



baelz 347 & 347-2

DESCRIPTION

The baelz 347-2-B is a universal 3-way valve for industrial applications. The variety of plug variants and the highly precise tightness tolerances allow utilization of the valve for the solution of complicated control tasks.

TECHNICAL SPECIFICATIONS

Connection type: Flange EN 1092-2; EN 1092-1 Shapes D / E / F on request.
Plug type: parabolic plug with slit
Control characteristic: linear
Working fluids: liquids, gases, thermal oil

Leakage class (EN 1349)

metal-to-metal seal: 0.004% Kvs (better than class IV)
with PTFE plug: 0.001% Kvs (better than class VI)

Stroke (mm)

DN 15-25	12	10
DN 32-125	22	
DN 150	44	
DN 200-250 (DN 300 and 350 on request)	66	22

Spindle diameter (mm)

Options		Designation*
Plug	Parabolic plug (standard)	baelz 347-2-B
	Cage plug	MP347-LK
	Balanced	baelz 347-2-B-EMF
	Reduced Kvs	MP347-Skr...
Spindle seal	V-rings in PFTE (standard)	baelz 347-2-B
	Cooling tube	baelz 347-2-BK
	Stainless steel bellows seal + safety gland	baelz 347-2-BK-SS
Flanges	Flange facing: groove all sides	MP347-ALL-N...
Additional options	V-shaped seal heating (for fluids at temperatures of - 10 to - 40°C) Pmax. 20 W; 12-24 V / 110-230 V AC/DC	baelz 85950...
	Silicone-free	MP347-Silf...
	Spindle wiper set	MP340-AF

* Designation: 347-2-B up to DN 125 and spindle Ø 10 mm; 347-BB from DN 150 and spindle Ø 22 mm

T max. (°C) / P max. (bar)			
Valve body material	Spheroidal ductile iron GJS-400-18-LT - 5.3103		Cast steel GP240GH - 1.0619
Nominal pressure	PN 16	PN 25	PN 40
baelz 347-2-B, 347-BB	240/14 ... 50/16	240/22 ... 50/25	-
baelz 347-2-BK, 347-BBK	350/11.2 ... 50/16	350/17.5 ... 50/25	350/25.7 ... 50/40
baelz 347-2-BK-SS, 347-BBK-SS	350/11.2 ... 50/16	-	350/25 ... 50/25 **
baelz 347-BK-EMF-2, 347-BBK-EMF	260/13.6 ... 50/16	260/21.4 ... 50/25	260/29.8 ... 50/40

** For nominal diameters DN 15-25 values for PN 16/25 apply

Note: As we are constantly improving our products, there is more than one series of this article. When ordering spares or parts for an existing system, please state the old serial numbers and, if in doubt, contact Baelz. We'll be pleased to help.

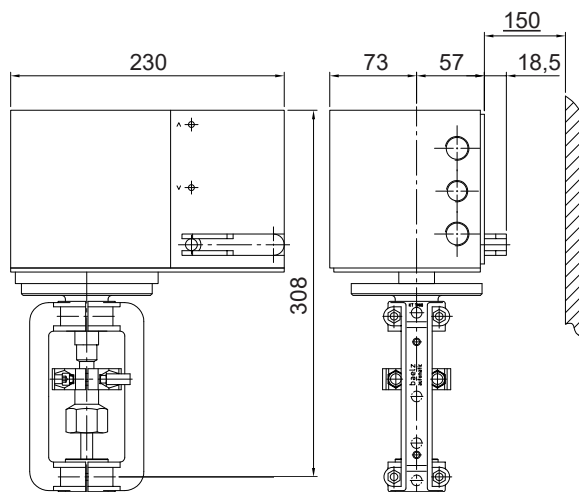
Kvs value (m³/h)														
DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300
Standard (B/BB/BK)	5.9	7.8	9.6	16	25	36	63	105	130	200	360	580	960	1340
Balanced (EMF)	-				25	36	63	105 / 75	130 / 105	200 / 150	360	580	960	1340
Cage plug (LK)	2.5	4	6.3	12,5	20	25	40	80	100	130	250	320	580	960

Kvs values given in this form: XX/YY, denote Kvs values for the straight way (XX) and the angle way (YY)

