



KIESELMANN

# Single seat and double seat valves



**KIESELMANN**

FLUID PROCESS GROUP



**PREMIUM CLASS -**  
the KIESELMANN double seat valve

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## KIESELMANN SINGLE SEAT AND DOUBLE SEAT VALVES

# Sits and fits

Full control. With valves precisely matched to your process – from the classic single seat valve through the double sealing single seat valve to the premium class: the KIESELMANN double seat valve.

### **SINGLE SEAT VALVES**

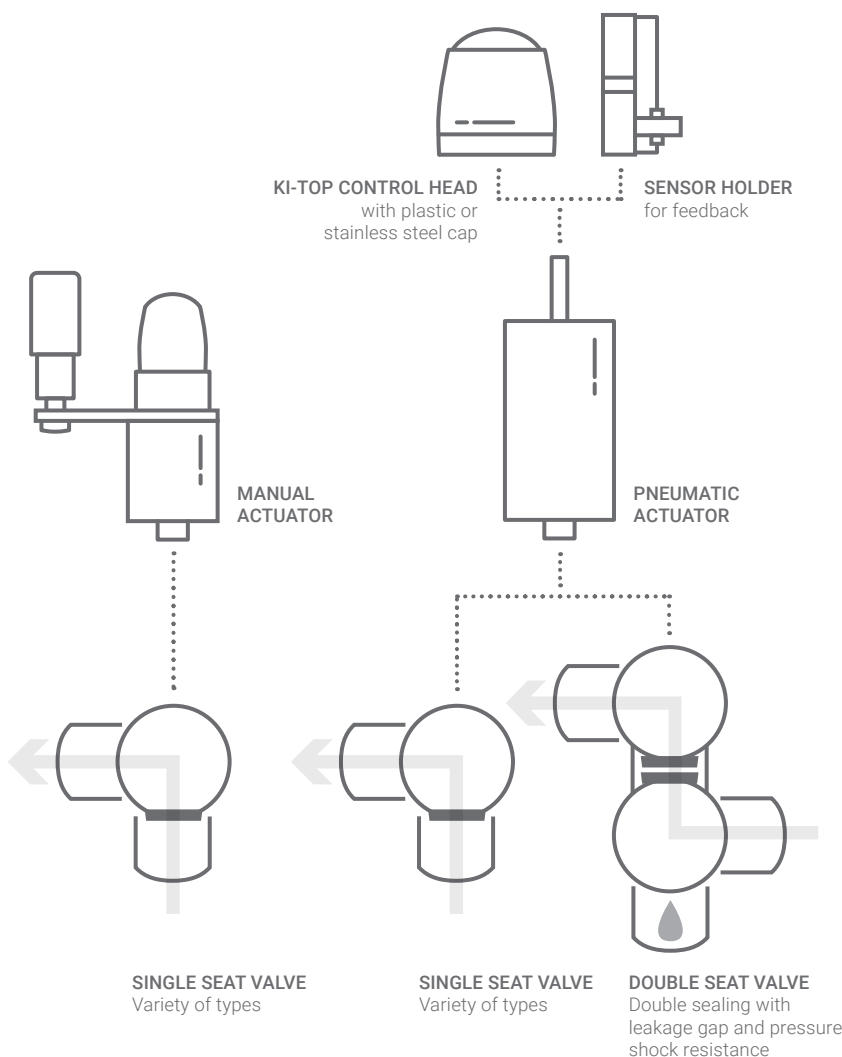
for hygienic isolation of crossing pipes.





### DOUBLE SEAT VALVES

for mixproof separation of different liquids in automated process systems.



### Modular valve system

The modular construction of the KIESELMANN single seat and double seat valves allows numerous independent configurations. The housing type, the seat concept as well as the actuator and control technology are combined according to your specific requirements.

**Modularity means flexibility.** Adjustments can be carried out quickly and safely. Changing over to a more powerful actuator or a different control head is really simple with the KIESELMANN single seat and double seat valves.

We offer many common sealing materials for your specific processes.



# Single seat valves

The modular design of the KIESELMANN single seat valves enables great solutions even in small nominal diameters.



Single seat valve



Control valve



Overflow valve



Long-stroke valve



Two-way changeover valve



Tank outlet valve



Non-return valve

# Mixproof valves

Quickly detect and discharge leaks.



Double sealing  
single seat valve



Double seat valve



3/2 way double seat  
changeover valve



Piggable  
double seat valve



Double seat tank  
outlet valve



Double seat valve  
blank plug

KIESELMANN SINGLE SEAT VALVES

# A seat for all occasions

KIESELMANN single seat valves are perfect for the safe and controlled isolation and media flow control in process plants.





Fe max. 4,0  
5571040111-...



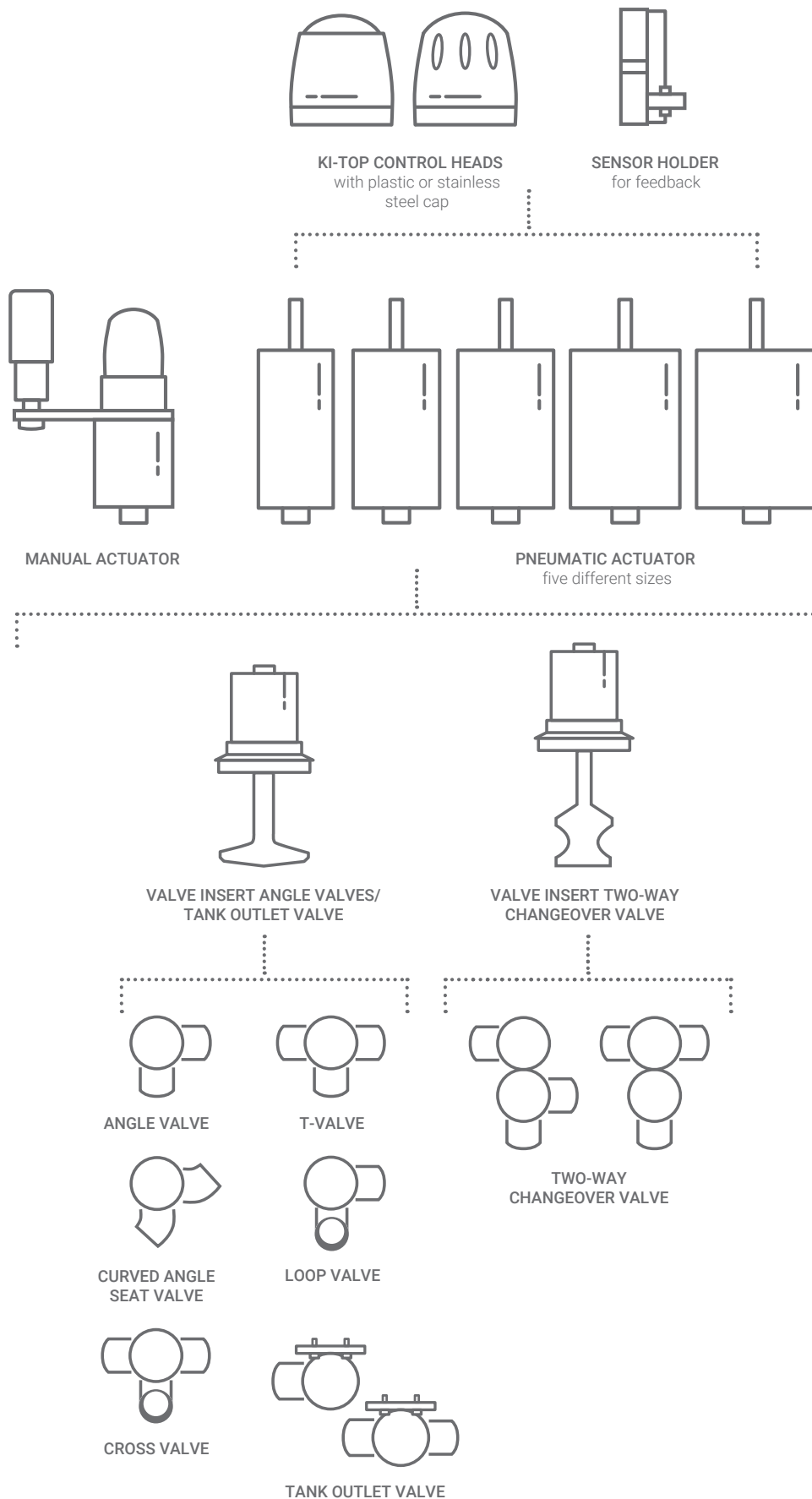
DN 150  
316L

106 PD 702 13V 94

SV S Na 1110 1110

## KI-DS SINGLE SEAT VALVES

Can be combined exactly as required



## KI-DS SINGLE SEAT VALVES

# Compact and flexible

The universal single seat valve modular system allows any custom configuration.

