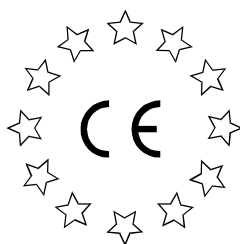


APV DELTA KHV

BALL VALVE

FORM NO.: H170761 REVISION: UK-2

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



Declaration of Conformity for Valves and Valve Manifolds

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

**APV double seal and double seat valves of the series
SD4, SDT4, SDU4, SDMS4, SDMSU4, SDTMS4, SWcip4, DSV,
DA3, DA3SLD, DE3, DEU3, DET3, DKR2, DKRT2, DKRH2**
in the nominal diameters DN 25 - 150, ISO 1" – 6" and 1 Sh5 - 6 Sh5

APV butterfly valves of the series SV1 and SVS1F, SVL and SVSL
in the nominal diameters DN 25 - 100, DN 125 - 250 and ISO 1" – 4"

APV ball valves of the series KHI, KHV
in the nominal diameters DN 15 - 100

**APV single seat, diaphragm and spring loaded valves of the series
S2, SW4, SWhp4, SW4DPF, SWmini4, SWT4, SWS4, MF4, MS4, MSP4, AP/T1, CPV,
RG4, RG4DPF, RGMS4, RGE4, RGE4DPF, RGEMS4, PR2, PRD2, SI2, UF/R3, VRA/H**
in the nominal diameters DN 10 - 150, ISO 1/2" – 4" and 1 Sh5 - 6 Sh5

and the valve manifolds installed thereof

meet the requirements of the Directives 2006/42/EC (superseding 89/392/EEC
and 98/37/EC) and ProdSG (superseding GPSG - 9.GPSGV).

For official inspections, SPX FLOW Technology Rosista GmbH 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,
as well as an operating manual with safety instructions.

The conformity of the valves and valve manifolds is guaranteed.

Authorised person for the documentation:
SPX FLOW Technology Rosista GmbH, Frank Baumbach,
Gottlieb-Daimler-Str. 13, D-59439 Holzwickede

January 2017

ppa. Baumbach

Manager Research and Development

Table of Contents :		Page :
1.	General Terms	2
2.	Safety Instructions	2 - 3
3.	Intended Use	3
4.	Mode of Operation	4
4.1.	General information	
5.	Auxiliary Equipment	5 - 6
5.1.	Valve position indication - controlled valve (proximity switches)	
5.2.	Valve position indication - manually operated valve (proximity switches)	
5.3.	Control Unit	
5.4.	Actuator for control unit	
6.	Cleaning	6
6.1.	Cleaning recommendation	
7.	Installation	7
7.1.	Welding instructions	
8.	Dimensions / Weights	8 - 11
8.1.	KHV1 - DN 10 - 50	
8.2.	KHV1 - DN 65 - 100	
8.3.	KHI1 - DN 8 - 40	
8.4.	KHI1 - DN 50 - 80	
8.5.	KHV2 - HL DN10 - 50, KHI2 - HL DN 8 - 40 (manually operated with feedback unit)	
8.6.	KHV2 - FZ DN 10 -100, KHI2 - FZ DN 8 - 80 (controlled with actuator and control unit)	
9.	Technical Data	12 - 13
9.1.	General data	
9.2.	Compressed air quality	
9.3.	Max. tightening torque in Nm	
9.4.	Pneumatic air consumption (NL)	
10.	Materials	13
11.	Maintenance	14
12.	Service Instructions for ball valve mit manual actuation KHV1 - H / KHI1 - H	15 - 16
12.1.	Replacement of ball and seats	
12.2.	Replacement of stem seal	
13.	Service Instructions for ball valve with actuator KHV2 - NC / KHI2 - NC	17
13.1.	Dismantling from the line system	
13.2.	Replacement of ball and seats	
14.	Spare Parts Lists	18
	(see annex)	
	KHV2 - FZ DN10 - 100	RN 01.240
	KHI2 - FZ DN8 - 80	RN 01.240 - 1
	KHV2 - HL DN 10 - 50	RN 01.240 - 2
	KHI2 - HL DN 8 - 40	RN 01.240 - 3
	turning actuator K-80, K-125, K-180	RN 01.073
	turning actuator F/L for feedback unit	RN 01.076

1. General Terms

This instruction manual has to be read carefully and observed by the competent operating and maintenance personnel.

We have to 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.

2. Safety Instructions

The valve must be assembled, operated, dismantled, maintained and serviced only by competent, trained personnel. Please contact your local SPX FLOW representative if necessary.

DANGER!



- The technical safety symbol draws your attention to important directions for operating safety. You will find it wherever the activities described are bearing risks of personal injury, for individuals and material assets.



- ***Do not reach into the open valve ball or yoke!***
Risk of injury by sudden valve operation!
In dismantled valve state, there is the risk of bruising at movable valve parts.



- Regular maintenance of the valve including replacement of all seals must be scheduled in order to prevent leakages and liquid emersion.
- Remove the turning actuator before the replacement of seals.
- Before any maintenance work, the line and cleaning system must be depressurized and discharged if possible.
- Electric and pneumatic connections must be separated.



- During disassembly you may find liquid residues in the valve ball.
- Observe service instructions to ensure safe maintenance of the valve.

2. Safety Instructions



- **DANGER!**

Welded actuators are preloaded by spring force.

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

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

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

Contact your local SPX FLOW company.

3. Intended Use

The intended use as field of application of the ball valve is the shut-off of pipeline sections.

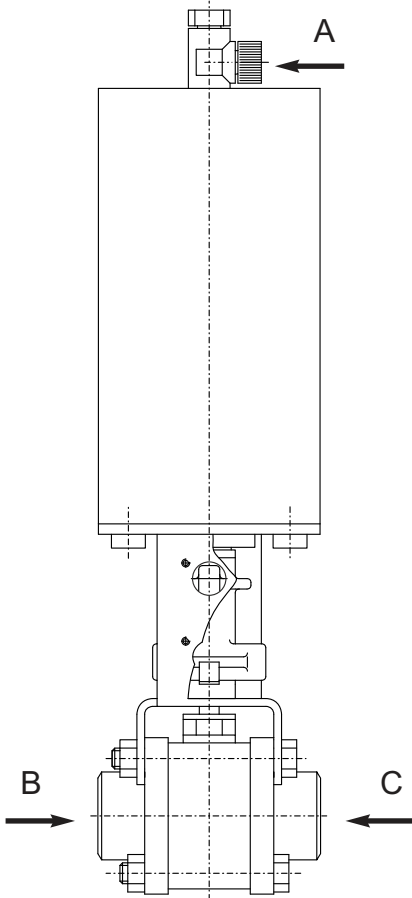
Unauthorized, constructional changes at the valve influence safety and the intended functionality of the valves and are **not** permissible.

4. Mode of Operation

4.1. General information

There are two different valve designs:

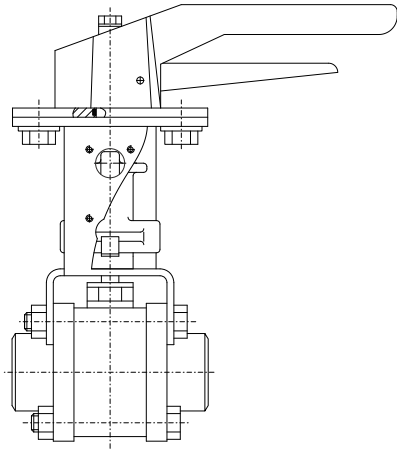
- Ball valve **KHV** (=venturi)
The free opening cross section in the ball is reduced by about one nominal dimension compared with the pipeline.
 - Ball valve **KHI** (=integral)
Smooth valve passage with full opening cross section in the dimension of the pipeline nominal diameter.
 - Due to the use of high-quality stainless steel and suitable seal materials which comply with the respective requirements, the KHV (venturi) and KHI (integral) ball valves are used in the food, beverage, pharmaceutical and chemical industry.
 - As the ball valve possesses dead spaces which cannot be cleaned, in food processing applications it should **be used only in CIP areas!!!**
 - As shut-off element, the ball is fitted in PTFE seats at both sides. Through the floating position of the ball, in closed position a movement into the flow direction becomes possible providing for optimum sealing in the passage (**B and C**).
 - The stem of the ball cock is generally inserted from the inside. Therefore, a collar being bigger than the bore of the body prevents the stem from being pressed to the outside. The inner stem seal takes over the sealing to the outside. In pressureless state and in case of a vacuum, sealing is ensured by springs and press ring.
 - The sealing between body and counterflange to the outside is effected by the PTFE body seal in standard design. Special designs for the chemical industry with nut-spring connection (graphite seal) are possible alternatives.
- Remark:** The ball cock is not equipped with a separate CIP connection to clean the existing "dead" spaces!!!
- Actuation by pneumatic turning actuator with air connection at (**A**), reset by spring force into the limit position "closed".



