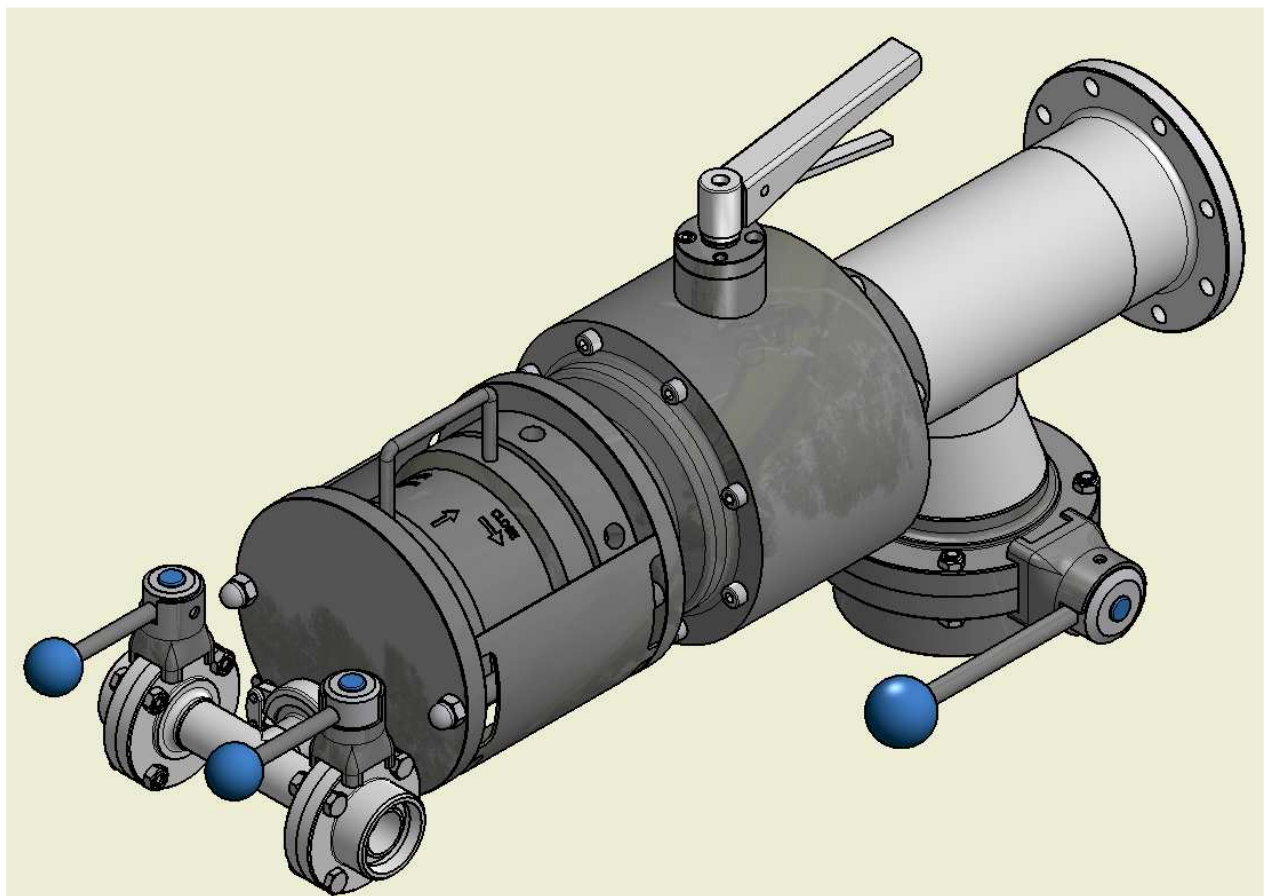


ASSEMBLY INSTRUCTIONS



Pigging Systems / Components
Type: Launching and Receiving Station DN100

AWH Armaturenwerk Hötensleben GmbH

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Edition 12/ 2010

Translation of Original Operating Instructions

		ADVICE
	<p><i>These assembly instructions represent an integral part of the installation and must be accessible for the operators and maintenance personnel at all times. The safety instructions contained therein must be observed. In case the installation is resold, the assembly instructions have to be joined to the delivery.</i></p>	

Translation

If delivered to a country of the European Economic Area, the assembly instructions are to be translated into one of the official languages of the European Community accepted by the manufacturer of the machine / installation into which this pigging system is to be integrated. In case of discrepancies in the text, the original assembly instructions (in German) are to be consulted or the manufacturer is to be contacted.

