

This document contains technical drawings of the machined parts of the PIGI system. Parts A-K correspond with labeled parts in diagrams 1-5 of the main supplement. Diagram 5 shows the assembled system. Additional 3D CAD files produced using *Solidworks* software) are provided at github.com/rizett/PIGI_system.

Units: All dimensions are in inches, unless otherwise stated.

Part A: Chamber base to support the primary and instrument chambers. The system is assembled onto the base, and then inserted into a *Pelican* case for security and easy-of-transport.

Parts B and C: Flow-through of the primary and instrument chambers.

Part D: Primary chamber inflow cap, through which water enters the system from the main seawater line. The debubbling apparatus, and an outflow line to the instruments chamber are installed on this cap.

Part E: Primary chamber outflow cap, though which water exits the primary chamber.

Part F: Primary chamber supports to secure the primary chamber in place on the chamber base.

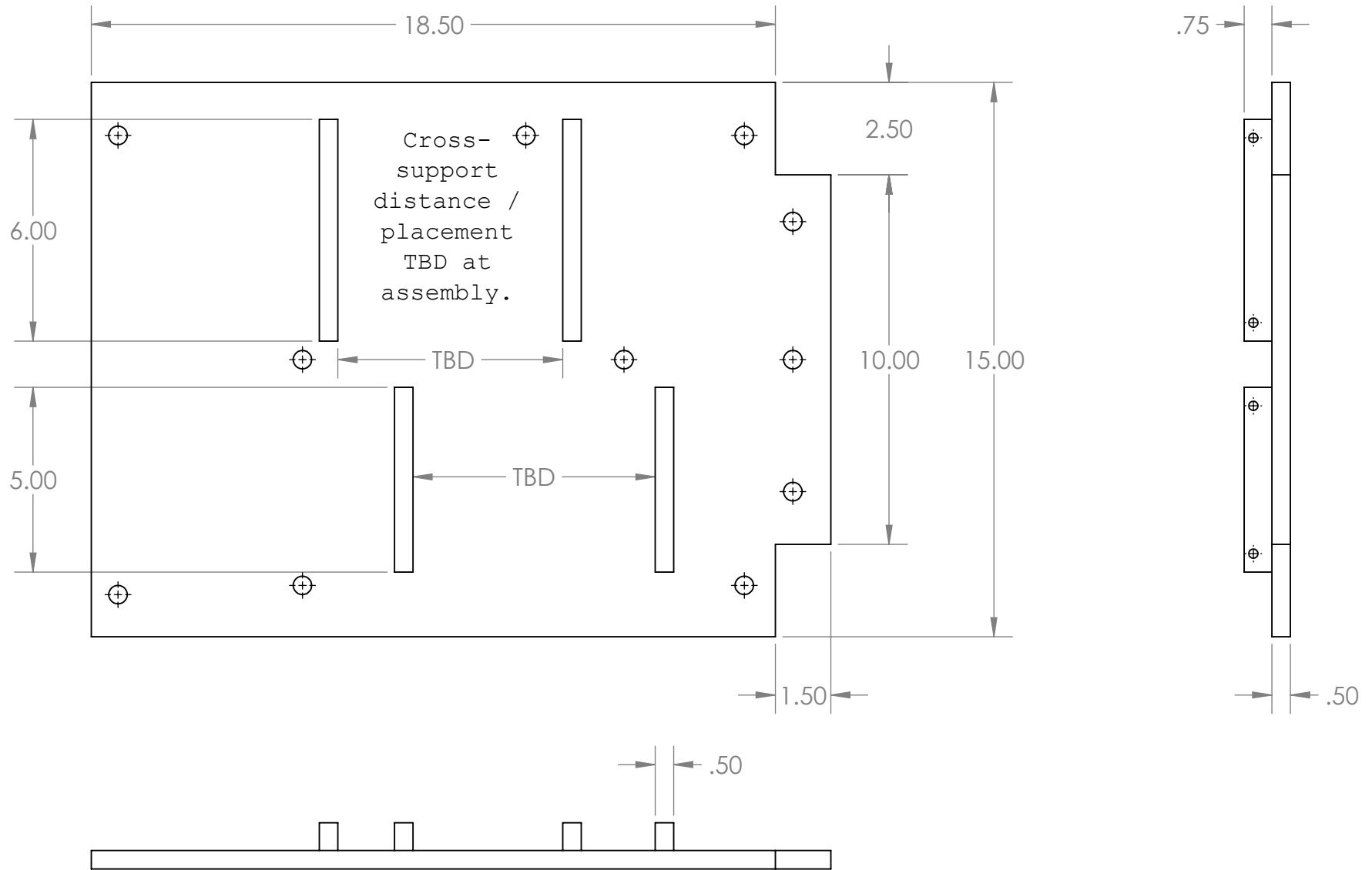
Part G: Optode chamber supports to secure the Optode chamber and TDGP GTD in place on the chamber base.

Part H: Optode chamber outflow stopper. This part is installed over the outflow cap of the Optode chamber, and secures the cap to the chamber supports.

