



Düker Plunger Valve RKV Type 7015

Professional control of flow rates, reservoir levels and pressures

Safe, hygienic and durable!

New!

The New Düker Plunger Valve Type 7015 – St

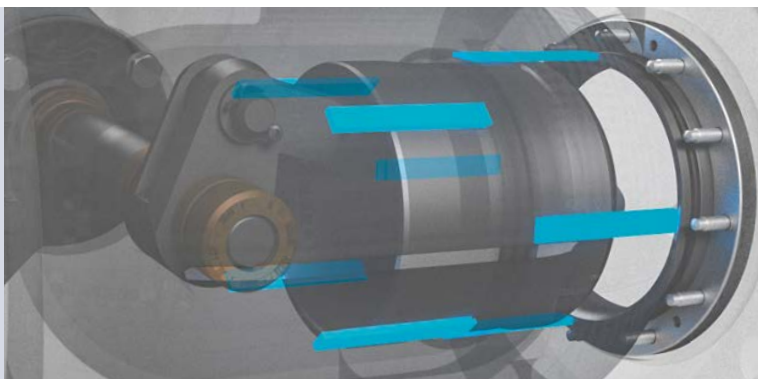
Plunger valves are applied wherever shut-off gate valves and butterfly valves can no longer be used. Plunger valves distinguish themselves by their excellent flow control characteristics which can be adapted to the operating conditions. They can be used continually in cavitation conditions, requiring a professional design adaptation which we will be glad to offer. They are **sturdy, safe control valves** which allow to adjust reservoir levels as well as pressures and flow rates minutely. An important area of application is the purposefully soft starting up and closing down of pipelines in order to avoid pressure surges, e.g. near pumps and turbines.

In the development of the Düker RVK type 7015, we made a point of making it sturdy and maintenance-free even at elevated charges, while keeping it minutely adjustable. Other very important aspects are **top hygiene and the prevention of cavitation damages**.

High-quality, matched materials bring the functioning and durability of the valves to perfection.

Safe positioning – easy-to-repair material wear!

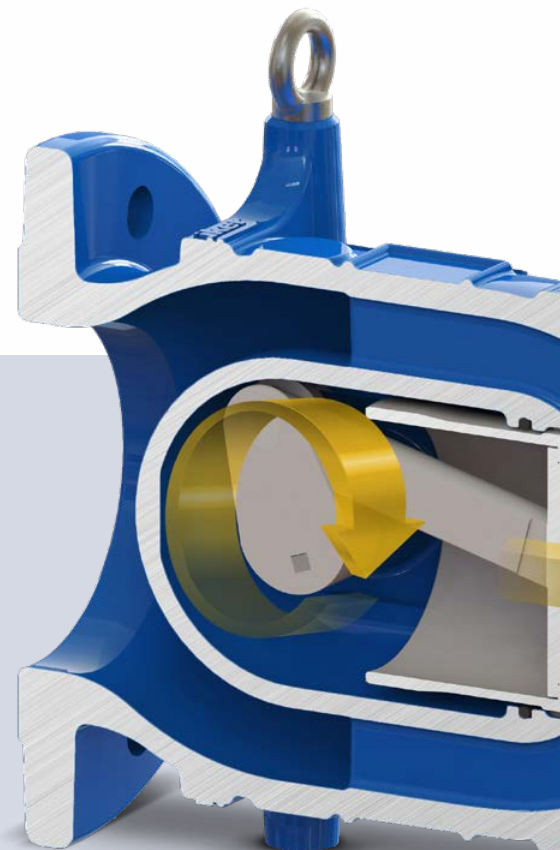
Eight guide rails made of high-strength stainless steel ensure safe purchase for the piston in any position. The piston consists of a stainless steel alloy which is slightly softer than the guide rails. If material wear should occur over time, it is definitely to be expected on the piston, not on the guide rails. The advantage: the piston can be put back in operation without problems on site by slightly rotating it, or after several rotations it can be exchanged!



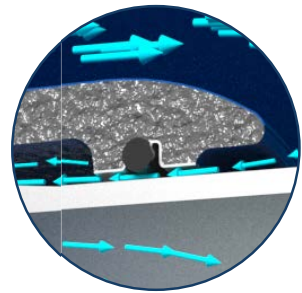
The guide rails are anchored fix and tension-free in the body – without bolts, without corrosion-prone material mixing zones.

