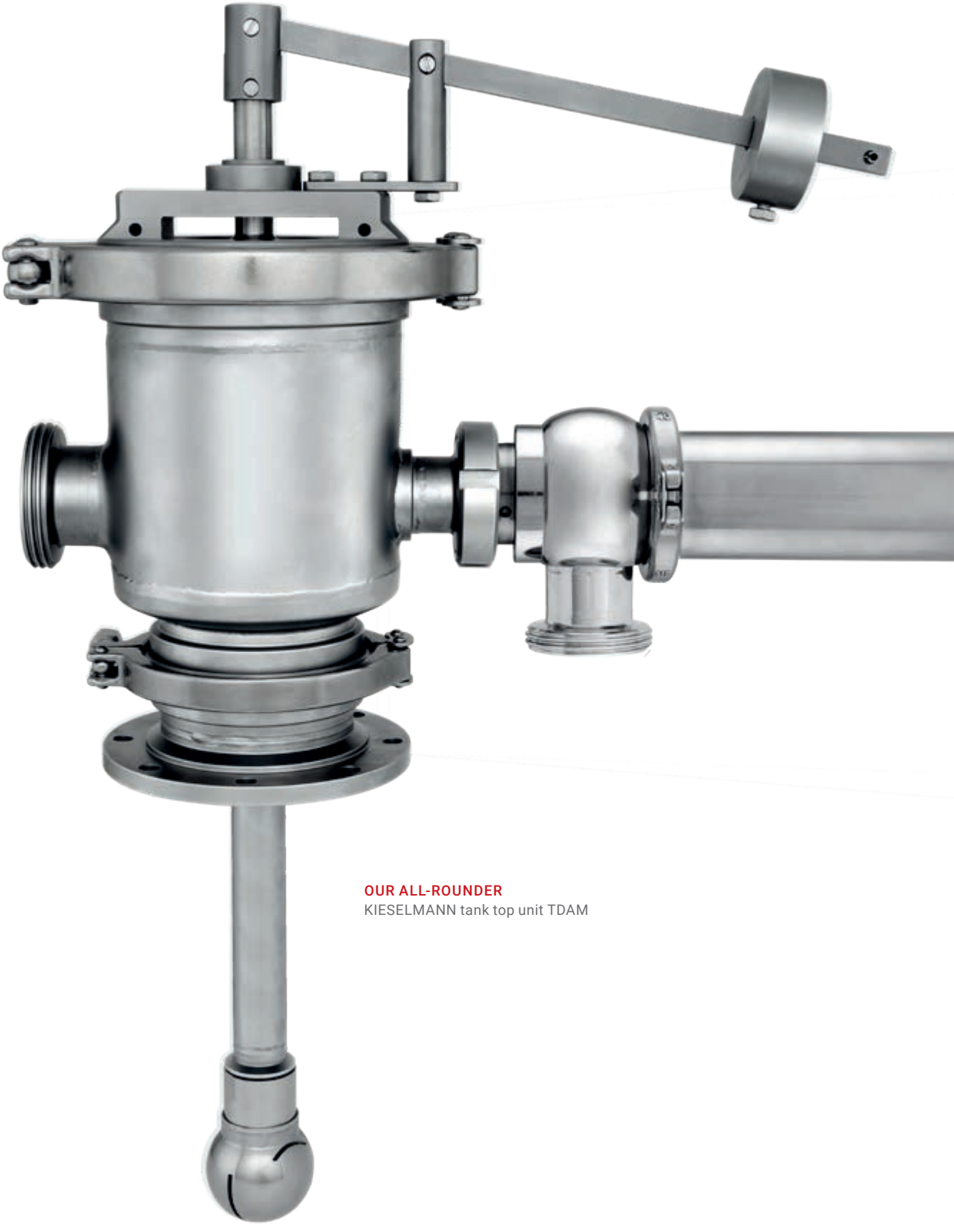
KIESELMANN

Tank fittings

KIESELMANN
FLUID PROCESS GROUP



OUR ALL-ROUNDER
KIESELMANN tank top unit TDAM

Contents


KIESELMANN

KIESELMANN TANK FITTINGS

On the safe side

KIESELMANN fittings ensure the highest level of safety and functionality on tanks and vessels. Our proven safety concept and the optimised design of the KIESELMANN tank fittings guarantee successful processes.

