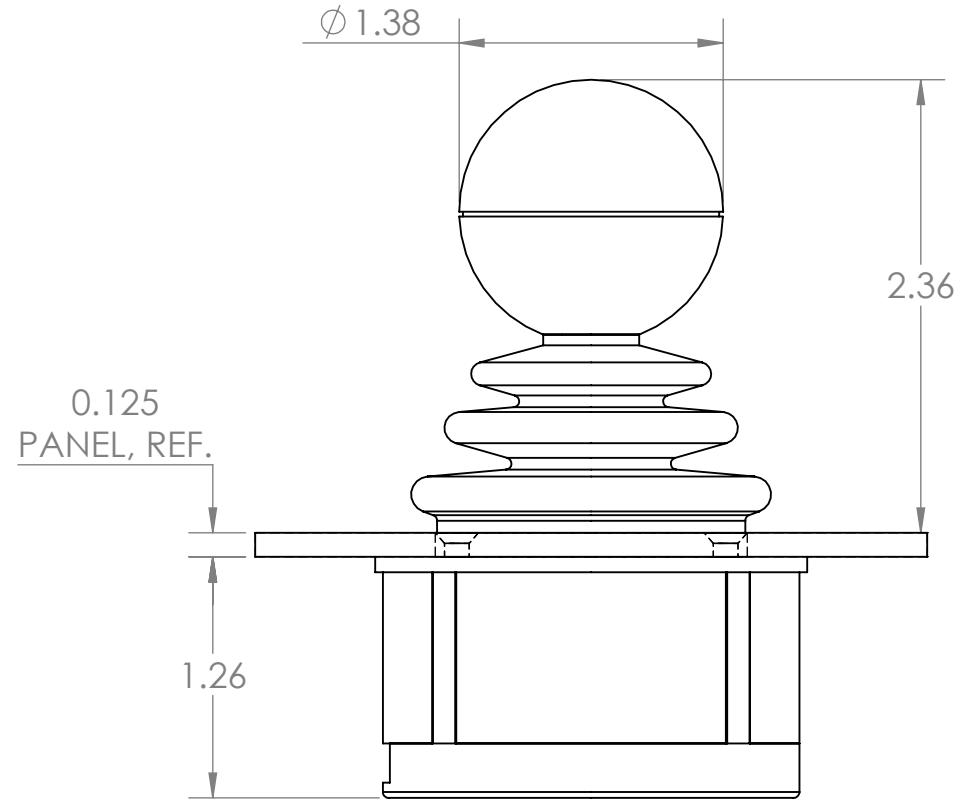
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SCALE 1:1



