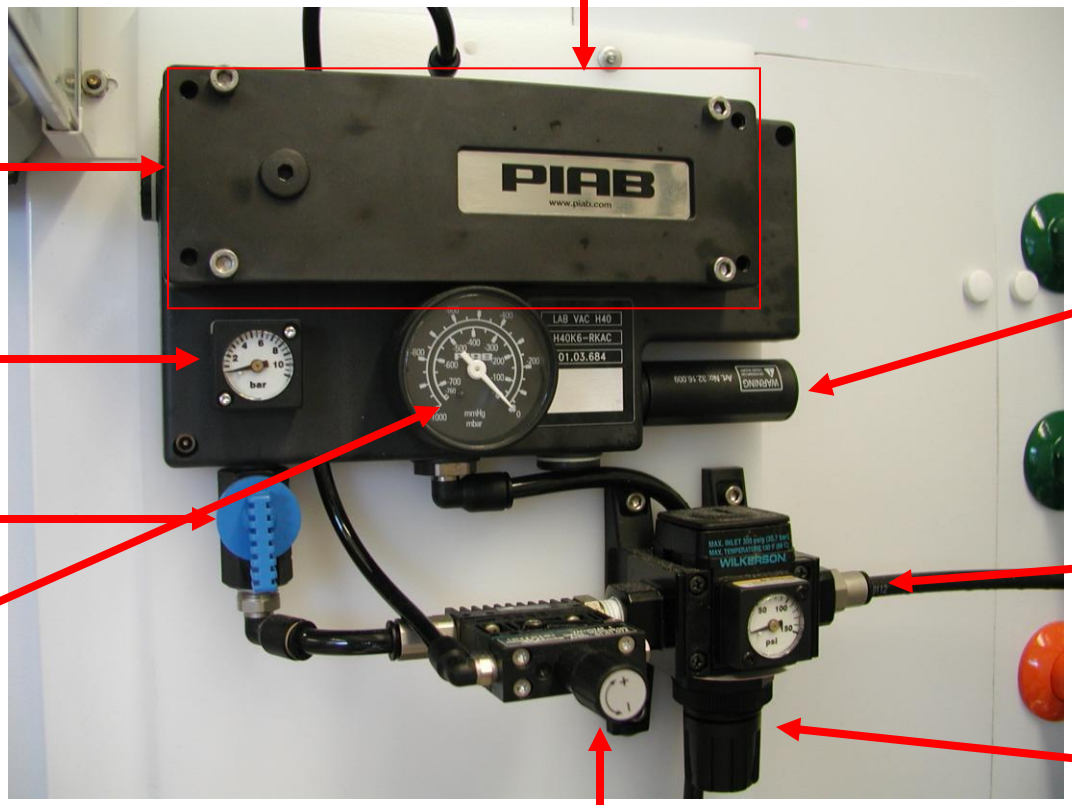
PIAB use and care

Set up and use

Common mistakes

Disassembly and cleaning

Names of parts and typical set up



(Exhaust line if on benchtop)

Vacuum generator box

Compressed air pressure gauge (*always 6 bar*)

Inlet valve (*always open*)

Vacuum gauge

Exhaust port if in fume hood

Compressed air line in (*always connected*)

Compressed air pressure regulator (*always 6 bar*)

