JORC

AIR SAVING PRODUCTS

AIR-SAVER G1
AIR-SAVER G2
LOCATOR
LOCATOR-EV

ADDING VALUE

RELIABLE

COMPRESSED AIR CONDENSATE MANAGEMENT AND ENERGY SAVING PRODUCTS

AIR SAVING PRODUCTS

INDEX

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JORC Industrial is a global condensate management specialist of Dutch origin offering condensate drains, oil water separators and air saving equipment to distributors, dealers and OEM's in more than 100 countries. JORC Industrial is dedicated to setting the standard in helping its customers manage their condensate management requirements.

SAVING AIR IS SAVING MONEY

AIR & ENERGY SAVING PRODUCTS

Chapter 1

INTRODUCTION TO COMPRESSED AIR

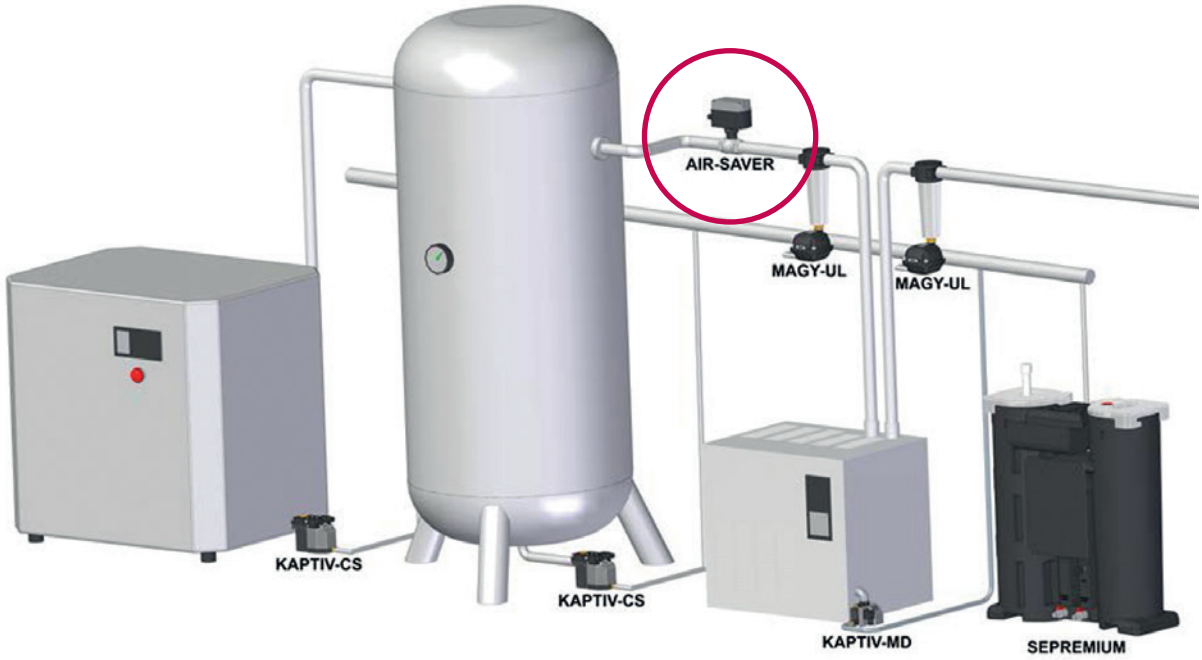
Compressed air is used widely throughout industry and is often considered the “fourth utility”. Almost every industrial plant, from a small machine shop to an immense pulp and paper mill, has some type of compressed air system. In many cases, the compressed air system is so vital that the facility cannot operate without it. Air compressor systems can vary in size from a small unit of 5 horsepower (hp) to huge systems with over 50,000 hp.

In many industrial facilities, air compressors use more electricity than any other type of equipment. Inefficiencies in compressed air systems can therefore be significant. Energy savings from system improvements can range from 20-50% or more of electricity consumption. For many facilities this is equivalent to thousands, or even hundreds of thousands of EURO’s of potential annual savings. A properly managed compressed air system can save energy, reduce maintenance cost, decrease downtime, increase production throughput and improve product quality.

Compressed air systems consist of a supply side, which includes compressors and air treatment, and a demand side, which includes distribution, storage systems and end-use equipment. A properly managed supply side will result in clean, dry and stable air being delivered at the appropriate pressure in a dependable, cost-effective manner.

A properly managed demand side minimises wasted air and uses compressed air for appropriate applications. Improving and maintaining peak compressed air system performance requires addressing both the supply and demand sides of the system and how the two interact. The compressor is the mechanical device that takes in ambient air and increases its pressure. Controls serve to regulate the amount of compressed air being produced.

