



WELCOME



## REAL TIME VALVES (RTV) Air Flow Saver

# REAL TIME VALVES (RTV)

We introduce a new generation of valves with a dose range, which is 1000 times higher as conventional valves

KTR SYSTEMS has the answer to all the existing problems in the valve market.

Our valves can be used wherever a flow is present, regardless of whether it is air, gases, water or viscous media, including a wide range of pressure and flow

Flexibility, cost-efficiency, long life only a few advantages! Our valves make new applications possible, increase the efficiency and decrease the costs in production processes.



# The fastest valve on earth?

Unbeatable in reliability, flexibility and life time

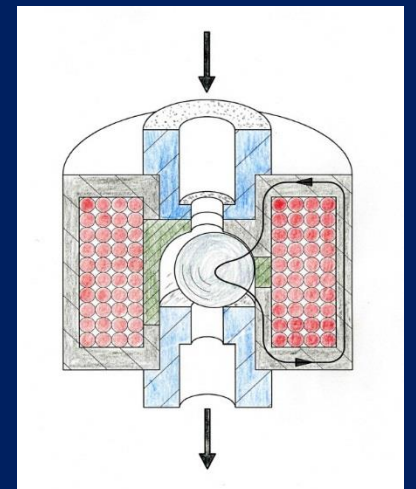
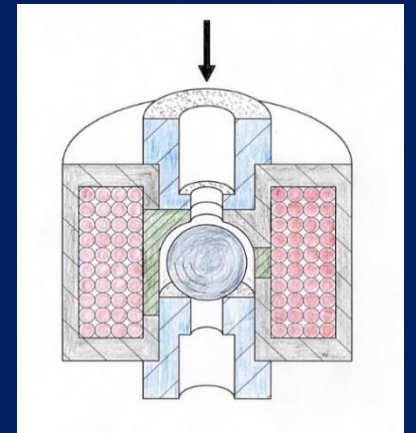
Real time and direct switching valve with a magnetized ball as a closure element for gases and liquids.

The pressure difference between the valve inlet and the outlet keeps the ball in the valve seat.

The ball is the only moving part of the valve. For the opening of the valve, a magnetic field is generated by the magnetic coil, which let force acts laterally on the ball and the ball rolls from the valve seat.

Without a magnetic field, the flow returns the ball back to the valve seat, the valve closes.

The magnet system, the valve seat diameter and the diameter of the valve ball determine the characteristics of such a valve, which can easily be adapted to different requirements by varying these parameters. This also results in a wide application field for this type of valves.



# Product features/ USP

Our valves are extremely flexible and replaces a large number of individual solutions

Our Valves don't have the disadvantages of needle or spring systems and convince through an extreme long life time - tested are more than 3bn switching cycles due to low friction and minimal mechanical load.

In addition no hydraulic system is required.

Only this facts lead to high cost savings in the production process

1

## **EGG LAYING WOOL MILK SOW**

Suitable for all gases and liquids, heat and cold resistant (plus / minus 200 degrees Celsius), usable for pressure control

2

## **LARGE DYNAMIC RANGE**

100 nl / min to 5l / min in one component; dose range is 1,000 times higher as conventional valves

3

## **FAST SWITCHES ALLOWS HIGH FLEXIBILITY**

extremely fast (1ms), direct and stochastic switching, which allows real time applications

4

## **WE LOVE PRESSURE**

Pressure range from 0.5 bar to 1.000 bar

5

## **COMPACT DESIGN**

Easy to clean, corrosion-resistant and requires no lubrication; regulating and self-locking in one (permanently technically dense)

6

## **FREQUENCIES UP TO 1000 HZ**

By pulse width modulation the flow can be controlled linearly

7

## **WE DON'T LIKE FAILURES**

No resonance frequencies

# Air compression industry

## Application: Air Flow Saver

*Air Flow Saver contribute to reduce consumption of compressed air for blow applications in many industries and markets*

### Market Need & Opportunity:

#### Global Environmental Issues

- Global warming
- Air & Water pollution

#### Trend on reduction of CO2 emission

- Political driven
- Market is struggling to achieve reduction
- Energy saving

Pressed air equals expensive energy

#### What may cost compressed air?

Of course, the air itself costs nothing - but the required electrical energy is even more expensive: electricity worker is four times as expensive as that of gas or oil. So it is always true that the more often a compressor has to start in order to maintain even pressure in the air system, the more expensive compressed air will ultimately be. Not seldom the energy cost for air compression is more than 30% of the total energy balance of a manufacturing company..



# Air compression industry

## Application: Air Flow Saver

How does it work?

