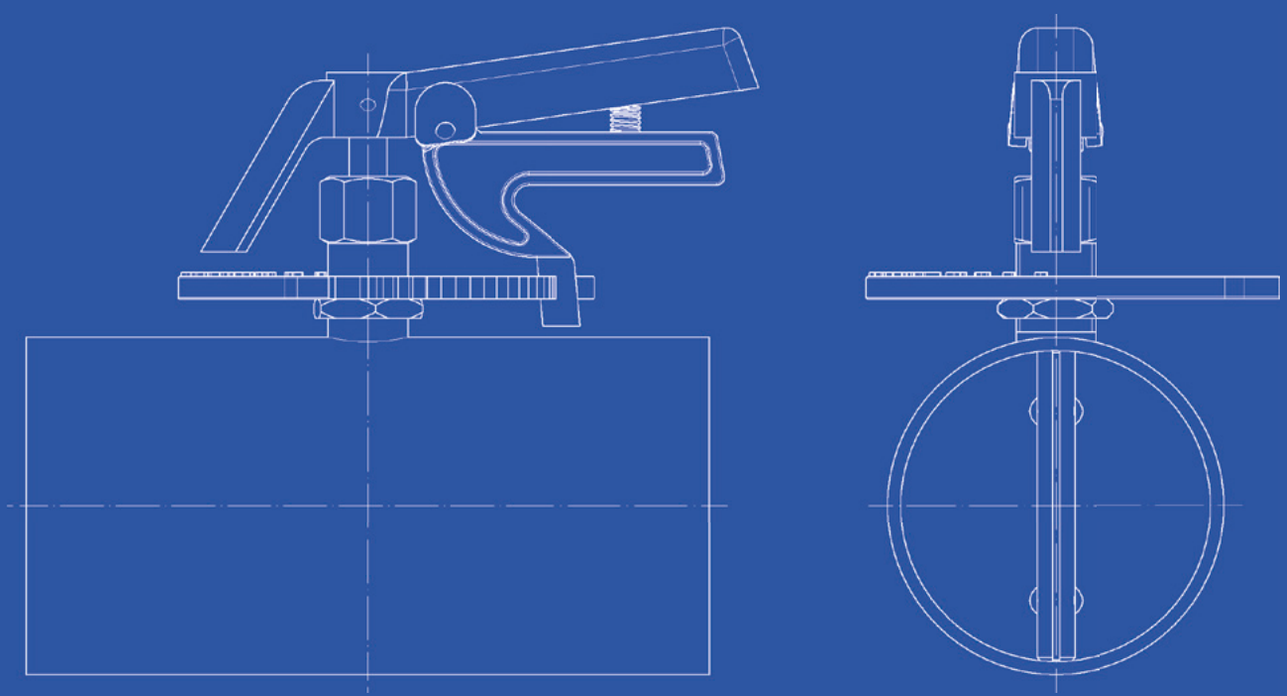
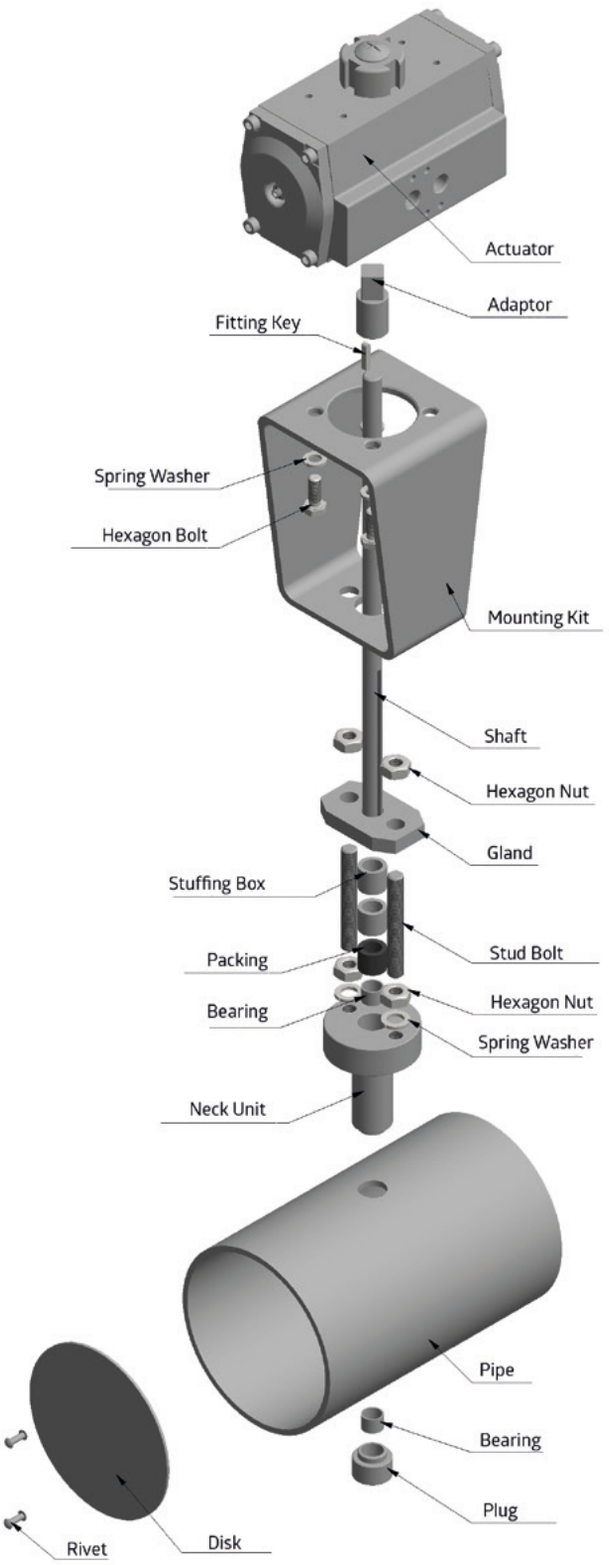
JASTA