HE3-23-x-A-x-x-x



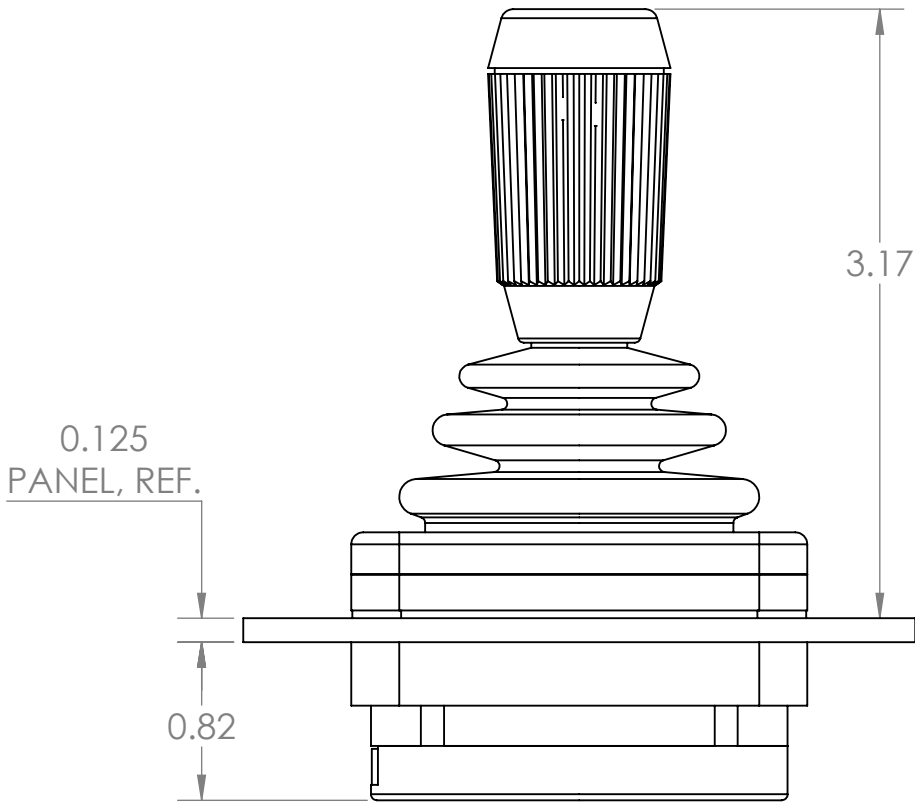
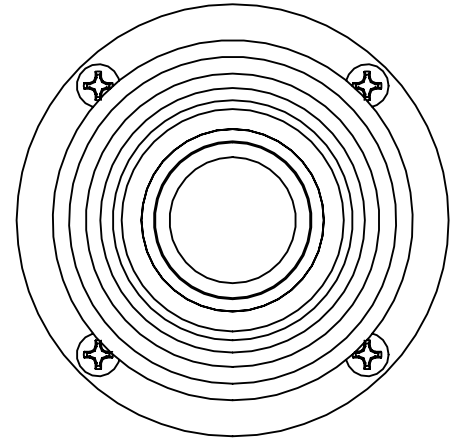
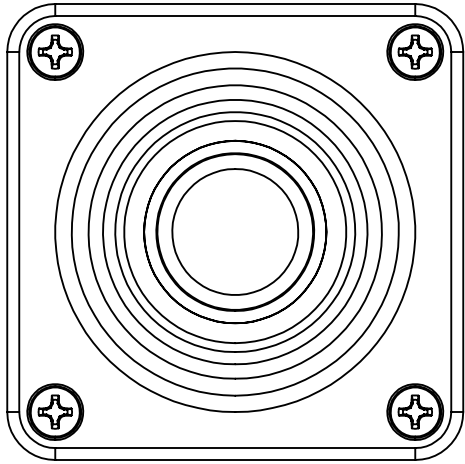
HE3-23-x-B-x-x-x

(BALL HANDLE, NO BUTTON)

