8803.5/01-EN

Ball Valve

RB Series

PN10/16/25/40
DN50-DN500 (3/4”-20”)
Two-piece trunnion-mounted body
Flanged ends (DIN)

Type Series Booklet



LINOR

Legal information/Copyright

Type Series Booklet RB Series

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Ball Valves

Two-piece Trunnion Mounted Ball Valve



Main applications

- Spray irrigation systems
- Mining
- Chemical industry
- Pressure-boosting
- Fire-fighting systems
- Air-conditioning systems:

– Heating

– Ventilation

– Air-conditioning

- Industrial recirculation systems
- Air-conditioning systems
- Cooling circuits
- Paint shops
- Paper and cellulose industry
- Pipelines and tank farms
- Snow-making systems
- Process engineering
- Washing plants
- Water treatment
- Water supply systems

Fluids handled

- Cleaning agents
- Condensate
- Cooling water
- Corrosive fluids
- Drinking water
- Fluids posing a health hazard
- Liquors (black, white, green)
- Lubricants
- Oil
- Pulp
- River, lake and groundwater
- Service water
- Solvents
- Wash water

Operating data

Operating properties

Characteristic	Quick Opening
Nominal pressure	PN 10/16/25/40
Nominal size	DN 50-500 (2"-20")*
Max. permissible pressure	40 bar (DN 25-500) 25 bar (DN 25-500) 16 bar (DN 50-500)
Max. permissible temperature	350 °C

*Bigger sizes available upon request

Body materials

Overview of available materials*

Material	Material number	Temperature limit
ASTM A 351 CF8M	1.4408	Up to 350 °C
ASTM A 351 CF8	1.4308	
ASTM A 216 WCB	1.0619	

*Other materials available upon request.

Design details

- Two-piece trunnion mounted ball valve
- Full bore, solid ball
- Locking lever available
- Flanged ends to DIN EN1092-1 PN 40/25/16/10
- Designed and tested to ASME B16.34
- Pressure test ISO5208 Rate D (Rate B av. up. request)

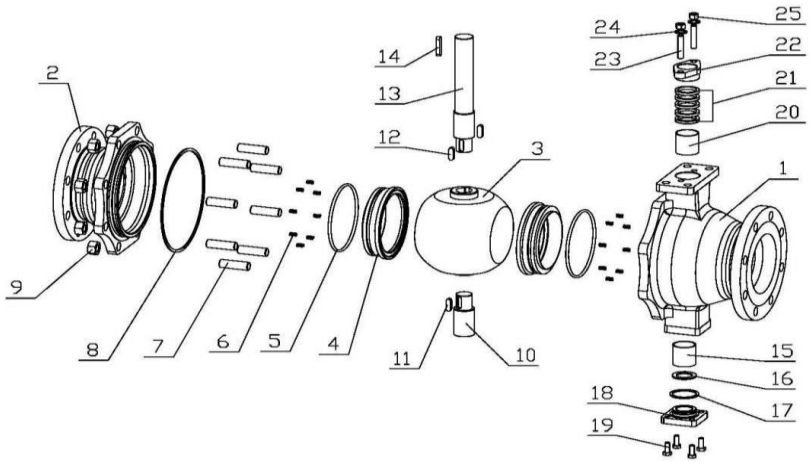
Product benefits

▪ Blow-out proof stem. Integral shoulder prevents blow-out.

▪ Locking device. Valve can be locked in open or closed position.

On all enquiries/orders please specify:

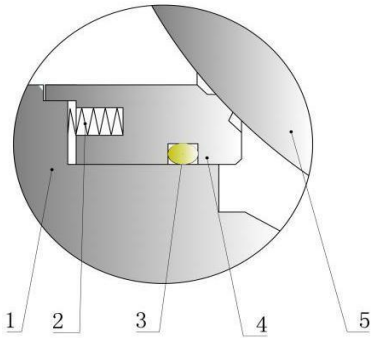
1. Type
2. Nominal pressure
3. Nominal size
4. Operating pressure
5. Differential pressure
6. Operating temperature
7. Fluid handled
8. Pipe connection
9. Number of type series booklet



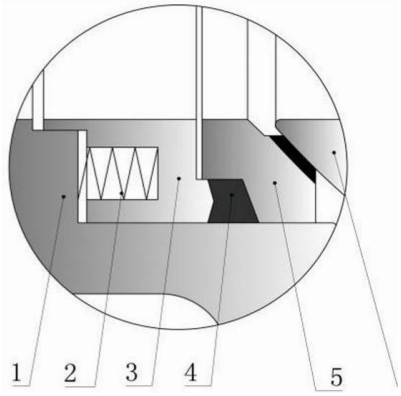
Overview of available materials

Part No.	Description	Material		
1	Body	ASTM A351 CF8M	ASTM A351 CF8	ASTM A216 WCB
2	Bonnet	ASTM A351 CF8M	ASTM A351 CF8	ASTM A216 WCB
3	Ball	ASTM A351 CF8M/CF8 + Hard chromium planting		
4	Seat	ANSI 316 /ANSI 304 + Stellite Surfacing		17-4PH
5	O-ring	Viton	Graphite	
6	Spring	17-4PH/X-750		
7	Stud	A193 B8	A193 B7	
8	Spiral Wound Gasket	SS316L+Graphite	SS304+Graphite	
9	Nut	A194 8	A194 2H	
10	Lower Shaft	A182 F60	17-4PH	
11	Flat Key	ANSI 316/ANSI 304		
12	Flat Key	ANSI 316/ANSI 304		
13	Upper Shaft	A182 F60	17-4PH	
14	Flat Key	ANSI 316/ANSI 304		
15	Self-lubricating Bearing	Composite Material		
16	Adjusting Gasket	316/Graphite		
17	Spiral Wound Gasket	SS316L+Graphite	SS304+Graphite	
18	Bottom Cap	CF8M/CF8		
19	Hexagon Bolt	SS304		
20	Self-lubricating Bearing	Composite Material		
21	Packing Gland	ASTM A351 CF8		
22	Packing	PTFE	Graphite	
23	Bolt	A193 B8/A193 B7		
24	Flat Key	ANSI 316/ANSI 304		
25	Nut	A194 8/A194 2H		

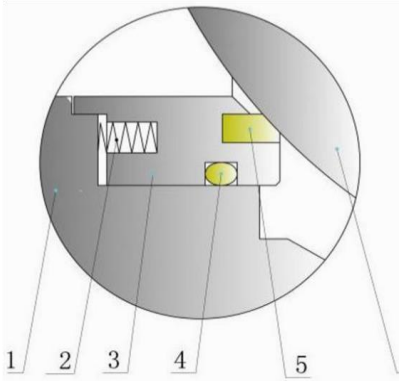
Seat seal constructions



Metal-seated		
Part No.	Description	Temp. Range
1	Valve body	-40~120°C
2	Cylinder spring	
3	O-ring	-40~180°C
4	Metal seat	
5	Ball	



Metal-seated for high temp. application		
Part No.	Description	Temp. Range
1	Valve body	-40~350°C
2	Cylinder spring	
3	Clamping ring	
4	Graphite Ring	
5	Seat	
6	Ball	



