

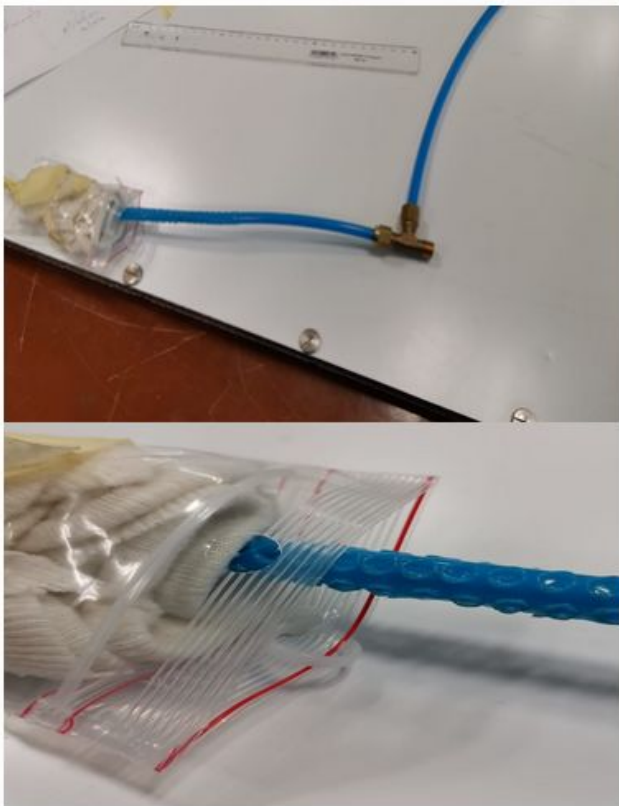
# A COOLING SYSTEM

Version: Unknown

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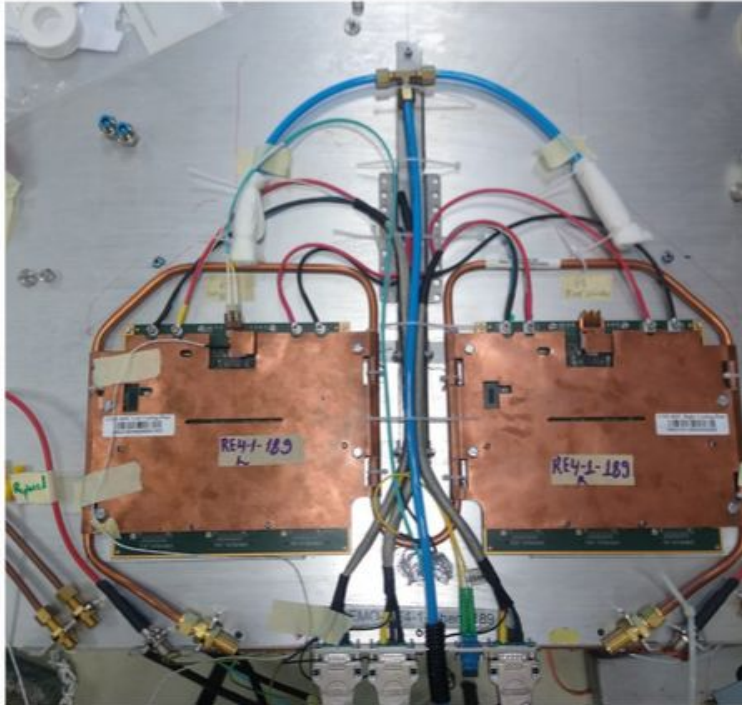
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## PREVIOUS SYSTEM

System without "muffler", noise level 75 dB.