The advantages at a glance:

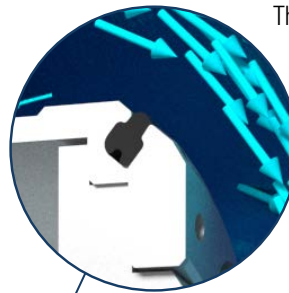
- **Optimal control range** and extremely soft closing thanks to the crankshaft movement of the plunger, furthermore supported by the Düker slidercrank gearbox
- **Safe main sealing** with sturdy profile sealing ring on the piston and O-ring in the body, positioned intelligently to prevent unnecessary wear
- **Hygienically safe** due to purposeful water flow in the piston chamber as well as safe shaft sealing
- **Long operative life** with sturdy, carefully placed guide rails; directed wear instead on the piston which can be rotated or exchanged easily
- **No cavitation damage** on valve or pipeline
Cavitation is directed hazard-free into the middle of the pipeline. Depending on the operating conditions, slotted or perforated cylinder as an option



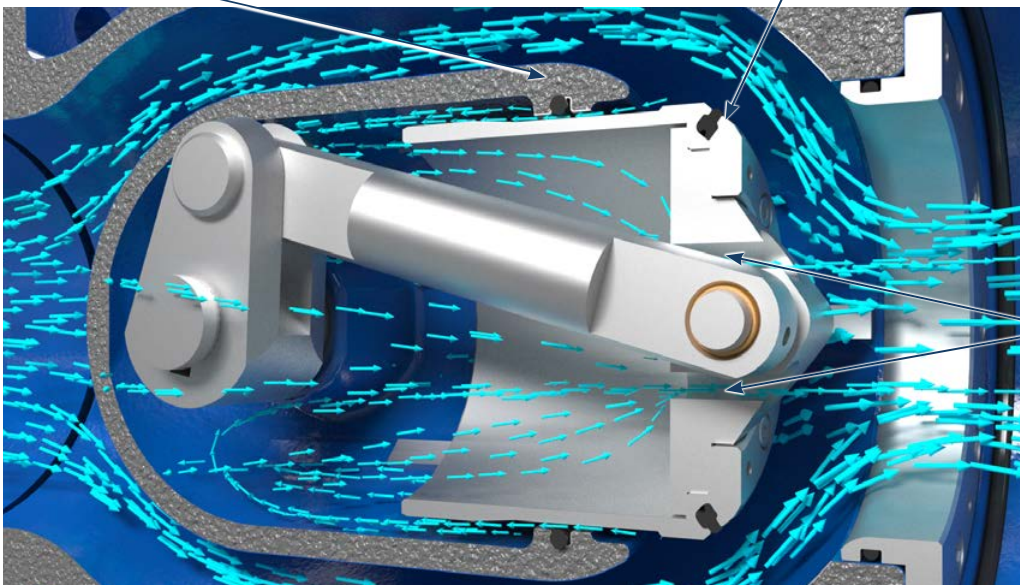
urdy, hygienic and durable!



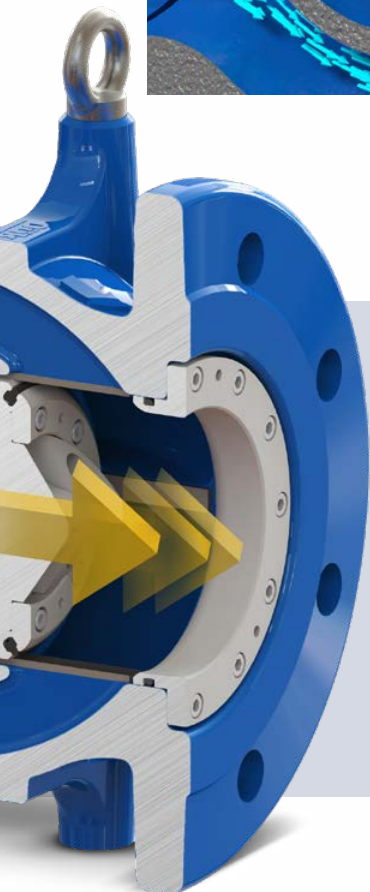
The O-ring in the body only seals onto the piston when the valve closes. In open or intermediate position it does not touch the piston. This ensures low wear and tear and faultless hygiene! The reason: this guarantees that the piston is flushed in the open and intermediate position and prevents stagnating water. No germ contamination!