We offer you tank fittings for all media. Whether liquid or gas, whether fittings for safety, connection to the tank or for process support: KIESELMANN has what you need.

Contact us, we will be happy to determine the right valves for you: With many years of experience and the latest design software for your process.

Safety fittings protect tubing and vessels and offer process-optimising functions.

Safety valves for liquids & gases

spring-returning

Basic design

Pneumatic lifting

TECHNICAL DATA	
Nominal diameters	DN 25–100
Materials	1.4301 / AISI 304 1.4404 / AISI 316L
Sealing material	EPDM, HNBR, FKM
Response pressure	0.3–12 bar, depending on nominal width
Continuous operation temperature	max. 100 °C CIP-/SIP-enabled: to 140 °C
Standard connection options	Taper nut DIN 11851 other connections on request (e. g. flanges, clamping spigots)
Options	Pneumatically liftable, heatable, inductive sensor

Safety valves for gases & vapours

spring-returning

Basic design

With lifting device

With mounting flange for cleaning fixture

TECHNICAL DATA	
Nominal diameters	DN 20
Materials	1.4301 / AISI 304 1.4404 / AISI 316L
Sealing material	EPDM (max. 130 °C, SIP 30 min) FKM (max. 90 °C, SIP 30 min)
Product-contacting surfaces	Ra < 0.8 µm e-polished
Response pressure	0.1–10 bar
Continuous operation temperature	max. 95 °C
Standard connection options	Thread G1 Taper nut (DN 25–65)
Options	Lifting device, Cleaning device

SAFETY VALVES

Be safe

Reliably safe processes, that's what our KIESELMANN safety valves with CE type examination and EAC certification for gases stand for. They protect automatically without any additional auxiliary energy.

With safety valves from our company you can ensure trouble-free operation and avoid damage due to impermissible overpressure. The ideal protection for all connected system parts, vessels, pipelines and your employees.

Safety first

KIESELMANN safety valves open automatically, as soon as the pressure has exceeded a previously defined value. Closing is then effected by spring force. They are used in systems containing liquids and gases. The set pressure is precisely adjusted at the factory to your requirements and sealed to protect against unwanted changes. We will be happy to help you design the right safety valve.

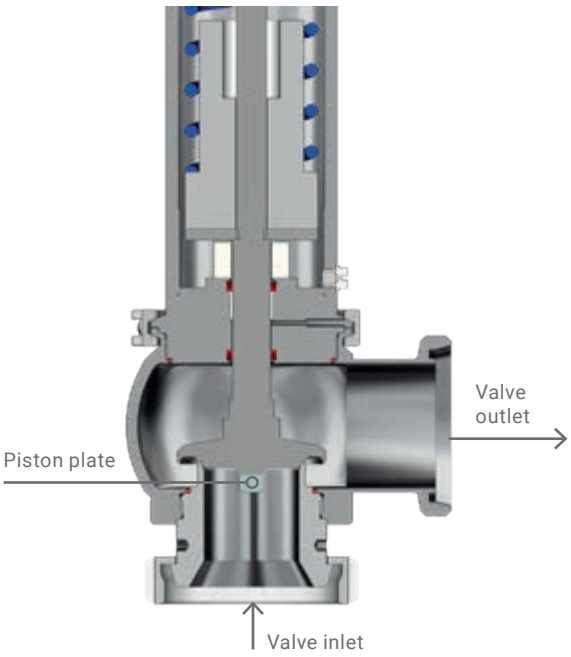
Protection against impermissible overpressure:
Our safety valves are characterised by a compact and closed housing design. All moving parts are located inside the housing so that no functional parts can be blocked from the outside. This also allows adequate cleaning of the external surfaces.

The spherical inner contour ensures excellent CIP (Cleaning-In-Place) and SIP (Sterilisation-In-Place) properties. And we have also thought of this: the valve insert can be removed from the housing for maintenance purposes without changing the pressure setting.

For easy cleaning, our safety valves are optionally available pneumatically or manually liftable.

ADVANTAGES

- For liquids and gases
- Type examination according to PED 2014/68/EU
- Design, manufacture and function conform AD 2000 regulations/ISO 4126-1
- Optimum blow-off performance (high α-value) with low flow resistance
- Hygienic design
- CIP/SIP cleanable



With pressure increase analogue to the opening characteristic, the flow rate is constantly discharged from the valve outlets depending on the max. permissible operating pressure.