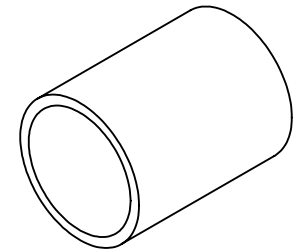
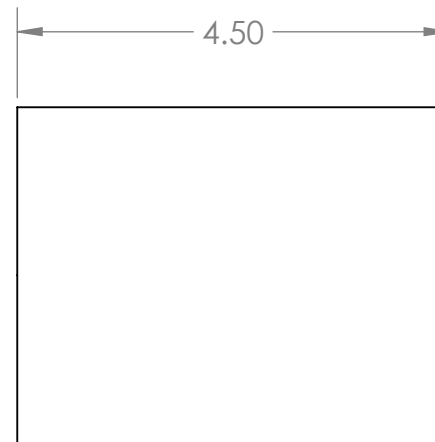
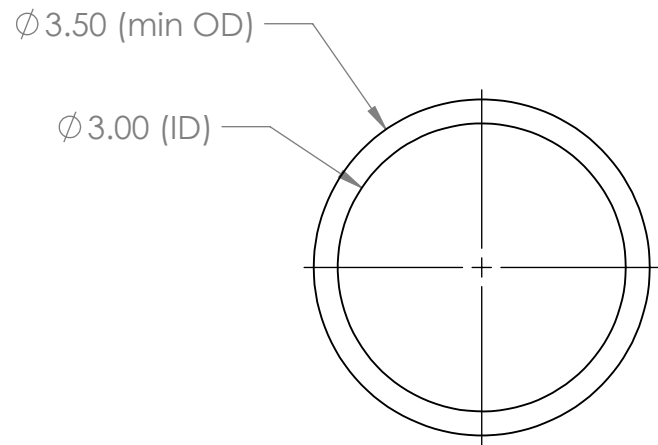
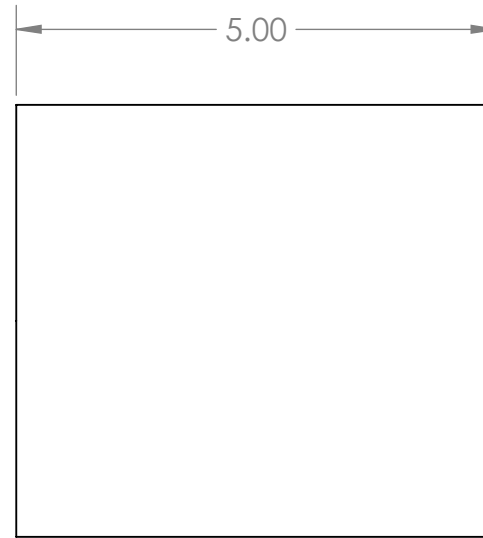
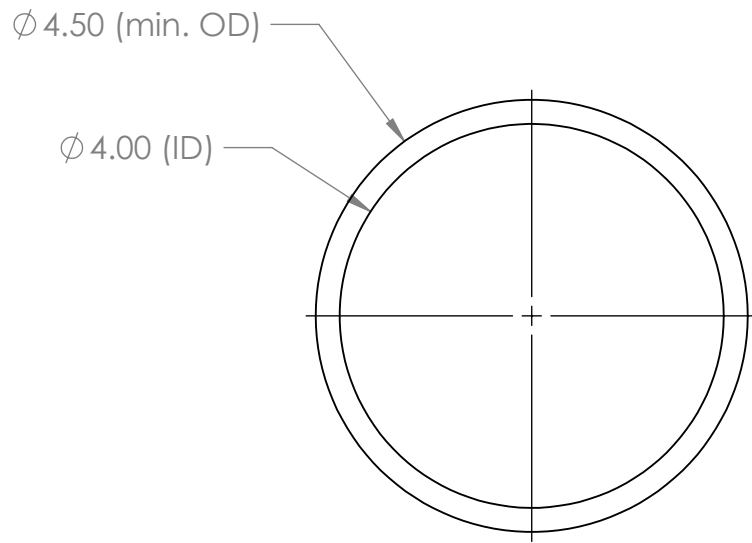
Part I: Optode chamber outflow cap, through which water exits the Optode chamber.

Part J: Optode chamber inflow cap, through which water enters the Optode chamber.

Part K: Optode support to secure the Optode to the outflow cap.

