

PRODUCT DATA SHEET

Ramén KS Ball Sector Valve



Ramén Valves

We know the flow

DN25 up to DN300 | Wafer/flanged | PN 16/25/40 | Soft/metal seat



KS DN25



KS DN40/50



KS DN80-250



KS DN300

The Ramén KS Ball Sector Valve is a stainless steel, soft or metal seated, valve used for both control and isolating of liquids and gases.

The Ramén KS Ball Sector Valve is available in five different types: KS-1, KS-1A, KS-1B, KS-1C and KS-1E, in three different alloys: Stainless steel (EN 1.4409 / 316L), 254SMO (EN 1.4547) and titanium grade 2.

- Excellent throttling characteristic of liquids and gases
- Good resistance to abrasive flow
- Easy maintenance with quick exchange of seat ring
- Compact and easy installation
- Easy automation with ISO 5211 top flange and 100% backlash free coupling
- Self-draining

Description of the different Ramén KS types

Type	Areas of use	Typical applications
KS-1	Soft seated, used in industrial applications for clean and non-abrasive liquid or gas at moderate pressure, pressure drop and temperature.	Clean and non-abrasive liquids Clean water, oil and non-abrasive suspensions Gases and vapors Nitrogen (N ₂), oxygen (O ₂), natural gas, air etc.
KS-1A	Soft seated, recommended when media is slightly contaminated liquids, slurries or dry powder and where shut off tightness is required.	Fibre suspensions Condensate Waste water Chemicals Bio gas Tank bottom valve
KS-1B	Metal seated, used when handling abrasive media at moderate pressure and temperature. This configuration is also used for elevated velocity caused by high pressure drop.	Slurries Liquor (Green, white & black) Low pressure steam
KS-1C	Metal seated, same as model KS-1B but for applications with risk of incipient cavitation and/or for abrasive slurries.	Chemicals Water & waste water
KS-1E	Metal seated, same as model KS-1B but for applications with risk of full cavitation and/or for abrasive slurries.	Process water

Technical information	KS-1	KS-1A	KS-1B	KS-1C	KS-1E
Design	Flangeless, wafertype (size DN300 flanged)				
Nominal sizes	DN25 - DN300 1"-12"				
Body material	DN25 / 1" : 1.4432 (AISI 316L) - DN40 / 1.5" to DN300 / 12": 1.4409 (AISI 316L)				
Shaft material	DN25 / 1" : 1.4435 (AISI 329) - DN40 / 1.5" to DN300 / 12": 1.4460 (AISI 329)				
Ball Sector material	DN25 / 1" : 1.4435 (AISI 329) DN40 / 1.5" to DN300 / 12": 1.4409 (AISI 316L)	DN 25 / 1" : 1.4435 (AISI 329) + Exp (1) DN40 / 1.5" to DN300 / 12": 1.4409 (AISI 316L) + Exp (1)			
Seat material	PTFE (Carbon/graphite reinforced)		Stellite		Deep Stellite
Seat holding ring	DN 25 / 1" : 1.4432 (AISI 316L) DN40 / 1.5" to DN300 / 12": 1.4409 (AISI 316L)		DN25/1" : 1.4432 (AISI 316L) + Exp DN40/1.5" to DN300/12": 1.4409 (AISI 316L) + Exp ⁽¹⁾		
O-rings material	FKM				
Bearing material	PTFE				
Nominal pressure DN 40 - DN 50 DN 80 - DN 100 DN 150 - DN 250 DN 300	PN 40 (for flange PN 10/40 and ANSI 150/300) PN 25 (for flange PN 10/25 and ANSI 150/300) PN 16 (for flange PN 10/16 and ANSI 150) PN 16 (Flanged PN 16 or ANSI 150)				
Vacuum	Suitable for full vacuum				
Operating temperature	-30°C to 200° -22°F to 392°F (broader temperature range depending on seat and sealing material, see below)				
Seat leakage class according to (EN60534-4)	VI		IV		
Shell test according to (EN12266-1)	No leakage detectable				
Characteristic	Equal percentage				
Rangeability	Up to 300:1				
Certificates and approvals	<p>CE marked acc. to PED 2014/68/EU, Category II, Module D1</p> <p>ATEX according to directive 2014/34/EU. Fugitive emission standards acc. to ISO 15848-1 and VDI 2440 (TA-luft).</p> <p>Fulfills FDA regulation and EC declaration 2023/2006 and 1935/2004 for articles intended to come in contact with food.</p>				
O-rings options	EPDM70, EPDM90SR, FFKM, Vitoflon				
Alloy steels options	254SMO (1.4547), Titanium Gr.2				
Seat options	White PTFE, PEEK				

