

APV DELTA UF3(A) / UFR3(A) DN25-100, 1"-4" RELIEF VALVE

SAFETY AGAINST EXPLOSION - FOR SPECIFIC ATEX-APPLICATIONS



FORM NO.: H332844 REVISION: UK-0-ATEX

READ AND UNDERSTAND THIS MANUAL PRIOR TO OPERATING OR SERVICING THIS PRODUCT.





EU Declaration of Conformity for Valves and Valve Manifolds

SPX Flow Technology Germany GmbH
Gottlieb-Daimler-Str. 13, D-59439 Holzwickede
herewith declares that the

APV relief valves of the series UF3 and variants ATEX design
in the nominal diameters DN 25 – 100, 1“ – 4“

meet the requirements of:

Machinery Directive 2006/42/EC
(superseding 89/392/EEC and 98/37/EC)
Equipment and Product Safety Act GPSG - 9.GPSGV
and
Directive on the Protection against Explosion 2014/34/EU ATEX (superseding 94/9/EC)
for Equipment Category -/2G IIB TX

For official inspections, SPX FLOW presents
a technical documentation according to Appendix VII of the Machinery Directive,
this documentation consisting of documents of the development and construction,
description of measures taken to meet the conformity and to correspond with
the basic requirements on safety and health, incl. an analysis of the risks,
an analysis of ignition hazards as well as an instruction manual with safety instructions.

The conformity of the valves is guaranteed.

An ATEX documentation is lodged at the notified body DEKRA EXAM GmbH
in Bochum, Germany (No. 0158)

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November 2017

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Spare Parts List DN and Inch design	RN ATEX 01.054.53

1. General Terms

This instruction manual applies for DELTA UF3 relief valves in the nominal dimensions DN25-100, 1"-4" for use in specific ATEX applications (according to Directive 2014/34/EU).

The valve must only be assembled, operated, disassembled and maintained by persons who have been trained accordingly. If necessary, contact your local SPX FLOW representative.

This instruction manual must be read and observed by the responsible operating and maintenance personnel.

We point out that we will not accept any liability for damage or malfunctions resulting from the non-compliance with this instruction manual.

Descriptions and data given herein are subject to technical changes.

1.1. Symbols



This symbol draws your attention to important directions which have to be observed with regard to the operation in explosive areas.



This technical safety symbol draws your attention to important directions for operating safety. You will find it wherever the activities described are bearing health hazards or risks for persons or material assets.

1.2. Responsibility for ATEX certification - scope of supply

SPX FLOW will be held responsible only for the valves supplied and selected according to the operating conditions indicated by the customer or end user and as stated in the order confirmation. If in doubt, contact your local supplier.

All other assembled equipment and devices must have a separate certification of at least the same or higher grade of protection as the valve, provided by the supplier(s) of that equipment and devices. The complete unit must be certified separately by the final assembling manufacturer and must have a separate name plate supplied by the unit manufacturer.

2. Safety Instructions

**Danger!**

Do not touch the open valve or the yoke!

Risk of injury due to sudden valve operation.

Risk of injury in dismantled valve state due to sudden valve operation.

- Regular maintenance including the replacement of all seals and bearing bushes must be scheduled in order to prevent leakages and discharge of liquids.



- Additional maintenance of spring-bearing components according to chapter 12. Maintenance
- Before any maintenance work the line system must be depressurized and drained if possible.
- Separate all electric and pneumatic connections.
- Observe the following Service Instructions to ensure safe maintenance of the valve.

**Danger!**

Welded actuators are preloaded by spring force.

**Opening of the actuators is strictly forbidden.
Danger to life!**

Actuators which are no longer used or defective must be disposed in professional manner.

Defective actuators must be returned to your SPX FLOW representative for their professional disposal and free of charge for you.

Please address to your local SPX FLOW representative.

2. Safety Instructions

Installation, connection, start-up, maintenance and repair work must only be carried out by qualified personnel.

The following aspects must be observed:

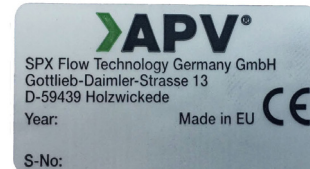
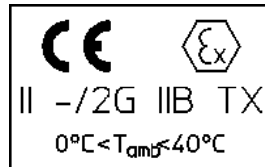
- The instructions of this manual together with all relevant instructions for the components, equipment and installations installed.
- Warnings and installations fixed to the components.
- The specific regulations for and requirements to the system in which the valve is installed.
- The currently valid regional, national and international regulations.
- Any special requirement and national legislation relative to the use of flammable liquids or tools, e.g. the risk of ignition in case of spark formation, must be observed.
- It must be ensured that the group, the category and the temperature class of the valve complies with the minimum requirements of the operating environment!
- Inflammable gas mixtures or dust concentrations in connection with hot, operational and movable parts of the valve can lead to serious or fatal injury!
- Before start of assembly the operator must make sure that an explosive atmosphere does not exist (detection/measurement of potential concentration of hazardous substances).
- Conductive connection to the pipeline must be provided. The integration into the internal potential equalisation must be guaranteed!
- In the sense of the Pressure Equipment Directive 2014/68/EU, the DELTA UF3/UFR3 relief valve is a "pressure-retaining component" and is not a "component with safety function", i.e. the valve **must not** be used as safety valve.



3. Identification of valves, Temperature classes, Responsibilities

3.1. Identification of valves for use in ATEX environment

ATEX identification:



- Equipment group II
- Equipment category outside 2G
 inside no equipment
- Explosion subcategory IIB

Ambient temperature for the operation

$$0\text{ °C} \leq T_{amb} \leq 40\text{ °C}$$

- Temperature classes TX (according to table 3.2)

3.2. Temperature classes and permissible temperatures

Media temperature	≤ 75 °C	≤ 95 °C	≤ 130 °C	up to 140 °C = T _{max} .
Safety addition	+ 5 °C	+ 5 °C	+ 5 °C	+ 5 °C
Temperature class	T6	T5	T4	T3

Under standard operating conditions the highest surface temperature will be comparably as high as the temperature of the medium (product and cleaning liquid) plus a safety addition for local temperature increases. The valve must be completely free to the environment in order to provide for sufficient heat release.

All data (temperature classes) refer to an ambient temperature of 0°C to 40°C. If the ambient temperature is above 40°C, the temperature difference must be adjusted.

In all cases, contact your responsible SPX FLOW representative!

3. Identification of valves, Temperature classes, Responsibilities

3.3. Responsibilites

It is within the operator`s responsibility to ensure that the specified product temperatures are not exceeded and that regular inspections and maintenance are carried out to provide for proper function of the valve.

4. Intended Use

The intended use as field of application of the DELTA UF3 relief valve is to prevent the max. product pressure from being exceeded or to discharge a certain product quantity.



Attention:

In the sense of the Pressure Equipment Directive 2014/68/EU, the DELTA UF3/UFR3 relief valve is a "pressure-retaining component" and is not a "component with safety function", i.e. the valve **must not** be used as safety valve.

Its use is permissible only within the admissible pressure and temperature margins and under consideration of chemical and corrosive influences.

Any use exceeding the margins and specifications set forth, is considered to be not intended.

Any damage resulting therefrom is not within the responsibility of the manufacturer.

The user will bear the full risk.

Attention!

Improper use of the valve leads to:

- damage
- leakage
- destruction.

Failures in the production process are possible.



Warning!

The valve is suitable for use in hazardous areas as identified on the valve according to Directive 2014/34/EU.

Arbitrary, constructive changes at the valve will influence safety as well as the intended functionality of the valve and are **not** permissible.