The treatment equipment removes contaminants from the compressed air and accessories keep the system operating properly. Distribution systems transport compressed air to where it is needed. Compressed air storage can also serve to improve system performance and efficiency.



AIR LEAKAGES, A COMMON PROBLEM

Air leaks are a concern for anyone operating a compressed air system. The average plant with no formal leak management program can have air leaks that can possible waste up to 30 percent of the total air capacity.

Leaks will cause compressors to run at full load for longer periods of time. The compressors will not only use more energy, but may also need additional maintenance due to the increased loads.

Leaks can give the false impression that additional compressors are required to meet the demand for compressed air.

COMMON LEAK POINTS

- Quick connections fittings have O-rings to seal the hose connections. A damaged or missing O-rings will cause the connection to leak.
- FRL's (filter, regulator & lubricator). Inlet and outlet connections and bottom drainage point can leak.
- The welds found on pipe joints and pipe flanges can leak due to vibrations, age or improper welding.
- Float or mechanical type condensate drains can also be a source of air leaks, because the operating mechanics can get stuck in the "open" position.
- Pipe thread connections, air tools and many more sources can be the cause of air leakages.

LOCATOR

The LOCATOR is an ultrasonic air leak detector and is a necessary part of a leak prevention program.

The LOCATOR is lightweight and easy to operate. The reliable and accurate detection capacity makes it a highly efficient air leak detector. Air leak turbulence or friction produce high frequency ultrasonic waves and are normally higher than 20 kHz. This is typically above the range of human hearing levels.

The LOCATOR is easy to use and highly effective at finding compressed air leaks.

AIR-SAVER

The compressed air that is stored in the receiver can leak out through the above mentioned sources of air leaks. This is a direct waste of energy and money.

The AIR-SAVER is installed on the air piping that comes of the receiver tank. It can be programmed to automatically open just prior to the start of a work shift and close just after the end of the work shift.

The AIR-SAVER is an improvement to any compressed air system with the above mentioned air leak problems and has a fast payback.

Chapter 2

THE VALUE OF AN AIR-SAVER

The AIR-SAVER is installed on the air piping that comes of the receiver tank. It can be programmed to automatically open just prior to the start of a work shift and close just after the end of the work shift. By doing so you save compressed air and reduce energy costs.

Compressed air leakages are common and more importantly very costly. Graph A and B (next page) illustrate the value of the AIR-SAVER when installed. A typical installation is illustrated below.

In graph A and B the light blue line demonstrates the operating movements of the compressor, or to put it in other words – **ENERGY USAGE**.

Graph A shows a compressed air system **without** an AIR-SAVER installed. At 4 pm the working shift is over and the compressed air leakages force the compressor to continually bring the air pressure up to the required level (even though no one is working in this particular example).

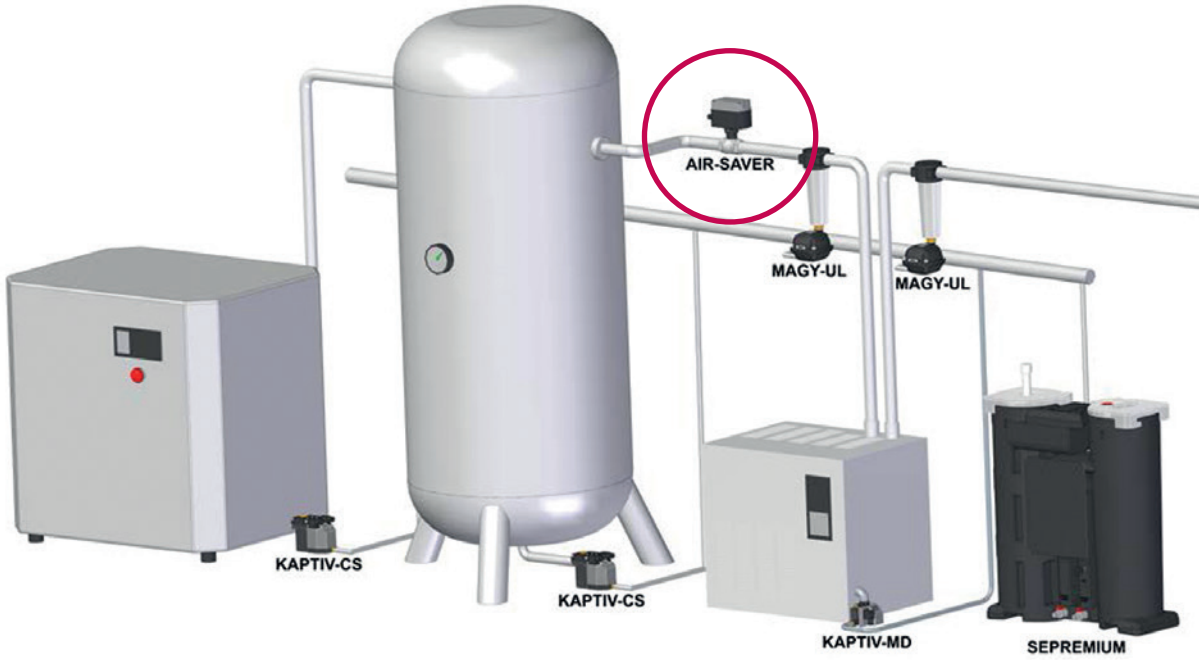
The result is that the compressor kicked in 20 times during the period in which no one was requiring compressed air! Compressed air losses occur through pipe work connection leakages, leaking float type drains, flow meters etc.