# HE3 SERIES - HANDLE OPTIONS

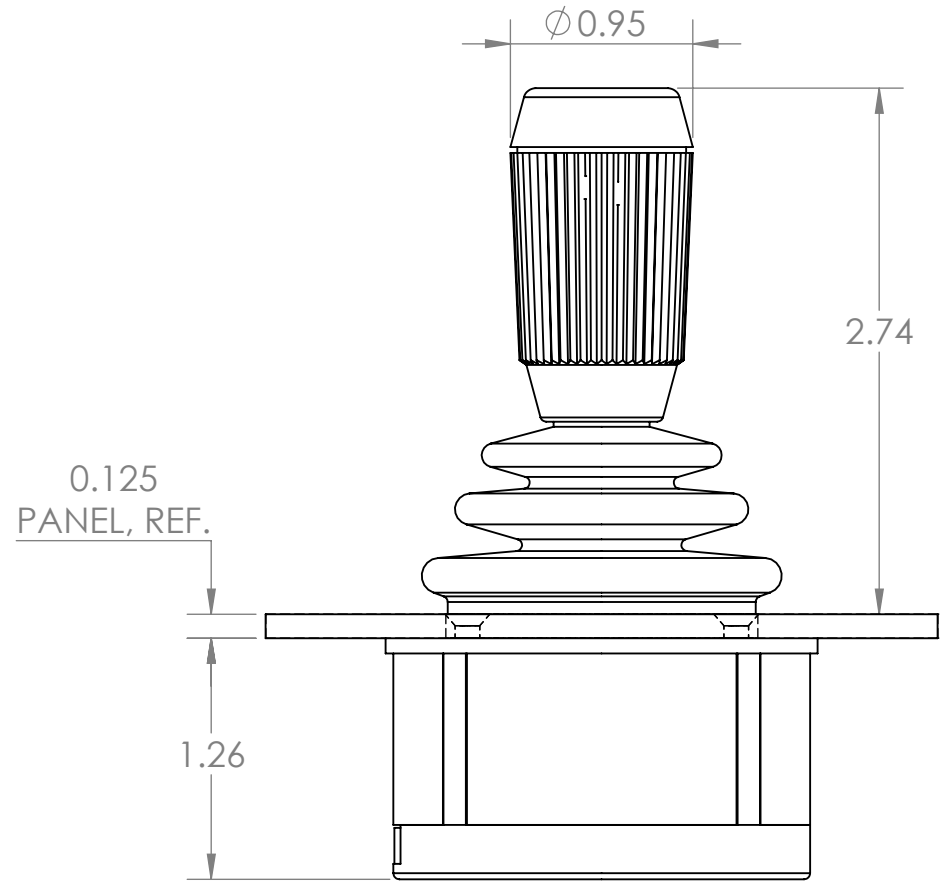
ALL HANDLES AVAILABLE WITH ANY MOUNTING OPTION UNLESS OTHERWISE SPECIFIED

SCALE 1:1



HE3-24-x-A-x-x-x

