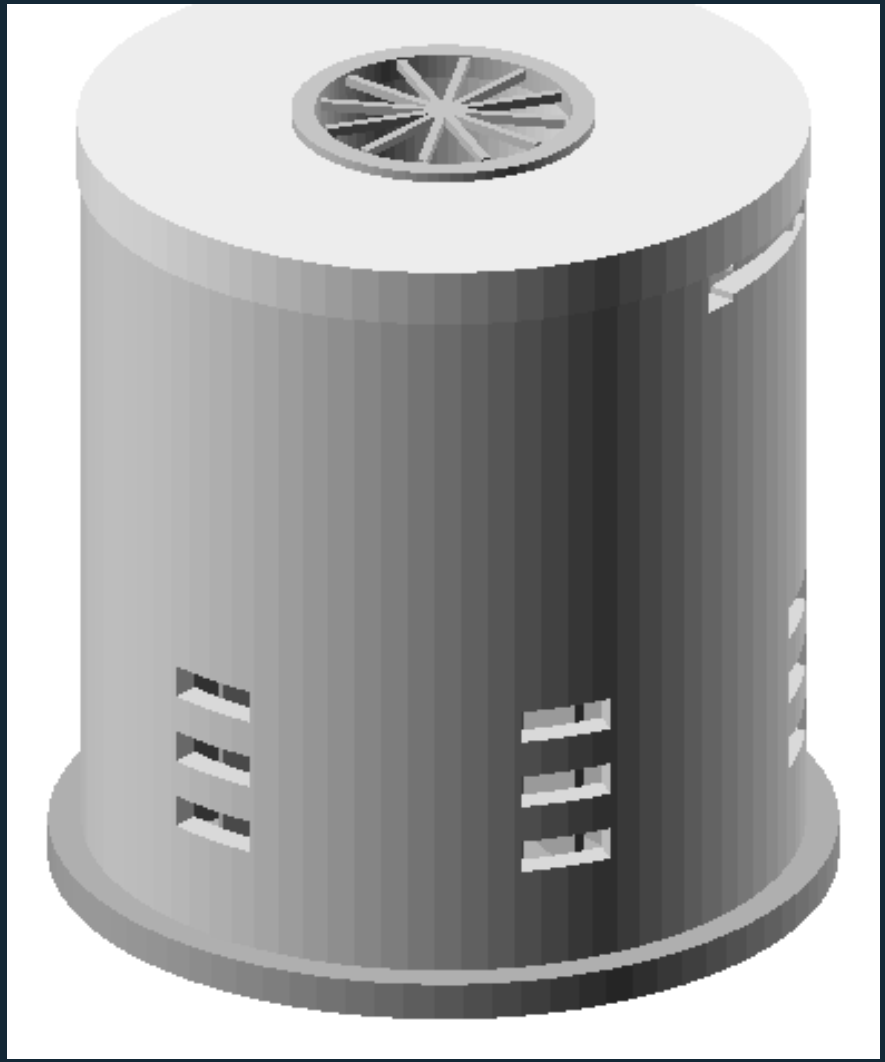
AERIS / TECHNICAL SERIES

F1

MODULAR AIR FILTER

ASSEMBLY / FIELD GUIDE

Assembly and maintenance reference for a fictional non-powered filter demonstrator.

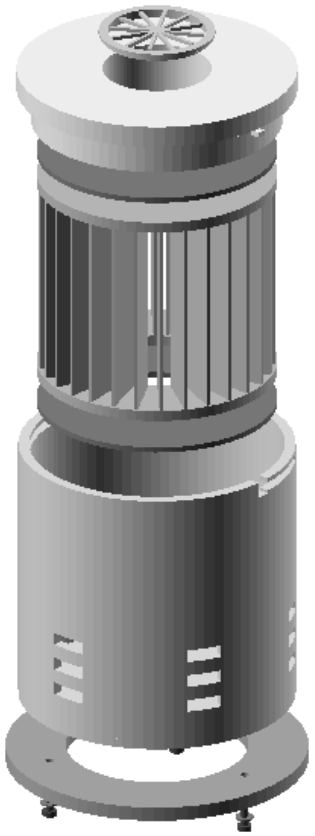


REV D2 / 05 NOV 2026

Concept fixture. Not for manufacture.