System with filter, noise level 70 dB

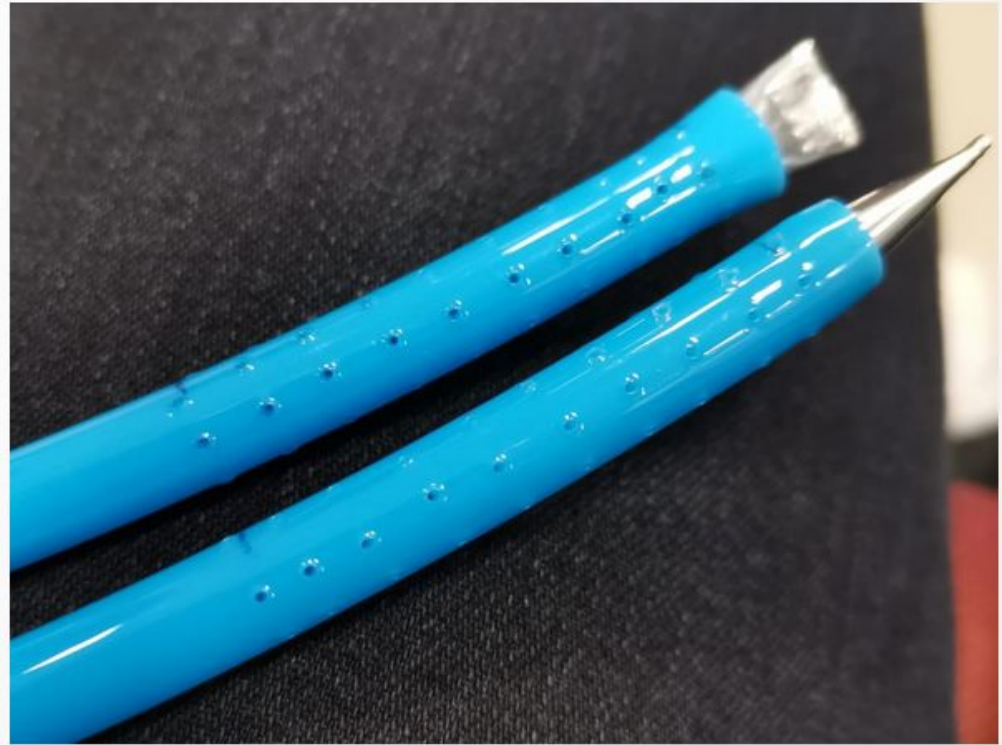


## NEW COOLING SYSTEM

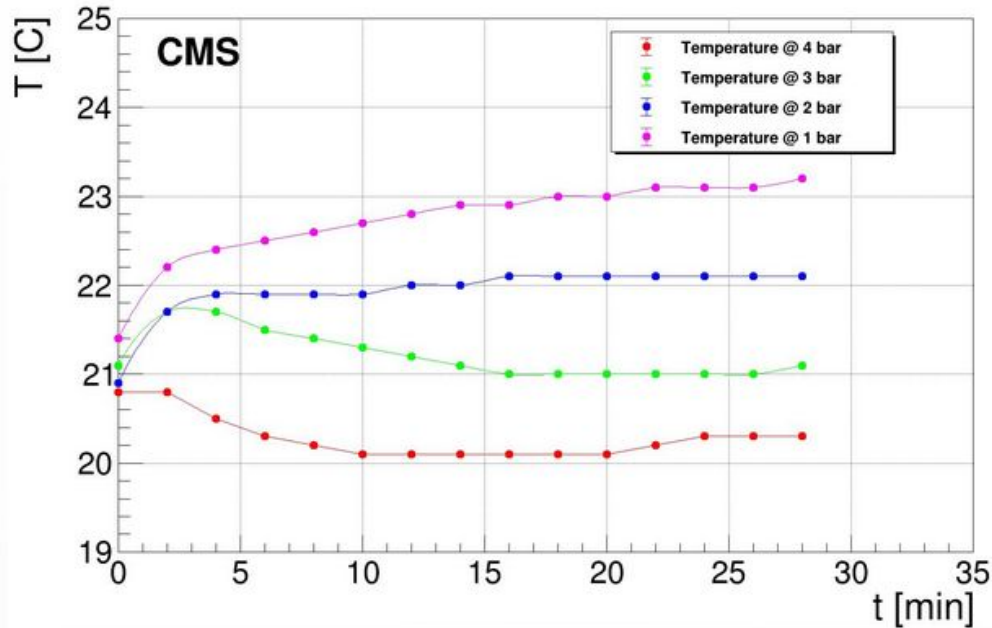
Compressed air at different  
pressures through a holey pipe

## HOLEY PIPE

Holes made with a hot  
needle of 1 mm thick



## Temperature as a function of time for different pressures

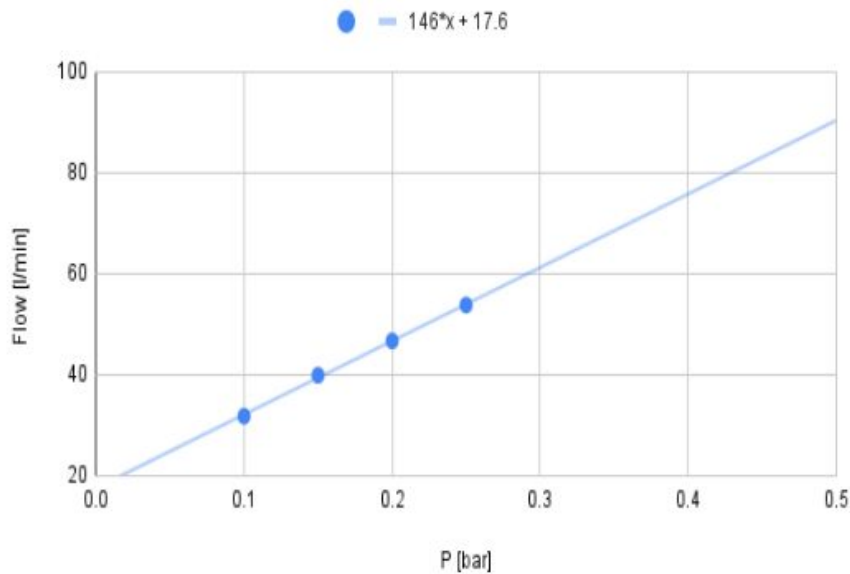


In all cases the  
temperature is lower  
than 30°C

By increasing the pressure by one unit, the temperature will decrease by one Celsius degree (approx).

# FLUX VS. PRESSURE

Flux vs. Pressure



No more values because of the limits of the fluxometer.

**Extrapolation in progress for 4 bar**

	Vol.[%]	Gas-type	Density [kg/m3]	Viscosity [10E-6 pa.s]
Gas#1	100	air ▾	0.296	18.1
Gas#2	0.0	----- ▾	0	
Gas#3	0.0	----- ▾	0	
Mixture Average :			0.296	18.1

Input Parameters			Results	
Temperature	21	[ °C ]	Reynolds Number	3107.78
Pressure	250	[ mbar ]	Gas Velocity	31.713 [ m/s ]
Gas Volume Flow	3228	[ l/h ]	Pressure Drop, ΔP	19.919 [ mbar ]
Pipe Inner Diameter	6	[ mm ]	Hydrostatic Column*	0 [ mbar/m ]
Pipe Length	2	[ m ]		

# PRESSURE DROP

To estimate the pressure drop from 4 bar we used this net tool

<https://detector-gas-systems.web.cern.ch/Tools/deltaP.htm>

which gives us a **pressure drop of about 20 mbar**



# NOISE VS. PRESSURE

System with filter  
**Noise is lower than  
in previous versions  
of the system**

Noise vs. Pressure