5. Auxiliary Equipment

fig. 5.2.

Ball valve, manually operated, with yoke to feed back ball position



5.1. Valve position indication

Switches to signal the limit position of the valve ball can be installed in the yoke area if requested.

We recommend to use APV standard proximity switches.
Type: three-wire proximity switch (ref.-No. 08-60-011/93; H16223)
Operating distance: 5 mm / diameter : 11 mm / length: 30 mm

Feedback complete with support and proximity switch (ref.-No. 15-33-023/33; H32725) for a limit position.

If the customer decides to use a different valve position indicator, we cannot take over any liability for a faultless function.

5.2. Valve position indication - valve with manual operation

Switches to signal the limit position of the valve ball can be installed in the yoke area if requested.

Specific manual actuations with feedback feature are available (fig. 5.2.) :

- a) Feedback of the closed ball position (simple variant).
- b) Feedback of both ball positions open and closed is possible.

5.2. Control unit (CU, fig. 5.3.)

Units with feedback switches and solenoid valves for the pneumatic control of the valve to be assembled on the actuator are also available in fieldbus technology.

The assembly of the control unit on the prepared variant of the turning actuator is possible.

For the start-up as well as assembly and disassembly of the different designs, the corresponding operating manuals must be observed.

fig. 5.3.

Control Unit CU4



Control Unit CU3



The following different designs are available:

CU4 - Direct Connect ref.-No.; ID-No.	CU41 - T - Direct Connect 08-45-101/93; H320461
CU4 - AS-interface 62 Slaves ref.-No.; ID-No.	CU41 - T - AS-i extended 08-45-111/93; H320468
CU4 - AS-interface 31 Slaves ref.-No.; ID-No.	CU41 - T - AS-i standard 08-45-251/93; H324674
CU3 - Profibus ref.-No.; ID-No.	CU31-Profibus 08-45-001/93; H315495
CU3 - Device Net ref.-No.; ID-No.	CU31 Device Net 16-31-240/93; H209422

5. Auxiliary Equipment

- For the assembly of a control unit on the ball valve, an adapter is required.

		adapter for CU4
DN 8 - 100 ; 1/4" - 4"	designation ref.-No.; ID-No.	CU4-T-adapter 08-48-601/93; H320475
		adapter for CU3
DN 8 - 100 ; 1/4" - 4"	designation ref.-No.; ID-No.	CU2 - adapter K080 08-48-416/93; H209431

5.4. Turning actuator for control unit

- For the installation of a control unit on the ball valve a special turning actuator and an adapter are required.
The standard actuator must be replaced.

Turning actuator for control unit	
turning actuator K080 F/L for KHV DN 10 - 50 ; 3/8" - 2"	ref.-No.: 000 - 15 - 37 - 070/17 ID-No.: H123937
turning actuator K125 F/L for KHV DN 65 ; 2,5"	ref.-No.: 000 - 15 - 37 - 106/17 ID-No.: H128942
turning actuator K180 F/L for KHV DN 80 - 100 ; 3" - 4"	ref.-No.: 000 - 15 - 37 - 103/17 ID-No.: H134034

6. Cleaning

6.1. Cleaning recommendation

The valve passage is cleaned by the cleaning liquid during cleaning of the connected pipelines.

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

The compatibility of the individually selected cleaning processes and liquids with the respectively used cleaning seals must be verified.

7. Installation

The installation position of the ball valve is arbitrary and can be selected according to the local situation and the task to be fulfilled.

- **Attention: Observe welding instructions 7.1.**

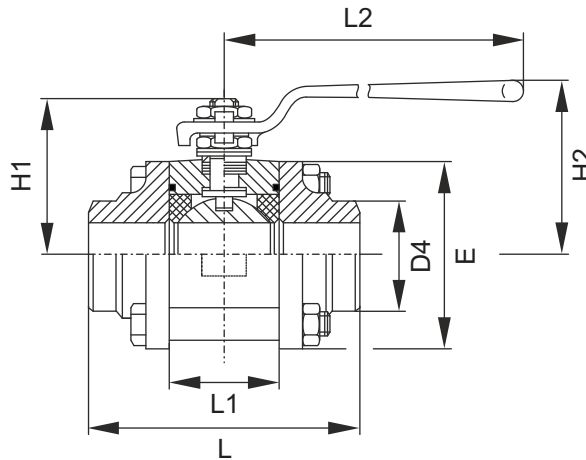
7.1. Welding Instructions

- Before welding of the valve, all sensitive parts must be removed! Dismantle the valve ball housing with seals from the mating flanges.
- Welding should only be carried out by certified welders (DIN EN ISO 9606-1) (seam quality DIN EN ISO 5817).
- Welding of the mating flanges must be undertaken in such a way that deformation strain cannot be transferred.
- TIG orbital welding is best!
- The preparation of the weld seam up to 3 mm thickness can be carried out as a square butt joint without air. (Consider shrinkage!)
- After welding 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 or can be transferred to other parts of the installation.
- Any damage resulting from the non-observance of these welding instructions is not subject to our guarantee.

8. Dimensions / Weights

8.1.

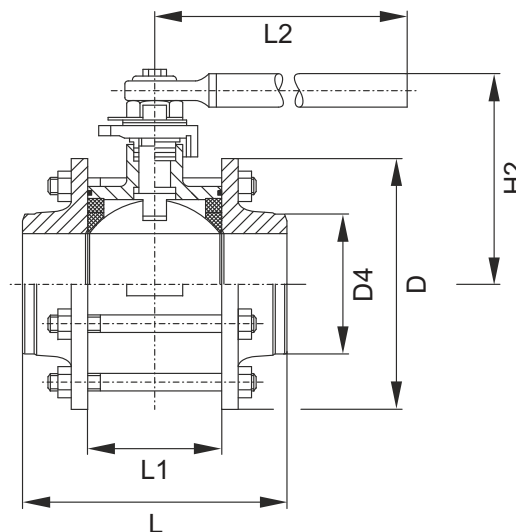
KHV1 - H - 10 - 50
(venturi)



dimensions in mm									ball bore diameter	weight kg
DN	Inch	D4	L	L1	L2	H1	H2	E		
10	3/8"	17,2	65,0	20,4	140	37	53	45	11,1	0,5
15	1/2"	21,3	65,0	20,4	140	37	53	45	11,1	0,5
20	3/4"	26,9	72,5	24,5	140	39	56	52	14,2	0,8
25	1"	33,7	85,4	31,5	180	53	73	60	20,6	1,3
32	1 1/4"	42,4	99,3	41,3	180	58	78	68	25,4	1,9
40	1 1/2"	48,3	110,4	48,4	200	71	90	76	31,7	2,8
50	2"	60,3	126,3	56,3	200	76	95	88	38,0	3,9

8.2.

KHV1 - H - 65 - 100
(venturi)

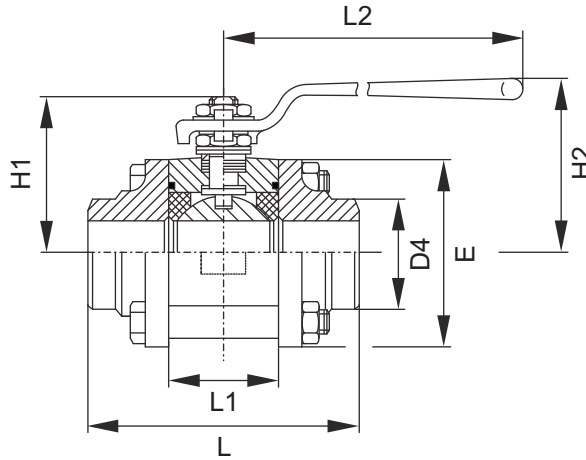


dimensions in mm									ball bore diameter	weight kg
DN	Inch	D4	L	L1	L2		H2	D		
65	2 1/2"	76,1	142,6	71,4	250		106	143	50	6,7
80	3"	88,9	169,5	88,9	480		156,5	165	62	13,0
100	4"	114,3	214,0	108,5	480		171,5	206	82,4	23,0

8. Dimensions / Weights

8.3.