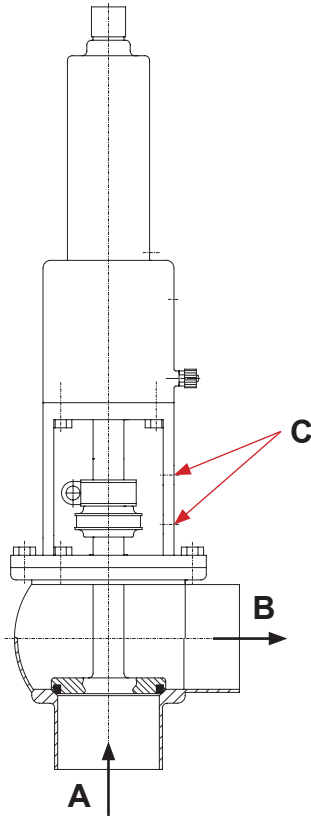
Authorizations and External Evaluations

To view the certifications for this and other innovative SPX FLOW products, visit

<https://www.spxflow.com/en/apv/about-us/certifications/>

5. Mode of Operation

DELTA UF3/ UFR3 relief valve



5.1. General terms

The valve has been developed for use in the brewing and beverage, dairy and food industries as well as for chemical and pharmaceutical applications.

The valves are designed for universal applications and stand out for their increased mechanical reliability and absolute ease of service.

The DELTA UF3/UFR3 relief valve is used to prevent a desired product pressure from being exceeded due to process requirements or to discharge a certain product quantity.

If the preset opening pressure is exceeded, the valve is opened automatically by the imminent line pressure in the supply line **(A)** under the valve seat. The liquid is drained via the discharge line **(B)**. If the adjusted set value falls short, the valve is closed by spring force.

The flow direction is always from A → B.

Attention:

DN in the sense of the Pressure Equipment Directive 2014/68/EU, the DELTA UF3/UFR3 relief valve is a "pressure-retaining component" and is not a "component with safety function", i.e. the valve **must not** be used as safety valve.

Proximity switches to signal the valve position can be installed in the yoke area **(C)**.

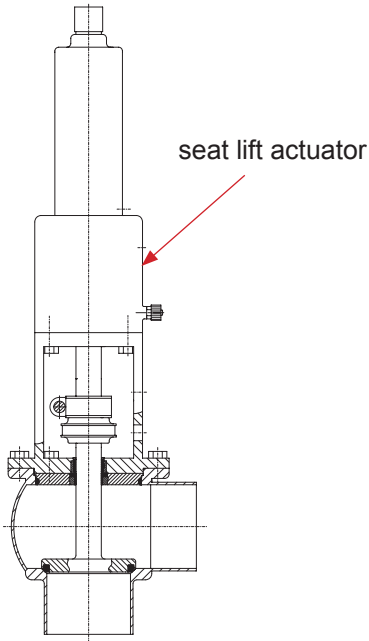
The use of valve position indicators which are approved for the application in explosive atmosphere is compulsory.

The use and operation of valve position indicators shall be evaluated by the operator of the installation!

Assembly, see chapter 12.5.4.

6. Auxiliary Equipment

fig. 6.1.



6.1. Seat lift actuator

The UF3 valve can be equipped with a seat lift cylinder if required for cleaning technical reasons . (see chapter 7.)

6.2. Valve seat variants (fig. 6.2.)

Valve seat in flat and conical design, for special requirements, are available. Through the use of a valve seat with regulating cone, the flow behaviour at low flow quantities is improved and a "softer" valve closing is achieved. The valve variant is called "UFR3".

6.3. Housing configurations (fig. 6.3.)

Different housing shapes can be applied to reduce dead spaces to a minimum.

fig. 6.2.

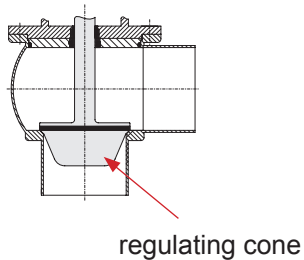
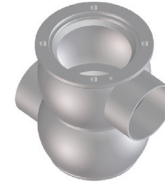


fig. 6.3.

UF31



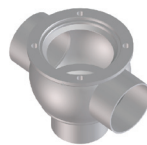
UFE31



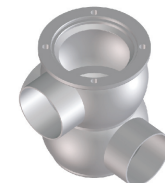
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UF32



UFE33



UFE34

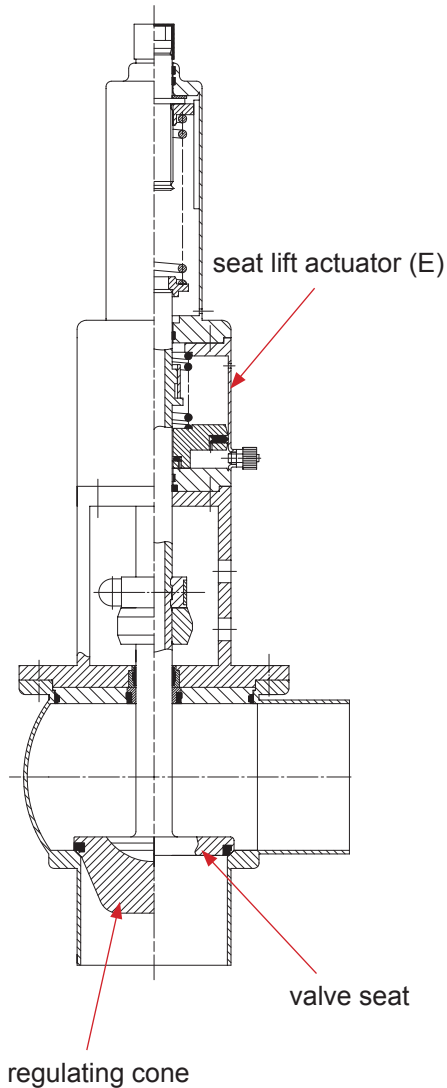


7. Cleaning

Optimum cleaning is given if the seat lift actuator (E) drives the valve seat into the position "on" during the cleaning process (fig. 5.1).

During this process, the cleaning liquid can flush the seal surfaces.

After termination of the cleaning step, the seat lift actuator is vented and the valve seat moves into "closed" position by spring force.



7.1. The flow chambers

The passages of the valve are cleaned by the cleaning liquid during cleaning of the connected pipelines.

Depending on the degree and substances of soiling, cleaning liquids, times and processes must be scheduled for the individual application.

The compatibility of the individually selected cleaning processes and liquids with the respective seal material must be verified.

8. Installation

8.1. General terms

Installation has to be done in such a way that liquids can drain off the valve housing. Vertical position is preferred.

Valves can be welded direct into the pipeline (valve insert completely dismantable).

- After the installation, the set value must be adjusted by a pressure gauge.

Adjustment:	turn right	=	pressure increase
	turn left	=	pressure reduction

If required, the value can be corrected during production by turning the adjusting screw at the spring cylinder.

Attention! Observe Welding Instructions 8.2.

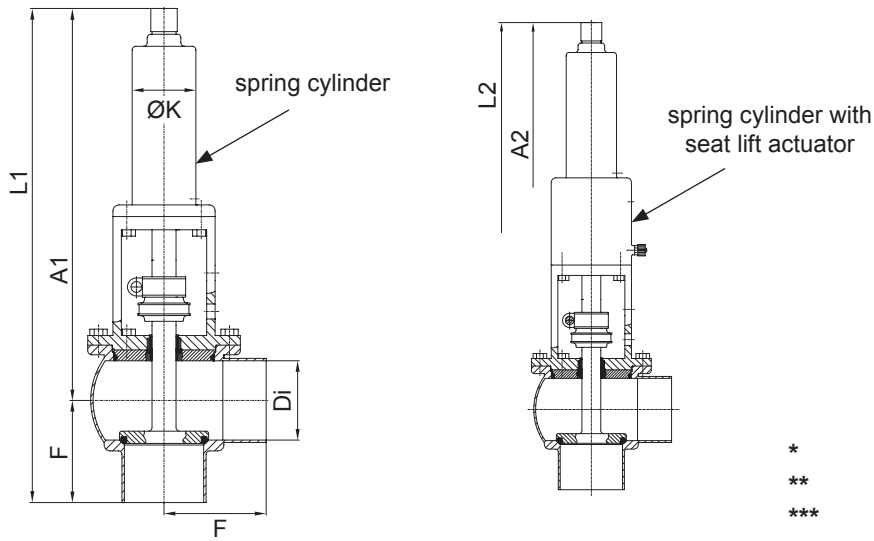
Conductive connection to the pipeline must be provided. The integration into the operational potential equalization must be guaranteed!