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1.2 Manufacturer's Declaration - Launching and Receiving Station

AWH Armaturenwerk Hötensleben
 Schulstrasse 5/6
 D-39393 Hötensleben

Declaration of Incorporation

in accordance with

- **EU Guideline: Pressure units 97/23/EG, Schedule II A**

We herewith declare that the type of construction of

Designator: Launching and Receiving Station

Type: DN100 / PN10

in its supplied version is in conformity with the above guidelines and the below listed standards (harmonized standards in accordance with the guidelines):

Guideline/ Standard	Title	Edition	Remarks
DIN EN 62079	Establishment of instructions, structures, contents and presentation	2001	Harmonized standard
97/23/EG	EU Guideline Pressure Units	2000	
AD 2000 Techn. bulletins	Regulations for pressure units (national standards)		
DIN EN 12516-2	Industrial valves - housing rigidity - Part 2: Calculation methods for pressurized housings of fittings made of steel	04.04.2009	Harmonized standard
The Launching and Receiving Station has been designed for liquids of fluid group 1 and for gases of fluid group 2; as such, it has been rated in accordance with article 3, paragraph 3.			

In case of modifications of the launching and receiving station not cleared with us, this declaration becomes void.

Note:

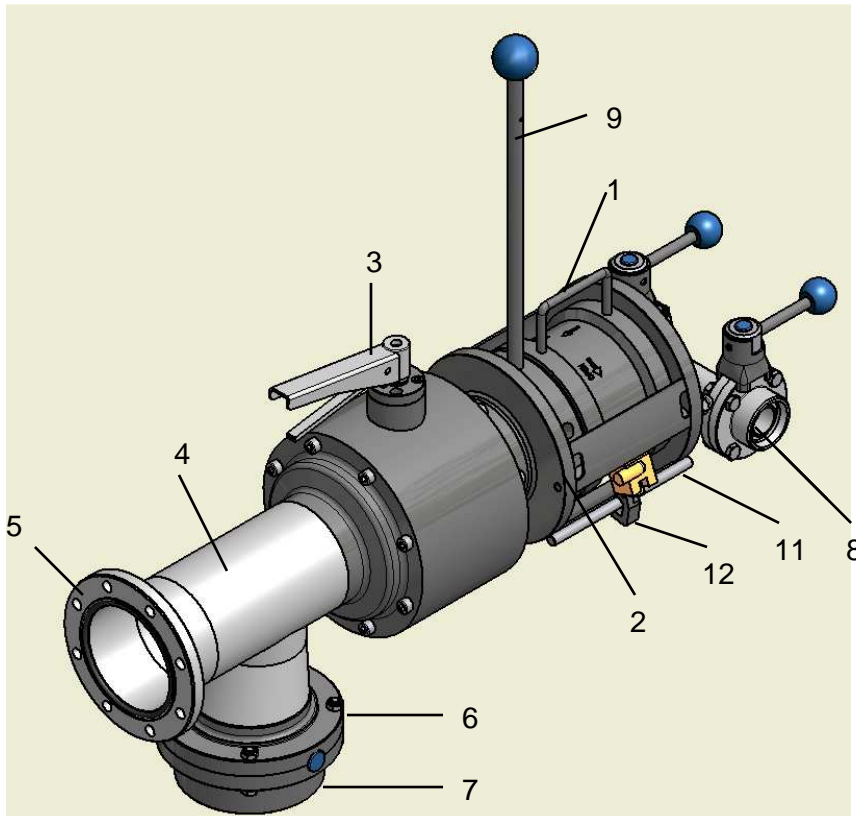
A commissioning is prohibited until it has been determined that the overall installation is in conformity with the regulations of the guidelines. Instructions on the proper use of the fittings can be taken from the operating instructions.

Hötensleben, December 23, 2010

.....
 Thomas Erhorn / General Manager

2 Overview and proper use

2.1 Overview Launching and Receiving Station - III. 2-1





The launching station consists of the following main components:

1	Plug-in chamber
2	Housing
3	Ball valve
4	Tee
5	Pigging connection groove-faced flange DIN 11864
6	Butterfly valve
7	Media branch DIN 11851
8	Connection fitting
9	Handle bar
10	Sensor support
11	Magnetic field sensor

2.2 Proper use

The launching and receiving station was designed for their use in installations of the foodstuffs, beverage and cosmetics industries. Depending on its version, it serves to introduce, receive, remove, and propel AWH lip or tangential pigs in piggable plant sections. The pigging system permits the separation of products and the cleaning of the pigging line. Suitable propelling media for the launching and receiving station are water, air or nitrogen.