⁽¹⁾ SuperExpanite®

Seat- and o-ring temperatures							
Material	FKM (Standard)	EPDM70	FKM V76F	FFKM	Vitoflon	PTFE	Stellite
Min tempera-	-25°C (-13°F)	-40°C (-40°F)	-15°C (-5°F)	-40°C (-40°F)	-40°C (-40°F)	-40°C (-40°F)	-40°C (-40°F)
Max tempera-	200°C (392°F)	150°C (302°F)	250°C (482°F)	250°C (482°F)	205°C (401°F)	200°C (392°F)	250°C (482°F)
Typical application	Water, hot water, oil, air	Low temperature applications	Steam	Corrosive chemicals	Corrosive chemicals	Non abrasive applications	Abrasive applications

Pressure and temperature limits

Temperature related max working pressure in bar for material stainless steel EN 1.4409 and 254SMO EN 1.4547

	-40°C [bar]	+20°C [bar]	+50°C [bar]	+75°C [bar]	+100°C4 [bar]	+150°C [bar]	+200°C [bar]	+250°C [bar]
EN 1.4409								
PN10	10	10	9	8,5	8	7,5	7	7
PN16	16	16	14,5	13,5	13	12	11,5	11
PN25	25	25	23	21,5	20,5	19	18	17,5
PN40	40	40	37	35	33	31	29	28
EN 1.4547								
PN10	10	10	10	10	10	9,2	8,3	7,8
PN16	16	16	16	16	16	14,8	13,3	12,5
PN25	25	25	25	25	25	23,1	20,7	19,5
PN40	40	40	40	40	40	36,9	33,2	31,3

Max differential pressure vs temperature

Valve size	Max recommended differential pressure				
	Seat of PTFE			Seat of Stellite	
DN	0-80°C [bar]	120°C [bar]	150°C [bar]	0-80°C [bar]	200°C [bar]
25-50	25	6	1	25	25
80-100	16	6	1	16	16
150-250	16	6	1	16	12
300	10	6	1	10	8

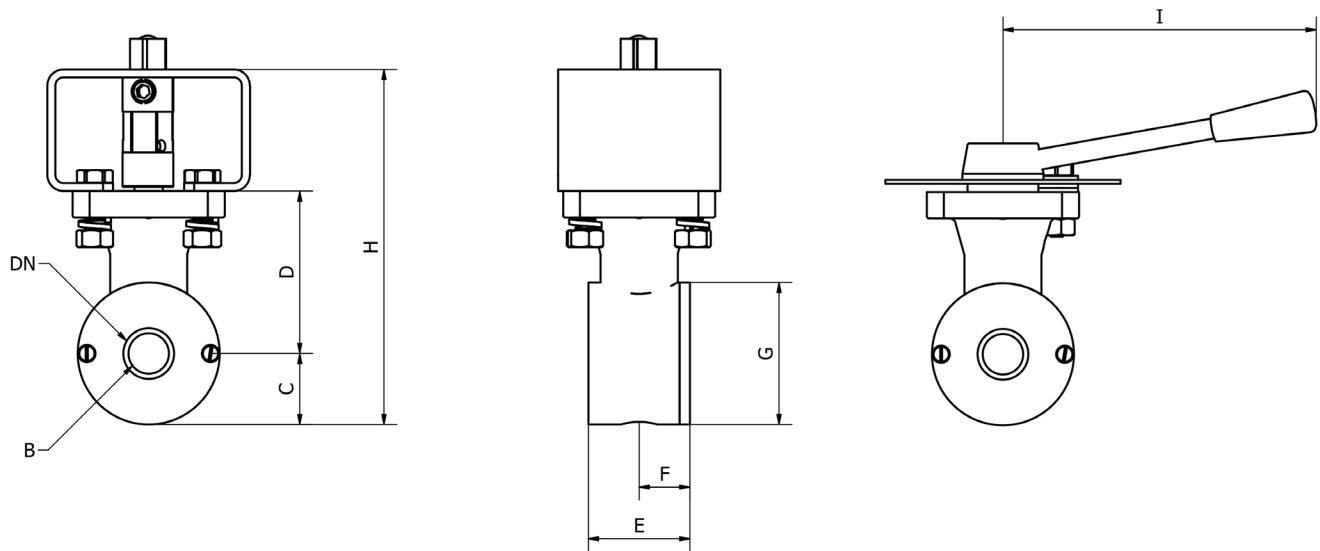
Above values are guidelines only for normal throttling control and shut off with clean media. For applications involving rapidly cycling pressure and temperature conditions there is sometimes necessary to apply an extra safety factor.