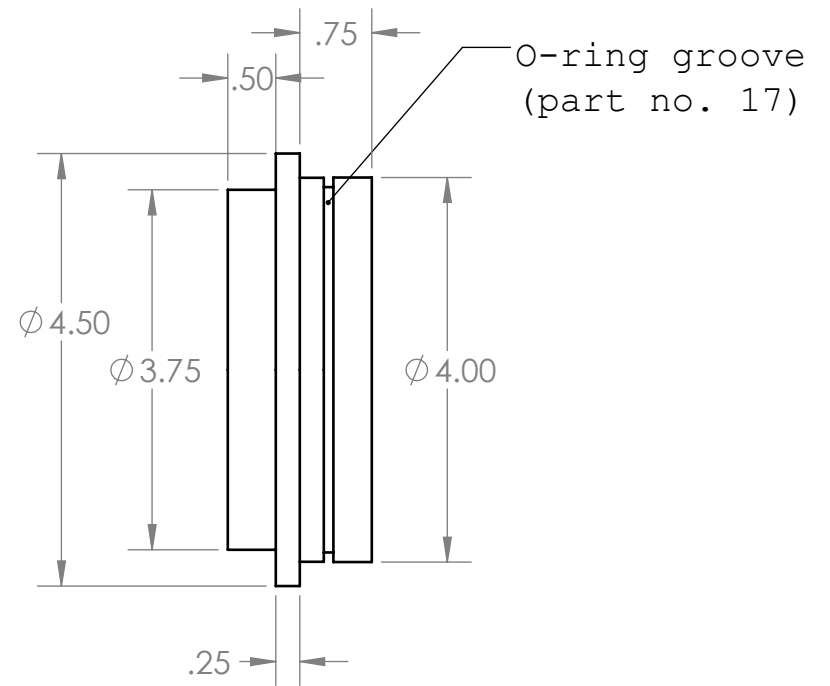
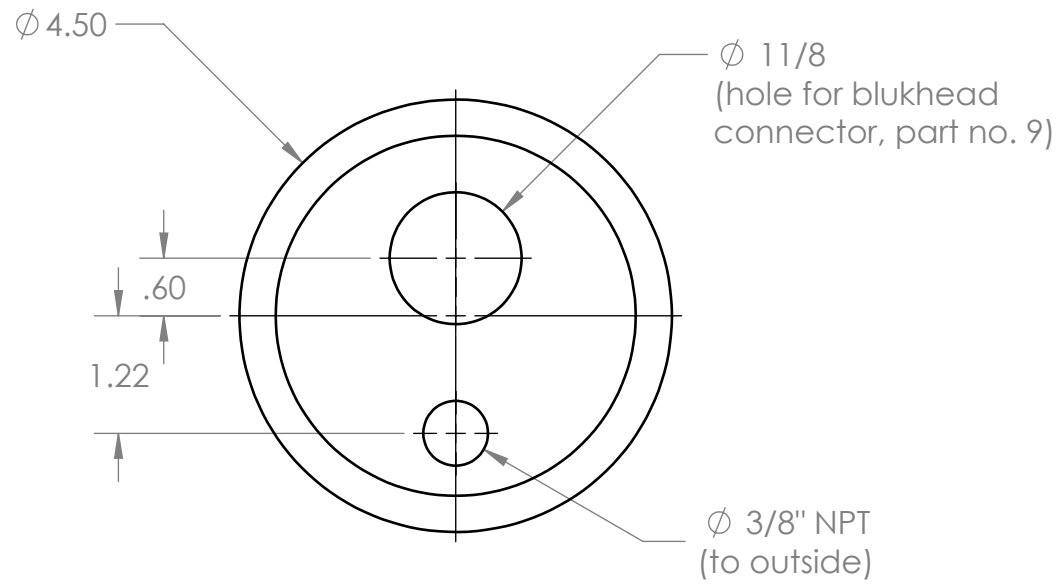
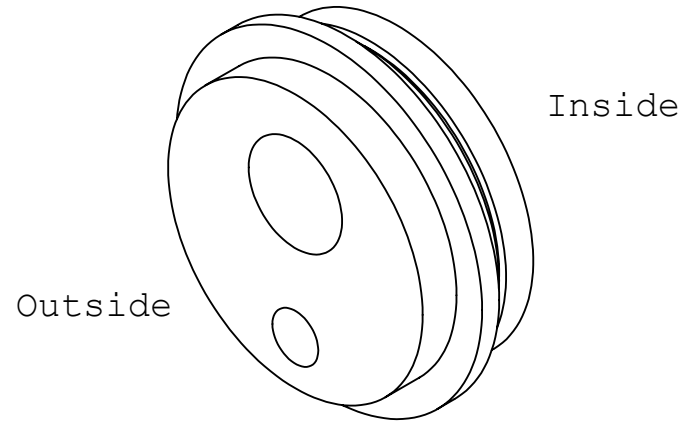