Graph B shows the same compressed air system **with** an AIR-SAVER installed. The light blue movements are the compressor in running mode. At 4 pm you see that the working shift ends and that the AIR-SAVER is programmed to close.

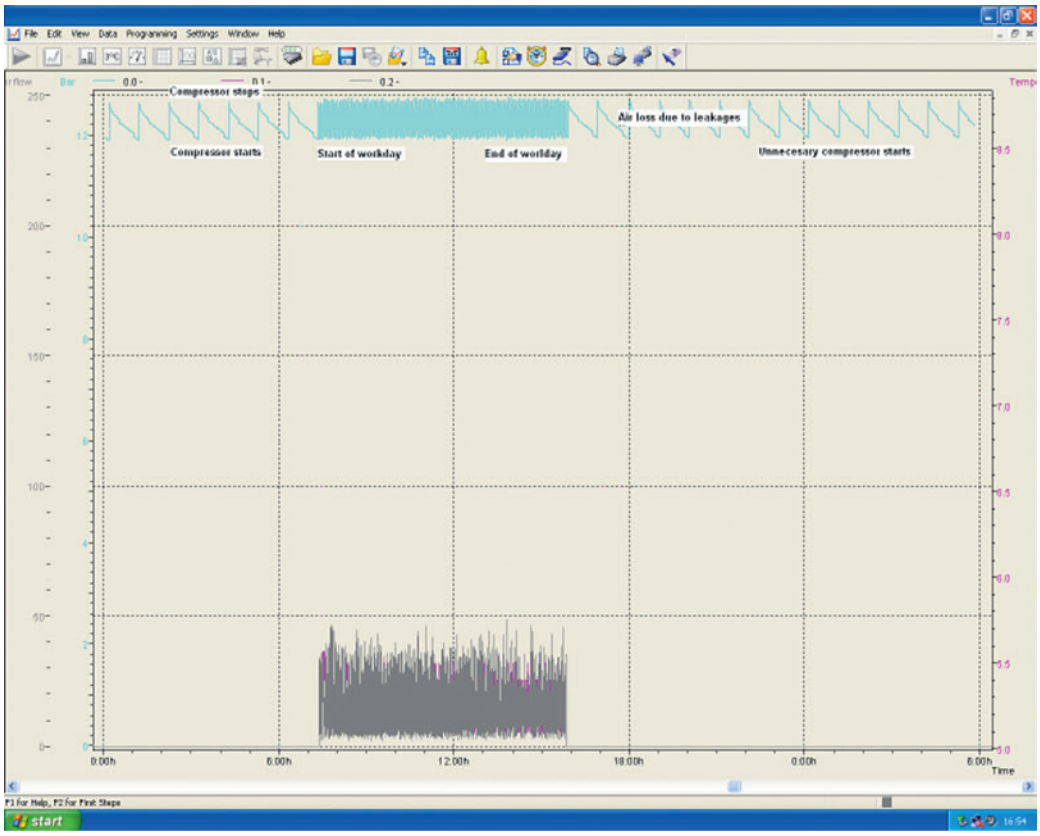
The result is that the pressure in the pipe work beyond the AIR-SAVER is lost as you see the pressure drops to 0 bar. The produced compressed air stored in the air receiver is saved and the compressor does not require to kick on and off to bring the air pressure up to a certain level.