8. Installation

8.2. Welding Instructions

- Before welding of the valve, the valve insert must be dismantled from the housing. Careful handling to avoid damage to the parts is necessary.
- Welding should only be carried out by certified welders (DIN EN ISO 9606-1). (Seam quality DIN EN ISO 5817).
- The welding of the valve housings must be undertaken in such a way that the valve body is not deformed.
- The preparation of the weld seam up to 3 mm thickness must be carried out as a square butt joint without air.
(Consider shrinkage!)
- TIG orbital welding is best!
- After welding of the valve housings or of the mating flanges and after work at the pipelines, the corresponding parts of the installation or pipelines must be cleaned from welding residues and soiling.
If these cleaning instructions are not observed, welding residues and dirt particles can settle in the valve and cause damage.
- Any damage resulting from the non-observance of these welding instructions is not subject to our guarantee.

9. Dimensions / Weights



* without / with regulating cone
 ** weight without/with seat lift act.
 *** dimension without/with seat lift act.

DN	Inch	*		***				***				**	
		pressure range (bar)		A1	A2	Ø Di		F	L1	L2	Ø K	Weight in kg	
		flat	cone	with- out	with	DN	Inch		with- out	with- out		with- out	with- out
25	1"	0-6,8	0-5,4	310	395	26	22,2	50	360	445	53	2,4	4,9
25	1"	0-10,0	0-10,0	353	438	26	22,2	50	403	488	53	2,6	5,1
40	1,5"	0-3,5	0-2,9	316	401	38	34,9	67	383	468	53	3,3	5,8
40	1,5"	0-7,5	0-6,3	359	444	38	34,9	67	426	511	53	3,5	6,0
40	1,5"	0-10,0	0-10,0	389	474	38	34,9	67	456	541	85	5,6	8,1
50	2"	0-2,1	0-1,8	322	407	50	47,6	72	394	479	53	3,8	6,3
50	2"	0-4,5	0-4,0	365	450	50	47,6	72	437	522	53	4,0	6,5
50	2"	0-10,0	0-10,0	395	480	50	47,6	72	467	552	85	6,1	8,6
65	2,5"	0-1,2	0-1,1	330	415	66	60,3	85	415	500	53	5,2	7,7
65	2,5"	0-2,7	0-2,4	373	458	66	60,3	85	458	543	53	5,4	7,9
65	2,5"	0-7,6	0-7,0	403	488	66	60,3	85	488	573	85	7,5	10,0
65	2,5"	0-10,0	0-10,0	451	536	66	60,3	85	536	621	85	8,0	10,5
	3"	0-1,1	0-1,0	333	418		72,9	90	423	508	53	6,6	9,1
	3"	0-2,3	0-2,1	376	461		72,9	90	466	551	53	6,8	9,3
	3"	0-6,5	0-6,0	406	491		72,9	90	496	581	85	8,8	11,3
	3"	0-10,0	0-10,0	454	539		72,9	90	544	629	85	9,3	11,8
80		0-0,9	0-0,8	338	423	81		98	436	521	53	6,7	9,2
80		0-1,8	0-1,7	381	466	81		98	479	564	53	6,9	9,4
80		0-5,2	0-4,8	411	496	81		98	509	594	85	9,0	11,5
80		0-10,0	0-10,0	459	544	81		98	557	642	85	9,5	12,6
100	4"	0-0,6	0-0,5	347	432	100	97,6	111	458	543	53	8,5	11,0
100	4"	0-1,2	0-1,1	390	475	100	97,6	111	501	586	53	8,7	11,2
100	4"	0-3,5	0-3,2	420	505	100	97,6	111	531	616	85	10,8	13,3
100	4"	0-8,3	0-7,7	468	553	100	97,6	111	579	664	85	11,3	13,8

10. Technical Data

10.1. General data

- Product-wetted parts: 1.4404 (DIN EN 10088)
- Other parts: 1.4301 (DIN EN 10088)
- Seals: standard design EPDM
- option: HNBR, VMQ, FPM

- max. line pressure 10 bar or acc. to drawing data
- max. operating temperature: 135°C EPDM, HNBR *FPM, *VMQ
- short-term load: 140°C EPDM, HNBR *FPM, *VMQ *(no steam)

- ambient temperature: 0 - 40 °C
- air connection (for hose): 6 x 1mm
- control pressure for seat lift actuator: 10 bar max. / 6 bar min.

Depending on the size of the spring cylinder, the response pressure can be adjusted variably or up to max. 10 bar. (or according to drawing data)

- The minimum response pressure can be > 0 bar depending on the valve mounting position and the friction of the shaft seal.

Use dry and clean control air only!

10.2. Compressed air quality

- Compressed air quality: quality class according to ISO 8573-1
- Content of solid particles: quality class 3,
max. number of particles per m³
10000 of 0,5 µm < d ≤ 1,0 µm
500 of 1,0 µm < d ≤ 5,0 µm
- Content of water: quality class 4,
max. dew point temperature - 20 °C
For installations at lower temperatures or at higher altitudes, additional measures must be considered to reduce the pressure dew point accordingly.
- Content of oil: quality class 1,
max. 0,01 mg/m³

The oil applied must be compatible with Polyurethane elastomer materials.

11. Maintenance

The maintenance intervals depend on the corresponding application and are to be determined by the operator himself carrying out temporary checks.

The valve must not be cleaned with products containing abrasive or polishing material. Especially the valve shaft must not, under any circumstances, be cleaned with such agents. Damage of the valve shaft can lead to leakages.



Before start of maintenance and assembly the operator must make sure that an explosive atmosphere does not exist (detection/ measurement of potential concentration of hazardous substances). Alternatively, use spark-resistant tools!

Exchange of seals is done according to Service Instructions. Customer stock keeping of spare seals is recommended. For valve service actions we supply complete seal kits including seal grease (see spare parts lists).

Attention! Use food-grade grease and special greases being suited for the respective seal material, only!

Recommendation:

APV assembly grease for EPDM, FPM, HNBR and NBR
(0,75 kg/tin - ref.-No. 000 70-01-019/93; H147382)
(60 g/tube - ref.-No. 000 70-01-018/93; H147381)

or

APV assembly grease for VMQ (Silicone)
(0,6 kg/tin - ref.-No. 000 70-01-017/93; H147380)
(60 g/tube - ref.-No. 000 70-01-016/93; H147379)

- ! Do not use grease containing mineral oil for EPDM seals.
- ! Do not use Silicone-based grease for VMQ seals.

Less suited grease types can influence function and service life.

11. Maintenance

Additionally required maintenance for applications in ATEX environment

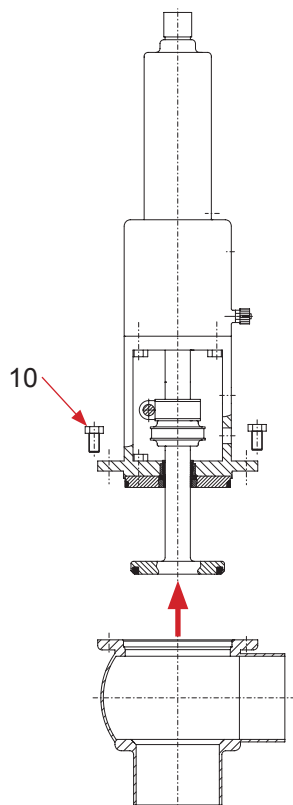
Valve maintenance for spring-bearing components	Note
Functional test, visual inspection of actuator stroke and control of abnormal running noise of the spring	1 x per year
Change interval (spring cylinder and seat lift actuator)	In case of damage, incomplete actuator movement, considerable running noise of spring as well as after 250,000 cycles* as preventive measure, however, after 10 years at the latest.