**Talk to us:** We will configure the valves for you. In this way you will also benefit from the many possibilities for upgrading.

The KI-DS valve range is notable for its modular and compact design. It includes double-seal single seat valves, angle valves, T-valves, curved angle seat valves, loop valves, cross valves, two-way changeover valves and tank outlet valves.

### Universal linear actuators with a twist

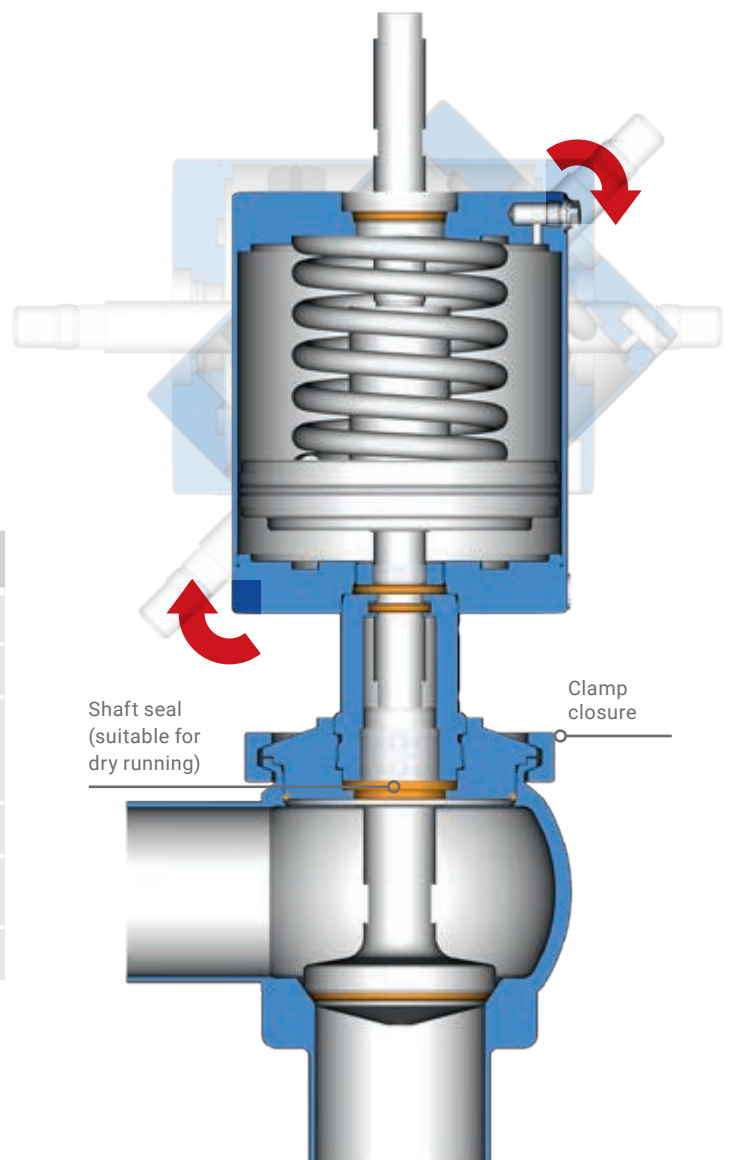
**Stay flexible:** The KIESELMANN modular system offers you the right actuator for every application area. If your process conditions change, you can quickly retrofit the suitable actuator, simply and without adapter pieces.

**An additional bonus:** Simply by turning, the base setting of our actuators can be changed. From air-opening spring-closing to spring-opening air-closing and vice versa. All KIESELMANN actuators have the same height.

TECHNICAL DATA	
Nominal diameters	DN 25 – 125/1" – 4"
Materials in product contact	1.4404/AISI 316L
Sealing material	HNBR (max. 120 °C, SIP 30 min) EPDM (max. 140 °C, SIP 30 min) FKM (max. 100 °C, SIP 30 min)
Product-contacting surfaces	Ra ≤ 0.8 µm, e-polished
Continuous operation temperature	max. 95 °C
Control air	5.5 – 8.0 bar

### ADVANTAGES

- > 5 performance-matched actuators with variable base setting and 2-year warranty
- > Hygienically safe with closed lantern with leakage drain
- > Hygienic design deadspace-free housing
- > Comprehensive modular system







## CONTROL VALVES

# Control without exception

KIESELMANN control valves are based on the modular design system of the single seat valve range. Within a nominal diameter different flow coefficients as well as control characteristics and seal types can be implemented.



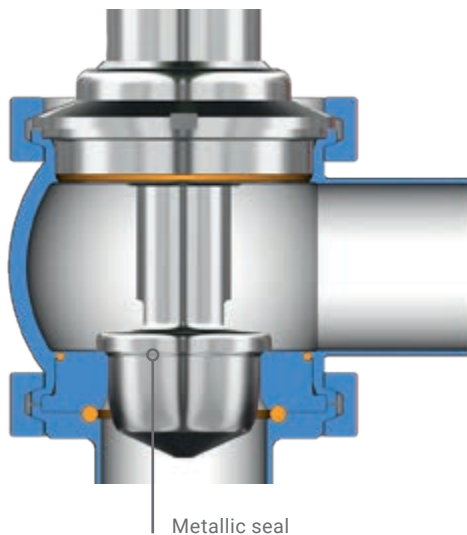
Control valve with membrane actuator.  
With reciprocating actuator as standard.

**Exact process control:** KIESELMANN control valves are available in a 1-, 2- and 3-stage version and in addition can also be configured as mixing and distribution valves. Single seat control valves are always available in linear and equal-percentage versions.

Their design is based on the proven, hygienic concept of the KI-DS valve range. This makes them especially suitable for sensitive production areas in the food and beverage industry.

### Flexible due to replacement seat concept

The key feature of this valve series is the hygienic replacement seat concept. There is a choice of linear or equal-percentage control characteristics. **The cone and the seat** can be replaced with just a few actions. The seal version can be changed easily from soft to metallic. For the greatest possible flexibility, our control valves can be adjusted to a flow rate coefficient of 0.2 m<sup>3</sup>/h to 160 m<sup>3</sup>/h, without complex upgrading work being required.



### ADVANTAGES

- > Simple adaptation
- > Linear or equal-percentage control
- > Flexible cone & replacement seat concept
- > 2 actuator versions each in 5 sizes

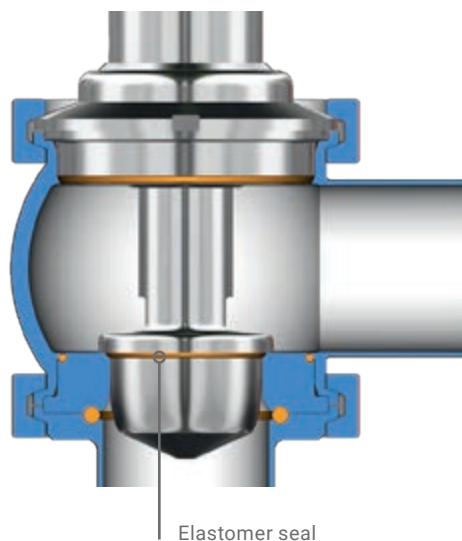
TECHNICAL DATA	
Nominal diameters	DN 20 – 125/1" – 4"
Materials in product contact	1.4404/AISI 316L
Sealing material	HNBR (max. 120 °C, SIP 30 min) EPDM (max. 140 °C, SIP 30 min) FKM (max. 110 °C, SIP 30 min)
Product-contacting surfaces	Ra ≤ 0.8 µm, e-polished
Nominal pressure	PN 16
Continuous operation temperature	max. 95 °C
Control air pressure	min. 5.5 bar
Actuators	Membrane actuator Reciprocating actuator Manual actuator (hand crank)



#### DID YOU KNOW....

all fixings for our control valves are designed as easy-undo clamp connections? This enables individual parts to be replaced simply.

*Alexander Hauser, Foreman of industry at KIESELMANN*







## OVERFLOW VALVES

# Constant pressure conditions

Overflow valves provide pressure relief for piping systems. In contrast to safety valves they are used as continuously-operating process valves, for example as a bypass valve behind positive displacement pumps.