Part A (x1): Chamber Base

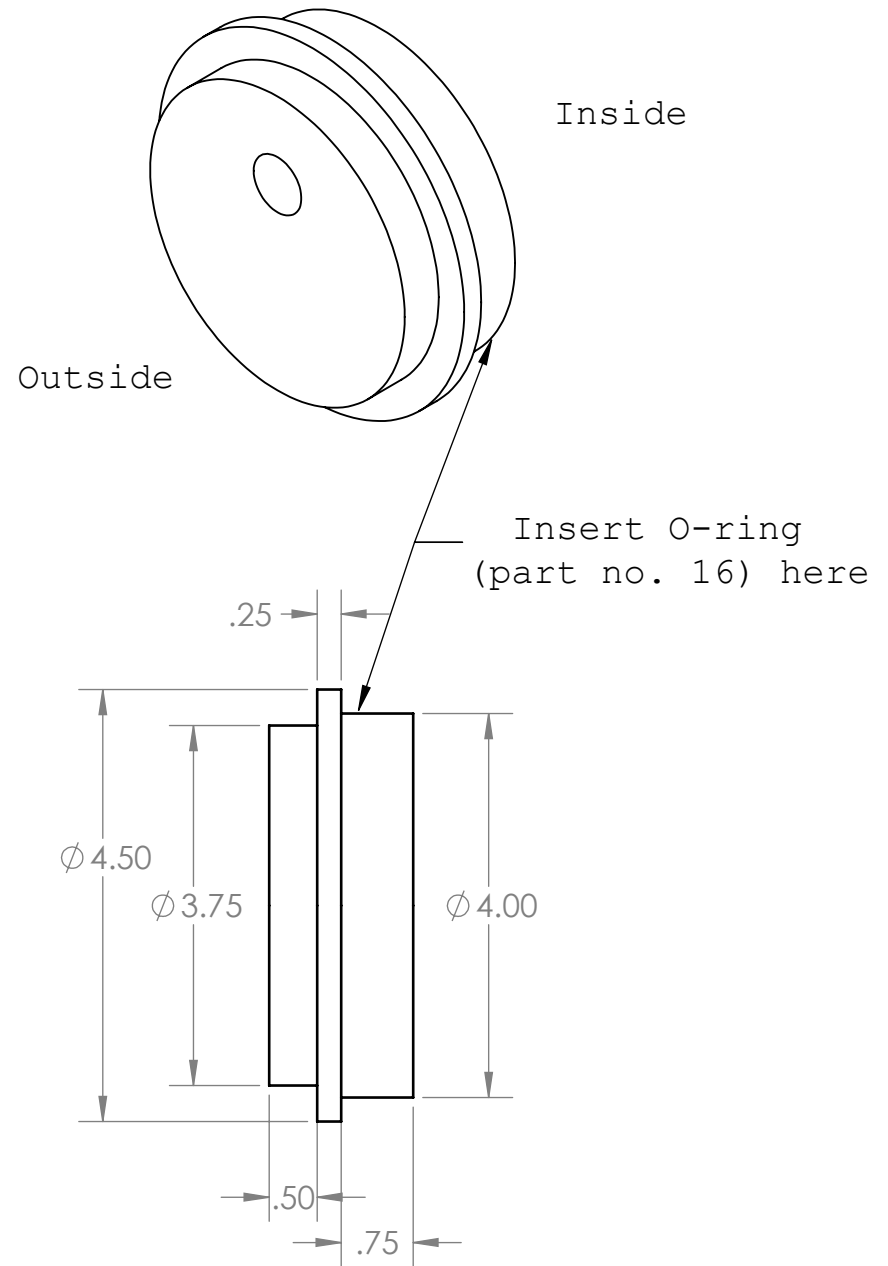
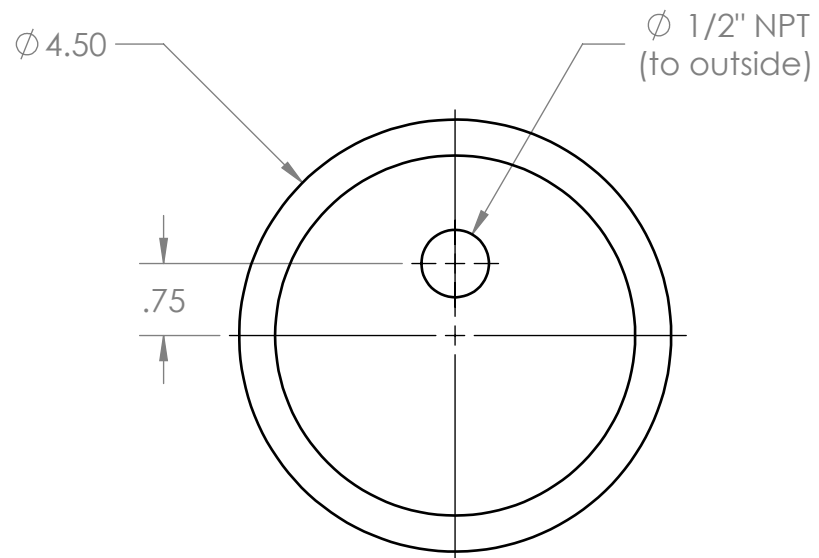


Part B (x1): Primary Chamber Tube (top)

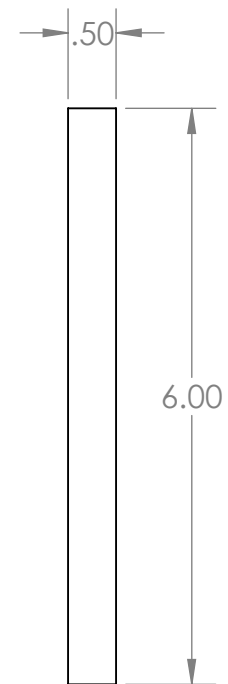
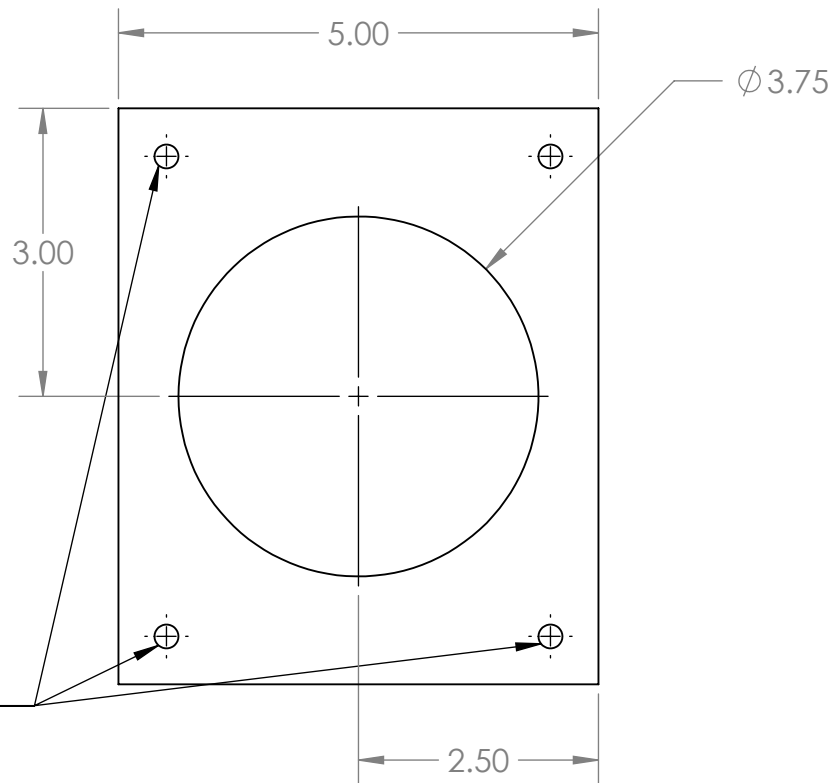
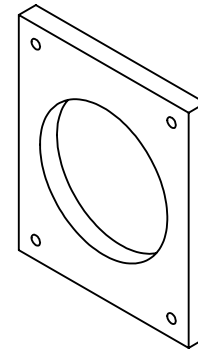
Part C (x1): Optode Chamber Tube (bottom)



