

COMPRESSED AIR TRAINING – ON-LINE



On-line course for
Single & Multiple users

ABOUT THE TRAINING

The purpose of the compressed air training is to give operators and staff the fundamental know-how about the use of compressed air. The safety aspects, cost of use, its effect on the environment are some of the key content.



ESTABLISHING COST AWARENESS IS THE KEY

Without an established cost for compressed air it is virtually impossible to create incentives or motivation to reduce its use. It would still be regarded as a free resource. Therefore, the key objective of the course is to explain why it is expensive by learning how the compressed air is produced and the type of equipment involved. With cost awareness comes the understanding of why and how we can reduce consumption. It is among your personell where you will find your greatest source of potential. The on-line course un-locks the potential of the people that work directly with machinery and equipment.

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**All compressed air systems have leakages.
You only need to find one single leakage and
the course is paid for**

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A study from the USA showed that every dollar invested in compressed air training yielded \$ 82 in energy savings. This did not include other benefits such as less downtime and reduced noise level. The course provides advice and tips on how you with very simple advice can reduce compressed air consumption. By eliminating misuse, optimizing pressure requirements, dimensioning blowing applications correctly, you are addressing 70% of the savings potential in a compressed air system.



WHAT DO LEAKAGES COST?

Regardless if you produce your compressed air at € 0,01 or € 0,025 per cbm the cost of leakages are still considerable. The chart below shows the cost of leakage sizes at various costs per cbm. Also note the exponential factor of leakage volume. A 3 mm leakage produces more than 9 times that of a 1 mm leakage. It is not unusual to find thousands of leakages in a large plant. The total leakage volume in a plant is usually between 20-40% of the total compressed air produced

Leakage diameter	M3/MIN	Annual volume in M3	Cost at € 0,01	Cost at € 0,015	Cost at € 0,02	Cost at € 0,025
1 mm	0,074	39 000	€ 390	€ 590	€ 780	€ 975
2 mm	0,3	158 000	€ 1 580	€ 2 400	€ 3 160	€ 3 950
3 mm	0,67	352 000	€ 3 520	€ 5 300	€ 7 000	€ 8 800

These figures are based on 8760 hours of operation

COST REDUCTIONS

A single leakage of 1 mm costs € 780 annually. If just one participant finds and fixes a single such leakage it will pay for 15 participants. Can you afford not let your operators get that know-how? All compressed air systems have leakages. If all participants fix the leakages around their respective workplaces, the financial impact is enormous.

SAFETY & LEGISLATION

Most countries legislation requires operators to receive sufficient training to work and operate machinery safely. Many companies are simply not aware of the safety issues associated with the use of compressed air. The on-line course covers the most common safety aspects as well how it affects noise levels and the working environment.



ENVIRONMENT & SUSTAINABILITY

Producing compressed air is extremely inefficient. Only 5-6 % of the energy used is turned into useful mechanical energy. The good news is when it comes to energy saving that it is the opposite that applies. What appears to be minor savings of compressed air are in reality significant reductions of energy. This is the reason why compressed air is at the top of the energy saving agenda. Very few, if any, measures provide same reduction of energy and CO2 emissions at such a low cost.

HOW MANY PERSONS NEED TO FIND A 1 MM LEAKAGE?

Whether you calculate € 0.01 or € 0.02 per cbm the cost of each leakage is significant. In practical terms it means that you only need to find very few leakages in order to pay for the course for the whole company. As an example, in a plant with 500 participants only 13 persons need to find a leakage. If within your plant you have a few 2 mm leakages then you would need to find only 3 for the course to be paid for.

WHAT IS REQUIRED TO REACH BREAK-EVEN?

Number of participants

	10	25	50	100	500	1000
How many need to find a 1 mm leakage?	1	2	2	3	13	19
Equivalent of % of participants	10%	5%	3.8%	3.20%	2.56%	1.9%
How many need to find a 2 mm leakage?	0.24	0.32	0.5	1	3	5
Equivalent of % of participants	2.4%	1.28%	0.96%	0.8%	0.6%	0.48%

These figures are based on 8760 hours of operation and € 0.02 per cbm.



THE COST BENEFITS OF REDUCING PRESSURE

After leakages the second biggest area of saving potential is reducing over pressurisation. Most compressed air applications should be pressure regulated. Tools, cylinders, air nozzles and machines should operate at recommended pressure which many times is considerably lower than the system pressure. By reducing pressure by one bar the flow is reduced by approx. 15% and the energy consumption will be reduced by approx. 8%. The chart shows how that translates into savings. Make sure you check the recommended operating pressure for the application and adjust accordingly.

AIR CONSUMPTION	M3/MIN	0,2	0,3	0,4	0,5
	Liters/MIN	200l/min	300l/min	400l/min	500l/min
1 BAR REDUCTION	15 %	30l/min	45l/min	60l/min	75l/min
	CBM/Year	15 800	23 700	31 500	47 300
	Annual savings	€ 316	€ 475	€ 630	€ 950

These figures are based on 8760 hours of operation and € 0.02 per cbm.

