



Product recovery System (Pigging system)



Technical Information

Product recovery system

Application

For pumpable products in piggable piping for

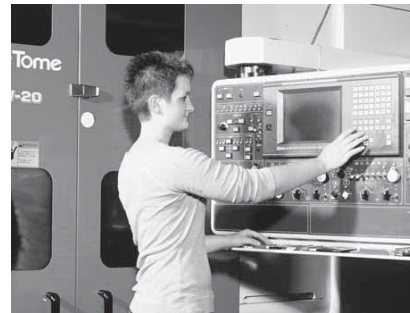
- Product recovery
- Product separation
- Media separation (gas/liquid)



- Pre-assembled components according to customer's specification
- Material AISI 304 or 316 L, other materials on request
- Gaskets according to FDA directive in Silicone, EPDM and HBNR
- Pigs in Silicone - HBNR on request - with magnetic or RO transponder

Planning instructions

The pig must freely pass through the plant. Built-in components, such as temperature sensors or butterfly valves must be exchanged with piggable fittings, if applicable.



Features

- Low costs due to use of standard pig components
- Very reliable in operation
- Automatic pig return or manual removal
- Pig fittings can be combined with components of the Nocado product lines to complete product recovery piping systems
- Patented ball-lip pig for optimum results



Although a Nocado pig can pass through certain oval piping and welding connections with minimal camber or with a certain misalignment, the wear is considerably less using nocaplug components and the corresponding professional installation.

Even though standard pipe bends can be used the pig runs smoother in bends with larger radius and branch enlargement. The wear of the pig increases more than proportionally to the velocity. During the run the pig should border a liquid at least on one side.

Design

Nominal sizes: DN 25 to DN 100

- Manual, semi-automatic or automatic version

Plant engineers certificated by Nocado proved to have the necessary knowledge and ability for the professional installation of a pigging system.

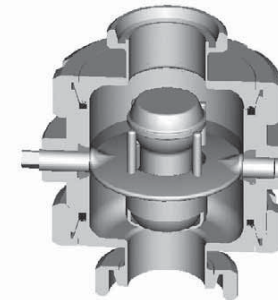
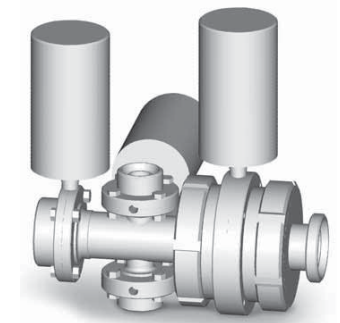
Technical Information

Pig stations

Pig inline station

Application

Suitable as launching and receiving station. During production and cleaning process the pig stays in the inline station and is circulated around by the product or cleaned with the system. For the pigging process the inline flap is switched about 90° and the Nocado pig is taken in flow direction by the following medium. The station is laid out for automatic operation, but can also be manually switched by handle.



Design

Nominal sizes: DN 25 to DN 100

- Manual, pneumatic or electromotive actuation
- 0°-90°-180° actuation for special functions
- Eccentric outlet for residual draining at horizontal installation
- Pre-assembled components through combination of components of the Nocado product lines
- Material AISI 304 or 316 L, other materials on request
- Gaskets according to FDA directive in Silicone, EPDM and HBNR

Planning instructions

Inline stations are used when the pig shall stay in the plant during various production and cleaning cycles.

Usually the pig travels back automatically. When separating two similar products the inline station is primarily used as catching station. As the pig is not taken out during cleaning and sterilization, the inline station is particularly used with micro-biological sensitive products of the food, beverages and cosmetics industry.

The inline station is not suitable for very fibrous products (e.g. sausage meat).

