

Camera holder first draft

Objective: The apparatus is designed to serve two main functions, the first function is to hold the micro pi camera as an attachment for the spore collector device and the second function is to maintain clear and sharp view of the sieve using two vertical focusing power screw sets.

Design visualization:

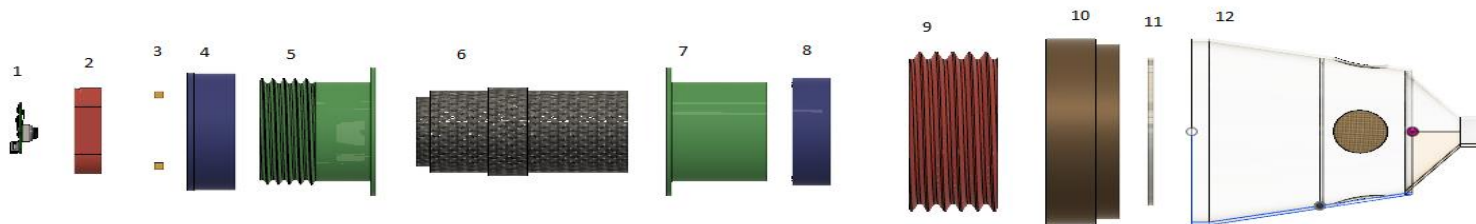


Figure 1 Camera holder exploded view.

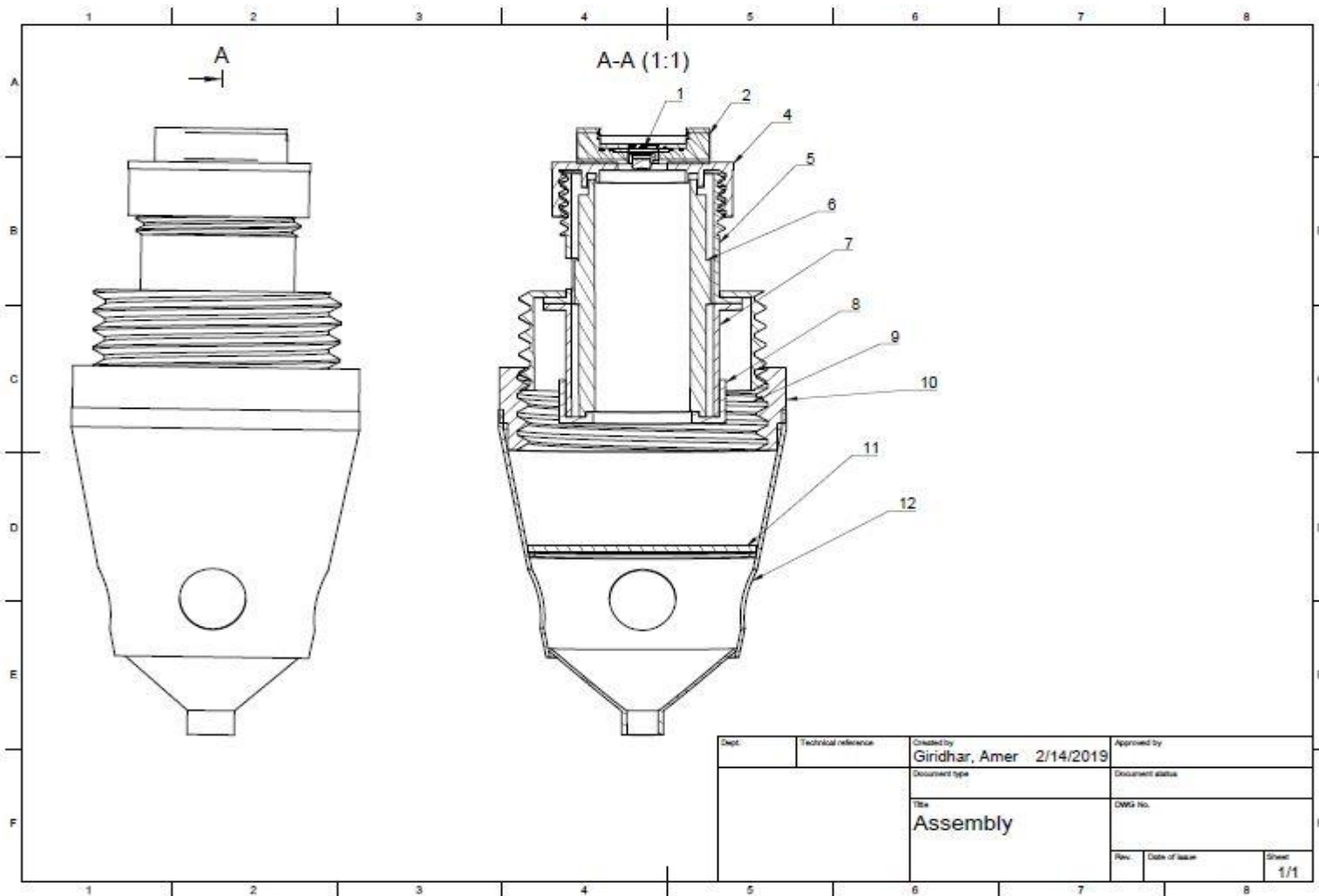


Figure 2 Camera holder assembly drawing.

List of components:

Part Number	Part Name	Function and description
1	Pi Camera V2 module	A micro HD pi camera module with 8 mp is installed for capturing high resolution pictures of the sieve.
2	Camera base	Camera Holder for maintaining position and protection against hazards and short circuits. It also allows axial rotation of the pi camera for vertical alignment with the sieve.
3	Keys	Connection between the camera holder and the objective cap.
4	Cap	Bottom tightening
5	Objective compartment 1	Bottom centering part of the objective.
6	Objective (Lens)	130X objective with fine focal length adjustment.
7	Objective compartment 2	Upper centering part of the objective.
8	Cap	Alignment part.
9	Rough focusing adjustment thread	Used for upper tightening and rough focusing with a pitch of 6 mm.
10	Working distance adjuster.	Used for adjusting the effective working distance for monitoring the sieve.
11	Optical glass layer	Thin sheet of optical glass serves as a transparent separator between the optical set and the air flow environment in the suction chamber created by the air pump.
12	Suction chamber	Works as the sieve holder and allowing air tight flow 4 inlet holes on the chamber surface filtered by meshes.