Utilization conditions for plugs in bælz 347 & 347-2 valves				
Valve function	Actuator type	Pressure difference at the plug (bar)	Nominal diameter	Plug type
Flow separation	Electric actuator	≤0.6	DN 15 - 350	without restrictions
		>0.6	DN 15 - 32	without restrictions
		>0.6	DN 40 - 350	Balanced (EMF)*
	Pneumatic actuator	≤0.6	DN 15 - 350	without restrictions
		>0.6	DN 15 - 32	on request
		>0.6	DN 40 - 350	Balanced (EMF)
Flow mix	without restrictions			

* Bælz will be pleased to inform you about possible applications with other plug variants

Approximate weights of the bælz 347 & 347-2 valves without actuator (kg)																
DN		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350
347-2-B/ 347-BB Spheroidal ductile iron	PN 16							24		39	57			240		
	PN 25	5.5	6.1	6.6	9.6	11.8	15.6	-	28.7	-	-	90	200	-	on request	on request
347-BB Cast steel	PN 40	-	-	-	-	-	-	-	-	-	-	108	250	338	-	-
347-2-BK/ 347-BBK Spheroidal ductile iron	PN 16							-		-	-			300		
	PN 25	6.5	7.1	7.6	10.6	12.8	16.6	25	29.7	40	58	96	250	-	on request	on request
347-2-BK/ 347-BBK Cast steel	PN 25	-	-	-	-	-	-	-	-	-	-	-	-	335		
	PN 40	7	7.6	8.1	11.6	14.3	18.6	28	33.7	45	65	114	265	353	-	-
347-2-BK/ 347-BBK-SS	PN 16	6.8	7.4	7.9	10.9	13.1	16.9	25.3	30	40.3	58.3	96.7	250	300	-	-
	PN 40	7.3	7.9	8.4	11.9	14.6	18.9	28.3	34	45.3	65.3	115	266	-	-	-



Dimensions of the bælz 373-E65 actuator

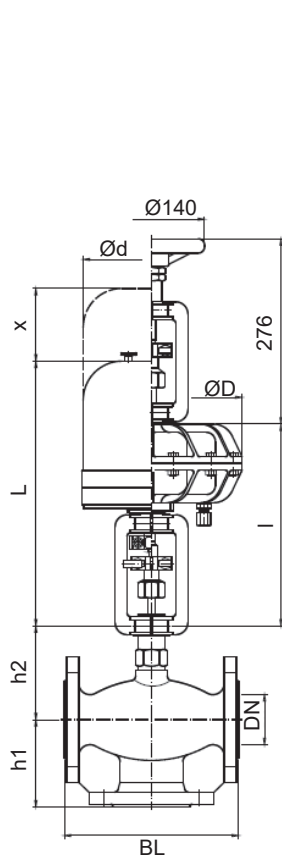
bælz 347 & 347-2 dimensions (mm)				
DN	BL	h1	h2	
			347-2-B, 347-2-B-EMF	347-2-BK, 347-2-BK-SS
15	130	75	110 (was 105)*	236 (was 231)*
20	150	75	110 (was 105)*	236 (was 231)*
25	160	85	110 (was 105)*	236 (was 231)*
32	180	100	104	283 (was 283)*
40	200	105	114	283 (was 281)*
50	230	115	124	293 (was 277)*
65	290	125	144	313 (was 269)*
80	310	130	154	323 (was 269)*
100	350	150	169	338 (was 262)*
125	400	200	189	358 (was 252)*
DN	BL	h1	347-2-BB, 347-BB-EMF	347-BBK, 347-BBK-SS
150	480	240	244 (324)	234
200	600	381	268 (348)	258
250	730	427	317 (397)	307
300	850	288	361 (441)	351

