

Operating Manual
DELTA DKR2
Double - Seat Ball Valve
with Cleaning Connection



Read and understand this manual prior to operating or servicing this product.



Declaration of Conformity for Valves and Valve Manifolds

APV Rosista GmbH, Zechenstr. 49, D-59425 Unna-Königsborn
as manufacturer with sole responsibility declares that the

**double seat valves of the series D2, SD4, SDT4, SDM4, SWcip4, DSV,
DA3, DE3, DEU3, DET3, DKR2, DKRT2, DKRH2**
in the nominal diameters DN 25 - 150, 1" - 6" and 1 Sh5 - 6 Sh5

butterfly valves of the series SV1 and SVS 1 F
in the nominal diameters DN 25 - 100, DN 125 - 250 and 1" - 4"

ball cocks of the series KH, KHV
in the nominal diameters DN 15 - 100

**single seat, diaphragm and spring loaded valves of the series
S2, SW4, SWmini4, SWT4, M3, MF3, M4, MF4, MP4, MS4, AP1, APT1, CPV, RG4,
RGM4, RGE4, RGEM4, PR2, PR3, PR4, SI2, UF3, VRA, VRAH**
in the nominal diameters DN 10 - 150, 1/2" - 4" and 1 Sh5 - 6 Sh5


and the valve manifolds installed thereof

meet the requirements of the Directives 89/392/EEC (amendment 93/44/EEC),
replaced by 98/37/EC and GSG - 9.GSGV.

For official inspections, APV Rosista GmbH presents
a technical documentation according to appendix V 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 remaining risks
as well as an operating manual with safety instructions.

The conformity of the valves and valve manifolds is guaranteed.

D-59425 Unna-Königsborn, June 04, 2008
APV Rosista GmbH



Manager Research and Development

Table of Contents :	Page :
1. General Terms	2
2. Safety Instructions	2
3. Mode of Operation	3
4. Auxiliary Equipment	4 - 5
5. Cleaning	5
6. Installation	6
6.1 Welding Instructions	6
7. Dimensions / Weights	7
8. Materials	8
9. Technical Data	8 - 9
10. Maintenance	9
11. Service Instructions	10 - 15
12. Detection of Seal Damage	16
13. Spare Parts Lists	
DKR2 - FZ DN25 - 125	RN 01.071
DKR2 - FZ 1" - 4"	RN 01.074
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 operating manual should be read carefully by the competent 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 operating manual.

Descriptions and data given herein are subject to technical changes.

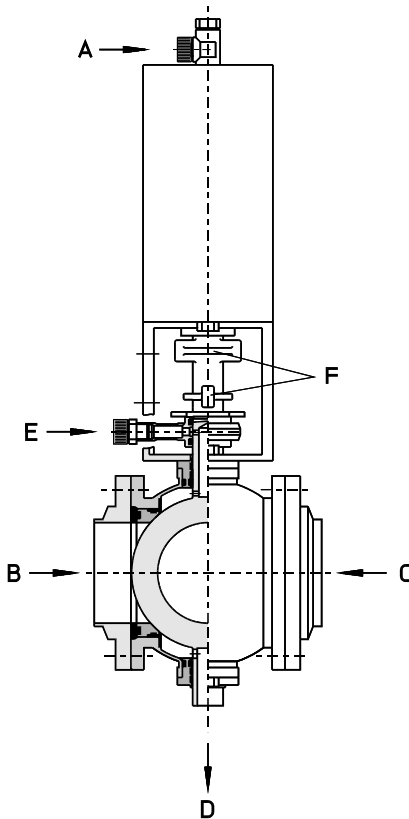
2. Safety Instructions



DANGER!

- The line and cleaning system must be depressurized before any maintenance work.
- Electric and pneumatic connections must be separated.
- Do not reach into the open valve ball!
Risk of injury by sudden valve operation!
- Observe service instructions to ensure safe maintenance of the valve.
- Dismantle the actuator before the change of seals.
- During valve operation, operating leakages spirt out to the bottom.
- If the cleaning connection is not used, it must be sealed by a plug or operating leakages must be discharged.

3. Mode of Operation



Due to the use of high-quality stainless steel and seal materials complying with the specified requirements, the double seat ball valve DELTA DKR2 is applicable in the food and beverage industries as well as in the chemical and pharmaceutical industries.

The field of application of the DELTA DKR2 valve comprises the separation of two line sections with different fluids **(B and C)** by two independent seals with intermediate leakage chamber and free drain **(D)** to the atmosphere.

Actuation of the pneumatic turning actuator with air connection at **(A)**, reset into the limit position "closed" by spring force.

- The free opening cross section has the same dimension as the nominal diameter of the pipeline.
- Smooth valve passage without diversion of the fluid.
- Cleaning of the leakage chamber by supply of cleaning liquids via the cleaning connection **(E)**.
- During the operating process, operating leakages bleed from the leakage drain **(D)** downwards. If a cleaning line is not connected, the cleaning connection **(E)** must be sealed by a plug or operating leakages must be discharged.
- The cleaning connection **(E)** can be used to vent the leakage chamber for a faster emptying or to sterilize the leakage chamber with steam.

4. Auxiliary Equipment

- **Operating leakage reduction**
During the opening and closing process of the valve, a certain quantity of the fluid is lost as operating leakage (see technical data).
Through a reconstruction of the valve, a reduction by about 40 % can be achieved.
Complete retrofit kits to reduce the quantity of operating leakages are available (see page 14).
- **Operating leakage drain**
To discharge operating leakages via a pipeline, retrofit kits with weld end are available (see page 15).

Valve position indication

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

We recommend our APV standard proximity switches.

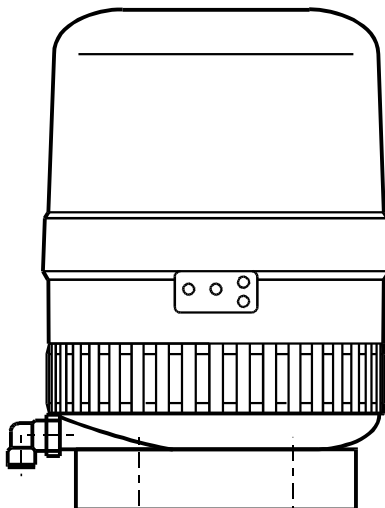
Type: three-wire proximity switch (ref.-No. 08-60-011/93)

Operating distance: 4 mm / diameter : 11 mm / length: 30 mm

Feedback complete with support and proximity switch (ref.-No. 15-33-023/93) for a limit position.

If the user decides to apply valve position indicators other than APV type, we cannot take over the liability for any malfunctions.

**control unit DELTA CU
with adapter**



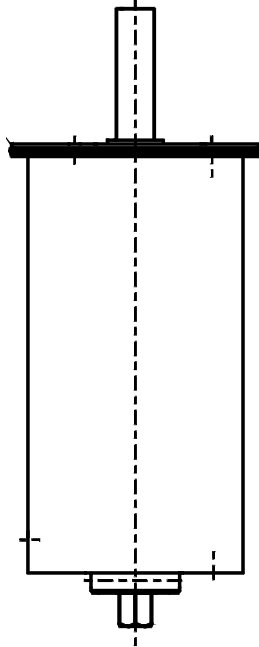
- **Control Unit**
Units with feedback switches and solenoid valves to be assembled on the actuator, for the pneumatic control of the valve are also available in fieldbus technology.

The Control Unit CU can be installed on the turning actuator.

Different types are available:

designation :	ref.-No.:
CU 31 Direct Connect	16-31-232/93
CU 21 Profibus	16-31-236/93
CU 31 Device Net	16-31-240/93
CU 31 AS - Interface	16-31-244/93

turning actuator for control unit



- For the installation of a control unit on the DKR2 valve a special turning actuator and an adapter are required. The standard actuator must be replaced.

turning actuators and corresponding adapters for control units	
	ref.-No.:
turning actuator K 080 DN 25 - 65 / 1" - 2,5"	15-37-070/17
CU 2 adapter SV1 / SVS1F / DKR2	08-48-416/93
turning actuator K 125 DN 80 - 100 / 3" - 4"	15-37-106/17
CU 2 adapter SV1 / SVS1F / DKR2	08-48-417/93
turning actuator K 180 DN 125	15-37-103/17
CU 2 adapter SV1 / SVS1F / DKR2	08-48-417/93

5. Cleaning

Cleaning recommendation for the DKR valve in the beverage industry

cleaning step	CIP - spraying
pre-flushing	2 x 10 sec.
caustic flushing 80° C	3 x 10 sec.
intermediate flushing	2 x 10 sec.
acid flushing	3 x 10 sec.
final flushing	2 x 10 sec.

