



TI-P133-94
 ST Issue 3

M21Ti ISO

Reduced Bore Ball Valve for the Tobacco Industry DN15 to DN150 Flanged PN40

Description

The M21Ti is a reduced bore ball valve, with a single piece body, having ISO mounting as standard. As a main feature the valve has UHMWPE seats.

The M21Ti has been designed for use as an isolating valve, not a control valve, and can be used on Teflon free process applications at moderate temperatures. The M21Ti ISO is not suitable for steam applications.

Available types

M21Ti2 ISO Zinc plated carbon steel body, UHMWPE seats.

M21Ti3 ISO Stainless steel body, UHMWPE seats.

Standards

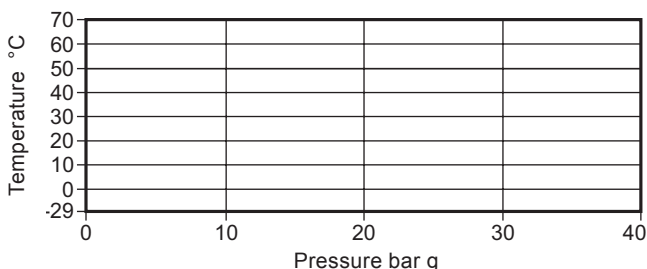
This product fully complies with the requirements of the European Pressure Equipment Directive 97/23/EC and carries the **CE** mark when so required.

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.

Pressure/temperature limits



Body design conditions	PN40
PMA Maximum allowable pressure	40 bar g @ 70 °C
TMA Maximum allowable temperature	70 °C @ 40 bar g
Minimum allowable temperature	-29 °C
PMO Maximum operating pressure	40 bar g @ 70 °C
TMO Maximum operating temperature	70 °C @ 40 bar g
Minimum operating temperature	-29 °C

Note: For lower operating temperatures consult Spirax Sarco

Δ PMX Maximum differential pressure is limited to the PMO

Designed for a maximum cold hydraulic test pressure of 60 bar g

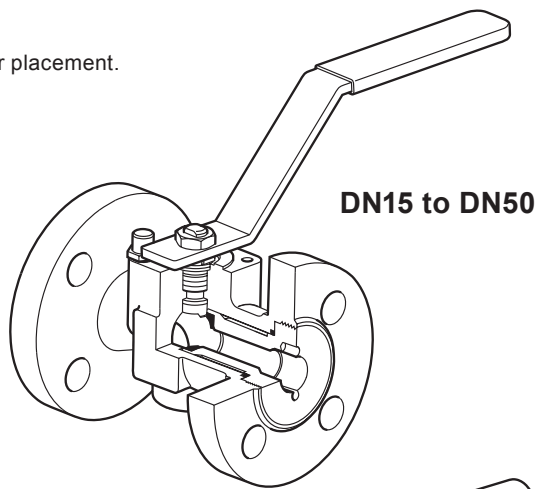
Sizes and pipe connections

DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, and DN150

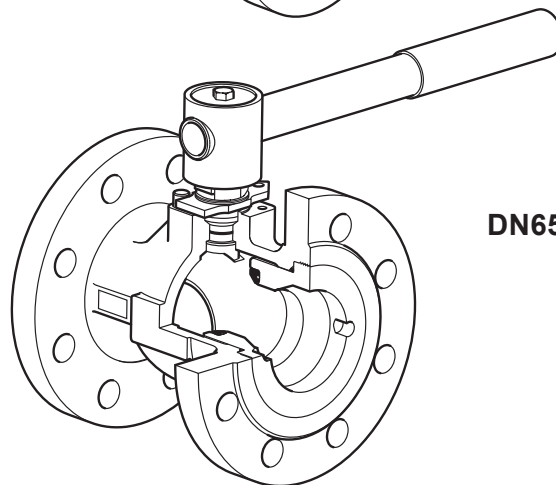
Standard flange: EN 1092 PN40

Face-to-face dimensions:

- DN15 to DN100 according to DIN 3202 F4.
- DN25 to DN150 according to BS 2080.