Savings achieved with the AIR-SAVER are:

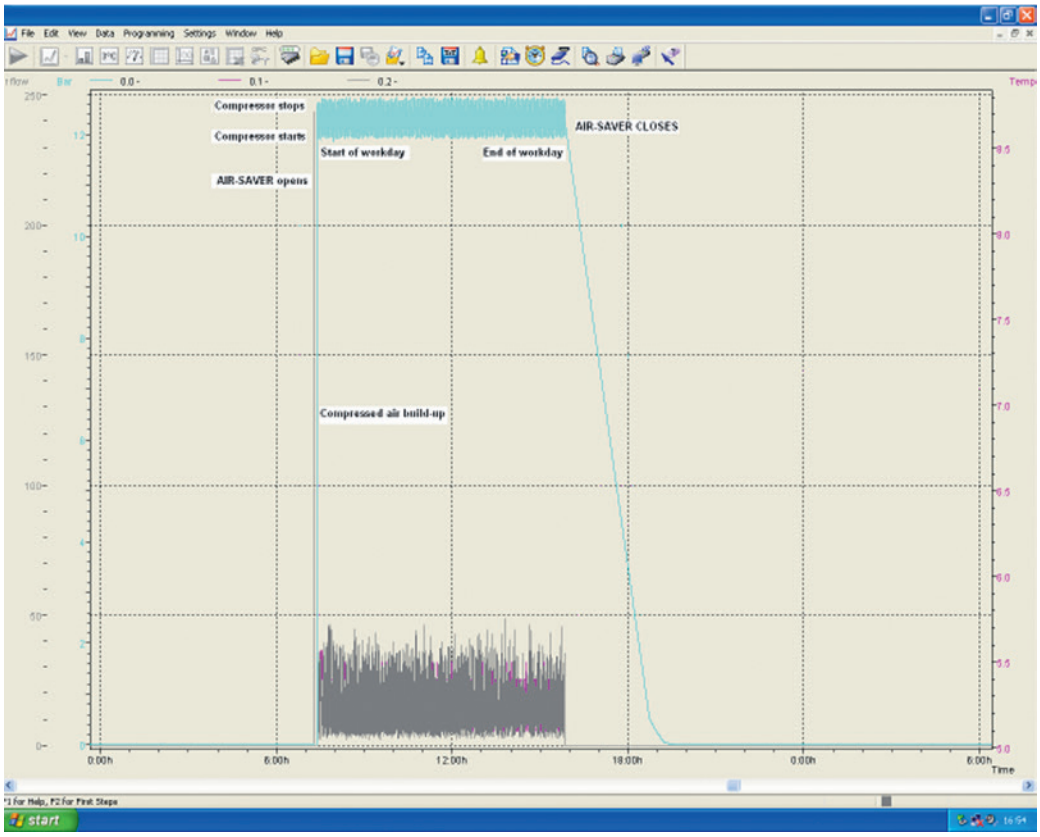
- Valuable and expensively produced compressed air
- Electricity for running the compressor
- Wearing parts of the compressor
- Compressor servicing costs due to unnecessary compressor operating hours
- Other wearing parts like compressed air filter elements due to unnecessary operating hours



Graph A: compressed air system without an AIR-SAVER



Graph B: compressed air system with an AIR-SAVER



Chapter 3

LOCATOR

Compressed air energy saver

The LOCATOR is an ultrasonic air leak detector that detects compressed air leaks, covering a wide frequency spectrum of 20 - 100 kHz.

PRODUCT FEATURES

The LOCATOR is an ultrasonic compressed air leak detector that detects leakages in compressed air systems at a distance up to 12 metres.

The ultrasonic technology allows for easy and fast detection of leakages. Production activity may continue whilst using the LOCATOR. The headset and the LED display allow for audible and visual confirmation of all compressed air leakages.

The decibel meter can be adjusted to pin-point the exact location of a specific air leak.

The LOCATOR makes locating air leaks simple and cost effective.

A deluxe version of the LOCATOR with **hard-hat head set** with over 23 dB of noise attenuation is also available as **LOCATOR-Delux**.