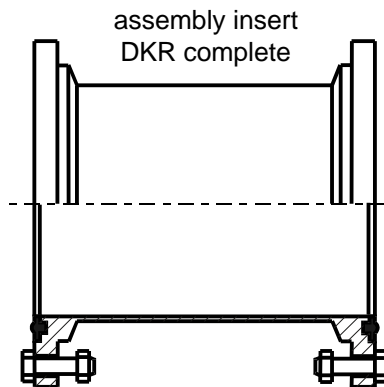
(with a break of 10 sec. each)

- The flushing times refer to a **cleaning pressure of p = 3 - 5 bar**.
- The flushing times indicated for the individual cleaning steps are standard values. In specific applications these times must be adjusted depending on the product, the pressure ratio and the degree of soiling.
- The flushing quantity per CIP spraying cycle amounts to about 1 litre at a cleaning pressure of 3 - 5 bar.

6. Installation

- The valve must be installed in vertical position. Operating leakages are freely drainable to the bottom and the leakage chamber drains off.
- With several valves being parallelly connected with one pipeline, a passage of the operating leakage to the cleaning connection of adjacent valves must be avoided. Installation of a shut-off device or a check valve in front of each cleaning connection is required.
- Cleaning connection with hose 8 x 1.
- **Attention: Observe welding instructions.**

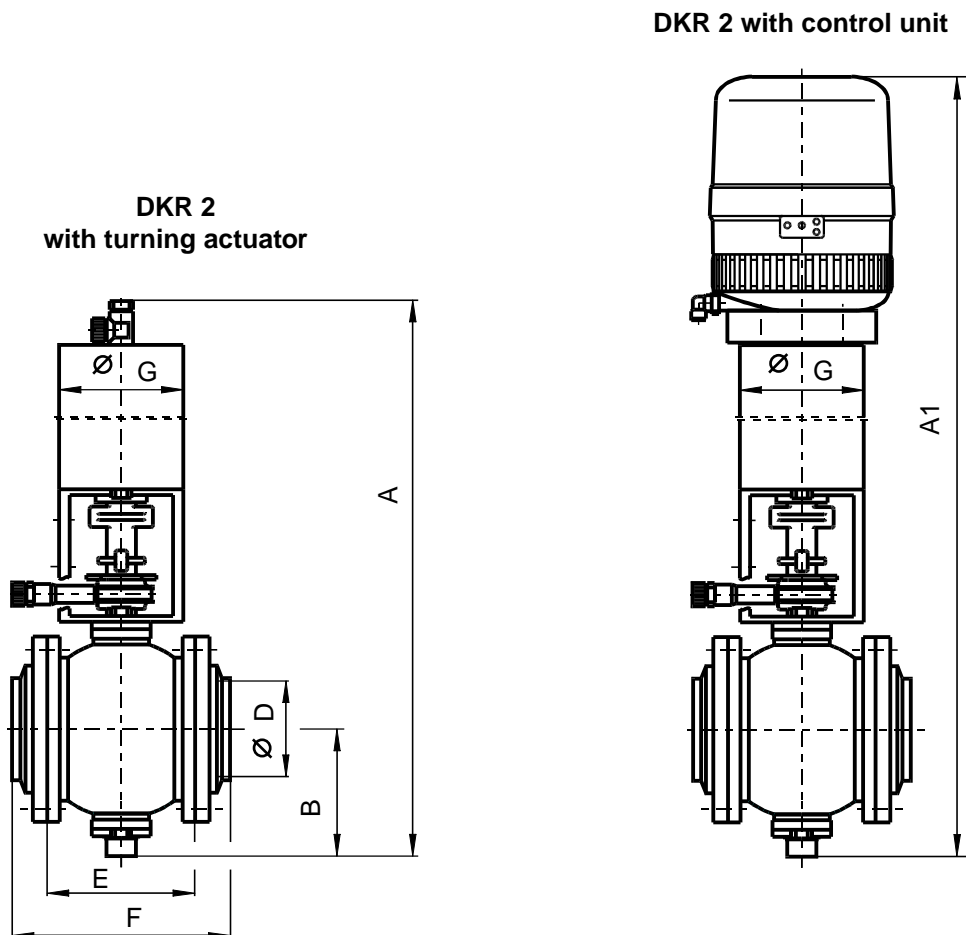
6.1 Welding Instructions



- Welding should only be carried out by certified welders (EN 287-1) (seam quality EN 25817 "B").
- Welding of the mating flanges must be undertaken in such a way that deformation strain cannot be transferred.
- TIG orbital welding is best!
- Before welding of the valve, all sensitive parts must be removed! Dismantle the valve ball housing with seals from the mating flanges.
- To simplify welding, fitting parts can be supplied as assembly inserts.
- 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.

DN / inch	ref.-No.
25 / 1"	08-48-250/59
40 / 1,5"	08-48-251/59
50 / 2"	08-48-252/59
65 / 2,5"	08-48-253/59
80	08-48-254/59
3"	08-48-257/59
100 / 4"	08-48-255/59
125	08-48-256/59

7. Dimensions / Weights



dimensions in mm

DN	A	A1	B	Ø D	E	F	Ø G	weight in kg
25	385	522	55	26,0	60,5	108,5	85	5,7
40	410	546	67	38,0	61,0	109	85	6,5
50	427	563	75	50,0	79,0	127	85	7,4
65	452	587	87	66,0	100,3	148,3	85	9,2
80	543	678	102,5	81,0	123,0	171	130	18,0
100	574	707	117	100,0	150,0	198	130	21,5
125	622		142	125,0	190,0	244	130	40,0
inch								
1"	385	522	55	22,2	60,5	108,5	85	5,7
1,5"	410	546	67	34,9	61,0	109	85	6,5
2"	427	563	75	47,6	79,0	127	85	7,4
2,5"	452	587	87	60,3	100,3	148,3	85	9,2
3"	543	678	102,5	72,9	123,0	171	130	18,0
4"	574	707	117	97,6	150,0	198	130	21,5

8. Materials

- housing, valve ball, shafts		1.4404
- ball seal		PTFE
- flange seal	standard option	EPDM HNBR, FPM, VMQ
- housing seal	standard option	EPDM HNBR, FPM
- O-rings		FPM, NBR
Actuator		
- yoke, actuator		1.4301
- coupling	or	1.4301 / 1.4308 1.4057 / 1.4059
- indicator		PE-solid
- piston		Polyacatal POM
- spindle bearing		Polyamide PA 12
- air connection		Polyamide PA 6.6

9. Technical Data

- max. line pressure		: 10 bar
- max. operating temperatures		: 135° C EPDM,HNBR *FPM, *VMQ
- short-term load		: 140° C EPDM, HNBR *FPM, *VMQ
		* no steam
- throughput cleaning at 3 bar admission pressure		: about 5 - 10 l/min.
- turning actuator		
max. control pressure		: 10 bar
min. control pressure		: 6 bar
turning angle		: 90°
- air connection (for hose)		: 6 x 1
(Use dry and clean air, only.)		

9. Technical Data

	DN inch	25 1"	40 1,5"	50 2"	65 2,5"	80 3"	100 4"	125
max. tightening torque in Nm	(M)	10	15	22	25	40	65	
operating leakage at about 5 bar in L (opening and closing process)	(Qs)	0,7	1,2	1,4	2,0	4,0	4,2	6,0
operating leakage at about 5 bar in L with operating leakage reducer	(Qs)	0,4	0,7	0,8	1,2	2,4	2,5	3,6
pneumatic air consumption at 6 bar NL	(V)	1,8	1,8	1,8	2,8	5,5	5,5	5,5

10. Maintenance

- Dismantling and installation of seals according to service instructions.
Use complete seal kits according to spare parts list.
- Assembly and adjustment of turning actuator according to service instructions.
- Lightly grease all seals.