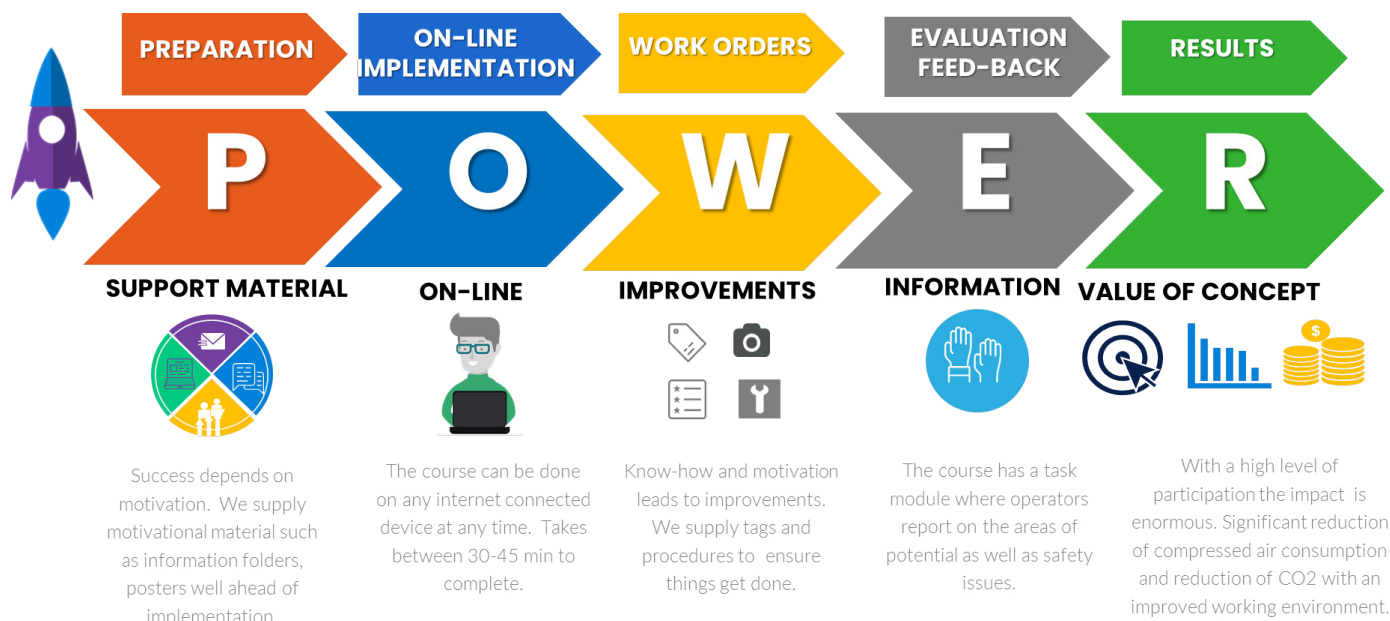


THE NUMBER OF PARTICIPANTS EFFECT ON RESULTS

The financial leverage you are able to achieve by increasing the number of participants becomes enormous. The chart below shows the annual savings possible through various levels of implementation and the effect of finding and repairing leakages. To this one should add the effect of pressure reductions (see chart – Pressure reduction). This is why we also pay great attention to the launching process so that all co-workers are included and motivated and understand both the financial and environmental impact of the course.



% of participants that will find and fix one 1 mm leakage.	50	100	500	1000
	Result in this amount of savings			
100 %	€ 38 500	€ 77 000	€ 385 000	€ 770 000
75%	€ 28 000	€ 58 000	€ 289 000	€ 580 000
50%	€ 19 000	€ 38 500	€ 193 000	€ 390 000
10%	€ 3 850	€ 7 700	€ 38 500	€ 77 000



PRICING AND HOW TO ORDER

Some companies prefer to let managers or supervisors to do the course as a group exercise. The benefits of that is that it creates space for discussions and explanations and makes it easier to determine the best way to implement the course within the company. We therefore have a special group price for 10 participants where the cost is equivalent of what a single 1 mm leakage.

Number of Participants

1 license € 150

10 licenses € 770

25 licenses € 995

- Energy saving services in compressed air systems
- 100 price on request.
- For larger corporations we have subscription based schemes. Contact us for details.

It is easy to order and implement. We only need to know the number of participants and receive their e-mail addresses. A separate login will be sent to each respective participant. For more than 50 users a separate access login that applies to all is supplied generally within 48 hours of receipt of payment. The access details are available for three months or according to your requirements. If you chose to do the course as a group we require only one e-mail address. Included in the price is a final report on approvals, time for completion for each individual. At a slight cost we can also supply certificates framed or as a download.



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