Weld-in Valve

Type EDR

Weld-in Valve Type EDR with welding ends and pneumatic actuator



Exploded view of a standard EDR with a swing through steel disk and a pneumatic actuator.

EDR

General Description of the Weld-in Valve Type EDR

The EDR valves are welded into the pipe in place to control the volume flow rate. Generally we produce weld-in valves for applications with an operating temperature up to 1100°C.

The valve EDR can prove advantageous in the chemical industry, because at a welded joint no toxic or other critical mediums can escape.

Due to the multitude of different mediums and operational conditions, a suitable offer is available on request which is customized upon your application.

Frequent application areas of this valve are: boiler construction, energy industry, steam generation, air cleaning, rolling mills, shipbuilding, melting furnaces, foundries.

Advantages at a glance

Handling	Easy, depending on the accessories
Impermeability	99%, 99,5% and 99,95% compared to fully opened disk
Operating Temperature	-100°C to +1100°C
Medium Compatibility	Design and material selection according to your medium and further operating conditions, including: (aggressive) flue gas, dust-laden mediums, biogas or exhaust gases from biomass burning
Reliability	Very low possibility of failure
Maintenance Characteristics	Low maintenance

Basic Information

Sizes: DN 17,3 - DN 533 (intermediate sizes viable)

- Up to DN 2000 possible as a custom order

EDR as a weld-in valve

- With welding ends

Operation

- With free shaft-end
- Manual operation with a grid handle with locking mechanism or continuously variable fine adjustment
- A corresponding shaft adaption with a DIN ISO 5211 mounting kit
- With a mounted actuator (pneumatic, electric or hydraulic)

Shaft Seal

- Gland seal (Graphite, PTFE, Al-Si)
- O-Rings or shaft seals (EPDM, FPM, NBR, PTFE)
- Smooth running seal (Al-Si spring-loaded)
- TA-Luft

Shaft Bearing

- Sliding bearing (RG7, Rhyolite, PTFE, DU)
- External fitting through flange bearings for smooth operating
- External fitting over a friction bearing (EN-GJL-250CrNi) for high temperatures up to 1100°C

Impermeability Classes

- Approx. 99% impermeability in a disk swing through design
- Approx. 99,5% impermeability (metallic sealing) compared to fully opened valve disk in a design with a stop bar in the body
- Approx. 99,95% impermeability (with flexible seal) in designs with a stop bar and three sided jacketed gasket in the body

Operating Temperature

- From -100°C up to +1100°C

Material

- Steel (e.g. S235JR, S355JR)
- Stainless steel (e.g. X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi17-12-2, NiMo16Cr16Ti)
- Heat resistant steel (e.g. X15CrNiSi20-12, X15CrNiSi25-21)

Closing Types

Disk swing through	99% impermeability compared to fully opened disk
With a stop bar in the body	99,5% impermeability compared to fully opened disk
With stop bar and gasket seal	99,95% impermeability compared to fully opened disk
With sealing air	Up to 100% impermeability

Material Combinations

Temperature	up to 350°C	up to 550°C	up to 750°C	up to 850°C	up to 1100°C
Body	S235JR; S355JR	X5CrNi18-10	X6CrNiMoTi17-12-2	X15CrNiSi20-12	X15CrNiSi25-21
Disk	S235JR; X5CrNi18-10	X5CrNi18-10	X6CrNiMoTi17-12-2	X15CrNiSi20-12	X15CrNiSi25-21
Shaft	MS (bis 150°C); S235JR; X20Cr13	X8CrNiS18-9; X6CrNiTi18-10; X20Cr13	X6CrNiMoTi17-12-2	X15CrNiSi20-12	X15CrNiSi25-21
Subject to modification					