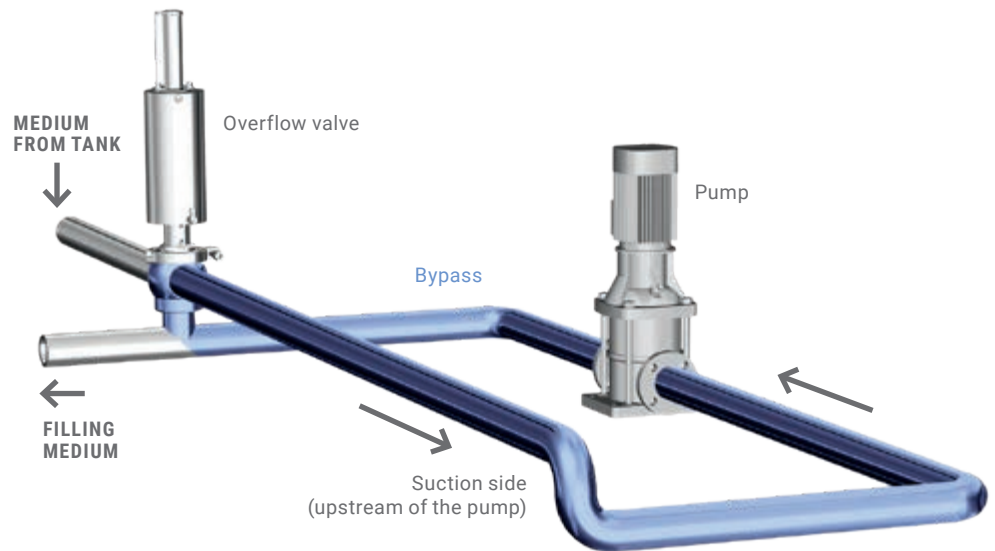
Possible housing versions: Angle valve, T-valve, cross valve and loop valve.





## Function in the event of excess pressure

As soon as the supply pressure exceeds the set value the overflow valve opens. The medium is routed back to the pump feed via the bypass and forms its own circuit until the overpressure is remedied.



## ADVANTAGES

- > Simple installation of the sensor bracket for feedback (retrofitable)
- > 5 exchangeable actuator sizes
- > Standard version is with pneumatic lifting function
- > No external movable components – no risk of injury
- > Optional: purely pneumatic actuator



**Precise to the full stroke:** Our overflow valves relieve pressurised spaces when impermissible pressures arise. The medium is routed to the exterior or into a closed system in a controlled manner. The flow-optimised disc geometry ensures precise opening and closing behaviour as well as high flow capacity.

The opening pressure can be adjusted and is secured against unintended adjustment. By pneumatic lifting the valves can be opened to the full stroke, e. g. for CIP (Cleaning-In-Place).

The actuators can be fitted with a sensor mounting or automated with a control head. If the adjustment range of the actuator is no longer sufficient, it is very easy to **retrofit** a different actuator. Purely pneumatic drives are also available as an option. Here, the closing pressure of the overflow valve is defined by a pressure superposition of the **double-acting actuator**. The setting of the overlay pressure or the response pressure is then carried out via an external filter pressure regulator.

## TECHNICAL DATA

Nominal diameters	DN 25 – 100/1" – 4"
Materials in product contact	1.4404/AISI 316L
Sealing material	EPDM (max. 140 °C, SIP 30 min) HNBR (max. 120 °C, SIP 30 min) FKM (max. 110 °C, SIP 30 min)
Product-contacting surfaces	Ra ≤ 0.8 µm e-polished
Nominal pressure	PN 16
Continuous operation temperature	max. 95 °C
Control air pressure	5.5 – 8 bar
Actuators	Spring return, adjustable, optional sensor bracket

## LONG-STROKE VALVES

# Modular with maximum stroke

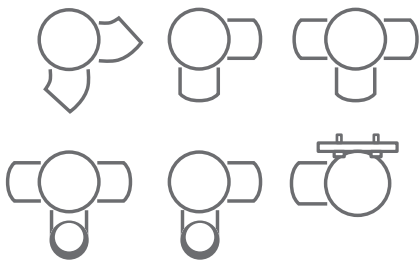
Do you have big plans? Then go straight for the KIESELMANN long-stroke valve. A valve that we think big of, because it holds big pieces and allows them to pass through.

KIESELMANN long-stroke single seat valves are available in all common nominal diameters, from DN 25 to DN 100.

The modular valves with a maximum stroke, deadspace-free housing and maintenance-free actuator are ideal for media containing larger particles, such as e.g. fruit yoghurts.

### TECHNICAL DATA

Nominal diameters	DN 25–100/1"–4"
Materials in product contact	1.4404/AISI 316L
Sealing material	EPDM (max. 140 °C, SIP 30 min) HNBR (max. 120 °C, SIP 30 min) FKM (max. 110 °C, SIP 30 min)
Nominal pressure	PN 16
Continuous operation temperature	max. 95 °C



Available in the versions angle seat valve, angle valve, T-valve, cross valve, loopvalve, tank outlet valve.



## NON-RETURN VALVE

# Onwards and upwards ...

Non-return valves prevent the return flow of a pumped medium in piping systems. If the flow direction changes or the flow is interrupted, the valve closes.

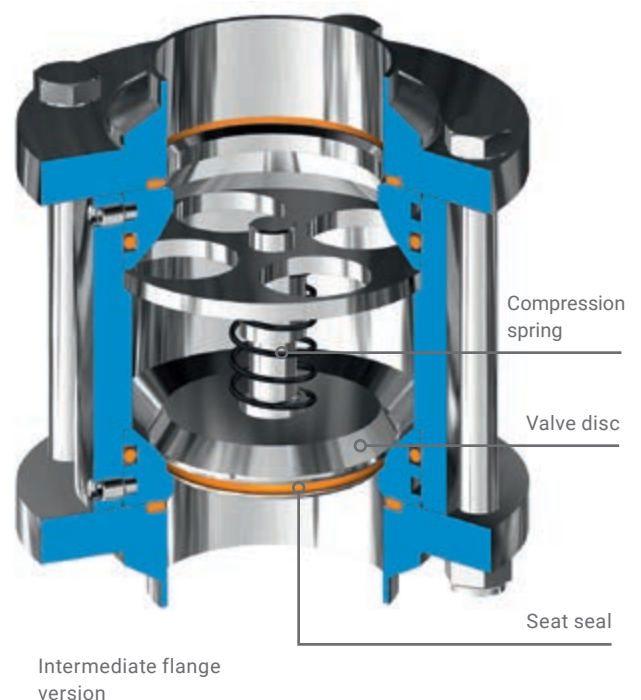
**Non-return valves are ideal for preventing the return flow of a pumped medium in piping systems.**

They are self-operating valves which require no external energy source. Flow is only possible in one direction through non-return valves, i.e. the opening and closing direction is preset.

They open autonomously, as soon as the inlet-side dynamic pressure exceeds the spring force and close automatically with a corresponding pressure drop or flow in the opposite direction. This means for example that the pressure line will not run dry after switching off the pump. In the depressurised condition the valve disc is pushed against the seat seal by the spring preload.

Due to the spring preload, non-return valves are suitable for both horizontal and vertical installation positions.