APV recommendation:

assembly grease for **EPDM, HNBR, NBR** and **FPM**

(750 g/tin - ref.-No. 000 70-01-019/93)

(60 g/tube - ref.-No. 000 70-01-018/93)

or

assembly grease for **VMQ**

(600 g/tin - ref.-No. 000 70-01-017/93)

(60 g/tube - ref.-No. 000 70-01-016/93)

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

11. Service Instructions

The item numbers refer to the spare parts drawing
(DN-design: RN 01.071; inch-design: RN 01.074)

11.1 Dismantling from the line system

- a. Shut off connecting lines, let off line pressure and discharge if possible.
- b. Disconnect pneumatic and electric connections.
- c. Dismantle cleaning line.
- d. Screw off valve position indicator.
- e. Remove flange screws **(20)**.
- f. Detach ball valve from the flanges.

11.2 Dismantling of seals and guide bands

- a. Detach flange seals **(8)**.
- b. Take off turning actuator **(15)** after removal of screws **(16)**.
- c. Release screws **(18)** and yoke, coupling, indicator and spray connection.



Danger! Do not replace seals before removal of turning actuator from the valve.

- d. Pull out PTFE ball seals **(9)** with appertaining housing seals **(7)**.

To pull the ball seals out, half open the ball by hand and grasp alternately behind the seal!



Attention! Ball and ball seal are sensitive to mechanical damage, the surfaces must not be touched by tools.

- e. Having released the screws **(3)**, slide both shaft bearings **(2)** out of the housing and replace O-rings **(5, 6)** and guide bands **(4)**.

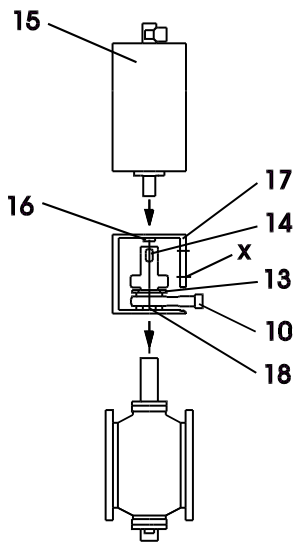


Attention! With dismantled shaft bearings and seals, the housing with ball must not be subject to vibrations.

11. Service Instructions

11.3 Installation of seals and guide bands

- a. Slightly grease O-rings (5, 6) and guide bands (4) before their installation in the shaft bearings (2).
- b. Push upper and lower shaft bearing (2) with a little grease in the housing, insert screws (3), but do not tighten them.
- c. Slightly grease housing seals (7) before their installation on the PTFE ball seals (9).
- d. Turn valve ball into open position by hand and install ball seals with a little grease at both sides.
- e. Slightly grease O-rings (12) and insert them in the spray connection (10).



11.4 Assembly of valve

- a. To ensure a safe handling of the valve, clamp the lower bearing flange into a vice with protective cheeks. Turn the ball into "open position". Place yoke (17), spray connection (10), indicator (13) and coupling (14) on the ball housing. The lower coupling cam must point to the lower yoke bore (x) and the indicator must point into flow direction.
- b. Screw in screws (18), but do not tighten them.

11. Service Instructions

11.5 Adjustment of operating position



Attention! For a safe, perfect and fast adjustment of the operating position, we recommend to use two separate FG flanges.

11.5.1 Adjustment of operating position with FG flanges

Install the ball seals as described in **11.3**.
Assemble the valve as described in **11.4**.
Turn the ball into its exact open position.

- a. Control actuator **(15)** with pneumatic air (**min. 6 bar**) and place it on the yoke.
- b. Screw in screws **(16)**, but do not tighten them.



Danger! Do not reach into the open valve after installation of the actuator.
Risk of injury by sudden operation of the valve.

- c. Screw down FG flanges at the housing. The ball must be in its exact open position during this procedure.
- d. Release both screws **(3)** of the shaft bearing (ball centers between the seals) and retighten them.
- e. Slightly turn the actuator in anticlockwise direction to adjust the play in the connecting parts.

!!! The ball must keep its exact open position during this procedure !!!



Danger! Do not reach into the open valve.
Risk of injury by sudden operation of the valve.

- f. At first, tighten the screws **(18)** and then tighten the screws **(16)**. Operate the turning actuator several times to check the operating accuracy of the ball in "open position".

- g. Shut off the air supply to the turning actuator and dismantle the FG flanges.

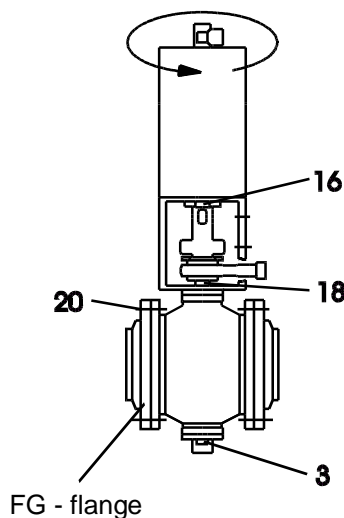
- h. Insert the valve in closed position between the flanges into the pipeline and fasten it with the screws **(20)**.

Tightening torque: M8 Md = 16 Nm
 M10 Md = 40 Nm.

- i. Connect pneumatic air line with turning actuator.

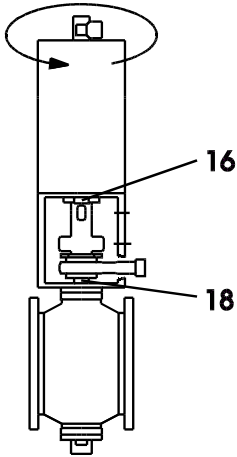
- j. Connect cleaning line.

- k. Attach valve position indicators.



11. Service Instructions

11.5.2 Adjustment of operating position without FG flanges



If FG flanges are not available, the ball can, in exceptional cases, be adjusted as follows

(Attention! Failure of adjustment is possible.):

Install the ball seals as described in 11.3.

Assemble the valve as described in 11.4.

Turn the ball into its exact open position.

- a. Control actuator (15) with pneumatic air (min. 6 bar) and place it on the yoke.
- b. Screw in screws (16), but do not tighten them.

Danger!

Do not reach into the open valve after installation of the actuator.

Risk of injury by sudden operation of the valve.

! The ball must be in its exact open position !

- c. Slightly turn the actuator in anticlockwise direction to adjust the play in the connecting parts.

!!! The ball must not move during this procedure !!!

(exact open position)

At first, tighten the screws (18) and then tighten the screws (16).

Operate the turning actuator several times to check the operating accuracy of the ball.

- d. Shut off the air supply to the turning actuator and insert the valve in closed position into the line system. Fasten it with the screws (20).

e. Centering of ball (absolutely necessary)

To center the ball between the seal rings, proceed as follows:

1. Release screws (3) by about ¼ turn.
2. Release one screw (18) by about ¼ turn.
3. Release second screw (18) by about ¼ turn and retighten it immediately.

Attention!

Hold the turning actuator fast during this process. Bring up holding moment in clockwise direction (top view of actuator).

4. Tighten screw (18) and, then, screw (3).

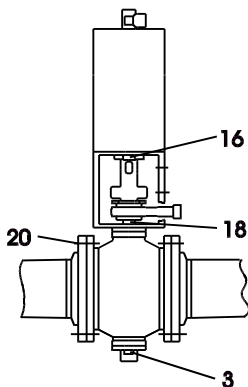
- f. Tightening torque:

Md = 16 Nm	M8
Md = 40 Nm	M10

- g. Connect pneumatic air line with turning actuator.

- h. Connect cleaning line.

- i. Attach valve position indicator.