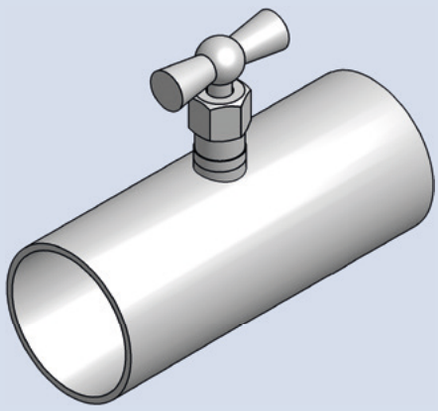
Note: The material combinations listed here are standard combinations. The exact selection is made for customized designs and special requests in accordance with specifications or after consulting with you.

Actuators and Actuator Accessories

Operation	Accessory
Manual operation	Grid handle, fine adjustment, worm gear
Pneumatic actuator	Magnet valve, electro-mechanical end switch, inductive proximity switch positioner 4...20mA, PROFIBUS, HART, etc.
Elektric actuator	End switch, revolution off-switch, position encoder 4...20mA, positioner, PROFIBUS, HART
Security functions	Fast closing and opening <1 sec through express airing or drop weights
Cylinder	Magnet valve, End position control
Subject to modification	

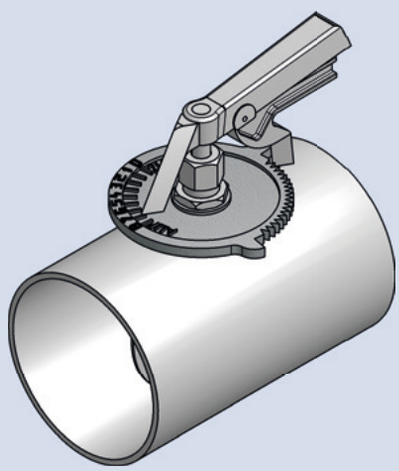
Advantages of the EDR

- Our valves are individually produced according to your needs. They are adjusted one hundred percent according to the operational conditions. That includes the specifications, material choice and operation.
- The Kv-values, impermeability and dynamic torque were tested in an FEM simulation.
- The valve EDR is simply welded with both ends in an existing pipeline.



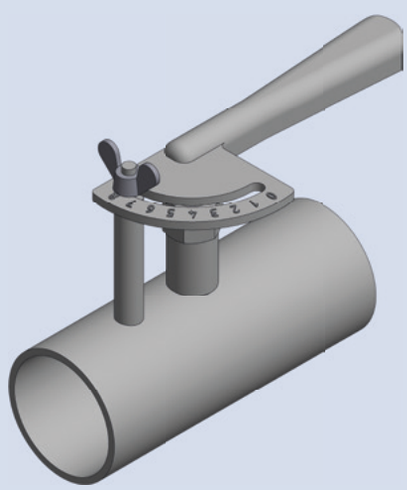
EDR Type I

The disk of the weld-in valve EDR Type I is adjusted by a locking handle. In the standard design the locking handle indicates the position of the disk. According to this, the disk of the shown throttle valve is open.



EDR Type II

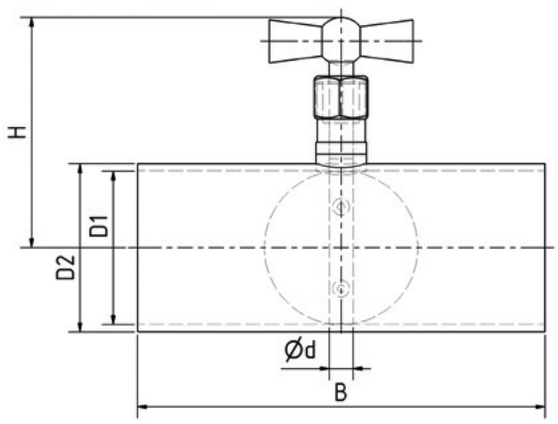
The disk of the EDR Type II is moved by a grid handle. Due to the scale and the lever of the grid handle the throttle valve is adjustable to different positions.

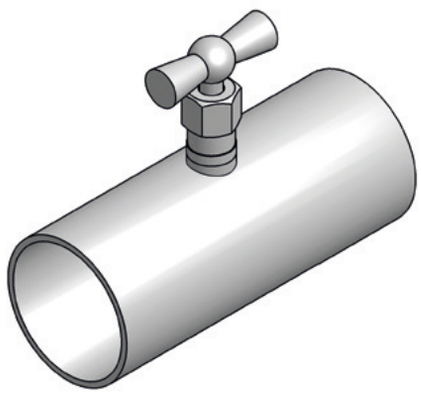


EDR Type II/F

The disk of the EDR Type II/F is moved by a continously variable fine adjustment. The disk can be adjusted to its position from 0° to 90° by a wing screw. From pipe size ø 267 the fine adjustment type RDST-32 and a reinforced neck-unit is installed.