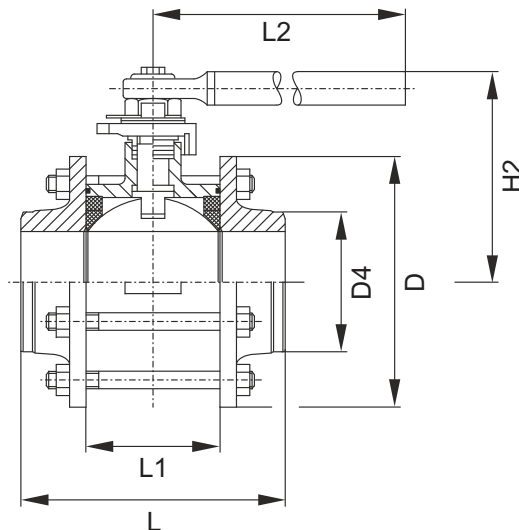
KHI1 - H - 8 - 40
(integral)



dimensions in mm									ball bore diameter	weight kg
DN	Inch	D4	L	L1	L2	H1	H2	E		
8	1/4"	13,5	65,0	20,4	140	37	53	45	11,1	0,5
10	3/8"	17,2	65,0	20,4	140	37	53	45	11,1	0,5
15	1/2"	21,3	65,0	20,4	140	37	53	45	11,1	0,5
20	3/4"	26,9	72,5	24,5	140	39	56	52	14,2	0,8
25	1"	33,7	85,4	31,5	180	53	73	60	20,6	1,3
32	1 1/4"	42,4	99,3	41,3	180	58	78	68	25,4	1,9
40	1 1/2"	48,3	110,4	48,4	200	71	90	76	31,7	2,8

8.4.

KHI1 - H - 50 - 80
(integral)

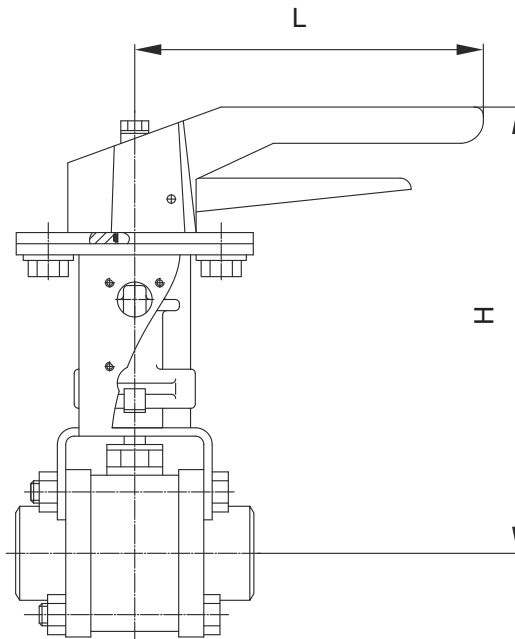


dimensions in mm									ball bore diameter	weight kg
DN	Inch	D4	L	L1	L2		H2	D		
50	2"	60,3	126,3	56,3	200		95	88	38	3,9
65	2 1/2"	76,1	142,6	71,4	250		106	143	50	6,7
80	3"	88,9	169,5	88,9	480		156	164	62	13,0

8. Dimensions / Weights

8.5.

ball valve manually operated
with feedback unit



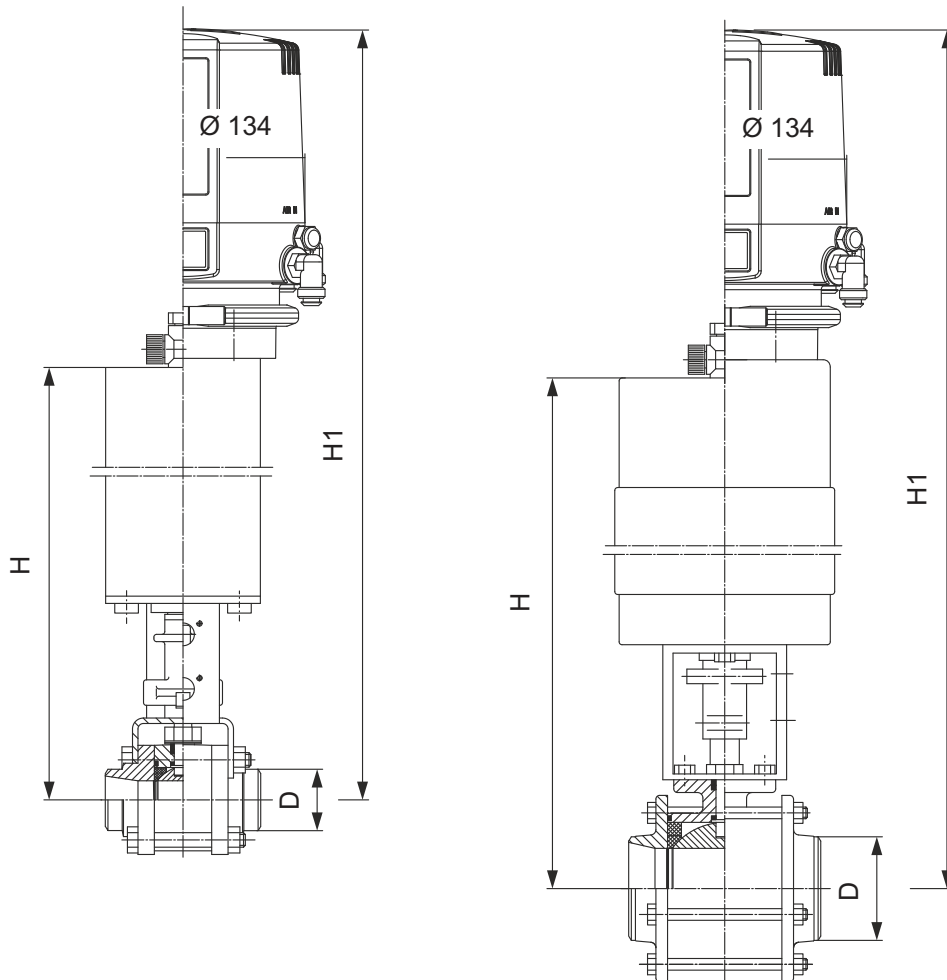
KHV2 - HL / dimensions in mm				
DN	Inch		H	L
10	3/8"		149	165
15	1/2"		149	165
20	3/4"		151	165
25	1"		160	165
32	1 1/4"		166	165
40	1 1/2"		176	165
50	2"		180	165

KHI2 - HL / dimensions in mm				
DN	Inch		H	L
8	1/4"		149	165
10	3/8"		149	165
15	1/2"		151	165
20	3/4"		160	165
25	1"		166	165
32	1 1/4"		176	165
40	1 1/2"		180	165

8. Dimensions / Weights

8.6.

ball valve controlled
with turning actuator / CU4



KHV2 - NC / dimensions in mm					
DN	Inch	D	H	H1	kg
10	3/8"	17,4	267	446	3,5
15	1/2"	21,3	267	446	3,8
20	3/4"	26,9	269	448	4,0
25	1"	33,7	278	457	4,2
32	1 1/4"	42,4	284	463	5,2
40	1 1/2"	48,3	294	473	6,4
50	2"	60,3	298	477	6,9
65	2 1/2"	76,1	392	571	10,1
80	3"	88,9	468	647	11,9
100	4"	114,3	483	659	15,1

KHI2 - NC / dimensions in mm					
DN	Inch	D	H	H1	kg
8	1/4"	13,5	267	446	3,1
10	3/8"	17,2	267	446	3,5
15	1/2"	21,3	269	448	3,8
20	3/4"	26,9	278	457	4,0
25	1"	33,7	284	463	4,2
32	1 1/4"	42,4	294	473	5,2
40	1 1/2"	48,3	298	477	6,4
50	2"	60,3	391	570	6,9
65	2 1/2"	76,1	421	600	10,1
80	3"	88,9	483	659	11,9

9. Technical Data

9.1. General data

- max. line pressure : **10 bar**
- max. operating temperatures : **140° C**
- short-term load : **160° C**
- turning actuator
 - min. control pressure : **6 bar**
 - max. control pressure : **10 bar**
 - turning angle : **90°**
- air connection (for hose) : **6 x 1**
 threaded angle - G1/8"
 slewable : **tightening torque 2 Nm**

9.2. Compressed air quality:

quality class according to ISO 8573-1

- **content of solid particles:** quality class 3,
 max. quantity of solid particles per m³
 10000 of 0.5µm < d ≤ 1.0 µm
 500 of 1.0 µm < d ≤ 5.0 µm
- **content of water:** quality class 4,
 max. dew point temperature + 3°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. 0.01mg/m³

The oil applied must be compatible with Polyurethane elastomer materials.

