



KIESELMANN
FLUID PROCESS GROUP

Operating instructions

- Translation of the original -

Duplex-Pigging-Systems



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2. Information for your safety

We are pleased that you have decided for a high-class KIESELMANN product. With correct application and adequate maintenance, our products provide long time and reliable operation.




Before installation and initiation, please carefully read this instruction manual and the security advices contained in it. This guarantees reliable and safe operation of this product and your plant respectively. Please note that an incorrect application of the process components may lead to great material damages and personal injury.

In case of damages caused by non observance of this instruction manual, incorrect initiation, handling or external interference, guarantee and warranty will lapse!

Our products are produced, mounted and tested with high diligence. However, if there is still a reason for complaint, we will naturally try to give you entire satisfaction within the scope of our warranty. We will be at your disposal also after expiration of the warranty. In addition, you will also find all necessary instructions and spare part data for maintenance in this instruction manual. If you don't want to carry out the maintenance by yourself, our KIESELMANN service team will naturally be at your disposal.

3. Marking of security instructions in the operating manual

Hints are available in the chapter "safety instructions" or directly before the respective operation instruction. The hints are highlighted with a danger symbol and a signal word. Texts beside these symbols have to be read and adhered to by all means. Please continue with the text and with the handling at the valve only afterwards.

Symbol	Signal word	Meaning
	DANGER	Imminent danger which may cause severe personal injury or death.
	ATTENTION	Dangerous situation which may cause slight personal injury or material damages.
	NOTE	Marks application hints and other information which is particularly useful.

4. Safety instructions

4.1 Field of application

The KIESELMANN Duplex Pig is a special development for applications in Pigging systems in the beverage and food industries, the chemical and pharmaceutical industries.

Pigging systems are incomplete machines which are determined for the installation in pipe systems or engineering systems.

Its fields of applications include maintaining the separation of liquid or highly viscous products from a liquid or even gaseous transport medium when purging pipelines, for keeping batches separated, in running production plants up and down, i.e. always then when a major role is being played in production by economics and ecology.



ATTENTION

- To avoid danger and damage, the fitting must be used in accordance with the safety instructions and technical data contained in the operating instructions.

4.2 General safety instructions



DANGER

- When opening from the system or the pigging station to the withdrawal of the pig, streaming out liquids or gases can cause injuries.
- Open the system or the pigging station only when it has been rendered pressure-less and free of liquid and gas.
- Risk of injury from use of gaseous media.
The use of the KIESELMANN Duplex Pig in gaseous transportation media is for custom specifications only.

4.3 General notes



NOTE

- The KIESELMANN Duplex Pig may only be used in accordance with its specifications. The KIESELMANN Duplex Pig and the corresponding pig stations constitute a single constructional and functional unit.
- No guarantee or liability will be assumed beyond the quality of the material and manufacturing if the KIESELMANN Duplex Pig is used outside of its specifications or outside of the functional unit of a system supplied by KIESELMANN (pig launching and pig reception station).
- The pig launching and pig reception stations are designed as individual solutions for each application in question and are documented as such by the accompanying drawings. The appropriate drawing numbers shall be quoted in the event of queries regarding the pig launching and pig reception stations.
- All data are in line with the current state of development. Subject to change as a result of technical progress.

5. Function

5.1 General functional description

Its fields of applications include maintaining the separation of liquid or highly viscous products from a liquid or even gaseous transport medium when purging pipelines, for keeping batches separated, in running production plants up and down.

6. Installation informations

6.1 Installation instructions

- The KIESELMANN Duplex Pig is supplied with an initial tension of + 0.3 mm with respect to the inside diameter of the pipeline. Before putting into operation for the first time, the inside diameter of the line to be purged must be determined and compared with the specification for the pig. The quality of the welding seam (orbital weld) shall meet the highest requirements. The pipes and T-junctions used may not exhibit any offset.
- The pipeline system shall be thoroughly rinsed before being put into operation for the first time. When using a gaseous pumping medium, an adjustable pressure reducer as well as an additional shut-off device shall be installed. A pipe segment of minimum 10 x inside diameter of the pipe has to be installed ahead of the launching and reception station.
- When the pig is used in hot systems the pig has to be adjusted according to the highest temperature because of its dilatation.

7. Maintenance

The tension of the pig must be checked from time to time. The natural wear can be compensated for by tightening the correction screw and the change thereby brought about in the tension of the pig bowls. The intervals between maintenance depend on the operating conditions such as temperature, pressure, media, frequency of running the pig and the quality of the welds in the pipeline. The pig bowls shall be replaced when the limits for wear have been reached, or every year.

8. Dry running

The KIESELMANN Duplex Pig may not be operated in dry pipeline systems.