Features

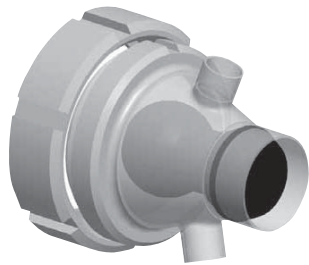
- Extremely reliable in operation
- Compact
- Use of Nocado standard gaskets
- Horizontal or vertical installation
- CIP- and SIP-compatible, pig included
- Can be combined with components of the Nocado product lines
- The pig position within the inline station is detected by two independent pig sensors (waiting and operating position)
- Modified self-centring unions compatible to DIN 11851

Pig stations

Pig launching and receiving station

Application

For launching and/or removal of the pig. In manual product recovery systems or as addition to automatic pigging systems.



Features

- Extremely reliable in operation
- Low costs
- For manual or semi-automatic operation
- Smooth surfaces, easy cleaning
- Compact
- Use of standard gaskets
- Horizontal or vertical installation
- Can be combined with components of the Nocado product lines

Design

Nominal sizes: DN 25 to DN 100

- Pre-assembled components according to customer's specification
- Material AISI 304 or 316 L, other materials on request
- Gaskets according to FDA directive in Silicone, EPDM and HBNR

Planning instructions

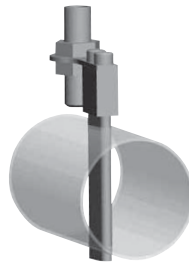
The product is let out in front of the pig launching and receiving station via T-piece, which can be closed by a valve. The launching and receiving station is preferably connected with a hygienic Nocado ball valve with rinsing connection to the piggable pipe. Particularly in connection with in-

line stations the plant can be designed in the way, that during automatic operation - instead of launching and receiving station - a bend is mounted and the launching and receiving station is only installed, when the pig is launched or removed.

Pig stopper

Application

When a pig shall be stopped in a pipeline, e.g. at the entrance of a machine or a non-piggable fitting and shall be returned immediately afterwards.



Features

- Simple design, reliable in operation
- Smooth surfaces, convenient in flow
- Hygienic
- Limited suitability for fibrous products
- Can be combined with components of the Nocado product lines

Design

Nominal sizes from DN 25 to DN 100 for pipelines according to DIN 11850

- Pre-assembled components according to customer's specification
- Material AISI 304 or 316 L, other materials on request

Planning instructions

The pig stopper is not designed symmetrically to ensure preferably optimum CIP-cleaning. On highly viscous products, particularly at low flow rates, it can be necessary to change the flow direction during cleaning to obtain satisfying CIP-cleaning. If this is not possible due to reasons of process engineering, the driving and relief connections can be designed as rinsing nozzles, if necessary. Maybe separate rinsing nozzles must be provided.

Pig and accessories

Pig

Application

For:

- Product recovery
- Product separation
- Media separation (gas/liquid) in piggable plants.

Features

- Universal application and not only limited to the use of Nocado pig fittings
- Despite preferred direction of travel, the pig can be used bidirectional with very good results
- One-piece, seamless pig
- Hygienic closed surface
- Suitable for passing through standard bends
- Lip wiper for optimum cleaning in straight pipelines
- Ball for optimum cleaning of bends
- Scraper blade for best results
- With encapsulated high-performance permanent magnets for secure position detection
- With RO transponder for complete documentation
- CIP-/SIP-compatible

Design

Pigs:

Nominal sizes: DN 25 to DN 100

- Silicone according to FDA directive
- HBNR on request

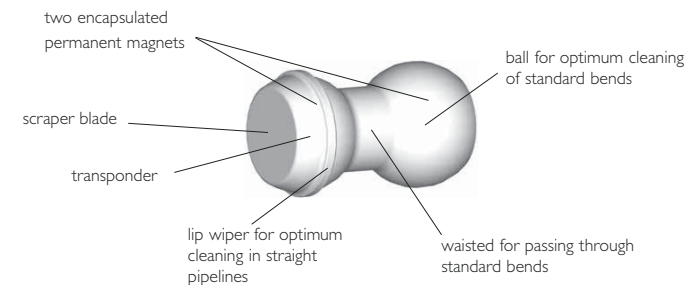
Transponder reader:

- Data communication with
 - o profibus DP
 - o serial interface



Planning instructions

When Nocado pigs are used in pigging systems of other manufacturers, it has to be proved whether the geometry of Nocado pigs is compatible particularly to the installed launching and receiving station. Detecting pin: For position detection of the pig within the pigging plant. Transponder reader: For reading out the transponders on the pigging plant and in the pig as well as for data communication to PC or SPS.