Understand the assembly

A sealed filter cartridge inside a cylindrical ABS housing. The product is invented for Vidocu demonstrations.



ASSEMBLY ARCHITECTURE

ENCLOSURE
A Main housing

FILTER MEDIA
B Cartridge + C/D seals

LOCKING
E Bayonet cap, +30 deg

MOUNTING
F + G/H Foot, washers, screws

OUTLET
I Snap-in grille

DESIGN ENVELOPE / Ø166 × 176 mm

Kit contents and tools

Verify identifiers and quantities. All nominal dimensions are in millimeters.

A QTY 1

MAIN HOUSING

OD 152 / ID 140 / H 150

B QTY 1

FILTER CARTRIDGE

OD 132 / bore 64 / H 120

C QTY 1

LOWER SEAL

OD 132 / ID 64 / T 3

D QTY 1

UPPER SEAL

OD 132 / ID 64 / T 3

E QTY 1

BAYONET TOP CAP

Flange OD 154; plug OD 138; H 31

F QTY 1

MOUNTING FOOT RING

OD 166 / ID 100 / T 8

G QTY 3

FLAT WASHER

OD 10 / ID 4.5 / T 1

H QTY 3

THREAD-FORMING SCREW

ST4.2 x 16; head OD 8 / H 3

I QTY 1

SNAP-IN OUTLET GRILLE

Top OD 64 / plug OD 59 / H 5

TOOLS / CONSUMABLES

01 Hand screwdriver

Use gentle manual torque.

02 Protective mat

Avoid scratching the cap and shell.

03 Clean gloves

Keep seals free of contaminants.

04 Dry cloth

Wipe the seal contact faces.

NO POWER TOOLS

Work safely

This is not a certified air filter. Do not assemble or install it as a functional protection device.

01 DO NOT USE FOR RESPIRATORY PROTECTION

No tested particle capture, flow or air-quality rating exists.

02 AVOID EXCESS TORQUE

Plastic pilot holes may strip when over-tightened.

03 KEEP SEAL SURFACES CLEAN

Twisted or pinched seals may not contact the mating faces.

04 HANDLE THE BAYONET WITH CARE

Retention strength, tolerances and snap deflection are untested.

05 NO POWER OR LIVE CONNECTIONS

The fictional product has no electrical system or motor.

06 CHECK ORIENTATION AT EACH STAGE

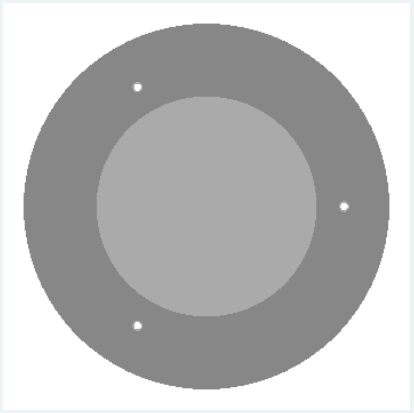
Isometric illustrations use schematic material and clearances.

01 / Prepare the housing and fasteners

Read the direction and check each operation before proceeding. Rendered assembly views share one model coordinate system.

01 Align the foot ring

F onto A



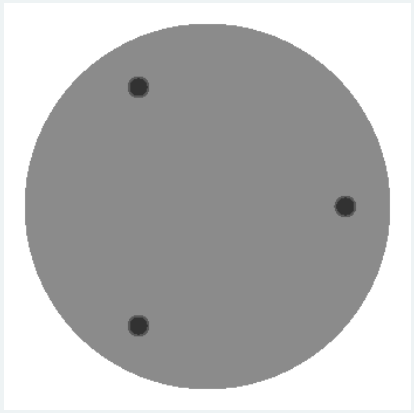
LINE UP

Turn the housing upside down on a protective mat. Match all three holes of foot F to the three underside pilot holes of A.

CHECK Use the hole pattern. Do not place F over the side ventilation slots.

02 Install washers and screws

3 x G + 3 x H



ROTATE CLOCKWISE

Insert one washer G onto each screw H. Drive all three screws through foot F and into housing A. Tighten evenly by hand.