Soft-seated		
Part No.	Description	Temp. Range
1	Valve body	-40~150°C
2	Cylinder spring	
3	Sealing seat	
4	O-ring	
5	Sealing ring	
6	Ball	

Allowable working pressure of body materials at different temperatures

WCB (ASTM A216)							
	Temperature °C						
	Ambient	100	150	200	250	300	350
Nominal pressure	Bar						
PN16	16	14	13	11	10	8	7
PN25	25	23	21	19	17	14	13
PN40	41	37	36	34	32	28	27

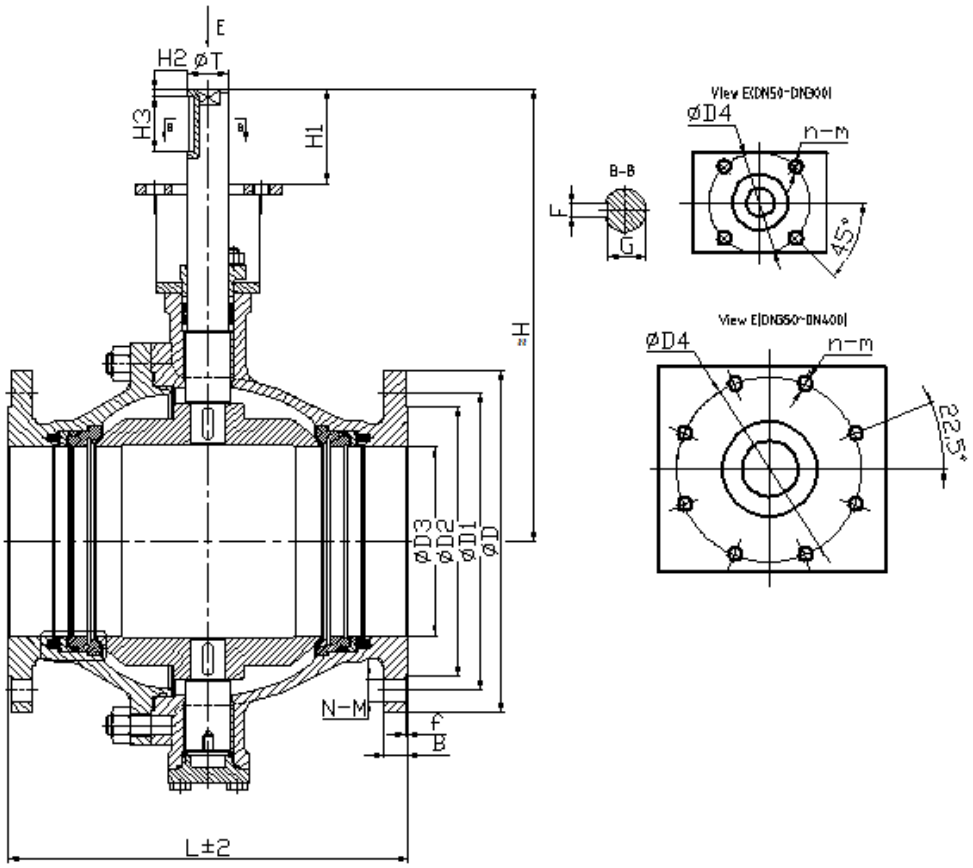
CF8 (ASTM A351)							
	Temperature °C						
	Ambient	100	150	200	250	300	350
Nominal pressure	Bar						
PN16	15	14	13	11	10	8	7
PN25	24	21	19	17	15	13	12
PN40	40	33	30	28	26	23	23

CF8M (ASTM A351)							
	Temperature °C						
	Ambient	100	150	200	250	300	350
Nominal pressure	Bar						
PN16	15	13	12	11	10	8	7
PN25	24	20	19	17	16	13	12
PN40	39	34	31	28	26	24	23

Dimensional drawings of Linor trunnion-mounted ball valves with high temperature seat

Drawing no.	Actuator	Pressure class	Sizes
1	bare shaft	PN16	DN50-400
2	bare shaft	PN40	DN50-400
3	gearbox	PN16	DN50-400
4	gearbox	PN40	DN50-400
5	double-acting	PN16	DN50-250
6	double-acting	PN16	DN300-400
7	double-acting	PN40	DN50-150
8	double-acting	PN40	DN200-400
9	single-acting	PN16	DN50-125
10	single-acting	PN16	DN150-400
11	single-acting	PN40	DN50-80
12	single-acting	PN40	DN100-400

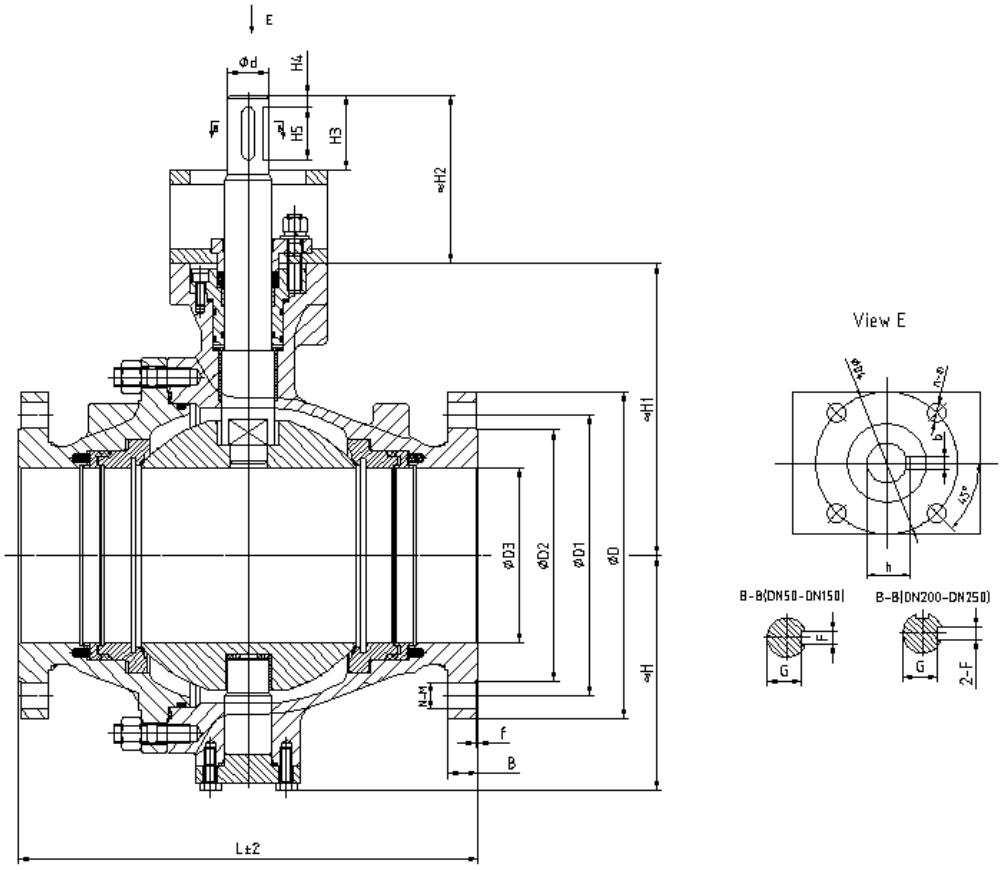
Drawing no. 1: **Dimensions of Linor trunnion-mounted ball valve with high temperature seat bare shaft, PN16, flanged, sizes DN50-400**