Part D (x1): Primary Chamber Inflow Cap



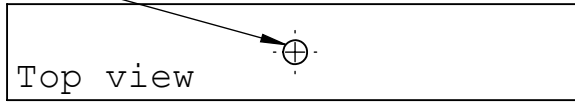
Part E (x1): Primary Chamber Outflow Cap



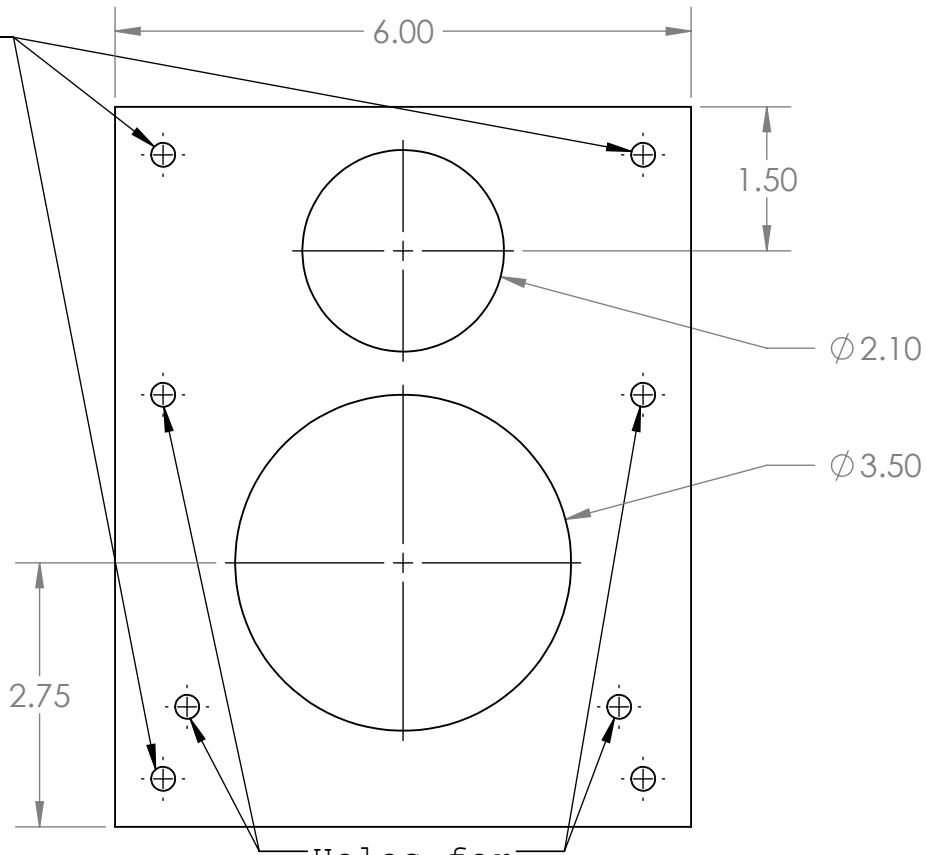
Holes for
1/4"-20 SS rods
(part no. 32)
Placement TBD
at assembly

Part F (x2): Primary Chamber Inflow/Outflow Supports

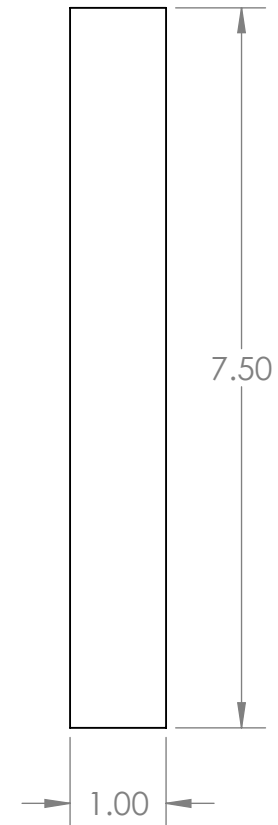
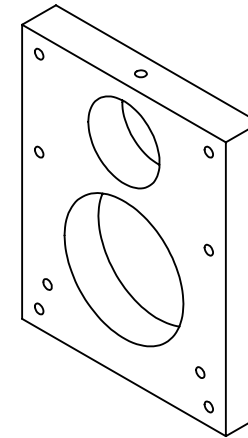
Hole for Teflon screw
(part no. 35)