9. Technical Data

9.3. Tightening torque, allocation of actuator size

ball valve type	KHV („venturi“)										
DN		10	15	20	25	32	40	50	65	80	100
actuator		K080							K125	K180	K180
torque (Nm)		3	3,5	5	9,5	15	20	24	60	95	150
ball valve type	KHI („integral“)										
DN	8	10	15	20	25	32	40	50	65	80	
actuator		K080							K125	K180	K180
torque (Nm)	3	3,5	5	9,5	15	20	24	60	95	150	
9.4. Control air consumption (NL) per stroke											
actuator	K080 = 1,8 NL			K125 = 5,5 NL			K180 = 11 NL				

10. Materials

- ball 1.4404 (DIN EN 10088)
- body 1.4404 (DIN EN 10088)
- yoke, actuator 1.4301(DIN EN 10088)
- coupling 1.4057(DIN EN 10088)
- indicator PE - hard
- ball seal / seat PTFE
- body seal PTFE
- plastic parts in actuator:
- bearing polyamide PA 12
- air connection polyamide PA 6.6
- piston polyacetal POM

11. Maintenance

- The **maintenance intervals** depend on the application of the valve and should be determined by the operator carrying out regular checks of the valve.

Apart from the replacement of wear parts, ball valves are nearly maintenance-free. During the operation observe that the ball valve is always switched into the open or closed final position. Intermediate positions can damage the seats and should be prevented. Depending on the operating conditions, the stem packing must be checked and re-sealed if necessary.

- Dismantling and installation of seals according to Service Instructions.
- Assembly and adjustment of turning actuator according to Service Instructions.
- All seals must be slightly greased before their installation.
- The inner parts of the actuator are maintenance free.

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

Recommendation:

APV assembly grease for EPDM, FPM, HNBR and NBR
(0.75 kg /can - 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
(0.6 kg /can - 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 the function and life time.

12. Service Instructions KHV1 - H / KHI1 - H

Ball valve with manual actuation KHV1-H / KHI1-H

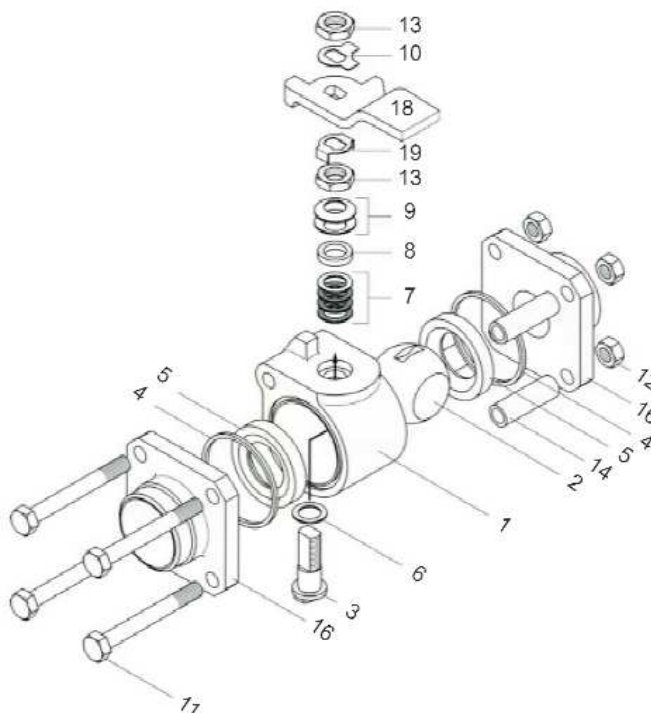
12.1. Replacement of ball and seats

Attention! Liquid residues can be in the ball valve.

1. Shut off connecting lines, let down line pressure and drain pipeline if possible.
2. Open ball valve with the handle (18).
3. Loosen all body screws (11). Remove the upper body screw which is not passing through the body and remove sleeve (14).
4. Swing out the body (1), move the ball (2) into closed position and remove it together with the seats.
5. Check ball for damage and replace it if necessary.
6. Insert ball with the new seats, replace the body seals (4) and reassemble the ball valve.
7. Tighten all body screws.

Attention! Ball and ball seal are sensitive to mechanical damage, the surfaces must not be in contact with any tools.

Pos. 1	body
Pos. 2	ball
Pos. 3	stem
Pos. 4	body gasket
Pos. 5	seat
Pos. 6	stem seal
Pos. 7	stem packing
Pos. 8	stem packing follower
Pos. 9	belleville washer
Pos. 10	lock washer
Pos. 11	body screw
Pos. 12	nut
Pos. 13	stem nut
Pos. 14	sleeve
Pos. 15	
Pos. 16	flange end
Pos. 17	
Pos. 18	handle
Pos. 19	lock washer



12. Service Instructions KHV1 - H / KHI1 - H

12.2. Replacement of stem seal

1. Dismantle ball valve as described.
2. Take off the handle. For this purpose remove the nut **(13)** together with the washer **(10)**.
3. Pull the lock washer **(19)** from the stem **(3)** without bending it, loosen nut **(13)** and dismantle parts **(9)** and **(8)**.
4. Remove the stem **(3)** with the stem seal **(6)** from the inside and the stem packings **(7)** from the outside of the housing.
5. Re-install the new stem seal **(6)** with the stem **(3)** through the inside of the body.
6. Replace the seals **(7, four pieces)** in the outside of the body.
7. Assemble stem packing follower **(8)**, the washer **(9, mutually racked)** and the nut **(13)** on the stem.
8. Tighten the body nut **(13)** and place it in such a manner that the lock washer **(19)** fits over it.
9. Assemble the fitting in its previous position.
10. Re-tighten stem nut **(13)** after 48 hours.

13. Service Instructions KHV2 - NC / KHI2 - NC

Ball valve with actuator

13.1. Disassembly from the line system

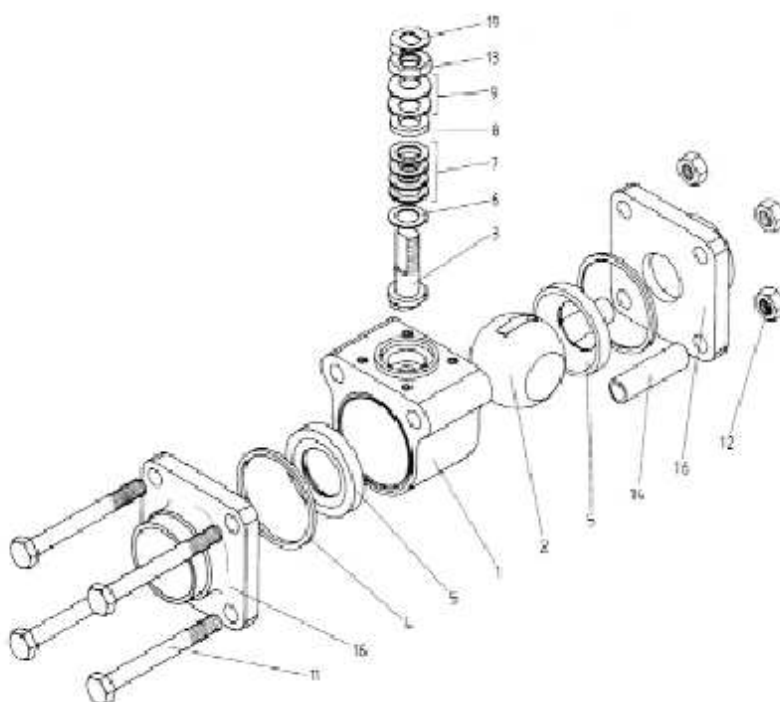
Attention! Liquid residues can be in the ball valve.

1. Shut off connecting lines, let down line pressure and drain pipeline if possible.
2. Disconnect electric and pneumatic connections.
3. Remove feedback.
4. Loosen all body screws (11) and remove the two upper screws.
5. Take off actuator to the top and take ball valve (1) out of the pipeline.

Attention! After dismantling of the seals, the ball lies freely in the body. - **In closed position, the ball can drop out of the body!** Proceed with care to avoid damage of the ball.

13.2. Exchange of ball and seats

1. The actuator is separated from the body.
Remove the ball (2) together with the seats (5).
2. For the further disassembly see items 12.1.3 - 12.1.7.



14. Spare Parts Lists

If damaged seals are exchanged, generally replace all seals. Complete seal kits are available for valve service (see 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 parts required
- reference number / ID number
- designation.

subject to change

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstöß verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustereintragung, vorbehalten. APV Rosista GmbH.

