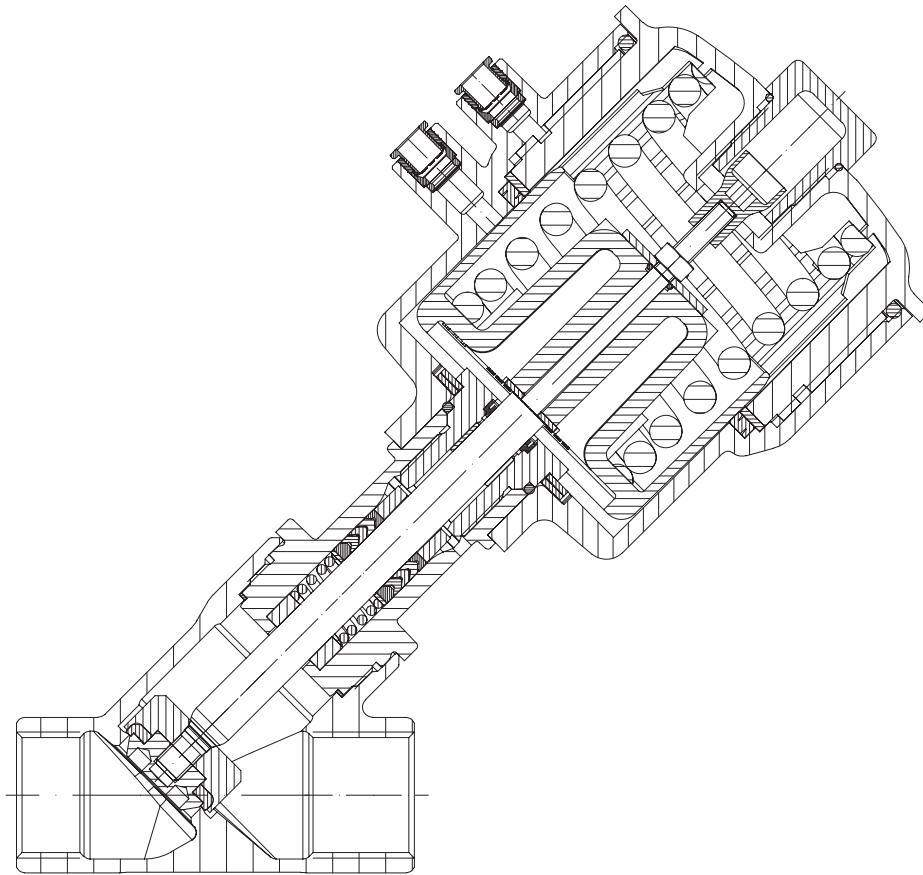


Operating and installation instructions

Y-pattern processing valve - STEVI® AS 350

DN 15 - 50



Series 350

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1.0 General information on operating instructions

These operating instructions provide information on mounting and maintaining the fittings. Please contact the supplier or the manufacturer in case of problems which cannot be solved by reference to the operating instructions.

They are binding on the transport, storage, installation, start-up, operation, maintenance and repair.

The notes and warnings must be observed and adhered to.

- Handling and all work must be carried out by expert personnel or all activities must be supervised and checked.

It is the owner's responsibility to define areas of responsibility and competence and to monitor the personnel.

- In addition, current regional safety requirements must be applied and observed when taking the fittings out of service as well as when maintaining and repairing them.

The manufacturer reserves the right to introduce technical modifications at any time.

These operating instructions comply with the requirements of EU Directives.

2.0 Notes on possible dangers

2.1 Significance of symbols



Warning of general danger.


2.2 Explanatory notes on safety information

In these operating and installation instructions dangers, risks and items of safety information are highlighted to attract special attention.

Information marked with the above symbol and "**ATTENTION !**" describe practices, a failure to comply with which can result in serious injury or danger of death for users or third parties or in material damage to the system or the environment. It is vital to comply with these practices and to monitor compliance.