Pressure recovery factor FL⁽¹⁾

Factor FL	Opening in percent						
	5%	10%	20%	40%	60%	80%	100%
	0,9	0,88	0,85	0,77	0,67	0,62	0,60

⁽¹⁾ Liquid pressure recovery factor

KS DN25



Dimensions KS DN25

DN	B Bore [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	Weight [kg]	Top mounting flange* (EN-ISO 5211)
25	See table "Valve data"	35	80	50	25	70	175	160	3,2	F05/F07, D14*

* D17 available on request

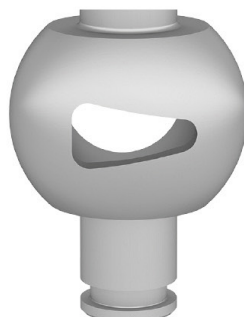
Valve data KS DN25

Size	25/0,03	25/0,3	25/0,7	25/1,3	25/2,5	25/5	25/10	25/15	25/20
K_{vs} [m ³ /h]	0,025	0,25	0,6	1,1	2,1	5	7,5	12,5	21
C_v [gpm]	0,03	0,3	0,7	1,3	2,5	5,8	9	15	25
Closed	0-18°	0-18°	0-18°	0-18°	0-18°	0-30°	0°	0-25°	0°
Flow control	18-90°	18-90°	18-90°	18-90°	18-90°	30-90°	0-90°	25-90°	0-90°
Bore [mm]	Triangle shaped groove					Triangle shaped bore		15	19
Characteristic	Percentage characteristic					Modified equal percentage		Equal percentage	
Actuator torque [Nm] Recommended ⁽¹⁾ Max.						20-50 100			

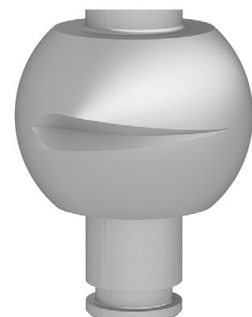
⁽¹⁾ The lower value of the torque range can be used for on-off applications for clean media at normal temperatures. The higher value of the torque range shall be used for pneumatic actuators with positioner when high control accuracy is needed or for dirty/sticky media. Indicated torques values include safety factor, on valve's break away torque, which is at least x2.