*complies with about 8 years in 1-shift-operation and 10-15 cycles per hour.

12. Service Instructions

Corresponding spare parts list:
RN ATEX 01.054.53

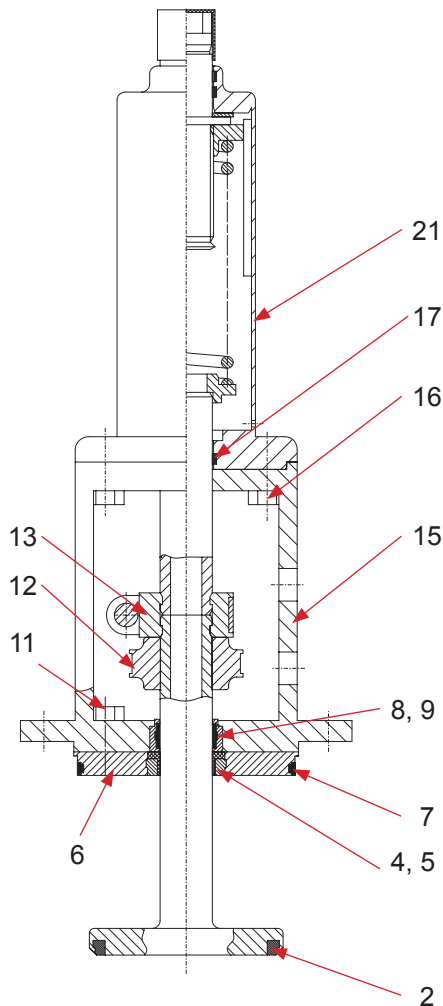
12.1. Dismantling from the line system



- Before start of maintenance and assembly the operator must make sure that an explosive atmosphere does not exist (detection/ measurement of potential concentration of hazardous substances). Alternatively, use spark-resistant tools!
1. Shut off line pressure in the product line and drain lines if possible.
 2. Remove pneumatic air lines (seat lift actuator).
 3. Release clamp screw at the feedback support and extract proximity switches. (If valve is not equipped with feedback, omit 12.1.3).
 4. Remove flange screws (10).
 5. Screw two flange screws into the threaded bores of the valve yoke, slightly lifting the complete valve insert.
 6. Remove the flange screws and carefully lift the valve insert vertically out of the valve housing.

12. Service Instructions

UF3 - without seat lift actuator



12.2. Dismantling of wear parts (product-wetted parts)

1. Remove housing screws (7) from housing cover (6).
2. Release screw of coupling (13) and dismantle.
3. Take the valve shaft (3) from the housing cover, simultaneously removing the operating cam (12) and the intermediate piece (14) of the UF valve without seat lift actuator.
4. Prick into the seat seal (2) with a peak object and carefully take it out of the groove.
5. Release screw (11). This is to position the housing cover. Remove the housing cover (6) and take out the two seal parts (4, 5).
6. Press the guide ring (8) out of the yoke flange.
7. Take the guide bush (9) out of the guide ring.
8. Remove the screws (16) and separate the complete spring cylinder(21) from the yoke (15).
9. UF3 with seat lift actuator: remove the O-ring (19).
UF3 without seat lift actuator: remove the guide band (17).

12.3. Assembly of spring cylinder

1. UF3 with seat lift actuator: insert the O - ring (19).
UF3 without seat lift actuator: insert the guide band (17).

12. Service Instructions

12.4. Installation of seals and assembly of valve

1. Fasten the spring cylinder (21) at the yoke (15) by the screws (16).
2. Insert the guide bush (9) in the guide ring (8) and press the complete unit into the yoke flange.
3. Insert the greased seal parts (4, 5) into the groove of the housing cover.
4. Screw the housing cover (6) to the yoke (15) by the hexagon screws (11).
5. Before installing the valve shaft, insert the seat seal (2).

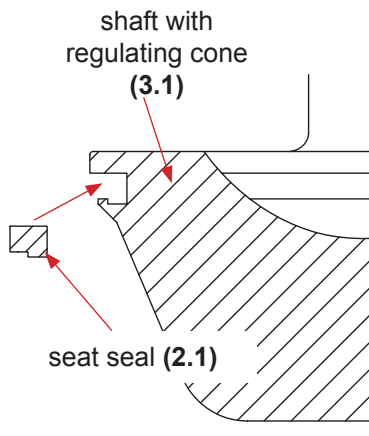
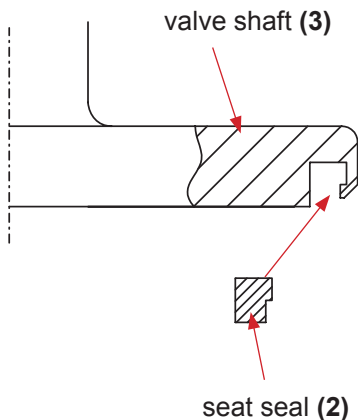
* UF3 valve without regulating cone - use assembly tool for seat seal (2).

* UF3 valve with regulating cone - install seal as follows:
 Press the slightly greased seal at four spots, the wide side to the front and the graduation to the top, into the groove. Introduce the seal, at the four protruding loops, e.g. by a thin, dull screwdriver into the groove and insert it by strong thumb pressure. Proceed alternately at the four loops to get an even fit of the seal. Finally, flatten the seal by strong pressure, e.g. by the handle of a screwdriver and prick the blade of a small screwdriver between the groove edge and the inner side of the seal down to the groove ground to vent the groove.
 Check the even fit of the seal after the installation.

6. UF3 valve without seat lift actuator - press the intermediate piece (14) from the bottom into the spring cylinder (21).
7. Slide the shaft (3) carefully through the housing cover (6).
8. Attach the operating cam (12) on the valve shaft (3).
9. Push the valve shaft against the intermediate piece and connect both shaft ends with the coupling clamp (13).

Attention: The distance tube must be between the two coupling halves when tightening the screws. The coupling screw must not slew into the feedback area.

10. Check the firm fit of the adjusting screw (11).
11. Insert the slightly greased housing seal (7) into the groove of the housing cover (6).



12. Service Instructions

12.5. Installation of valve

1. Place the complete valve insert carefully into the valve housing (1).
2. Enter the screws (10) and tighten them crosswise.
3. UF3 valve with seat lift actuator: mount the pneumatic air lines.
4. Installation of valve feedback.

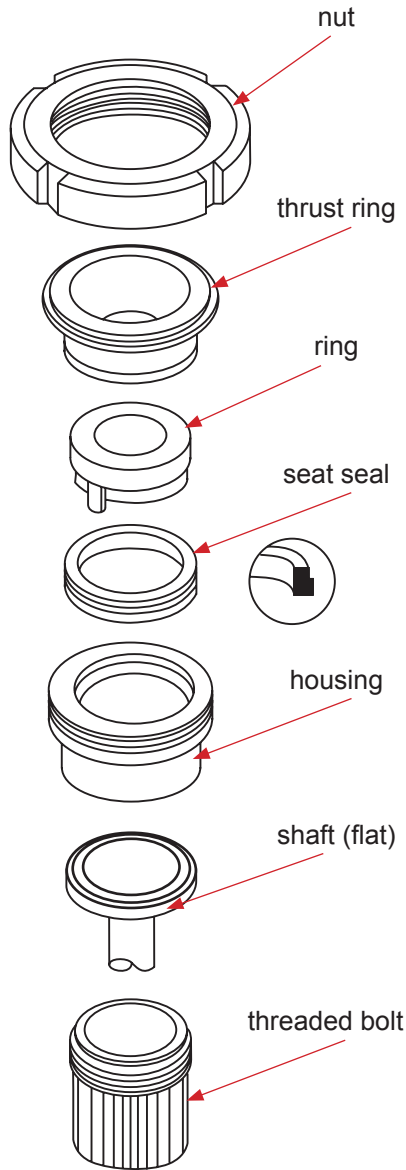
basic adjustment: Push the proximity switch into the holder with a 2 mm distance to the operating cam (12)

fine adjustment: By slightly displacing the switch, the shift point can be adjusted more precisely if necessary. Observe the luminous diode at the switch during this adjustment.