(2 AXIS TAPERED HANDLE, TALL)

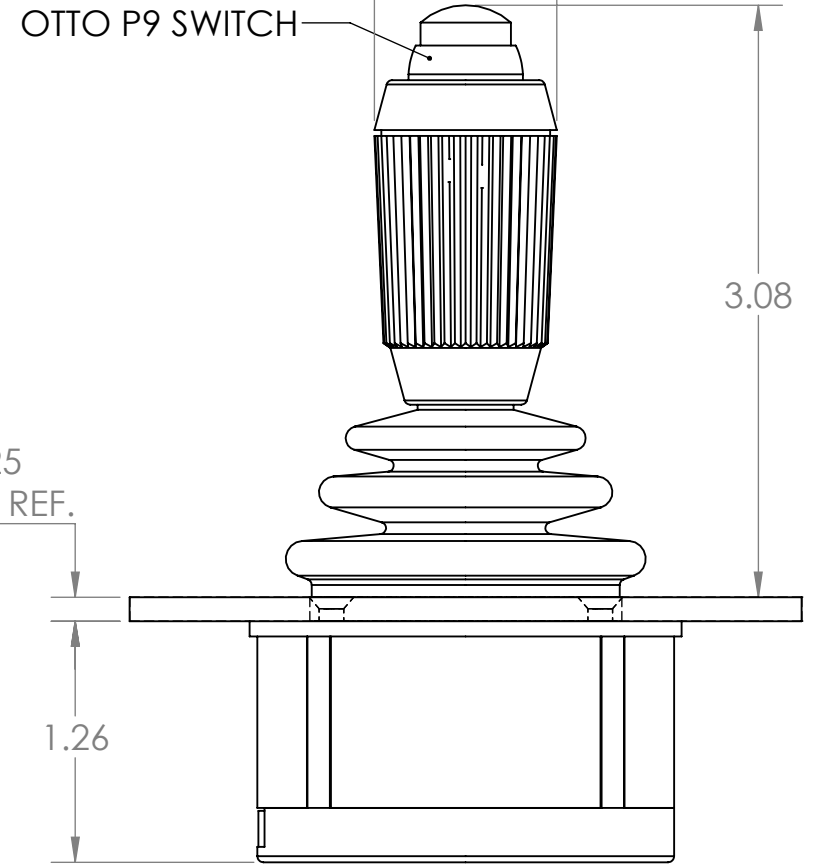
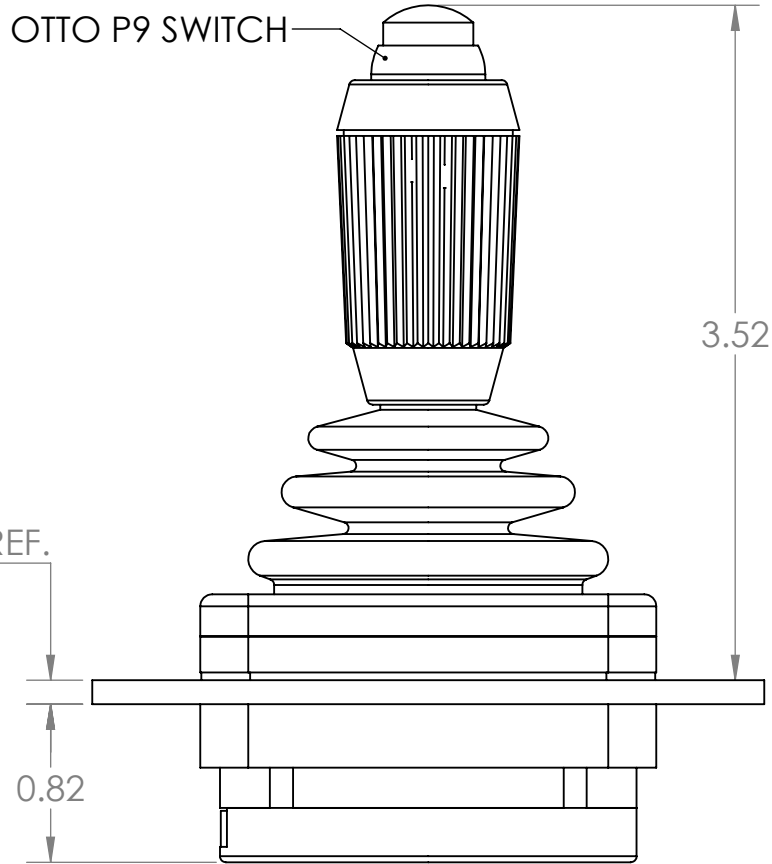
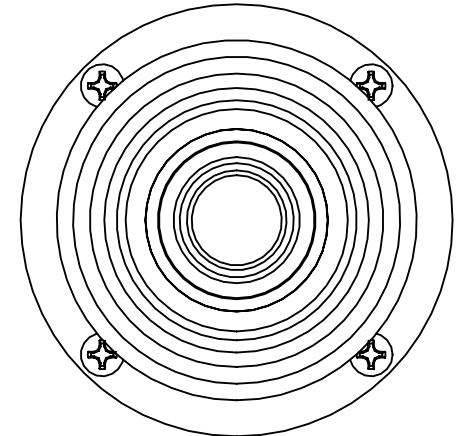
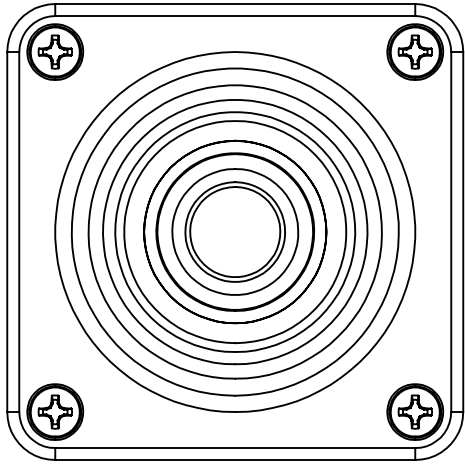