COMMERCIAL BENEFITS

- Easy and effective detection of compressed air leaks in a wide frequency spectrum of 20 - 100 kHz.
- Locates repair points in air lines, offering energy & money saving options
- Locates air leaks during working hours, no need to shut down production to carry out the leak audit
- Cost competitive offering a rapid pay-back
- Light and easy to operate, no training required
- Consult JORC for private labelling options

TECHNICAL ADVANTAGES

- Leaks will be detected from a distance up to at least 10 metres
- Includes sensitivity selection knob / noise reduction filter up to 70 dB
- Standard supplied in a protective case, complete with a headset
- The **LOCATOR-D-LUX** is supplied with a hard hat headset
- Fully automatic – no maintenance

PRODUCT DIMENSIONS

PRODUCT SPECIFICATIONS

Construction	Hand held ABS pistol type ultrasonic processor Stainless steel sensor enclosures
Circuitry	SMT/Solid state hybrid heterodyne receiver
Transmitter	Warble tone transmission
Response time	300 mille seconds
Frequency response	20 - 100 kHz. (Centred at 28-42 kHz.)
Indicator	10 segment visual leak indication LED bar
Sensitivity selection	8 sensitivity positions / Noise reduction filter up to 70 dB
Power	9 volt alkaline battery (included)
Low battery indicator	LED
Ambient operating temp.	1 – 50°C
Relative humidity	10 – 95%
Weight	0,3 kg.

Supplied in a protective case, complete with headset and rubber focussing probes

Visual leak & low battery indication and sensitivity selection knob

LOCATOR-D-LUX version with hard hat headset available

Chapter 4

LOCATOR®-EV

Ultrasonic air leak detector

The LOCATOR-EV is an ultrasonic air leak detector that detects compressed air leaks in a frequency spectrum of 36 - 44 kHz.

PRODUCT FEATURES

The LOCATOR-EV is lightweight and easy to operate. The reliable and accurate detection capacity makes it a highly efficient air leak detector. Air leak turbulence or friction produce high frequency ultrasonic waves and are normally higher than 20 kHz. This is typically above the range of human hearing levels.

The ultrasonic waves can travel in air and are highly directional. This directional aspect allows the LOCATOR-EV to isolate the ultrasonic sound amongst other external factory sounds, which will prove very useful in preventive maintenance, trouble shooting, quality control and diagnostic data collection on any compressed air system.

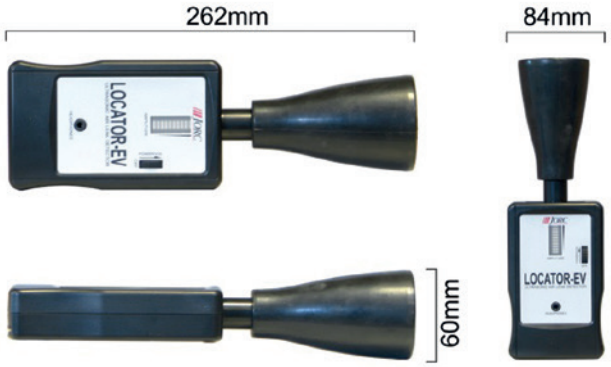
COMMERCIAL BENEFITS

- Easy and effective detection of compressed air leaks within a frequency spectrum of 36 - 44 kHz.
- Locates repair points in air lines, offering energy & money saving options
- Production does not need to be disturbed when the LOCATOR-EV is being applied
- Cost competitive, offering a rapid pay-back
- Light and easy to operate, no training required
- Consult JORC for private labelling options

TECHNICAL ADVANTAGES

- Leaks will be detected from a distance up to 10 metres
- Includes sensitivity selection knob / noise reduction filter up to 70 dB
- Supplied in hard protective case, complete with a headset and rubber focussing probe
- Fully automatic – no maintenance

PRODUCT DIMENSIONS



PRODUCT SPECIFICATIONS

Construction	Hand held ABS ultrasonic processor
Circuitry	SMT/Solid state hybrid heterodyne receiver
Frequency Response	36 - 44 kHz.
Indicator	10 segment visual leak indication LED bar
Power	9 volt alkaline battery (included)
Headset	Double headset wired monophonic Impedance: 16 ohms.
Response time	300 mille seconds
Ambient operating temp. Relative humidity	10 – 60°C 10 – 95%
Weight	0,3 kg.

Supplied in its own hard case

Visual and audible leak indication

Hard hat headset optionally available

Chapter 5

AIR-SAVER® G1

Compressed air energy saver

The AIR-SAVER G1 is installed in the compressed air line after the air receiver. The AIR-SAVER G1 opens and closes the air supply to the factory, based on customer specific working shifts.

PRODUCT FEATURES

A typical compressed air system has air loss through pipe work connections, leaking float type drains, etc.

The AIR-SAVER G1 will open the ball valve at the beginning of a working shift and close the ball valve when the working shift is over. From that point on, all compressed air will remain in the air receiver until the next working shift, rather than being lost through leakages.

The clever and versatile programming feature allows or customer specific settings and is totally adaptable to the working hours of each individual factory.

The AIR-SAVER G1 can be installed in all pipe line systems up to 1". Remote switching kits are available to operate the AIR-SAVER G1 from a distance.