TECHNICAL DATA	
Nominal diameters	DN 25–65/1"–2.5" (PN 16) DN 80–150/3"–4" (PN 10)
Materials	1.4307/304L 1.4404/AISI 316L
Surface	Ra < 0.8 µm e-polished
Sealing material	EPDM (max. 120 °C, SIP 30 min) HNBR (max. 110 °C, SIP 30 min) FKM (max. 95 °C, SIP 30 min)
Continuous operation temperature	max. 95 °C







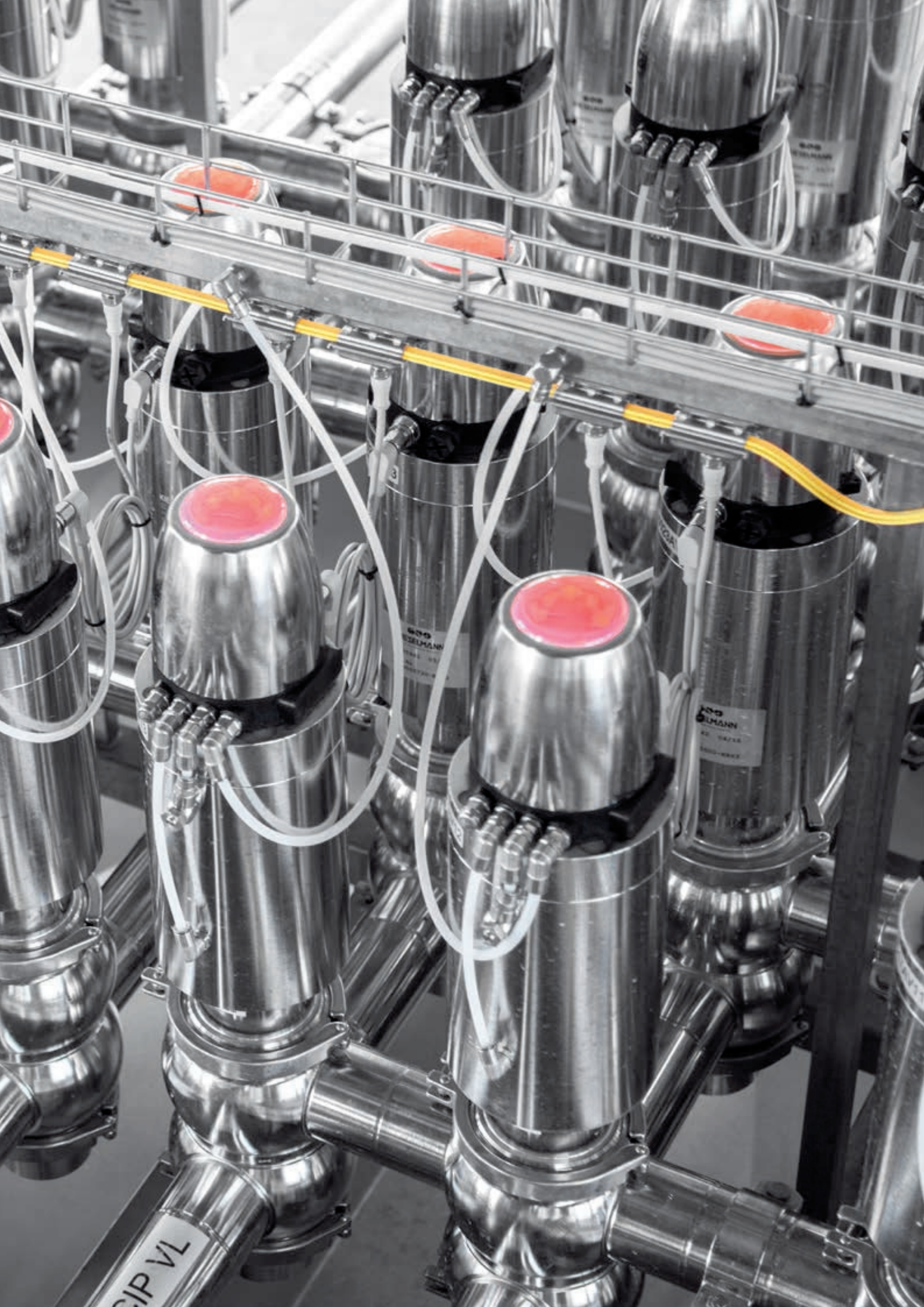
KIESELMANN DOUBLE SEAT VALVES

# Premium class

KIESELMANN double seat valves are the optimum choice to achieve safe separation between incompatible media in automatic process equipment.

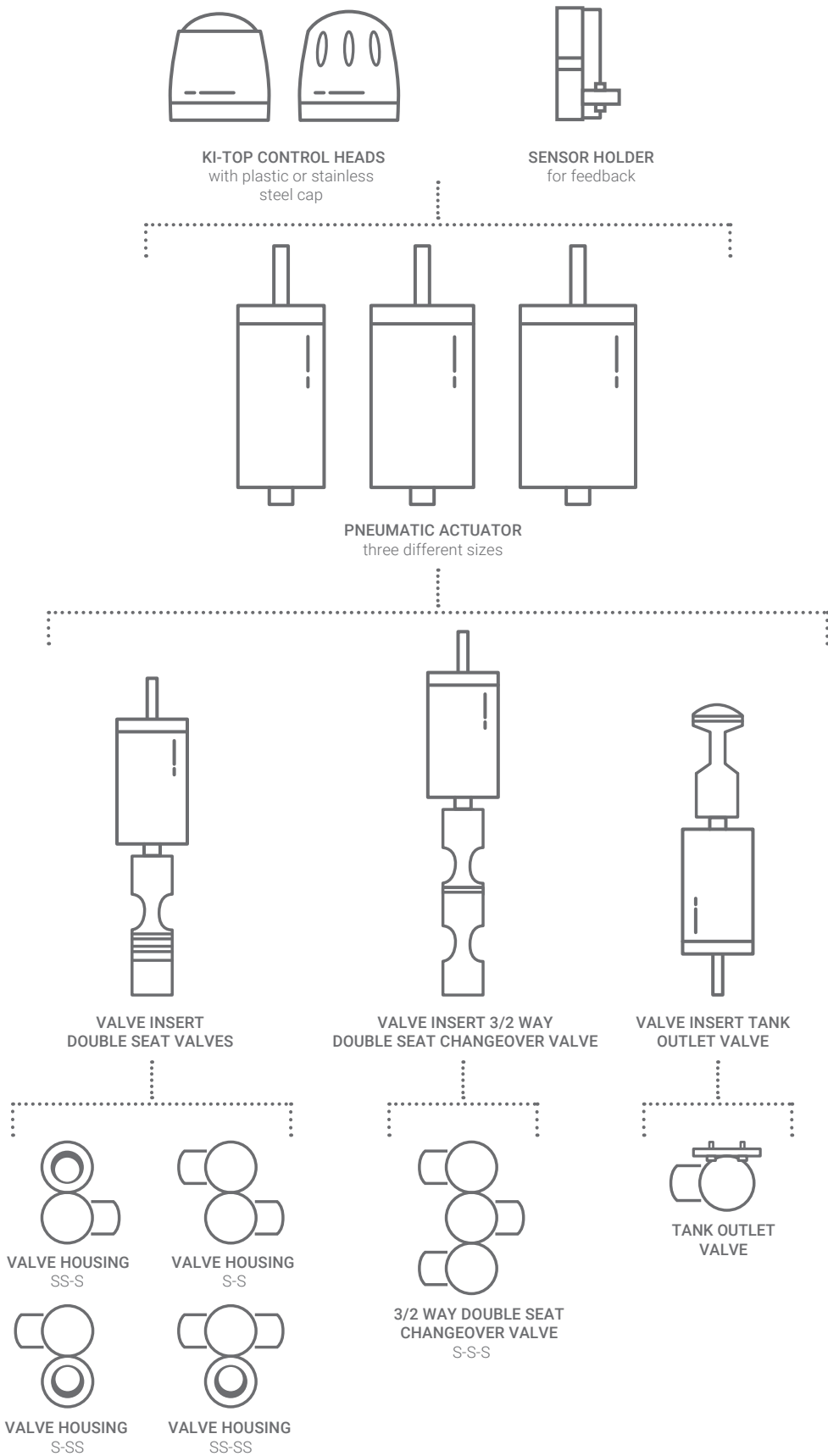






# DOUBLE SEAT VALVES

Can be combined exactly as required





## DOUBLE SEAT VALVES

# The safest method of separation

Our double seat valves are among the most modern mixproof valves on the market.

Two independently controllable valve discs with an atmospheric leakage gap prevent separated incompatible media from mixing. In the closed position, different media are separated from each other with a double seal. Product migration backwards across the valve discs is not possible. Any leaks which may occur – due to potentially worn or damaged valve disc seals – are routed, via the atmospheric leakage gap, to the outside without ever coming into contact with the other medium.

**The easy cleaning of the leakage space** is performed by lifting the upper or lowering the lower valve disc.

**Everything under control thanks to comprehensive automation options:** from optical position display, through valve position detection using proximity switches, to PLC-, AS-i- or IO-Link control heads with integrated electronic position feedback and optional LED all-round display. Even an EX and NAMUR version for explosive environments (Zones 1 and 21 and 2 and 22) is available.



### IT WORKS LIKE THIS

In this YouTube video we show you the full functionality of KIESELMANN mixproof valves. Simply scan the QR code.