All other information not specifically emphasised such as transport, installation, operating and maintenance instructions as well as technical data (in the operating instructions, product documentation and on the device itself) must also be complied with to the fullest extent in order to avoid faults which in turn can cause serious injury to persons or damage to property.

3.0 Storage and transport

	<p>ATTENTION !</p> <ul style="list-style-type: none">- Protect against external force (like impact, vibration, etc.).- Valve mountings such as actuators, handwheels, hoods must not be used to take external forces, e.g. they are not designed for use as climbing aids, or as connecting points for lifting gear.- Suitable materials handling and lifting equipment should be used. See catalog sheet for weights.
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- At -20 °C to +65 °C.

4.0 Description

4.1 Scope of applications

Valves are used for „interrupting the flow of liquids, gases and vapours in chemical, processing, and other plants“.



ATTENTION !

- Refer to the data sheet for applications, limits on use and possibilities.
- Certain media require or preclude the use of special materials.
- The valves are designed for standard operating conditions. If conditions exceed these requirements, e.g. aggressive or abrasive media, the operator should state the higher requirements when ordering.

The information complies to the Pressure Equipment Directive 97/23/EC.

It is the responsibility of the machine planner to ensure compliance.

The special markings on the valve must be taken into account.

Refer to the catalogue sheet to see which materials are used in standard versions.

Please contact the supplier or the manufacturer if you have any questions.

4.2 Operating principles

A Y-pattern seat in the body will be closed by a plug, depending on the flow direction with or against the media. The plug is connected with the piston via stem. The stem is sealed within the guidance area between the valve body and control cylinder. The valve is actuated with a piston via control pressure (air).

Depending on application different types are possible:

1. Spring closes on air failure (NC)

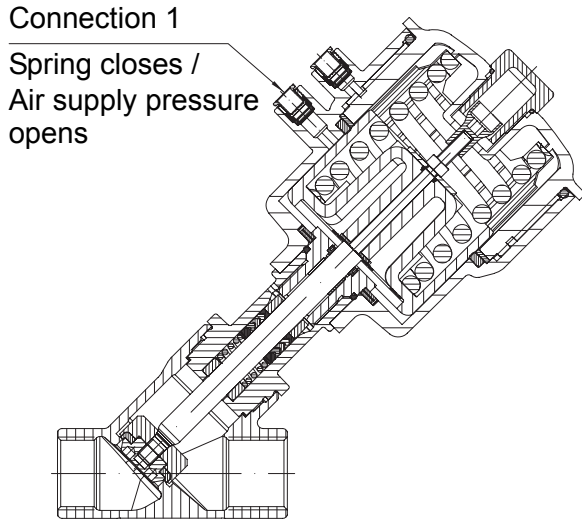


Fig. 1:
When applying pressure, the air supply pressure moves the piston against the spring, lifts the plug from the seat and the valve opens.

2. Spring opens on air failure (NO)

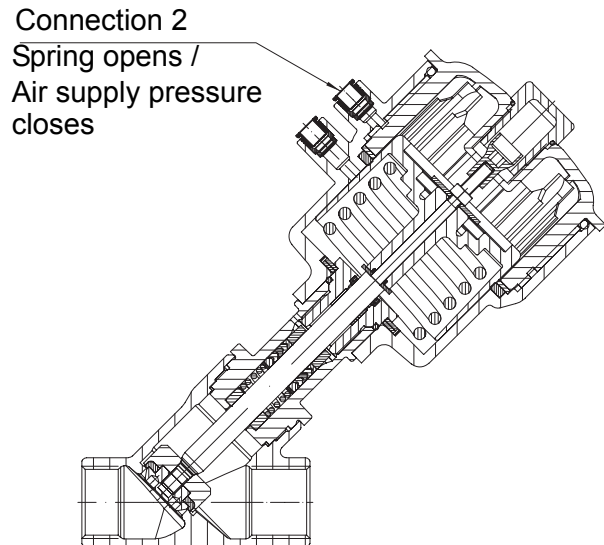


Fig. 2:
In the rest position, the valve is held by a spring below the piston in the open position. The valve closes by introducing the air supply pressure.