The main sealing is placed on the piston in a position which is sheltered from strong water currents and is not in the cavitation zone. Wear on the sealing ring is kept as low as possible.

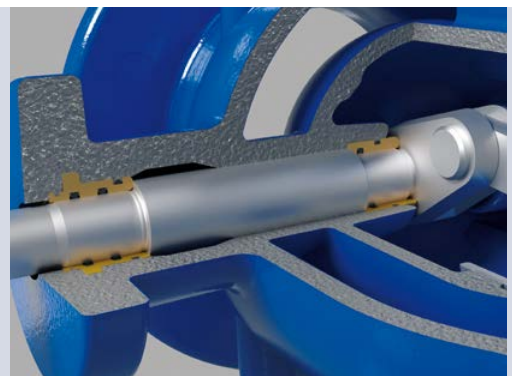


Openings in the piston bearing ensure safe flushing of the piston chamber and serve to even out the pressure conditions behind the piston, which can therefore be operated easily.



Functioning

- The slidercrank movement of the plunger ensures a very large control zone, and a significant slowing down in the end closing phase.
- The Düker slidercrank gearbox reinforces this effect even more.
- The extremely soft closing and opening minimises the danger of pressure surges decisively.



The stem is safely protected from water entries. No stagnating water.

Intelligent Design and Choice of Types

Adapting the plunger valve to the operating conditions on site is vital for its safe functioning. We will be glad to verify for you what size and which type will be best for your requirements.

In case of increased cavitation danger, it is indispensable to protect the pipeline behind the valve against damages. Cavitation – the formation and implosion-like disintegration of gas bubbles under certain pressure conditions – cannot be completely prevented. However, with the intelligent application e.g. of slotted or perforated cylinders, it can be directed.

This way, cavitation falls flat without harm in the middle of the pipe or even inside the cylinder. Pipe walls will not be attacked. Noise emission is minimised.

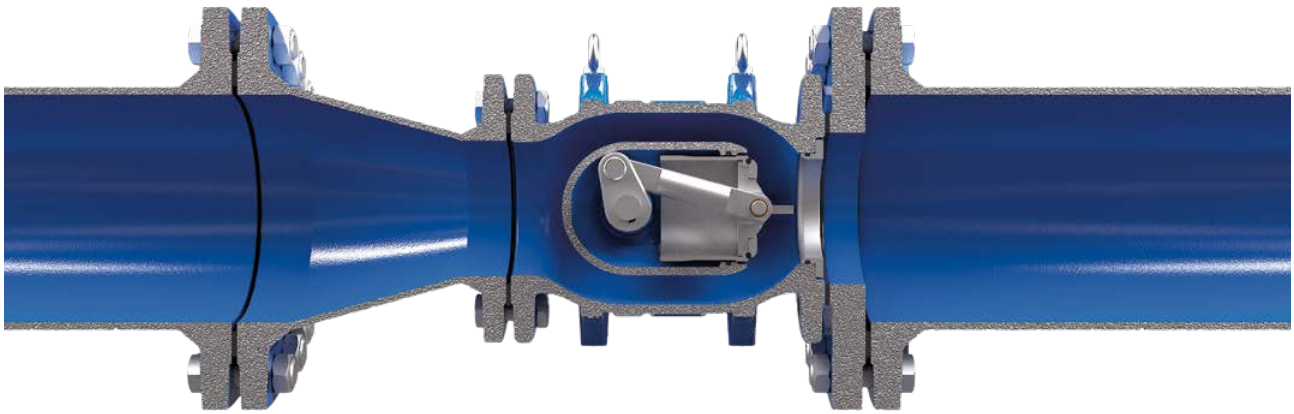


Cavitation: Implosion of gas bubbles in the water
Caused by very high local flow velocities and very low pressures (steam pressure), this phenomenon causes very small, but extremely high-energy micro-jets, which can cause enormous damage when in contact with pipeline components

Professional flow control and protection from cavitation damages by intelligent design adaption of the plunger valve



Please communicate the exact operating conditions when or before ordering – we will help you with the required size and type!