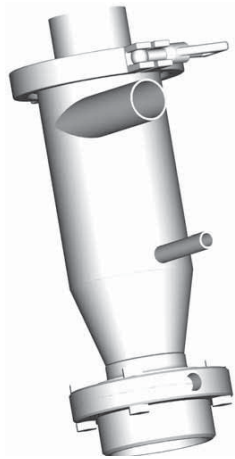
Technical Information

Pig and accessories

Separator

Application

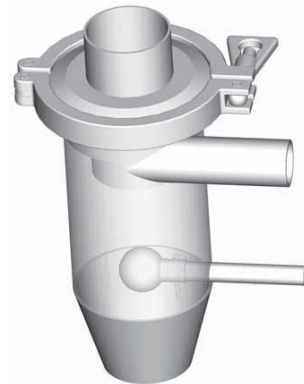
For separation of propellant and product residues or for media sticking at pipelines.



The separator nearly completely separates the gas from the solid or liquid medium. The gas escapes through the upper connection that in the easiest case diverts the gas flow through a bend outside to the ground.

The gas flow can also be piped into the open air or led to a filter. The separated residues are collected in the separator and let out to the bottom.

A spray ball is integrated in the inner chamber for optimum cleaning of the separator:



Features

- Simple design, reliable in operation
- Smooth surfaces
- Hygienic connections
- Compact
- Use of standard gaskets

Design

2 sizes with connection nominal sizes DN 15 and DN 25

- Material AISI 304 or 316 L
- For manual cleaning or automatic/semi-automatic CIP-cleaning

Planning instructions

After driving the pig with gas (mostly compressed air) the medium, which is still sticking to the pipeline wall, is partly entrained at the draining of gas.

On assembling it must be taken into consideration that the separator is mounted high enough so that the separated product can be drained e.g. in a bucket.

If drain piping is desired, the separator which belongs to the hygienic area of the plant should be separated from the waste water system with a professionally mounted funnel.

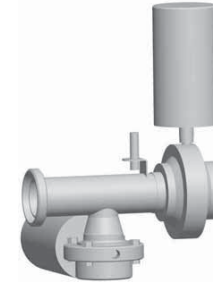
Technical Information

Piggable fittings

Piggable T-piece

Application

The piggable T-piece is piggable in straight passage. It is used where pigs must travel through T-pieces. It also is particularly used in connection with a piggable Nocado ball valve and a launching and receiving station for the comfortable launching in the plant and removing of the pig.



Features

- Simple design, reliable in operation
- Smooth surfaces
- Hygienic
- Suitable for fibrous products

Design

Nominal sizes from DN 25 to DN 100 according to DIN 11850

- With pig detector for position indication
- Can be combined with components of the Nocado product lines
- With ball valve
- With launching and receiving station

Hygienic ball valve

Application

As shut-off valve for piggable piping systems.



Features

- Floating ball
- Sturdy, long service life, reliable in operation
- Cleaning of dead ends through rinse connections (optional)

Design

Available in nominal sizes from DN 25 to DN 100

- Manual actuation
- Pneumatic actuation: spring opening, spring closing, air/air
- Electromotive actuation
- For welding on
- With pipe connections of the Nocado product lines
- End position feedback with
 - o proximity initiators (also Namur)
 - o mechanical limit switches
- Control top also with bus
- Material
 - o housing
 - * AISI 304/304 L (similar to 1.4301/1.4307)
 - * AISI 316 L (similar to 1.4404/1.4435)
 - * special stainless steel or titanium on request

o sealing

- * ball sealing PTFE
- * flange or shaft sealing FEP coated O-rings
- Surface: electro-polished, matt blasted, others on request
- Pressure PN 10, higher pressures available on request