3. Double acting (DA)

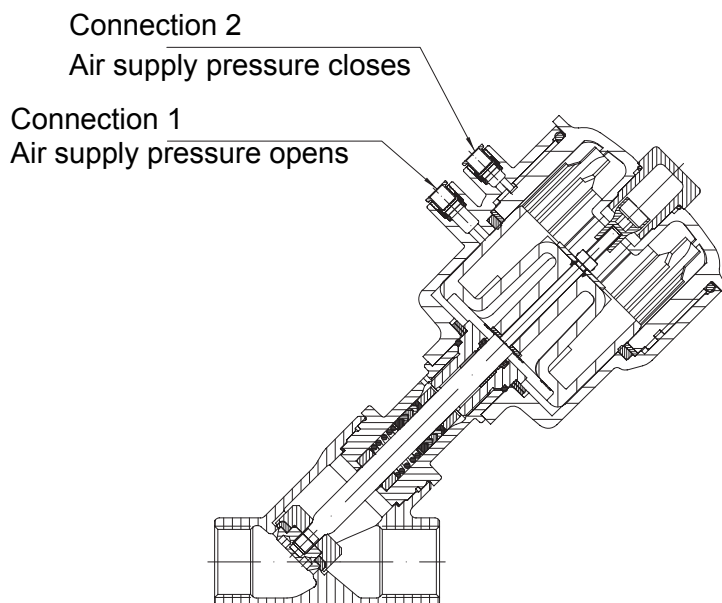


Fig. 3:
There is no spring installed in the actuator. The valve opens and closes only by air supply pressure