### TECHNICAL DATA

Nominal diameters	DN 25–200/1"–6"
Materials in product contact	1.4404/AISI 316L
Sealing material	EPDM (max. 140°C, SIP 30 min) HNBR (max. 100°C, SIP 30 min) <i>k-flex</i> (max. 140°C, SIP 30 min) FKM (max. 100°C, SIP 30 min)
Surfaces in product contact	Ra ≤ 0.8 µm, e-polished
Operating pressure	max. 10 bar
Nominal pressure	PN 16
Continuous operation temperature	max. 95 °C
Control air	min. 5.5 bar
Certification	3A Sanitary Standard

### ADVANTAGES

- > Mixproof separation
- > Housing machined from solid stainless steel block
- > The right valve for every application with the modular design
- > Hygienic design – no backward product seepage across the valve disc seals
- > Extensive automation possibilities
- > Simple and fast seal replacement
- > Product and process safety
- > Universal *k-flex* (PTFE) seal material with high resistance to aggressive media, more information on page 26
- > Leak-free switching

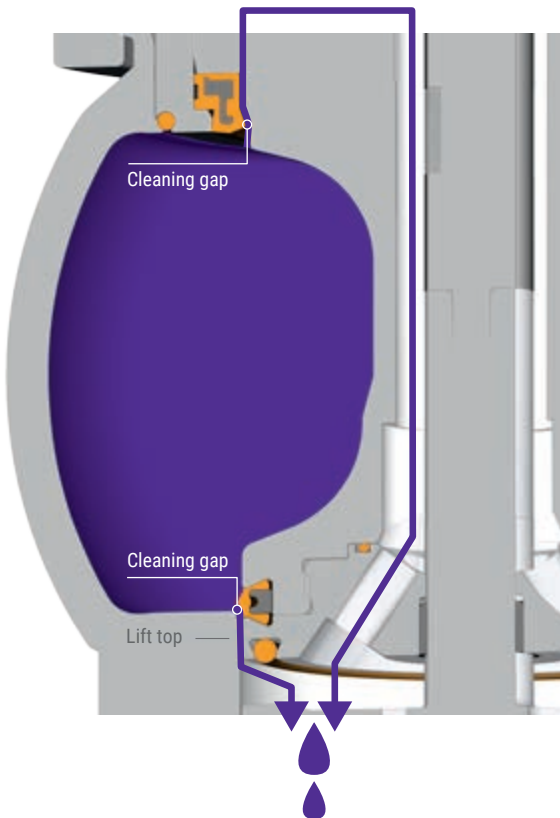
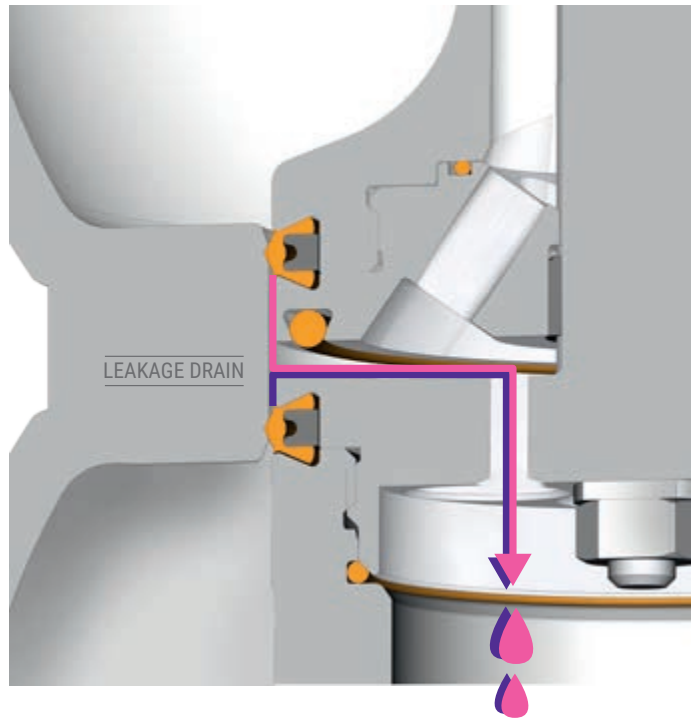
## DOUBLE SEAT VALVES

# Hygiene & safety

### Valve closed

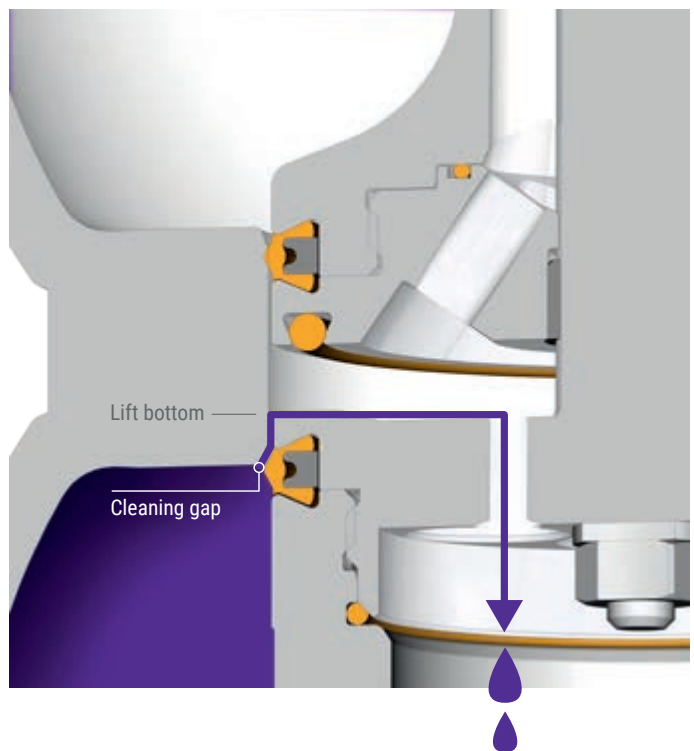
- > Safe separation of product and cleaning medium (CIP)
- > Any leaks are routed to the exterior without pressure via the leakage space
- > Pressure-shock proof closed position

■ Product  
■ CIP-Medium



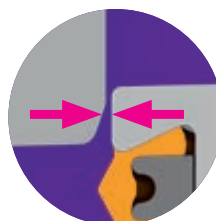
### Lift upper valve disc

- > Lifting of upper valve disc
- > Cleaning and sterilisation of shaft seal, valve disc shaft, lantern, valve disc with seals, valve seat, leakage space with discharge
- > Optimally defined cleaning gap



### Lift lower valve disc

- > Lifting of lower valve disc
- > Cleaning and sterilisation of valve disc with seals, valve seat, leakage space with discharge
- > Optimally defined cleaning gap



Constant flow rate for CIP medium through metallic gap, irrespective of the swelling behaviour or Ageing of the seal (defined consumption).

## DOUBLE SEAT VALVES

# All advantages at a glance

### Linear actuator

(with a 2-year function warranty)

- > Maintenance-free
- > Ensures leak-free opening and closing of the valve without product losses and hygiene risks in the leakage area
- > Pressure shock resistance
- > Can be dismantled

### Closed lantern

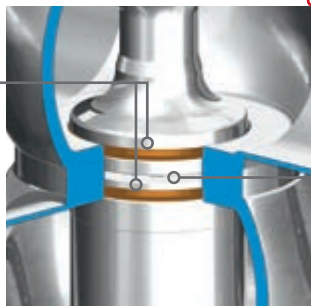
### Simple maintenance

Clamp closure for dismantling actuator incl. valve insert.

### Deadspace-free housing design

for safe cleaning and product-protective media routing.

### Double seal



Leakage opening

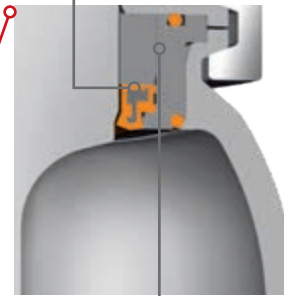
Leakage drain

### Modular control head

- > Position query and display
- > Valve control

### Metal-core shaft seals

For optimum dynamic and static sealing effect through defined preload.

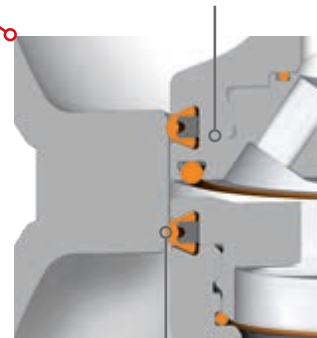


### Deadspace-free

positioning of all sealing elements via metallic stop.