Holes for
1/4"-20 SS rods
(part no. 32)
Placement TBD
at assembly

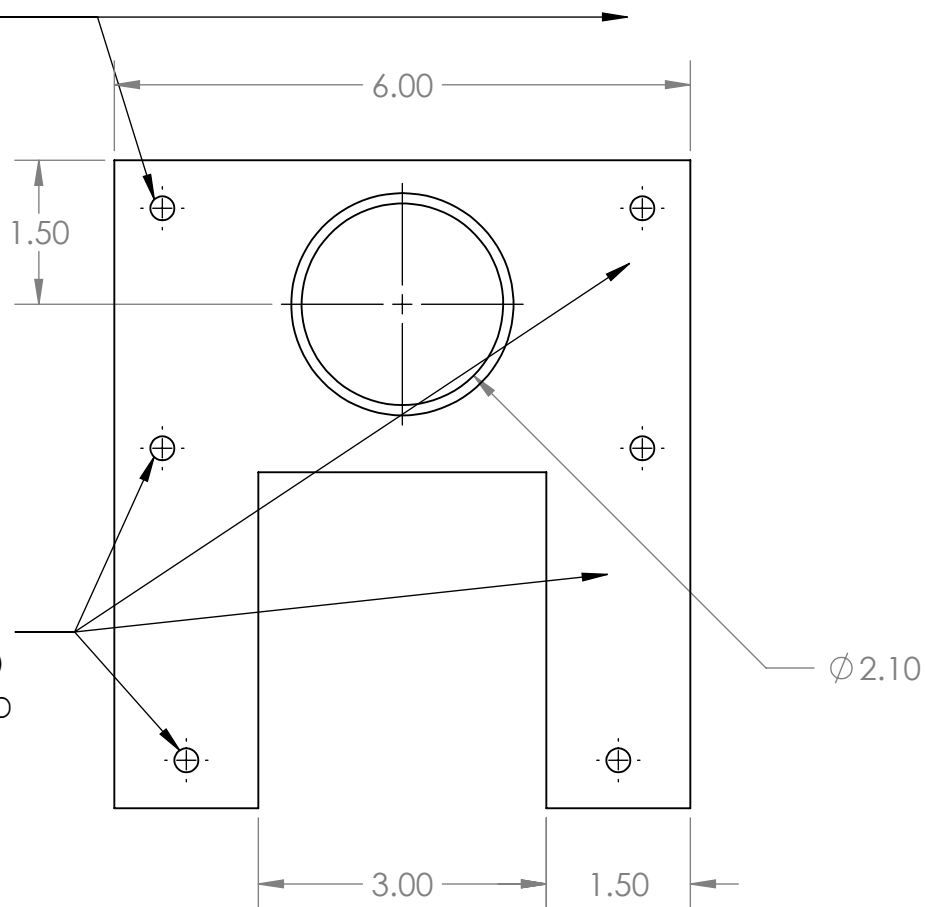


Holes for
1/4"-20 thumb screws
(part no. 34)
Placement TBD at assembly

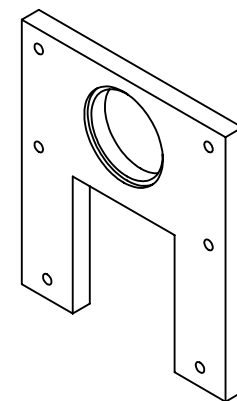


Part G (x2): Optode Chamber Inflow/Outflow Supports

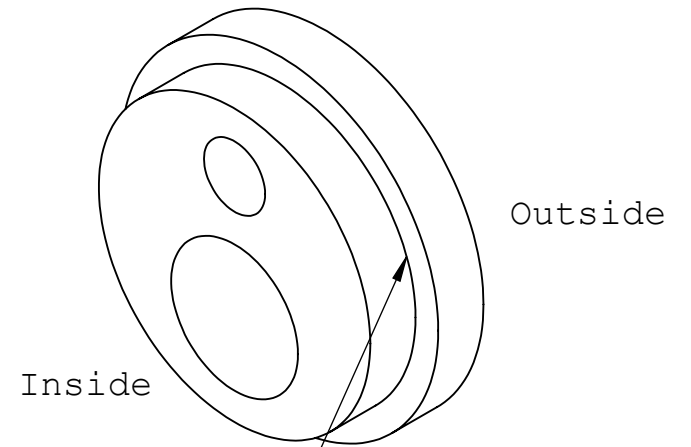