COMMERCIAL BENEFITS

- At least one air receiver's worth of compressed air savings per day
- No unnecessary compressor start-up during periods when compressed air is not required
- Compressor, dryer and filter activities are reduced during factory closing hours
- Possibility to shut of parts of the pipe line system where compressed air is not needed continuously
- Language selection feature (English, German, Spanish, French and Dutch)
- Each individual day can be programmed according to specific working day shift requirements
- Time programmed or remote controlled
- Manual valve opening and closing possible, in case of a power failure
- Consult JORC for private labelling options

TECHNICAL ADVANTAGES

- Microprocessor controlled (7 day program feature - multiple cycles possible each day)
- Extended programming features relating to valve open and close cycles (100)
- Slow ball valve rotation 90°in 30 seconds to avoid "water-hammer" when opening or closing
- Stainless steel ball, valve is nickel plated brass
- Battery saves the installation set-up during power failure
- Battery life indication in the display
- Compact design-Easy to install

PRODUCT DIMENSIONS

Manual valve opening and closing possible, in case of a power failure

PRODUCT SPECIFICATIONS

Supply voltage	115VAC or 230VAC 50/60Hz
Power consumption	Approx. 7W during cycle rotation
Opening / closing duration	30 sec. / 90°
Ambient temperature	1 - 50° C
Medium temperature	1 - 100° C
Valve	Nickel plated brass with stainless steel ball
Connection	1" BSP or NPT
Pressure range	0 to 16 bar
Manual override	Yes
Environmental protection	IP54 (NEMA13)
Indicators	LCD indicating program and current time
Timer	display 24 hours
Battery	4 x AAA mini penlight batteries.

CE certified

Built-in quartz controlled timer with LCD display

Remote control option.

G1 Stainless steel rotation ball.

Chapter 6

AIR-SAVER® G2

Compressed air energy saver

The AIR-SAVER G2 is installed in the compressed air line after the air receiver.

The AIR-SAVER G2 opens and closes the air supply to the factory, based on customer specific working shifts.

PRODUCT FEATURES

A typical compressed air system has air loss through pipe work connections, leaking float type drains etc.

The AIR-SAVER G2 will open the ball valve at the beginning of a working shift and close the ball valve when the working shift is over. From that point on, all compressed air will remain in the air receiver until the next working shift, rather than being lost through leakages.

The clever and versatile programming feature allows for customer specific settings and is totally adaptable to the working hours of each individual factory.

The AIR-SAVER G2 can be installed in all pipe line systems up to 2". Remote switching kits are available to operate the AIR-SAVER G2 from a distance.

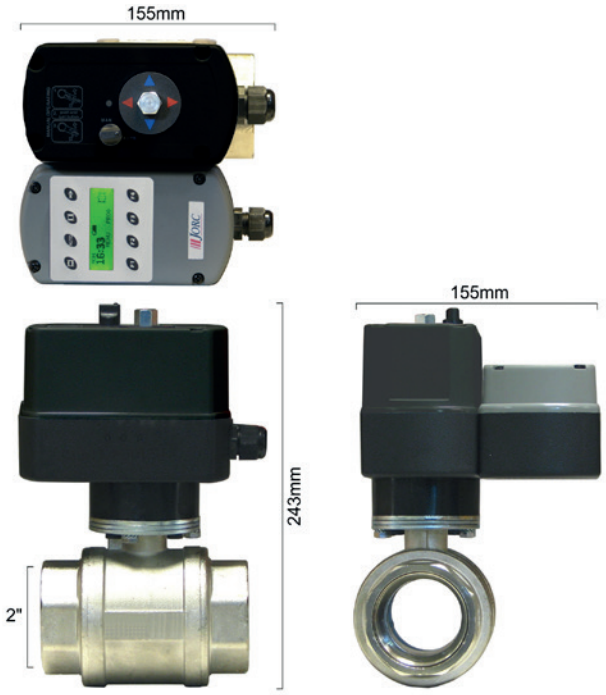
COMMERCIAL BENEFITS

- At least one air receiver's worth of compressed air savings per day
- No unnecessary compressor start-up during periods when compressed air is not required
- Compressor, dryer and filter activities are reduced during factory closing hours
- Possibility to shut of parts of the pipe line system where compressed air is not needed continuously
- Language selection feature (English, German, Spanish, French and Dutch)
- Each individual day can be programmed according to specific working day shift requirements
- Time programmed or remote controlled
- Manual valve opening and closing possible, in case of a power failure
- Consult JORC for private labelling options