Ersatzteilliste: spare parts list

Kugelhahn-FZ-KHV2
Ball valve with pneumatic actuator
reduzierter Durchgang / reduced bore (venturi)
DN 10, 3/8" - 100, 4"

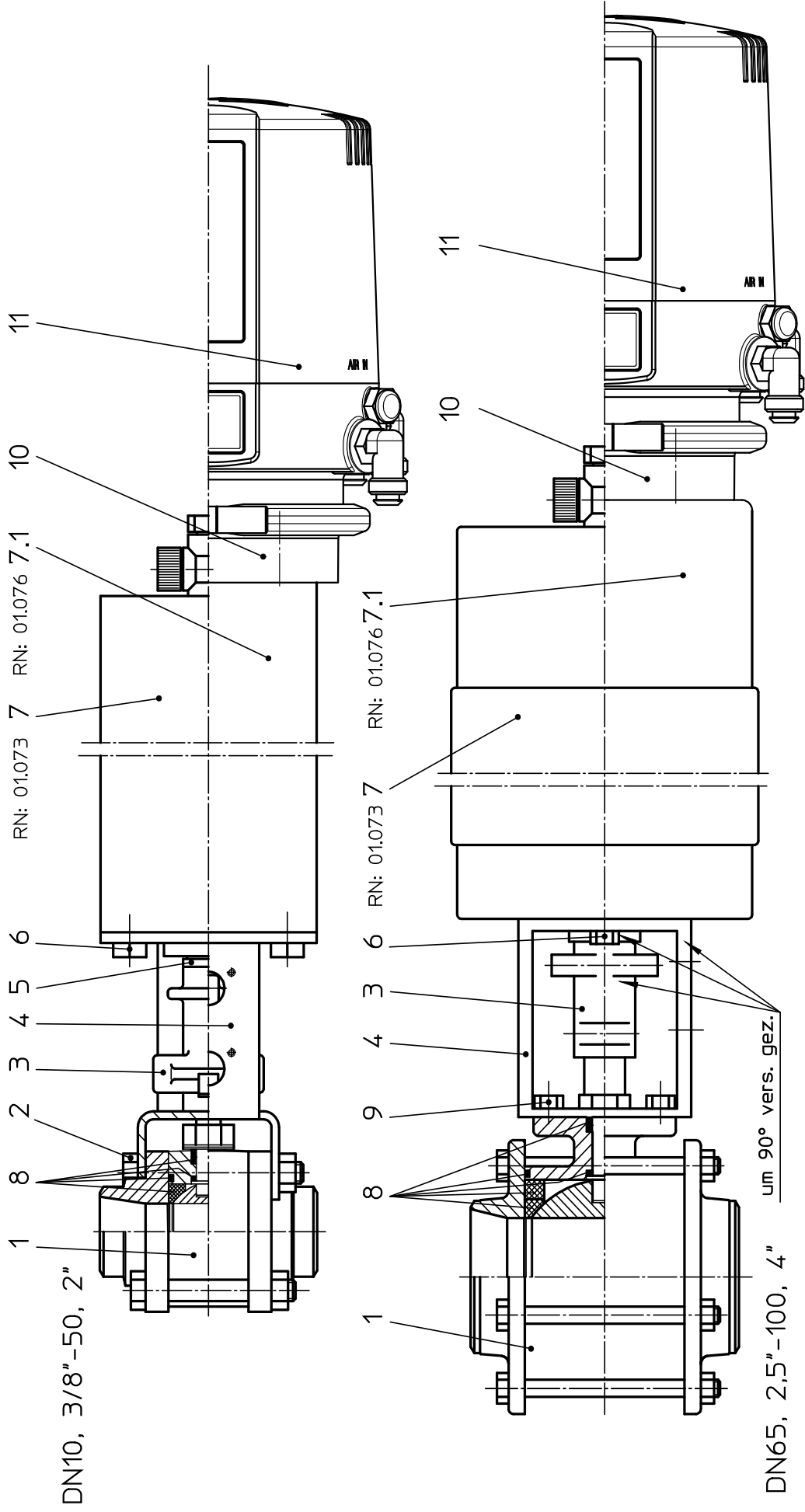
Datum: 06.05.11 30.10.14

Name: Trytko Trytko

Geprüft: Goebel

Blatt 1 von 3

RN 01.240



DN10, 3/8" - 50, 2"

DN65, 2,5" - 100, 4"

um 90° vers. gez.

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstöß verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustererteilung, vorbehalten. APV Rosista GmbH.

Ersatzteilliste: spare parts list

Kugelhahn-FZ-KHV2

**Ball valve with pneumatic actuator
reduzierter Durchgang / reduced bore (venturi)
DN 10, 3/8" - 100, 4"**

Datum:	06.05.11	30.10.14
Name:	Trytko	Trytko
Geprüft:	Goebel	
Datum:		
Name:		
Geprüft:		

APV		Blatt	3	von	3
SPX Flow Technology Rosista GmbH D-59425 Umma Germany		RN 01.240			

pos. item	Menge quantity	Beschreibung description	Material	DN50, 2"	DN65, 2,5"	DN80, 3"	DN100, 4"	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.
1	1	Kugelhahn KHV1-H 1+2S Ball valve KHV1-H 1+2S	1.4404/1.4408 PTFE	30-15-441/57 H67402	30-15-491/57 H67403	30-15-541/57 H131736	30-15-641/57 H120589			
	1	Kugelhahn KHV1-H 1+2S Ball valve KHV1-H 1+2S	PTFE/C22.3	30-15-441/52 H175607	30-15-491/52	30-15-541/52	30-15-641/52			
2	2	Skt. Schraube DIN EN 24014-A2-70 Hex. screw	1.4301	65-01-150/13 M10x90 H78827						
3	1	Kupplung Coupling	1.4308	08-52-251/17 H105106	08-52-350/17 H316995	08-52-352/17 H316996				
4	1	Laterne Yoke	1.4301	15-40-210/17 H112409	15-40-246/17 H316997	15-40-247/17 H323568	15-40-248/17 H316998			
5		Zeiger Position indikator	PE-HART	08-29-021/93 H14634						
6	2	Skt. Schraube DIN EN 24017-A2-70 Hex. screw	1.4301	65-01-079/15 M8x14 H78768	65-01-129/15 M10x14 H78805					
7	1	Drehantrieb F/L Actuator spring/air	1.4301	15-31-055/17 H315054	15-31-057/17 H105502	15-31-923/17 H32589				
7	1	Drehantrieb F/L für RME Actuator s/a for control-unit	1.4301	15-37-070/17 H315055	15-37-106/17 H128942	15-37-103/17 H134034				
8	1	Dichtungssatz Seal kit	PTFE	58-34-292/04 H119957	58-34-293/04 H155424	58-34-295/04 H321505	58-34-296/04 H323854			
9	4	Skt. Schraube DIN EN 24017-A2-70 Hex. screw	1.4301	65-01-079/15 M8x14 H78768	65-01-079/15 M8x14 H78768	65-01-082/15 M8x18 H78774	65-01-131/15 M10x18 H78807			
10	1	CU4-T-Adapter CU4-T-adapter	PA 6.6 GF30 schwarz	08-48-601/93 H320475						
11	1	Control-Unit CU4-T-Direct Connect Control-Unit CU4-T-Direct Connect	PA 6.6 GF30 schwarz	08-45-101/93 H320461						

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstöß verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustereintragung, vorbehalten. APV Rosisia GmbH.