11. Service Instructions

Leakage reduction for DKR ball valve

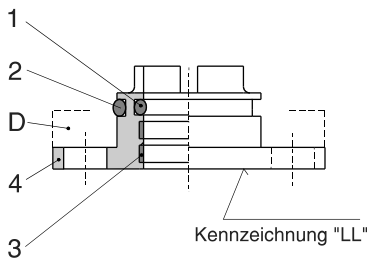


If the valve is not dismantled from the pipeline for the installation of the leakage reduction, it must be guaranteed that the corresponding pipeline is **depressurized!**

Leakage reducer compl.

nominal size	ref.-No.
DN 25, 1"	000 15-28-143/59
DN 40 - 65, 1,5" - 2,5"	000 15-28-144/59
DN 80,100, 3", 4"	000 15-28-145/59
DN 125	000 15-28-146/59

parts	item	quantity	ref.-No.
	item 1		000 58-06-078/13
	item 2		000 58-06-119/13
DN 25 - 65, 1" - 2,5"	item 3	2 x	000 08-39-079/93
DN 80, 100, 3", 4"	item 3	3 x	000 08-39-079/93
DN 125	item 3	1 x	000 08-01-160/93
DN 25,1"	item 4		000 15-28-143/42
DN 40 - 65, 1,5" - 2,5"	item 4		000 15-28-144/42
DN 80, 100, 3", 4"	item 4		000 15-28-145/42
DN125	item 4		000 15-28-146/42

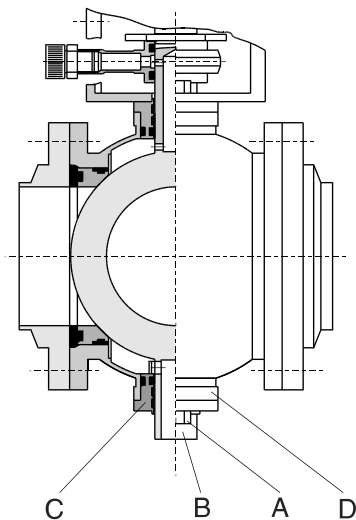


Installation of the leakage reducer

- Remove the two hexagon screws **(A)** and pull out the shaft bearing **(C)** by careful turning.
- If the leakage reducer is not equipped with the guides **(3)** and the two O-rings **(1, 2)**, these parts can carefully be dismantled from the shaft bearing **(C)** and used.
- Lightly grease O-rings **(1, 2)** before their installation.

!!! Do not use grease containing mineral oil for EPDM seals !!!

- Slide the complete leakage reducer instead of the shaft bearing over the shaft pivot **(B)** and tighten it with the hexagon screws **(A)** at the housing flange **(D)**.



11. Service Instructions

Leakage connection (drain) for DKR ball valve



If the valve is not dismantled from the pipeline for the installation of the leakage drain, it must be guaranteed that the corresponding pipeline is **depressurized!**

Leakage connection compl.

nominal sizes

DN 25 - 65, 1" - 2,5"

DN 80 - 125, 3", 4"

with 2 spare screws

ref.-No.

000 16-37-020/59

000 16-37-024/59

parts

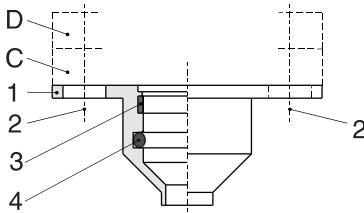
DN 25 - 65, 1" - 2,5" item 1 000 16-37-020/42

DN 80 - 125, 3", 4" item 1 000 16-37-024/42

DN 80 - 125, 3", 4" item 2 000 65-01-132/15

DN 25 - 125, 1", 4" item 3 000 08-39-079/93

DN 25 - 125, 1", 4" item 4 000 58-06-078/13

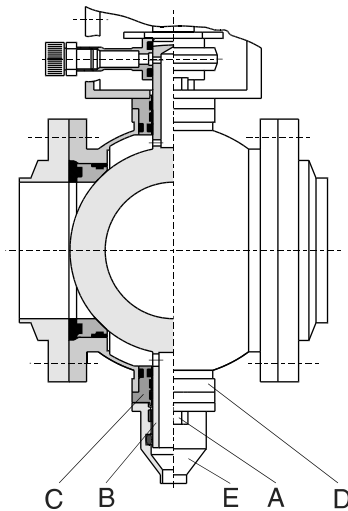


DKR ball valve

- Remove the two hexagon screws **(A)** and push the leakage connection **(E)** over the shaft pivot **(B)** against the shaft bearing **(C)**.
- Lightly grease O-ring **(4)** in the leakage drain.

!!! Do not use grease containing mineral oil for EPDM seals !!!

- With DN 25 to 65 tighten the shaft bearing **(C)** together with the leakage connection at the housing flange **(D)** by the hexagon screws **(A)**.
- With DN 80 to 125 use the hexagon screws **(2)** supplied with the leakage connection for fastening purposes.
- In its standard version, the **leakage connection** is provided with a butt weld end.



12. Detection of Seal Damage

Failure	Remedy
<i>Valve is closed and controlled with air</i>	
Leakage at upper and lower housing flange	replace seal (8).
Leakage from the leakage bore	replace seals (8, 9, 7).
<i>Valve is closed and leakage during cleaning via the spray connection</i>	
Leakage at spray connection	replace O-rings (12).
Leakage at shaft bearing	replace seals (4, 5, 6).
<i>Valve is open</i>	
Leakage at the leakage bore	replace seals (8, 9, 7).

If damaged seals are replaced, generally all seals should be changed. Complete seal kits for the valve service are available (see spare parts lists).

13. Spare Parts Lists

(see annex)

BA DKR2 000002
ID-No.: H 1 7 0 7 5 5
Translation of original manual



rev. 7



Your local contact:



APV
Zeichenstraße 49
D-59425 Unna

Phone: +49(0) 23 03/ 108-0 Fax: +49(0) 23 03 / 108-210

For more information about our worldwide locations, approvals, certifications, and local representatives, please visit www.apv.com.

Copyright © 2008 SPX Corporation

The information contained in this document, including any specifications and other product details, are subject to change without notice. While we have taken care to ensure the information is accurate at the time of going to press, we assume no responsibility for errors or omissions nor for any damages resulting from the use of the information contained herein.



DELTA DKR2

Doppelsitzkugelventil
Ersatzteillisten



Double-Seat Ball Valve
Spare Parts Lists



Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstößt verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UMG, Paragraf 106 UMG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmusteranmeldung, vorbehalten. APV Rosista GmbH. Diese Zeichnung wurde mit CAD erstellt und darf nicht von Hand geändert werden.

Besteht aus <u>3</u> Blatt		Blatt <u>1</u>	
Gezeichnet	10.5.90	Name	Trytko
Gepflicht	30.5.90	Normgepr.	Goe
Datum		12/01/07/02/03/03/08/06	
Name		Trytko/Trytko/Trytko/Trytko	

Besteht aus <u>3</u> Blatt		Blatt <u>1</u>	
Datum	5/90	2/96	5/97
Name	Trytko	Trytko	Trytko
Datum		6/00	
Name		Trytko	

Ventil DKR-FZ DN 25-125 1+2S
 Double seat ball valve DN 25-125 1+2S



APV Rosista GmbH
 D-58425 Urra
 Germany

RN 01.071

Es stehen verschiedene Werkstoffe zur Verfügung. Bitte WS-Nr. ergänzen

The following materials are available (fill in last two digits of ref.-no.)

- *Dichtungswerkstoff: material seals:
 - ../13-VMQ
 - ../33-HNBR
 - ../73-FPM
 - ../93-EPDM