TECHNICAL ADVANTAGES

- Microprocessor controlled (7 day program feature - multiple cycles possible each day)
- Extended programming features relating to valve open and close cycles (100)
- Slow ball valve rotation 90° in 105 seconds to avoid water-hammer when opening or closing
- Stainless steel ball, valve is nickel plated brass
- Battery saves the installation set-up during power failure
- Battery life indication in the display
- Compact design-Easy to install

PRODUCT DIMENSIONS



Manual valve opening and closing possible, in case of a power failure

PRODUCT SPECIFICATIONS

Supply voltage	115VAC or 230VAC 50/60Hz
Power consumption	7W during cycle rotation
Opening / Closing duration	105 sec. / 90°
Ambient temperature	1 - 50° C
Medium temperature	1 - 100° C
Valve	Nickel plated brass with stainless steel ball
Connection	2" BSP or NPT
Pressure range	0 to 16 bar
Manual override	Yes
Environmental protection	IP54 (NEMA13)
Indicators	LCD indicating program and current time
Timer display	24 hours
Battery	4 x AAA mini penlight batteries.

CE certified

Built-in quartz controlled timer with LCD display

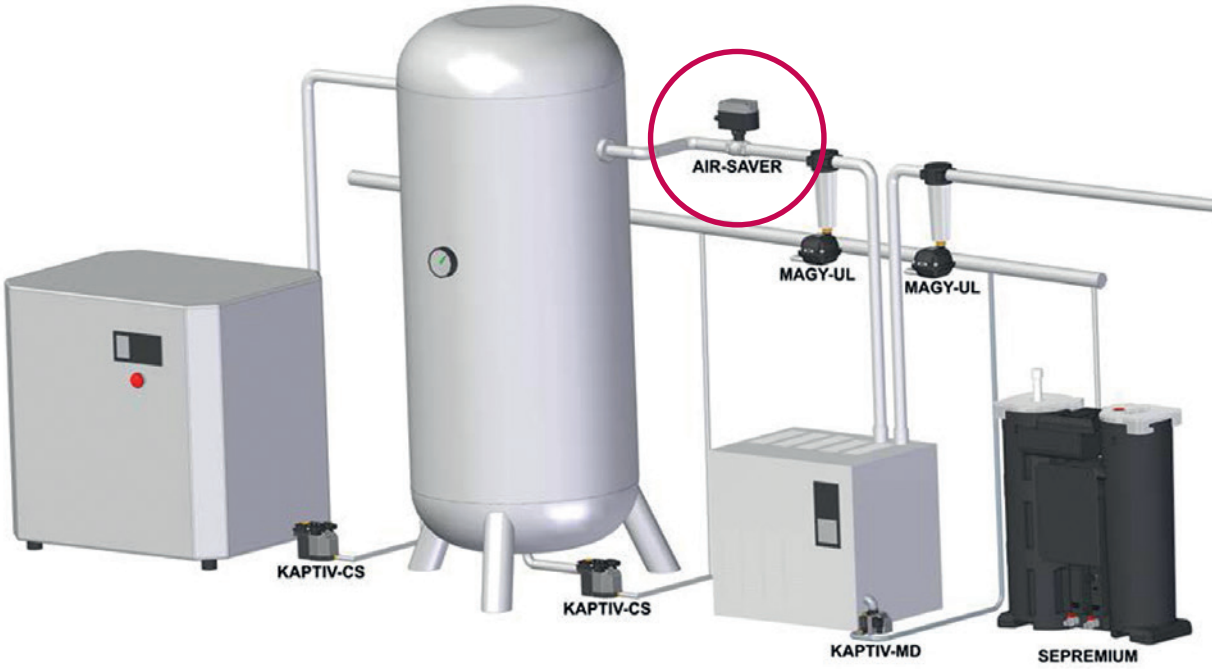
Remote control option

G2 Stainless steel rotation ball

Chapter 7

INSTALLATION

POSITIONING



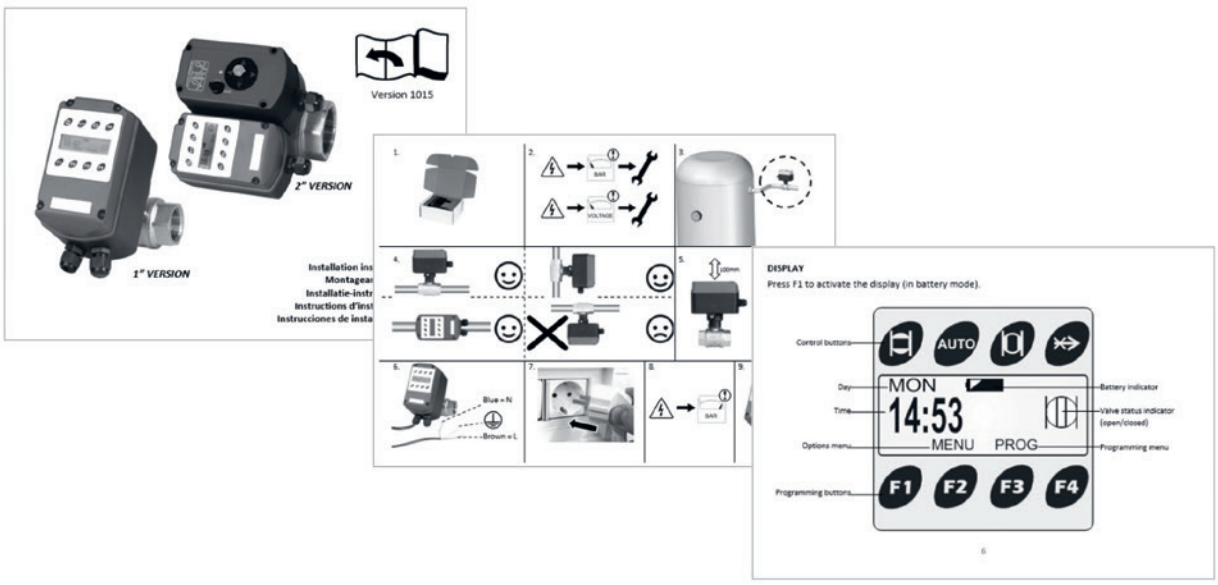