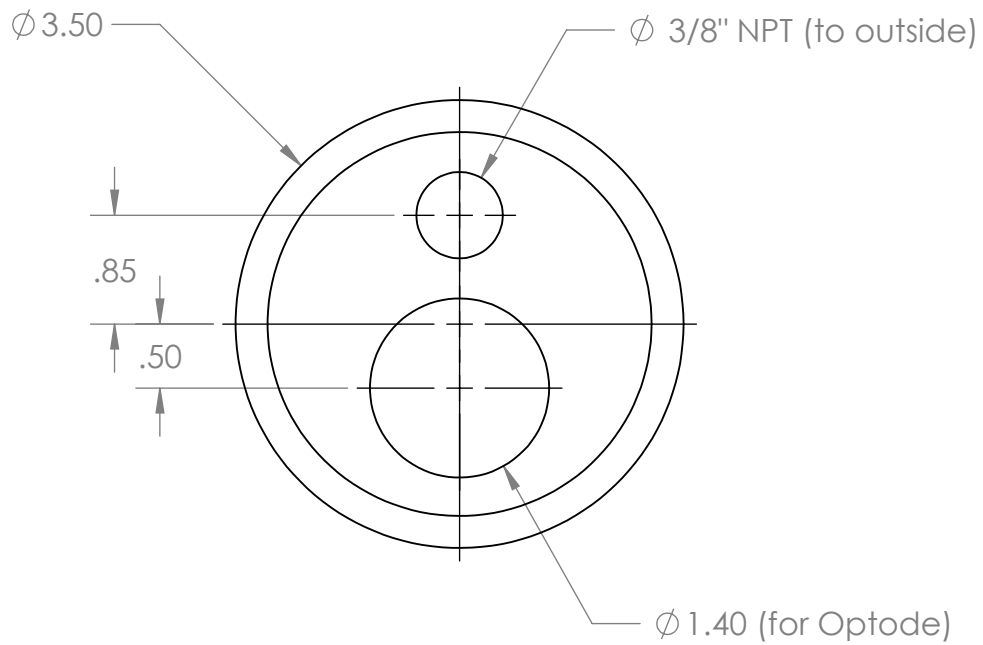
Holes for
1/4"-20 SS rods
(part no. 32)
Placement TBD
at assembly



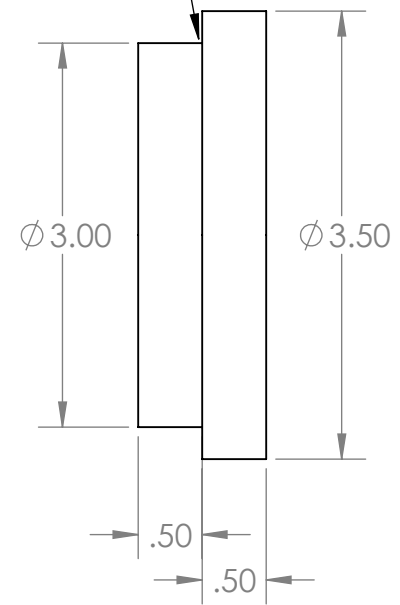
Holes for
1/4"-20 thumb
screws
(part no. 34)
Placement TBD
at assembly



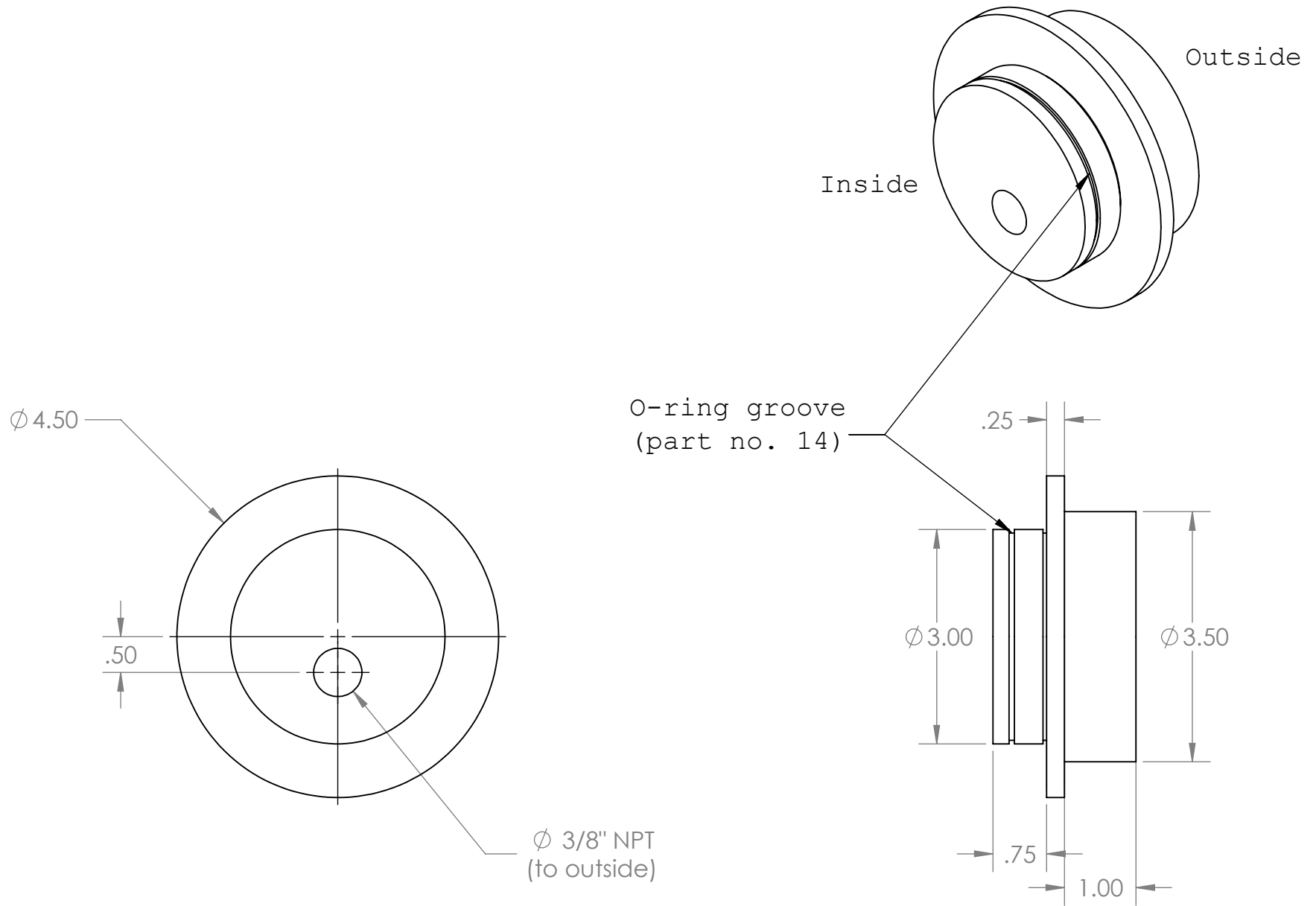
Part H (x1): Optode Chamber Outflow Stopper