	 WARNING
	<p><i>The launching and receiving station was exclusively built for the above described purpose. Any other or additional use or any modification of the launching and receiving station without a prior written agreement with the manufacturer is considered improper. The manufacturer will not accept any liability resulting from this. The risk lies solely with the user. The launching and receiving station must not be commissioned before it has been assured that all safety systems are fully operational and the installation into which this launching and receiving station is to be incorporated is in conformity with the EU guidelines.</i></p>

Proper use includes the observation of the operating instructions prescribed by the manufacturer, as well as the instructions on maintenance and repair.

The work described in this manual is described in such a way that **only** a qualified person will be able to understand and complete it.

Qualified person

Any person who, based on his/her technical training, knowledge and experience as well as his/her knowledge of the applicable standards, is capable of judging the tasks he/she is entrusted with and can recognize possible dangers.

The definition follows the contents of EN 60204-1.

2.3 Technical Data

2.3.1 Working data

Nominal width	DN100
Nominal pressure	PN 10
Working temperature	100°C

2.3.2 Materials in contact with the media

refer to overview 2-1

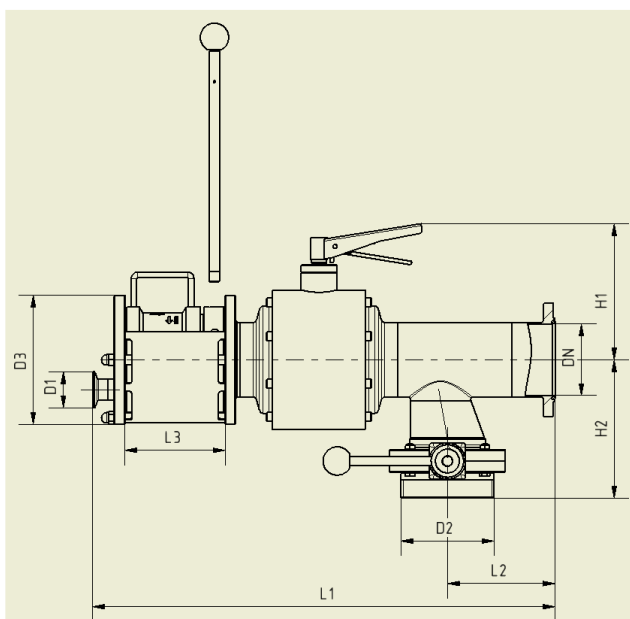
Plug-in chamber	1.4404
Housing	1.4404/ 1.4301
Butterfly valve	1.4404
Ball valve	1.4404
Tee	1.4404

Seal material	EPDM, PTFE silicone
---------------	---------------------------

Surfaces

External surface	metallic bright
Interior surfaces in contact with the media	Ra < 0,8 µm

2.3.3 Dimensions



DN	100
D1	DN 25
D2	Rd 130x1/4"
D3	180
L1	645,5
L2	150
L3	140
H1	210
H2	193,5

III. 2-2



2.3.4 General data

Ambient temperature range

lower temperature limit

+ 5°C

upper temperature limit














+ 60°C



Mounting position

horizontally

3 Safety / Dangers

3.1 Advice / Explanations

	 <div style="background-color: red; color: white; text-align: center; padding: 2px;">DANGER</div> <p><i>"DANGER" cautions about dangerous situations. Avoid all such dangerous situations! Otherwise, death or serious bodily harm will result.</i></p>
	 <div style="background-color: orange; color: white; text-align: center; padding: 2px;">WARNING</div> <p><i>"WARNING" cautions about dangerous situations. Avoid all such dangerous situations! Otherwise, death or serious bodily harm may result.</i></p>
	 <div style="background-color: yellow; color: black; text-align: center; padding: 2px;">CAUTION</div> <p><i>"CAUTION" in combination with the warning sign cautions about dangerous situations. Avoid all such dangerous situations! Otherwise, slight or minor injuries may result.</i></p>
	 <div style="background-color: blue; color: white; text-align: center; padding: 2px;">ADVICE</div> <p><i>"ADVICE" offers recommended procedures the disrespect of which will not result in bodily harm. Follow the recommended procedures to avoid material damage and trouble!</i></p>
	 <div style="background-color: blue; color: white; text-align: center; padding: 2px;">ADVICE</div> <p>Assembly instructions are binding; <i>this is marked by the "book" sign.</i></p>
	 <div style="background-color: red; color: white; text-align: center; padding: 2px;">DANGER</div> <p><i>Risk of contusions is indicated by this pictogram.</i></p>
	 <div style="background-color: red; color: white; text-align: center; padding: 2px;">DANGER</div> <p><i>A risk of burns is indicated by this pictogram.</i></p>