VACUUM VALVES

All-round safety

The KIESELMANN vacuum valve prevents impermissible pressure drops and protects tanks and vessels from damage. They are characterised by their very precise response behaviour and very high flow capacities.

Due to the "Hygienic Design", excellent cleanability in the area of the seal and the seat is made possible.

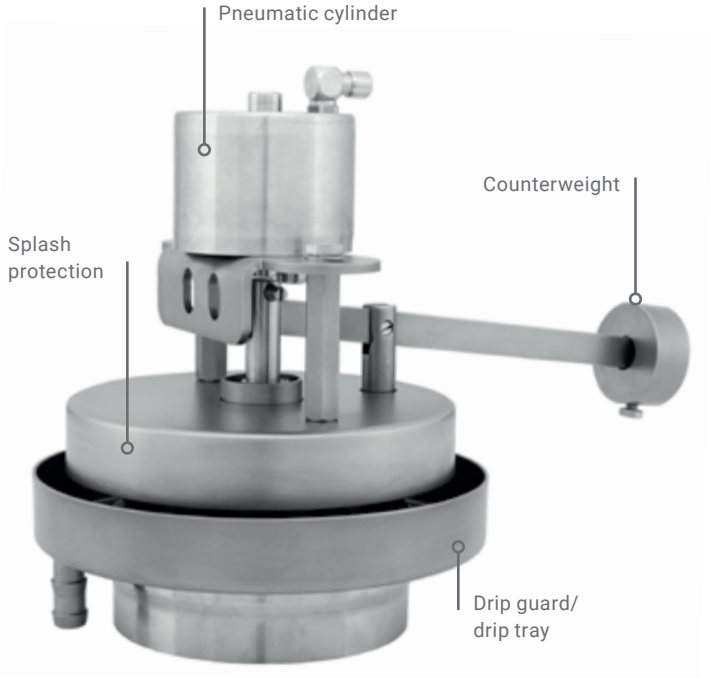
In addition, excellent tightness is achieved even at very low operating pressures. Depending on the type of specific application, various sizes and designs are available, e.g. spring-return with counterweight.

The vacuum valves can be installed separately as individual fittings or in combination with tank dome fittings. They are designed for vertical installation.

TECHNICAL DATA TYP 6160 UND 6164	
Nominal diameters/ Nominal pressure Typ 6160 und Typ 6164	DN 50/PN 16 DN 65, 100/PN 10 DN 125–150/PN 16 DN 200–250/PN 10
Materials	1.4407/AISI 304L 1.4404/AISI 316L
Sealing material	EPDM (CIP/SIP max. 100 °C)
Continuous operation temperature	max. 100 °C
Set pressure	3–10 mbar, higher response pressures possible
Options	Electric trace heating, pneumatic lifting, splash & drip protection, position sensor

Type 6160: Spring return with feedback.

Type 6139: Spring return
Available in sizes from DN 25 to DN 65 and the connection types weld end, thread, cone/nut and clamp connection.



Type 6164: Weight-loaded with pneumatic lifting and and splash/drip protection.

PRESSURE COMPENSATION VALVES

The best way, to relieve pressure

KIESELMANN pressure compensation valves are ideal for automatically ventilating and vessels to be ventilated and vented automatically.

When it comes to overpressure and underpressure protection, you can rely on the tried and tested: our pressure compensation valves are successfully used in numerous systems in the food and beverage industry, the pharmaceutical and chemical industry and in biotechnology.

Functionality with positive and negative pressure

Overpressure: Generally, the set pressure is greater than the operating pressure. The valve opens against spring force when the operating pressure has increased to the set pressure.

Negative pressure: The valve opens against spring force at a type-specific pressure difference to the atmosphere. The flow volume is proportional to the absolute pressure.
All pressure compensating valves are spring return.