Fix the switch by the clamp screw.

13. Installation of Seat Seal

13.1 Installation of seat seal (2) in valve shaft



The assembly tool (fig. 13.1) consists of:

- nut
- thrust ring
- ring with venting nose
- housing
- threaded bolt

1. Insert the valve shaft into the housing in such a way that the seal groove is in the housing.
2. Clamp the shaft into the housing by means of the threaded bolt.
3. Slightly grease the seat seal with APV assembly grease. Then install the seal on the ring with the venting nose until it stops.
4. Introduce the ring with the installed seat seal into the housing and press it down until it stops sensibly.
5. Insert the thrust ring into the housing. Screw on the nut and tighten it with a hook spanner until it stops.
6. Release the nut. Take ring and thrust ring off the housing.
7. Take housing out of the vice, take off the threaded bolt. Detach the valve shaft from the housing.

Check the even fit of the seat seal.

Attention:

The tool is not suited for the installation of seals in valve shafts of UFR valves with regulating cone.

To simplify the installation of the seat seal, the following assembly tools are available:

Assembly tool for seat seal			
DN	Inch	reference number	ID number
25	1"	000 51-13-110/17	H179465
40	1,5"	000 51-13-111/17	H179466
50	2"	000 51-13-112/17	H179467
	2,5"	000 51-13-12017	H179468
65		000 51-13-113/17	H179469
	3"	000 51-13-121/17	H179470
80		000 51-13-114/17	H179471
100	4"	000 51-13-115/17	H179472

14. Trouble Shooting

Failure	Remedy
Valve closed	
Leakage at discharge side	Replace seat seal (2, 2.1) . Check line pressure (max. 10 bar) .
	Check control of seat lift actuator.
Leakage between housing and yoke flange	Check housing seal (7) and shaft seal (4, 5) , replace damaged seals.
Leakage at valve shaft	Replace shaft seal (4, 5) .
Spring cylinder	
Correction at spring cylinder is not possible.	Replace complete spring cylinder (21) .
Seat lift actuator	
Seat lift actuator does not work (air escapes permanently from the shaft rod).	Replace o-ring (19) .
Seat lift actuator does not work (air escapes permanently from the vent bore).	Replace complete spring cylinder. Do not open cylinder by force. Spring force!
Valve position indication	
No feedback.	Carry out fine adjustment.

15. Spare Parts Lists

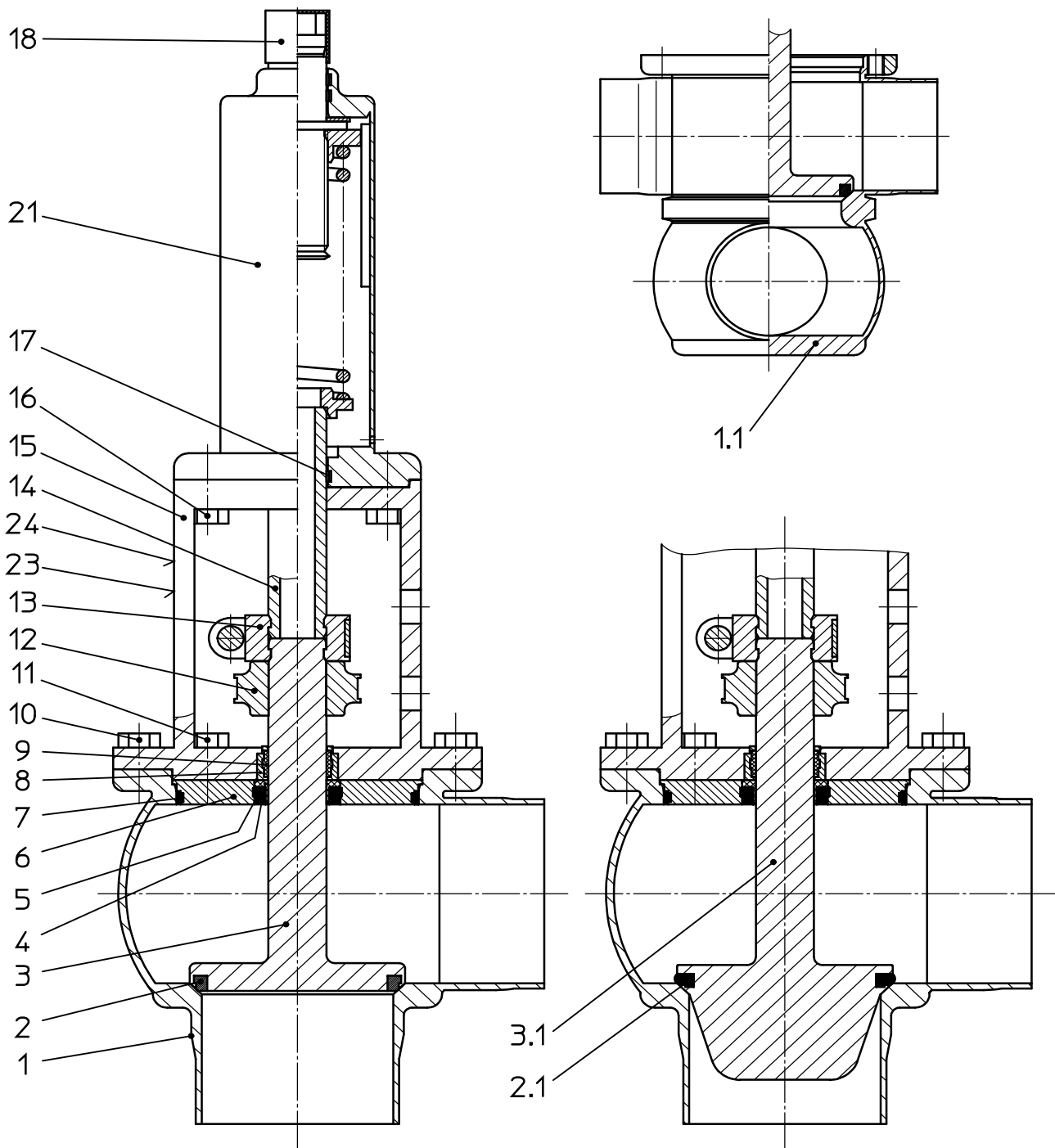
The reference numbers of the spare parts for the different valve designs and sizes are included in the attached spare parts drawings with corresponding lists.