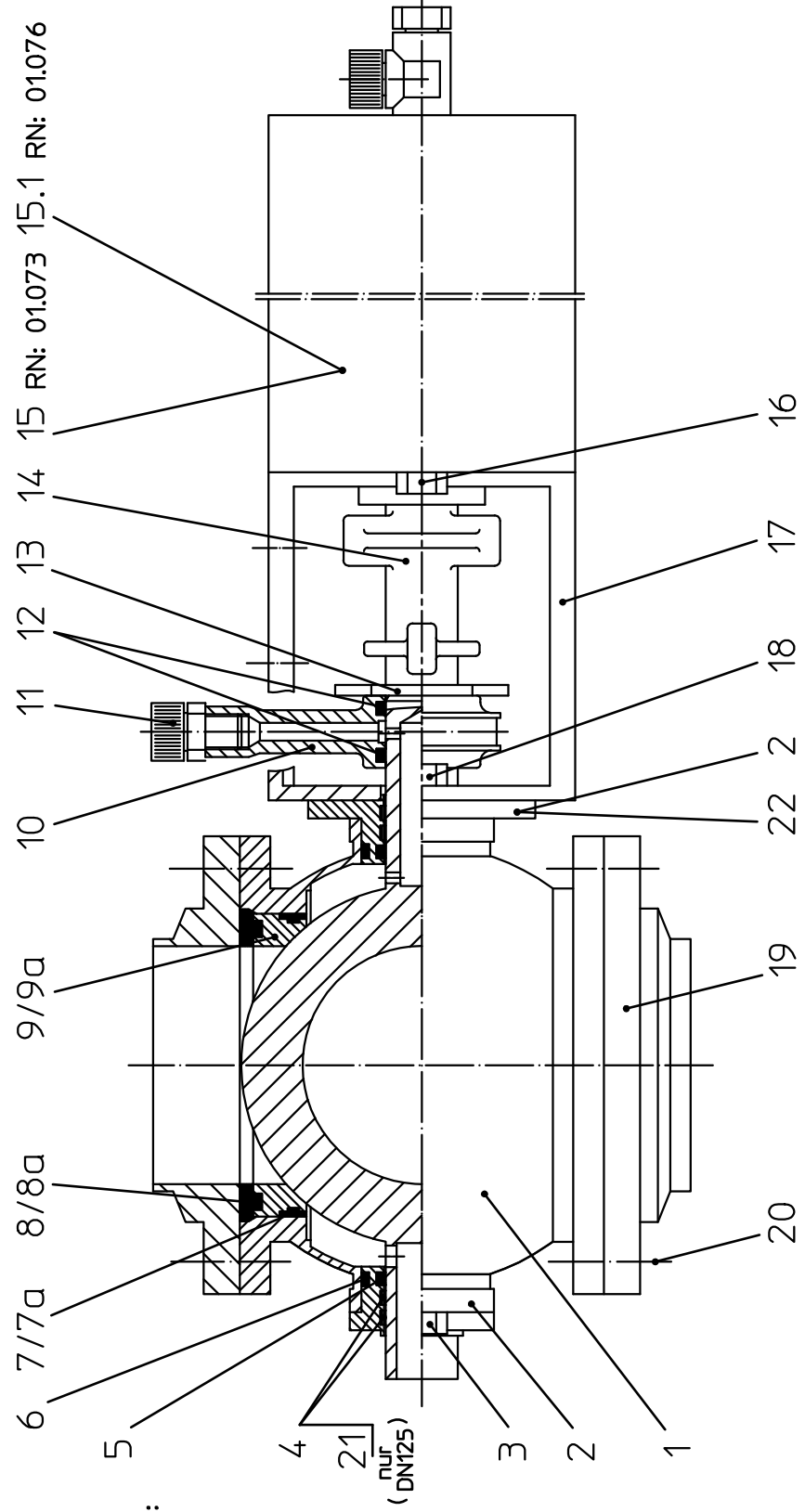
Gehäusedichtung /housing seal
 Bei VMQ wird die HNBR-Gehäusedichtung eingesetzt.
 For VMQ take the HNBR-housing seal.

- ** Werkstoff metallisch+Dichtung: Material metallic+seal:
 - ../29-HNBR 1.4404
 - ../59-EPDM 1.4404
 - ../61-VMQ 1.4404
 - ../69-FPM 1.4404

*** O-Ring:
 -Werkstoff NBR 70-75 Shore A bei Ventilen mit Dichtungswerkstoff EPDM, HNBR und VMQ einsetzen/
 Material NBR 70-75 Shore A to be used for valves with seal material EPDM, HNBR and VMQ
 -Werkstoff FPM 70-75 Shore A nur bei Ventilen mit Dichtungswerkstoff FPM verwenden.
 Material FPM 70-75 Shore A to be used only for valves with seal material FPM.

ACHTUNG !!! ATTENTION !!!

Pos.7a, 8a, 9a nur für DN80
 item 7a, 8a, 9a only for DN80



Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts ist 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 Gebrauchsmustererteilung, vorbehalten. APV Rosista GmbH. Diese Zeichnung wurde mit CAD erstellt und darf nicht von Hand geändert werden.

Ersatzteilliste: spare parts list:

Ventil DKR-FZ DN 25-125 1+2S

Double seat ball valve DN 25-125 1+2S

Blatt 2

Gezeichnet	10.5.90	Trytko	Name	Trytko
Geprüft	30.5.90	Goe		
Normspr.				
Datum	5/90	2/96	5/97	6/00
Name	Trytko	Trytko	Trytko	Trytko
	40	50	65	80
	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.	WS-Nr. ref.-no.

RN 01.071

APV Rosista GmbH
D-58425 Urra
Germany

Pos. item	Benennung description	25	40	50	65	80	100	125	150
1	Ventilkörper Valve body	WS-Nr. ref.-no. 31-08-277/47	WS-Nr. ref.-no. 31-08-377/47	WS-Nr. ref.-no. 31-08-427/47	WS-Nr. ref.-no. 31-08-477/47	WS-Nr. ref.-no. 31-08-527/47	WS-Nr. ref.-no. 31-08-627/47	WS-Nr. ref.-no. 31-08-677/47	WS-Nr. ref.-no. 31-08-677/47
2	Wellenlager Bearing	2x 15-28-124/42	2x =	1x =	1x =	1x 15-28-125/42	1x =	1x 15-28-180/42	1x =
3	Skt. Schraube Hex. screw	DIN EN 24017-M8x12-A2-70				DIN EN 24017-M10x14-A2-70		DIN EN 24017-M10x16-A2-70	
4	Führungsband Guide	4x 08-39-079/93	4x =	4x =	4x =	6x =	6x =		
5	O-Ring	***							
6	O-Ring	***							
7	Gehäusedichtung Housing seal	* 58-33-292/	=	58-33-392/	58-33-492/	58-33-542/33	58-33-642/	58-33-692/	
7a	Gehäusedichtung /nur bei DN80 einsetzen Housing seal /only to be used for DN80			VMQ/Silicone EPDM					
8	Flanschdichtung Seal flange	* 58-32-277/	58-32-377/	58-32-427/	58-32-477/	58-32-527/33	58-32-627/	58-32-677/	
8a	Flanschdichtung /nur bei DN80 einsetzen Seal flange /only to be used for DN80			VMQ/Silicone EPDM					
9	Kugeldichtung Ball seal	58-32-291/23	58-32-391/23	58-32-441/23	58-32-491/23	58-32-541/23	58-32-641/23	58-32-691/23	
9a	Kugeldichtung /nur bei DN80 einsetzen Ball seal /only to be used for DN80			VMQ/Silicone und / and EPDM					
10	Spritzanschluß CIP connection	08-52-136/92	=	=	=	=	=	=	=
11	G.Verschraubung Union	08-63-003/13	=	=	=	=	=	=	=
12	O-Ring	58-06-078/83	=	=	=	=	=	=	=

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstößt verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UWG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmusteranmeldung, vorbehalten. APV Rosista GmbH. Diese Zeichnung wurde mit CAD erstellt und darf nicht von Hand geändert werden.

Ersatzteilliste: spare parts list:

Ventil DKR-FZ DN 25-125 1+2S

Double seat ball valve DN 25-125 1+2S

Blatt 3



D-58425 Unna
Germany

RN 01.071

Pos. item	Benennung description	25		40		50		65		80		100		125		150	
		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.	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.
13	Zeiger Position indicator	08-29-021/93	=	=	=	=	=	08-29-022/93	=	=	=	=	=	=	=	=	=
14	Kupplung Coupling	08-52-050/17	=	=	=	=	=	08-52-217/17	=	=	=	=	08-52-247/17	=	=	=	=
15	Drehantrieb F/L Actuator spring/air	15-31-055/17	=	=	=	=	=	15-31-057/17	=	=	=	=	15-31-923/17	=	=	=	=
15.1	Drehantrieb F/L für RM Actuator spring/air for control unit	15-37-070/17	=	=	=	=	=	15-37-106/17	=	=	=	=	15-37-103/17	=	=	=	=
16	Skt. Schraube Hex. screw	DIN EN 24017-M8x12-A2-70															
17	Laternen Yoke	15-40-164/17	=	=	=	=	=	15-40-168/17	=	=	=	=	=	=	=	=	=
18	Skt. Schraube Hex. screw	DIN EN 24017-M8x14-A2-70															
19	Flansch Flange	09-51-277/42	09-51-377/42	09-51-427/42	09-51-477/42	09-51-527/42	09-51-627/42	09-51-677/42	09-51-727/42	09-51-777/42	09-51-827/42	09-51-877/42	09-51-927/42	09-51-977/42	09-51-1027/42	09-51-1077/42	09-51-1127/42
20	Skt. Schraube Hex. screw	8xDIN EN 24017-M8x16-A2-70															
21	Lagerbuchse Bearing	15-28-210/42															
22	Wellenlager Bearing	30-11-387/															
1	DKR-FZ 1+2S Double seat ball valve-pneum.actuator	30-11-287/		30-11-387/		30-11-437/		30-11-487/		30-11-537/		30-11-637/		30-11-687/		30-11-737/	