ADVANTAGES

- Spring-resetting
- Automatic
- Compact and low maintenance

TECHNICAL DATA TYP 6131	
Material*	1.4306
Sealing material	VMQ
Response pressure	+10/-20 mbar(g)
Continuous operation temperature	max. 50 °C
Connection	Rd 78 x 1/6"

*Stainless steel or plastic

TECHNICAL DATA TYP 6132	
Nominal pressure	PN 10
Continuous operation temperature	max. 100 °C
Overpressure	Set pressure: 0,4 bar Closing pressure: 0,32 bar
Low pressure	Set pressure: 60 mbar Closing pressure: 0,40 mbar

TECHNICAL DATA TYP 6133	
Nominal pressure	DN 10
Material	1.4307/AISI 304
Sealing material	EPDM (CIP/SIP 100 °C) FKM (CIP/SIP 100 °C)
Response pressure	250/-50 mbar(g)
Continuous operation temperature	max. 100° C

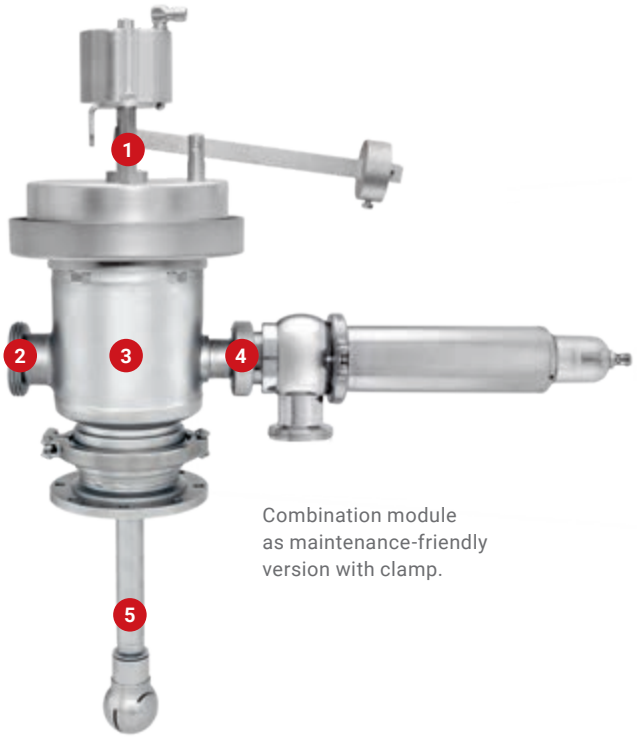
TECHNICAL DATA TYP 6135	
Material	1.4306
Sealing material	VMQ
Response pressure	+10 (+350)/-20 mbar(g)
Continuous operation temperature	max. 100 °C
Connection	Rd 78 x 1/6"

TANK TOP UNITS

A true multi-talent

The KIESELMANN tank top unit TDAM is a combination of overpressure and underpressure protection, CO_2 recirculation and tank cleaning. The cost-effective design with only a single connection to the tank makes an expensive tank dome plate with various connections superfluous.

The integrated nozzles ensure effective internal cleaning and for cleaning the vacuum and safety valve.



Combination module as maintenance-friendly version with clamp.

1. Integrated vacuum valve, spring-loaded or weight-loaded
2. CIP/CO_2 connection
3. integrated change-over valve (integrated vapour recovery)
4. connection for safety valve
5. connection for spray ball, target jet or rotary cleaner

TECHNICAL DATA TANK TOP UNIT

Nominal diameters	DN 50 – 250
Materials	1.4407 / AISI 304 1.4404 / AISI 316L
Sealing material	EPDM
Product-contacting surfaces	Ra < 0,8 µm
Continuous operation temperature	max. 60 °C

One of the numerous functions of KIESELMANN tank top units is the **integrated vacuum safety device.** This can be selected either weight-loaded or spring-loaded. If the opening pressure falls below the set value, e. g. when emptying a tank, the vacuum valve opens. It is also available with splash protection and pneumatic lifting for cleaning. For overpressure protection, our pneumatically ventable safety valve is screwed onto the side connection piece. If the tank pressure exceeds the set opening pressure, this valve opens automatically.

CO_2 recirculation (degassing) is also provided. The gases produced by the process are discharged from the tank in a controlled manner by the gas recirculation integrated in the switching valve.

The interior of the tank can be cleaned by connecting various cleaning heads (see page 23). The changeover valve closes during this process. This allows the cleaning agent to be fed directly to the tank cleaning device.