HE3-24-x-B-x-x-x

# HE3 SERIES - HANDLE OPTIONS

ALL HANDLES AVAILABLE WITH ANY MOUNTING OPTION UNLESS OTHERWISE SPECIFIED

SCALE 1:1



HE3-25-x-A-x-x-x

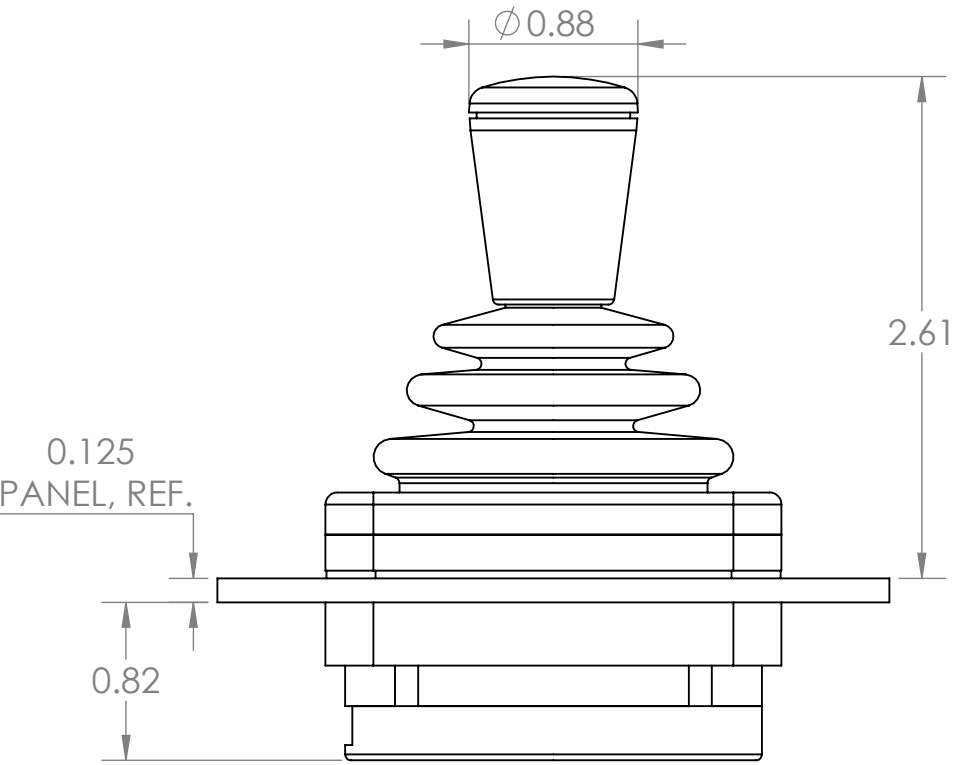
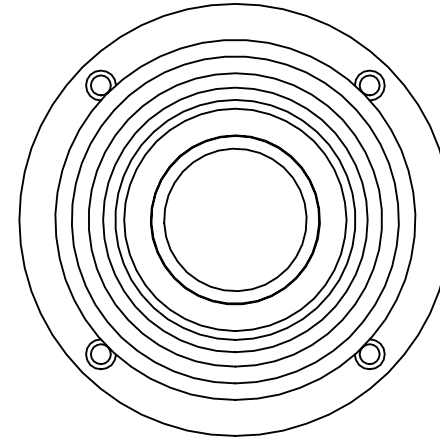
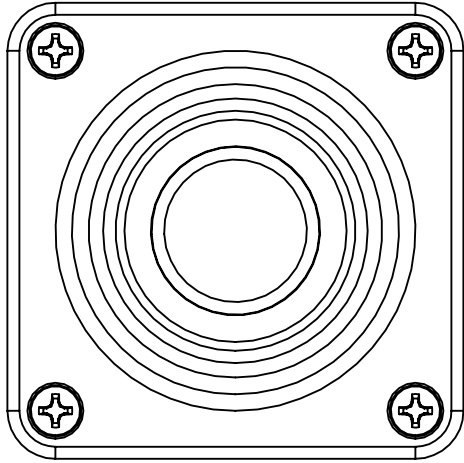
HE3-25-x-B-x-x-x

(2 AXIS TAPERED HANDLE, 1 BUTTON)