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	H1	H2	H3	ØT	G	F	ØD4	n-Øm	[kg]
50	178	165	125	102	46	18	2	4-18	216	110	5	25	20	16.5	6	32	4-10	13
65	191	185	145	122	62	18	2	8-18	228	110	5	25	20	16.5	6	32	4-10	17.7
80	203	200	160	138	74	20	2	8-18	250	120	5	35	25	21	8	44	4-12	24
100	229	220	180	158	100	20	2	8-18	306	136	5	40	30	25	10	52	4-12	36.5
125	356	250	210	188	123	22	2	8-18	325	136	5	40	30	25	10	52	4-14	51.4
150	394	285	240	212	150	22	2	8-22	384	166	5	50	40	35	12	58	4-14	84
200	457	340	295	268	201	24	2	12-22	421	166	5	50	40	35	12	58	4-18	131
250	533	405	355	320	252	26	2	12-26	516	202	8	60	45	39.5	14	75	4-22	210
300	610	460	410	378	303	28	2	12-26	564	202	8	60	50	44	16	75	4-22	305
350	686	520	470	438	334	30	2	16-26	658	245	8	80	60	53	18	90	8-18	434
400	762	580	525	490	385	32	2	16-30	730	255	10	90	70	62.5	20	102	8-18	630

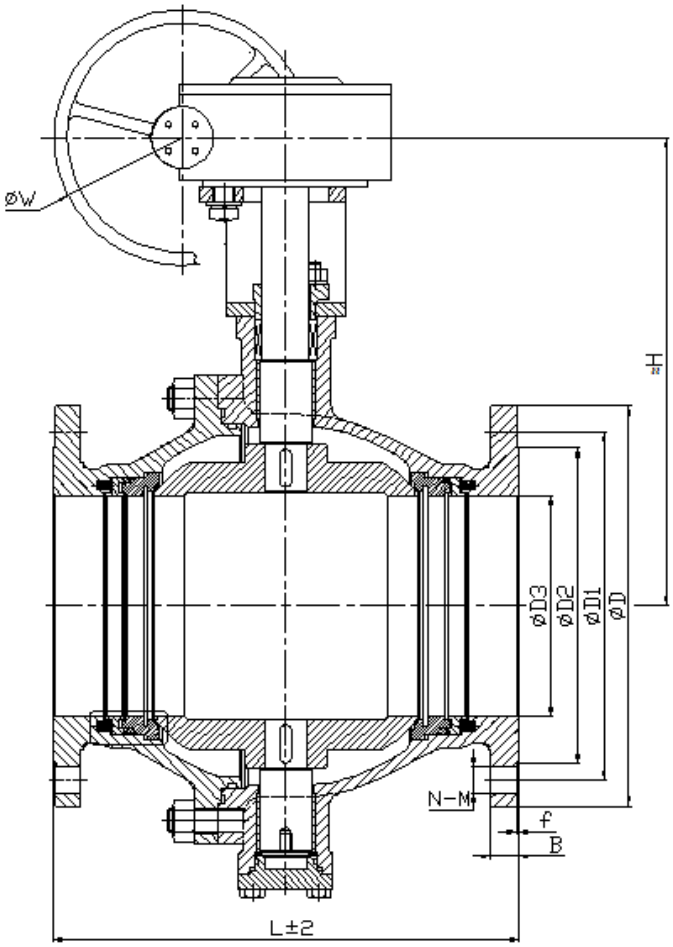
Drawing no. 2: **Dimensions of Linor trunnion-mounted ball valve with high temperature seat bare shaft, PN40, flanged, sizes DN50-400**



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	H1	H2	H3	H4	H5	Ød	G	F	ØD4	n-m	[kg]
50	216	165	125	102	49	20	2	4-18	105	126	110	40	5	25	20	16.5	6	70	4-10	20
65	241	185	145	122	62	22	2	8-18	117	146	125	40	5	25	25	21	8	70	4-10	33
80	283	200	160	138	74	24	2	8-18	125	154	125	40	5	25	25	21	8	70	4-10	41
100	305	235	190	162	100	24	2	8-22	156	184	145	60	5	40	35	30	10	102	4-12	63
125	381	270	220	188	125	26	2	8-26	183	215	134	49	5	40	35	30	10	102	4-12	80
150	403	300	250	218	150	28	2	8-26	201	250	150	50	5	40	35	30	10	125	4-14	137
200	502	375	320	285	201	34	2	12-30	236	300	198	78	10	60	45	39.5	14	165	4-22	249
250	568	450	385	345	252	38	2	12-33	290	338	217	97	10	80	50	44	16	165	4-22	338
300	648	515	450	410	303	42	2	16-33	337	390	213	93	10	80	60	53	18	254	8-18	629
350	762	580	510	465	334	46	2	16-36	357	425	218	98	10	80	65	58	18	254	8-18	824
400	838	660	535	385	385	50	2	16-39	457	448	275	125	10	90	75	67.5	20	254	8-18	1200

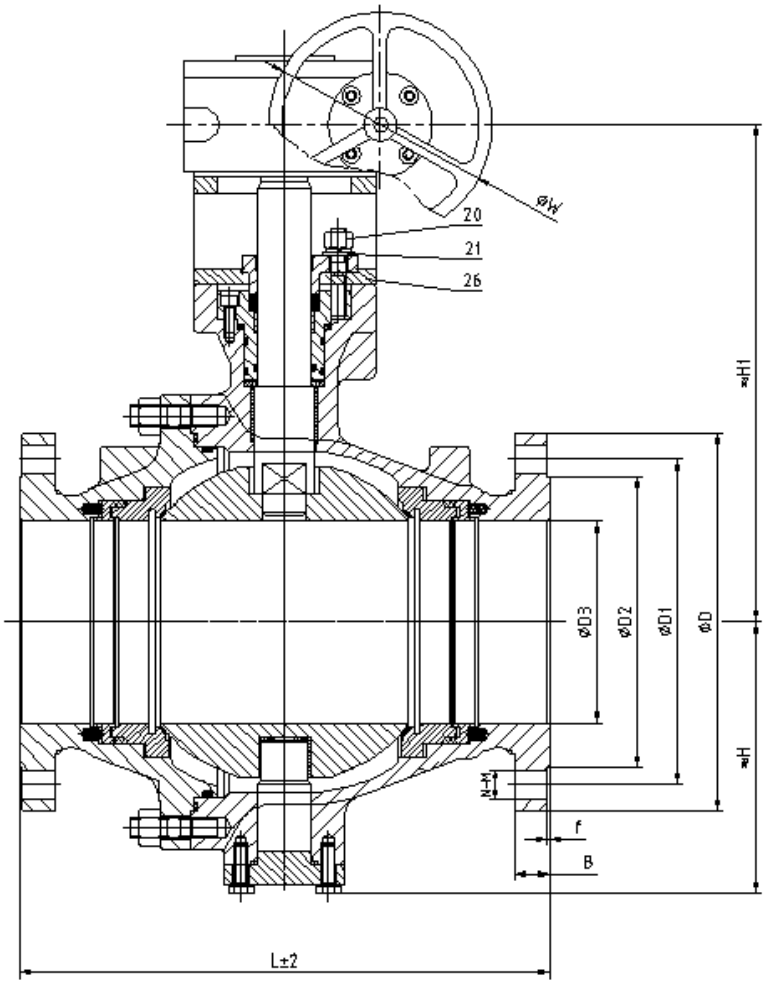
Drawing no. 3: **Dimensions of Linor trunnion-mounted ball valve with high temperature seat gearbox, PN16, flanged, sizes DN50-400**



