VCSO
COMPACT / RUGGED
JOYSTICK CONTROLLER

Construction:
The **TYPE VCSO** Joystick Controller is rugged, compact and offers excellent application versatility. VCSO Joysticks are utilized where precise proportional and step control of A/C or D/C drives and Electro-Hydraulics is desired.

The all plastic Zytel housing and specially treated rugged metal components make this Joystick ideal for use in corrosive environments.

The **VCSO** Joystick is constructed with nickel chromium gimbal yokes, nylon guide blocks, 5/16" hardened operating shaft and bronze gate with shaft roller as a stop. The VCSO also features a new positive detent system and a field removable off point contact module.

Application:
These devices are commonly utilized to control Material Handling and Processing machinery used in Metals, Mining, Marine, Construction and Forestry Industries where durability and resistance to corrosion is paramount.

Features:
- Rugged construction
- Compact design (6 contacts & potentiometer in each axis in a 4 ¾ square area).
- Corrosion resistant components
- Single and dual axis operation
- 6 Double Pole contact blocks each axis (field replaceable)
- 10 million plus operations
- Long life, compression type return spring system

Options:
- Multiple mounting systems
- Friction held handle
- Standard and custom switching gates
- Up to 6-0-6 detented steps
- Large variety of optional handle configurations including deadman and mechanical interlock options.
- Large selection of proportional outputs including high life conductive plastic potentiometers, PWM, encoders and Can-bus

VCSO ORDERING INFORMATION

Drive Arrangement: Single axis and double axis
Basic Assembly: 4.3" [110mm] shaft length x 0.32 [8mm] shaft diameter, boot and 3.78" [96mm] mounting plate supplied standard
Handle: 2 piece standard
Handle Action: Spring Return
Output: Proportional, discrete
Output Devices: Potentiometer, encoder, PWM, CAN, double pole contact block with saddle clamps

VCSO Technical Data

Mechanical:

- **Mechanical Life**:
  10 million cycles
- **Gear Ratio:** 3.78:1
- **Detented Positions:**
  0° neutral and 1-0-1 – 6-0-6 steps
- **Handle Travel:** ± 37° for proportional
- **Potentiometer Rotation:** ±140°

Environmental:

- **Operating Temperature:** -25 to +70° C
- **Storage temperature:** -40 to +70° C
- **Protection above the panel:** IP55

Options:

- **Handle:** See handle section for a selection of handle options
- **Shaft Length:** 3.3" [85mm], 5.5" [140mm] and 7.13" [180mm]
- **Handle Action:** Friction Brake
- **Mounting:** See mounting section for a selection of mounting options
- **Gates:** Variety of standard and special handle restricting gates available.
- **Special Pots:** Please consult factory with special potentiometer requirements.

Please consult factory for other available options not listed.

Electrical:

- **Contacts:**
  Double pole contact block with M3.5 x 0.5 screw with saddle clamp (#12 AWG max.).

  6 double pole contact blocks (12 circuits) maximum each axis.
  3 double pole contact blocks (6 circuits) maximum with potentiometer.

  AC Current: 10A Resistive, 4 A Inductive @ 250V
  DC Current Resistive: 4A at 12V, 1.7A at 24-42V,0.3A at 115-230V.
  DC Currect Inductive: 0.8A at 24-42V, 0.2A at 115-230V

  UL file # E106738(m)
  Consult factory for other contact ratings not listed.

- **Potentiometers:**
  Conductive Plastic, 0.5 watt 5K 3-wire or 10K 4-wire center tap, 5 million revolutions

