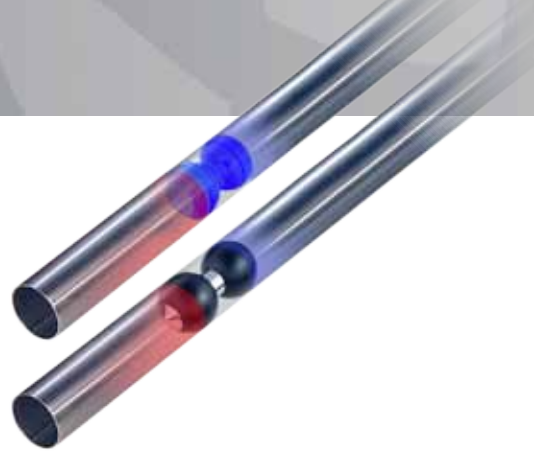


Pigging Systems
Duplex Pig
Aseptic Duplex Pig

Product Separation



KIESELMANN
FLUID PROCESS GROUP

Duplex Pigging Systems / Aseptic Duplex Pigging Systems - to ensure safe Product Separation

Quick, easy, absolutely reliable, and affordable. These are the essential demands on pipeline recovery systems. Safe and reliable product separation is of importance if, for example, small batches are to be separated in one and the same pipeline, or if valuable product is to be removed and recovered effectively prior to cleaning, and it is of particular importance if the product cannot drain by itself out of the pipe to be cleaned. In addition, it is of utmost importance to remove the product completely, if the cleaning process is to be implemented in such a manner as to keep adverse effects on the environment to a minimum.

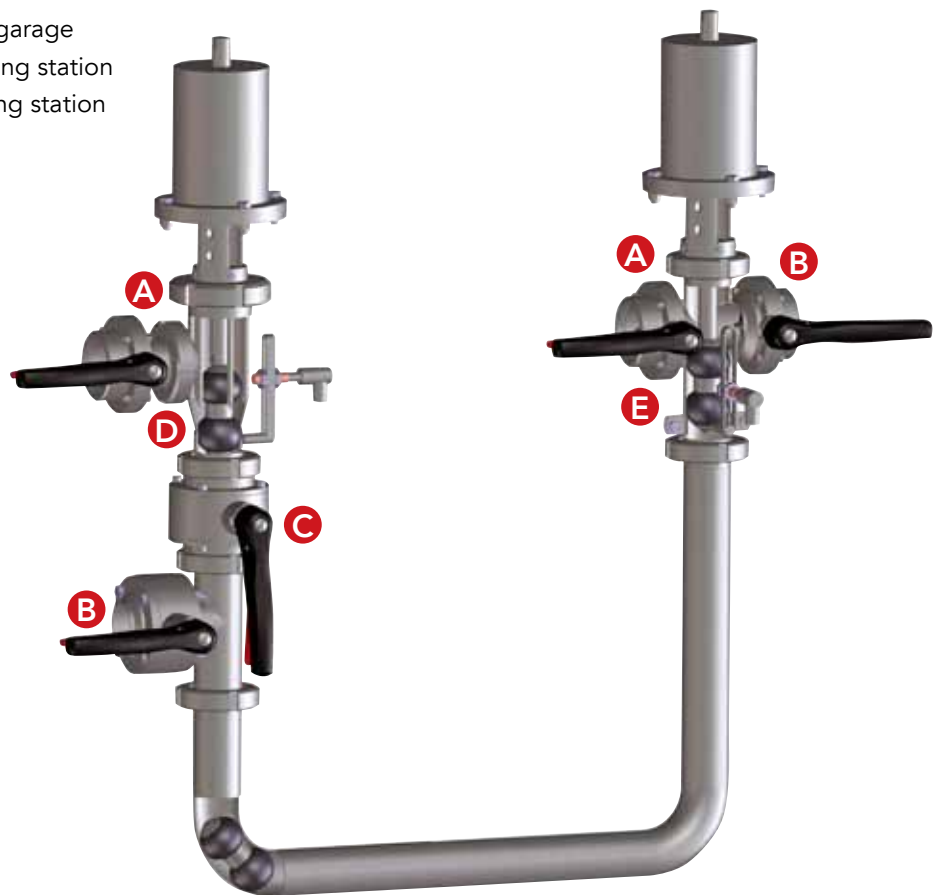
KIESLMANN's Duplex pigging technology ensures the best possible pipeline draining while considering prevalent economical and ecological issues. Kieselmann will offer an innovative Duplex pigging system adapted to the specific requirements of the task in question, independent of whether the product flows easily, is highly viscous, or is a liquid containing solids and even independent of which propellant was selected.



Schematic Representation

Duplex Pigging Launching and Receiving Station

- A CIP/water inlet/outlet
- B Product line
- C Separation of product / pig garage
- D Position of pig in the launching station
- E Position of pig in the receiving station



Features of KIESELMANN's Pigging Stations

- ▶ easily integrated into existing process plants
- ▶ closed launching and receiving stations can be integrated in cleaning cycles including steam sterilizations
- ▶ pig is carefully „parked“ in the stations by means of a buffer system
- ▶ flow guidance produces the best possible cleaning results in the stations
- ▶ pig sensors located at the final positions or at the pipeline
- ▶ KIESELMANN leakage butterfly valves safeguard product runs from leakage
- ▶ pig transport by product/water/air
- ▶ can be upgraded at anytime with KIESELMANN's automation components

Save Separation of Product with Duplex Pigging Technology

The patented Kieselmann Duplex-pig is at the heart of KIESELMANN's Duplex pigging systems. It has been designed to permit forward and backward movement in the pipeline. The permanent magnet at the core of the Duplex-pig coupled with sensor technology easily lets you monitor the position of the Duplex-pig in all system components.