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	ØW	Gear Box	[kg]
50	178	165	125	102	46	18	2	4-18	215	350	WQT06	25
65	191	185	145	122	62	18	2	8-18	225	350	WQT06	29.5
80	203	200	160	138	74	20	2	8-18	245	350	WQT07	37
100	229	220	180	158	100	20	2	8-18	295	350	WQT07	50
125	356	250	210	188	123	22	2	8-18	330	350	WQT08-F14	70
150	394	285	240	212	150	22	2	8-22	380	460	WQT18-F16	111
200	457	340	295	268	201	24	2	12-22	415	460	WQT18-F16	158
250	533	405	355	320	252	26	2	12-26	495	600	WQT28-F25	260
300	610	460	410	378	303	28	2	12-26	555	600	WQT37-85	388
350	686	520	470	438	334	30	2	16-26	625	600	WQT37-200	526
400	762	580	525	490	385	32	2	16-30	700	600	WQT38-F25	737

Drawing no. 4: **Dimensions of Linor trunnion-mounted ball valve with high temperature seat gearbox, PN40, flanged, sizes DN50-400**



Dimensions in mm

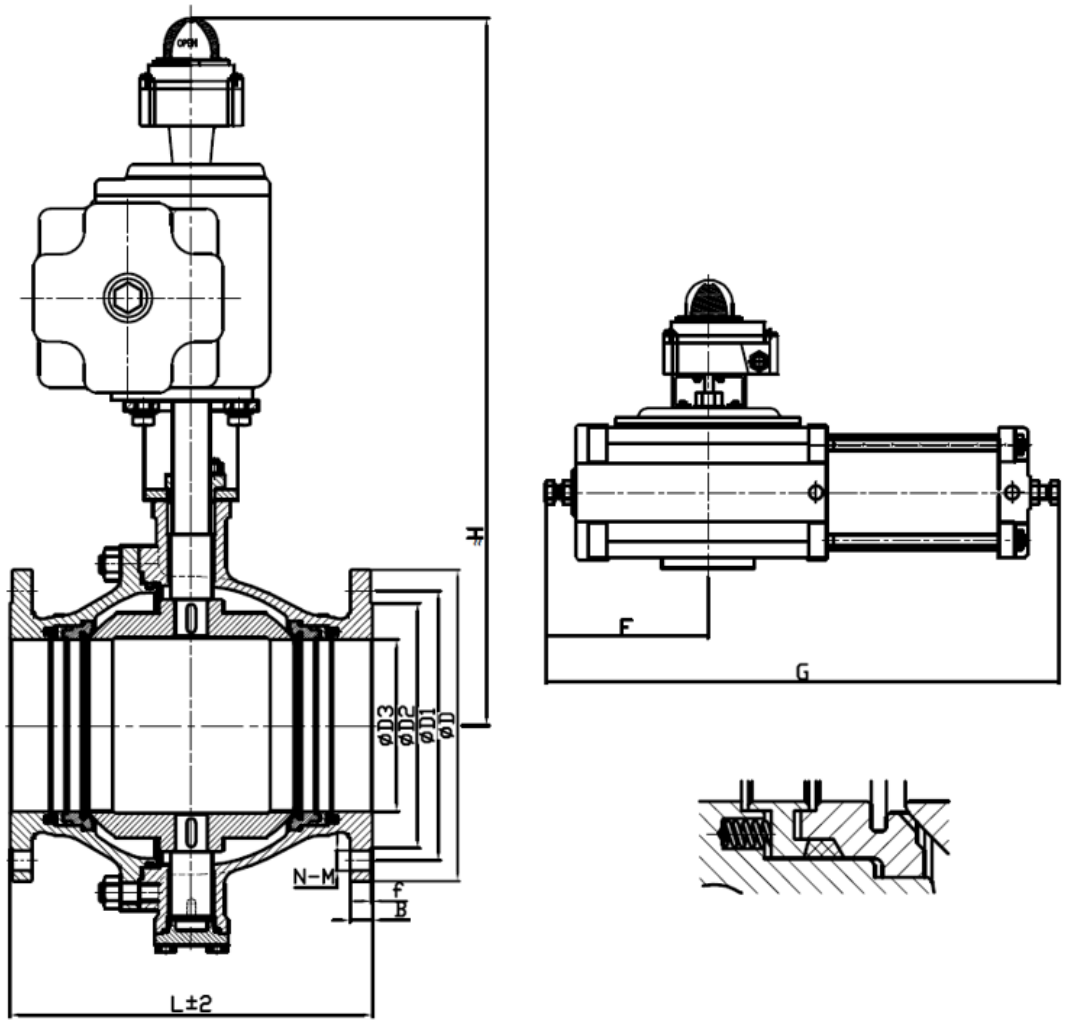
DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	H1	ØW	Gear Box	[kg]
50	216	165	125	102	49	20	2	4-18	105	235	350	WQT06	32
65	241	185	145	122	62	22	2	8-18	117	270	350	WQT06	45
80	283	200	160	138	74	24	2	8-18	125	275	350	WQT06	53
100	305	235	190	162	100	24	2	8-22	156	315	350	WQT07	76
125	381	270	220	188	125	26	2	8-26	183	360	350	WQT08-F14	100
150	403	300	250	218	150	28	2	8-26	201	410	460	WQT18-F16	165
200	502	375	320	285	201	34	2	12-30	236	490	600	WQT37-85	333
250	568	450	386	345	252	38	2	12-33	290	530	600	WQT37-200	430
300	648	515	450	410	303	42	2	16-33	337	595	600	WQT38-F25	735
350	762	580	510	465	334	46	2	16-36	357	625	600	WQT39	955
400	838	660	585	535	385	50	2	16-39	457	690	600	WQT47	1400

Actuator Sizing

DN	Operation Torque PN16（N.m）	Operation Torque PN40 (N.m)	Air Supply Pressure
	1.6MPa	4MPa	（MPa）
50	85	180	0.5~0.7
65	115	310	
80	160	450	
100	295	900	
125	465	1350	
150	730	1890	
200	1300	3300	
250	2000	5760	
300	3300	9000	
350	4300	13200	
400	6400	18600	

Note: ZSQ and ZDQ series piston actuators are manufactured by Linuo. The actuators above are recommended for valves of pressure PN16, PN40 and temp. -20~350°C, with minimum air supply pressure of 5 bar.