KS25/20
Circular opening

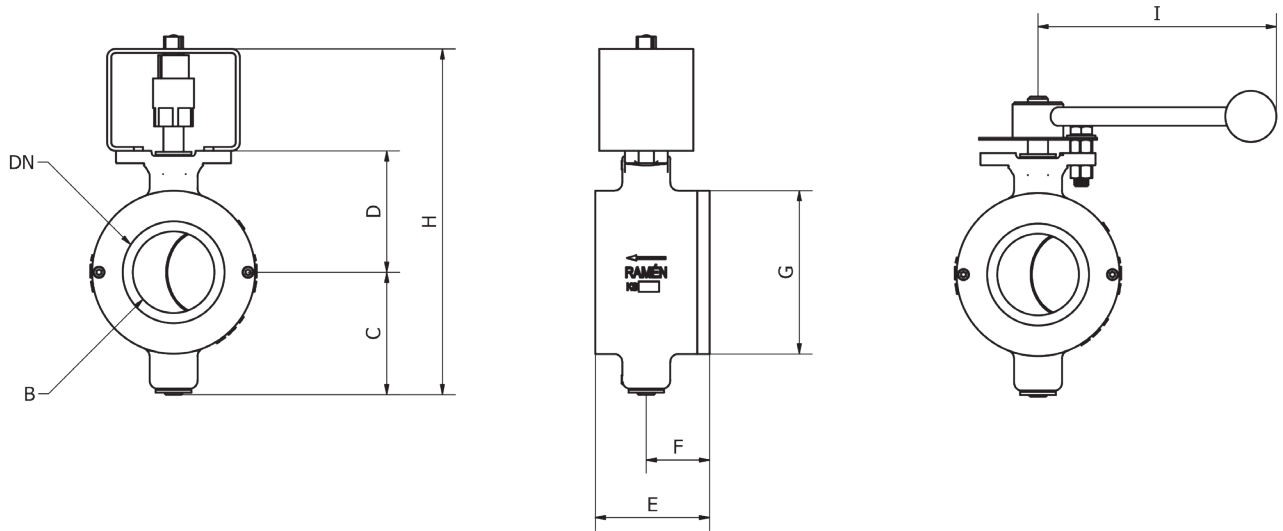


KS25/5
Triangle shaped bore



KS25/0,3
Triangle shaped groove

KS DN40 to DN300



Dimensions KS DN40 to DN300

DN	40	50	80	100	150	200	250	300
B Bore [mm]	25 / 32	40	64	80	120	150	195	250
C [mm]	95	95	107	118	167	188	233	310
D [mm]	95	95	107	118	167	188	233	310
E [mm]	71	71	95	112	170	210	270	368
F [mm]	38	38	55	62	95	120	150	198
G [mm]	94	94	140	160	220	274	330	460
H [mm]	250	250	315	337	454	503	561	710
I [mm]	160	160	290	290	370	370	N.A. ⁽¹⁾	N.A. ⁽¹⁾
Weight [kg]	4	4	8	12	25	38	67	170
Top mounting flange acc. to (EN-ISO 5211) ⁽²⁾	D14 or ⁽³⁾ D17 F05 & 07	D14 or ⁽³⁾ D17 F05 & 07	D17 or ⁽³⁾ D22 F07 & F10	D17 or ⁽³⁾ D22 F07 & F10	D22 or ⁽³⁾ D27 F10 & F12	D22 or ⁽³⁾ D27 F10 & F12	D27 F10 & F12	D36 F14

⁽¹⁾ Gear boxes available on request

⁽²⁾ D refers to diagonal square size & F refers to hole pattern.

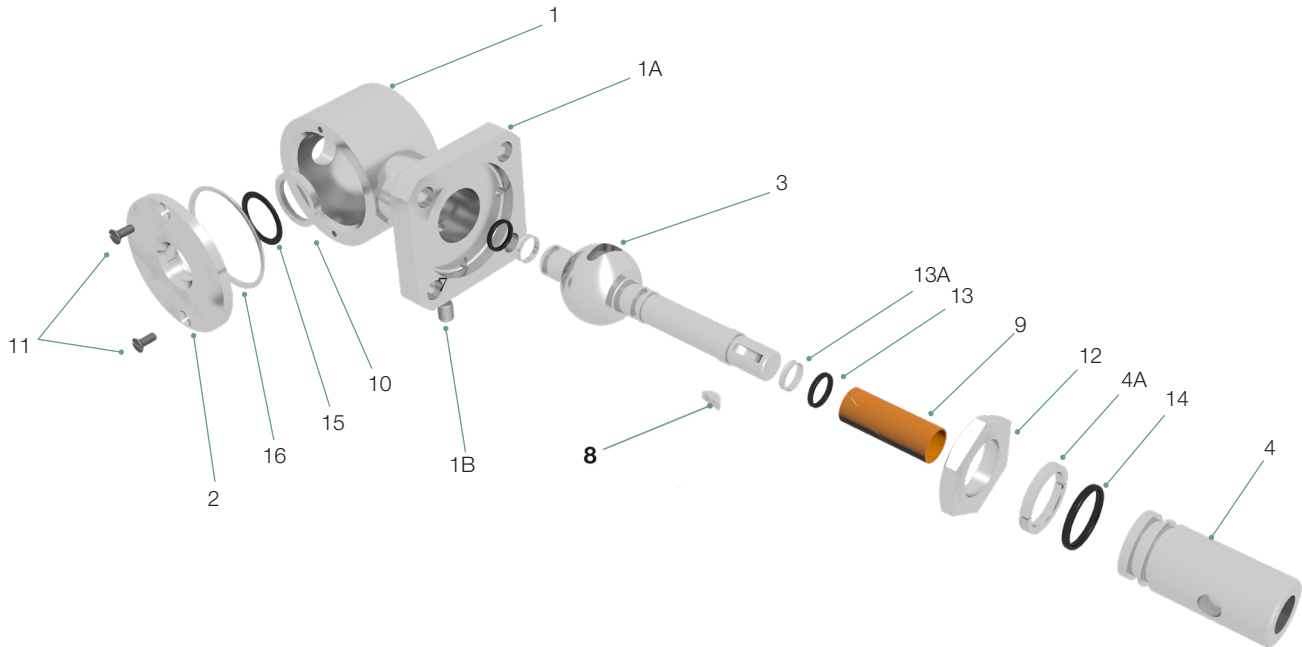
⁽³⁾ Optional

Technical specifications KS DN40 to DN300

DN	40	50	80	100	150	200	250	300	
Kvs [m ³ /h]	34 / 64	94	255	390	810	1365	2220	3840	
Cv [gpm]	40 / 75	110	300	460	950	1600	2600	4500	
Actuator torque [Nm]	Recommended ⁽¹⁾	30-90	30-90	80-200	80-200	160-400	160-400	250-600	700-1200
	Max.	100	100	200	200	400	400	700	2000
Rotation angle	30°-90° / 20°-90°	0°-90°	0°-90°	0°-90°	0°-90°	0°-90°	0°-90°	0°-90°	

⁽¹⁾ The lower value of the torque range can be used for on-off applications for clean media at normal temperatures. The higher value of the torque range shall be used for pneumatic actuators with positioner when high control accuracy is needed or for dirty/sticky media. Indicated torques values include safety factor, on valve's break away torque, which is at least x2.