Small spray nozzles in the tank dome fitting ensure cleaning of the surfaces in contact with the product with **minimal consumption of cleaning agent.** In the process, the safety and vacuum valves are also cleaned from the inside.

Additional process equipment, such as bung valves, measuring devices, attachments or other fittings, can be installed in the connection pipe.

ADVANTAGES

- Interior cleaning with low water consumption
- Single-hole installation on the tank dome: only one connection necessary
- Universal basis for a wide range of combinations and applications
- Integrated CO_2 recirculation
- Also available as a particularly easy-to-install and easy-to-maintain clamp version

BUNGING VALVES

For safe pressure conditions

Reliable results, easy to handle: spring return bunging valves from KIESELMANN can be precisely and continuously adjusted to the desired opening pressure. The valves open and close extremely sensitively even at low differential pressures.

Our bunging valves are available in both **open and closed designs with pipe connection.** The open design is ideal for free blow-off of CO_2. With the closed design, the excess CO_2 can be collected.

During the entire fermentation process, the KIESELMANN bung valves ensure a constant bunging pressure. They ensure that the required CO_2 saturation is maintained during storage, thus ensuring consistent quality. They are also characterised by their smooth opening and closing behaviour.

Bunging valve type 6268
(closed version)

Bunging device type 6255
(open version)

ADVANTAGES

- Optional for type 6254 & 6255: with water seal to detect gas leakage
- CO_2 return (closed version)
- Suitable for all gases used in the production process

THE HYGIENIC BUNGING VALVE...

... from KIESELMANN is easy to clean: Simply unscrew, connect the elbow and you're ready to go. The seal can be changed in just as few steps. The desired pressure can be set precisely using the scale. And the CO_2 is safely discharged: for optimum work safety.

Thomas Gabriel, design engineer KIESELMANN

TECHNICAL DATA TYPE 6268

Nominal diameters	DN 15/25, DN 25/32, DN 40/50
Materials	1.4404 / AISI 316L 1.4301 / AISI 304
Sealing material	EPDM
Product-contacting surfaces	Ra ≤ 0,8 µm
Continuous operation temperature	max. 95 °C
Response pressure	2.0–4.0 bar

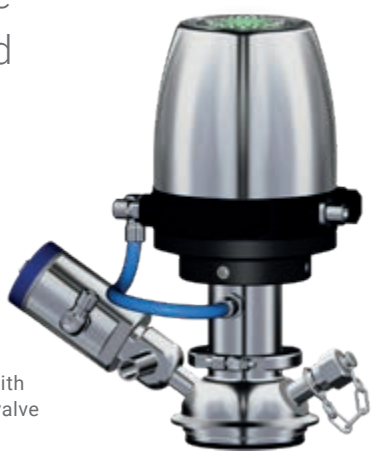
TECHNICAL DATA TYPE 6254 & 6255

Nominal diameter	DN 25
Materials	1.4404 / AISI 316L 1.4301 / AISI 304
Sealing material	EPDM, HNBR, FKM
Product-contacting surfaces	Ra ≤ 0,8 µm
Continuous operation temperature	max. 95 °C
Response pressure	0.2–3.2 bar

ASEPTIC SAMPLING VALVES

Sterile, handy and safe

Aseptic sampling valves from KIESELMANN are ideal for sampling in laboratories and production facilities in the food or beverage industry. They are easy to handle and prevent contamination due to their aseptic design.



Pneumatic aseptic sampling valve with control head and pneumatic steam valve with closing ring.

Compact design, safe cleaning and individual equipment characterise the aseptic sampling valves from KIESELMANN. The modular system makes it possible to equip or upgrade each valve according to individual requirements.

From the ergonomic, smooth-running handle to pneumatic actuators with end position feedback to the control head, our aseptic stainless steel valves impress with their user-friendliness. The rinsing connections of the sampling valves allow safe and easy cleaning. Product pressures up to 10 bar(g) are reliably maintained by our optimised bellows.