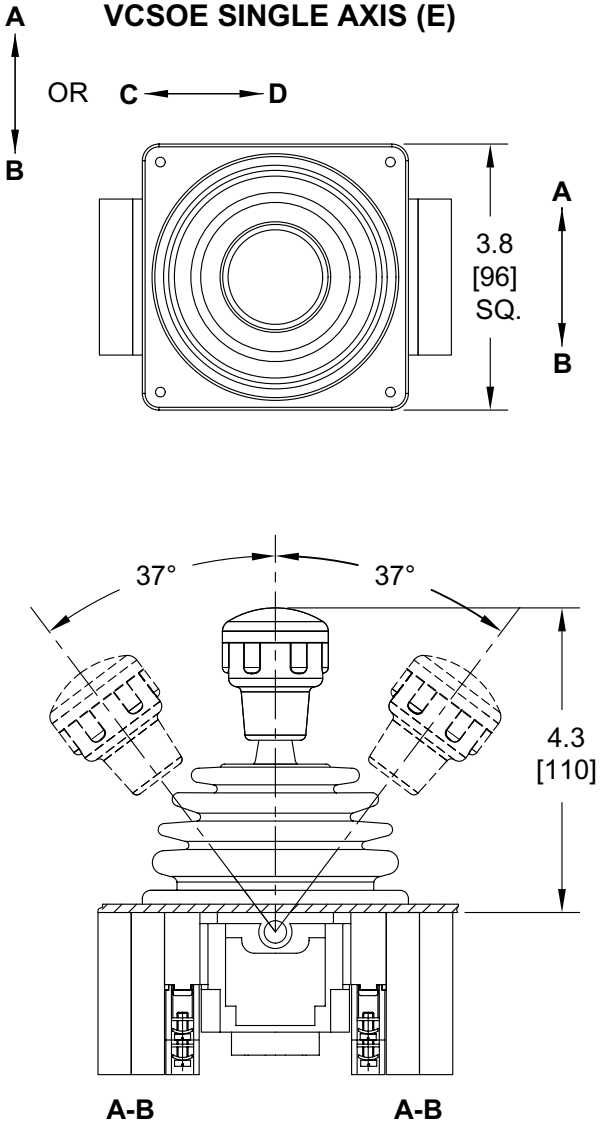
  Connections: 20 AWG Hi-Temp, XLPVC, UL1430 wire with Molex connector (03-06-2042)

- **Electronics:**
  PWM Amplifiers, Pot Amplifiers, Motor Control, CAN Bus, Encoder

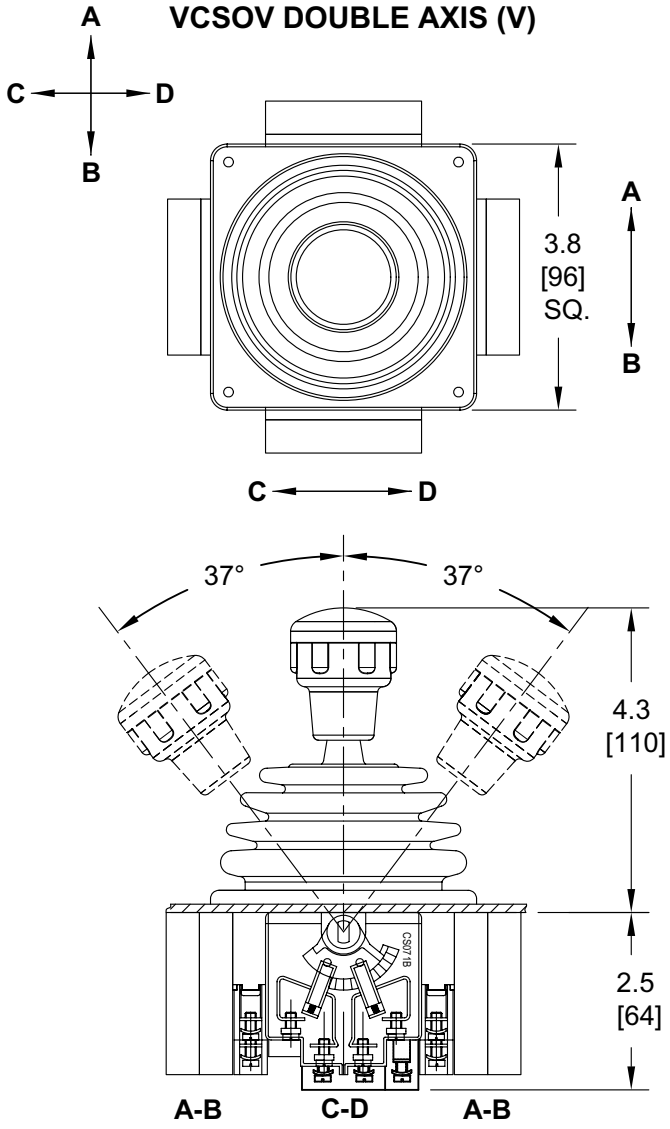
  Connections: Varies with product – see individual output device pages for connection details.