* Dimension h2 for previous bælz 347version

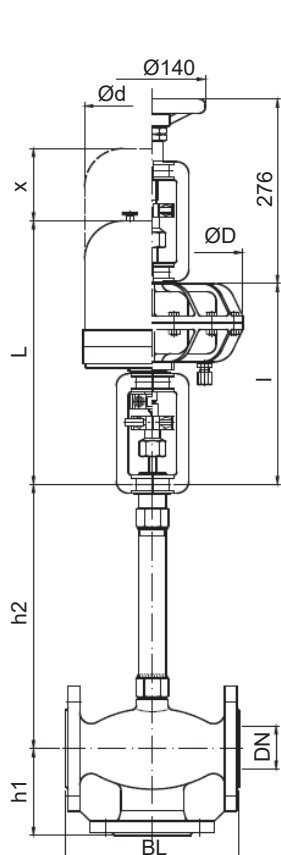
Dimensions of the bælz actuators (mm)					
Designation	L	x	Ød	I	ØD
E07	320	145	129		
E45	560	150	175		
E65	see dimensional drawing on previous page				
P11				244	160
P21				268	242
P21-V6				304	242
P22				322	242
	347-BB/ BB-EMF	347-BBK/ BBK-SS		347-BB/ BB-EMF	347-BBK/ BBK-SS
E45	577	1057	150	175	
E66	614	1094	200	188 (258*)	
P31				509	989 384
P32				525	1005 384
P41				562	1042 506
P41-V6				687	1167 506

Electric actuators: bælz 373-E

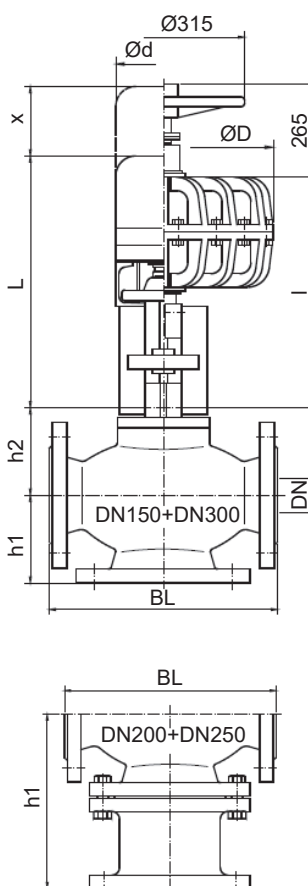
Pneumatic actuators: bælz 373-P



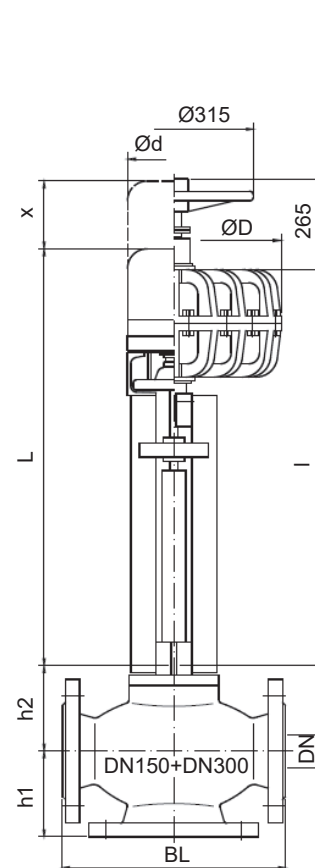
bælz 347-2-B DN15-125
bælz 347-2-B-EM DN50-125



bælz 347-2-BK DN15-125
bælz 347-2-BK-SS DN15-125



bælz 347-BB DN150-300
bælz 347-BB-EM DN150-300



bælz 347-BBK DN150-300
bælz 347-BBK-SS DN150-300

Maximum differential pressure ΔP_{max} (bar) at which the actuator closes the valve completely

The differential pressures specified here are limited by the nominal pressure of the valve body, if this is lower.

Electric actuators. 3-way valves as mixing valves and diverting valves baelz 347-2-B/347-BB, 347-2-BK/347-BBK, 347-2-BK-SS/347-BBK-SS.
Plug closes against the flow.

Actuator baelz 373-	Power (N)	DN (mm) / maximum differential pressure ΔP_{max} (bar)													
		15	20	25	32	40	50	65	80	100	125	150	200	250	300
E07- OSX-	700	14.5	14.5	10	4.8	2.4	1.1	0.3							
E07- 20-	2000	40	40	32	20	12	8	4.8	3	2	1.2				
E65- 11-	1100	26.8	26.8	19	9.9	5.5	3	1.4	0.7	0.2					
E65- 20-	2000	40	40	32	20	12	8	4.8	3	2	1.2				
E45- 40-	4000	40	40	40	40	25	16	10	6.9	4.4	2.8	1.7			
E66- 80-	8000							23.8	15.1	9.3	5.7	3.1	1.6	0.9	
E66- 150-	15000								28.3	17.9	11.3	7.1	3.8	2.3	1.5
E88- 100-	10000							28	18	11	7.4	5	2.4	1.7	1.1
E88- 100-	13000							37	24	15	9.8	6.7	3.3	2.3	1.5
E88- 100-	16000							40	30	19	12	8.4	4.5	2.9	2
E88- 300-	30000									(36)	(23)	15.3	9	5.8	3.9
E88- 300-	35000											18.9	10.5	6.7	4.6
E88- 300-	40000											21.7	12.1	7.7	5.3

Electric actuators. Balanced 3-way valves as mixing valves and diverting valves for liquids and steam
baelz 347-2-B-EMF, 347-BB-EMF.