Ersatzteilliste: spare parts list

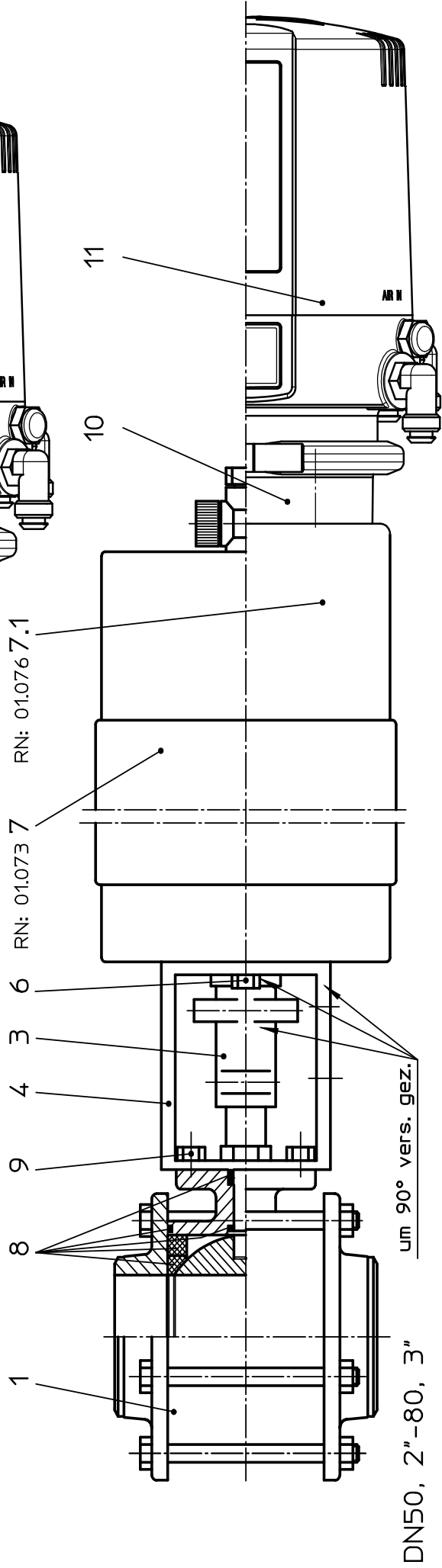
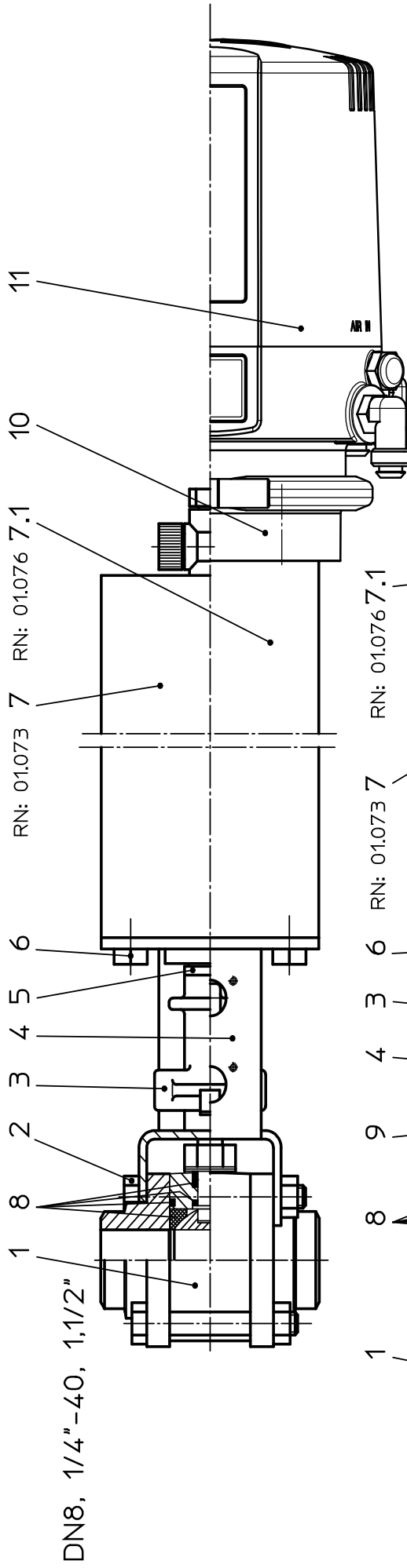
Kugelhahn-FZ-KHI2
Ball valve with pneumatic actuator
voller Durchgang / full bore (integral)
DN 8, 1/4" - 80,3"

Datum:	24.05.11	30.10.14	08.01.16
Name:	Trytko	Trytko	Trytko
Geprüft:	Goebel		
Datum:			
Name:			
Geprüft:			

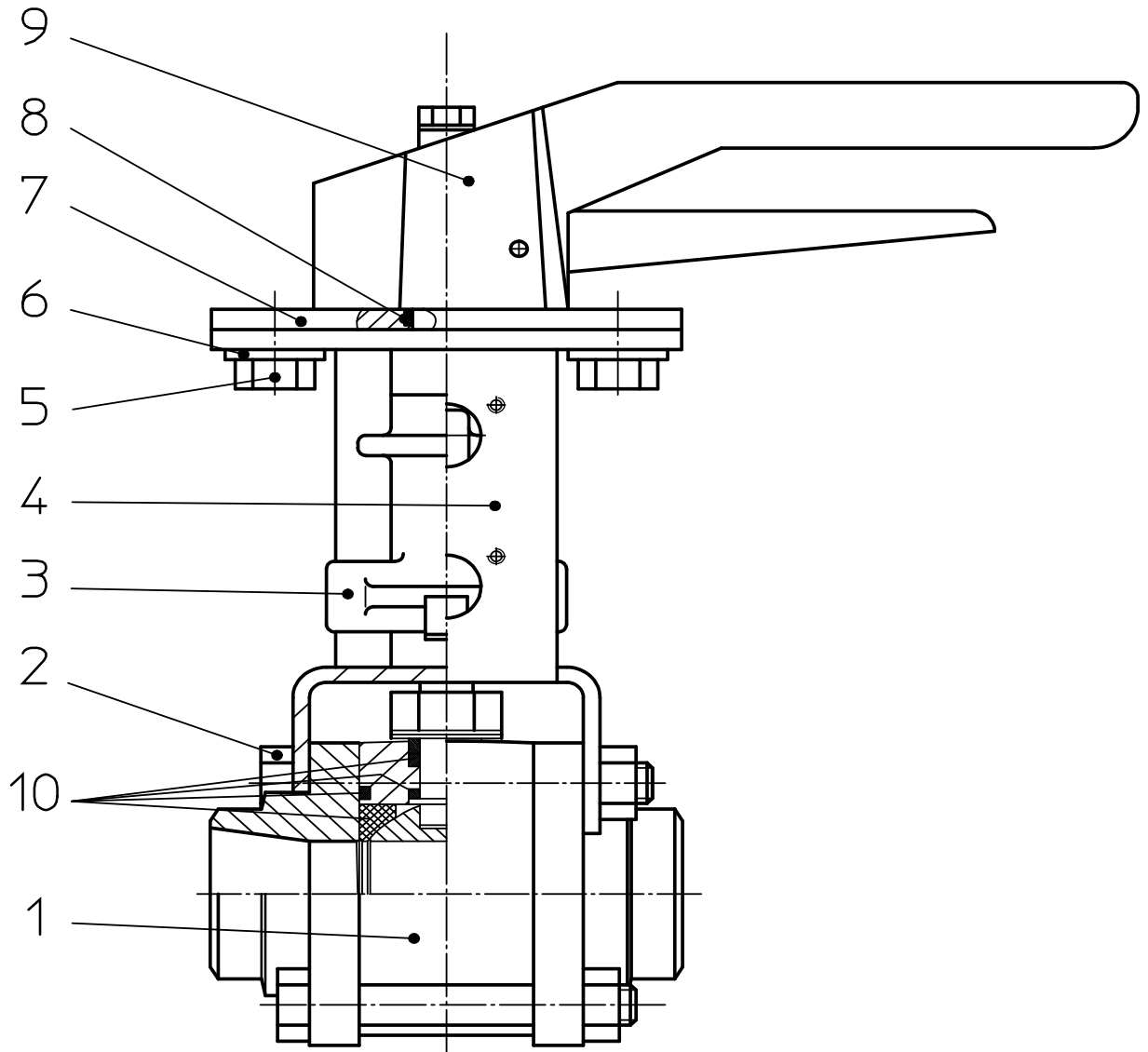
APV
 SPX Flow Technology Rosisia GmbH
 D-59425 Umma Germany

Blatt 1 von 3

RN 01.240-1



Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstoß verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraph 18 UWG, Paragraph 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustereintragung, vorbehalten. APV Rosista GmbH.



Datum:	25.05.11	30.10.14									
Name:	Trytko	Trytko									
Geprüft:	Goebel										

Ersatzteilliste: spare parts list

Kugelhahn-HL-KHV2 für Rückmeldung
Ball valve, manually operated for optional feedback
reduzierter Durchgang / reduced bore (venturi) DN 10, 3/8" - 50, 2"