Converts continuous air flow into pulse blow

Reduces consumption of compressed air

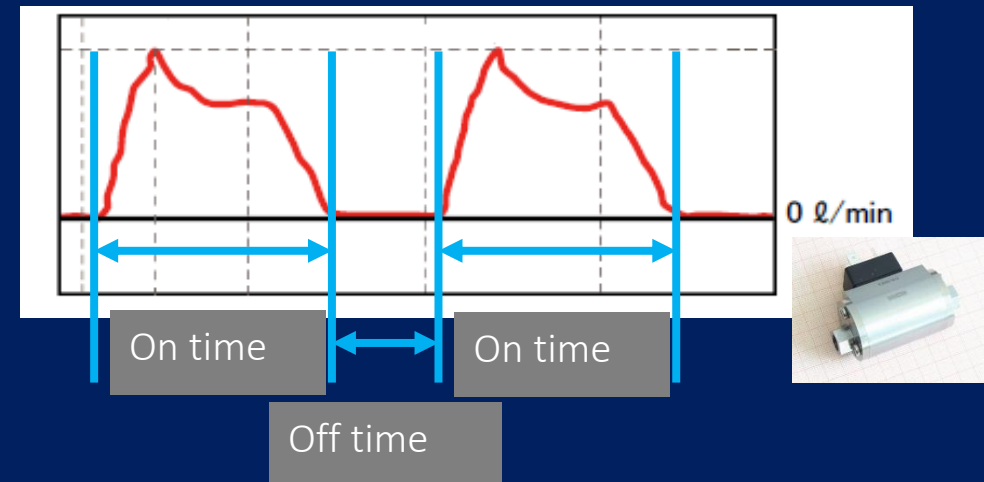
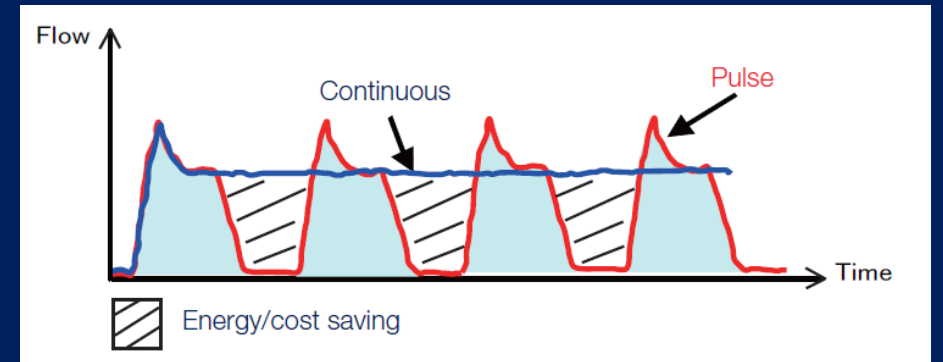
Reduces CO2 emission associated with production of compressed air

Improved the impulse of air blow resulting in higher efficiency

By pulse width modulation the flow can be controlled linearly up to 1000 Hz

Extremely fast (1ms), direct and stochastic switching, which allows real time

Big effect due to very fast short strong impacts and an individual controllable on / off timing



# Air compression industry

## Application: Air Flow Saver

### Value Proposition:

Reduces consumption of compressed air resulting in energy saving

Improves impulse of air blow resulting in higher efficiency

Reduces CO2 emission associated with production of compressed air

Easy installation in existing pneumatic systems

Short payback time

Will contribute to companies environmental objectives

Does not have the technical limitations of the competitors



# Air compression industry

## Target Markets with high consumption of air compression

### Forming

Rubber/plastic Molding  
Die-casting  
Injection molding



### Cutting

Machine tool cutting  
Production machinery tool



### Converting

Paper applied  
Non-Food packaging, Converting



### Packaging and Conveying

Cleaning and Distribution



### Printing Industry

Paper feeding/handling machinery



### Filling

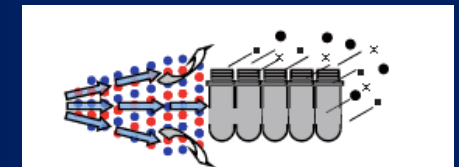
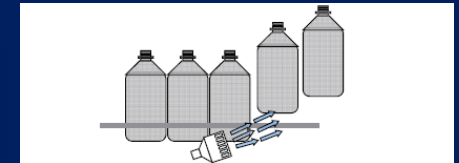
Beverages and Food

# Air compression industry

Markets : Filling Tech and PET bottle manufacturer

Filling industry and PET bottle manufacturer uses assist air pulse for molding, cleaning and 'push' out process. Air blow process is expensive and customer is looking for saving.

Pulsed blow by RTV makes the process more effectively and compensate to save about 50% of air consumption.



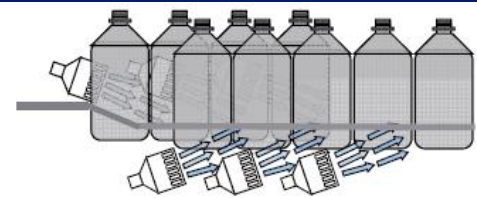
→ Savings in energy and CO<sup>2</sup>

# Air compression industry

## Markets : Can manufacturer

Leading manufacturer of cans for primary packaging process uses assist air blow in handling line to prevent jamming of cans. Air blow process is expensive and customer is looking for saving.