		ADVICE
	<p><i>The Environmental sign indicates measures to protect the environment.</i></p>	

3.2 Characterization of the launching and receiving station

The indications in these assembly instructions refer to the launching and receiving station only, the type and version of which is indicated on the title page. For all inquiries, we need the correct indication of:

- the nominal width
- the type of connection (DIN 11851, DIN 11864, welded on, etc.)
- manual operation
- version with ball valve
- accessory parts (feedback signal, etc.)

3.3 Safety measures (responsibility of the user)

We would like to point out

- that the user has to train his maintenance personnel and to supervise that the safety instructions are adhered to and the mandated personal protective gear is worn
- that the user has to ensure that unauthorized people (no operators or maintenance personnel) are prevented from accessing the danger zone of the installation (into which the launching and receiving station has been integrated)
- that the integration of the launching and receiving station, as well as its service may be effected only after all pipes have been emptied and depressurized.
- that the technical separation of energy sources is effected in such a way as to ensure that the shutdown procedures as described under **4.4.** can be completed.

These assembly instructions are to be retained for future use. They must be accessible close to the installation into which the launching and receiving station has been integrated.









The indicated inspection and control measures must be observed.

4 Safety hints

4.1 Dangers



The safety systems and safety instructions in these assembly instructions must be observed.

The installation is operated manually.

	 <p style="text-align: center;">CAUTION</p> <p><i>The launching and receiving station, the length and quality of the pipes have to meet the requirements. The assembly is to be effected by qualified personnel. The parameters listed on the data sheet must be observed.</i></p>
	 <p style="text-align: center;">DANGER</p> <p><i>A risk of burns exists during operation and maintenance, respectively, in case the flow media reach temperatures exceeding 60 °C.</i></p>
	 <p style="text-align: center;">DANGER</p> <p><i>When opening screw joints or removing the plug-in chamber while the system is still pressurized, there is a risk of injuries caused by ejected system components.</i></p>
	 <p style="text-align: center;">DANGER</p> <p><i>For locating purposes, the pigs are equipped with powerful permanent magnets capable of affecting sensitive, electronic devices. People wearing a pacemaker have to keep a minimum distance of 1 m from the installation.</i></p>

4.2 Dangers at the launching and receiving station

The area around the launching and receiving station has to be kept accessible to the operator.

	 <p style="text-align: center;">CAUTION</p> <p><i>For the operation and preparation, maintenance and repairs the danger zone extends to 1 m around the launching and receiving</i></p>
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	<p>station. The pivoting range of opening switchbox doors has to be taken into consideration as well. The operator has to ensure that any access to the danger zone is prevented while parts of the installation are in motion.</p>
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4.3 Installation of spare and wear parts

We expressly point out that spare and wear parts not supplied by AWH have neither been checked nor approved by us. Consequently, the installation and / or use of such products may adversely modify structural characteristics of your installation.



Messrs. AWH GmbH will not accept any liability for damages caused by the use of other than the original parts or accessories.

4.4 Shutdown procedures

		WARNING
	<p>Before conducting any cleaning, maintenance work or repairs (by qualified personnel only), the following shutdown procedure must be observed.</p> <ol style="list-style-type: none"> 1. Cut higher-level installation / machine / device off from the mains. 2. Block propelling medium / pneumatics <ul style="list-style-type: none"> - close check valve - Make sure the installation is depressurized - Secure check valve against reopening. 3. Block off the media supply, depressurize the pipes and empty same (exercise specific care in case of dangerous substances). Verify that the media supply has been safely cut off and make sure that the dummy disks are in position. Make sure that in case of media temperatures exceeding 60°C a cooling phase is observed. <p>In case of disrespect of the above, dangers for live and limb of the personnel result!</p>	

5 Installation

5.1 Scope of delivery

		ADVICE
	<i>The detailed scope of supply can be taken from the order confirmation.</i>	

5.2 Transport and packing

Before being shipped, all products of Messrs. AWH Armaturenwerk Hötensleben GmbH are carefully checked and packed; however, damage to the products during transport cannot be ruled out completely.

5.2.1 Delivery (applicable for spare and wear parts as well)

Receiving inspection:

- Check for completeness based on the information on the delivery note!