Please indicate the following data to place an order for spare parts:

- number of required parts
- reference number
- designation

subject to change

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Datum:	07.07.14	23.07.14									
Name:	Trytko	Trytko									
Geprüft:	Goebel										

Ersatzteilliste: spare parts list

Überströmventil / Relief valve UF3, UFE3, UFR3, UFRE3 -Ex II -/2G IIB TX

Ausführungen: I. Federzylinder und II. Federzylinder mit Anlüftzylinder

Designs: I. spring cylinder and II. spring cylinder with seat lift actuator

DN 25-100 ; 1-4 Zoll / inch

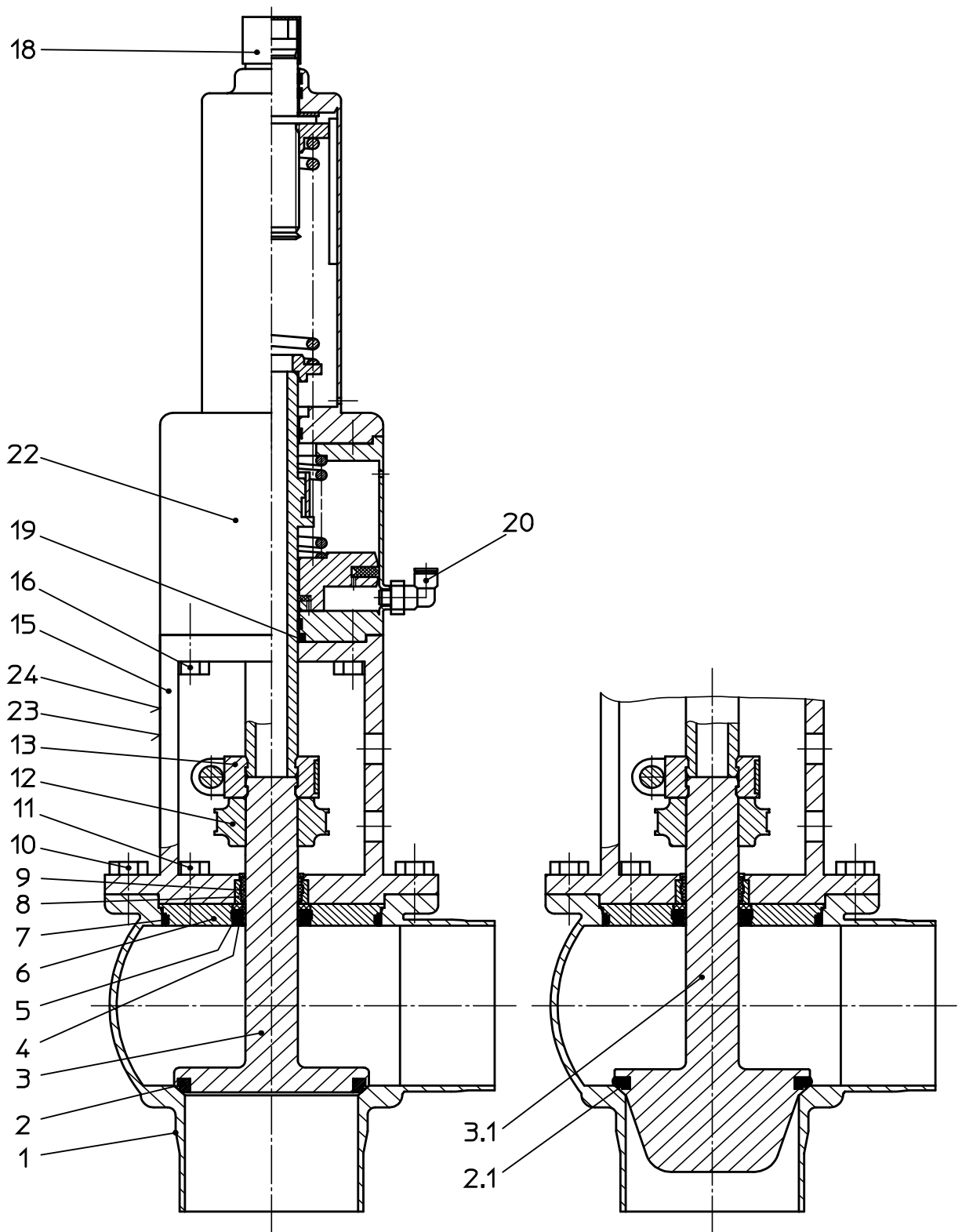


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Datum:	07.07.14	23.07.14										
Name:	Trytko	Trytko										
Geprüft:	Goebel											

Ersatzteilliste: spare parts list
Überströmventil / Relief valve UF3, UFE3, UFR3, UFRE3 -Ex II -/2G IIB TX
Ausführungen: I. Federzylinder und II. Federzylinder mit Anlüftzylinder
Designs: I. spring cylinder and II. spring cylinder with seat lift actuator
DN 25-100 ; 1-4 Zoll / inch

APV
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Ersatzteilliste: spare parts list

Überströmventil / Relief valve UF3, UFE3, UFR3, UFRE3 -Ex II -/2G IIB TX
Ausführungen: I. Federzylinder und II. Federzylinder mit Anlüftzylinder
Designs: I. spring cylinder and II. spring cylinder with seat lift actuator
DN 25-100 ; 1-4 Zoll / inch

pos. item	Menge quantity	Beschreibung description	Material	DN25	1"	DN40	1,5"	DN50	2"	Datum: 07.07.14		Blatt 4 von 10		
										WS-Nr. ref.-no.	WS-Nr. ref.-no.	Name: Geprüft:	Name: Geprüft:	WS-Nr. ref.-no.
4	1	Schafdichtung Shaft seal	Turcon MF6											
5	1	Tellerdichtung Seat seal	EPDM FDA-konform											
	1	Tellerdichtung Seat seal	FPM FDA-konform											
	1	Tellerdichtung Seat seal	HNBR FDA-konform											
	1	Tellerdichtung Seat seal	VMQ FDA-konform											
	1	Gehäusedeckel Housing cover	1.4404	15-00-065/42 H156869										15-00-793/42 H148194
7	1	Gehäusedichtung Housing seal	EPDM FDA-konform	58-33-292/93 H77439										58-33-442/93 H77488
	1	Gehäusedichtung Housing seal	HNBR FDA-konform	58-33-292/33 H170017										58-33-442/33 H168714
	1	Gehäusedichtung Housing seal	FPM FDA-konform	58-33-292/73 H77438										58-33-442/73 H77487
8	Führungsbuchse Bushing	1.4301												08-01-181/12 H148192
9	Führungsbuchse Bushing	PTFE + 25% Kohle												08-01-178/23 H207154
10	Skt. Schraube Hex. screw	1.4301												65-01-081/15 M8x16 H78772
11	Skt. Schraube Hex. screw	1.4301	65-01-056/13 M6x16 H78751											65-01-081/15 M8x16 H78772
12	Schaltnocke Operating cam	1.4301 / PA12												08-60-082/12 H16295
13	Kupplung Coupling	1.4301												08-52-110/13 H15938
14	Zwischenstück Intermediate piece	1.4404												09-87-084/42 H19710

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Ersatzteilliste: spare parts list

Überströmventil / Relief valve UF3, UFE3, UFR3, UFRE3 -Ex II -/2G IIB TX
Ausführungen: I. Federzylinder und II. Federzylinder mit Anlüftzylinder
Designs: I. spring cylinder and II. spring cylinder with seat lift actuator
DN 25-100 ; 1-4 Zoll / inch

pos. item	Menge quantity	Beschreibung description	Material	DN25	1"	DN40	1,5"	DN50	2"	Datum: 07.07.14		Blatt 5 von 10	
										Name: Trytko		RN ATEX 01.054.53	
										Name: Goebel			
										Name:			
										Geprüft:			
										Name:			
										Geprüft:			
15	1	Laterne Yoke	1.4308	16-40-091/17 H164718	WS-Nr. ref.-no.	16-40-385/17 H40502	WS-Nr. ref.-no.	16-40-435/17 H40511	WS-Nr. ref.-no.				
16	4	Skt. Schraube Hex. screw DIN EN 24017-A2-70	1.4301	65-01-079/15 M8x14 H78768									
17	1	Führungsband PTFE guide strap	Turcite	08-39-079/93 H14879									
18	1	Verschlußkappe Cap	PE-weich-gelb	08-60-006/93 H16219									
19	1	O-Ring O-ring 20,2x3	NBR	58-06-078/83 H76943									
20	1	W-Verschraubung Elbow connector G1/8" 6x1	1.4301/PA	08-60-750/93 H208825									
21	1	Federzylinder Spring cylinder	1.4301	Nr.31 16-30-170/17 H39536	Nr.32 16-30-171/17 H39537	Nr.33 16-30-172/17 H39538	Nr.34 16-30-173/17 H39539	je nach Druckbereich entsprechenden Federzylinder einsetzen use spring cylinder depending on required pressure range					
22	1	Federzylinder mit Anlüftzylinder Spring cylinder with seat lift actuator	1.4301	Nr.31-12 16-30-180/17 H39543	Nr.32-12 16-30-182/17 H39545	Nr.33-12 16-30-184/17 H39547	Nr.34-25 16-30-186/17 H39549	je nach Druckbereich entsprechenden Federzylinder mit Anlüftzylinder einsetzen use spring cylinder with seat lift actuator depending on required pressure range					
23	1	ATEX-Typenschild Ex II-/2G IIB TX ATEX type label Ex II-/2G IIB TX	Polyesterfolie	08-29-381/93 H329934									
24	1	Typenschild APV-Ventile CE Type label APV valve CE	Polyesterfolie AF 50 PS-EB	08-29-281/93 H155642									