### Split valve disc

Torsion-free clamping of the valve disc seal with metallic stop. Excludes backward product migration across the valve disc seal.



### FE-optimised seal profile

with metal support ring for safe, low-friction and durable sealing performance.







## BLANK PLUG

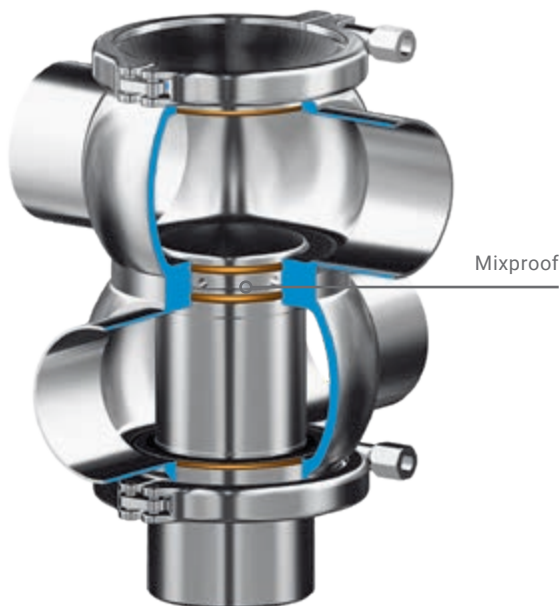
# Growth preinstalled

Think about tomorrow today. With leakproof blank plugs from KIESELMANN you have the maximum flexibility and expansion for your production.

**The valve housings with mixproof blank plug are installed as a placeholder in the valve manifolds.**

In the planning phase, we discuss your expansion options and integrate corresponding blank plugs into the piping system, designed according to hygienic design principles. On later expansion of the process plant it is very simple to fit double seat valves instead of the blank plugs.

Undo housing clamp, remove the blank plug and install the valve insert. Done. **No cutting, no welding, no stainless steel chips** in the pipeline, no impurities that pose a risk to your product and your system.



### TECHNICAL DATA

Nominal diameters	For unstepped KIESELMANN double seat valve housing DN 25 – 200/1" – 4"
Materials in product contact	1.4404/AISI 316L
Sealing material	EPDM (max. 140 °C, SIP 30 min) HNBR (max. 100 °C, SIP 30 min) FKM (max. 100 °C, SIP 30 min)
Product-contacting surfaces	Ra ≤ 0.8 µm, e-polished
Nominal pressure	PN 16

### ADVANTAGES

- > Easy retrofitting of valves in the matrix compound
- > Plant expansion without conversion of the valve manifold
- > No additional, complex welding work
- > Hygienic seal design

## K-FLEX SEALING MATERIAL

# More than just a seal



Seals must ensure trouble-free operation of the valves and piping connections. They are the most sensitive component. This is why KIESELMANN developed the *k-flex* sealing material.

*k-flex* is a particularly durable and rugged seal material. It has **excellent resistance** against aggressive media. Even higher temperatures, which are frequently used in CIP cleaning, cannot affect the material. If you are looking for production safety and long maintenance intervals, the *k-flex seal* makes a significant contribution.

***k-flex* seal elements are available exclusively from KIESELMANN.** Our double seat valves can easily be upgraded with *k-flex*.



Simple and rapid seal change: optimised seal geometry for low friction and a long service life.

### TECHNICAL DATA

Conformity	FDA 21 CFR 177.1550 USP Class VI Directive (EC) No. 2023/2006 Directive (EC) No. 10/2011 Guideline 2002/72/EC
Continuous operation temperature	In conjunction with threaded pipe fitting according to DIN 11853 max. 90 °C (product)
Temperatures for CIP and SIP process	CIP 85 °C SIP 100 °C (max. 30 min)



### WE WILL BE HAPPY TO ADVISE YOU...

and configure the optimum valves for your application area together with you.

Bernd Apel, Technical Advisory  
at KIESELMANN  
+49 7043 371-133  
[apel@kieselmann.de](mailto:apel@kieselmann.de)

### ADVANTAGES

- > High resistance to aggressive media
- > FDA compliant
- > Due to excellent cleanability (anti-adhesive), suitable for hygienic and aseptic use



## DOUBLE SEALING SINGLE SEAT VALVES

# Double separation is better

Double sealing single seat valves separate product flows with no risk of mixing at intersection points in piping systems: with a cleaning inlet and leakage drain.

The simple, mixproof seat valve version from KIESELMANN. Our double sealing single seat valves open and closing without any leakage.

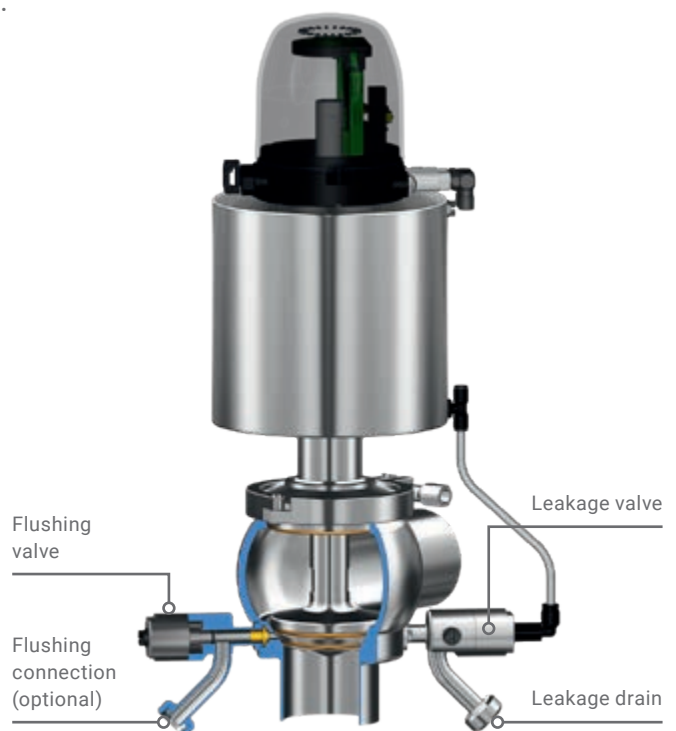
We machine the housing of the single seat valves from solid stainless steel blocks. This also makes our double sealing single seat valves extremely durable.

### THE SEALING FUNCTION

in the isolation position is provided statically. Any leaks occurring due to damaged piston seals are drained atmospherically to the exterior via the leakage discharge.

### CLEANING

is carried out with the valve open. Via the inlet valve, the leakage space between the piston seals can be cleaned or sterilised with the valve closed.



### TECHNICAL DATA

Nominal diameters	DN 25 – 100/1" – 4"
Materials in product contact	1.4404/AISI 316L
Sealing material	EPDM (max. 140 °C, SIP 30 min) HNBR (max. 120 °C, SIP 30 min) FKM (max. 100 °C, SIP 30 min)
Product-contacting surfaces	Ra ≤ 0.8 µm, e-polished
Nominal pressure	PN 16
Continuous operation temperature	max. 95 °C
Control air	min. 5.5 bar



KIESELMANN AUTOMATION AND VALVE MANIFOLDS

# System and control

KIESELMANN valve manifolds are ideal distributor systems for media in fully automatic process systems. The appropriate automation solution is matched to the size and application of your process.