In case of damage

- Check the shipment for damage (visual inspection)!

In case of complaints

If the shipment was damaged during transport:

- Immediately contact the last forwarding agent!
- Do not dispose of the packing material (for a possible inspection by the forwarder or for the return transport).

Packing for return transport

For a possible return transport the machinery parts have to be packed in such a way as to ensure that any damage during a proper transport can be ruled out.

In case of questions in this context, please contact Messrs. AWH Armaturenwerk Hötensleben GmbH.



5.2.2 Intermediate storage

The packing of the machine and the spare and wear parts at the time of delivery has been designed for a storage duration of up to 3 months.

Storage conditions

- Enclosed and dry area with an ambient temperature of + 10°C to + 45°C.
- The relative humidit must not exceed 60% (non-condensing).

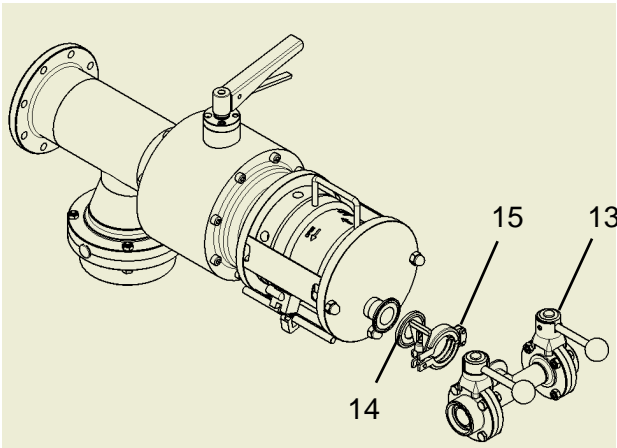
5.3 Installation

		ADVICE
	<p><i>The installation of the launching and receiving station is effected in line with the structural design of the pipe systems and the technical data of the connection variants.</i></p> <p><i>The installation dimensions can be taken from the dimensional drawings. The floor space required for the operation and maintenance must be guaranteed.</i></p> <p><i>Make sure that the flanged connections and pipe connections, respectively, are tightly sealed.</i></p> <p><i>Preclude any tensile or compression stress after installation.</i></p> <p><i>Thanks to the design of the valves, a conversion from a manually operated valve to a remote controlled valve with pneumatic drive can be easily realized without having to disassemble the valves from the pipe system.</i></p>	

5.3.1 Incorporation of the launching and receiving station

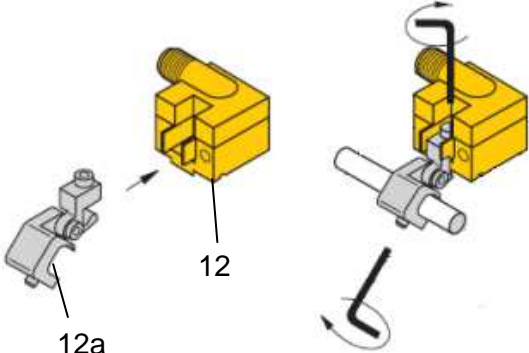
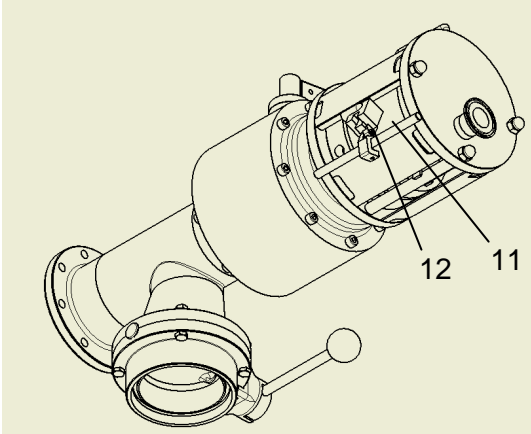
- Check all seals for possible damage and replace them, if necessary.
- Whenever components are being replaced, new seals have to be used.
- Clean the assembly area and conduct a check for possible damages.
- Attach the media supply and return lines.
- Insert the fastening bolts of the launching station into the flange connection and fasten same in a criss-cross tightening sequence in small steps. The bolts have to be tightened to such a degree as to ensure that the joint remains leak-proof under the conditions to be expected.