Actuator baelz 373-	Power (N)	DN (mm) / maximum differential pressure ΔP_{max} (bar)													
		15	20	25	32	40	50	65	80	100	125	150	200	250	300
E07- OSX-	700					10.8	6.3	1.9							
E07- 20-	2000					40	40	29.2	21.4	12.1	4.2				
E65- 11-	1100					24.8	17.7	10.7	5						
E65- 20-	2000					40	40	29.2	21.4	12.1	4.2				
E45- 40-	4000					40	40	40	40	40	26.7	6.5			
E66- 80-	8000											19.7	15.5	8.7	5.7
E66- 150-	15000											40	37.3	26.2	20.3
E63- 440-	4448											8.2			
E88- 100-	10000											29	21.5	14.6	10.6
E88- 100-	13000											40	31.1	21.6	16.4
E88- 100-	16000											40	40	28.6	22.3
E88- 300-	30000											40	40	40	40
E88- 300-	35000											40	40	40	40
E88- 300-	40000											40	40	40	40

Maximum differential pressure ΔP_{max} (bar) at which the actuator closes the valve completely

The differential pressures specified here are limited by the nominal pressure of the valve body, if this is lower.

Pneumatic actuators. 3-way valves as mixing valves bælz 347-2-B/347-BB, 347-2-BK/347-BBK, 347-2-BK-SS/347-BBK-SS. Plug closes against the flow.

Actuator bælz 373-	Power (N)	req. feed pressure (bar)	DN (mm) / maximum differential pressure ΔP_{max} (bar)													
			15	20	25	32	40	50	65	80	100	125	150	200	250	300
P11- 1	950	6.0	18.6	18.6	13.9	5.6	3.4	1.9	0.9	0.4						
P21- 3	1020	1.2	7	7	4.5	2.8	1.7	1.1	0.7	0.4	0.3	0.2				
P21- 6	2040	3.0	40	40	33	20	13	8	5	3.3	2.1	1.3				
P21- 12	3390	6.0	40	40	40	35	22	14	8.5	5.6	3.6	2.3				
P21- 18	4030	6.0	40	40	40	40	27	17	10	7	4.3	2.7				
P21- V6	7590	6.0	40	40	29	18	11.5	7	4.3	2.8	1.8	1.2				
P31- 3	2480	1.2											0.6			
P31- 6	4960	3.0											2.3			
P31- 18	10560	6.0											5			
P41- 3	3765	1.2											2.4	1	0.6	0.4
P41- 6	7530	3.0											4.8	2	1.3	0.9
P41- V6	31920	6.0											8.2	3.5	2.3	1.6

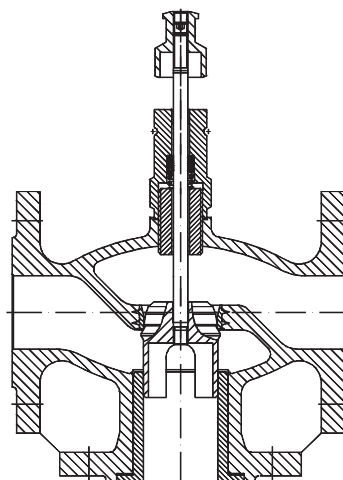
Pneumatic actuators. Balanced 3-way valves as mixing valves and diverting valves for liquids and steam bælz 347-2-B-EMF, 347-BB-EMF.

