

# Water in Compressed Air – Where does it come from?

**It comes from the air we breathe which contains:-**

## Water vapour:

- The amount varies with seasons and geographical factors
- Expressed as “relative humidity” (RH%)
- The amount of water vapour which air can support increases as temperature rises and decreases as temperature falls

## Solid particles:

- Dust, sand soot and crystals of salt.
- In cities the number of particles may reach 500 000 per m<sup>3</sup>
- Up to 80% of these are smaller than 2 microns

## Hydrocarbon vapours:

from unburnt fuels, industrial processes and vehicle exhaust emissions

## Example

Compressor: output 28 m<sup>3</sup>/min = 1000 cfm at 7 Bar

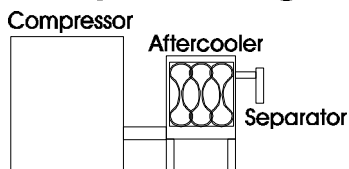
Relative Humidity is 90%.

Air entering the compressor is carrying 27 grams of water per m<sup>3</sup> of air i.e. 756 grams per minute.

**This equals 756 ml per minute, 45 litres per hour!!**

## Three steps to remove the problem

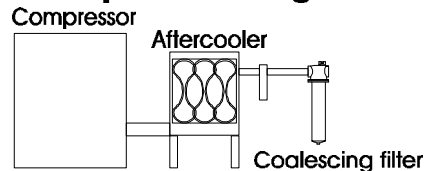
### Step 1 Cooling



65% water removed by *efficient* aftercooling and separation

**29 litres per hour**

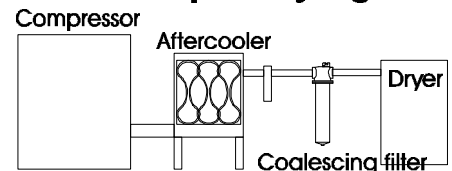
### Step 2 Filtering



An additional 20% water and oil removed by coalescing

**9 litres per hour**

### Step 3 Drying



The final 10 to 15% removed

**7 litres per hour**

**TOTAL OF 45 LITRES per hour!!**

# Rawsen

We Understand Compressed Air

Remember - if the automatic drains do not operate, the water will remain in the piping system!