Exploded view DN 25



Parts list DN 25

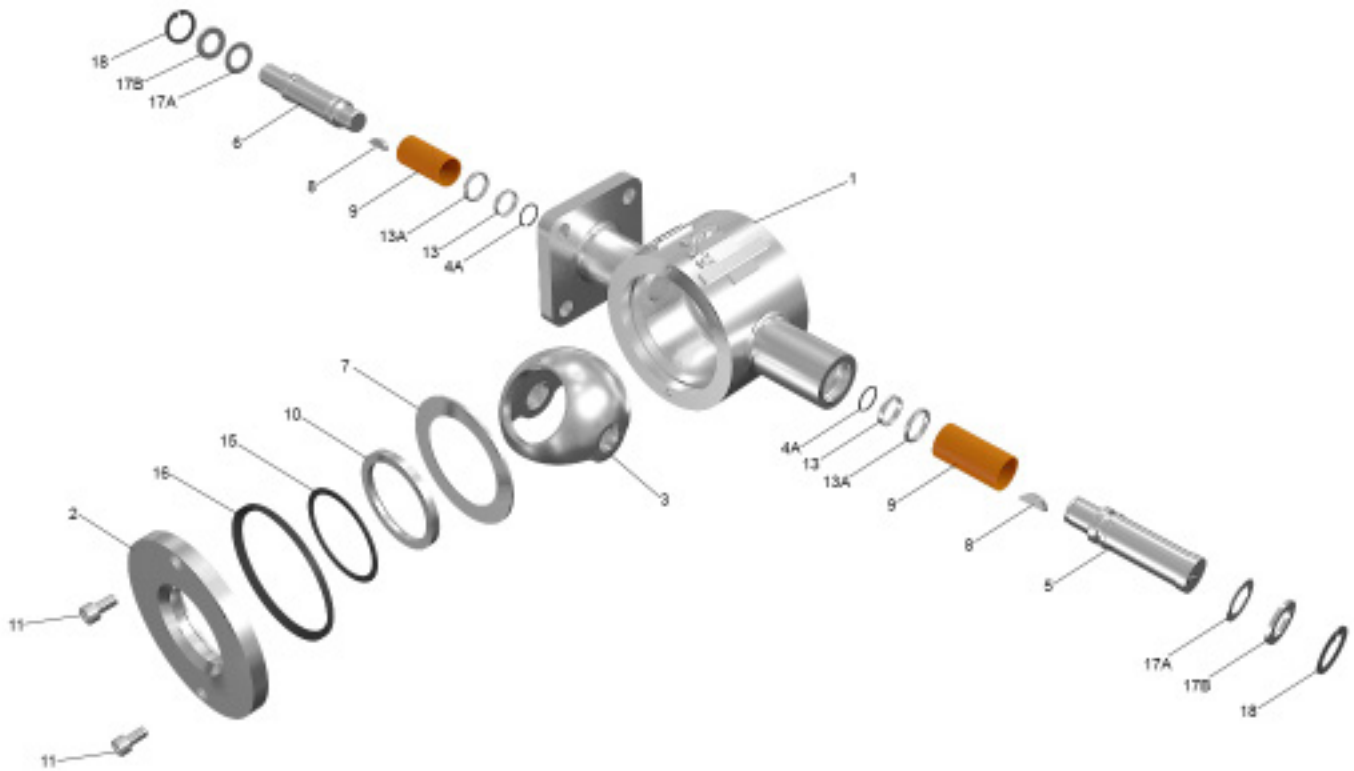
Part	QTY	Name	Material
1	1	Body	EN 1.4432 (AISI 316L)
1A	1	Flange	EN 1.4432 (AISI 316L)
1B	1	Grub screw	EN 1.4409 (AISI 316L)
2	1	Seat holding ring	EN 1.4432 (AISI 316L) SuperExpanite® (model 1C, 1E)
3	1	Ball sector & shaft	EN 1.4435 (AISI 316L) SuperExpanite® (model 1A, 1B, 1C, 1E)
4	1	Bearing sleeve	EN 1.4460 (AISI 329)
4A	1	Split ring	EN 1.4460 (AISI 329)
8	1	Woodruff key	EN 1.4460 (AISI 329)
9	1	Bearing	PTFE
10	1	Seat ring	Carbon reinforced PTFE (model 1, 1A) Stellite (model 1B, 1C) Deep Stellite (1E)
11	2	Screw	EN 1.4409 (AISI 316L)
12	1	Grub screw	EN 1.4409 (AISI 316L)
13	2	O-ring	FKM
13A	2	Sliding ring	PTFE
14	1	O-ring	FKM
15	1	O-ring	FKM
16	1	O-ring	FKM

All materials acc. to standard configuration. Please contact Ramén Valves for order specific materials.