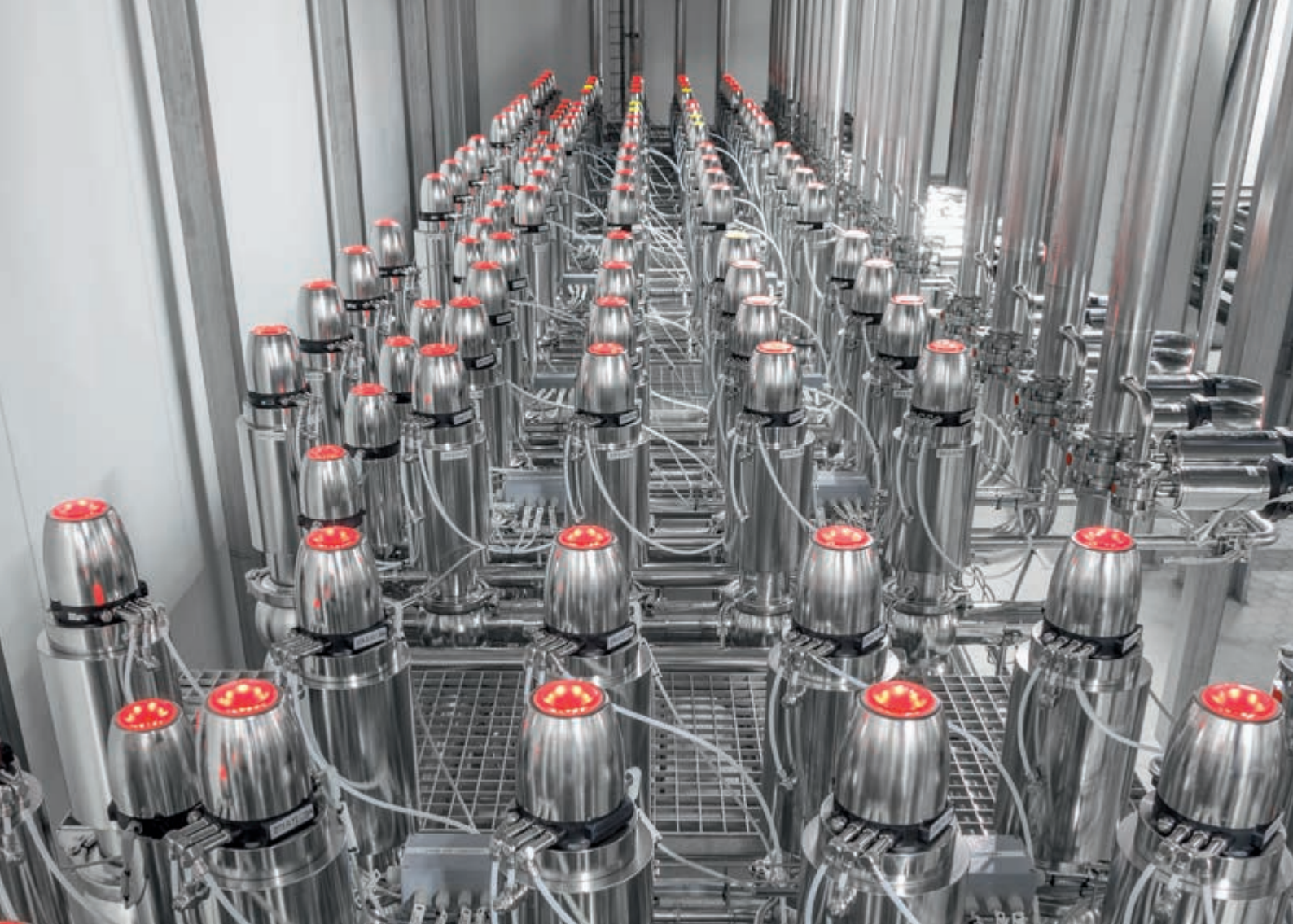




DT3.G.Y2 / 184

DT3.G.Y2 / 184





## CONTROL HEADS

# Smart controls

Four valve positions can be controlled and reported using the digital KIESELMANN "KI-TOP" control heads.



### **DID YOU KNOW ...**

That with our optional RGB-Top LED you can set a different colour for every valve position?

*Julius Heim, Product Management  
at KIESELMANN*

**Automate valves easily.** The modular design of the KIESELMANN valves makes it possible to convert to a pneumatic actuator with control head at any time. Our actuators are equipped with mechanical position indicator and sensor holder as standard.

**Powerful & intelligent:**

**Drives with KI-TOP control heads.**

Our control heads already contain control electronics and pilot valves. They can be connected to the bus system via various systems, such as cable entry or M12 connectors.

The control heads support all common communication interfaces, such as PLC, AS-i and IO-Link. The connection to the supply air is made by compressed air quick connector on the control head.

The control board can be fitted with an LED all-round display for optimum visual checks.

**Extra safety in Ex zones**

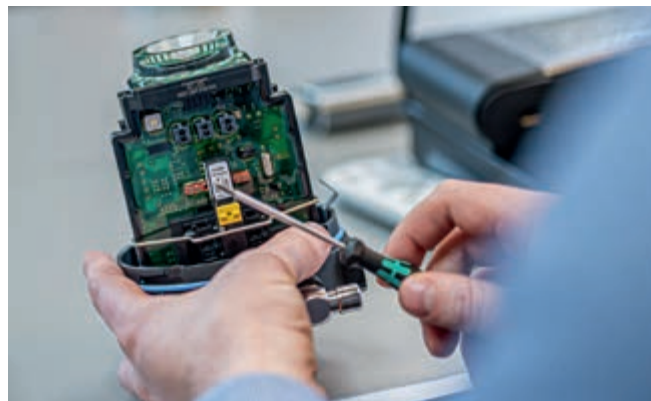
In production areas with highly flammable and explosive substances, such as spirits, our TÜV approved control heads offer the highest level of safety. Two versions are available: Zones 1 and 21 as well as 2 and 22. They comply with the guideline 2014/34/EU.



The standard – our transparent, acid-resistant cap for viewing the valve position display.

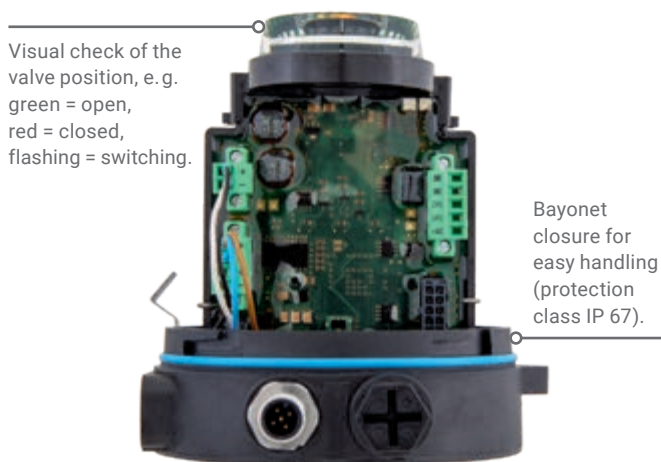


Stainless steel cap for rugged operating conditions.



**TECHNICAL DATA AS-I BUS**

Supply voltage	30V DC AS-i mains power supply
Protection class with stainless steel cap with plastic cap	IP 67 DIN EN 6052 DIN EN 61140 I DIN EN 61140 I
Power consumption max.	80 mA (30V DC)
Ambient temperature	-10 °C – 60 °C
Control air	max. 6 bar



**ADVANTAGES**

- > Precise position querying, optionally with an automatic learning mode
- > Control and reporting of up to 4 valve positions
- > Fully automatic
- > Optional: LED all-round display
- > Optional: Increased safety via emergency stop function







Two-level, fully-automatic valve manifolds with DN125/100 mixproof double seat valves, to connect ten tanks to seven filling lines.





## VALVE MANIFOLDS

# A perfect fit

KIESELMANN designs and develops tailor-made valve manifolds for your processes. Even in confined spaces, we implement your media controls automatically and in a clear format.

The valve manifolds can be controlled via pneumatic actuators and by means of control heads.

KIESELMANN control heads give your process control additional security. They are available with integrated electronic position feedback, LED all-round display and an emergency stop function.



### XXL VALVE MANIFOLD

A superlative from a bird's eye view. In this video we fly over the largest KIESELMANN valve manifold to date with 371 double-seat valves. Built for the Edrington Group.



Switch from manual to automated control: In the filter cellar, the panel equipment was replaced by double seat valve manifolds.