4.3 Diagram

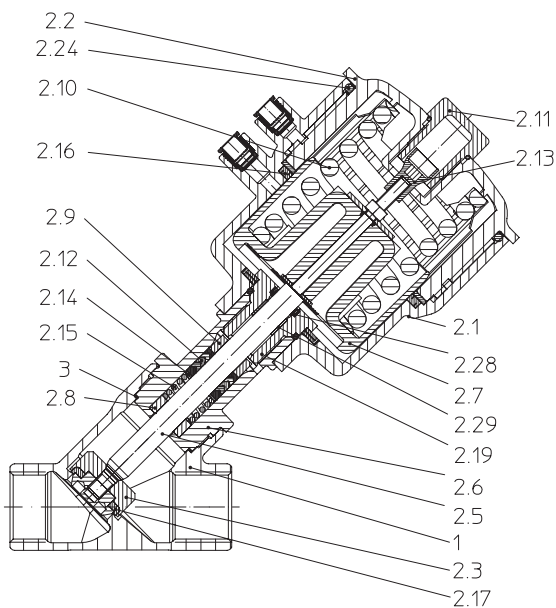


Fig. 4: Series 350 with screwed sockets

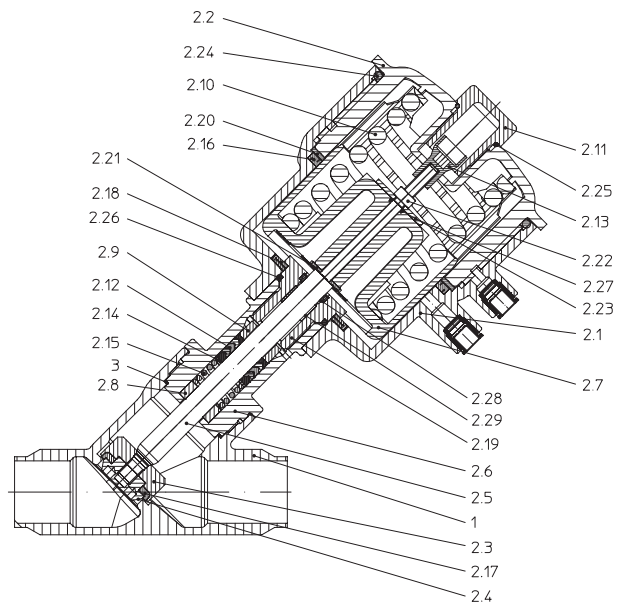


Fig. 5: Series 350 with butt weld ends

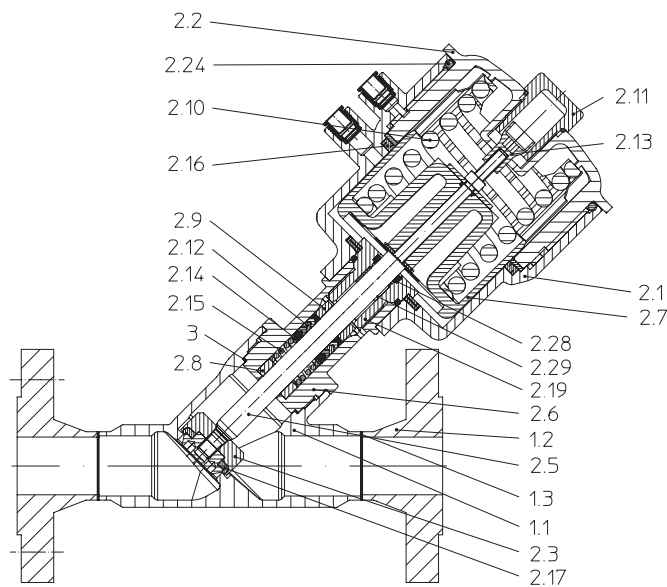


Fig. 6: Series 350 with flanges

4.4 Technical data

for

- **Principal dimensions**

- **Pressure-temperature-ratings, etc.** refer to data sheet.

Ambient temperature for the actuator:

-10°C up to 60°C

Permissible control media:

neutral gases, air

Max. air supply pressure:

10 bar

Air supply pressure

(Function: **Spring closes on air failure (NC)**, on flow-to-open)

DN	15			20			25			32			40			50					
Actuator	ATG50			ATG50			ATG50			ATG80			ATG80			ATG80					
Operating pressure max. (bar)	6	10	16	6	10	16	6	10	6	10	16	6	10	16	6	10	16	6	10	4	
Kvs-value (m ³ /h)	6,2			9,6			19,7			20,7			24,8			36,1			54,3		
Travel (mm)	15			15			15			20			20			20			20		
Air supply pressure min. (bar)	2,9	4,5	6,8	2,9	4,5	6,8	5,7	8,8	2	3,1	4,8	2,8	4,3	7,4	4,3	7,4	8,8	7	8,8	5	

Air supply pressure diagram

(Function: **Spring opens on air failure (NO)**, on flow-to-open)

