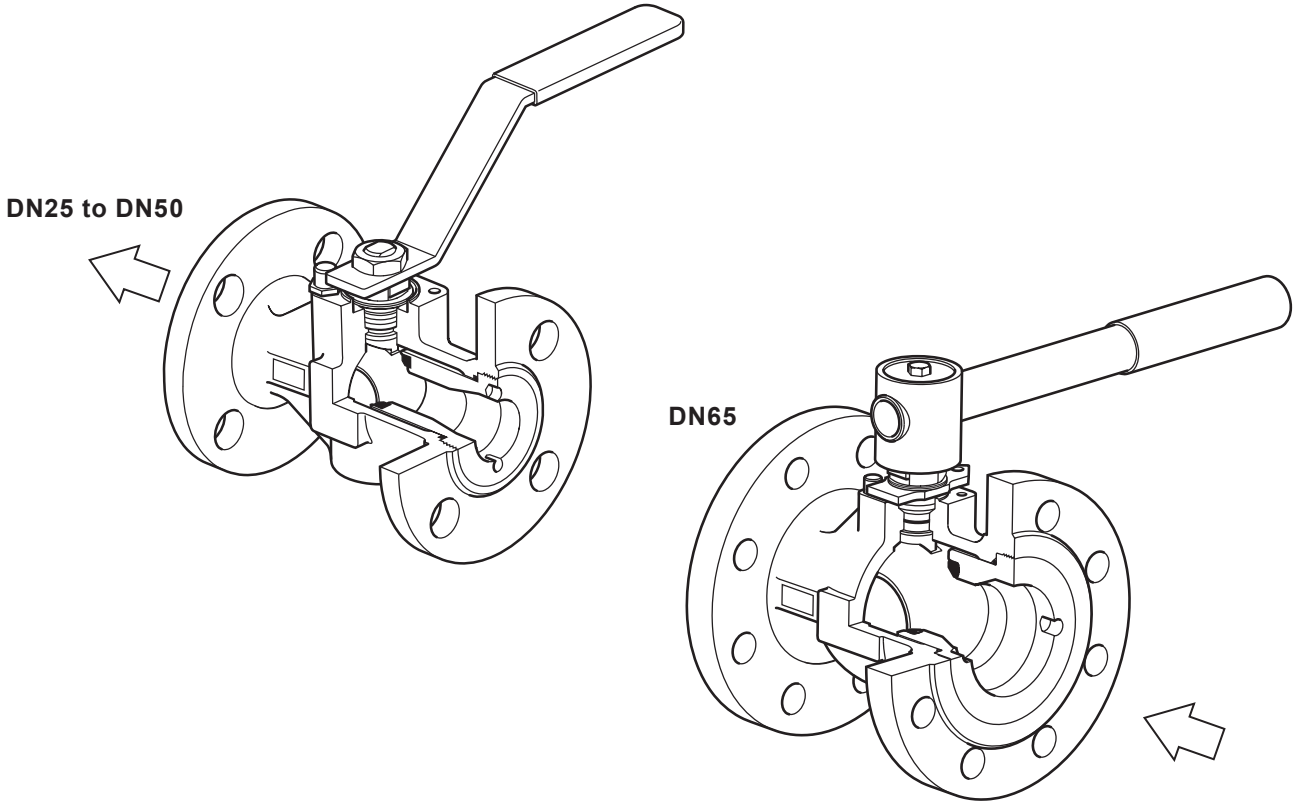
M40Bi
High pressure Bottom Blowdown Ball Valve
DN25 to DN65 Flanged ASME 300



Description

The M40Bi is a reduced bore ball valve, with a single piece body, having ISO mounting as standard. As a main feature the valve has a special ball which has received a surface hardening and also benefits from having reinforced PTFE metal charged seats.
The M40Bi has been designed for use as an isolating valve, not a control valve and can be installed in high temperature and pressure applications such as steam up to 32 bar g.

Available types

M40Bi2	Zinc plated carbon steel body, reinforced PTFE metal charged seats.
M40Bi3	Stainless steel body, reinforced PTFE metal charged seats.