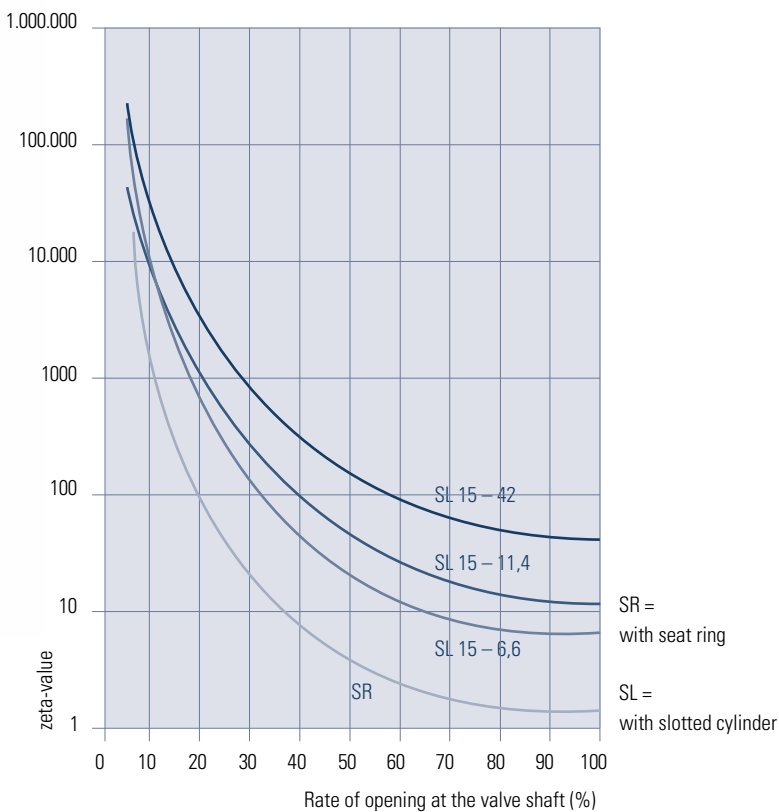
Plunger valves are not chosen depending on the pipeline diameter, but depending on the actual operating data. In most cases this leads to reduced nominal dimensions in order to achieve optimal flow control characteristics.

Watch the Düker Plunger Valve type 7015 in a film!

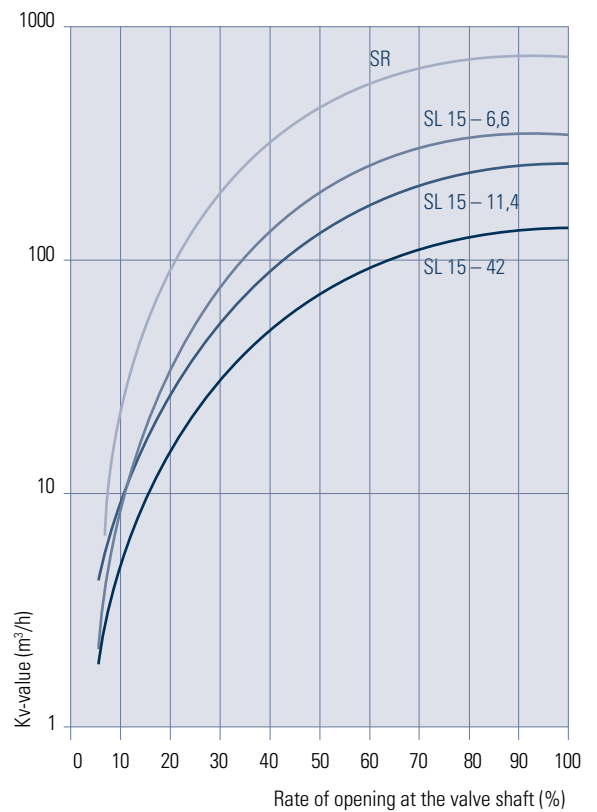


Characteristic Curves RKV DN 150 as an example

Characteristic curves pressure loss coefficient (zeta value)



Characteristic curves flow rate coefficient (Kv)



Düker Plunger Valve Type RKV 7015

as per EN 1074 parts 1, 2 and 5, face-to-face length as per EN 558, basic series 15

Shut-off and control valve for pressure adjustment and flow limiting, one-part body with eye bolts, flanges as per EN 1092-2, ring-shaped passage, sealing both ways, in case of slotted or perforated cylinder one-way sealing, optimised flow channelling, control insert: seat ring, slotted cylinder or special versions depending on the operating conditions, guide rails for the piston in the body made of stainless steel with superior hardness, fixed firmly in the body (without bolting or welding), robust low-wear profile sealing ring on the piston, piston rotatable in case of repair, sealing gaskets EPDM / NBR and plastic parts according to DVGW W 270 and UBA guidelines.