VCSO WITH CONTACTS OVERALL DIMENSIONS

VCSOE SINGLE AXIS (E)

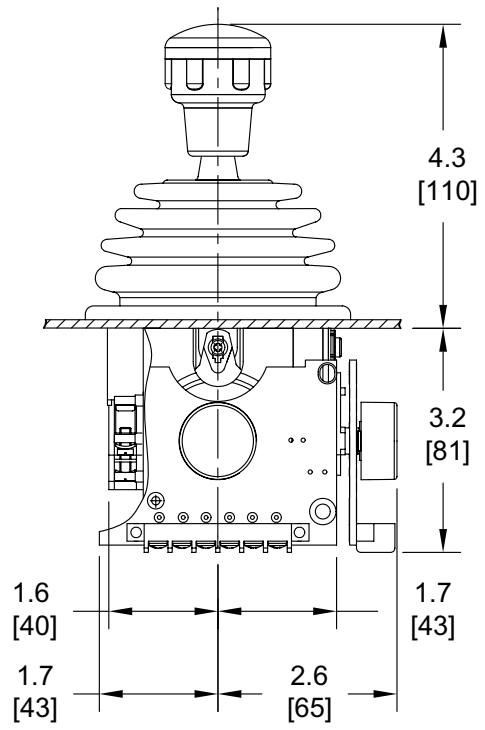


VCSOV DOUBLE AXIS (V)