Standards

This product fully comply with the requirements of the EU Pressure Equipment Directive (PED) / UK Pressure Equipment (Safety) Regulations and carry the CE / UKCA marks when so required.

Certification

This product is available with certification to EN 10204 3.1.
Note: All certification/inspection requirements must be stated at the time of order placement.

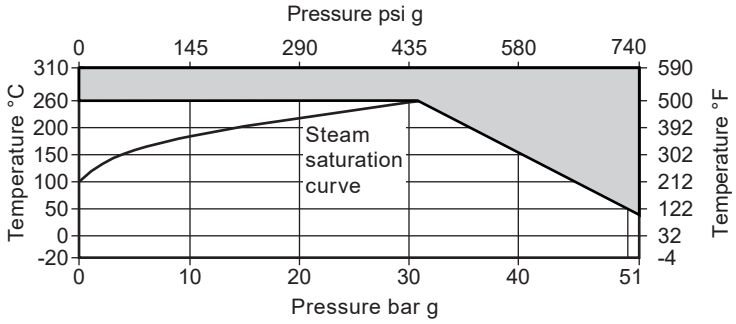
Sizes and pipe connections

DN25, DN32, DN40, DN50 and DN65.
Standard flanges ASME 300 with face-to-face dimensions according to ASME B16.10.

Technical data

Flow characteristic	Modified linear
Port	Reduced bore
Leakage test procedure to ISO 5208 (Rate A)/EN 12266-1 (Rate A)	
Antistatic device (optional) complies with ISO 7121 and BS 5351	

Pressure/temperature limits

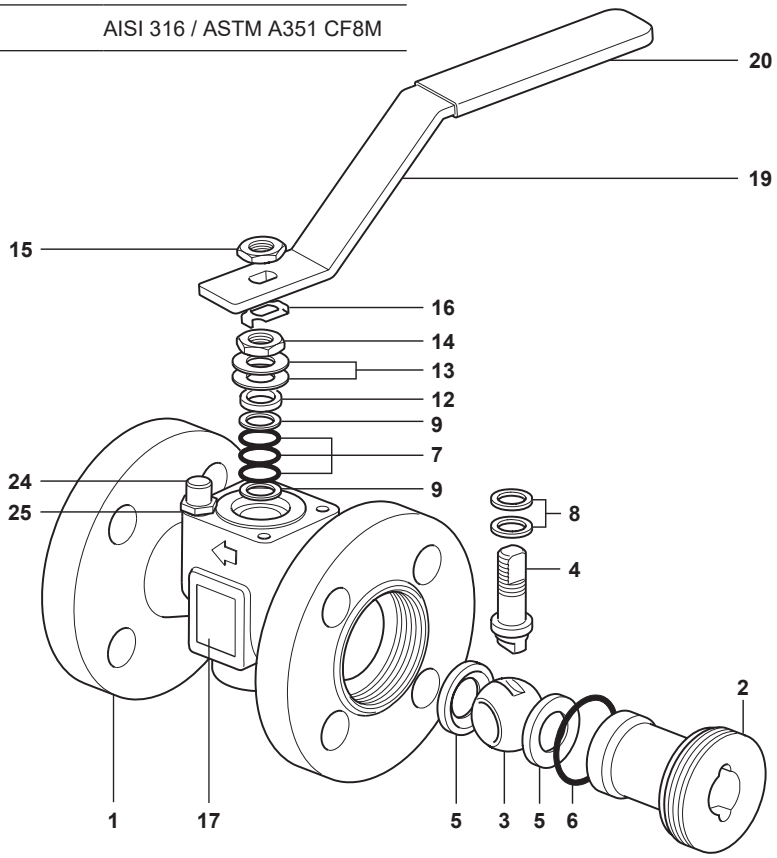


The product **must not** be used in this region.