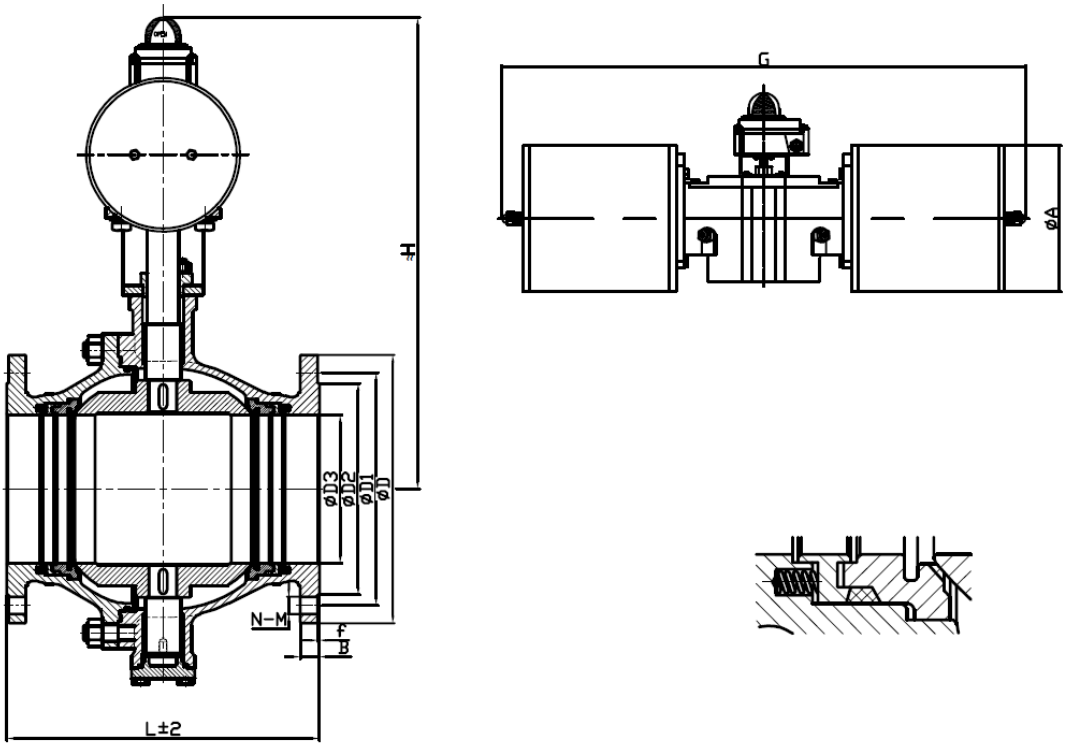
Drawing no. 5: **Dimensions of Linor trunnion-mounted ball valve with high temperature seat double-acting, PN16, flanged, sizes DN50-250**



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	G	F	Actuator	[kg]
50	178	165	125	102	46	18	2	4-18	505	430	130	ZSQ41-100	22
65	191	185	145	122	62	18	2	8-18	515	430	130	ZSQ41-100	27
80	203	200	160	138	74	20	2	8-18	535	485	150	ZSQ50-125	36
100	229	220	180	158	100	20	2	8-18	585	520	150	ZSQ50-160	52
125	356	250	210	188	123	22	2	8-18	640	580	175	ZSQ60-160	72
150	394	285	240	212	150	22	2	8-22	730	750	245	ZSQ80-200	152
200	457	340	295	268	201	24	2	12-22	765	780	245	ZSQ80-250	197
250	533	405	355	320	252	26	2	12-26	845	800	245	ZSQ80-300	315

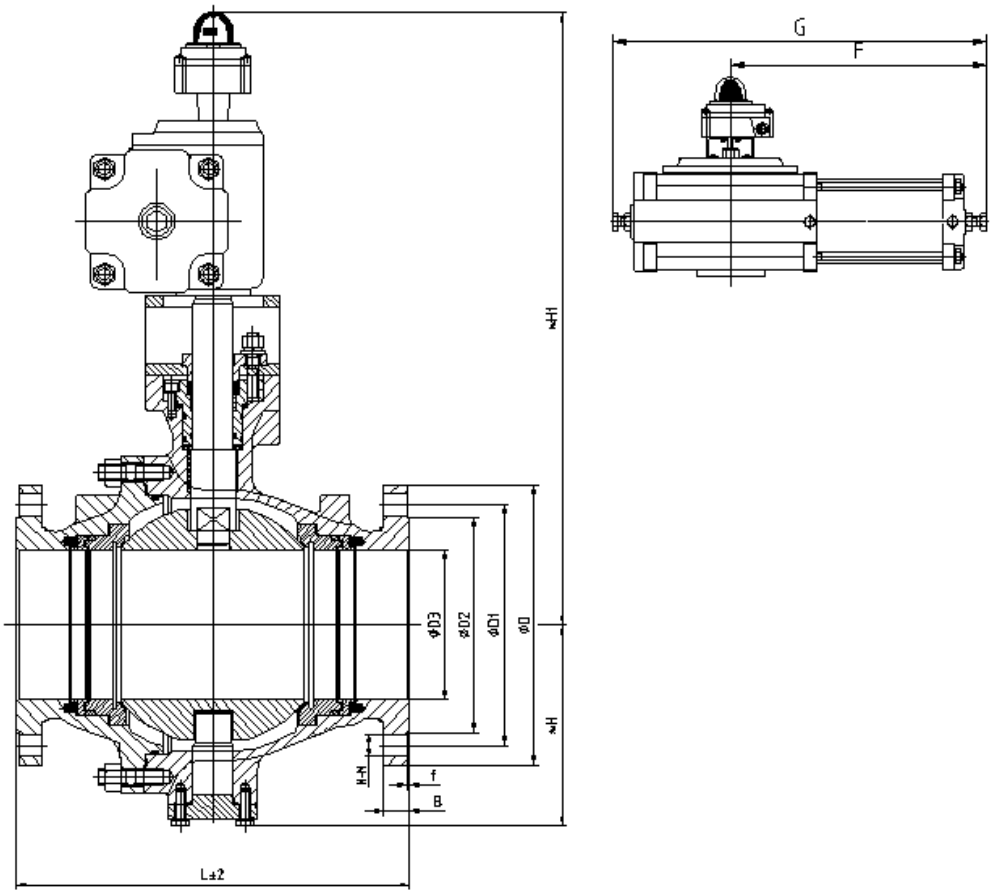
Drawing no. 6: **Dimensions of Linor trunnion-mounted ball valve with high temperature seat double-acting, PN16, flanged, sizes DN300-400**



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	G	ØA	Actuator	[kg]
300	610	460	410	378	303	28	2	12-26	920	1110	216	BRB20	430
350	686	520	470	438	334	30	2	16-26	1005	1110	270	BRB25	590
400	762	580	525	490	385	32	2	16-30	1090	1110	297	BRB28	800