ADVANTAGES

- Individual equipment and retrofitting
- Operating range up to 10 bar
- Easy maintenance
- Flushing connections
- Easy handling with automatic reset function or self-locking actuation
- Excellent cleaning characteristics
- Compact design
- Low actuating force
- Optional: sensor inductive, control head, manually or pneumatically actuated steam or flush valve (SIP)

1. Housing complete with inline clamp
2. Insert, spring assembly with clamp and bellows
3. Manual operation, manual actuator
4. Pneum. linear actuator with quick-fit screw coupling
5. Closure ring
6. Pneumatic steam valve insert

- ✔ Manual operation (spring closing)
- ✔ Manual operation (self-locking)
- ✔ Pneumatic operation
- ✔ Pneumatic and manual operation

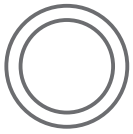
TECHNICAL DATA

Material	1.4404/AISI 316L
Sealing material	PTFE pleated bellows
Operating pressure	10 bar (liquids)
Continuous operation temperature	max. 95 °C CIP/SIP-capable up to 140 °C
Control air	4.0 – 6.0 bar
Vessel & piping connections	Inline clamp connection (DN 25–150), pipe T-piece (DN 25–150 & OD 1"–4"), Vessel weld-neck flange DN 25 weld-neck
Product outlet & flushing connection	DN 10, G 3/8, Clip-on, manual steam or flushing valve

ASEPTIC SAMPLING VALVES

Combine as needed

SUPERSTRUCTURES



CLOSING RING

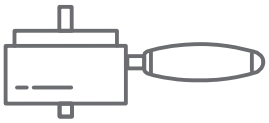
SENSOR HOLDER FEEDBACK
Only on pneumatic actuators adaptable

KI-TOP CONTROL HEADS
Only adaptable on pneumatic actuators

ACTUATORS

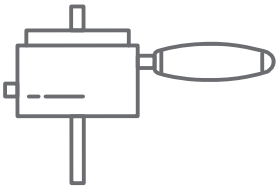
PNEUMATIC AND MANUAL
with handwheel

MANUAL
with handwheel

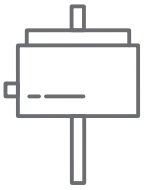


MANUAL (SPRING CLOSING)
can be combined with pneumatic actuators
Optional: lockable

MANUAL (SELF-LOCKING)
cannot be combined with pneumatic actuators



PNEUMATIC AND MANUAL
spring closing only



PNEUMATIC

CONNECTIONS

INLINE HOUSING

DN 25 WELD NECK HOUSING

T-PIPE SECTION HOUSING
DN 25-150/1.5"–4"

VESSEL WELD NECK HOUSING

OUTLETS

G3/8
Screw connection

DN 10
Tube

CLIP-ON

G3/8
with blind nut (G3/8B)

FLUSHING AND STEAM CONNECTIONS

WITHOUT FLUSHING CONNECTION

G3/8
Screw connection

DN 10
Tube

CLIP-ON

G3/8
with blind nut (G3/8B)

MANUAL STEAM VALVE

PNEUM. STEAM VALVE

PNEUM. STEAM VALVE
with position indication

PNEUM. STEAM VALVE
with control head

"All good things come in threes: aseptic design, modularity and reset function.

The outlet of the aseptic sampling valve can be cleaned independently of the product in the line or in the tank. Thanks to the modular design, the valve can be adjusted to fit exactly. Whether you want to dampen, pneumatically actuate or monitor the valve outlet, everything is possible.
The reset function ensures that the valve is not open by mistake."

Daniel Pohler, Graduate Master Brewer
Project Manager Brewery Technology
KIESELMANN

Safe & controlled

With KIESELMANN valves, you can empty tanks with the necessary care. Maximum flexibility and leakage safety are offered by double seat valves at the tank outlet.

KI-DS single seat tank outlet valves

KIESELMANN single seat valves are ideal for safe, regulated tank outlets. The dead space-free stainless steel housings prevent domes and sumps.
Their height is exactly matched to the diameter of the process line. The valve can be controlled pneumatically or by means of a manual actuator. Easy assembly, disassembly and maintenance due to detachable clamp connections.

Double seat tank outlet valves

With a double seat valve, you can operate a common filling and emptying line at the tank: without mixing. Leak-proof, the pipeline can be cleaned while the product in the tank goes through the required process. Media present on the tank and pipeline sides are separated in a leak-proof manner by two independently acting valve discs in double seat function.