Body design conditions				ASME 300
PMA	Maximum allowable pressure	Zinc plated carbon steel	740 psi g @ 100 °F	51 bar g @ 38 °C
		Stainless steel	720 psi g @ 100 °F	49.6 bar g @ 38 °C
TMA	Maximum allowable temperature		500°F @ 0 psi g	260 °C @ 0 bar g
Minimum allowable temperature			-4 °F	-20 °C
PMO	Maximum operating pressure for saturated steam service		464 psi g	32 bar g
TMO	Maximum operating temperature		500 °F @ 0 psi g	260 °C @ 0 bar g
Minimum operating temperature. **Note:** For lower operating temperatures consult Spirax Sarco			-4 °F	-20 °C
△PMX	Maximum differential pressure is limited to the PMO			
Designed for a maximum cold hydraulic test pressure of:		Zinc plated carbon steel	1110 psi g @ 100 °F	76.5 bar g @ 38 °C
		Stainless steel	1080 psi g @ 100 °F	74.4 bar g @ 38 °C

Materials - DN25 to DN50

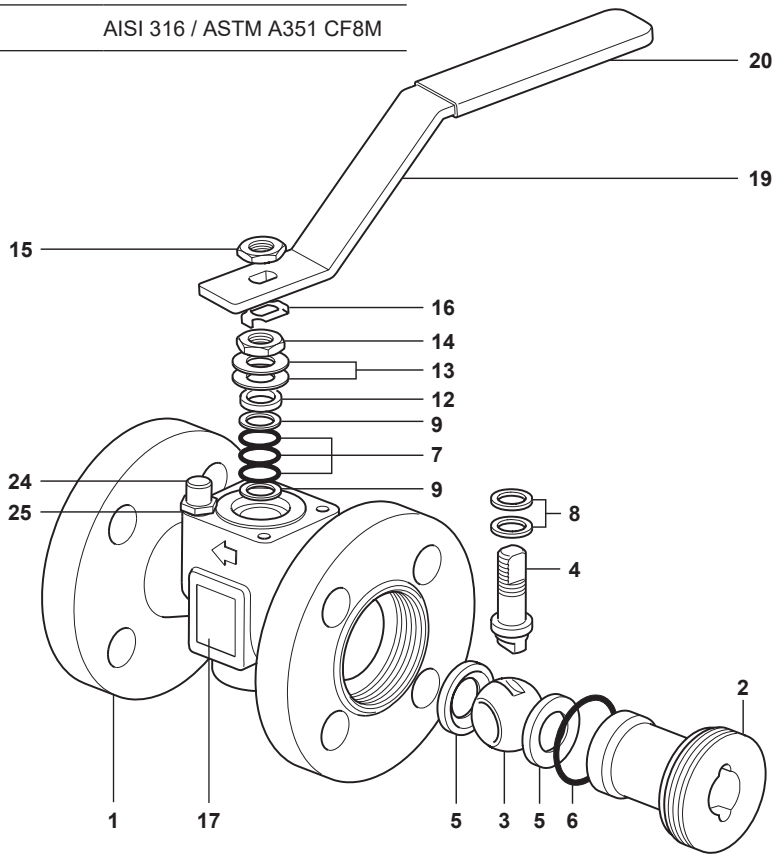
No.	Part		Material	
1	Body	M40Bi2	Zinc plated carbon steel	ASTM A216 WCB
		M40Bi3	Stainless steel	ASTM A351 CF8M
2	Insert	M40Bi2	Zinc plated carbon steel	SAE 1040 / ASTM A216 WCB
		M40Bi3	Stainless steel	AISI 316 / ASTM A351 CF8M



No.	Part	Material	
3	Ball (Venting type)	Stainless steel	AISI 316 hardened surface
4	Stem	Duplex stainless steel	AISI 318 LN
5	Seat	PTFE	Metal charge
6	Insert gasket	Graphite	
7	Stem seal	Graphite	
8	Stem seal	PEEK	Reinforced
9	Stem seal	Stainless steel	AISI 304
12	Separator	Zinc plated carbon steel	SAE 1010
13	Belleville washer	Stainless steel	AISI 301
14	Gland nut	Zinc plated carbon steel	SAE 1010/SAE 12L14
15	Upper stem nut	Zinc plated carbon steel	SAE 1010/SAE 12L14
16	Locking plate	Stainless steel	AISI 304
17	Nameplate	Stainless steel	AISI 430
19	Lever	Zinc plated carbon steel	SAE 1010
20	Grip	Vinyl	Blue
24	Stop screw	Zinc plated carbon steel	SAE 12L14
25	Split lock washer	Stainless steel	AISI 304