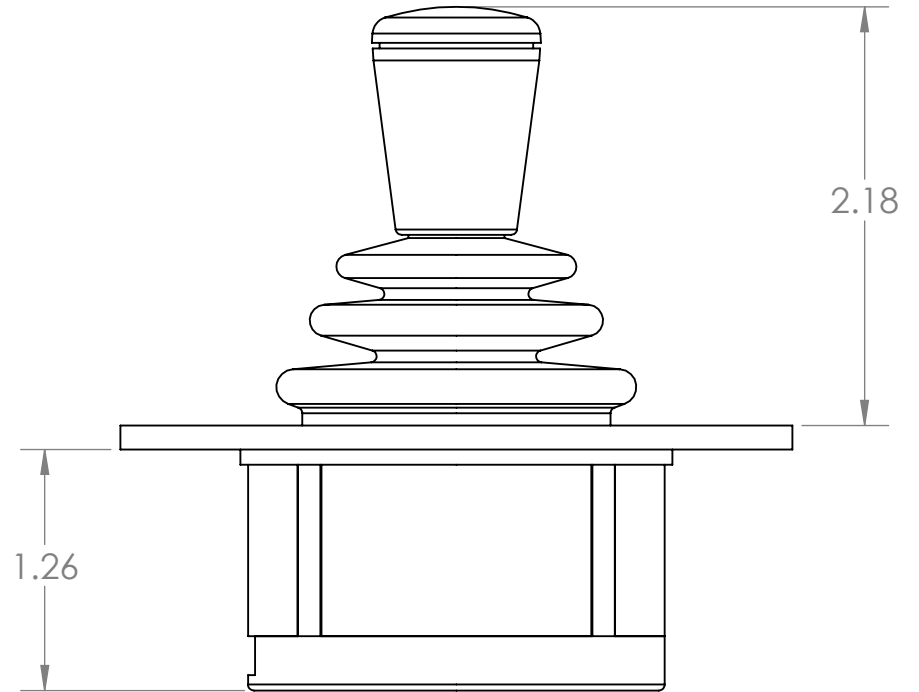
# HE3 SERIES - HANDLE OPTIONS

ALL HANDLES AVAILABLE WITH ANY MOUNTING OPTION UNLESS OTHERWISE SPECIFIED

SCALE 1:1



HE3-26-x-A-x-x-x



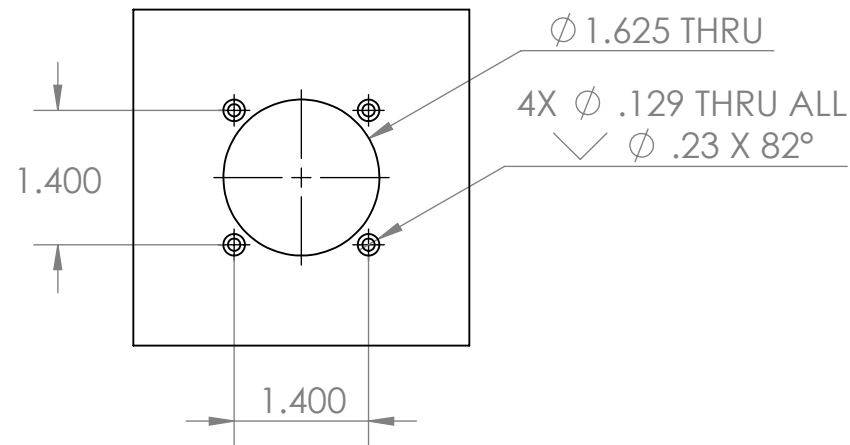
HE3-26-x-B-x-x-x

(2 AXIS TAPERED HANDLE, SHORT)