Actuator bælz 373-	Power (N)	req. feed pressure (bar)	DN (mm) / maximum differential pressure ΔP_{max} (bar)													
			15	20	25	32	40	50	65	80	100	125	150	200	250	300
P11- 1	950	6.0					18.6	12.6	6.7	2.4						
P21- 3	1020	1.2					21	14.6	8.2	3.4						
P21- 6	2040	3.0					40	40	30	22	12.7	4.6				
P22- 3	1846	3.0					40	37.4	25.9	18.7	10	2.4				
P22- 6	3692	6.0					40	40	40	40	35.8	23.3				
P31- 3	2480	3.0											0.8			
P31- 6	4960	3.0											10.1			
P31- 18	10560	6.0											31.1			
P32- 6	4402	3.0												4.3	1.5	
P32- 18	8115	6.0												15.9	10.1	6.9
P41- 3	3765	1.2											5.6	2.4		
P41- 6	7530	3.0											19.8	14.1	8.8	5.8
P41- V6	31920	6.0											40	40	40	40

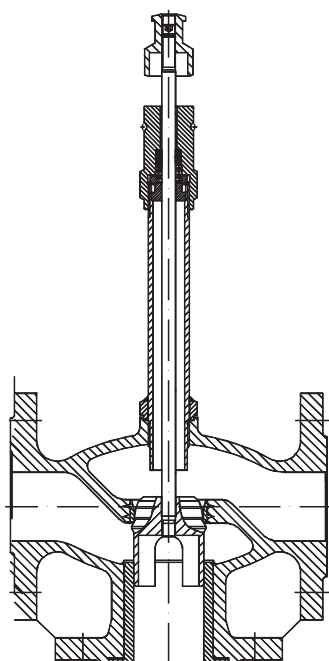
Pneumatic actuators. 3-way valves as diverting valves bælz 347-2-B/347-BB, 347-2-BK/347-BBK, 347-2-BK-SS/347-BBK-SS. Plug closes in direction of flow.

Actuator bælz 373-	Power (N)	req. feed pressure (bar)	DN (mm) / maximum differential pressure ΔP_{max} (bar)													
			15	20	25	32	40	50	65	80	100	125	150	200	250	300
all		1.2 - 6.0	Deploy all diverting valves only up to 0.6 bar differential pressure. If a diverting valve with > 0.6 bar is required, valve with > 0.6 bar is required, a damping device must be provided on the actuator.													

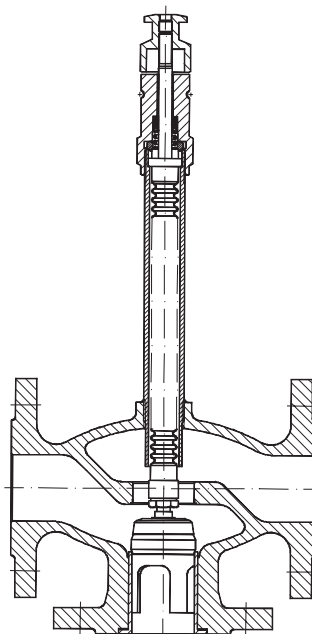
Sectional drawings of the baelz plug 347 & 347-2



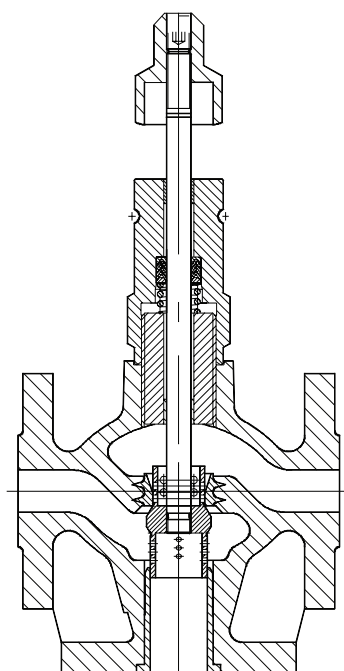
Mixing plug
with slot guides
baelz 347-2-B



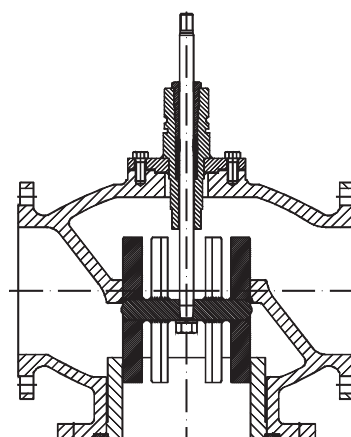
Mixing plug
with slot guides
baelz 347-2-BK