Materials - DN25 to DN50

No.	Part		Material	
1	Body	M40Bi2	Zinc plated carbon steel	ASTM A216 WCB
		M40Bi3	Stainless steel	ASTM A351 CF8M
2	Insert	M40Bi2	Zinc plated carbon steel	SAE 1040 / ASTM A216 WCB
		M40Bi3	Stainless steel	AISI 316 / ASTM A351 CF8M



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5	Seat	PTFE	Metal charge
6	Insert gasket	Graphite	
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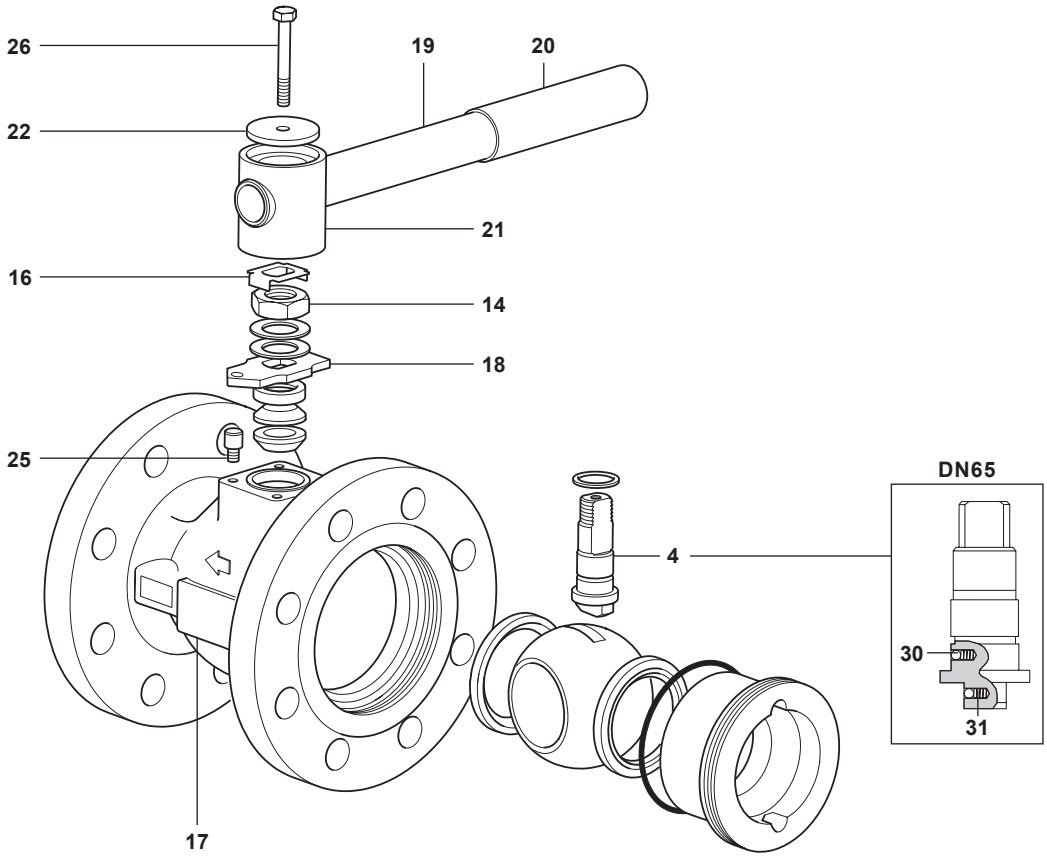
9	Stem seal	Stainless steel	AISI 304
12	Separator	Zinc plated carbon steel	SAE 1010
13	Belleville washer	Stainless steel	AISI 301
14	Gland nut	Zinc plated carbon steel	SAE 1010/SAE 12L14
15	Upper stem nut	Zinc plated carbon steel	SAE 1010/SAE 12L14
16	Locking plate	Stainless steel	AISI 304
17	Nameplate	Stainless steel	AISI 430
19	Lever	Zinc plated carbon steel	SAE 1010
20	Grip	Vinyl	Blue
24	Stop screw	Zinc plated carbon steel	SAE 12L14
25	Split lock washer	Stainless steel	AISI 304