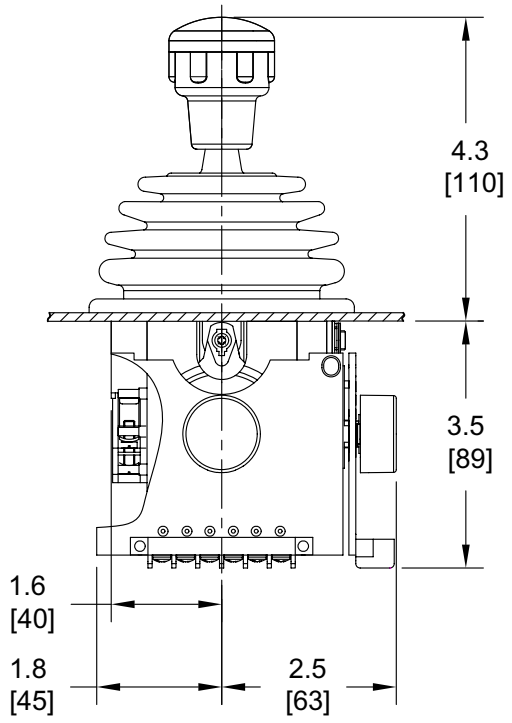


VCSO WITH POTENTIOMETERS DIMENSIONS

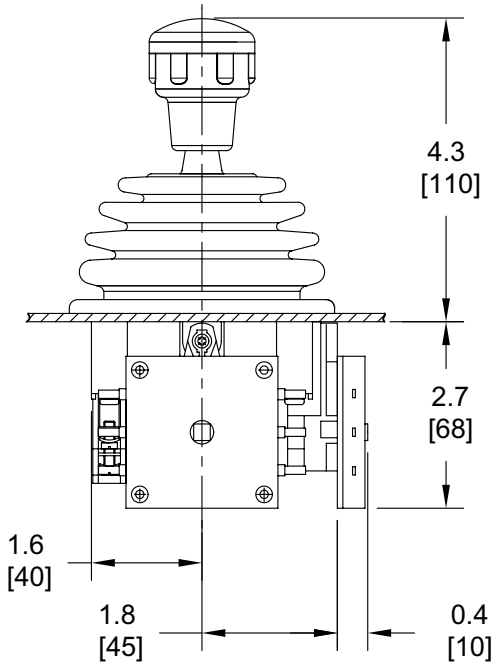
STANDARD POTENTIOMETER BOARD & PEC POTENTIOMETER



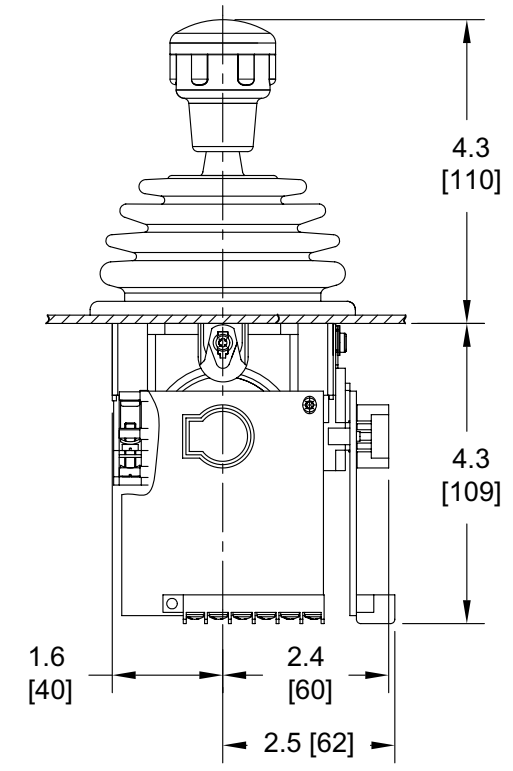
VOLTAGE BOARD & PEC POTENTIOMETER



POTENTIOMETER PD550/PW55

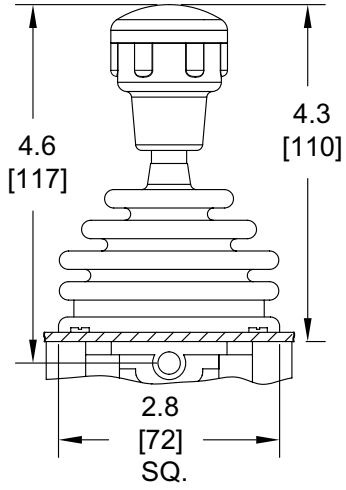


CURRENT BOARD & CLAROSTAT CONDUCTIVE PLASTIC POTENTIOMETER

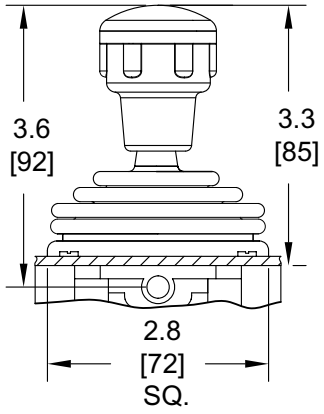


VCSO OVERALL HANDLE OPTIONS DIMENSIONS