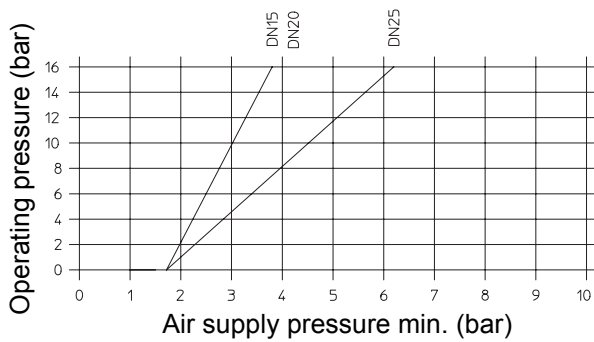


Fig. 7: Actuator ATG50

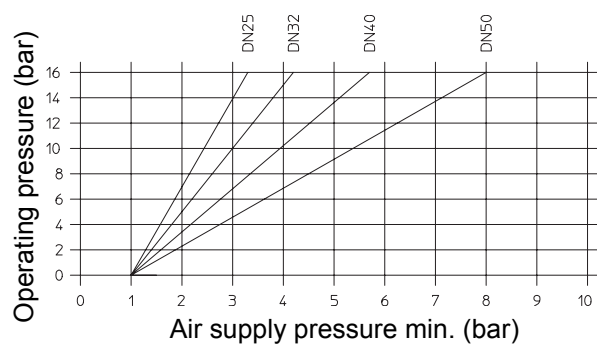


Fig. 8: Actuator ATG80

4.5 Marking

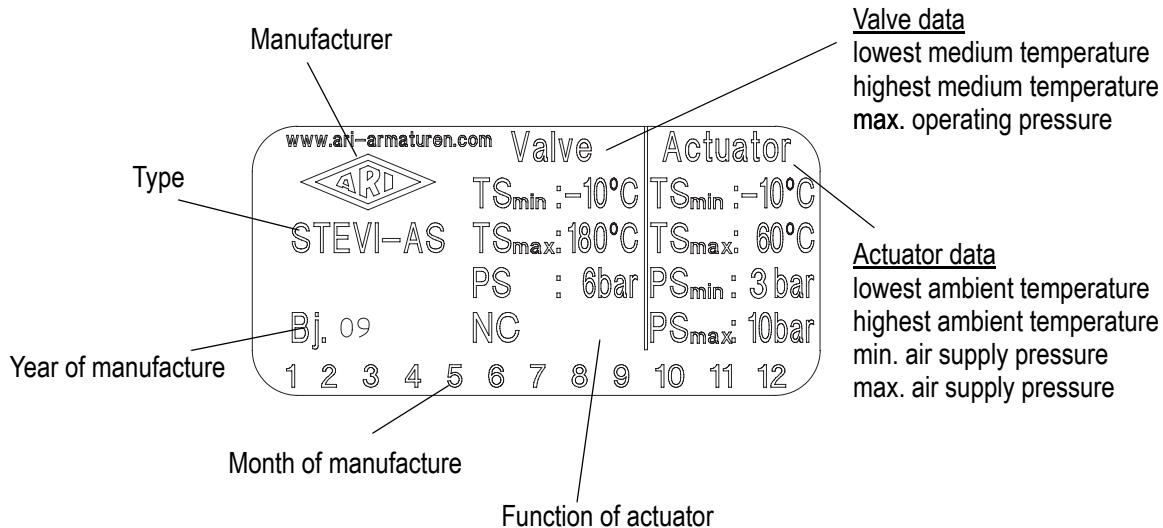


Fig. 9

Address of manufacturer: refer to item 11.0 Warranty / Guarantee

According to the Pressure Equipment Directive article 3, paragraph 3 (sound engineering practice) these products need not carry a CE mark.

5.0 Installation

5.1 General notes on installation

The following items should be taken into account besides the general principles governing installation work:



ATTENTION !

- *Remove flange covers if present.*
- *Remove covers from air supply connection if present.*
- *The interior of valve and pipeline must be free from foreign particles.*
- *Note installation position with reference to flow, see mark on valve.*
- *Steam line systems should be designed to prevent water accumulation.*
- *Lay pipelines so that damaging transverse, bending and torsional forces are avoided.*
- *Protect valves from dirt during construction work.*
- *Connection flanges must mate exactly.*
- *Connecting bolts for pipe flanges should be mounted preferably from the counter flange side (hexagon nuts from the valve side).*
At DN15-32: If valves should be mounted directly to valves, the upper flange connecting bolts should be preferably executed with studs and hexagon nuts on both sides.
- *Valve mountings such as actuators, handwheels, hoods must not be used to take external forces, e.g. they are not designed for use as climbing aids, or as connecting points for lifting gear.*
- *Suitable materials handling and lifting equipment should be used.*
Refer to data sheet for weights.
- *Centre gaskets between the flanges.*
- *Strainers or filters should be installed before the valves.*

- *Planners / construction companies or operators are responsible for positioning and installing products.*
- *The valves are designed for application, not influenced from weather.*
- *For application outside or in adverse environments like corrosion-promoting conditions (sea water, chemical vapours, etc.), special constructions or protective measures are recommended.*

5.2 Requirements at the place of installation

The place of installation should be easily accessible and provide ample space for maintenance and removing the actuator. The valve should preferably installed vertically with the actuator at the top.