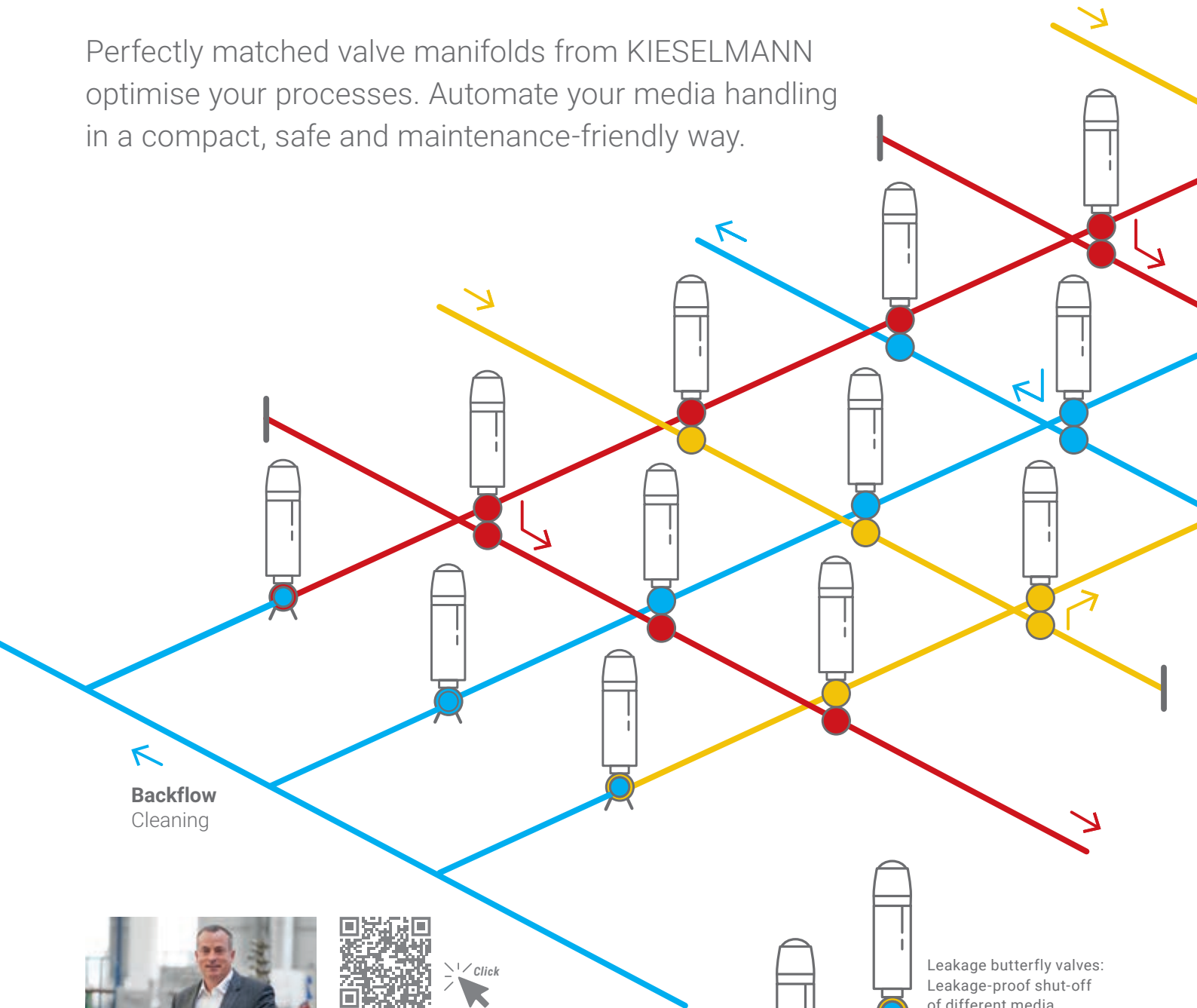


Full automation with process control system and control heads. All plant components can be controlled centrally from the control room.

## AUTOMATIC PROCESS CONTROL

# The clever solution for your production

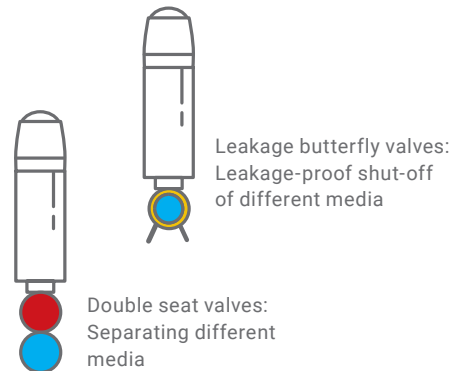
Perfectly matched valve manifolds from KIESELMANN optimise your processes. Automate your media handling in a compact, safe and maintenance-friendly way.



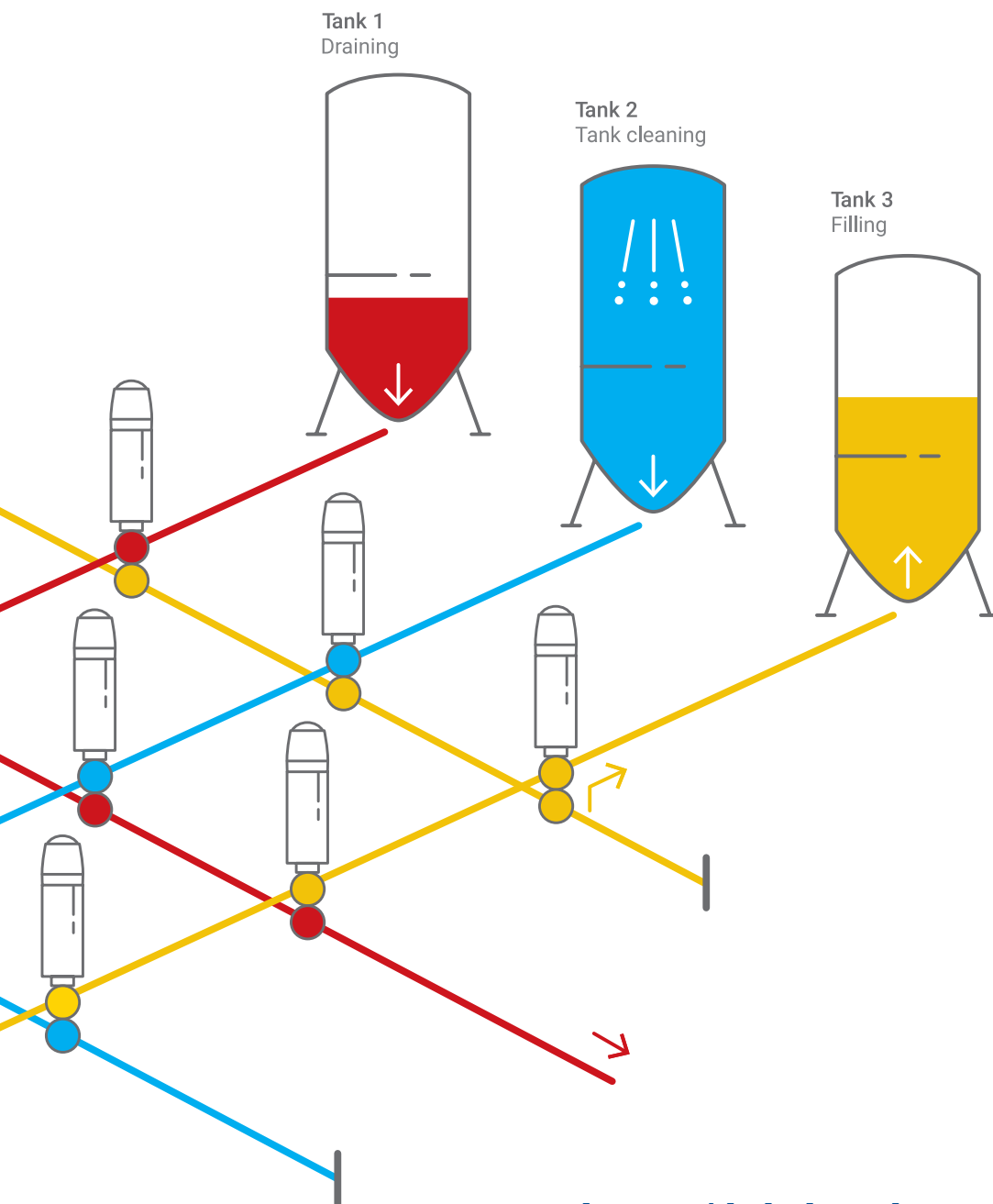
**Backflow**  
Cleaning



**FULL FLEXIBILITY**  
Colin Jeffrey, General Manager  
KIESELMANN UK, presents the  
advantages of the KIESELMANN  
manifolds.







### In league with the best: the automated manifold

KIESELMANN valve manifolds are ideal control systems for media in fully automatic process systems.

**The maximum flexibility for modern process systems.** Using the automated double seat valve combination, multiple processes can be controlled in parallel. While a tank is being drained, another can be filled and a third cleaned including the associated piping.

- ✓ Double seat valves allow safe separation of different media within your production process
- ✓ Mixproof due to double sealing and intermediate leakage space

### Available brochures:

- > Piping
- > Butterfly valves and ball valves
- > **Single seat and double seat valves**
- > Aseptic valves
- > Safety valves
- > Cleaning technology
- > Automation technology

5

E5

D5



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Quick access to food-grade tubes, stainless steel valves and fluid process technology equipment.

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