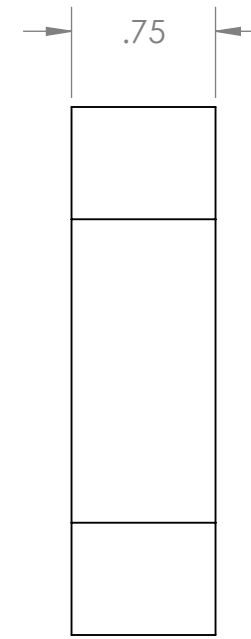
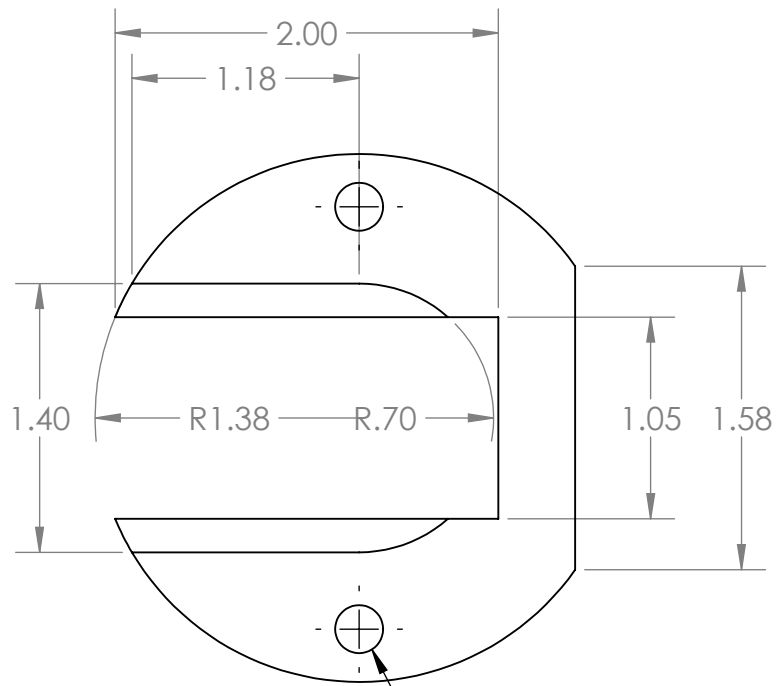
Insert O-ring
 (part no. 15) here



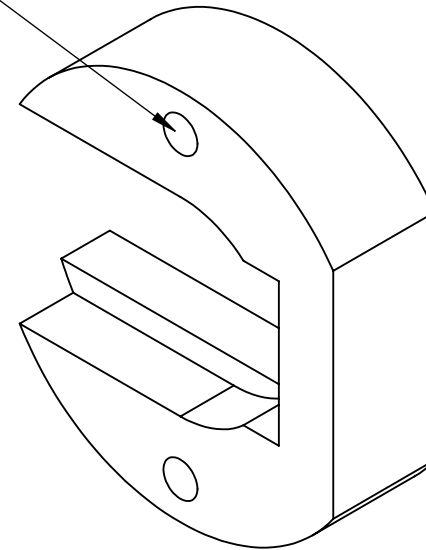
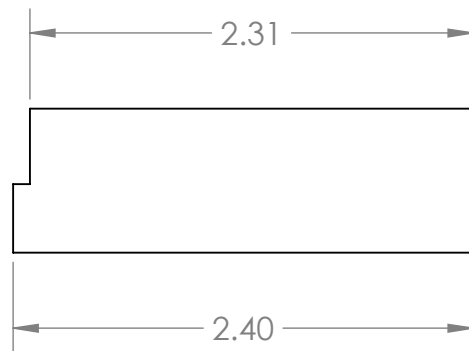
Part I (x1): Optode Chamber Outflow Cap



Part J (x1): Optode Chamber Inflow Cap



Secure to Part I
using SS screws



Part K (x1): Optode Support