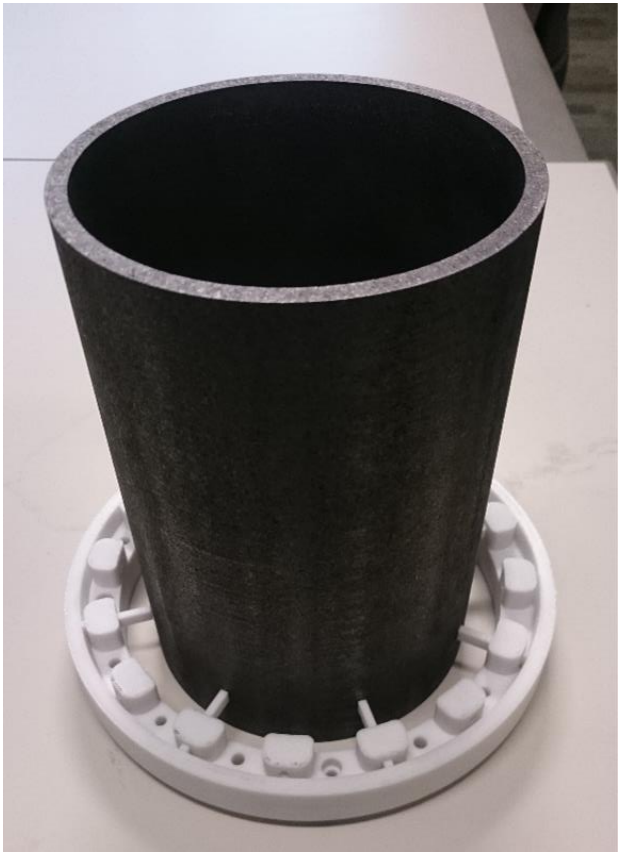
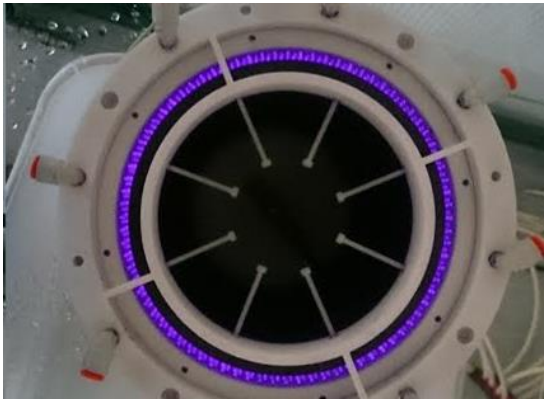
3D printing saves the day!

Prototyping

3D printing is super helpful in design validation, this innovation is inspired from a bezel chuck, provides self centering and alignment in larger parts D >10in



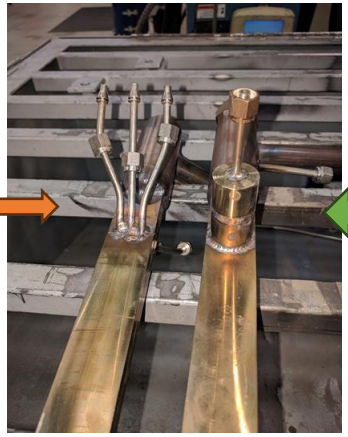


The bezel chuck in action facilitates coaxial assemblies for large components (10in X 20in) saves > $10K in development cost

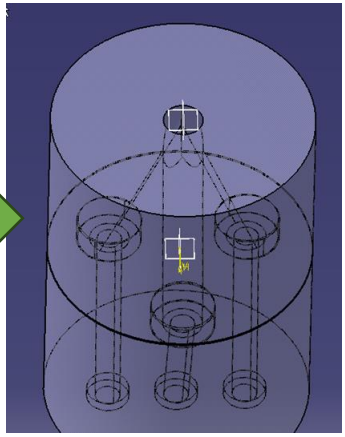
3D printing can also be avoided

Fluid 3 way splitting, precursor delivery:
Simplified design, avoided $$$ 3d metal printing
Modeled the CNC axis to determine machining coordinates

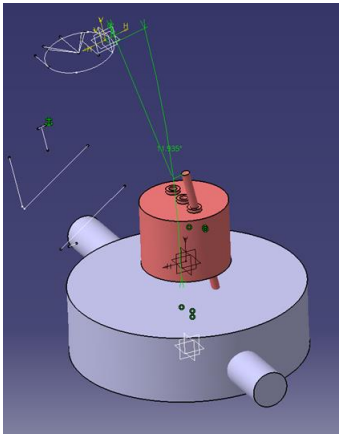
Original splitter hard to weld, high scrap rate



Solved with Unified splitter design



Challenge, Identify milling parameters in the 4th axis
Solved by modeling the machining process to retrieve co-ordinates



Angle	X	Y		
8.656	0.494305	-0.322	0.321995	
16.935	0.478318	0		
8.656	0.494305	0.322		
16.935	0.478318	0	0	
10.391	0.4918	0.267	34.317	
10.391	0.4918	-0.267	34.317	
Tilt	X	Y	Rot	
16.935	0.464	0	0	
10.391	0.659	0.267	34.317	
10.391	0.659	-0.267	(-)34.317	
Tilt	X	Y	Rot	
16.935	0.464	0	0	
10.391	0.659	0.267	33.817	CW
10.391	0.659	-0.267	67.754	CCW