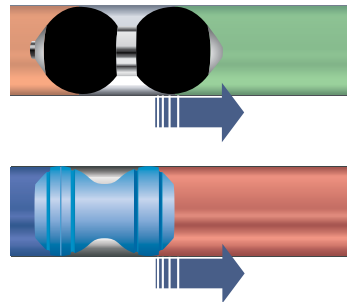
The double-ball design gives the Duplex pig its optimised geometrical shape to effortlessly travel through standard 90° bends and tees. In order to perfectly adapt to its environment, its diameter is adjustable and thus can snugly fit the inner pipe wall. The outcome is the safe product separate and effective cleaning.

Due to these performance features and especially due to its sanitary design, the Duplex-pig is predestined for applications in the food and beverage industries. In addition, it will help to significantly reduce the cleaning time and cleaning agents used and thus will lower costs and the environmental impact.



KIESELMANN Duplex Pigs

PRODUCT FEATURES	
Materials:	
Duplex pig	balls made of EPDM (FDA), silicone (FDA), viton, stainless steel 1.4404 (AISI 316L)
Aseptic Duplex pig	silicone (FDA)
Diameters: DN 25 - 100, 1" - 4"	

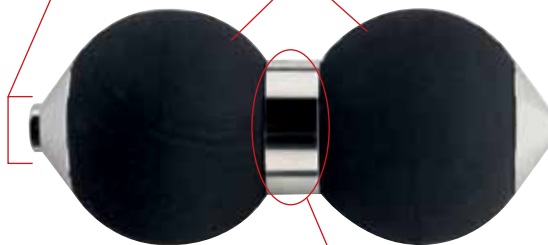


save separation of product

Duplex pig

screw ensures perfect adaption to inner pipe diameter

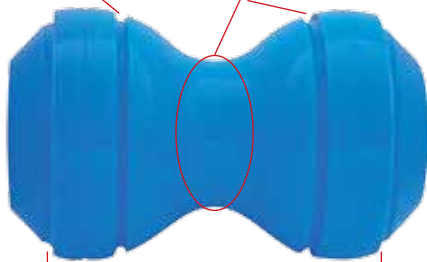
balls available in various materials



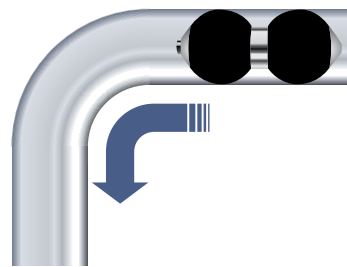
Aseptic Duplex pig

Local extensions for easier transit through curves

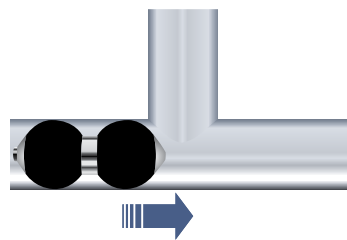
internal permanent magnet to locate pig



Extensions for better cleaning effect



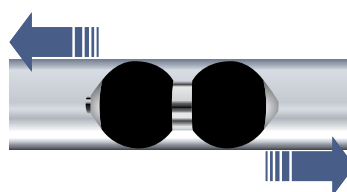
pigging of DIN bends without mixing the product



problem-free pigging of tees



exact adaption to inner pipe diameter by adjusting screw



operates in both directions



Automation of Pigging Systems

With the increasing trend towards fully computer controlled automation of process plants, KIESELMANN's Duplex pigging systems of course can be used in fully automatic operations. As a perfectly fitted module in a plant and its control systems, the Duplex pig will independently and reliably complete its tasks, whereby it does not matter whether it is to be integrated in a master control or whether it is to be operated via an autonomous control system. In addition to a standard control system design, KIESELMANN also offers the capability to integrate the Duplex pigging system into a modern field bus system.

To do so KIESELMANN has developed the electronic control KI-TOP specifically for valves. This valve control provides the intelligence to realise automation of the Duplex pigging process right on-site. With KIESELMANN's automation technology you will be in the position to easily realise a significant reduction in time and labour required for wiring, a reduction in installation times; you will simplify the start-up, enjoy extensive yet easy-to-use error analysis capabilities, and above all you will increase your system's safety and save up to 30% in costs for the control system.



fully automatic pig launching station



fully automatic pig receiving station

KIESELMANN Automation Components



KIESELMANN valve control KI-TOP with SPS or ASI-Bus control

KIESELMANN Automation Technologies

- ▶ Duplex pigging stations and controls from one supplier
- ▶ Sensor technology to locate pig
- ▶ Variable design of KIESELMANN's standard fittings
- ▶ Actuator valve control with SPS or ASI-Bus control
- ▶ Maintenance-free pneumatic multiturn actuator with 5 year functional warranty



Piggable double sealing single seat valve

Our Product Programme



- ▶ **Sanitary pipes**
- ▶ **Fittings and tube accessories**
- ▶ **Valves and process components**
 - Butterfly valves
 - Leakage butterfly valves
 - Ball valves
 - Single seat valves
 - Double seat valves
 - Safety valves
 - Tank top units
 - Sample valves
 - Aseptic valves
- ▶ **Cleaning units**
 - Sprayballs
 - Rotating cleaning heads
- ▶ **Planning and construction of plants**
 - CIP plants
 - Pigging technology
 - Thermal systems
 - Turnkey projects

We hope that this small glimpse at our capabilities has been interesting.

If you would like any further information then please do not hesitate to get in touch with us and we will be pleased to answer any questions you may have.

Just call us or send us an e-mail.