5.3.2 Assembly of the connection fitting

Assembly of the connection fitting	
 <p>III. 5-1</p>	<p>Attach the connection fitting (13) with a seal (14) and a clamp (15) to obtain a clamped connection in accordance with DIN 32676</p>

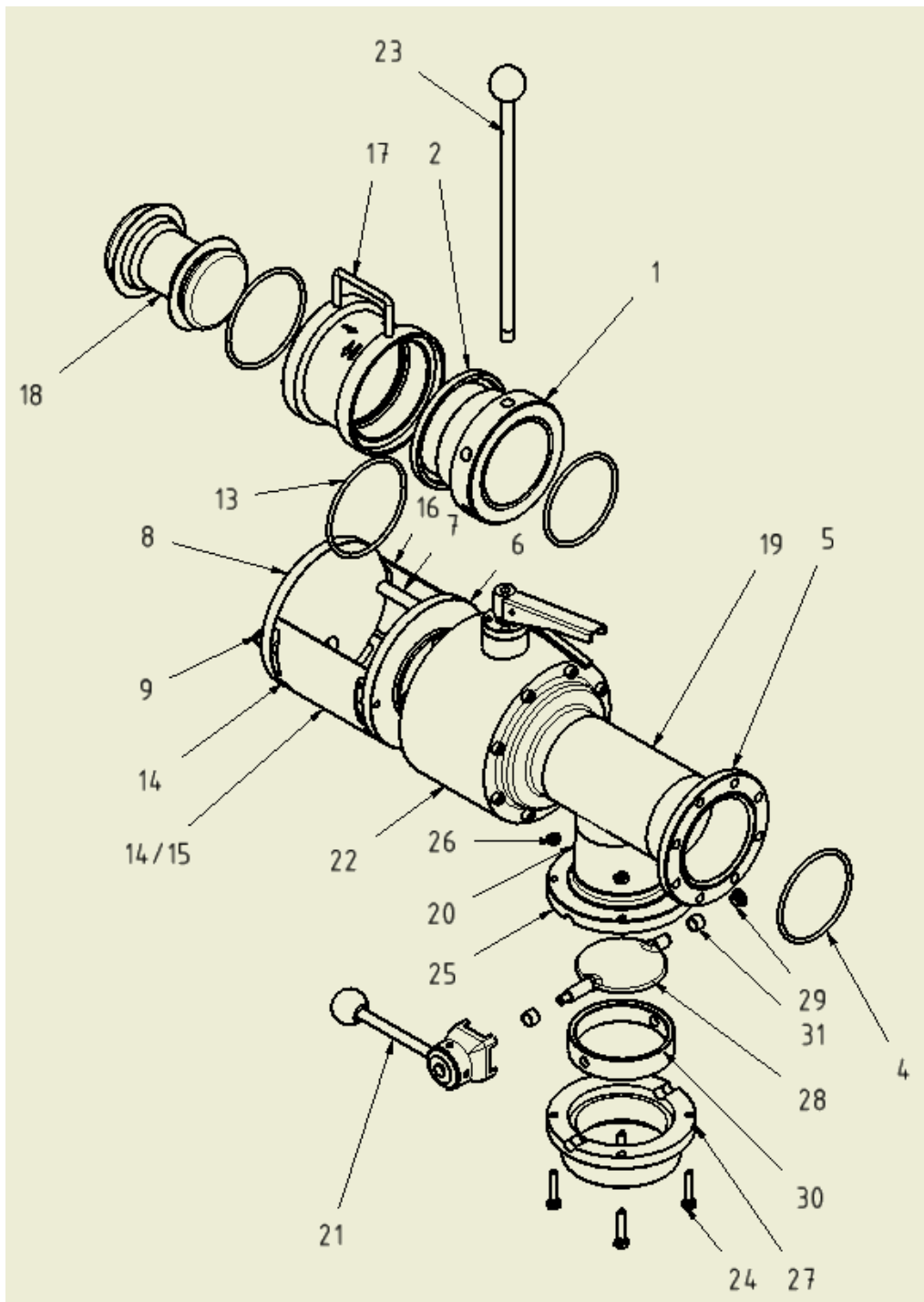
- Attach the propelling pressure supply / relief duct.