EDR Type I

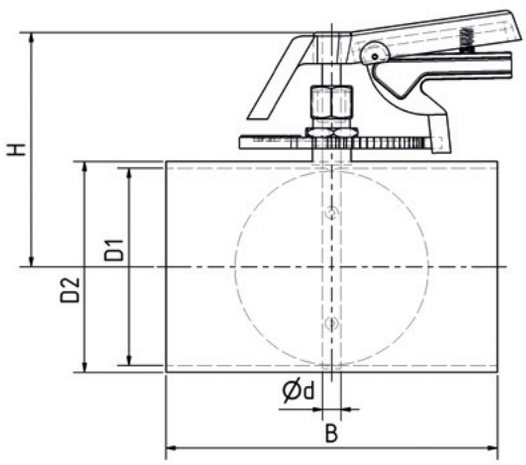


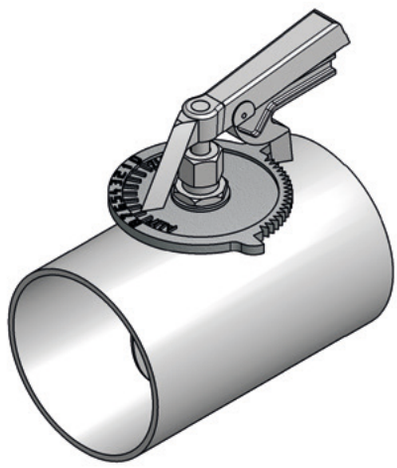


D2	D1	B	H	ød	Mass [kg]
21	17,3	80	81	8	0,4
27	22,3	100	84	8	0,4
33,7	27	130	87	8	0,4
38	33	140	89	8	0,5
42,4	37	140	91	8	0,5
44,5	39	140	92	8	0,6
48,3	43	140	94	8	0,6
51	46	150	96	8	0,6
54	49	150	97	8	0,7
57	51	150	99	8	0,8
60,3	54	150	100	10	0,9
63,5	57	150	102	10	1
70	64	170	105	10	1,1
76,1	70	170	108	10	1,3
82,5	76	170	111	10	1,5
88,9	82	180	114	10	1,6
95	88	180	118	10	1,8
101,6	94	180	121	10	1,9
108	100	180	124	10	2
114,3	107	180	127	10	2,4

D2	D1	B	H	ød	Mass [kg]
127	119	200	144	12	3,1
133	125	200	147	12	3,2
140	131	200	150	12	3,5
146	137	200	153	12	4
159	150	230	160	12	4,5
168,3	159	230	164	12	4,6
178	167	200	169	12	5,9
193,7	182	300	177	12	8
219,1	207	300	190	12	10,5
267	254	300	282	15	13,5
273	259	300	285	15	14,8
298	284	300	297	15	16
323,9	309	330	330	20	20
355,6	339	330	346	20	24
406,4	389	330	371	20	29
419	399	330	378	20	34
456	441	330	396	20	28
508	486	330	462	25	50
558	533	330	487	25	61

EDR Type II

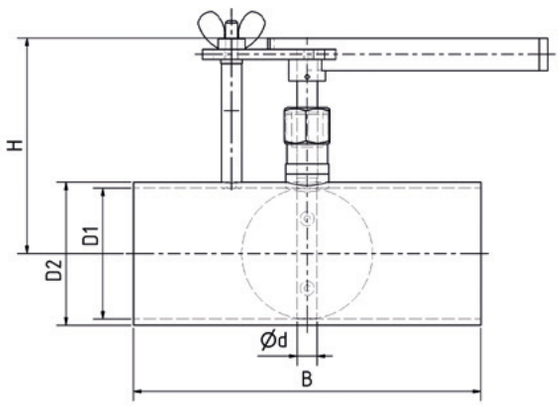


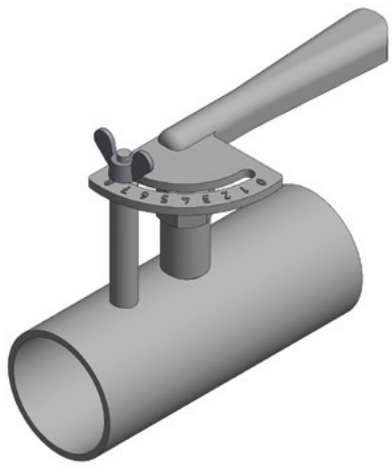


D2	D1	B	H	ød	Mass [kg]
21	17,3	80	81	8	0,8
27	22,3	100	84	8	0,8
33,7	27	130	87	8	0,8
38	33	140	89	8	0,9
42,4	37	140	91	8	0,9
44,5	39	140	92	8	0,9
48,3	43	140	94	8	0,9
51	46	150	96	8	1,1
54	49	150	97	8	1,1
57	51	150	99	8	1,2
60,3	54	150	100	10	1,3
63,5	57	150	102	10	1,4
70	64	170	105	10	1,7
76,1	70	170	108	10	1,7
82,5	76	170	111	10	1,9
88,9	82	180	114	10	1,9
95	88	180	118	10	2,2
101,6	94	180	121	10	2,5
108	100	180	124	10	2,5
114,3	107	180	127	10	2,7

