



WELCOME



REAL TIME VALVES (RTV)  
filling and dosing

# 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

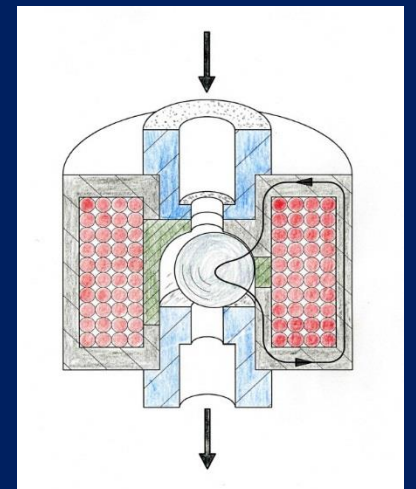
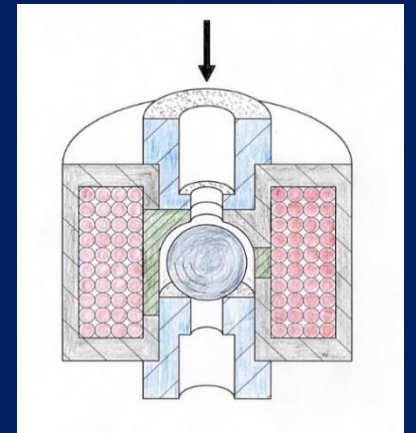
Real time and direct switching valve with a magnetized ball as a closure element for gases and liquids.

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

# Filling and dosing

Application: Filling Tech ( Beverages etc. )

Valves are a dominant factor in filling technology - in number and importance.  
Fast or slow - just these two fill speeds are available with conventional valves.

The market is dominated by elaborate electro-pneumatic valves, which are characterized by low adaptability, insufficient service life, high space requirements, high energy consumption and a complex infrastructure.



# Filling and dosing

## Application: Filling Tech ( Beverages etc. )

Our valve technology solves most topics of filling technology!

- No complicated construction or peripherals - only the valve and the electronic control is required!
- Performance enhancement: Filling speeds can be adapted to the product or the requirements for greater efficiency
- Drastically reduced space requirement
- Saves energy costs and media due to lack of compressed air and low power requirement on the valve
- Less production disruptions due to trouble-free working valve
- Improved filling quality by avoiding overfilling and underfilling as well as non-existent hygiene issues of a pneumatic solution.
- New applications enable the complete elimination of process components

→ High cost savings and increased quality!



# Filling and dosing

## Application: Filling Tech – high grade of savings in energy

Project : Reduction of Air Consumption

Problem:

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.

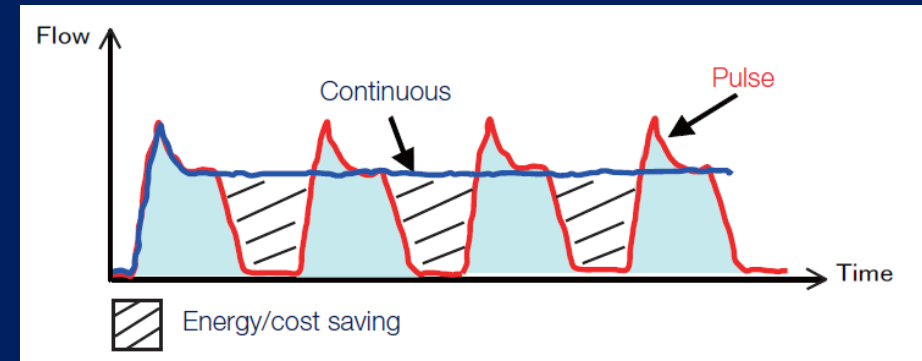
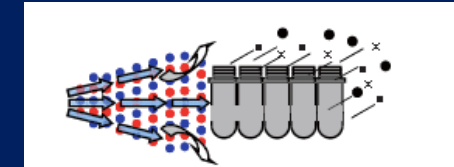
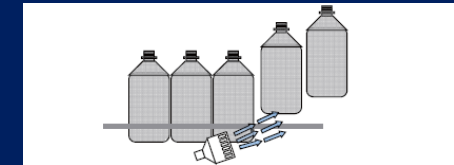
Solution:

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

Added Value:

- Easy installation
- Improvement of impulse of blow
- Energy savings ( ~ k 30 \$ per plant )
- CO<sup>2</sup> reduction
- Improvement of process

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



# Filling and dosing

## Application: Filling Tech – flexibility and cost savings

Project: Stand-alone application for filling beverage concentrates

In many cases, bottlers of flavor-intensive beverages have the problem that the flavorings accumulate in their piping systems, seals, etc.