Ersatzteilliste: spare parts list

Überströmventil / Relief valve UF3, UFE3, UFR3, UFRE3-Ex II -/2G IIB TX
Ausführungen: I. Federzylinder und II. Federzylinder mit Anlüftzylinder
Designs: I. spring cylinder and II. spring cylinder with seat lift actuator
DN 25-100 ; 1-4 Zoll / inch


Datum:	07.07.14	23.07.14	
Name:	Trytko	Trytko	
Geprüft:	Goebel		
Datum:			
Name:			
Geprüft:			



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RN ATEX 01.054.53

pos. item	Menge quantity	Beschreibung description	Material	DN65		2.5"		3"		DN80		DN100		4"	
				WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.				
1	1	Gehäuse Housing UF31 1+2S	1.4404	15-41-476/47 H34225	15-41-524/47 H34244	15-41-551/47 H34263	15-41-526/47 H34248	15-41-526/47 H34248	15-41-626/47 H34277	15-41-626/47 H34292	15-41-674/47 H34292	15-41-674/47 H34292	15-41-674/47 H34292	15-41-674/47 H34292	
	1	Gehäuse Housing UF32 1+2+3S	1.4404	15-42-476/47 H34374	15-42-513/47 H34382	15-42-551/47 H34390	15-42-526/47 H34396	15-42-526/47 H34396	15-42-626/47 H34396	15-42-626/47 H34402	15-42-674/47 H34402	15-42-674/47 H34402	15-42-674/47 H34402	15-42-674/47 H34402	
	1	Gehäuse Housing UFE31 1+2S	1.4404	15-46-476/47 H34647	15-46-513/47 H34650	15-46-551/47 H34655	15-46-526/47 H34652	15-46-526/47 H34652	15-46-626/47 H34658	15-46-626/47 H34663	15-46-663/47 H34663	15-46-663/47 H34663	15-46-663/47 H34663	15-46-663/47 H34663	15-46-663/47 H34663
1.1	1	Gehäuse Housing UFE32 1+2+3S	1.4404	15-47-476/47 H34692	15-47-513/47 H34694	15-47-551/47 H34698	15-47-526/47 H34696	15-47-526/47 H34696	15-47-626/47 H34700	15-47-626/47 H34703	15-47-663/47 H34703	15-47-663/47 H34703	15-47-663/47 H34703	15-47-663/47 H34703	15-47-663/47 H34703
	1	Gehäuse Housing UFE33 1+2+3S	1.4404	15-48-476/47 H34723	15-48-513/47 H34726	15-48-551/47 H34730	15-48-526/47 H34728	15-48-526/47 H34728	15-48-626/47 H34734	15-48-626/47 H34737	15-48-663/47 H34737	15-48-663/47 H34737	15-48-663/47 H34737	15-48-663/47 H34737	15-48-663/47 H34737
	1	Gehäuse Housing UFE34 1+2+3+4S	1.4404	15-49-476/47 H34764	15-49-513/47 34766	15-49-551/47 H34770	15-49-526/47 H34768	15-49-526/47 H34768	15-49-626/47 H34773	15-49-626/47 H34775	15-49-663/47 H34775	15-49-663/47 H34775	15-49-663/47 H34775	15-49-663/47 H34775	15-49-663/47 H34775
2	1	Tellerdichtung Seat seal	EPDM FDA-konform	58-33-493/93 H77515	58-33-493/93 H77515	58-33-568/93 H77561	58-33-543/93 H77546	58-33-543/93 H77546	58-33-643/93 H77586	58-33-643/93 H77586	58-33-643/93 H77586	58-33-643/93 H77586	58-33-643/93 H77586	58-33-643/93 H77586	
	1	Tellerdichtung Seat seal	FPM FDA-konform	58-33-493/73 H77514	58-33-493/73 H77514	58-33-568/73 H77560	58-33-543/73 H77545	58-33-543/73 H77545	58-33-643/73 H77785	58-33-643/73 H77785	58-33-643/73 H77785	58-33-643/73 H77785	58-33-643/73 H77785	58-33-643/73 H77785	
	1	Tellerdichtung Seat seal	HNBR FDA-konform	58-33-493/33 H166678	58-33-493/33 H166678	58-33-568/33 H166679	58-33-543/33 H166681	58-33-543/33 H166681	58-33-643/33 H166682	58-33-643/33 H166682	58-33-643/33 H166682	58-33-643/33 H166682	58-33-643/33 H166682	58-33-643/33 H166682	58-33-643/33 H166682
	1	Tellerdichtung Seat seal	VMQ FDA-konform	58-33-493/13 H77513	58-33-493/13 H77513	58-33-568/13 H77559	58-33-543/13 H77544	58-33-543/13 H77544	58-33-643/13 H77584	58-33-643/13 H77584	58-33-643/13 H77584	58-33-643/13 H77584	58-33-643/13 H77584	58-33-643/13 H77584	58-33-643/13 H77584
	1	Tellerdichtung Seat seal	EPDM FDA-konform	58-33-494/93 H77518	58-33-494/93 H77518	58-33-569/93 H77564	58-33-544/93 H77549	58-33-544/93 H77549	58-33-644/93 H77589	58-33-644/93 H77589	58-33-644/93 H77589	58-33-644/93 H77589	58-33-644/93 H77589	58-33-644/93 H77589	58-33-644/93 H77589
	1	Tellerdichtung Seat seal	FPM FDA-konform	58-33-494/73 H77517	58-33-494/73 H77517	58-33-569/73 H77563	58-33-544/73 H77548	58-33-544/73 H77548	58-33-644/73 H77588	58-33-644/73 H77588	58-33-644/73 H77588	58-33-644/73 H77588	58-33-644/73 H77588	58-33-644/73 H77588	58-33-644/73 H77588
2.1	1	Tellerdichtung Seat seal	HNBR FDA-konform	58-33-494/33 H172178	58-33-494/33 H172178	58-33-569/33 H176688	58-33-544/33 H172180	58-33-544/33 H172180	58-33-644/33 H172183	58-33-644/33 H172183	58-33-644/33 H172183	58-33-644/33 H172183	58-33-644/33 H172183	58-33-644/33 H172183	58-33-644/33 H172183
	1	Tellerdichtung Seat seal	VMQ FDA-konform	58-33-494/13 H77516	58-33-494/13 H77516	58-33-569/13 H77561	58-33-544/13 H77547	58-33-544/13 H77547	58-33-644/13 H77587	58-33-644/13 H77587	58-33-644/13 H77587	58-33-644/13 H77587	58-33-644/13 H77587	58-33-644/13 H77587	58-33-644/13 H77587
3	1	Schaft Shaft	1.4404	15-22-484/42 H30314	15-22-517/42 H30363	15-22-559/42 H30439	15-22-534/42 H30384	15-22-534/42 H30384	15-22-634/42 H30485	15-22-634/42 H30532	15-22-667/42 H30532	15-22-667/42 H30532	15-22-667/42 H30532	15-22-667/42 H30532	
	1	Schaft mit Regelkegel Shaft with control cone	1.4404	15-22-153/42 H29986	15-22-166/42 H29995	15-22-154/42 H39988	15-22-155/42 H29990	15-22-155/42 H29990	15-22-156/42 H29991	15-22-156/42 H29991	15-22-181/42 H144652	15-22-181/42 H144652	15-22-181/42 H144652	15-22-181/42 H144652	15-22-181/42 H144652