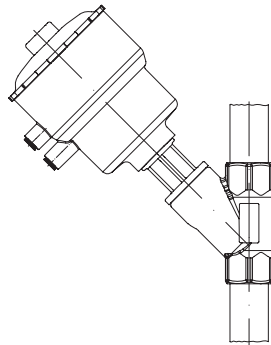


Fig. 10: Pipeline vertically

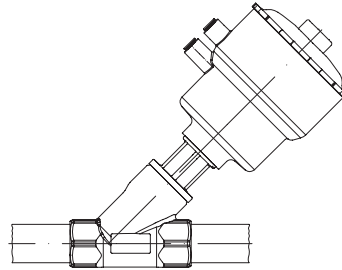


Fig. 11: Pipeline horizontally

To protect the actuators from excessive heat, the pipes have to be insulated.

5.3 Installation instructions concerning actuators

Normally, stop valves are supplied complete with actuator fitted. It is not permitted to mantle / dismantle actuators with valves operating and service conditions (temperature and pressure). At retrofitting or maintenance, the mounting of the bonnet has to be done acc. to item „7.1 Replacement of bonnet“. During assembly work, the plug is not be turned on its seating at air supply pressure.

5.4 Installing valves with butt weld ends

Please note that only qualified persons using appropriate equipment and working in accordance with technical rules are allowed to install fittings by welding. The responsibility for this lies with the system owner.

Refer to the data sheet for information about the shape of the butt weld ends.



ATTENTION !

Before welding, the bonnet has to be dismantled in order to avoid damage to the plug sealing.

6.0 Putting the valve into operation



ATTENTION !

- Before putting the valve into operation, check material, pressure, temperature and direction of flow.
- Regional safety instructions must be adhered to.
- Residues in piping and valves (dirt, weld beads, etc.) inevitably lead to leakage.
- Touching the valve when it is operating at high ($> 50\text{ °C}$) or low ($< 0\text{ °C}$) media temperatures can cause injury.

Affix warning notice or protective insulation as appropriate!

Before putting a new plant into operation or restarting a plant after repairs or modification, always make sure that:

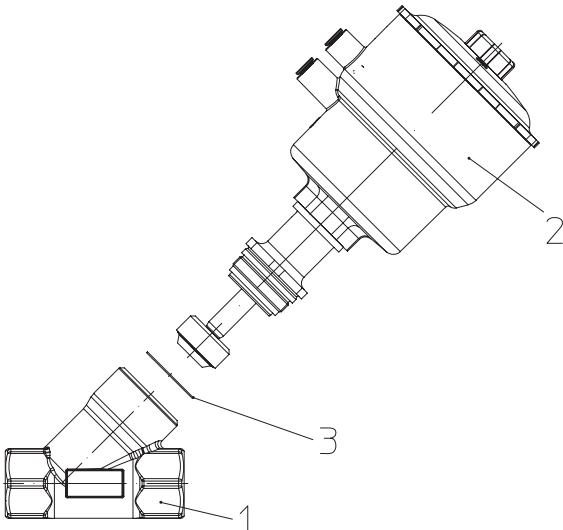
- All works has been completed!
- The valve is in the correct position for its function.
- Safety devices have been attached.
- Control lines are mounted relaxed and without kinkings.

7.0 Care and maintenance

Maintenance and maintenance intervals have to be defined by the operator according to the service conditions.

7.1 Replacement of bonnet

At leakages at the stem or in the plug tightness or resp. on failures of the actuator, the bonnet must be changed.



ATTENTION !

Refer to item 10.0 and 11.0 before dismantling the valve.

Fig. 12

- Relieve valve seat before removing and installing

Function:

Spring closes on air failure (NC) --> switch actuator (switch on air supply pressure);

Spring opens on air failure (NO) --> switch off air supply pressure;

Double acting (DA) --> switch off air supply pressure


- Unscrew bonnet (pos. 2) from the body (pos. 1) (at the hood above the body)
- Remove the gasket (Pos. 3) between body (Pos. 1) and bonnet (Pos. 2) from the body (Pos. 1).
- Replace gasket (Pos. 3) and screw new bonnet (Pos. 2) into the body (Pos. 1).
(For tightening torques refer to item 7.2).