The AIR-SAVER typically gets installed after the receiver (air tank). Once closed it retains the compressed air built up in the receiver and also ensures that the compressor does not run unnecessarily during moments when it is not required (after hours, public holidays etc.).

In addition, the AIR-SAVER can be used to section off certain compressed air pipelines if not required.

INSTALLATION

Detailed instruction manuals will guide you through the simple installation procedure. Our instruction manuals are designed with many illustrations and simple text.

In addition, the JORC instruction manuals are set up in various languages.



AIR-SAVER ACCESSORIES

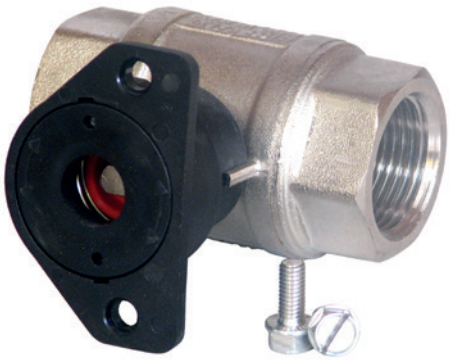
REMOTE SWITCHING KIT

The air pipe line is often positioned high up, under the ceiling. Attending to the AIR-SAVER to manually open or close the valve can be time consuming. To simplify this procedure we offer a remote switching kit with 5 meters cable.

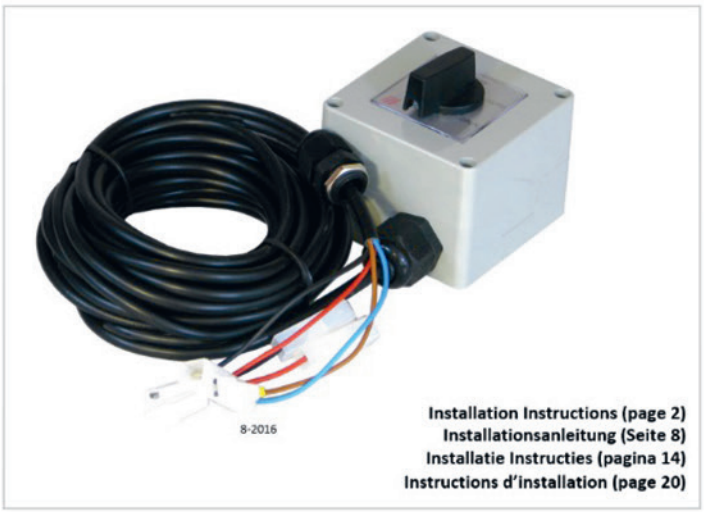
The remote switching kit allows for open/close control at eye level.

JORC can supply the AIR-SAVER pre-wired to the remote switching kit or it can be ordered as a separate item.

Connecting and installing the remote switching kit is a simple and straightforward procedure, an instruction manual is available.



Replacement valve kits are available



Notes:

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