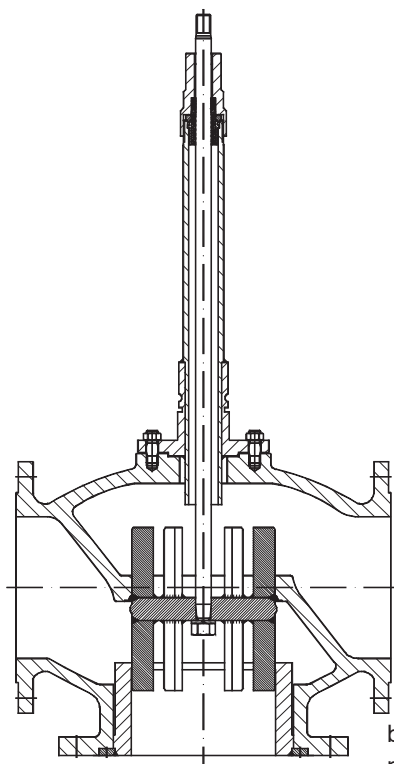
Reinforced plug
with slot guides
baelz 347-2-BK-SS



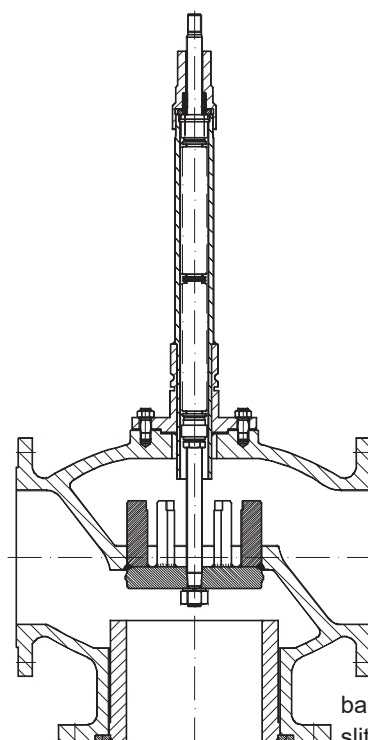
baelz 347-2 mixing
cage plug



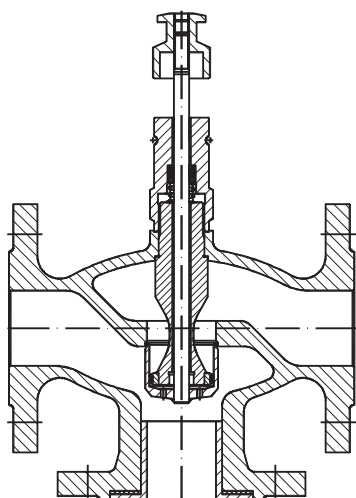
baelz 347-BB mixing slit
plug



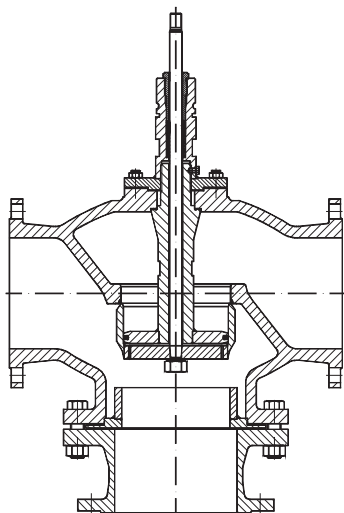
baelz 347-BBK mixing slit
plug



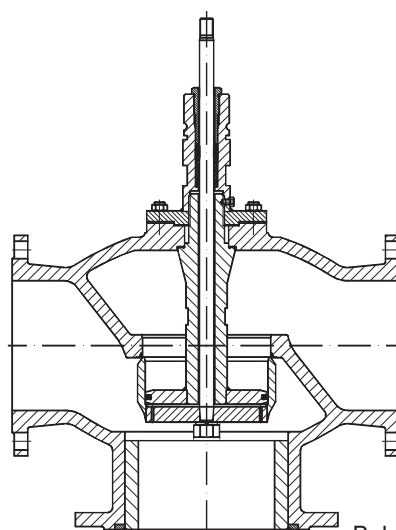
baelz 347-BBK-SS mixing
slit plug



baelz 347-2-B-EM balanced
universal plug



Balanced universal plug
baelz 347-BB-EMF
DN200+250



Balanced universal plug
baelz 347-BB-EM
DN150-300