Materials (continued)

DN65

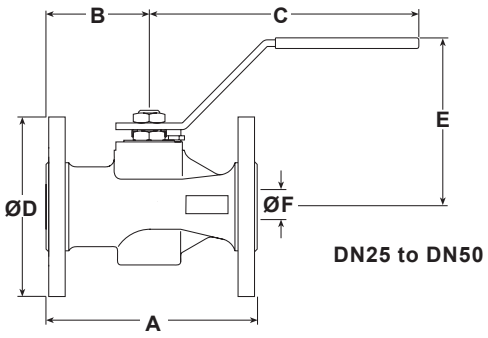


No.	Part	Material	
14	Gland nut	Zinc plated carbon steel	SAE 1010/SAE 12L14
16	Locking plate	Stainless steel	AISI 304
17	Nameplate	Stainless steel	AISI 430
18	Stop plate with indicator	Zinc plated carbon steel	SAE 1010
19	Lever	Zinc plated carbon steel	SAE 1010
20	Grip	Vinyl	Blue
21	Adaptor	Zinc plated SG iron	
22	Adaptor plate	Zinc plated carbon steel	SAE 1010
26	Adaptor screw	Zinc plated carbon steel	Grade 5
30	Antistatic device ball	Stainless steel	AISI 302
31	Antistatic device spring	Stainless steel	AISI 301

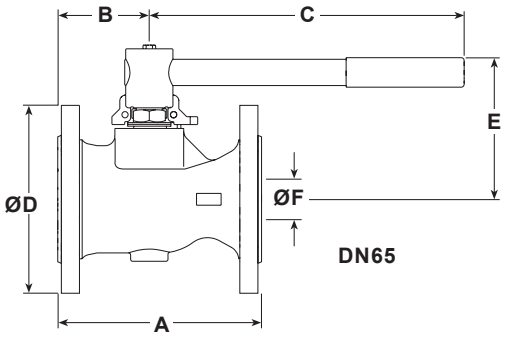
Dimensions/weights (approximate) in mm and kg

Flanged ASME 300

Size	A	B	C	D	E	F	Weight
DN25	165	62	162	124	101	19	4.5
DN32	178	65	182	134	106	25	5.7
DN40	190	70	186	156	118	30	8.2
DN50	216	75	186	165	123	37	10.3
DN65	241	79	278	190	144	50	16.0



DN25 to DN50



DN65

K_v values

DN	25	32	40	50	65
K_v	30	40	81	103	197

For conversion:
C_v (UK) = K_v x 0.963
C_v (US) = K_v x 1.156

Operating torques (Nm)

DN	25	32	40	50	65
N m	20	25	35	60	100

Note: The torque figures shown are for a valve that is frequently operated at the maximum operating pressure. Valves that are subject to long static periods, may require a greater break-out torque.

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions supplied with the product.

Welding

Only the models that have connections designed for welding (SW, BW, Imperial Tube connections) should be welded. Valves with flanged connections must not be welded to avoid damages to the valve and/or injury to personnel.

How to order

Specify	Body material		
		2 =	Zinc plated carbon steel
		3 =	Stainless steel

Example: 1 off Spirax Sarco DN50 M40Bi2 ball valve having flanged ASME 300 connections.

Optional extras:

- Extended stems to allow full insulation: 50 mm (2") for DN25 to DN50 sizes and 100 mm (4") for DN25 to DN65 sizes.
- Lockable handle.
- 100 mm extended stem with lockable handle.