D2	D1	B	H	ød	Mass [kg]
127	119	200	144	12	3,6
133	125	200	147	12	3,7
140	131	200	150	12	4
146	137	200	153	12	4,5
159	150	230	160	12	5,4
168,3	159	230	164	12	5,5
178	167	200	169	12	6,8
193,7	182	300	177	12	8,1
219,1	207	300	190	12	11,2
267	254	300	282	15	18,2
273	259	300	285	15	19,5
298	284	300	297	15	20,8
323,9	309	330	330	20	27,5
355,6	339	330	346	20	30,6
406,4	389	330	371	20	46
419	399	330	378	20	51
456	441	330	396	20	45
508	486	330	462	25	63
558	533	330	487	25	72

EDR Type II/F



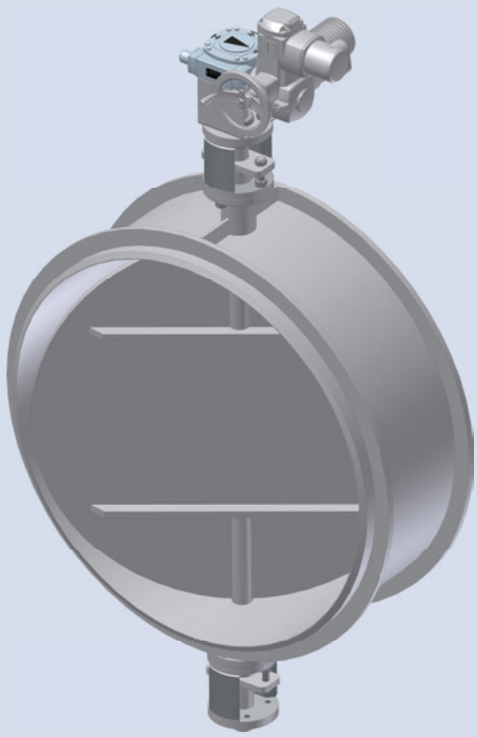


D2	D1	B	H	ød	Mass [kg]
21	17,3	80	81	8	0,7
27	22,3	100	84	8	0,7
33,7	27	130	87	8	0,7
38	33	140	89	8	0,7
42,4	37	140	91	8	0,8
44,5	39	140	92	8	0,8
48,3	43	140	94	8	0,9
51	46	150	96	8	0,9
54	49	150	97	8	0,9
57	51	150	99	8	1
60,3	54	150	100	10	1,1
63,5	57	150	102	10	1,2
70	64	170	105	10	1,3
76,1	70	170	108	10	1,4
82,5	76	170	111	10	1,6
88,9	82	180	114	10	1,8
95	88	180	118	10	1,9
101,6	94	180	121	10	2,2
108	100	180	124	10	2,4
114,3	107	180	127	10	2,4

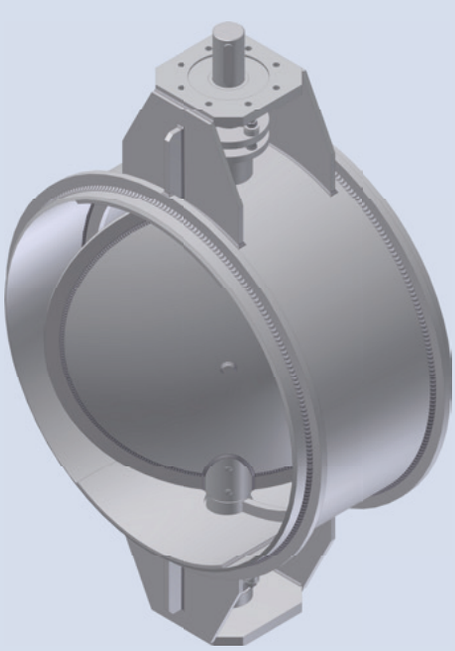
D2	D1	B	H	ød	Mass [kg]
127	119	200	144	12	3,2
133	125	200	147	12	3,4
140	131	200	150	12	3,7
146	137	200	153	12	4
159	150	230	160	12	4,9
168,3	159	230	164	12	5,3
178	167	200	169	12	6,6
193,7	182	300	177	12	7,9
219,1	207	300	190	12	11
267	254	300	282	15	20
273	259	300	285	15	22
298	284	300	297	15	23
323,9	309	330	330	20	29,4
355,6	339	330	346	20	32,5
406,4	389	330	371	20	47,9
419	399	330	378	20	53
456	441	330	396	20	47
508	486	330	462	25	65
558	533	330	487	25	74