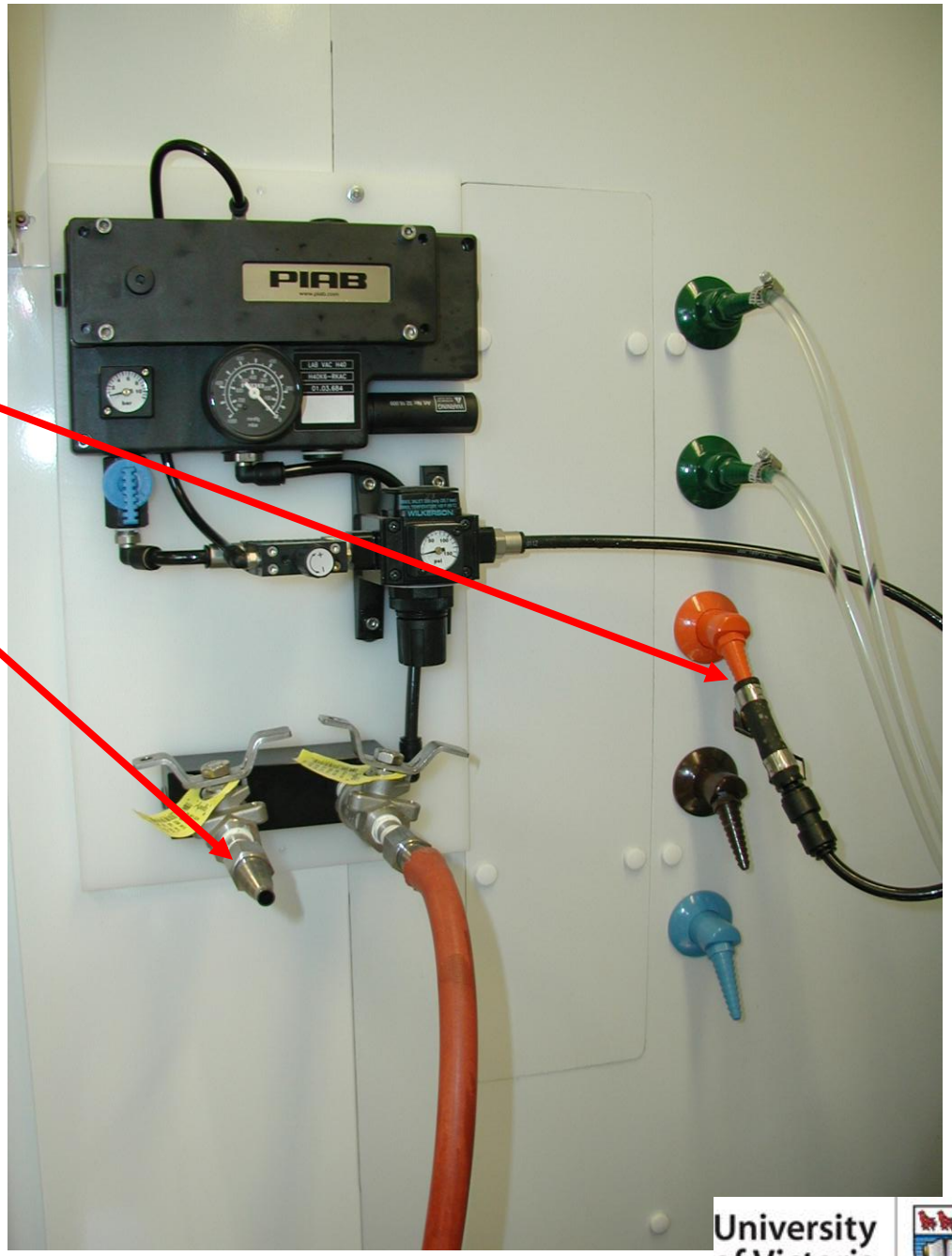
Vacustat control knob

University of Victoria

Set up and use

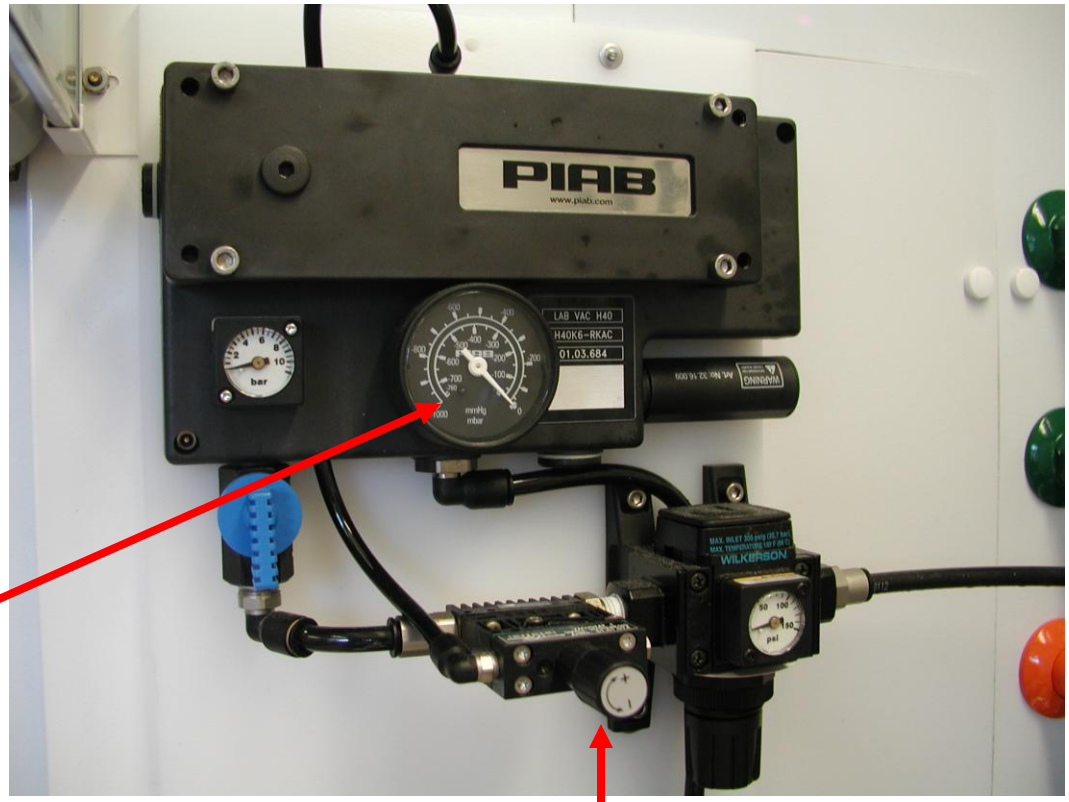
The concept is simple: compressed air goes in, and vacuum is provided to the hose barb to which you will attach your vacuum tubing. Like a water aspirator.