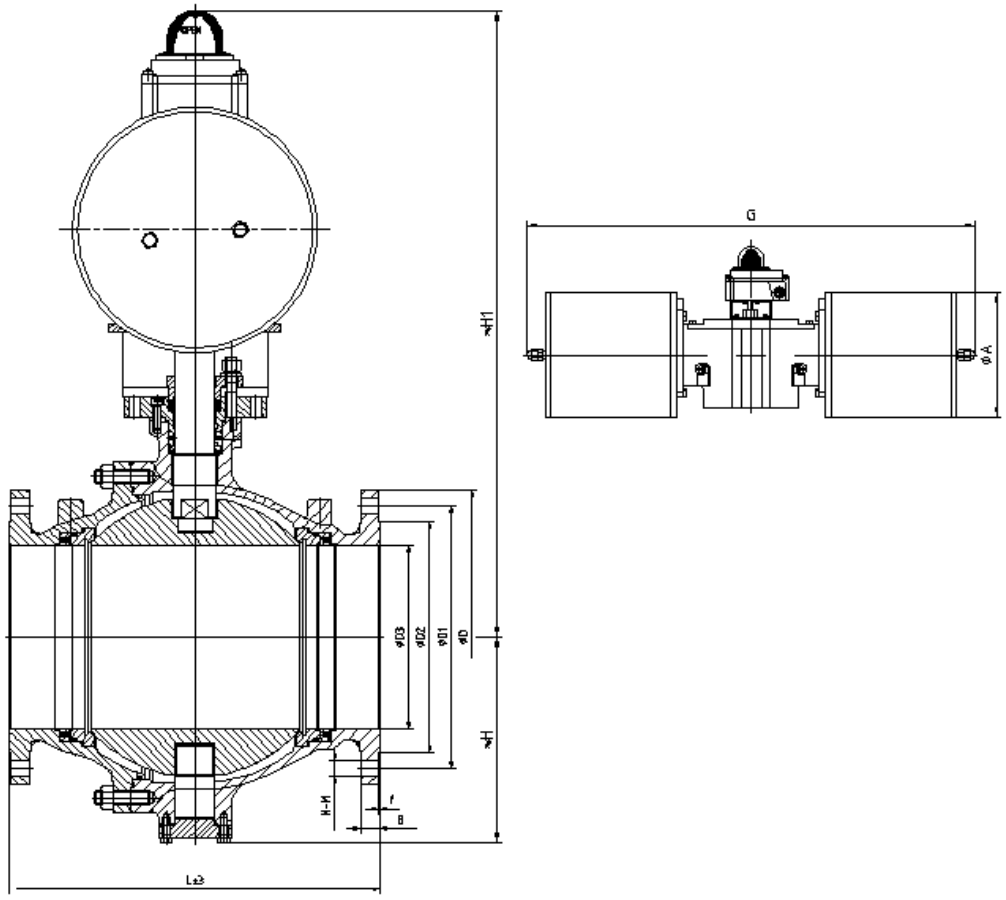
Drawing no. 7: **Dimensions of Linor trunnion-mounted ball valve with high temperature seat double-acting, PN40, flanged, sizes DN50-150**



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	H1	G	F	Actuator	[kg]
50	216	165	125	102	49	20	2	4-18	105	535	485	150	ZSQ50-125	34
65	241	185	145	122	62	22	2	8-18	117	565	520	150	ZSQ50-160	50
80	283	200	160	138	74	24	2	8-18	125	610	580	175	ZSQ60-200	72
100	305	235	190	162	100	24	2	8-22	156	680	780	245	ZSQ80-250	148
125	381	270	220	188	125	26	2	8-26	183	710	800	245	ZSQ80-300	200
150	403	300	250	218	150	28	2	8-26	201	790	925	300	ZSQ100-300	330

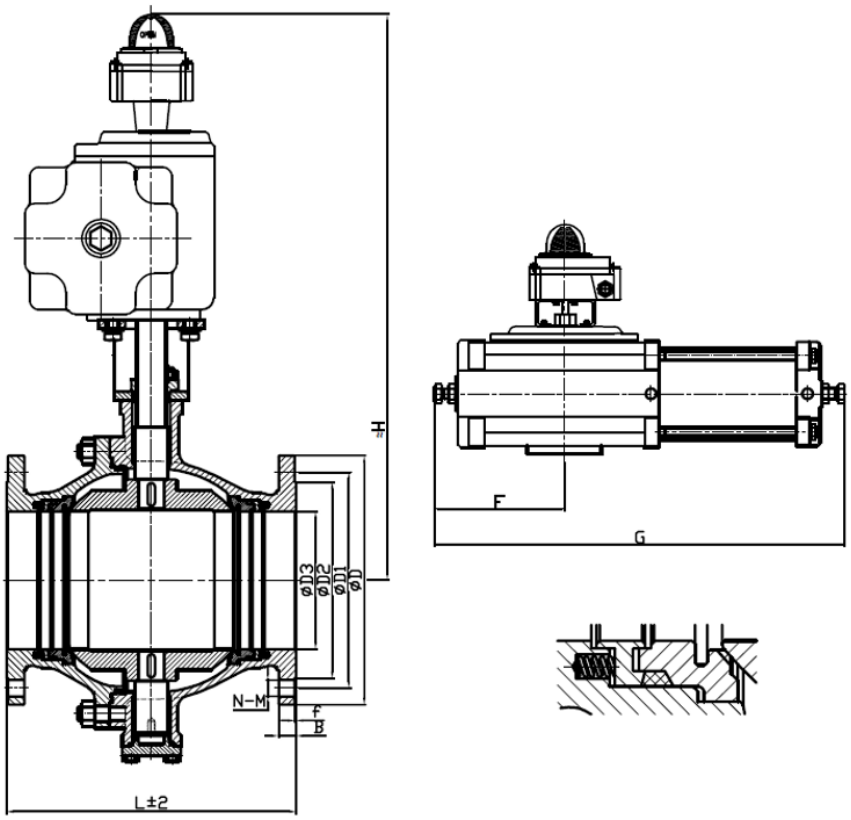
Drawing no. 8: **Dimensions of Linor trunnion-mounted ball valve with high temperature seat double-acting, PN40, flanged, sizes DN200-400**



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	H1	G	ØA	Actuator	[kg]
200	502	375	320	285	201	34	2	12-30	236	810	1110	270	BRB25	405
250	568	450	385	345	252	38	2	12-33	290	850	1110	297	BRB28	510
300	648	515	450	410	303	42	2	16-33	337	940	1390	370	BRC35	985
350	762	580	510	465	334	46	2	16-36	357	975	1390	370	BRC35	1180
400	838	660	585	535	385	50	2	16-39	457	1030	1390	475	BRC45	1700