Surface Protection

- Inside and outside epoxy blue RAL 5005 according to the GSK guidelines
- Inside and outside Düker etec enamel as per EN ISO 11177, DEV guideline – on request

Areas of Application

- Reservoir inlet
- Flow control in pipelines
- Pressure control in pipelines
- Turbine bypass
- Turbine inlet
- Bottom outlet of dams
- Filling, flushing, emptying valve
- Pump test facility

Installation:

Usually in valve chambers or manholes

Operating Possibilities

- Slidercrank gearbox with hand wheel
- Slidercrank gearbox with electric actuator
- Pneumatic or hydraulic rotary actuator

No.	Description	Material	
1	body 7015	EN-GJS 500-14	
2	eye bolts	steel galvanised	
3	O-rings	NBR (UBA, W270)	
4	gear crank with feather key	stainless steel	1.4057
5	feather key	steel	
6	thrust rod with bushes	stainless steel / bronze (UBA)	1.4057
7	stud, collared stud	stainless steel	1.4057
8	bushes	bronze (UBA)	
9	piston	stainless steel	1.4301
10	piston bearing	stainless steel	1.4301
11	clamp ring or slotted cylinder	stainless steel	1.4301
12	profile sealing	EPDM (UBA, W270)	
13	cylinder head bolts / safety rings	A4	
14	seat ring	stainless steel	1.4301
15	drive shaft	1.4057	
16	safety ring	spring steel	





Required data for design adaption

1. Area of application (e.g. high-level tank, turbine supply)
2. DN of the pipeline
3. PN of the pipeline
4. Flow rate Q min and max
5. Upstream pressure in front of the valve P1 at min and max flow rate
6. Downstream pressure behind the valve P2 at min and max flow rate
7. Actuator type, closing time
8. Gearbox arrangement (see page 8)

A corresponding questionnaire can be found in the „Fittings and Valves“ download area at www.dueker-germany.com.