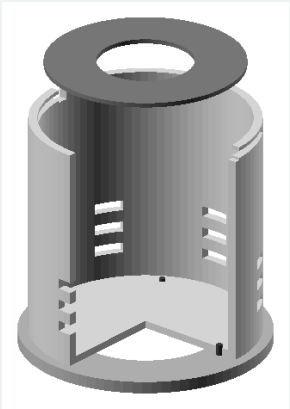
CHECK Stop when seated. Over-tightening can damage plastic pilot holes.

02 / Install lower seal and cartridge

Read the direction and check each operation before proceeding. Rendered assembly views share one model coordinate system.

03 Insert the lower gasket

C into A



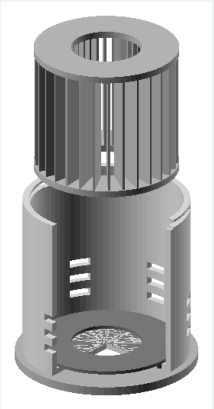
LOWER VERTICALLY

Set the housing upright. Lower gasket C through the open upper end and lay it flat on the inner bottom face at Z=5.

CHECK CUTAWAY VIEW: a section of the wall is removed only to show the inside.

04 Lower in the filter

B onto C



LOWER VERTICALLY

Keep cartridge B vertical and centered. Lower it through the 140 mm bore until it rests on lower gasket C.

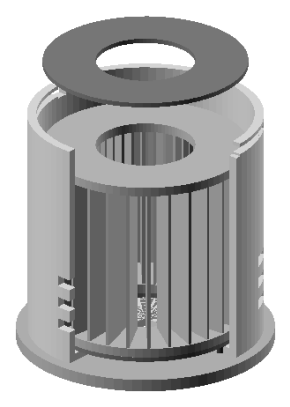
CHECK Nominal radial clearance is 4 mm per side. Do not tilt or force the cartridge.

03 / Complete the sealing stack

Read the direction and check each operation before proceeding. Rendered assembly views share one model coordinate system.

05 Place the upper gasket

D on B



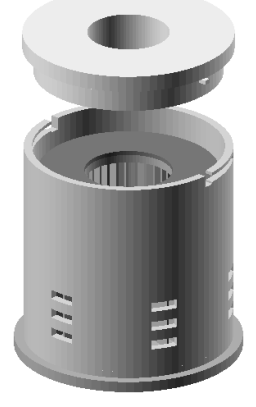
PLACE FLAT

Seat upper gasket D flat on the cartridge top face. Check that the bore stays aligned with the cartridge center.

CHECK CUTAWAY VIEW: the filter, gasket and wall positions share one 3D coordinate system.

06 Lower the top cap

E into A



ALIGN + LOWER

Align both cap lugs with the vertical entry slots. Lower E along the common center axis until the cap flange meets the housing rim.

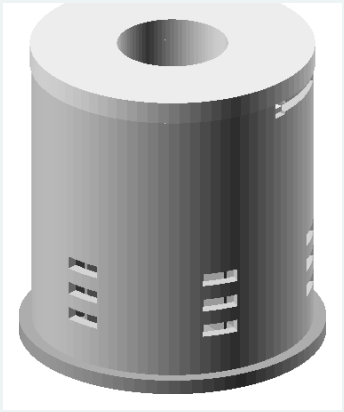
CHECK The lugs must enter through the opposed slots. Do not twist before lowering.

04 / Lock cap and attach grille

Read the direction and check each operation before proceeding. Rendered assembly views share one model coordinate system.

07 Turn the cap clockwise

E: +30 degrees



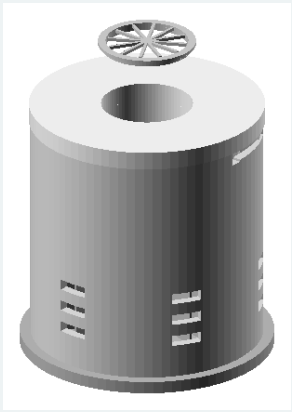
TURN +30 deg

With the cap fully seated, rotate E clockwise by 30 degrees until both lugs reach the ends of the circumferential tracks.

CHECK The source model includes the matching slots. Actual retention force is not tested.

08 Snap in the outlet grille

I into E



PRESS UNTIL CLICK

Align the two small catch features with the cap outlet opening. Press grille I straight down until both catches are engaged.