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Ersatzteilliste: spare parts list		Überströmventil / Relief valve UF3, UFE3, UFR3, UFRE3 -Ex II -/2G IIB TX Ausführungen: I. Federzylinder und II. Federzylinder mit Anlüftzylinder Designs: I. spring cylinder and II. spring cylinder with seat lift actuator DN 25-100 ; 1-4 Zoll / inch							
pos. item	Menge quantity	Beschreibung description	Material	DN65	2,5"	3"	DN80	DN100	4"
			material	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
4	1	Schafldichtung Shaft seal	Turcon MF6			3A0 58-33-151/24 H323082			
	1	Tellerdichtung Seat seal	EPDM FDA-konform			58-33-293/93 H77442			
5	1	Tellerdichtung Seat seal	FPM FDA-konform			58-33-293/73 H77441			
	1	Tellerdichtung Seat seal	HNBR FDA-konform			58-33-293/33 H170176			
	1	Tellerdichtung Seat seal	VMQ FDA-konform			58-33-293/13 H77440			
6	1	Gehäusedeckel Housing cover	1.4404	15-00-794/42 H151968	15-00-799/42 H159895	15-00-797/42 H156593			15-00-798/42 H159888
	1	Gehäusedichtung Housing seal	EPDM FDA-konform	58-33-492/93 H77512	58-33-567/93 H77558	58-33-542/93 H77543			58-33-642/93 H77583
7	1	Gehäusedichtung Housing seal	HNBR FDA-konform	58-33-492/33 H168759	58-33-567/33 H170013	58-33-542/33 H170075			58-33-642/33 H170074
	1	Gehäusedichtung Housing seal	FPM FDA-konform	58-33-492/73 H77511	58-33-567/73 H77557	58-33-542/73 H77542			58-33-642/73 H77582
8	1	Führungsbuchse Bushing	1.4301		08-01-179/12 H156220				
9	1	Führungsbuchse Bushing	PTFE + 25% Kohle		08-01-178/23 H207154				
10	4	Skt. Schraube Hex. screw	1.4301	65-01-081/15 M8x16 H78772					65-01-130/15 M10x16 H78806
11	1	Skt. Schraube Hex. screw	1.4301	DIN EN 24017-A2-70					
12	1	Schaltnocke Operating cam	1.4301 / PA12	DIN EN 24017-A2-70					
13	1	Kupplung Coupling	1.4301						
14	1	Zwischenstück Intermediate piece	1.4404						

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Ersatzteilliste: spare parts list


Überströmventil / Relief valve UF3, UFE3, UFR3, UFRE3 -Ex II -/2G IIB TX
Ausführungen: I. Federzylinder und II. Federzylinder mit Anlüftzylinder
Designs: I. spring cylinder and II. spring cylinder with seat lift actuator
DN 25-100 ; 1-4 Zoll / inch

Datum:	07.07.14
Name:	Trytko
Geprüft:	Goebel
Datum:	
Name:	
Geprüft:	
Blatt 9 von 10	
RN ATEX 01.054.53	

pos. item	Menge quantity	Beschreibung description	Material	DN65	2,5"	3"	DN80	DN100	4"
				WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
15	1	Laterne Yoke	1.4308	16-40-485/17 H40529	16-40-560/17 H40547	16-40-535/17 H40540			
16	4	Skt. Schraube Hex. screw DIN EN 24017-A2-70	1.4301		65-01-079/15 M8x14 H78768				
17	1	Führungsband PTFE guide strap	Turcite		08-39-079/93 H14879				
18	1	Verschlusskappe Cap	PE-weich-gelb		08-60-006/93 H16219				
19	1	O-Ring 20,2x3	NBR		58-06-078/83 H76943				
20	1	W-Verschraubung Elbow connector G1/8" 6x1	1.4301/PA		08-60-750/93 H208825				
21	1	Federzylinder Spring cylinder	1.4301	Nr.31 16-30-170/17 H39536	Nr.32 16-30-171/17 H39537	Nr.33 16-30-172/17 H39538	Nr.34 16-30-173/17 H39539		
22	1	Federzylinder mit Anlüftzylinder Spring cylinder with seat lift actuator	1.4301	Nr.31-12 16-30-180/17 H39543 Nr.31-25 16-30-181/17 H39544	Nr.32-12 16-30-182/17 H39545 Nr.32-25 16-30-183/17 H39546	Nr.33-12 16-30-184/17 H39547 Nr.33-25 16-30-185/17 H39548	Nr.34-25 16-30-186/17 H39549		
23	1	ATEX-Typenschild Ex II-/2G IIB TX ATEX type label Ex II-/2G IIB TX	Polyesterfolie		08-29-381/93 H329934				
24	1	Typenschild APV-Ventile CE Type label APV valve CE	Polyesterfolie AF 50 PS-EB		08-29-281/93 H155642				



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Ersatzteilliste: spare parts list		Überströmventil / Relief valve UF3, UFE3, UFR3, UFRE3-Ex II -/2G IIB TX Ausführungen: I. Federzylinder und II. Federzylinder mit Anlüftzylinder Designs: I. spring cylinder and II. spring cylinder with seat lift actuator DN 25-100 ; 1-4 Zoll / inch							
pos. item	Menge quantity	Beschreibung description	Material	DN65	2,5"	3"	DN80	DN100	4"
				WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
Dichtungssatz / seal kit UF3, UFE3 Pos. 2, 4, 5, 7, 9 nur im kompletten Dichtungssatz erhältlich / Item 2, 4, 5, 7, 9 available as complete seal kits only									
		Dichtungssatz Seal kit	FPM	58-34-441/00 H179245	58-34-443/00 H179261	58-34-442/00 H179251	58-34-444/00 H179257		
		Dichtungssatz Seal kit	EPDM	58-34-441/01 H179247	58-34-443/01 H179262	58-34-442/01 H179253	58-34-444/01 H179258		
		Dichtungssatz Seal kit	VMQ	58-34-441/02 H179249	58-34-443/02 H179263	58-34-442/02 H179254	58-34-444/02 H179259		
		Dichtungssatz Seal kit	HNBR	58-34-441/06 H179250	58-34-443/06 H179264	58-34-442/06 H179255	58-34-444/06 H179260		
Dichtungssatz / seal kit UFR3, UFRE3 (mit Regelkegel / with control cone) Pos. 2, 1, 4, 5, 7, 9 nur im kompletten Dichtungssatz erhältlich / Item 2, 1, 4, 5, 7, 9 available as complete seal kits only									
		Dichtungssatz Seal kit	FPM	58-34-453/00 H179277	58-34-455/00 H179290	58-34-454/00 H179281	58-34-456/00 H179285		
		Dichtungssatz Seal kit	EPDM	58-34-453/01 H179278	58-34-455/01 H179291	58-34-454/01 H179282	58-34-456/01 H179286		
		Dichtungssatz Seal kit	VMQ	58-34-453/02 H179279	58-34-455/02 H179292	58-34-454/02 H179283	58-34-456/02 H179287		
		Dichtungssatz Seal kit	HNBR	58-34-453/06 H179280	58-34-455/06 H179297	58-34-454/06 H179284	58-34-456/06 H179289		

Datum:	07.07.14
Name:	Trytko
Geprüft:	Goebel
Datum:	
Name:	
Geprüft:	
Blatt	10 von 10
RN ATEX 01.054.53	

APV DELTA
UF3(A) / UFR3(A)



RELIEF VALVE
FOR SPECIFIC ATEX-APPLICATIONS

SPXFLOW

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