Pos. 4, 5, 6, 7, 7a, 8, 8a, 9, 9a, 12, 21 nur im kompletten Dichtungssatz erhältlich
item. 4, 5, 6, 7, 7a, 8, 8a, 9, 9a, 12, 21 available es complete seal kits only

1	Dichtungssatz Seal kit	FPM	58-34-279/00	58-34-280/00	58-34-281/00	58-34-282/00	58-34-283/00	58-34-284/00	58-34-285/00
1	Dichtungssatz Seal kit	EPDM	58-34-279/01	58-34-280/01	58-34-281/01	58-34-282/01	58-34-283/01	58-34-284/01	58-34-285/01
1	Dichtungssatz Seal kit	VMQ/Silicone	58-34-279/02	58-34-280/02	58-34-281/02	58-34-282/02	58-34-283/02	58-34-284/02	58-34-285/02
1	Dichtungssatz Seal kit	HNBR	58-34-279/06	58-34-280/06	58-34-281/06	58-34-282/06	58-34-283/06	58-34-284/06	58-34-285/06

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 UMG, Paragraph 106 UMG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmusteranmeldung, vorbehalten. APV Rosista GmbH. Diese Zeichnung wurde mit CAD erstellt und darf nicht von Hand geändert werden.

02/94

Ersatzteilliste: spare parts list:		Besteht aus 3 Blatt 1		Name	
Ventil DKR-FZ 1-4 Zoll 1+2S		Blatt 1		Trytko	
Double seat ball valve 1-4 inch 1+2S		Blatt 1		Goe/WB	
		Normgepr.		Datum	
		01/02		07/02	
		Trytko		Trytko	
		03/03		08/06	
		Trytko		Trytko	
		6/00		RN 01.074	
		Trytko		Trytko	
		7/97			
		Trytko			
		5/97			
		Trytko			
		2/96			
		Trytko			
		4/92			
		Trytko			



Es stehen verschiedene Werkstoffe zur Verfügung. Bitte WS-Nr. ergänzen

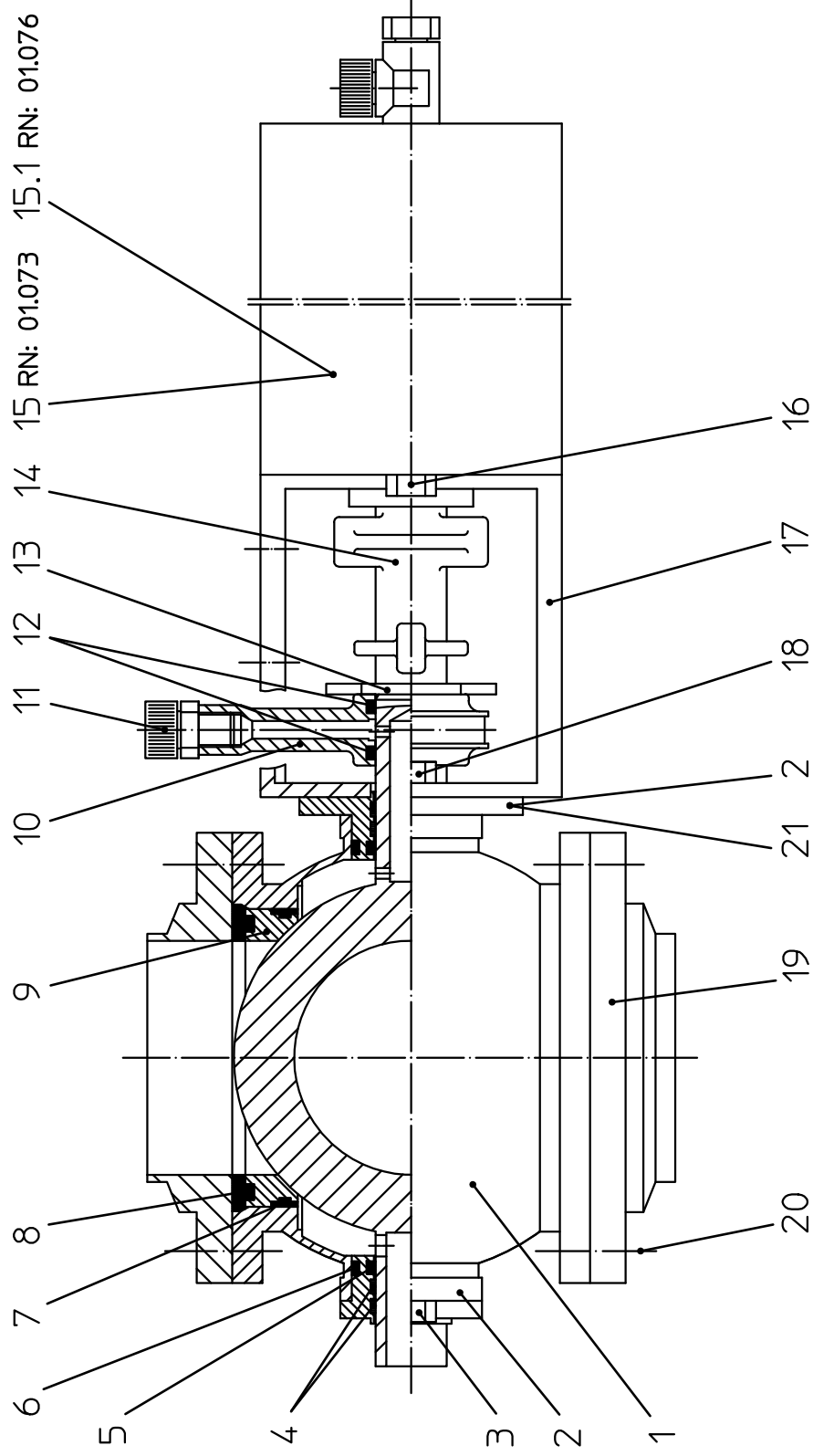
The following materials are available (fill in last two digits of ref.-no.)

*Dichtungswerkstoff: material seals:
 ../13-VMQ
 ../33-HNBR
 ../73-FPM
 ../93-EPDM

Gehäusedichtung /housing seal
 Bei VMQ wird die HNBR-Gehäusedichtung eingesetzt.
 For VMQ take the HNBR-housing seal.

** Werkstoff metallisch+Dichtung:
 Material metallic+seal:
 ../29-HNBR 1.4404
 ../59-EPDM 1.4404
 ../61-VMQ 1.4404
 ../69-FPM 1.4404

*** O-Ring:
 -Werkstoff NBR 70-75 Shore A bei Ventilen mit Dichtungswerkstoff EPDM, HNBR und VMQ einsetzen/
 Material NBR 70-75 Shore A to be used for valves with seal Material EPDM, HNBR and VMQ
 -Werkstoff FPM 70-75 Shore A nur bei Ventilen mit Dichtungswerkstoff FPM verwenden/
 Material FPM 70-75 Shore A to be used only for valves with seal Material FPM.



Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts ist 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. Diese Zeichnung wurde mit CAD erstellt und darf nicht von Hand geändert werden.