Measurements and Gear Box Arrangements

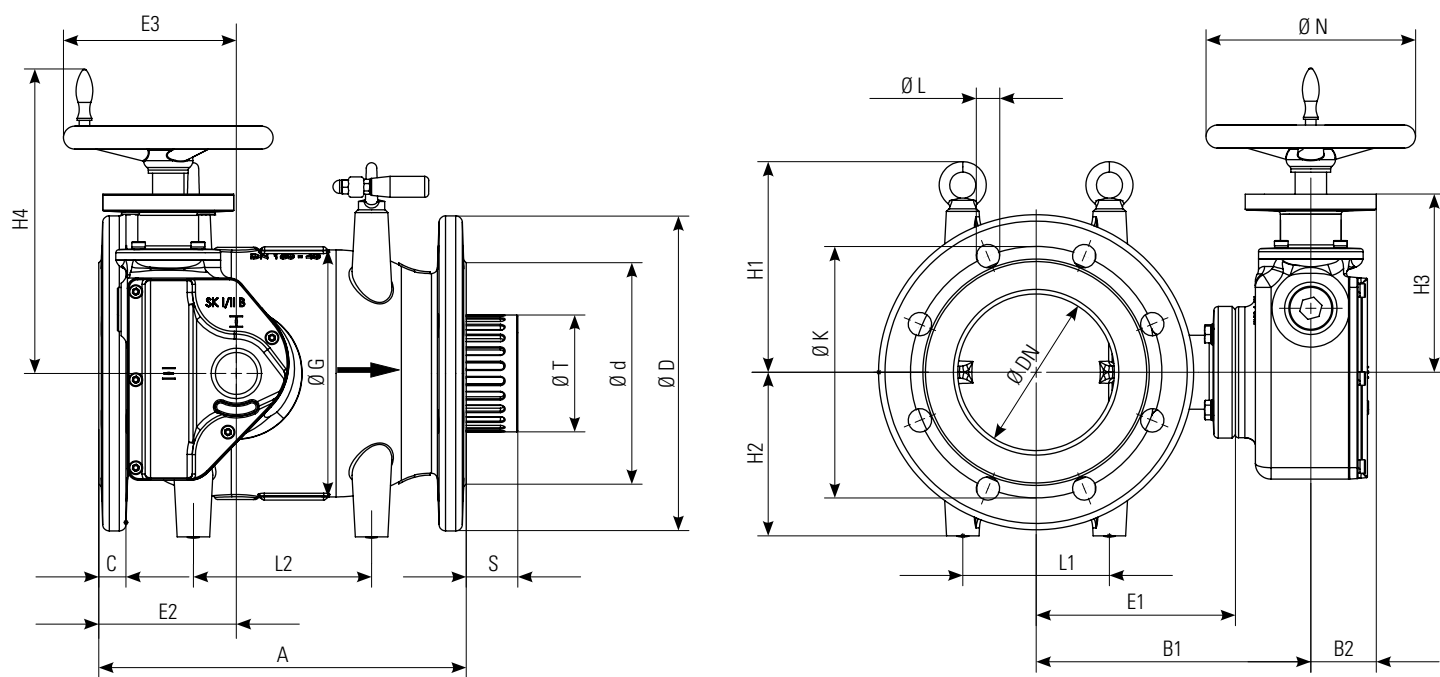


Illustration: Gear box right-hand side in flow direction, position 1 (standard)

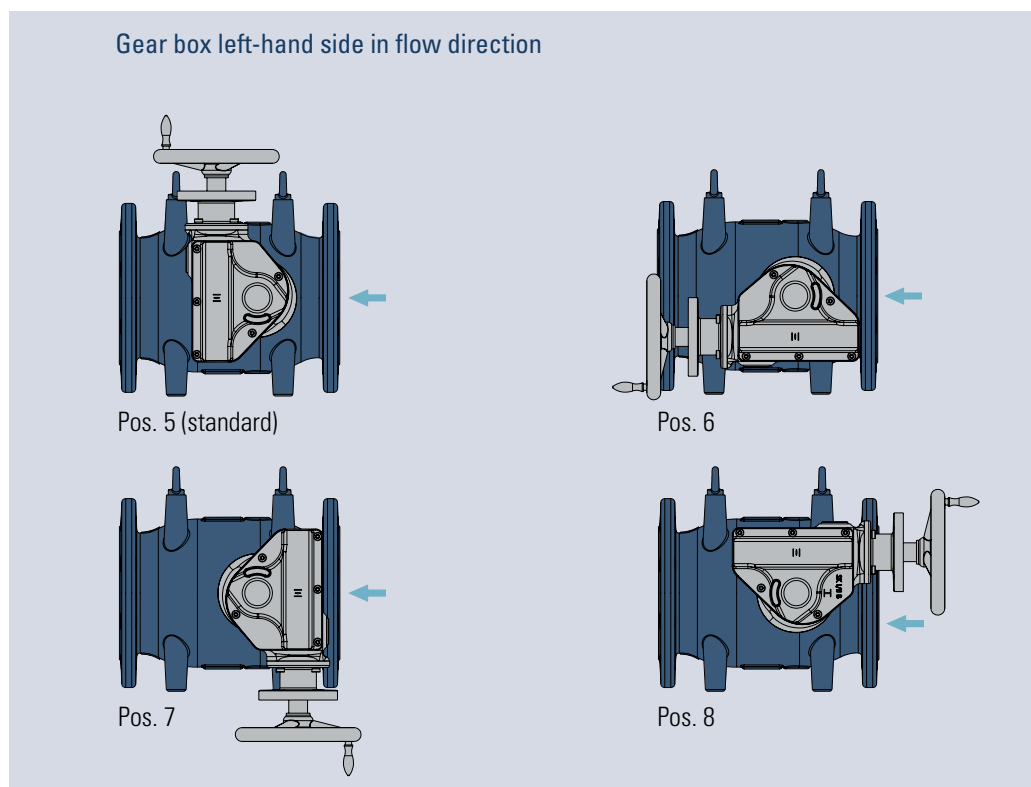
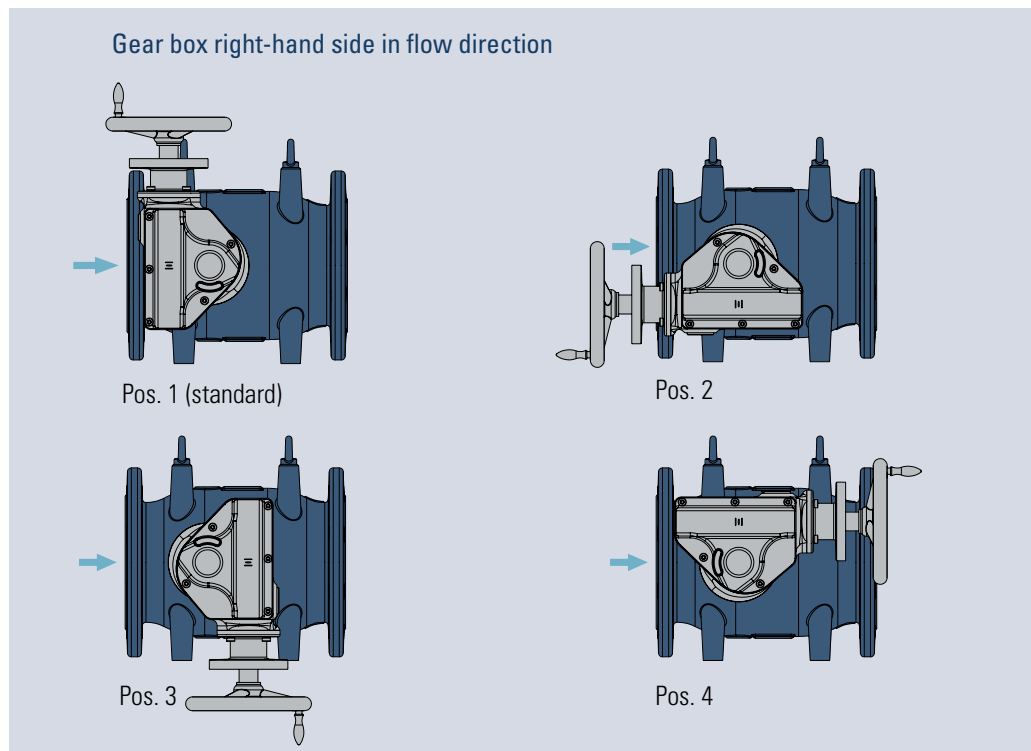
Dimensions Düker Plunger Valve RKV Type 7015