Custom Designs

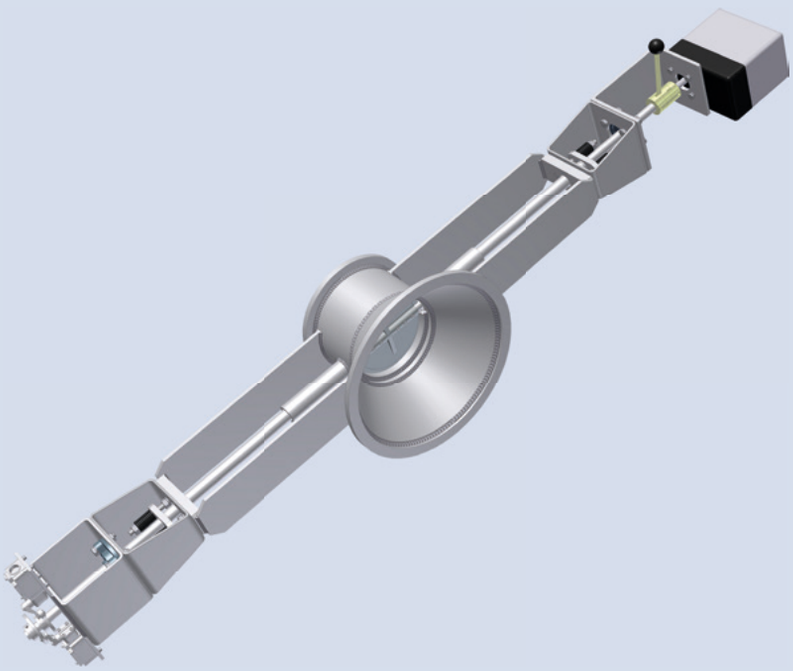
According to your individual needs, we produce the EDR in different material combinations and for different actuators and applications.



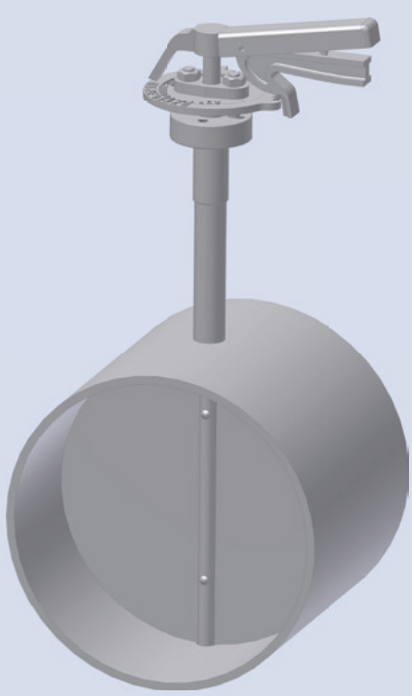
EDR with double external bearing and electric actuator.



EDR/S V/V in heavy-weight design. Disk reinforced by spherical dished cover. With shear bar in the body. Medium contaminated with pieces of wood up to 80 mm. Produced completely in 1.4571. With connectors for sealing air in the shaft feedthrough..



EDR-LB/S for very hot and aggressive mediums made from 2.4856. With double external bearing on flange bearing. 2 end switches mounted at the side of the actuator. Electric actuator and flexible hand lever, which can be uncoupled. Compression gland loaded with spring washers to prevent leakage of the medium. Size reduced for better control characteristics.



EDR Type II with an extended shaft feedthrough for high temperatures and improved insulation.