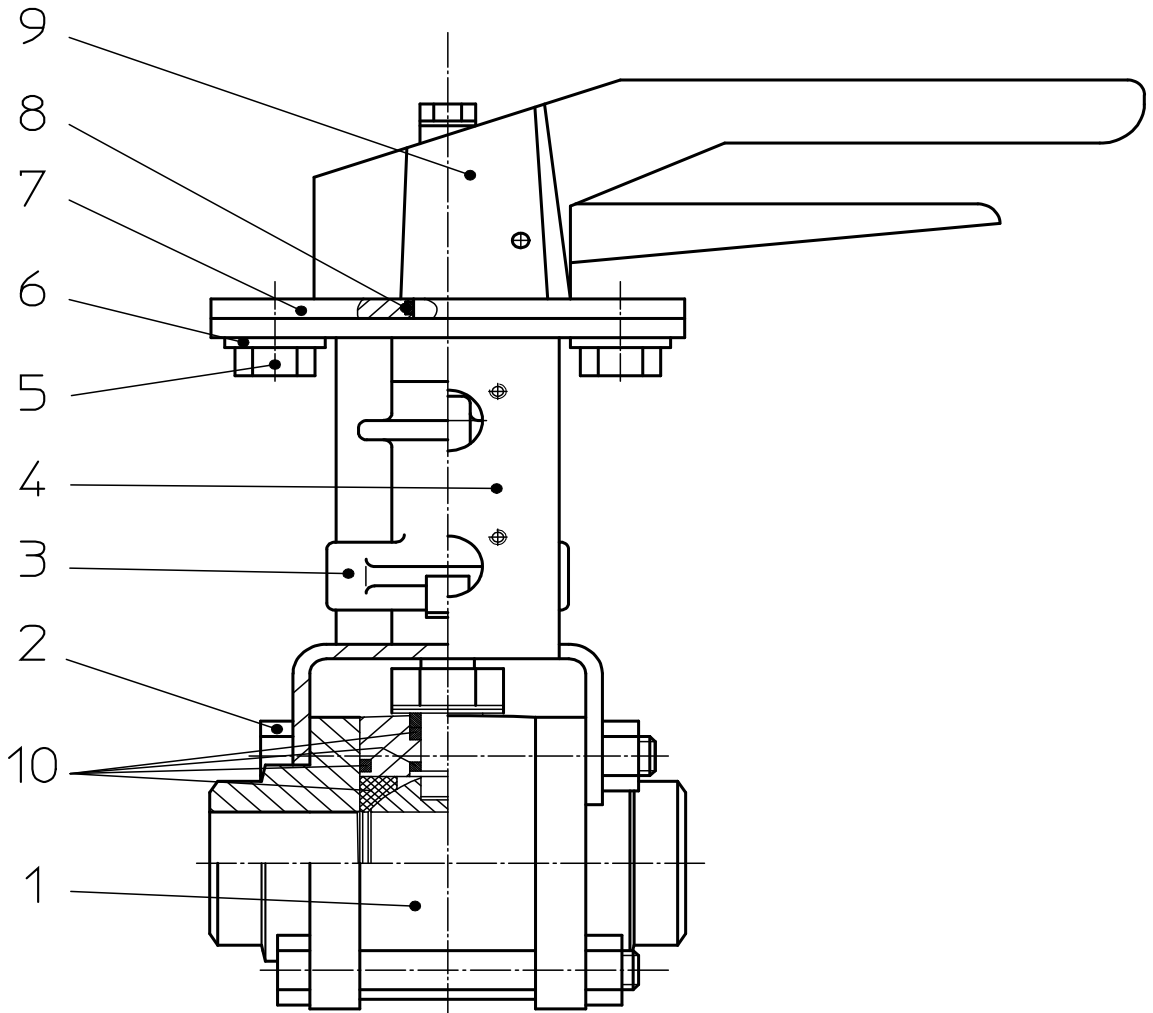


SPX Flow Technology Rosista GmbH
D-59425 Unna Germany

Blatt 1 von 3

RN 01.240-2

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstoß verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustereintragung, vorbehalten. APV Rosista GmbH.



Datum:	26.05.11	30.10.14								
Name:	Trytko	Trytko								
Geprüft:	Goebel									

Ersatzteilliste: spare parts list

Kugelhahn-HL-KHI2 für Rückmeldung
Ball valve, manually operated for optional feedback
voller Durchgang / full bore (integral) DN8, 1/4" - 40, 1 1/2"



SPX Flow Technology Rosista GmbH
D-59425 Unna Germany

Blatt 1 von 3


RN 01.240-3

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstöß verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraph 18 UWG, Paragraph 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustererteilung, vorbehalten. APV Rosista GmbH.

Ersatzteilliste: spare parts list

Kugelhahn-HL-KHI2 für Rückmeldung
Ball valve, manually operated for optional feedback
voller Durchgang / full bore (integral)
DN8, 1/4" - 40, 1 1/2"

Datum:	26.05.1	30.10.14				
Name:	Trytko	Trytko				
Geprüft:	Goebel					
Datum:						
Name:						
Geprüft:						



SPX Flow Technology Rosista GmbH
D-59425 Umma Germany

Blatt 2 von 3

RN 01.240-3

pos. item	Menge quantity	Beschreibung description	Material	DN8, 1/4"	DN10, 3/8"	DN15, 1/2"	DN20, 3/4"	DN25, 1"	DN32, 1 1/4"
			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.
1	1	Kugelhahn KHI1-H 1+2S	1.4404/1.4408	30-15-092/57 H314558	30-15-751/57 H323889	30-15-752/57 H323890	30-15-753/57 H323891	30-15-754/57 H316991	30-15-755/57 H323894
	1	Ball valve KHI1-H 1+2S	PTFE						
	1	Kugelhahn KHI1-H 1+2S	PTFE/C22.3						
	1	Ball valve KHI1-H 1+2S							
2	2	Skt. Schraube DIN EN 24014-A2-70	1.4301					65-01-150/13	
		Hex. screw						M10x90 H78827	
3	1	Kupplung	1.4308	08-52-234/17 H323872			08-52-235/17 H162801		08-52-236/17 H162802
	1	Coupling							
4	1	Laterne	1.4301	15-40-205/17 H175641	15-40-206/17 H175640		15-40-208/17 H112412	15-40-207/17 H175635	15-40-209/17 H112426
	1	Yoke							
5	2	Skt. Schraube DIN EN 24017-A2-70	1.4301					65-01-078/15 M8y10 H158966	
		Hex. screw							
6	2	Scheibe DIN 125-A2	1.4301					67-01-022/15 A-8,4 H79594	
		Washer							
7	1	Ronde	1.4301					08-58-026/17 H153636	
		Round plate							
8	1	Clipsgleitlager	Iglidur					08-01-094/93 H169101	
		Clips slide bearing							
9	1	Handbetätigung	PA6.6 30%GF					08-41-065/93 H15059	
		Manual actuating handle							
10	1	Dichtungssatz	PTFE	58-34-287/04 H323853	58-34-288/04 H154838	58-34-289/04 H154839	58-34-290/04 H119954	58-34-294/04 H176492	58-34-291/04 H119956
		Seal kit							

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstöß verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UrtG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustererteilung, vorbehalten. SPX Flow Technology Rosista GmbH.

Ersatzteilliste: spare parts list

Drehantrieb K080, K125, K180 F/L
Actuator K080, K125, K180 spring/air

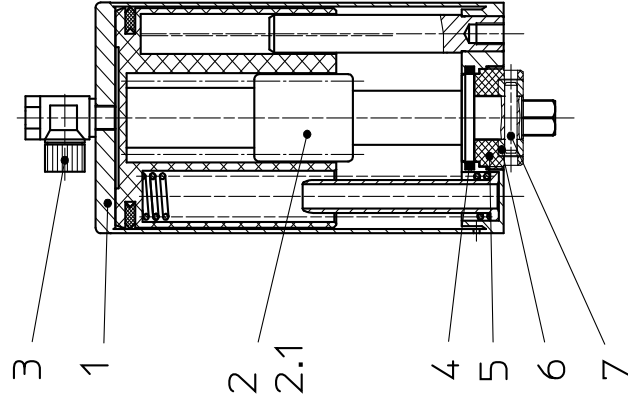
Datum:	22.11.12	12.03.14
Name:	Trytko	Trytko
Geprüft:	Goebel	

Datum:		
Name:		
Geprüft:		

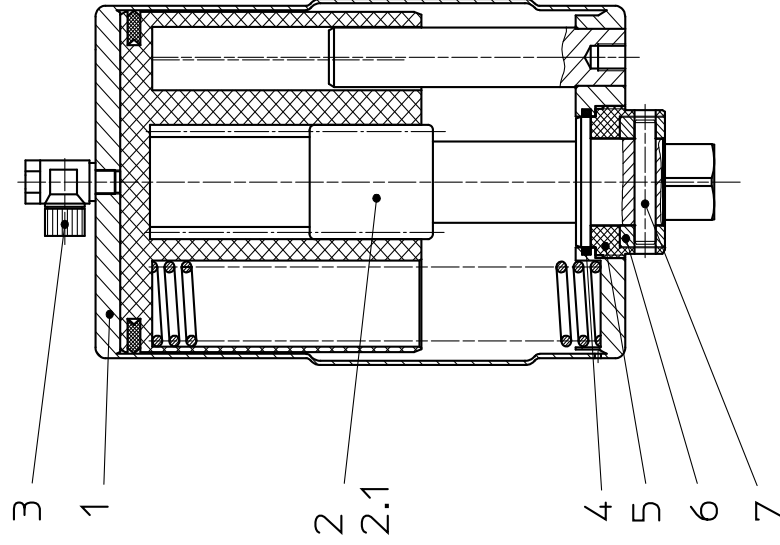
APV
 SPX Flow Technology Rosista GmbH
 D-59425 Umma Germany