DN25 to DN50 - Spare parts

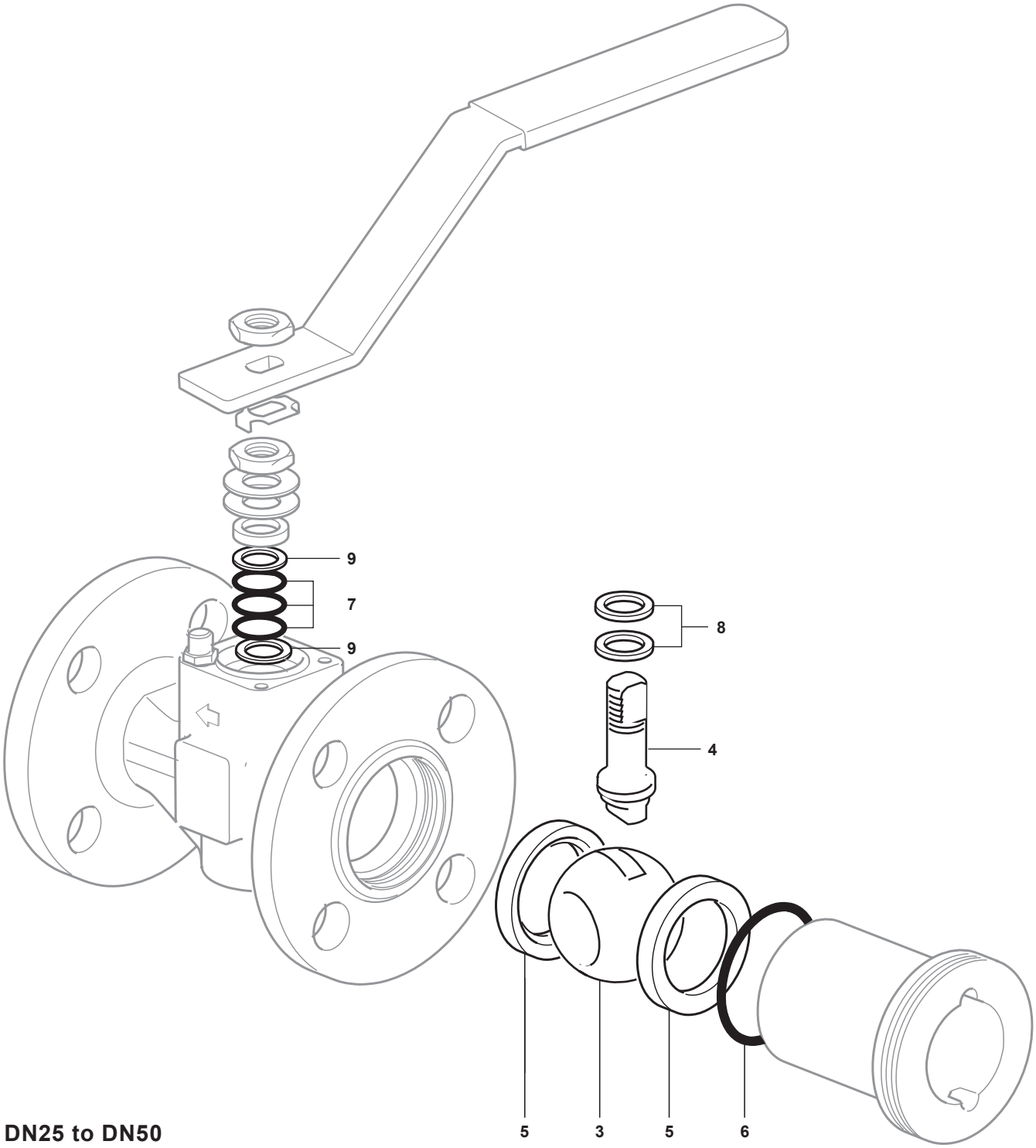
The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.

Available spares	
Ball, seats, body gasket and steam seals	**3, 5, 6, 7, 8 and 9**
Duplex stem	**4**

How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of ball valve.

Example: 1 set of seats, ball, body gasket and stem seals for a Spirax Sarco DN50 flanged ASME 300 M40Bi2 ball valve.