7.2 Tightening torques

DN 15	=	50 Nm
DN 20	=	50 Nm
DN 25	=	60 Nm
DN 32	=	70 Nm
DN 40	=	80 Nm
DN 50	=	100 Nm


8.0 Troubleshooting

In the event of malfunction or faulty operating performance check that the installation and adjustment work has been carried out and completed in accordance with these Operating Instructions.

	<p>ATTENTION ! - It is essential that the safety regulations are observed when identifying faults.</p>
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If malfunctions cannot be eliminated with the help of the following table "9.0 Troubleshooting table", the supplier or manufacturer should be consulted.

9.0 Troubleshooting table

	<p>ATTENTION ! - read item 10.0 and 11.0 prior to dismantling and repair work! - read item 6.0 before restarting the plant !</p>
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Fault	Possible cause	Corrective measures
No flow	Valve closed.	Open valve (using actuator).
	Flange covers not removed.	Remove flange covers.
Little flow	Valve not sufficiently open.	Open valve (using actuator).
	Dirt sieve clogged.	Clean / replace sieve.
	Piping system clogged.	Check piping system.
Valve stem moves in jerks.	PTFE V-ring unit damaged or worn	Replace bonnet (pos. 2); refer to item 7.1
Leakage too high when valve is closed.	Sealing surfaces of plug eroded or worn.	Replace bonnet (pos. 2); refer to item 7.1
	Sealing edge of seating damages or worn.	Replace valve
	Seating and/or plug dirty.	Clean internals of valve;
	Pneumatic actuator not completely vented; spring force not fully effective.	Vent actuator air chamber completely.
	Actuator not powerful enough.	Install more powerful actuator.

10.0 Dismantling the valve or the top part



ATTENTION !

The following points must be observed:

- *Pressureless pipe system and control line system.*
- *Medium must be cool.*
- *Plant must be drained.*
- *Purge piping systems in case of caustic or aggressive media.*

11.0 Warranty / Guarantee

The extent and period of warranty cover are specified in the "Standard Terms and Conditions of Albert Richter GmbH & Co. KG" valid at the time of delivery or, by way of departure, in the contract of sale itself.

We guarantee freedom of faults in compliance with state-of-the-art technology and the confirmed application.

No warranty claims can be made for any damage caused as the result of incorrect handling or disregard of operating and installation instructions, datasheets and relevant regulations.

This warranty also does not cover any damage which occurs during operation under conditions deviating from those laid down by specifications or other agreements.

Justified complaints will be eliminated by repair carried out by us or by a specialist appointed by us.

No claims will be accepted beyond the scope of this warranty. The right to replacement delivery is excluded.

The warranty shall not cover maintenance work, installation of external parts, design modifications or natural wear.

Any damage incurred during transport should not be reported to us but *rather* to the competent cargo-handling depot, the railway company or carrier company immediately or else claims for replacements from these companies will be invalidated.



Technology for the Future. GERMAN QUALITY VALVES

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Telephone (+49 5207) 994-0 Telefax (+49 5207) 994-158 or 159
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12.0 Manufacturers declaration

ARI-Armaturen Albert Richter GmbH & Co. KG,
Mergelheide 56-60, D-33756 Schloß Holte-Stukenbrock

EC declaration of conformity
as defined by
the Pressure Equipment Directive 97/23/EC

Herewith we declare,

that pursuant to the aforementioned Pressure Equipment Directive the products listed below were executed and classified in accordance with Directive 97/23/EC article 3, paragraph 3 „Sound engineering practice“ (Fluid group 2) .

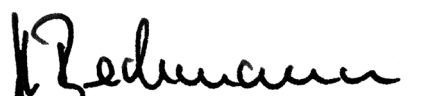
Pursuant to article 3, paragraph 3 these products need not carry a CE mark.

**Y-pattern processing valve
Type 350**

Applied standards:

DIN 12516
AD 2000 leaflet A4
- Cast steel

Schloß Holte-Stukenbrock, 06.10.2009


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(Brechmann, Managing director)