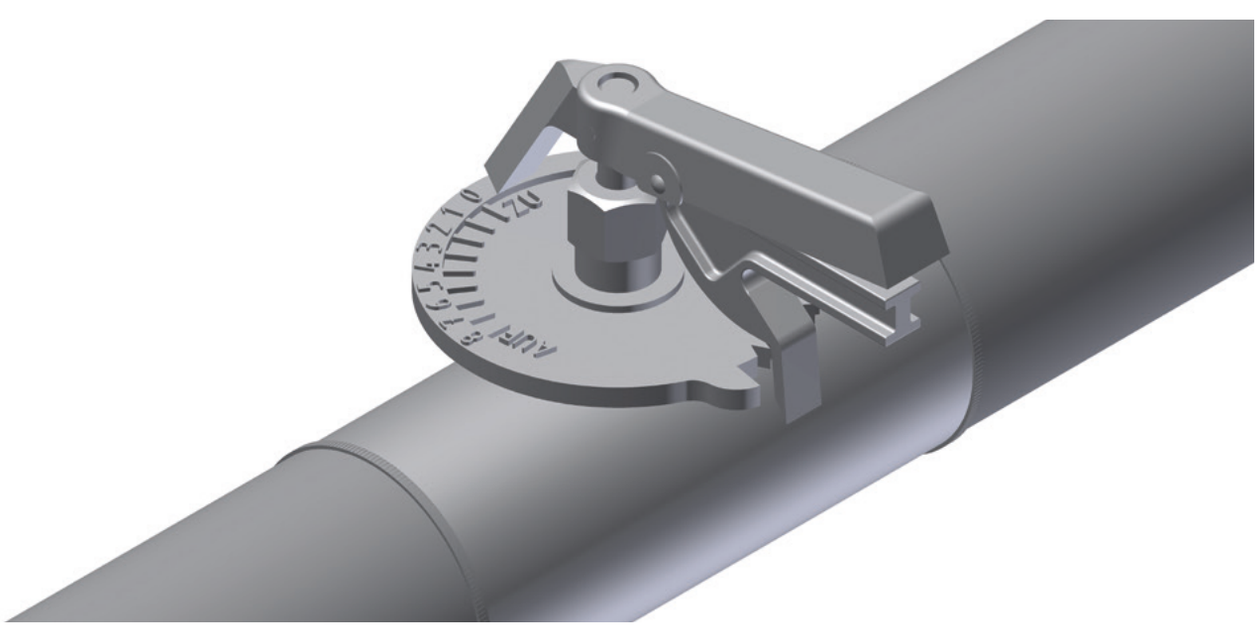
References

- KELLER HCW GmbH, Ibbenbüren-Laggenbeck
- Claudius Peters Projects GmbH, Buxtehude
- VENTAPP GmbH, Kempen
- Wiedemann Industriebrenner GmbH, Stockach / Raithaslach

> We appreciate Jasta due to
>
> - the constantly high quality of the applied products
> - the delivery reliability and the adherence to schedules
> - the flexibility on custom designs
> - the comprehensive product range, that meets all our wishes
> - the good cooperation on any query
>
> *Gunter Pfau / Wiedemann Industriebrenner GmbH*

Application Areas

Smelters, foundries, cement factories, crematoriums, industrial furnaces (for iron, steel, aluminium and stainless steel), glass factories, factories (for Rockwool, autoclaved aerated concrete etc.), ceramic kilns, drying and dust extractors, gas turbines, heat treatment, high temperature furnace construction and chemical plants.



Our delivery supply range: Sensors according to determination of the mass flows. Our flow measurement sensors measure independently from pressure, temperature and medium. Further information upon request.

EDR

Kv-values of the EDR

α [°]	Ø 60,3 (DN 50)	Ø 76,1 (DN 65)	Ø 88,9 (DN 80)	Ø 114,3 (DN 100)	Ø 139,7 (DN 125)	Ø 168,3 (DN 150)	Ø 219,1 (DN 200)	Ø 273 (DN 250)	Ø 323,9 (DN 300)
5 °	1	2	3	4	6	9	16	26	37
10 °	2	3	5	8	12	18	31	49	70
15 °	4	6	9	14	22	32	57	88	127
20 °	6	9	14	22	35	50	89	139	201
25 °	8	14	21	32	50	72	128	201	289
30 °	11	18	28	44	68	98	175	273	393
35 °	14	24	37	58	90	130	231	361	520
40 °	19	32	48	76	118	170	302	472	680
45 °	25	42	63	98	154	222	394	616	886
50 °	32	54	82	129	201	290	515	804	1158
55 °	42	71	108	169	263	379	674	1054	1518
60 °	55	93	142	221	346	498	885	1383	1991
65 °	73	123	186	290	453	653	1160	1813	2610
70 °	95	160	243	380	593	854	1519	2373	3417
75 °	123	208	315	492	769	1108	1969	3077	4431
80 °	166	281	425	665	1039	1496	2659	4155	5984
85 °	207	349	529	827	1292	1861	3308	5169	7443
90 °	227	384	582	909	1420	2045	3635	5680	8179

α [°]	Ø 355,6 (DN 350)	Ø 406,4 (DN 400)	Ø 457 (DN 450)	Ø 508 (DN 500)	Ø 610 (DN 600)	Ø 711 (DN 700)	Ø 813 (DN 800)	Ø 914 (DN 900)	Ø 1016 (DN 1000)
5 °	50	65	83	102	147	200	261	331	408
10 °	96	125	158	196	282	384	501	634	783
15 °	173	226	286	353	509	693	905	1145	1414
20 °	273	357	452	558	803	1093	1428	1807	2231
25 °	393	514	650	803	1156	1573	2055	2600	3210
30 °	536	699	885	1093	1574	2142	2798	3541	4372
35 °	708	925	1171	1446	2082	2833	3701	4684	5782
40 °	926	1209	1530	1889	2720	3702	4835	6120	7555
45 °	1206	1576	1994	2462	3546	4826	6303	7977	9849
50 °	1576	2059	2606	3217	4632	6305	8235	10423	12867
55 °	2066	2698	3414	4215	6070	8262	10791	13658	16861
60 °	2711	3540	4481	5532	7966	10842	14161	17923	22127
65 °	3553	4641	5874	7251	10442	14213	18564	23494	29005
70 °	4651	6075	7688	9491	13668	18603	24298	30752	37966
75 °	6031	7878	9970	12309	17725	24126	31511	39881	49236
80 °	8144	10637	13463	16621	23934	32577	42549	53852	66483
85 °	10131	13232	16746	20675	29771	40522	52927	66986	82699
90 °	11132	14540	18402	22718	32714	44527	58158	73607	90872