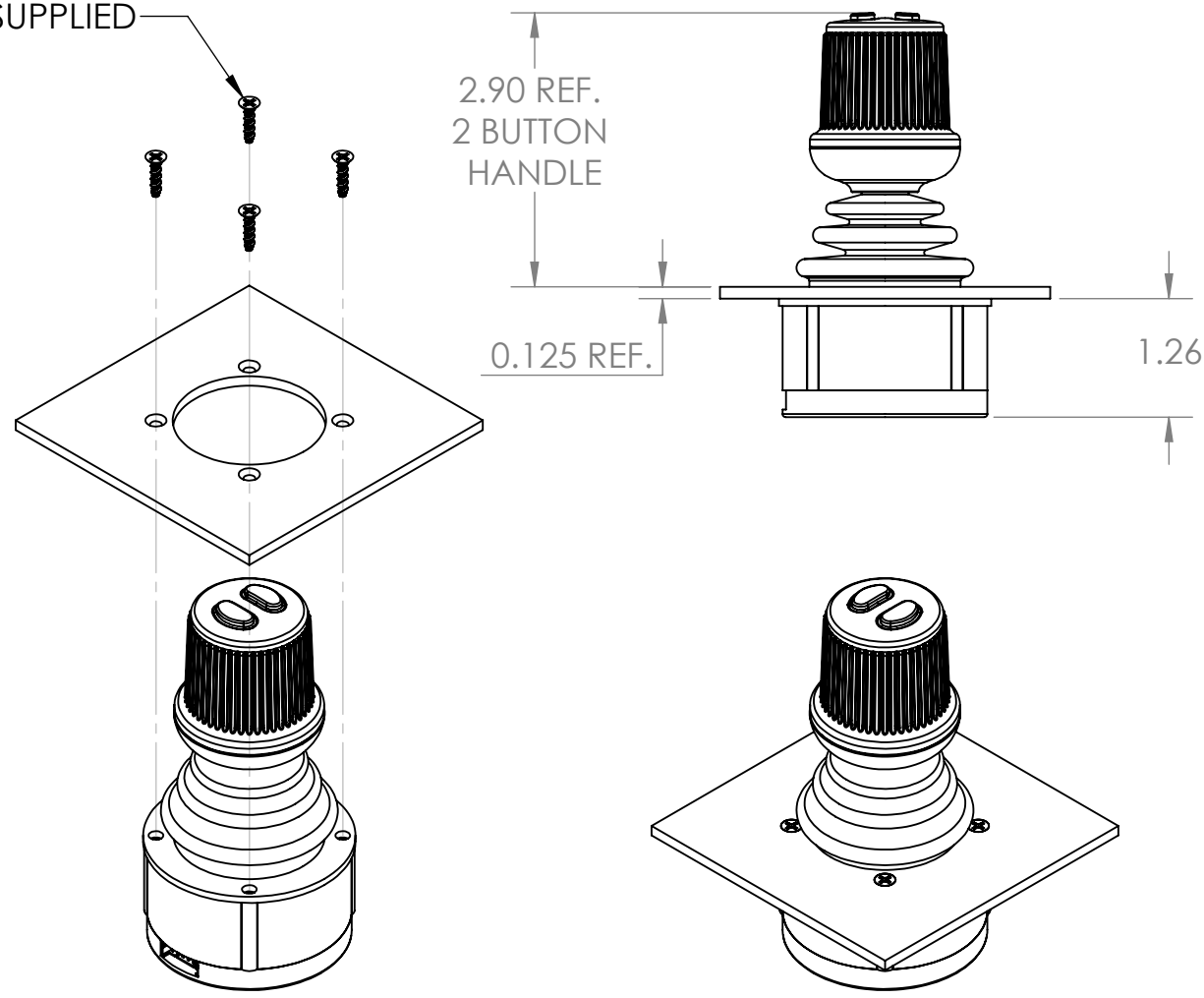


# HE3 - MOUNTING & HANDLE OPTIONS

## REAR MOUNT PANEL DIMENSIONS

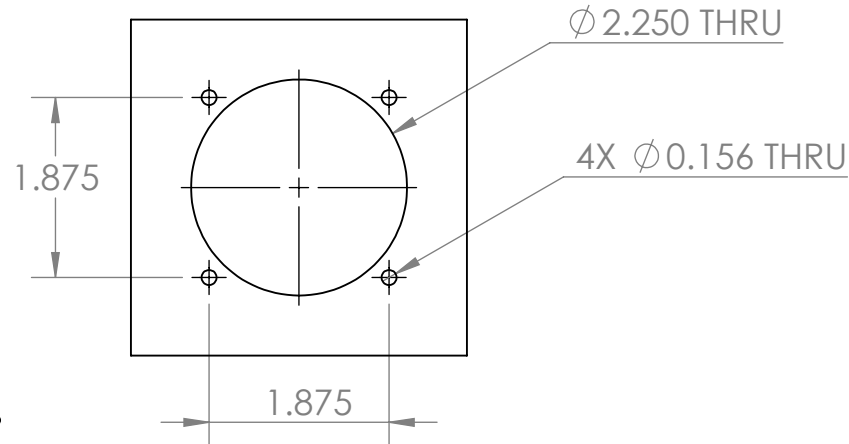


4X #4 FLAT HEAD SCREW, SUPPLIED

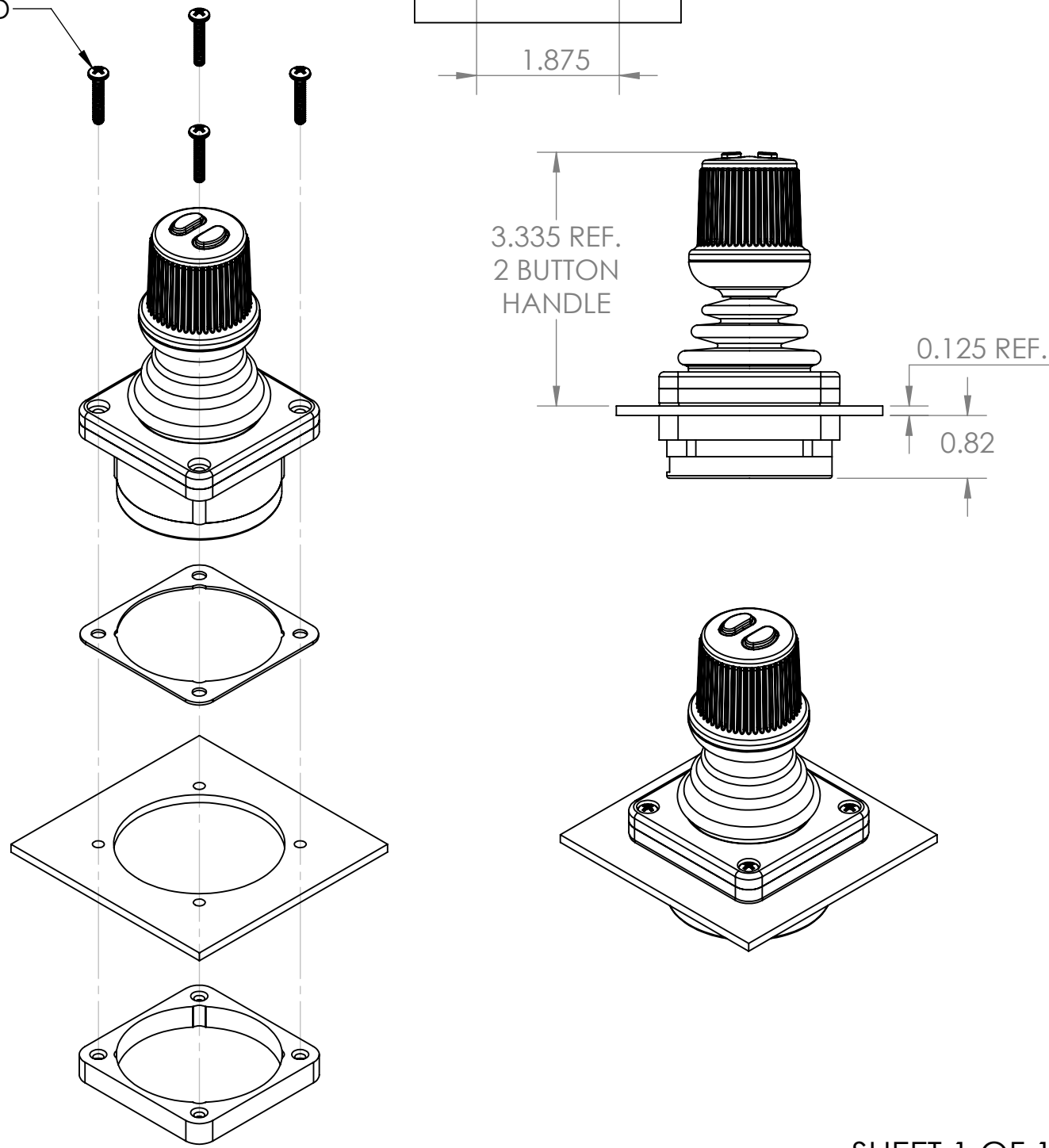


REAR MOUNT OPTION

## DROP-IN PANEL DIMENSIONS

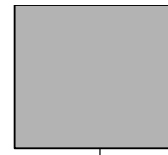
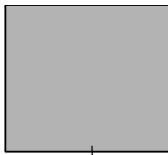


4X #6 MACHINE SCREW, SUPPLIED



**HE3**

SERIES



**LIMITER OPTION:**

S SQUARE (□)  
 R ROUND (O)  
 G GUIDED FEEL (□ / +)  
 X X AXIS LIMITER (-)  
 Y Y AXIS LIMITER (|)

**HANDLE COLOR:**

BK BLACK  
 GY GREY

**SPRING FORCE:**

(BLANK) STANDARD  
 1 +35% (X,Y,Z)

**HANDLE OPTION:**

20 2 AXIS NO BUTTON LOCKED Z  