DN15 to DN50

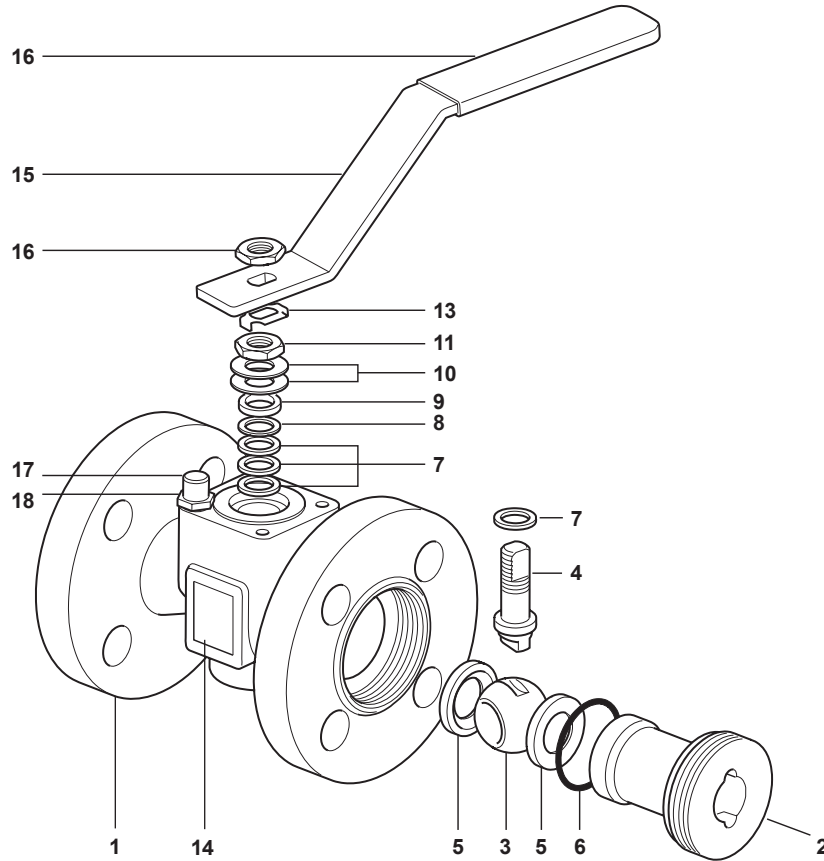


DN65

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	

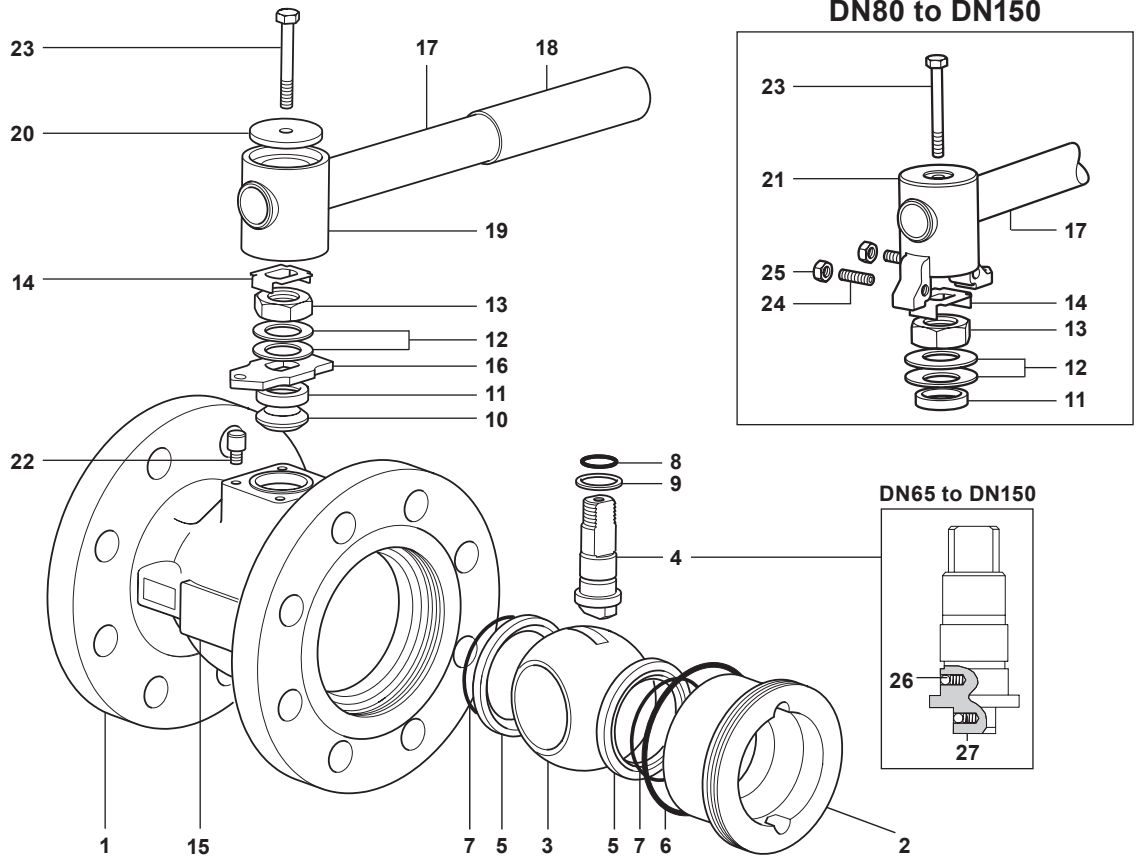
DN15 to DN50



Materials

No.	Part	Material		
1	Body	M21Ti2 ISO	Zinc plated carbon steel	ASTM A216 WCB
		M21Ti3 ISO	Stainless steel	ASTM A351 CF8M
2	Insert	M21Ti2 ISO	Zinc plated carbon steel	SAE 1040
		M21Ti3 ISO	Stainless steel	AISI 316
3	Ball		Stainless steel	AISI 316
4	Stem		Stainless steel	AISI 316
5	Seat		UHMWPE	
6	Insert 'O' ring		EPDM	Geothermal
7	Stem seal		UHMWPE	
8	Stem seal		Stainless steel	AISI 304
9	Separator		Zinc plated carbon steel	SAE 1010
10	Belleville washer		Stainless steel	AISI 301
11	Gland nut		Zinc plated carbon steel	SAE 1010 / SAE 12L14
12	Upper stem nut		Zinc plated carbon steel	SAE 1010 / SAE 12L14
13	Locking plate		Stainless steel	AISI 304
14	Nameplate		Stainless steel	AISI 430
15	Lever		Zinc plated carbon steel	SAE 1010
16	Grip		Vinyl	Light blue
17	Stop screw		Zinc plated carbon steel	SAE 12L14
18	Split lock washer		Stainless steel	AISI 304