9. Technical data

Size:	DN 25 - DN 100			
Temperature range:	Sealing material			
		EPDM	SILICONE	VITON
	Operating temperature (°C):	120	80	80
Max. short periods (<1h) (°C):	140	100	100	
<i>It is only permitted to use approved lubricants, if the respective fitting is used for the production of food or drink. Please observe the relevant safety data sheets of the manufacturers of lubricants.</i>				
Operating pressure:	Maximum working pressure:			
	The maximum working pressure is given by the counter-pressure which is created by transporting the product through the pipeline, and a difference of 0.5 bar in the pressure, which not be exceeded, between this counter-pressure and the pumping medium pressure.			
	The maximum pumping medium pressure amounts to 10 bar.			
	The highest permissible pressure for the pipeline in use shall not be exceeded under any circumstances.			
Speed:	The maximum speed of motion for the KIESELMANN Duplex Pig is 1 m/s. During cleaning the maximum speed of the cleaning agents inside the pipe is 2.5 m/s.			
Material: in product contact	Stainless steel:	1.4404 / AISI316L		
	Surfaces:	Ra < 0,8µm e-polished		
	Sealing material:	EPDM SILICONE VITON		

10. Disassembly and assembly

10.1 Disassembly

- The pig is taken apart in order to replace the pig bowls.
- To do this, the straining screw is opened using a suitable spanner, the pig bowls to be replaced can be withdrawn from the inner section.
- The new pig bowls are inserted and the assembly completed in accordance with the drawing using the metal parts for the pig.
- During reassembly of the pig, attention shall be paid to the pig retaining the same diameter.
- To do this, the pig bowls shall be tumbled on a suitable base after each turning of the straining screw.
- The pig must reach the specified dimensions, i.e. the tension shall be adjusted such that, as a minimum, the dimensions correspond to the as-delivered state.
- Should the dimensions not be reached or a different diameter is given by the pig bowls, then the pig must be dismantled again and the assembly repeated.

11. Wearing parts

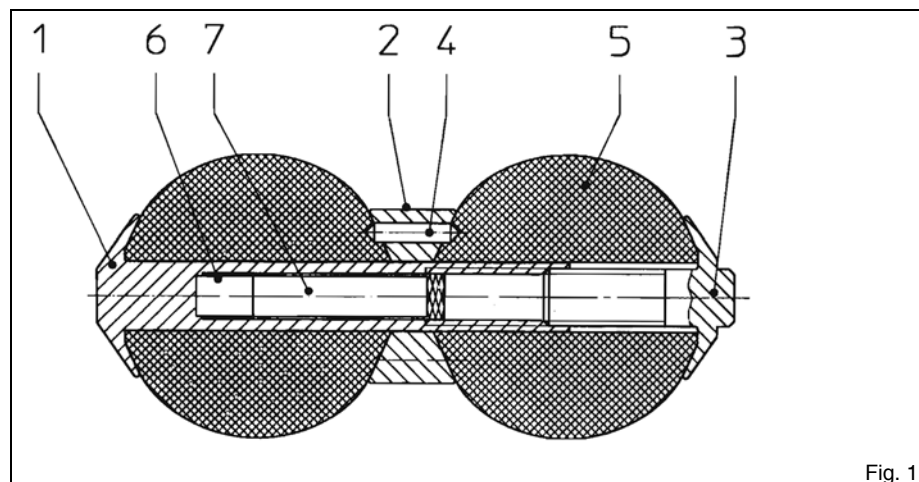
11.1 Ordering numbers for pig bowls

VITON (black) <i>(Article number is depending on the nominal width)</i>	7079 DN 010 - 109 7079 DN 010 - 112
EPDM (black) <i>(Article number is depending on the nominal width)</i>	7079 DN 010 - 080 7079 DN 010 - 113
SILICONE (transparent)	7079 DN 010 - 085

DN = nominal width 025; 040; 050; 065; 080; 100

Additional information is to be found in the enclosed drawing for the Duplex Pig. The drawing number is also the ordering number for the complete pig assembly in its original specification with respect to the order.

12. Drawing



Item.	Designation	Material
1	Connection piece	1.4404
2	Distance	1.4404
3	Screw	1.4404
4	Pin	1.4316
5	Bowl	according to type: EPDM; VITON; SILIKON
6	Bar magnet	ALNICO
7	Bar magnet	ALNICO



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Declaration of incorporation

Translation of the original

Manufacturer / authorised representative:

KIESELMANN GmbH
Paul-Kieselmann-Str. 4-10
75438 Knittlingen
Germany

Authorised representative,
for compiling technical documents:

Elke Deeß
KIESELMANN Anlagenbau GmbH
Paul-Kieselmann-Str. 6
75438 Knittlingen
Germany

Product name

Pigging systems

Function

drain product from pipe systems

The manufacturer hereby states that the above product is considered as an incomplete machine in the sense defined in the Directive 2006/42/EC on Machinery. The above product is exclusively intended to be installed into a machine or an incomplete machine. The said product does not yet conform to all the relevant requirements defined in the Directive on Machinery referred to above for this reason.

The specific technical documents listed in Appendix VII, Part B, have been prepared. The Authorized Agent empowered to compile technical documents may submit the relevant documents if such a request has been properly justified.

Commissioning of an incomplete machine may only be carried out if it has been determined that the respective machine into which the incomplete machine is to be installed conforms to the regulations set out in the Directive on Machinery referred to above.

The above product conforms to the requirements of the directives and harmonized standards specified below:

- DIN EN ISO 12100 Safety of machinery

Knittlingen, 19. 03. 2012

Klaus Dohle
General Director