DN	PN	$\emptyset D$	$\emptyset d$	$\emptyset K$	$\emptyset L$	n	C	f	A	B1	B2	E1	E2	$\emptyset G$	H1	H2	H3	L1	L2
150	10	300	211	240	23	8	26	3	350	262	62,5	190	131	236	201	156	170	140	170
150	16	300	211	240	23	8	26	3	350	262	62,5	190	131	236	201	156	170	140	170
150	25	300	211	250	28	8	26	3	350	262	62,5	190	131	236	201	156	170	140	170
150	40	300	211	250	28	8	26	3	350	262	62,5	190	131	236	201	156	170	140	170
200	10	340	266	295	23	8	20	3	400	292	62,5	220	140	309	242	197	170	140	170
200	16	340	266	295	23	12	20	3	400	292	62,5	220	140	309	242	197	170	140	170
200	25	360	274	310	28	12	22	3	400	292	62,5	220	140	309	242	197	170	140	170
200	40	375	284	320	31	12	33	3	400	292	62,5	220	140	309	242	197	170	140	170
300	10	455	370	400	23	12	24,5	4	500	421	85	321	150	453	313	268	228	180	200
300	16	455	370	410	28	12	24,5	4	500	421	85	321	150	453	313	268	228	180	200
300	25	485	389	430	31	16	27,5	4	500	421	85	321	150	453	313	268	228	180	200
300	40	515	409	450	34	16	39,5	4	500	421	85	321	150	453	313	268	228	180	200

DN 250, 350 and 400 in preparation, * Version with slotted cylinder in closed position

All dimensions in mm

Possible Gear Box Arrangements



H4	E3	Ø N	S* Ø T*
291	165	200	50 112
291	165	200	50 112
291	165	200	50 112
291	165	200	50 112
291	165	200	
291	165	200	
291	165	200	
291	165	200	
379	257	315	
379	257	315	
379	257	315	
379	257	315	

FITTINGS AND VALVES

DRAINAGE TECHNOLOGY

GLASS-LINING TECHNOLOGIES

JOBGING FOUNDRY

Düker GmbH

Hauptstraße 39-41
63846 Laufach
Germany

Tel. +49 6093 87-560
Fax +49 6093 87-8560

Internet: www.dueker.de

E-Mail: sales.fittings-valves@dueker.de