TECHNICAL DATA SINGLE SEAT	
Nominal diameters	DN 25–125/1"–4"
Material	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)
Nominal pressure	PN 16
Product-contacting surfaces	Ra ≤ 0,8 µm, e-poliert
Continuous operation temperature	max. 95 °C
Control air	5.5 – 8.0 bar

TECHNICAL DATA DOUBLE SEAT	
Nominal diameters	DN 25–150/1"–4"
Material	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)
Nominal pressure	PN 16
Product-contacting surfaces	Ra ≤ 0,8 µm, e-poliert
Continuous operation temperature	max. 95 °C
Control air	5.5 – 8.0 bar

Manual control of the valve is also possible.

The crown at the bottom of the tank. The KIESELMANN double seat is the royal class of valve technology.

TANK WELDING FLANGES

Flexible in connection

KIESELMANN tank welding flanges are made of forged solid material. Our designs are perfectly matched to your applications. The hygienic inline process connection offers flush mounting for all commercially available measuring and control fittings.

Block flange
Flange diameter: 165 mm
Inline connection: 68 mm

Block flange
Flange diameter: 110 mm
Inline connection: 68 mm

TECHNICAL DATA	
Flange diameter/ Inline connection	165 mm/68 mm 110 mm/68 mm 145 mm/50 mm
Material	1.4404 Other materials on request
Product-contacting surfaces	Ra ≤ 0,8 µm
Operating pressure	16 bar

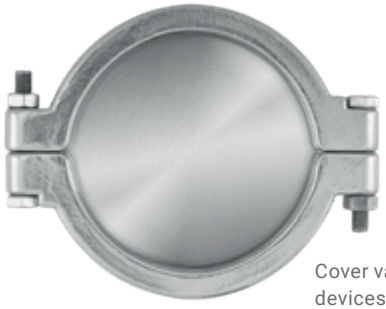
Tank welding flanges are welded into the tank wall or the tank bottom.

Maintaining shape during welding

The heat input from welding can cause flanges to deform, resulting in leaking process connections. To avoid this, the KIESELMANN welding aid set made of copper is available. For safe welding and optimum connections.

Welding aid set for the inner and outer welding seam.

Accessories



Cover variants and measuring devices according to customer requirements.

CLEANING TECHNOLOGY

Powerful, targeted and reliable

No chance for germs and contamination in tanks and vessels. Whether static, rotating, surge or target jet, AquaDuna's high-quality cleaning technology is perfectly adapted to different types of contamination and the tanks to be cleaned.

AquaDuna cleaners are characterised by a component-minimised and dead space-free design. Specific jet geometries, the number of nozzles and the speed of rotation allow the cleaners to be optimally adapted to your requirements. Another advantage is the effective self-cleaning effect, which prevents the cleaning equipment itself from becoming a source of contamination.

Qualification and validation

All generated cleaning results are reproducible at any time. This significantly facilitates process validation and revalidation. AquaDuna supplies all the necessary certificates for the materials and assemblies used for fast and smooth processing of the system qualification. FDA conformity and cGMP compliance are just as much a matter of course as full service and expert advice tailored to your and expert advice tailored to your requirements.

Due to the special conception and technical design, our cleaners are extremely robust and and can be used in any installation position.

Static cleaner DUNOS S
For cost-effective cleaning.

Surge cleaner DUNOS R
Jet angle from 180° to 360°.

ADVANTAGES

- Low maintenance
- Self-cleaning
- Flexible installation position
- High efficiency and high effectiveness

The optimised and low-loss flow through the cleaners ensures that the cleaning medium and energy introduced act where they are needed: on the surface to be cleaned. Combined with high surface quality and the stability of selected materials, the AquaDuna cleaning technology offers maximum operational reliability and economic efficiency in all respects.

The DUNOS O (left) and DUNOS O-S (right) target jet cleaners convince with their highest mechanical cleaning effect.

DID YOU KNOW THAT...
you can also get all AquaDuna cleaners from your KIESELMANN customer advisor? We have been part of the KIESELMANN Fluid Process Group since 2009. Strong products for a strong group. New in the family, the target jet cleaners of the DUNOS O-S Silver series and the gear-controlled surge cleaner DUNOS R-F.

Sebastian Vogel
Managing Director AquaDuna

Rotary cleaner DUNOS RN
Powerful target zone cleaner for large vessels.

Surge cleaner DUNOS R-F
Gear-controlled, individual nozzle layout, optional support tubes.

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KIESELMANN
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