Ersatzteilliste: spare parts list:

Ventil DKR-FZ 1-4 Zoll 1+2S

Double seat ball valve 1-4 inch 1+2S

Blatt 2



RN 01.074

Pos. item	Benennung description	1"		1,5"		2"		2,5"		3"		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	Ventilkörper Valve body	31-08-277/47		31-08-377/47		31-08-427/47		31-08-477/47		31-08-552/47		31-08-627/47			
2	Wellenlager Bearing	2x =		2x =		1x =		1x =		1x =		1x =			
3	Skt. Schraube Hex. screw	DIN EN 24017-M8x12-A2-70													
4	Führungsband Guide	4x =		4x =		4x =		4x =		6x =		6x =			
5	O-Ring	OR 20,2-3 70-75 Shore A													
6	O-Ring	OR 28-3 70-75 Shore A													
7	Gehäusedichtung Housing seal	58-33-292/	=	58-33-392/		58-33-492/		58-32-545/		58-32-642/					
8	Flanschdichtung Seal flange	58-32-277/		58-32-377/		58-32-427/		58-32-477/		58-32-555/		58-32-627/			
9	Kugeldichtung Ball seal	58-32-291/23		58-32-391/23		58-32-441/23		58-32-491/23		58-32-566/23		58-32-641/23			
10	Spritzanschluß CIP connection	08-52-136/92		=		=		=		=		=			
11	G.Verschraubung Union	08-63-003/13		=		=		=		=		=			
12	O-Ring	58-06-078/83		=		=		=		=		=			
13	Zeiger Position indicator	08-29-021/93		=		=		=		08-29-022/93		=			
14	Kupplung Coupling	08-52-050/17		=		=		=		08-52-217/17		=			
15	Drehantrieb F/L Actuator spring/air	15-31-055/17		=		=		=		15-31-057/17		=			
15.1	Drehantrieb F/L für RM Actuator spring/air for control unit	15-37-070/17		=		=		=		15-37-106/17		=			
16	Skt. Schraube Hex. screw	DIN EN 24017-M8x12-A2-70													
17	Laferne Yoke	15-40-164/17		15-40-166/17		=		=		15-40-168/17		=			
18	Skt. Schraube Hex. screw	DIN EN 24017-M8x14-A2-70													
19	Flansch Flange	09-51-314/42		09-51-414/42		09-51-464/42		09-51-514/42		09-51-552/42		09-51-664/42			

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstößt verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 Urtg.). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustereintragung, vorbehalten. APV Rosista GmbH. Diese Zeichnung wurde mit CAD erstellt und darf nicht von Hand geändert werden.

02/94

Ersatzteilliste: spare parts list:

Drehantrieb K-80, K-125, K-180 F/L

Actuator K-80, K-125, K-180 spring/air

Besteht aus 2 Blatt Blatt 1

Gezeichnet	4.3.98	Name	Tryiko
Geprüft			
Normgepr.			

APV Rosista GmbH
D-59425 Urena
Germany

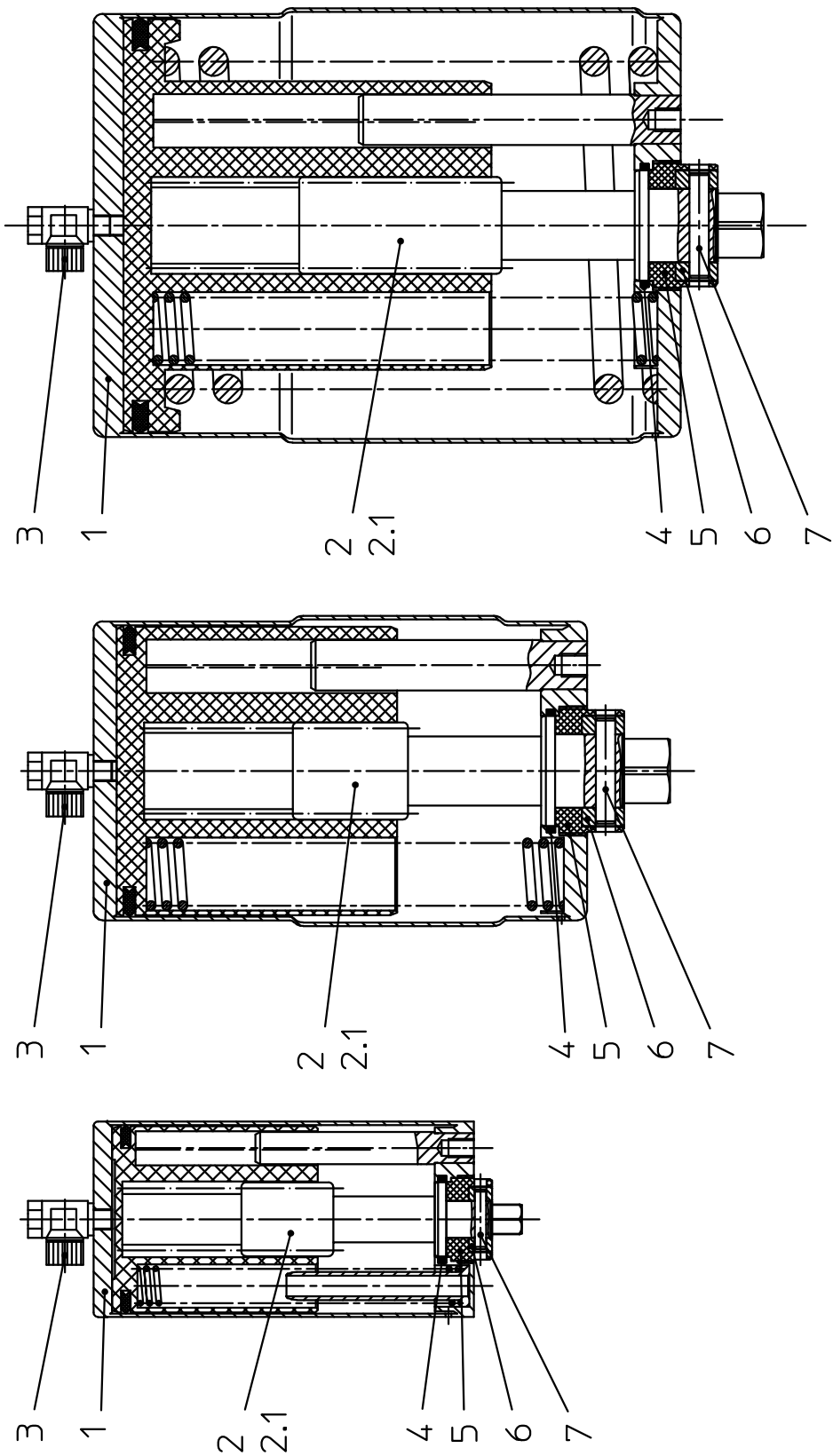
RN 01.073

Datum	3/98
Name	Tryiko

Es stehen verschiedene Werkstoffe zur Verfügung. Bitte WS-Nr. ergänzen

The following materials are available (fill in last two digits of ref.-no.)

- *werkstoff metallisch/
material metallic
- ../13-1.4.301 poliert/polished
- ../17-1.4.301 matt-gl./satin finish



Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstößt verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraf 18 UWG, Paragraf 106 UWG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustererteilung, vorbehalten. APV Rosista GmbH. Diese Zeichnung wurde mit CAD erstellt und darf nicht von Hand geändert werden.

02/94

Besteht aus 2 Blatt Blatt 1

Gezeichnet	21.06.93	Trytko
Geprüft	25.06.93	Spliehoff
Normgepr.	06.07.93	Plümper

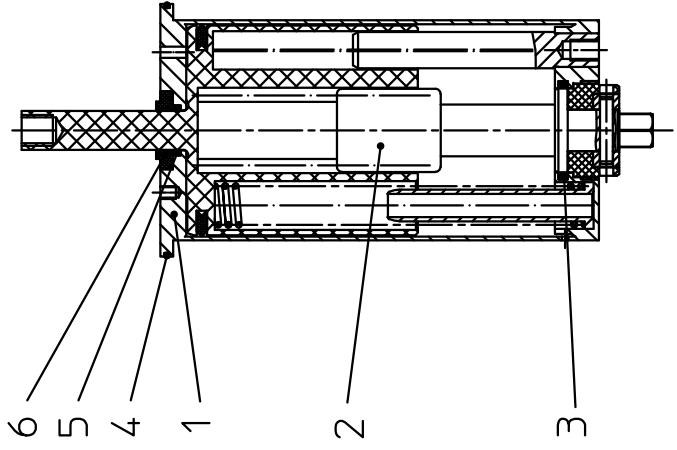
Datum	06/93	10/01
Name	Trytko	Trytko

Ersatzteilliste: spare parts list:
 Drehantrieb F/L für Rückmeldeeinheit
 Actuator spring/air prepared for control unit