DN65



Materials

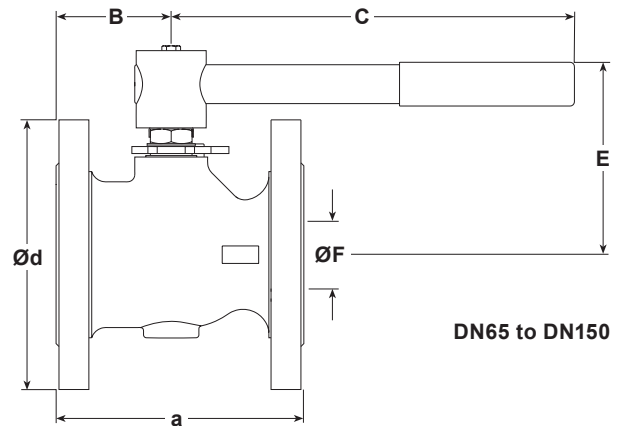
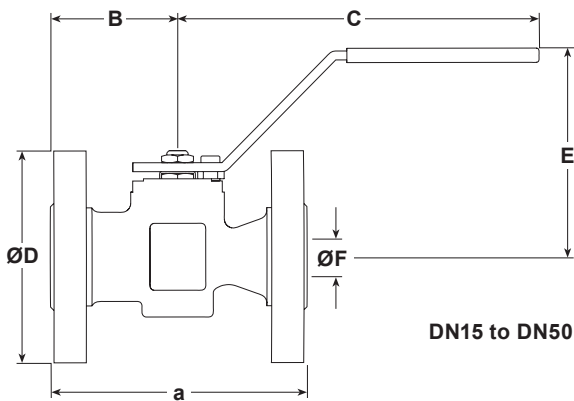
No.	Part		Material	
1	Body	M21HTi2 ISO	Zinc plated carbon steel	ASTM A216 WCB
		M21HTi3 ISO	Stainless steel	ASTM A351 CF8M
2	Insert	M21HTi2 ISO	Zinc plated carbon steel	SAE 1040
		M21HTi3 ISO	Stainless steel	AISI 316
3	Ball		Stainless steel	AISI 316
4	Stem		Stainless steel	AISI 316 / AISI 420
5	Seat		UHMWPE	
6	Insert 'O' ring		EPDM	Geothermal
7	Seat 'O' ring		EPDM	Geothermal
8	Stem 'O' ring		EPDM	Geothermal
9	Lower stem seal		UHMWPE	
10	Upper stem packing		UHMWPE	
11	Separator		Zinc plated carbon steel	SAE 1010
12	Belleville washer		Carbon steel / Stainless steel	
13	Gland nut		Zinc plated carbon steel	SAE 1010 / SAE 12L14
14	Locking plate		Stainless steel	AISI 304
15	Nameplate		Stainless steel	AISI 430
16	Stop plate with indicator	DN65 only	Zinc plated carbon steel	SAE 1010
17	Lever		Zinc plated carbon steel	SAE 1010
18	Grip		Vinyl	Light blue
19	Adaptor	DN65 only	Zinc plated SG iron	
20	Adaptor plate	DN65 only	Zinc plated carbon steel	SAE 1010
21	Adaptor with indicator	DN80 to DN150	Zinc plated SG iron	
22	Stop screw	DN80 to DN150	Zinc plated carbon steel	SAE 12L14
23	Adaptor screw		Zinc plated carbon steel	Grade 5
24	Stop screw	DN80 to DN150	Carbon steel	
25	Adaptor hex. nut	DN80 to DN150	Zinc plated carbon steel	
26	Antistatic device ball		Stainless steel	AISI 302
27	Antistatic device spring		Stainless steel	AISI 301

Dimensions/weights (approximate) in mm and kg
PN40 DIN 3202 F4 flanges

Size	A	B	C	D	E	F	Weight
DN15	115	57	162	95	95	13	2.5
DN20	120	60	162	105	95	13	3.2
DN25	125	62	162	115	101	19	4.0
DN32	130	65	182	140	106	25	5.5
DN40	140	70	186	150	118	30	6.9
DN50	150	75	186	165	123	37	9.3
DN65	170	79	278	185	144	50	13.4
DN80	180	91	417	200	157	57	17.7
DN100	190	98	517	235	172	75	25.0
DN150	-	-	-	-	-	-	-

PN40 BS 2080 flanges

Size	A	B	C	D	E	F	Weight
DN15	-	-	-	-	-	-	-
DN20	-	-	-	-	-	-	-
DN25	165	62	162	115	101	19	4.2
DN32	178	65	182	140	106	25	5.9
DN40	190	70	186	150	118	30	7.4
DN50	216	75	186	165	123	37	10.2
DN65	241	79	278	185	144	50	14.9
DN80	283	91	417	200	157	57	20.2
DN100	305	98	517	235	172	75	29.4
DN150	403	130	700	300	200	100	56.9



K_v values

DN	15	20	25	32	40	50	65	80	100	150
K _v	10	10	30	40	81	103	197	248	581	735

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

Operating torque (N m)

DN	15	20	25	32	40	50	65	80	100	150
N m	8	8	10	15	20	25	50	70	100	155

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 M21Ti2 ISO ball valve having flanged EN 1092 PN40 connections and DIN 3202 F4 face-to-face dimensions.

Optional extras:

- Self-venting ball.
- Extended stems to allow full insulation: 50 mm (2") for DN15 to DN50 sizes and 100 mm (4") for DN15 to DN150 sizes.
- Lockable handle.
- 100 mm extended stem with lockable handle.