Blatt 1 von 2
RN 01.073

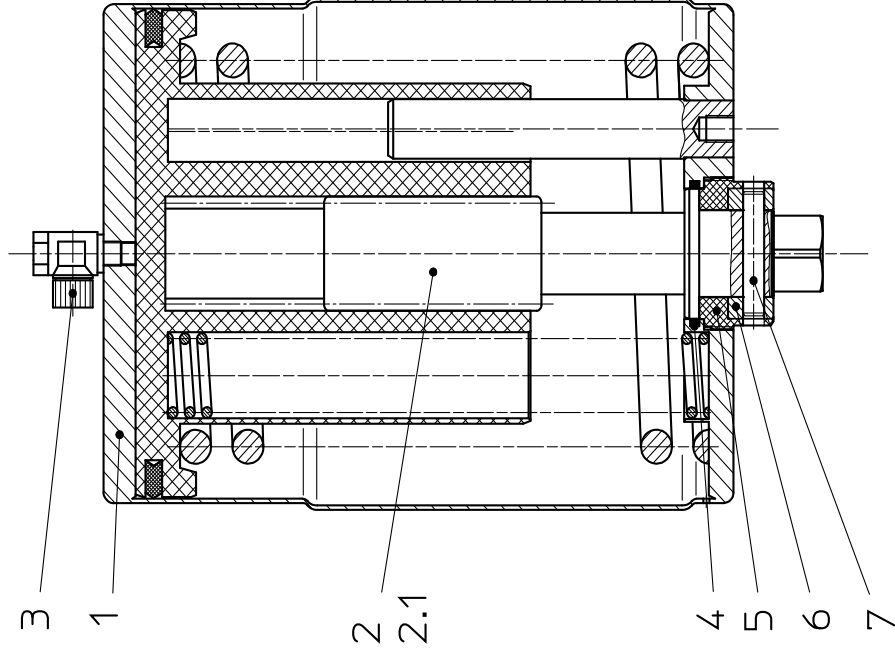
DRAT K080



DRAT K125



DRAT K180



Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstöß verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustereintragung, vorbehalten. SPX Flow Technology Rosista GmbH.

Ersatzteilliste: spare parts list

Drehantrieb K080, K125, K180 F/L für Rückmeldeinheit
Actuator K080, K125, K180 spring/air for control unit

Datum: 28.03.13 08.05.14

Name: Trytko Trytko

Geprüft:

Datum:

Name:

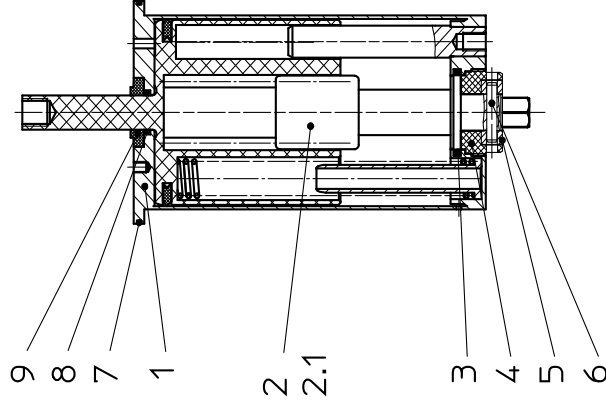
Geprüft:

APV
 SPX Flow Technology Rosista GmbH
 D-59425 Umma Germany

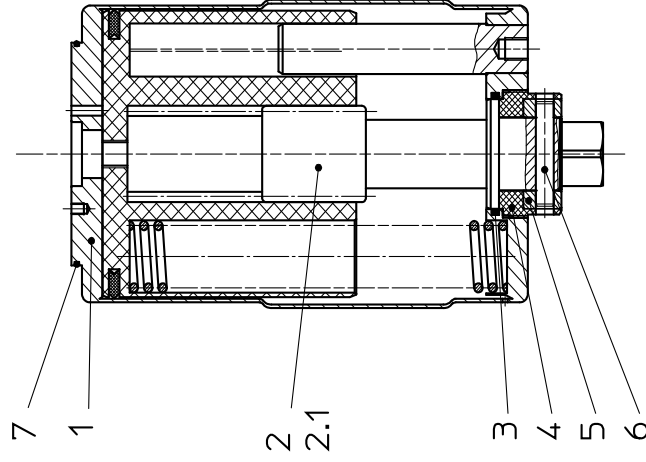
Blatt 1 von 2

RN 01.076

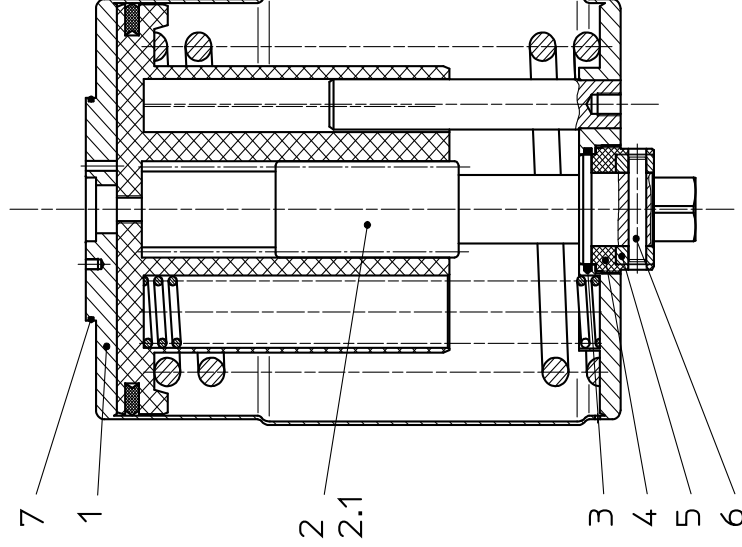
DRAT K080-RM



DRAT K125-RM



DRAT K180-RM



Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstoß verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmusterteilung, vorbehalten. SPX Flow Technology Rosista GmbH.

Ersatzteilliste : spare parts list

**Drehantrieb K080, K125, K180 F/L für Rückmeldeeinheit
Actuator K080, K125, K180 spring/air for control unit**

Datum:	28.03.13	08.05.14
Name:	Trytko	Trytko
Geprüft:		
Datum:		
Name:		
Geprüft:		

Blatt 2 von 2	
RN 01.076	



pos. item	Menge quantity	Beschreibung description	Material	K080	K125	K180	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	Drehantrieb komplett Actuator complete	1.4301 matt-glänzend	15-37-070/17 H123937	15-37-106/17 H128942	15-37-103/17 H134034			
1	1	Drehantrieb komplett Actuator complete	1.4301 poliert	15-37-070/13 H316969	15-37-106/13 H327700	15-37-103/13 H328071			
1	1	Drehantrieb Schweißteil Actuator welded	1.4301	15-37-071/17 H123936	15-37-105/17 H128940	15-37-104/17 H134503			
2	1	Spindel komplett mit Lager Shaft complete with bearing	1.4301	15-24-021/13 H31494	15-24-031/13 H31502	15-24-033/13 H31504			
2.1	1	Spindel Shaft	1.4301	15-24-020/13 H31493	15-24-030/13 H31501	15-24-032/13 H31503			
3	1	O-Ring O-ring	NBR	58-06-130/83 H76965					
3	1	O-Ring O-ring	FPM		58-06-222/73 H77000				
4	1	Lager für Drehantrieb Bearing for actuator	POM	15-28-002/34 H31673					
4	1	Lager für Drehantrieb Bearing for actuator	PA12		15-28-009/63 H31684				
5	1	Stelling Adjust ring	1.4301	67-08-007/13 H79757	67-08-008/13 H79758				
6	1	Zyl. Kerbstift Cyl. pin	1.4305	DIN EN ISO 8740-V2A 5x26 H79916	67-15-035/13 8x45 H79917				
7	1	O-Ring O-ring	NBR	OR 90x2	58-06-426/83 H143352				
8	1	O-Ring O-ring	NBR	OR 15,3x2,4					
9	1	Druckstück Drehantrieb Thrust ring turning actuator	Hostaform	58-06-052/83 H107914 08-48-117/53 H105080					

APV DELTA KHV

BALL VALVE

SPXFLOW

SPX FLOW

Design Center

Gottlieb-Daimler-Straße 13
D-59439 Holzwickede, Germany
P: (+49) (0) 2301-9186-0
F: (+49) (0) 2301-9186-300

SPX FLOW

Production

Stefana Rolbieskiego 2
PL- Bydgoszcz 85-862, Poland
P: (+48) 52 566 76 00
F: (+48) 52 525 99 09

SPX FLOW reserves the right to incorporate the latest design and material changes without notice or obligation.

Design features, materials of construction and dimensional data, as described in this manual, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region.

For more information visit www.spxflow.com.

ISSUED 10/2016 - Translation of Original Manual

COPYRIGHT ©2016 SPX FLOW, Inc.