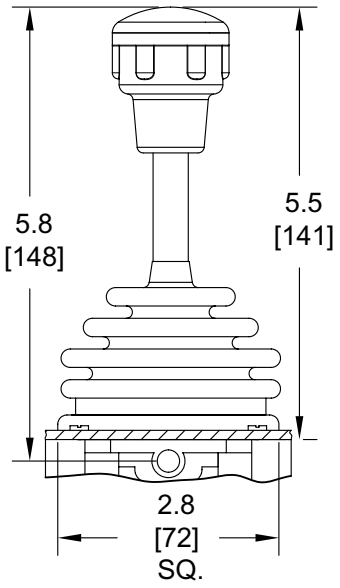
2 PIECE, OPTIONAL
VCS2 [2.8] 72 X [2.8] 72
PLATE, SMALL BOOT
& 4.3 [110] SHAFT



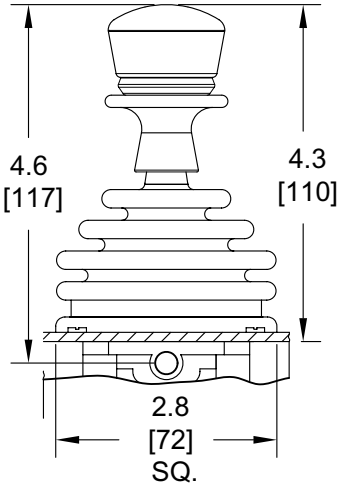
2 PIECE, OPTIONAL
VCS2 [2.8] 72 X [2.8] 72
PLATE, SMALL BOOT
& 3.3 [85] SHAFT



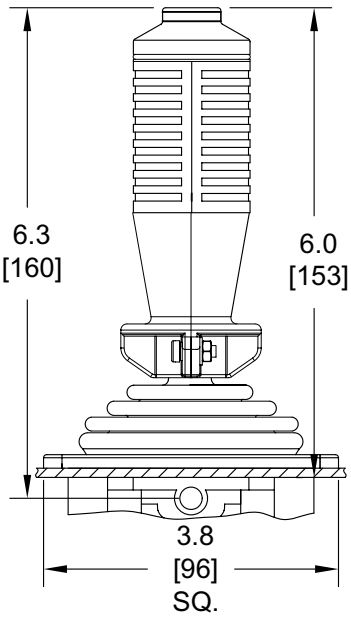
2 PIECE, OPTIONAL
VCS2 [2.8] 72 X [2.8] 72
PLATE, SMALL BOOT
& 5.5 [141] SHAFT



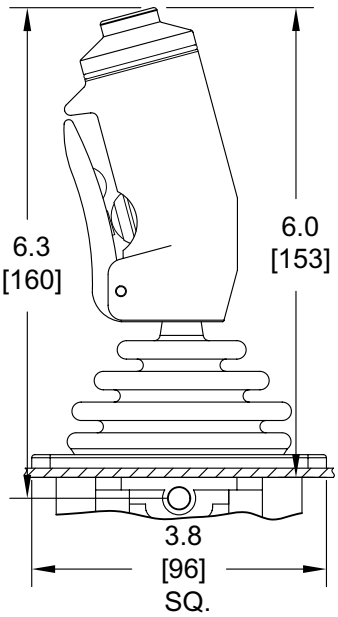
MI, OPTIONAL
VCS2 [2.8] 72 X [2.8] 72
PLATE, SMALL BOOT
& 4.3 [110] SHAFT