DN15 to DN50 - Spare parts (see page 6 for sizes DN65 - DN150)

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

Available spares

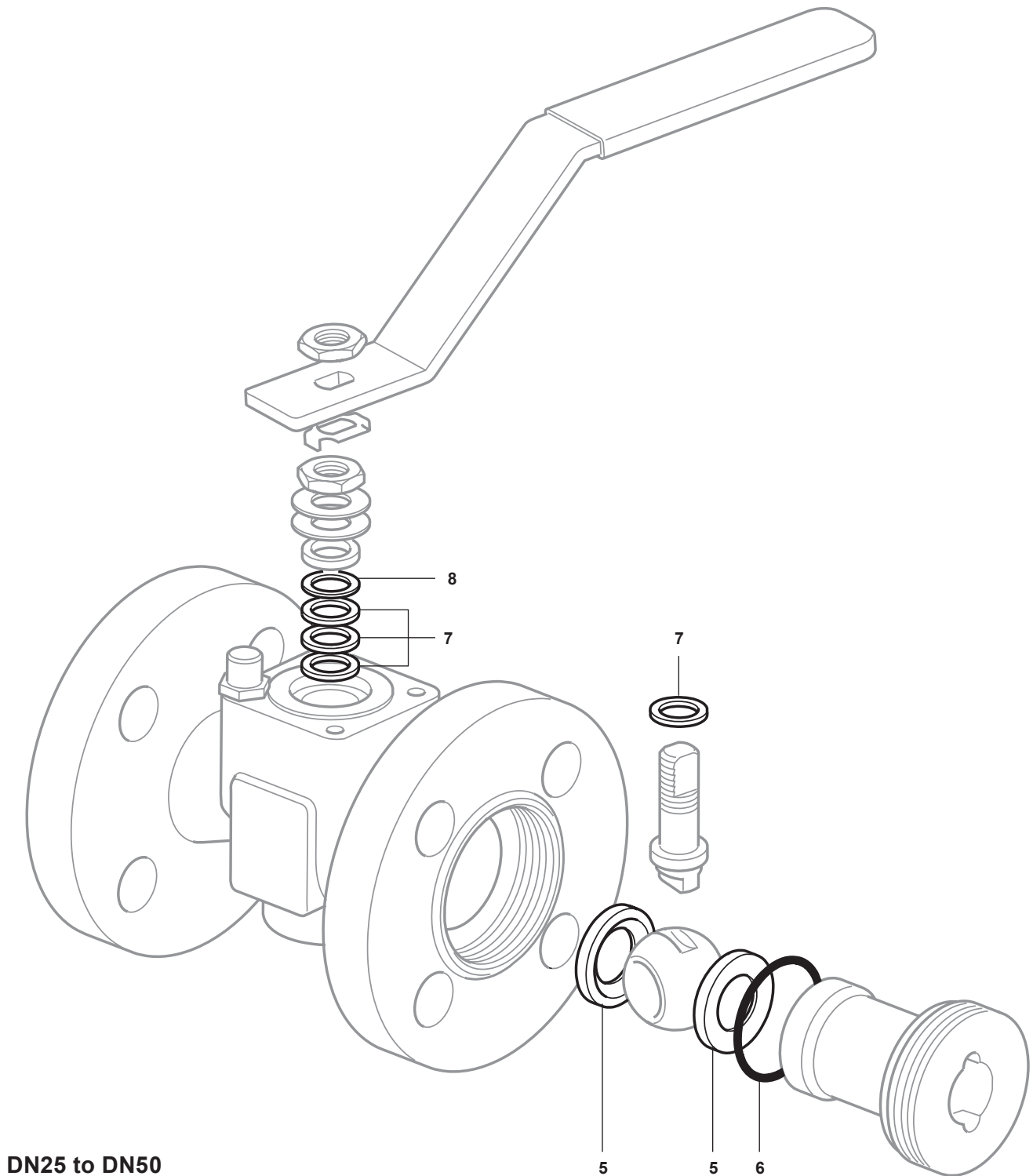
Seats, insert 'O' ring and stem seals

5, 6, 7, 8

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, insert 'O' ring and stem seals for a Spirax Sarco DN50 flanged PN40 M21Ti2 ball valve.



DN25 to DN50

DN65 to DN150 - Spare parts (see page 5 for sizes DN25 - DN50)

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

Available spares

Seats, insert 'O' ring, seat 'O' ring, stem 'O' ring, lower stem seal and upper stem packing

5, 6, 7, 8, 9, 10

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, insert 'O' ring, seat 'O' ring, stem 'O' ring, lower stem seal and upper stem packing for a Spirax Sarco DN80 flanged PN40 M21Ti2 ball valve.