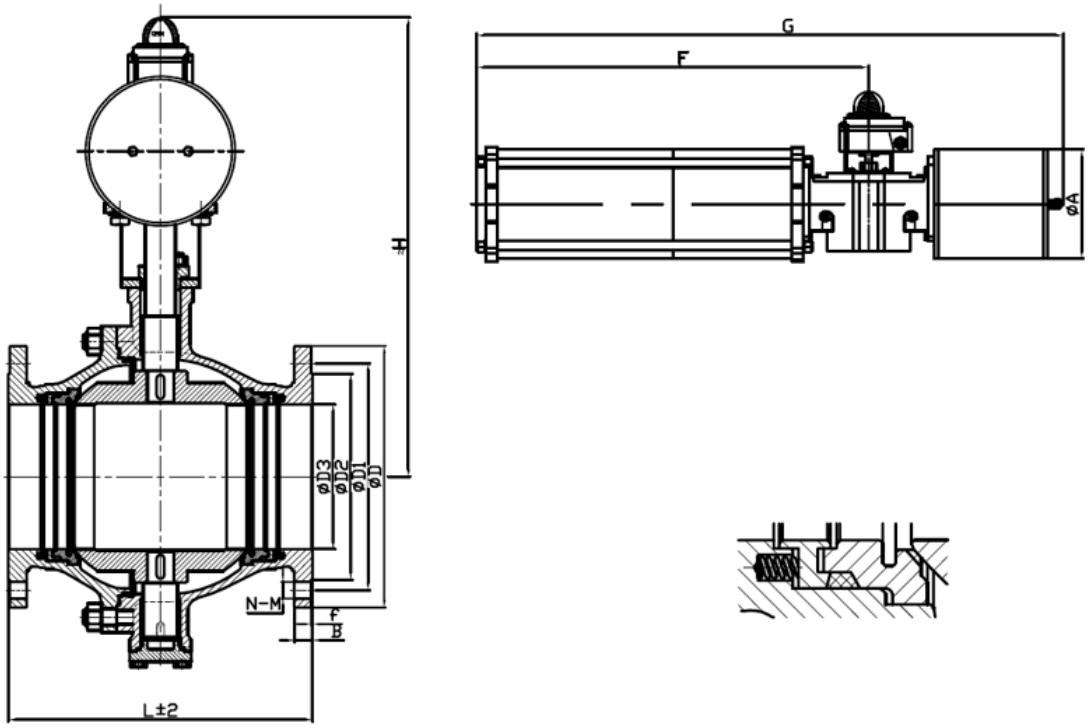
Drawing no. 9: **Dimensions of Linor trunnion-mounted ball valve with high temperature seat single-acting, PN16, flanged, sizes DN50-125**



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	G	F	Actuator	[kg]
50	178	165	125	102	46	18	2	4-18	510	660	150	ZDQ50-125	35
65	191	185	145	122	62	18	2	8-18	525	700	150	ZDQ50-160	49
80	203	200	160	138	74	20	2	8-18	570	790	175	ZDQ60-200	80
100	229	220	180	158	100	20	2	8-18	660	970	245	ZDQ80-200	150
125	356	250	210	188	123	22	2	8-18	680	990	245	ZDQ80-250	190

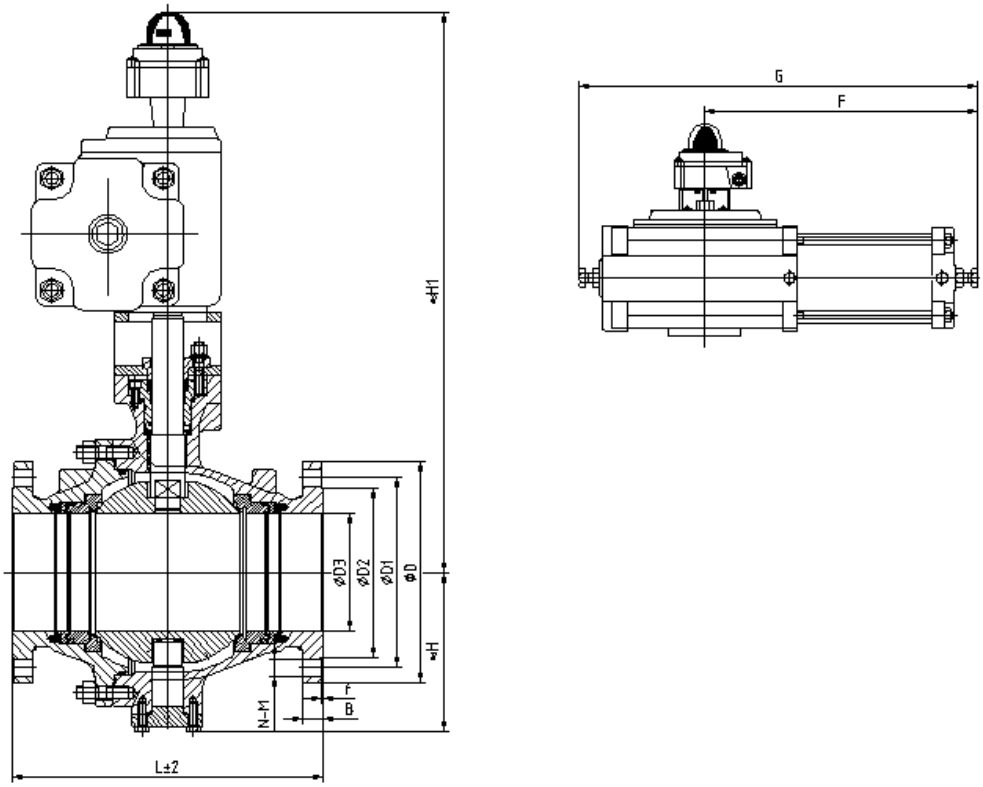
Drawing no. 10: Dimensions of Linor trunnion-mounted ball valve with high temperature seat single-acting, PN16, flanged, sizes DN150-400



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	G	F	ØA	Actuator	[kg]
150	394	285	240	212	150	22	2	8-22	740	1060	654	216	BRA20S	260
200	457	340	295	268	201	24	2	12-22	790	1500	945	270	BRB25S	375
250	533	405	355	320	252	26	2	12-26	875	1520	965	297	BRB28S	490
300	610	460	410	378	303	28	2	12-26	960	1890	1195	297	BRC28S	630
350	686	520	470	438	334	30	2	16-26	1045	2040	1345	370	BRC35S	925
400	762	580	525	490	385	32	2	16-30	1130	2040	1345	370	BRC35S	1120

