

- Double Delrin Plate design
- more durable
- securely holds all components

This slide-in plate
can also be printed

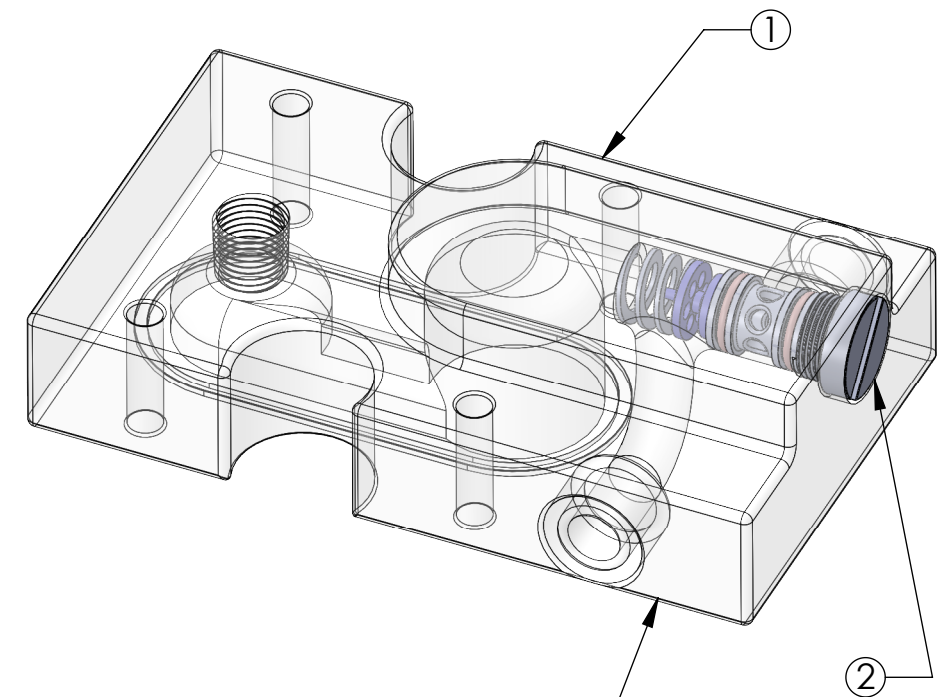
TBT from the CTD
outflow here could
be installed here—

Plates separated
by 1" long spacers:

- Pumps use standard encaps that just fit between plates
- lower production cost
- pumps connected w/ short lengths of 1/2" ID tubing

All components stand flat on lab bench

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		
A	Added 3rd plate, handle etc.	11/24/21	hwj



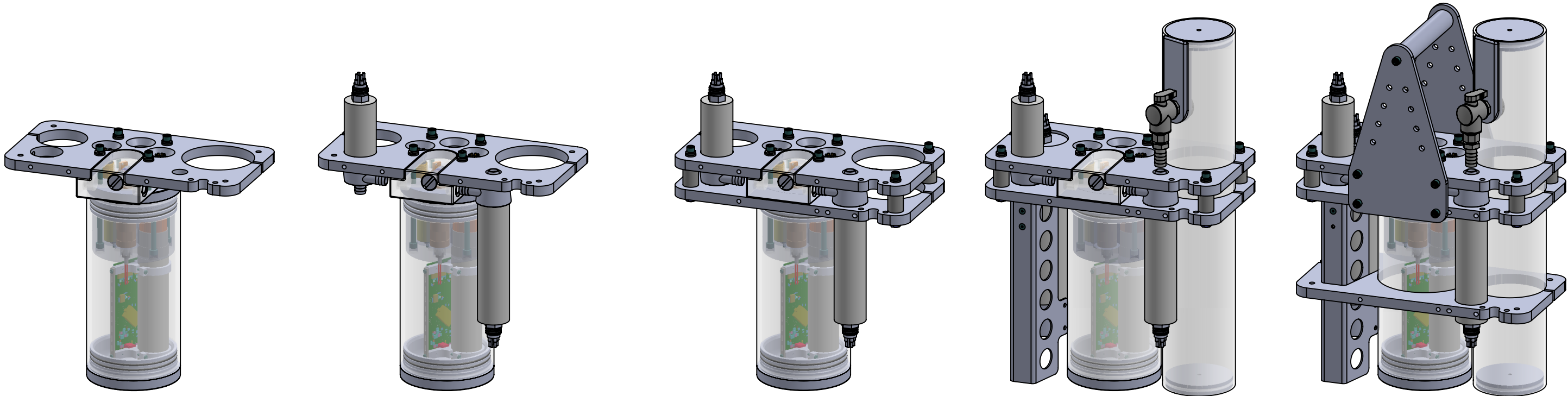
Smaller Printed Manifold

- Lower cost
- Can be printed by MBARI shop in clear material
- Can be printed by Paul Coenen in clear or black
- 5.5 x 3.25 x 1.5"

2	1		Valve retaining screw	Printed or machined
1	1		Mini mpHOx manifold	Printed Acrylic-like material
Item No.	Qty	Part No.	Description	Material Specification

Bill of Materials									
Shop / Q.C.		UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:				APPROVALS		DATE	
Inspector		1 PLACE DIM ±1/16	2 PLACE DIM ±.02	3 PLACE DIM ±.005	ANGLES ±1°	Designer Hans Jannasch 10/8/2021			
Shop Foreman		1. DIMENSIONS ARE IN INCHES 2. DIMENSION LIMITS HELD AFTER PLATING. 3. REMOVE BURRS AND SHARP EDGES .015 MAX. 4. MACHINED FILLET RADII .015-.030.				CHECKED			
Engineer		5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005 6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH, MAX .012 INCHES FOR SINGLE SURFACE.				PROJECT			
NEXT ASSY Description	NEXT ASSY Number								
Application		DO NOT SCALE DRAWING				WEIGHT		jDesign Hans Jannasch 532 Herrmann Drive Monterey, CA 93940 jannasch@mac.com; 831-521-8425 mpHOx (mini printed flowcell) Concept	
						SIZE B	DWG. NO. 201JD-mpHox-miniPM-Concept		REV. A
						SCALE 1:3 CAD FILE:		SHEET 1 OF 2	

REVISIONS			
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- Assembly:
- 1) Install valve in manifold
 - 2) Install STD pump manifold w/ short 1/2" ID tube.
 - 3) Install top plate and manifold onto mpHOx controller

- Assembly:
- 4) Connect samplr pump outflow ports to manifold w/ short 1/2" ID tube
 - 5) Screw pumps into their own manifolds.

- Assembly:
- 6) Slide on 2nd plate and secure w/ screws and 1" spacers (Pump impeller housings now securely held between plates)
 - 7) Install nylon-tipped setscrews to further secure pumps.

- Assembly: (For Lab use/testing)
- 7) Remove TBT from CTD outflow
 - 8) Fit CTD with CTD adapter
 - 9) Install CTD with 1/2" ID connecting 1/2" ID tube,
 - 10) Fill and install Tris STD with short connection tube.

- Assembly: (For deployment)
- 11) Install 3rd plate and handle
 - 12) secure connecting cables to handle side plates.

NOTES:
A) A backplate could be added for mounting to a mooring line
B) A cage would better protect the cables in rough environments

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Engineer						PROJECT	
NEXT ASSY Description	NEXT ASSY Number						
Application		DO NOT SCALE DRAWING				WEIGHT	
						SIZE B	DWG. NO. 201jD-mpHox-miniPM-Concept
						SCALE 1:3	CAD FILE: SHEET 2 OF 2

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mpHOx (mini printed flowcell) Concept

REV. **A**