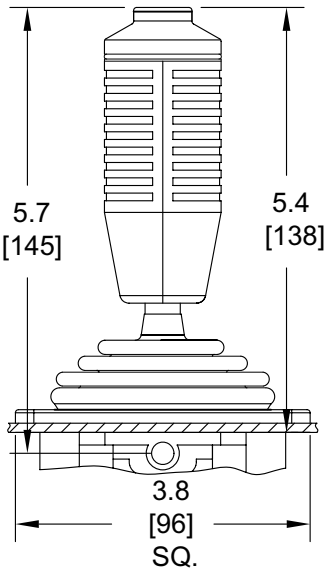
RHN-01
3.3 [85] SHAFT



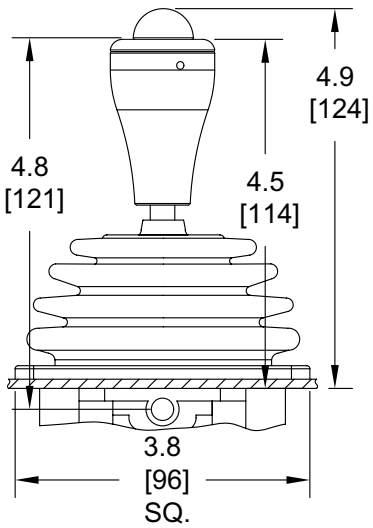
BH
3.3 [85] SHAFT



RHS-01
3.3 [85] SHAFT



MG27
4.3 [110] SHAFT

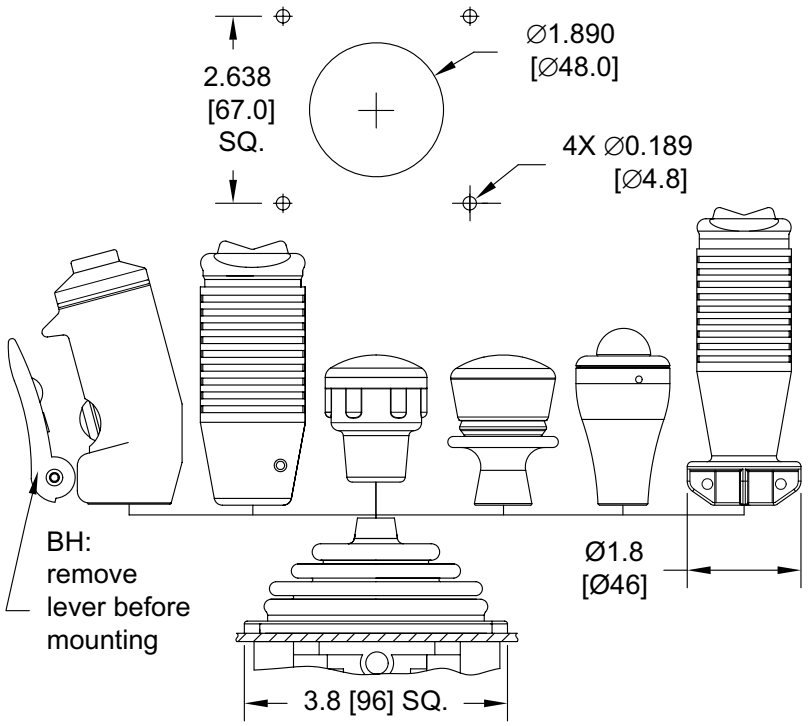


(Consult factory for other handle options)
See handle sections for handle degree protection.

VCSO MOUNTING DIMENSIONS

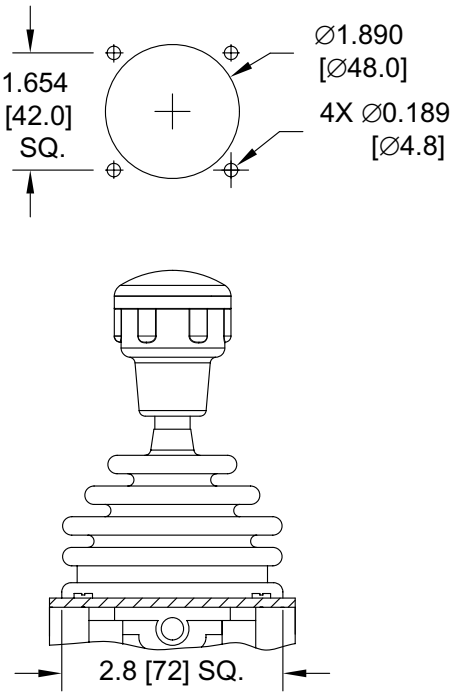
MOUNTING STYLE 1:

Standard 5 hole with 1.890Ø [48.0] center hole



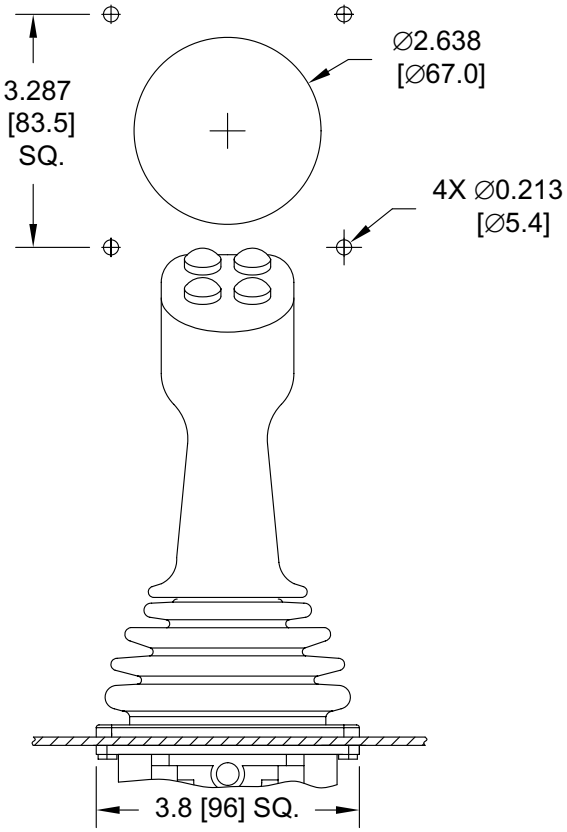
MOUNTING STYLE 2:

Optional 5 hole with Ø1.890 [48.0] center hole and 2.84 [72] X 2.84 [72] nameplate



MOUNTING STYLE 3:

5 hole with 2.638Ø [67.0] center hole



MOUNTING STYLE 4:

5 hole with 2.250Ø [57.1] center hole