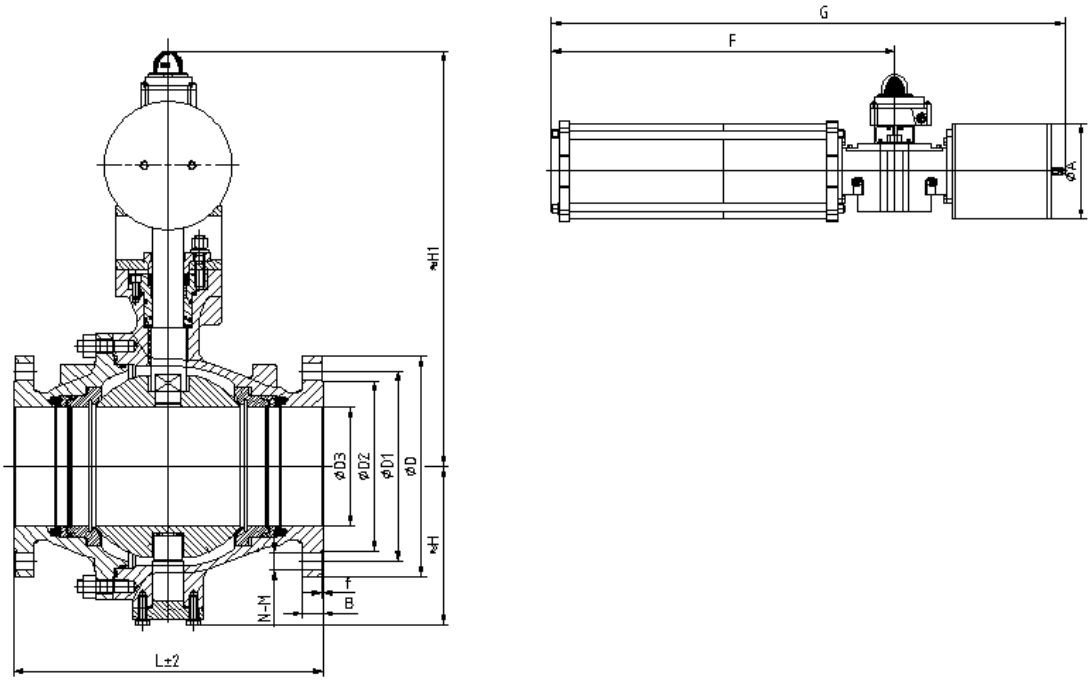
Drawing no. 11: Dimensions of Linor trunnion-mounted ball valve with high temperature seat single-acting, PN40, flanged, sizes DN50-80



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	H1	G	F	Actuator	[kg]
50	216	165	125	102	46	20	2	4-18	105	605	970	245	ZDQ80-200	135
65	241	185	145	122	62	22	2	8-18	117	640	990	245	ZDQ80-250	171
80	283	200	160	138	74	24	2	8-18	125	650	1030	245	ZDQ80-300	225

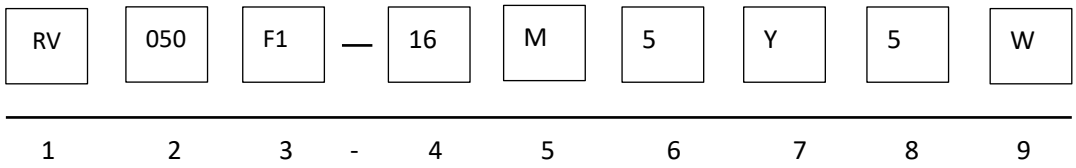
Drawing no. 12: Dimensions of Linor trunnion-mounted ball valve with high temperature seat single-acting, PN40, flanged, sizes DN100-400



Dimensions in mm

DN	L	ØD	ØD1	ØD2	ØD3	B	f	N-ØM	H	H1	G	F	ØA	Actuator	[kg]
100	305	235	190	162	100	24	2	8-22	156	660	1500	945	216	BRB20S	240
125	381	270	220	188	125	26	2	8-26	183	690	1500	945	270	BRB25S	320
150	403	300	250	218	150	28	2	8-26	201	740	1890	1195	297	BRB28S	420
200	502	375	320	285	201	34	2	12-30	236	850	2040	1345	370	BRC35S	740
250	568	450	385	345	252	38	2	12-33	290	890	2040	1345	425	BRC40S	930
300	648	515	450	410	303	42	2	16-33	337	940	2050	1355	475	BRC45S	1360
350	762	580	510	465	334	46	2	16-36	357	1150	2820	1870	800	BC50SR-700	2530
400	838	660	585	535	385	50	2	16-39	457	1250	3810	2650	970	BC60SR-850	4200

Product selection



1: Valve series type

RV - Segment ball valve

RR - Two-piece body floating ball valve

RB - Two-piece body trunnion mounted ball valve

2: Nominal diameter

015 - DN15	1/2”	065 - DN65	2-1/2″	250 - DN250	10″
020 - DN20	3/4”	080 - DN80	3″	300 - DN300	12″
025 - DN25	1”	100 - DN100	4″	350 - DN350	14″
032 - DN32	1-1/4”	125 - DN125	5″	400 - DN400	16″
040 - DN40	1-1/2″	150 - DN150	6″	450 - DN450	18″
050 - DN50	2″	200 - DN200	8″	500 - DN500	20″

3: Connection type

F1 – RF Flange

D1 – RF Wafer

4: Nominal pressure

DIN		ANSI	
04	PN6	01	150Lb
10	PN10	03	300Lb
16	PN16	06	600Lb
25	PN25	09	900Lb
40	PN40	15	1500Lb

5: Body material

C - WCB	L - CF3M (316L)	S - Duplex steel (2205)
F - CG3M (317L)	M - CF8M (316)	T - Titanium alloys
G - CG8M (317)	P - CF8 (304)	Z - Special material
H - Hastelloy alloy	Q - CF3 (304L)	

6: Disc material and surface treatment

Material:

1 - A105 (Q235, WCB)	7 - 317	K - LF2
2 - F6a	8 - 410	L - 4Cr13
3 - 304	9 - 201	S - Duplex steel (2205)
4 - 304L	E - 321	T - Titanium alloys
5 - 316	F - CG3M (317L)	Y - P20
6 - 316L	H - Hastelloy alloy	Z - Special material

Surface treatment:

0 - Without treatment	3 – Spr.weld. nickel base all.	6 - Spray welding stellite
1 - Hard chrome plating	4 – Spr.weld. tungsten carb.	7 - Graphite
2 - Nickel plating	5 - Plasma nitriding	

7: Seat seal construction

Y - Metal seated

G - High temperature execution

R - Soft-seated

8: Seat material and treatment:

Metal seat				Soft seat	
Material		Treatment		Material	
1	A105	0	Without treatment	P0	PTFE
2	F6a	1	Hard chrome plating	P1	GFRPTFE (glass fiber RTFE)
3	304	2	Nickel plating	P2	CFRPTFE (carbon fiber RTFE)
4	304L	3	Spray welding nickel base alloy	K0	PEEK
5	316	4	Spray welding tungsten carbide	E0	EPDM
6	316L	5	Plasma nitriding	B0	NBR
7	317	6	Overlaying stellite	V0	VITON
8	2CR13	7	Graphite	D0	DEVLON
F	317L	D	Overlaying 13%Cr		
H	Hastelloy alloy	G	Spray welding chromium carbide		
S	Duplex steel				
T	Titanium				
Z	Special material				

9: O-Ring material:

A - PFA

K - KFM

V - VITON

W - Without O-ring

Zhejiang Linuo Flow Control Technology Co., Ltd.
Weiyi Road, Hi-tech Area, Gexiang, Rui'an, Zhejiang, 325200
Tel: 86-577-65099777 www.cn-linuo.com