Standard spare part kit

Part	Name
9	Shaft bearing
10	Seat ring
13A	Sliding ring
13, 14, 15, 16	O-rings

Exploded view DN 40/50



Parts list DN 40/50

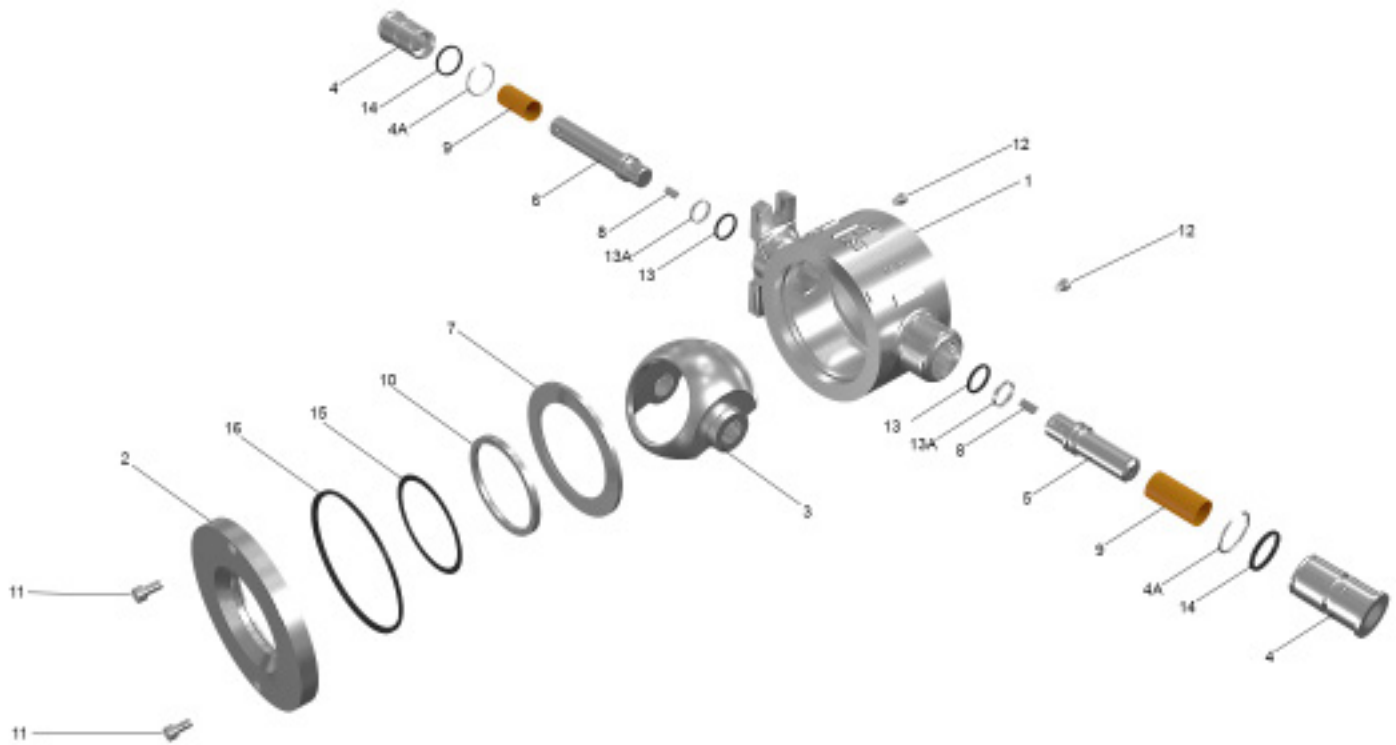
Part	QTY	Name	Material
1	1	Body	EN 1.4409 (AISI 316L)
2	1	Seat holding ring	EN 1.4409 (AISI 316L) SuperExpanite® (model 1C, 1E)
3	1	Ball sector	EN 1.4409 (AISI 316L) SuperExpanite® (model 1A, 1B, 1C, 1E)
4	2	Bearing sleeve	EN 1.4460 (AISI 329)
4A	2	Safety ring	EN 1.4409 (AISI 316L)
5	1	Shaft	EN 1.4460 (AISI 329)
6	1	Shaft	EN 1.4460 (AISI 329)
7	1	Seat support ring	EN 1.4409 (AISI 316L)
8	2	Key	EN 1.4460 (AISI 329)
9	2	Bearing	PTFE
10	1	Seat ring	Carbon reinforced PTFE (model 1, 1A) Stellite (model 1B, 1C) Deep Stellite (model 1E)
12	2	Grub screw	EN 1.4409 (AISI 316L)
13	2	O-ring	FKM
13A	2	Sliding ring	PTFE
14	2	O-ring	FKM
15	1	O-ring	FKM
16	1	O-ring	FKM
19	1	Clamp ring	EN-GJS-400
20	3	Screw	C.St. Zn.PI.
21	3	Nut	Stainless steel