Turn it on and off using the bench's or fume hood's compressed air tap.



Adjust the vacuum

Adjust the vacustat control knob to achieve the desired level of vacuum. DON’T CRANK IT - the vacustat will strip and need to be replaced ($140).



Vacuum gauge

Vacustat control knob

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Protect the PIAB

Set the vacuum low enough so that ALL of the solvent is condensing completely in the rotovap trap.

Use a secondary cold trap for all low-boiling solvents and acid vapors.

Use a Whatman vacu-gard filter element to catch grease and particulates.

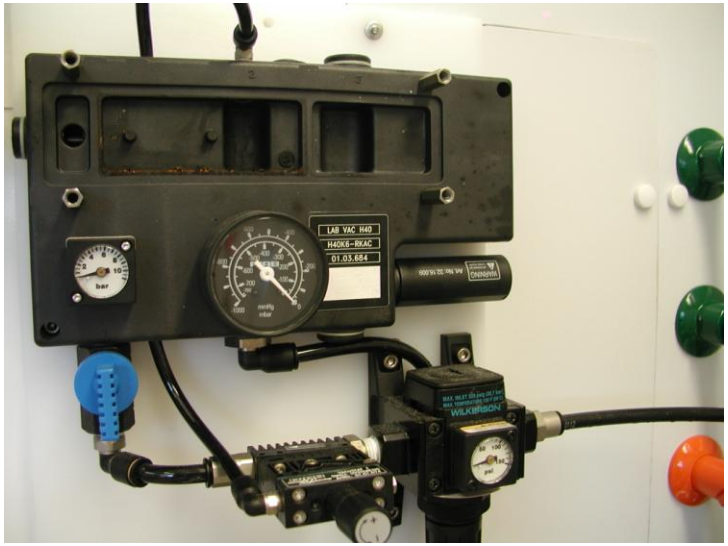
When working and set up properly, the PIAB will only draw a puff of compressed air every few seconds.

When the PIAB starts to puff more frequently than that, it means you have a leak caused by buildup of gunk inside the vacuum generator. DON’T just turn it up and keep using it. Clean it. It’s easy.