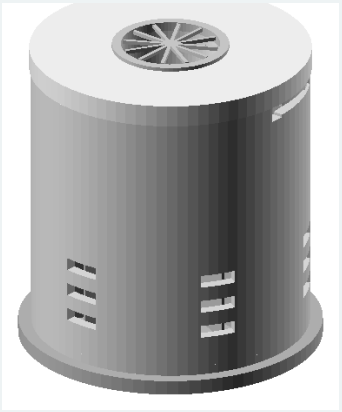
CHECK Catch flexure is illustrated schematically and needs separate mechanical validation.

Verify before handoff

One last visual review of all interfaces and the finished product.

09 Final visual check

AERIS F1 complete



INSPECT

Check that the grille sits flush, the cap is at the locked stop, the cartridge does not rattle and the side inlet slots stay clear.

CHECK Prototype demonstration only. No filtration rating, airflow or safety certification.

INSPECTION GRID

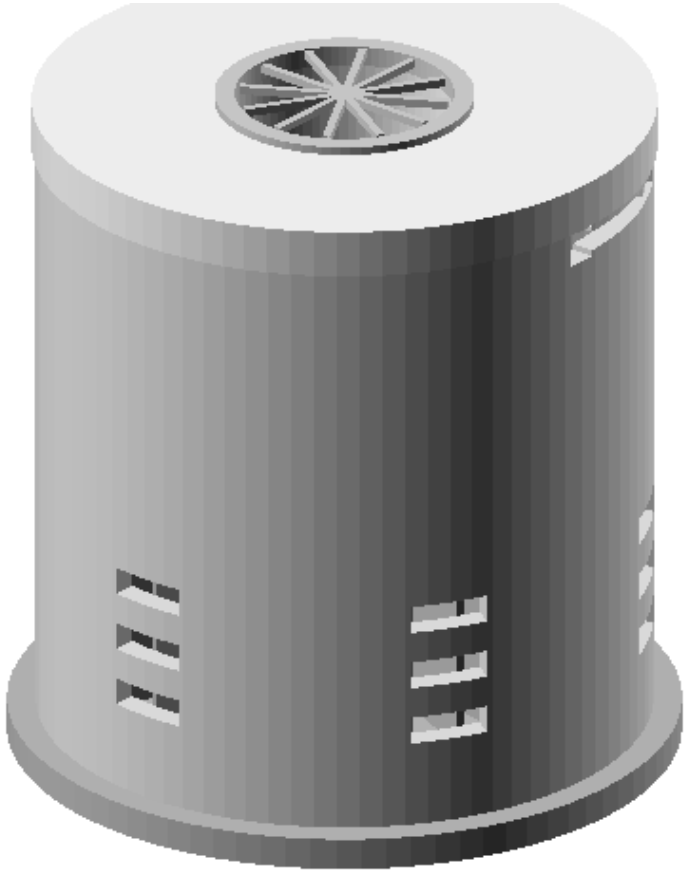
- [ ] **A / F**
  Support ring flush against the shell
- [ ] **G / H**
  3 washers under 3 screw heads
- [ ] **C / B / D**
  Two seals on opposing cartridge faces
- [ ] **E**
  Cap turned +30 degrees to end stop
- [ ] **I**

NOT CERTIFIED FOR FUNCTIONAL USE

Fictional test fixture only.

Replace a cartridge

The source model also supports a reverse-operation service animation.



01 — RELEASE

Press the grille catches inward; lift I.

02 — UNLOCK

Rotate E 30 degrees counterclockwise.

03 — REMOVE

Lift E, remove D and extract B.

04 — RESEAL

Reinstall B and D; repeat steps 6-8.

What this guide can prove

Use the fixture for visual storytelling and repeatable workflow experiments, not for production sign-off.

SUPPORTED	Same parts IDs across PDF and CAD
SUPPORTED	Nominal dimensions and BOM quantities
SUPPORTED	Illustrative assembly order and poses
NOT TESTED	Interference over entire motion paths
NOT TESTED	Bayonet lock force / snap retention

AERIS F1 / FICTIONAL ASSEMBLY DEMO

CAD and manuals are internally referenced concept assets. Treat all mechanical fit and safety claims as unverified until engineering review.