DN25 to DN50

DN65 - Spare parts

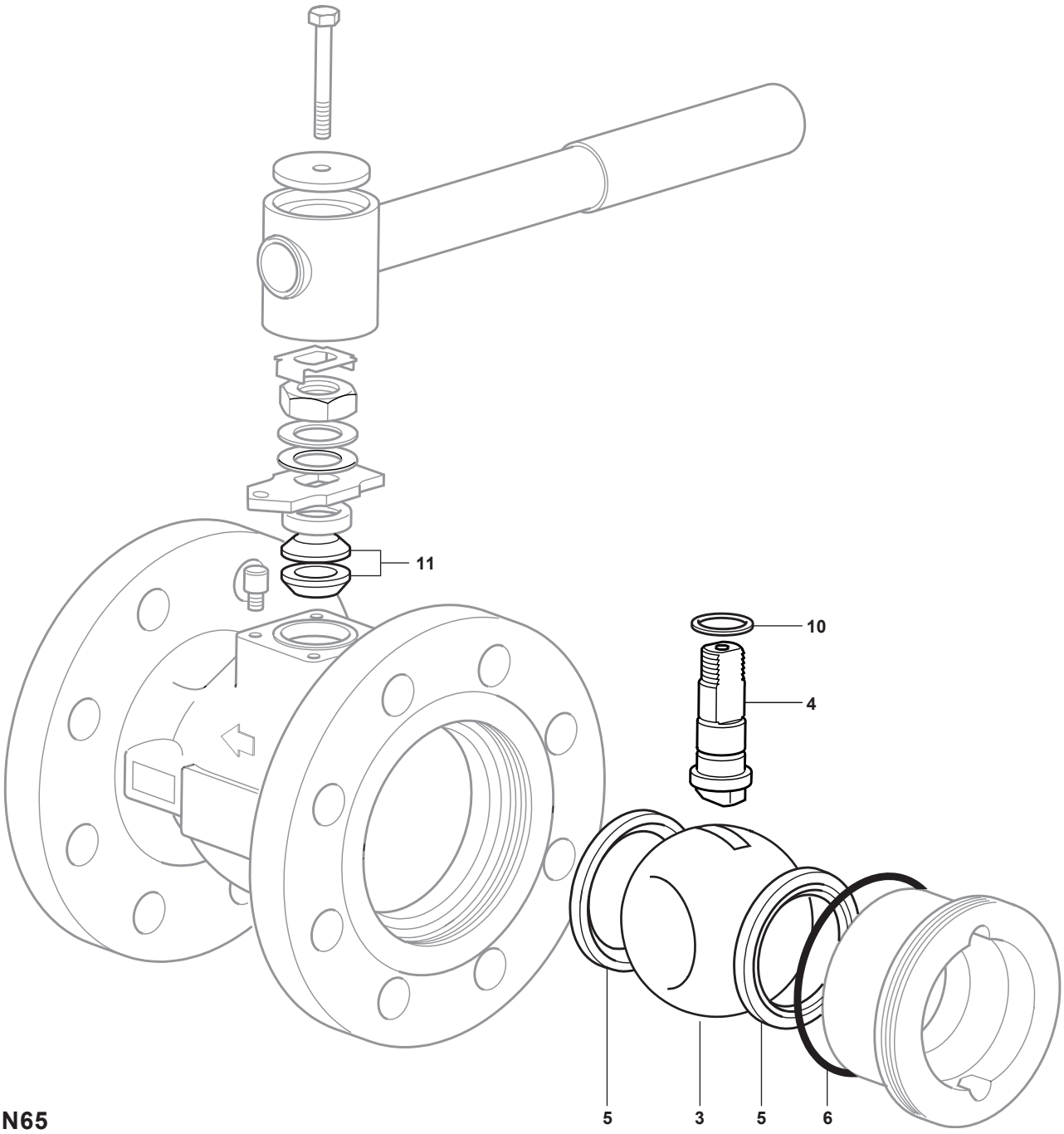
The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.

Available spares	
Ball, seats, body gasket and stem seals	**3, 5, 6, 10 and 11**
Duplex stem	**4**

How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of ball valve.

Example: 1 set of seats, ball, body gasket, stem seals packing for a Spirax Sarco DN65 flanged ASME 300 M40Bi2 ball valve.



DN65