All materials acc. to standard configuration. Please contact Ramén Valves for order specific materials.

Standard spare part kit

Part	Name
9	Shaft bearing
10	Seat ring
13A	Sliding ring
13, 14, 15, 16	O-rings

Exploded view DN 80-250



Parts list DN 80-250

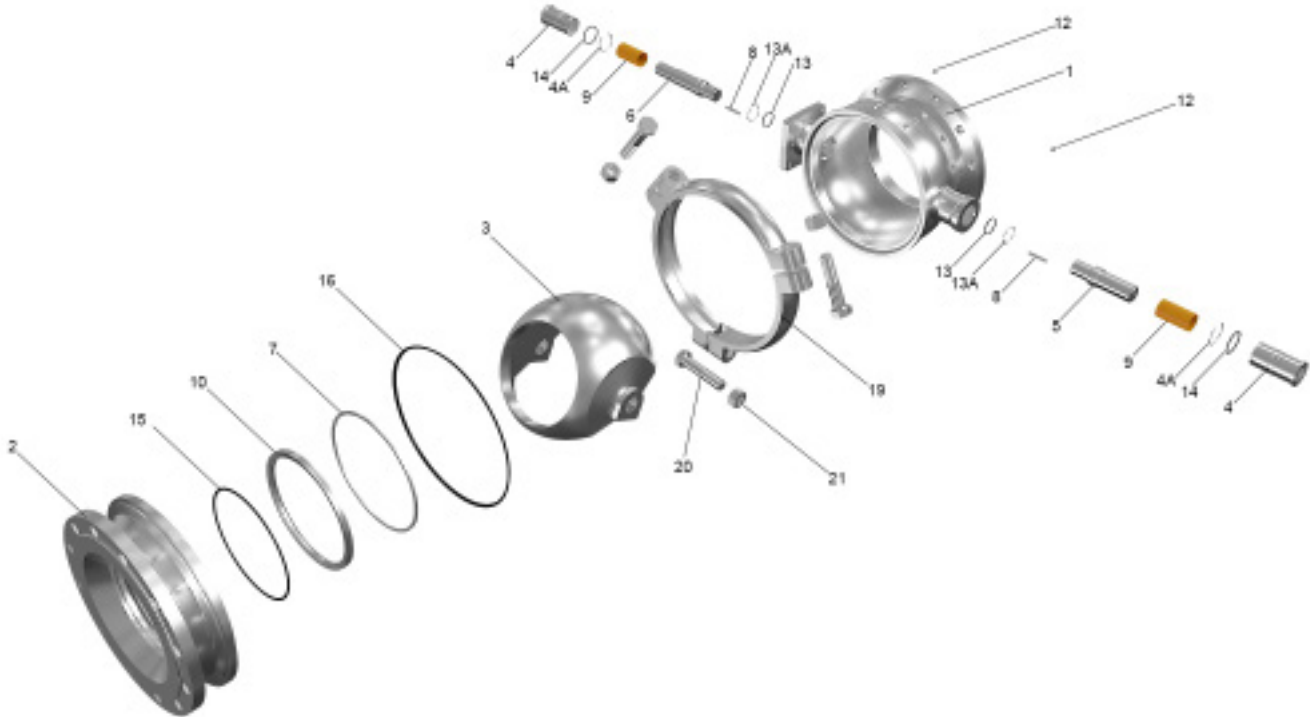
Part	QTY	Name	Material
1	1	Body	EN 1.4409 (AISI 316L)
2	1	Seat holding ring	EN 1.4409 (AISI 316L) SuperExpanite® (model 1C, 1E)
3	1	Ball sector	EN 1.4409 (AISI 316L) SuperExpanite® (model 1A, 1B, 1C, 1E)
4	2	Bearing sleeve	EN 1.4460 (AISI 329)
4A	2	Safety ring	EN 1.4409 (AISI 316L)
5	1	Shaft	EN 1.4460 (AISI 329)
6	1	Shaft	EN 1.4460 (AISI 329)
7	1	Seat support ring	EN 1.4409 (AISI 316L)
8	2	Key	EN 1.4460 (AISI 329)
9	2	Bearing	PTFE
10	1	Seat ring	Carbon reinforced PTFE (model 1, 1A) Stellite (Model 1B, 1C) Deep Stellite (Model 1E)
12	2	Grub screw	EN 1.4409 (AISI 316L)
13	2	O-ring	FKM
13A	2	Sliding ring	PTFE
14	2	O-ring	FKM
15	1	O-ring	FKM
16	1	O-ring	FKM
19	1	Clamp ring	EN-GJS-400
20	3	Screw	C.St. Zn.Pl.
21	3	Nut	Stainless steel