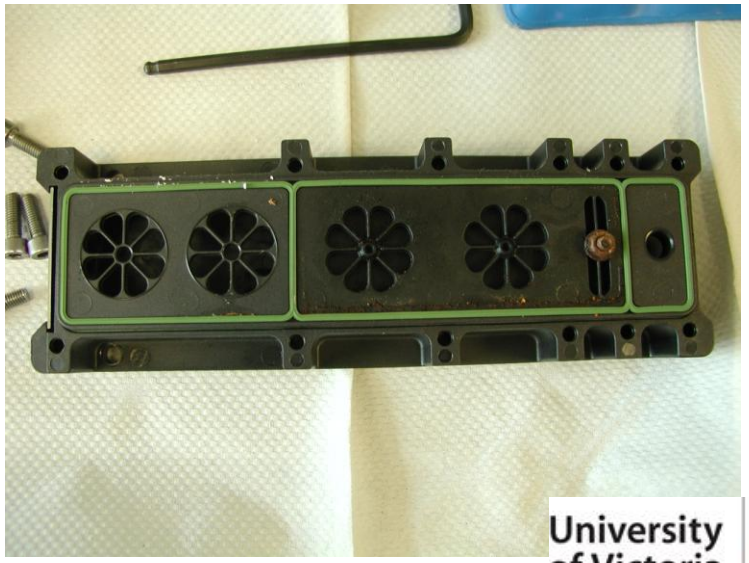
Cleaning

1. Undo 4 hex screws to open vacuum generator

2. Clean body with wipes and EtOH



3. Further disassembly…



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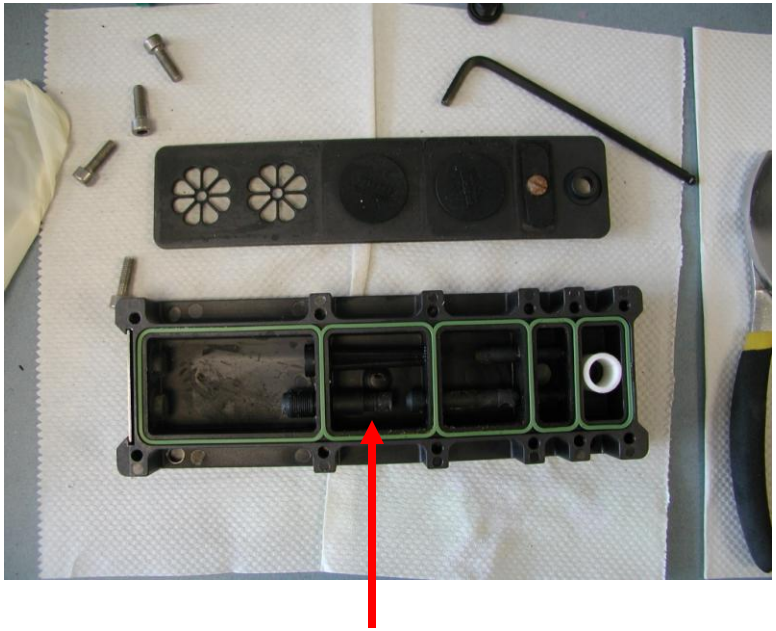
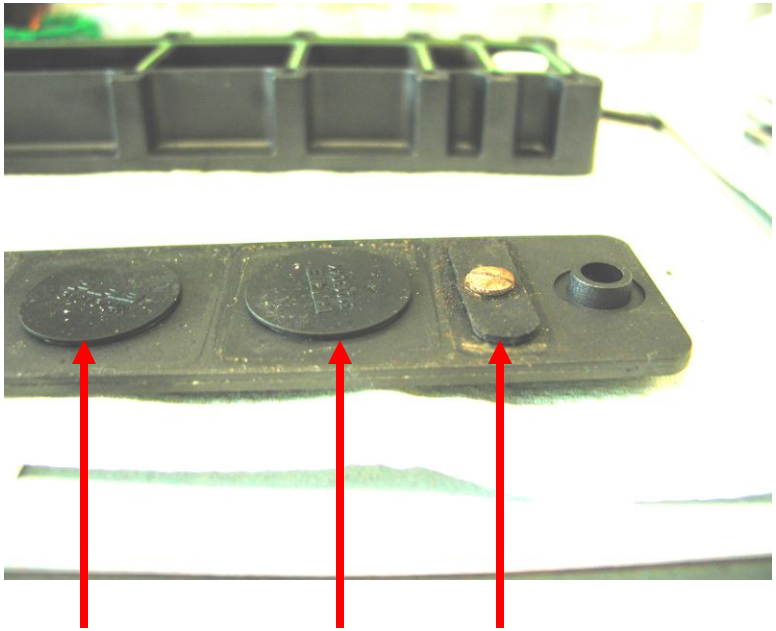
Cleaning





4. Body can be cleaned with wipes, tweezers, and EtOH. Green gaskets are not normally the problem, but can also be cleaned if necessary.

5. These 3 flap valves get crusted up and can't close. They are the source of almost all problems with the PIAB. Clean them thoroughly until they can close properly.

6. Reassemble in reverse order. Don't strip the screws. Total time 15-20 minutes.

Other problems…

Check for leaks from compressed air lines.

Check for leaks from vacustat body.

If you have done all cleaning and troubleshooting possible and it still isn’t performing, talk to the machine shop about getting replacement parts as needed.

Retrofits coming summer 2010

-The metal 2- and 4-barb manifolds will be removed completely and replaced with a single teflon hose barb (to reduce corrosion particulate entering PIAB).

- In-line vacuum filter elements are on order.

- Compressed air line hose clamps will be replaced with a proper threaded connection for increased safety.