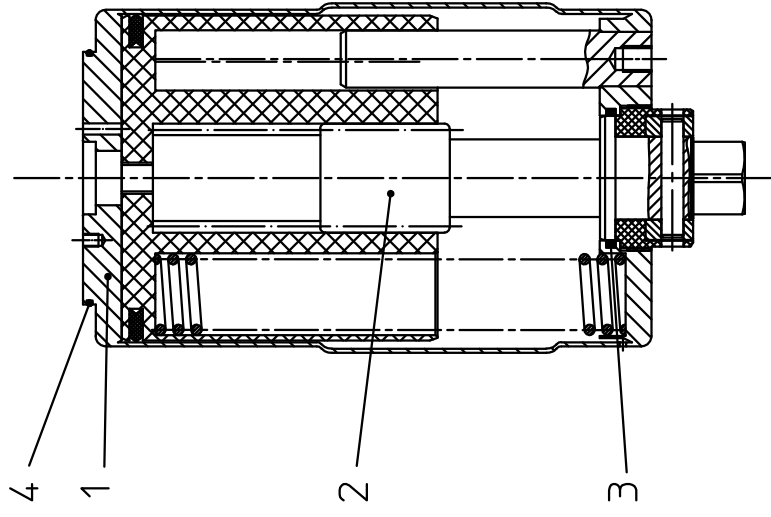
APV Rosista GmbH
 D-59425 Urra
 Germany

RN 01.076

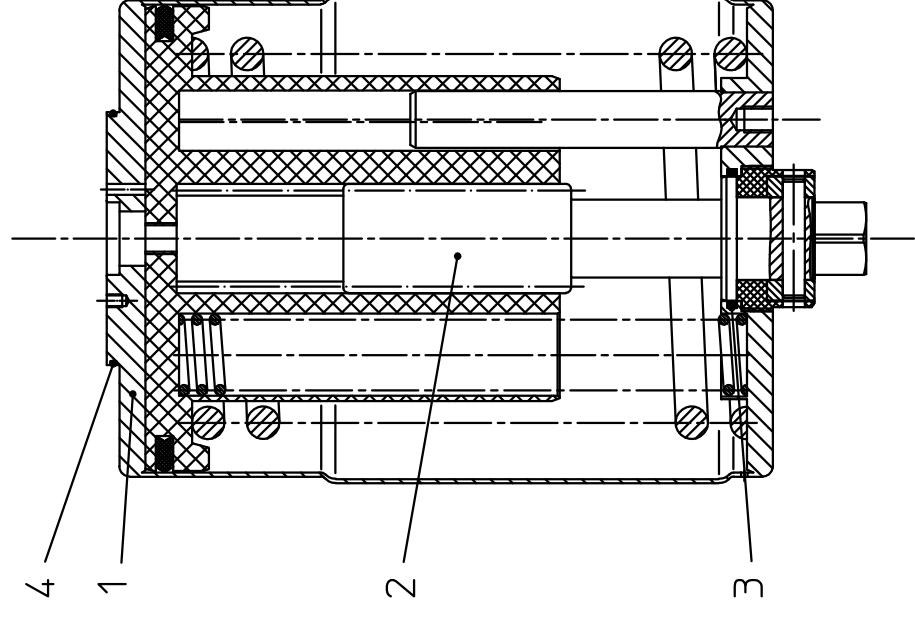
DRAT K080-RM

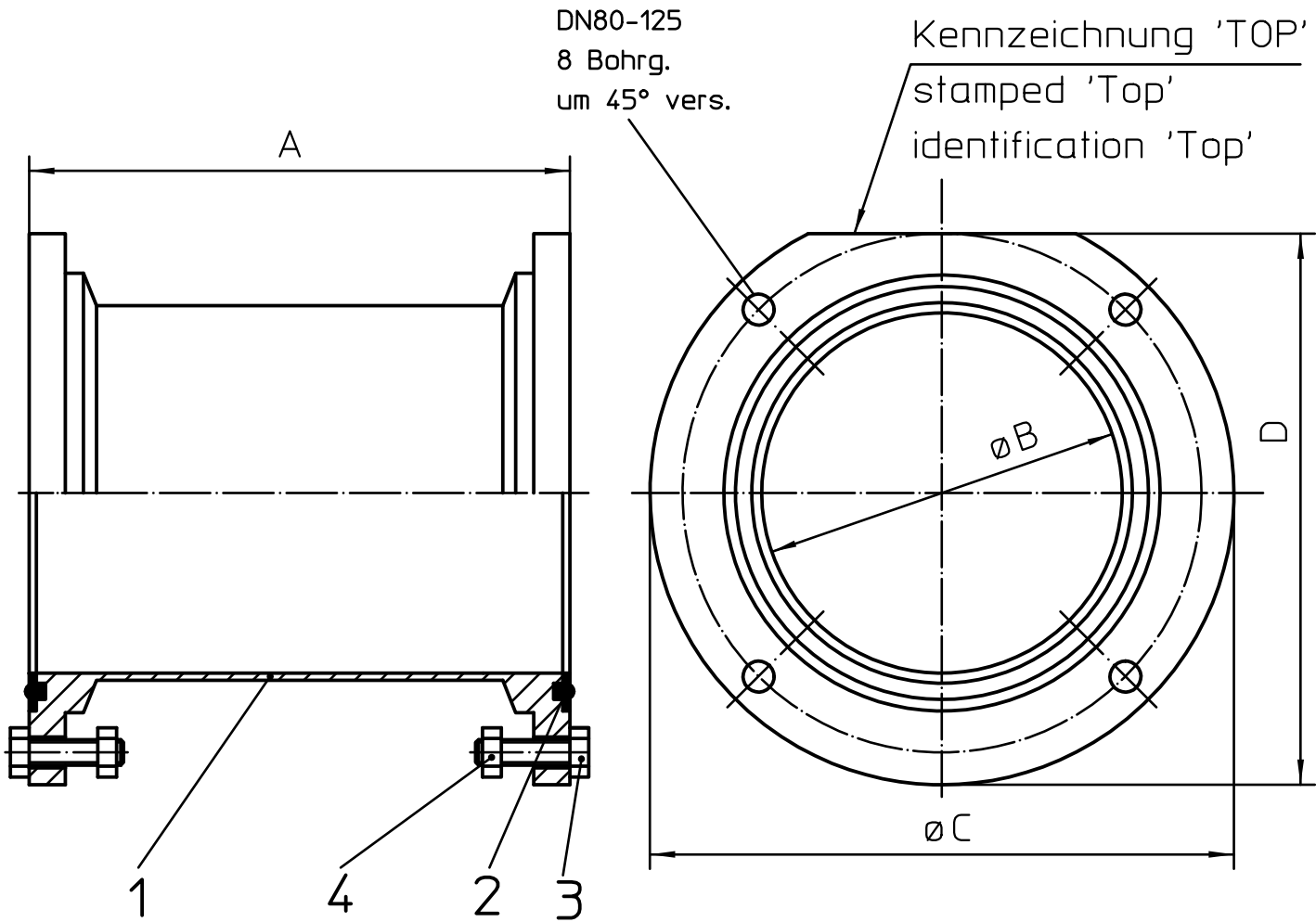


DRAT K125-RM



DRAT K180-RM






DN	WS-Nr.	A	B	C	D
25/1"	08-48-250/..	61,5	26	83	74
40/1,5"	08-48-251/..	61,5	38	100	91
50/2"	08-48-252/..	79,5	50	110	101
65/2,5"	08-48-253/..	100,8	66	127	118
3"	08-48-257/..	123,5	72,9	134	125
80	08-48-254/..	123,5	81	142	133
100/4"	08-48-255/..	150,5	100	162	153
125	08-48-256/..	190,5	125	190	177

../59 = EP-1.4404 matt-glänzend
 EP-1.4404 satin-finish
 EP-1.4404-mat

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 Gebrauchsmusteranmeldung, vorbehalten. APV Rosista GmbH. Diese Zeichnung wurde mit CAD erstellt und darf nicht von Hand geändert werden.

Datum:	25.7.96	16.5.02	27.1.03						
Name:	Janning	Trytko	Trytko						
geprüft:	Goe/Pl	Plümper							

Montageeinsatz DKR kpl
 Installation Aid DKR / Insert de montage DKR complet


APV Rosista GmbH
 D-59425 Urra
 Germany
 Blatt 1 von 1
RN 268.07