Elaborate cleaning processes are the result up to missing flexibility in the filling. Especially in the filling of energy drinks is often the situation given that the plants are contaminated by the flavoring and you can not fill other drinks on the system.

We develop a self-sufficient system in which the concentrate is fed to the beverage after filling and before closing. Thus, the flavorings no longer burden the bottling plant. In addition, for bottlers who today renounce the bottling of aromatic drinks, new opportunities are possible.

High optimization potential exists in the complex mixing processes in the pre-process of filling. For some drinks, these can be omitted if a concentrate is added to the base drink.



➔ High cost savings and increased flexibility!

Projekt is sponsored by ESA

**OPEN CALL  
FOR DEMONSTRATORS**

Receive 39.000 euro to solve a technical challenge using space technology



esa  
space solutions

# Filling and dosing

## Application: Filling Tech – easy and reliable

### Project: Filling and CO<sup>2</sup> Valves

Today's valves in the filling technology are complex, vulnerable and subject to high maintenance. In addition, pneumatic systems have a high energy requirement. Maintenance intervals and susceptibility lead to production losses. Lack of speed leads to high space requirements.

Our real-time valve (RTV) does not have these disadvantages. The use of this valve leads to high reliability, less maintenance intervals and production shutdowns, smaller footprint and savings.

→ High cost savings and increased efficiency!



# Filling and dosing

## Phase of development – multi ball valve

### Project: New Applications in Filling Industry

We are in the final stage in the development of a three-pole valve, which controls three balls with a solenoid.

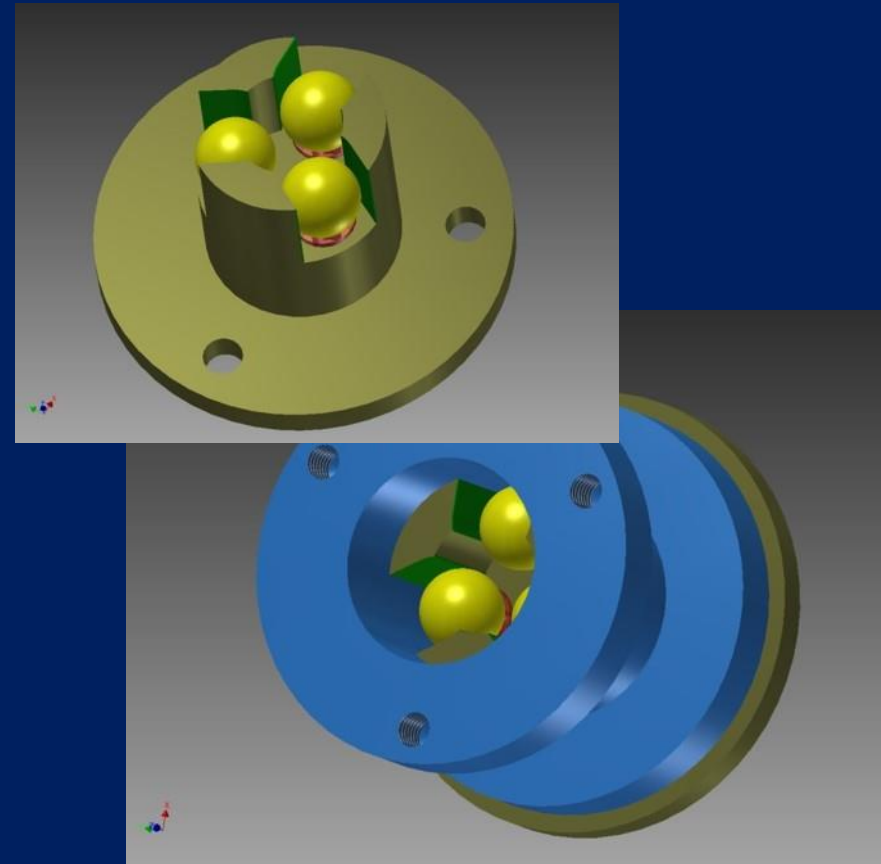
Why?

With this valve completely new applications can be implemented:  
It replaces the complex design of pilot operated and readjusted valves with its functionality.

The valve is able to replace mixing processes as up to 3 media can be mixed in the valve and then filled.

Several valves, such as the filling valve, Co<sup>2</sup> valve and degassing valve are combined in this valve.

→ Flexibility in the filling industry



# Thank You.

The best way to predict the future is to invent it

Get in Touch

---

KTW SYSTEMS GmbH  
Gleeser Str. 14, 56653 Wehr  
[info@ktwsystems.de](mailto:info@ktwsystems.de)  
+49 160 411 1100