Pulsed air blow by Air Flow Saver avoid jamming of can in the handling line more effectively and save about 40% of air consumption.

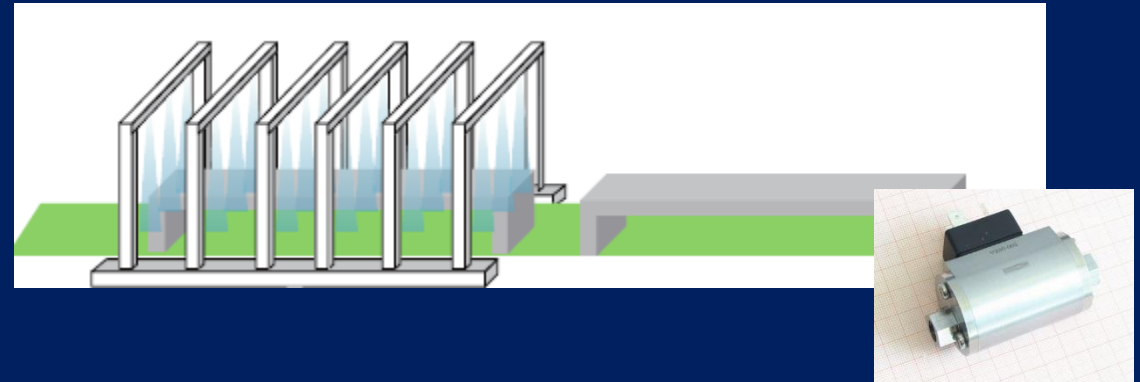


# Air compression industry

## Markets : Composite printing machine

Composite printing machine supplier using air blow to remove dust from molded resin parts. Air blow process is expensive and customer is looking for energy saving and CO<sup>2</sup> reduction.

Pulsed blow by Air Flow Saver clean parts effectively and compensate to save about 40% of air consumption.

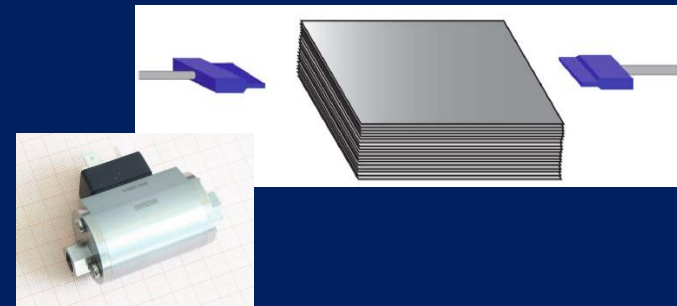


# Air compression industry

## Markets : Paper industry

Paper manufacturer using air blow to prevent paper sheet sticking remove in high speed production process. Customer is looking for energy saving and CO<sup>2</sup> reduction.

Pulsed blow by Air Flow Saver effectively avoid paper stacking at paper handling process. Introducing RTV could save about 40% of air consumption.



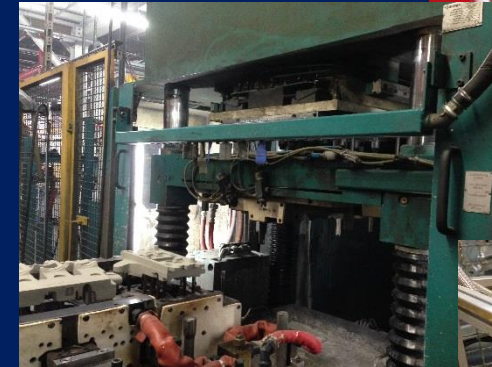
# Air compression industry

## Markets : Car manufacturer

Air compression improvement for car manufacturers is possible for:

- production of gear wheel operation
- production of machined parts
- cleaning (remove of swarf) of casted parts
- final test and clean of passenger car body
- clean sand casted parts, air blow removes all sand particles from parts
- bolt feeder equipment
- Laser weld application

Pulsed blow by Air Flow Saver effectively save a energy and CO<sup>2</sup>in a lot of car manufacturing processes.



# Air compression industry

## Competition: Air saving products

### SMC

Reduce air consumption

Not effective for blow application

Reduces air consumption but also impact of air blow



### Parker

Only manually adjustable pulse frequency

Only duty cycle speed by adjustment needle

Frequency must be less than 5 Hz to operate the pneumatic valve

Frequency must be between 2 and 22 Hz to operate electric valve

Use of pneumatic to save air flow



No competitive valve on the market!

# Thank You.

The best way to predict the future is to invent it

Get in Touch

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