5.3.3 Mounting the magnetic field sensor

Assembly pigging sensor	
 <p>12a 12 III. 5-2</p>	<p>Pre-assemble the sensor (12) with the clamp (12a).</p>
 <p>12 11 III. 5-3</p>	<p>Slide sensor onto the support (11). Connect the sensor to the power supply. Adjust the sensor by turning and sliding same. (magnet recognized = the red LED at the sensor lights up). Fix the sensor in position by tightening the screws (Allen key size 3).</p>

6 Design and function

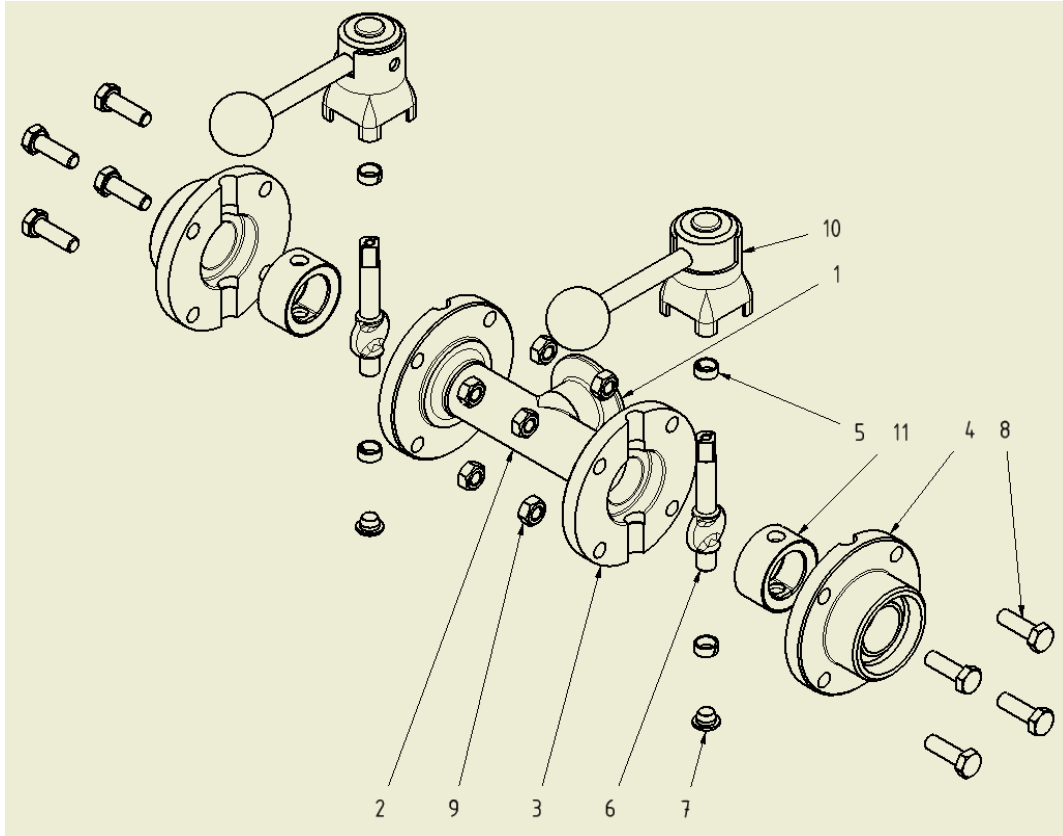
6.1 Launching and receiving station - III. 6-1





Pos.	Qty.	Designator	Material
1	1	Slider chamber part 2 DN100	1.4404
2	1	PTFE ring 139x127x10	PTFE
3	1	Cross-tie 80.5x10x3	1.4404
4	2	O-ring FDA 102x5 EPDM	EPDM
5	1	Groove-faced flange DIN 11864 DN100	1.4404
6	1	Lid 2 DN100	1.4404
7	3	Stud bolt DN100 Lipp	1.4301
8	1	Lid 1 DN100	1.4404
9	3	Cap nut	A2
10	1	Pipe section 29x1,5x10	1.4404
11	1	Clamp nozzle DN25	1.4404
12	1	Ini support DN100 Lipp	1.4301
13	2	O-ring FDA 111x5 EPDM	EPDM
14	1	Shell plate 1 DN100 Lipp	1.4301
15	1	Shell plate 2 DN100 Lipp	1.4301
16	1	Shell plate 3 DN100 Lipp.	1.4301
17	1	Schiebek. DN100 Lipp Teil1 geschw.	1.4404
18	1	Lip pig DN100	PTFE/ Silikon FDA
19	1	Red Tee, shortened	1.4404
20	1	Reducer DN100/80 exc.	1.4404
21	1	SV handle standard DN80-100	1.4301
22	1	Ball valve DN100 SS man. Operated	1.4404
23	1	Handle bar DN80/ 100 cpl	1.4301
24	4	Hexagon bolt M8x40	A2
25	1	Welded flange DN100 DIN	1.4404
26	4	Hexagon nut M8	A2
27	1	Threaded flange DN100	1.4404
28	1	Flap	1.4404
29	1	Plug GPN 300F112 blue	PHT
30	1	SV middle seal DN100	Silikon FDA
31	2	SV bearing sleeve d14 DN80-100	PTFE
32	1	Magnetic field sensor BIM-AKT-AP6X-H1141/S235	