Please contact us in case you need the values for valves in larger sizes.

Glossary

Butterfly Valve	A butterfly valve consists of a body and is for flow regulation. Clamped between flanges.
Centering Aid	Lugs right and left of the operating side shaft outlet of the valve. They ensure easier and more precise installation into a pipeline.
Closing	Contact of the valve disk with the body. Possible seals: Striking, swing through, with stop bar and stop bar with seals.
Coupling	Connection between the actuator and the valve shaft.
Electric Operation	Electric operation of the valve. Control over 4 .. 20 mA-signal possible. Wide ranging optional accessories available.
Element	Element flowing through the valve. (Gas, liquid, etc.)
External Seal	Used at high temperatures to guarantee the turning of the valve at all operating conditions.
Fine Adjustment	Lever which has a free swing variance of 90° and is movable per wing screw or clamp lever into any position.
Fitting Key	Metallic adaption of the shaft to the actuator. This is a side connected metal lug on the shaft. Serves for power transfer from the actuator to the shaft.
Flange Bearing	Serves as transmission of high torques.
Four Cornered Shaft	Serves for the adaption of the shaft to the required connection of the actuator.
Grid Handle	Gear teeth on a nut screwed scale provides the possibility of a gradual adjustment of the valve disk. The catch of the hand lever locks into the teeth. 16 positions between 0 and 90 ° are fixed.
Hand Operation	With grid handle, fine adjustment or worm gear. Depending on installation.
Hydraulic Operation	Operates with a hydraulic cylinder. Special: Good power distribution in limited spaces.
Impermeability	Shows how impermeable the flow is inside the valve. (Dependant on construction, classified in leakage rates).
Inner Sizing	Internal flow area of the valve.
Installation Position	Describes the horizontal or vertical position of the shafts of the valve once installed.
ISO 5211	Norm regulates the attachment measurements for actuators to attachment parts onto valves.
Kv 90°	Flow in a fully open valve disk.
Lever System	It regulates two or more valves with an actuator.
Mounting Kit	Normed part for mounting actuators.
Nominal Size	Size of the inner measurement of the valve.
Operation	Operation of the valve. Possible operation: manual, pneumatic- und electric actuators (as standard). All further adaptions available as per customer needs.
Operating Pressure	Pressure in the pipeline which works on the valve.
Operating Temperature	Temperature of the medium in the pipeline.

Packing Gasket	Serves as the seal between the valve and shaft exit from the valve body. Can be produced in various ways. (EPDM, PTFE, TA-Luft eg.)
Pneumatic Operation	Opening of the disk in the valve with a pneumatic actuator. With or without a spring setting. Control possible with a positioner.
RDST-32	Infinitely adjustable fine adjustment for larger valves.
Safety Position	This is decided by the customer. Defines the position of the valve in an emergency.
Seal	Flexible material in the valve. To improve the impermeability.
Sealing Air	Used to seal the shaft up to 100%.
Service	Defines the regular necessary readjustments (readjustment of the packaging, etc.). For the maintenance plan please see operating and maintenance manual.
SFD-6	Infinitely adjustable fine adjustment with a manual handle, used in smaller valves.
Shaft Bearing	Bears of the shafts in the body.
Slide Bearing	Turned sleeve, e.g. from red brass.
Step-seated	Disk valve fitted in the body of the valve and stops the flow.
Stop bar	Metallic valve stop in the valve. Serves to seal the valve.
Swing-through	Valve without seals between the disk and body with defined ring gap.
TA-Luft	German Clean Air Act (§48 BImSchG). Using a TA-Luft packing ensures 100% seal of the shaft bushing to the outside.

Certificates

We are certified for the following processes:

- ISO 9001
- AD 2000 HP0
- EN 3834-2
- SIL
- ATEX

Services for the Valves

We are happy to support you with various services to optimize the use of the valve.

- Determination of sound level
- Expertise on earthquake safety
- Strength calculation
- FEM calculation
- Leakage calculation
- Flow simulations
- Assembly and test run of your actuator
- Lacquering to your liking

Test station at JASTA-ARMATUREN

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