All materials acc. to standard configuration. Please contact Ramén Valves for order specific materials.

Standard spare part kit

Part	Name
9	Shaft bearing
10	Seat ring
13A	Sliding ring
13, 14, 15, 16	O-rings

Exploded view DN 300



Parts list DN 300

Part	QTY	Name	Material
1	1	Body	EN 1.4409 (AISI 316L)
2	1	Seat holding ring	EN 1.4409 (AISI 316L) SuperExpanite® (model 1C)
3	1	Ball sector	EN 1.4409 (AISI 316L) SuperExpanite® (model 1A, 1B, 1C)
4	2	Bearing sleeve	EN 1.4460 (AISI 329)
4A	2	Safety ring	EN 1.4409 (AISI 316L)
5	1	Shaft	EN 1.4460 (AISI 329)
6	1	Shaft	EN 1.4460 (AISI 329)
7	1	Seat support ring	EN 1.4409 (AISI 316L)
8	2	Key	EN 1.4460 (AISI 329)
9	2	Bearing	PTFE
10	1	Seat ring	Carbon reinforced PTFE (model 1, 1A) Stellite (Model 1B, 1C)
12	2	Grub screw	EN 1.4409 (AISI 316L)
13	2	O-ring	FKM
13A	2	Sliding ring	PTFE
14	2	O-ring	FKM
15	1	O-ring	FKM
16	1	O-ring	FKM
19	1	Clamp ring	EN-GJS-400
20	3	Screw	C.St. Zn.PI.
21	3	Nut	Stainless steel

Standard spare part kit

Part	Name
9	Shaft bearing
10	Seat ring
13A	Sliding ring
13, 14, 15, 16	O-rings

All materials acc. to standard configuration. Please contact Ramén Valves for order specific materials.

Ordering code

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
KS	50	1	A	xK	K	T								

I	Model code
KS	Ball Sector valve/soft or metal seat with shaft/seat O-rings, wafered type (size DN300 in flanged)

II	Nominal Size/ trim size
i.e. DN25/03	25/0,03
	...
DN100	100
	...
DN300	DN300

III	Body and ball sector material
1	AISI316L (EN 1.4409)
5	Titanium grade 5
11	254SMO (EN1.4547)
4G	Body in ductile iron lined with Polyurethane (PUR) and natural rubber (NR) lined ball sector (EN GJS-400-15)

IV	Seat/ wetted part- material combination
-	Seat ring: PTFE, Ball Sector: EN 1.4409
A	Seat ring: PTFE, Ball Sector: AISI 316L+Exp
B	Seat ring: stellite, Ball Sector: AISI 316L+Exp
C	Seat ring: stellite, Ball Sector: AISI 316L+Exp, Seat holding ring: Exp
E	Seat ring: Deep stellite, Ball Sector: AISI 316L+Exp, Seat holding ring: Exp
F	Seat ring: Peek, Ball Sector: EN 1.4409+Exp

V	Shaft sealing O-ring (item 13/14)*	ref. to table α
VI	Seat back-up O-ring (item 15)*	ref. to table α
VII	Sealing between inlet cover ring and body (item 16)*	ref. to table α

Position III and IV are combined, e.g., 1A.

*If same material for all, please use one code for V,VI,VII (e.g. EPDM 70 peroxide for all V, VI,VII, coding will be xP)

Sealing material	FKM	EPDM 70	EPDM 90	FFKM	Vitoflon	FFKM Perlast	V75SR
Code	-	P	F	K	T	R	V

VIII	Pressure class
PN40	DN25-50
PN25	DN80-100
PN16	DN150-300



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