 21 2 AXIS 1 BUTTON LOCKED Z  
 22 2 AXIS 2 BUTTON LOCKED Z  
 23 2 AXIS BALL HANDLE  
 24 2 AXIS TAPERED TALL  
 25 2 AXIS 1 BUTTON TAPERED  
 26 2 AXIS TAPERED SHORT  
 30 3 AXIS NO BUTTON  
 31 3 AXIS 1 BUTTON  
 32 3 AXIS 2 BUTTON

**MOUNTING OPTION:**

A DROP-IN STD. SQUARE BEZEL  
 B REAR MOUNT

**OUTPUT OPTION:**

1 0V-5V Sensor 1  
 0V-5V Sensor 2  
 2 0.5V-4.5V Sensor 1  
 0.5V-4.5V Sensor 2  
 3 0.25V-4.75V Sensor 1  
 0.25V-4.75V Sensor 2  
 4 1V-4V Sensor 1  
 1V-4V Sensor 2  
 5 0V-5V Sensor 1  
 5V-0V Sensor 2  
 6 0.5V-4.5V Sensor 1  
 4.5V-0.5V Sensor 2  
 7 0.25V-4.75V Sensor 1  
 4.75V-0.25V Sensor 2  
 8 1V-4V Sensor 1  
 4V-1V Sensor 2