6.2 Connection fitting - III. 6-2



1	1	Clamp nozzle DN25	1.4404
2	1	Tee, short DN 25	1.4404
3	2	Welded flange DN 25	1.4404
4	2	Threaded flange DN 25	1.4404
5	4	SV bearing sleeve di=12 DN25-65	PTFE
6	2	Flap DN25 1.4404	1.4404
7	2	Plug GPN 300F5 blue	PHT
8	8	Hexagon bolt M8x28	A2
9	8	Hexagon nut M8	A2
10	2	SV standard handle DN25-32	1.4301
11	2	Middle seal DN25	Silicone

6.3 Inserting / Removing the pig in / from the launching and receiving station

		CAUTION
	<p>Before conducting any work at the launching and receiving station, make sure that the shutdown procedures are observed.</p>	

		CAUTION
	<p>Prior to each pigging operation, make sure that the receiving station is operational. There must be no pig inside and it has to be properly closed.</p>	

<p>Inserting / removing the pig:</p> <p style="text-align: center;">III. 6-3</p>	<p>After closing the ball valve (3), depressurize the sliding chamber via the pressure relief connector (8).</p> <p>Insert the handle bar (9) into one of the bores of the plug-in chamber's front section (1) and turn same 1/2 to 1 turns in the "open" direction.</p>
<p style="text-align: center;">III. 6-4</p>	<p>Remove the plug-in chamber towards the top and insert the pig (10) into the plug-in chamber from behind; it has to be completely introduced into the plug-in chamber.</p> <p><i>To remove, push the pig out of the plug-in chamber by pressing same towards the rear.</i></p>

<p>III. 6-5</p>	<p>Clean sealing surfaces and check the O-rings.</p> <p>Re-insert the plug-in chamber into the housing. To do this, the guide plates (1a) have to be positioned to the left and the right of the cross-tie (2a)(distortion lock).</p>
<p>III. 6-6</p>	<p>Insert the handle bar (9) into one of the bores of the plug-in chamber's front section (1) and turn same 1/2 to 1 turns in the "close" direction. Make sure that the seals are positioned parallel to each other.</p>



		<p>CAUTION</p>
	<p><i>To prevent any damage, proceed conscientiously and carefully.</i></p>	





7 Maintenance

To ensure a flawless operation of the launching and receiving station it is required that same is maintained regularly.

During operation the launching and receiving station is subjected to vibrations that can lead to a loosening of screw and clamp connections. To preclude possible damages, regularly check the launching and receiving station (recommended intervals in one-shift operation: once every three months) for loose connections.

		CAUTION
	<i>Before conducting any work at the launching and receiving station make sure that the shutdown procedures are observed.</i>	

8 Malfunctions, Causes, Remedies

		WARNING
	<p><i>If the listed measures are not successful, please contact the manufacturer of the installation or Messrs. AWH Armaturenwerk Hötensleben GmbH.</i></p>	



Malfunction	Cause	Remedy
Leaks at the plug-in chamber	Defective O-rings	Replace O-rings
Leaks at the plug-in chamber	Plug-in chamber not sufficiently expanded	Turn front section of the plug-in chamber further towards "Close".
Leaking valves	Defective or worn seal	Replace seal



9 Emergency

The required measures are the responsibility of the user.



10 Disassembly / Disposal



		CAUTION
	<p><i>Before conducting any work at the launching and receiving station make sure that the shutdown procedures are observed.</i></p>	

Disassembly

A disassembly may be effected by qualified personnel only.

Disposal

		ADVICE
	<p><i>The pigging components are predominantly made of steel (with the exception of the electrical equipment); they have to be disposed off in conformity with the applicable local regulations on the protection of the environment.</i></p> <p><i>Oils and detergents are to be disposed off in conformity with the locally applicable regulations and by observing the instructions in the safety data sheets of the manufacturers.</i></p> <p><i>Contaminated cleaning tools (brushes, cloths, etc.) must be disposed off as per the information of the manufacturers as well.</i></p>	

		CAUTION
	<p><i>Make sure not to get in direct contact with hazardous liquids.</i></p> <p><i>Always wear appropriate personal protective gear (e. g., protective goggles, gloves).</i></p>	