

# BALL VALVE

## AL 33-K

### Description

AL 33-K is a three-piece steel ball valve with full or reduced bore and mounting plate according to ISO 5211. Body in forged material and free-floating ball. Modified PTFE + CG (TFM1600+CG) for higher temperature and pressure. The valve is Fire Safe and has a self-adjusting packing with an exhaust-safe stem.

**Applications:** Shut off valve for simple to very demanding applications with neutral to aggressive fluids and gases.

### Approvals

- CE/PED 2014/68/EU
- ATEX 2014/34/EU
- Certificate Fire Safe
- SIL 3 Capable
- NACE MR 0175

### Installation

The valve can be installed in horizontal and vertical lines. The valve is maintenance free but should be operated at regular intervals depending on the installation. See separate manual for further instructions.



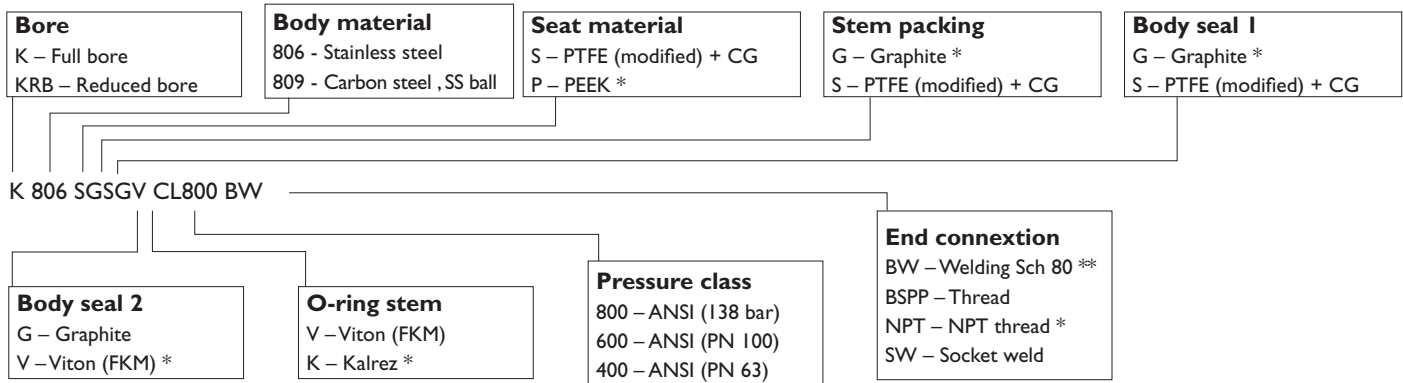
### Carbon steel

<b>AL 33-K</b>	DN 8-40	Class 800	Full bore
	DN 50-65	Class 600	
	DN 80	Class 400	
<b>AL 33-KRB</b>	DN 15-50	Class 800	Reduced bore
	DN 65-80	Class 600	
	DN 100	Class 400	

### Stainless steel

<b>AL 33-K</b>	DN 8-40	Class 800	Full bore
	DN 50-65	Class 600	
	DN 80	Class 400	
<b>AL 33-KRB</b>	DN 15-50	Class 800	Reduced bore
	DN 65-80	Class 600	
	DN 100	Class 400	

### Ordering key



\* Optional, not standard

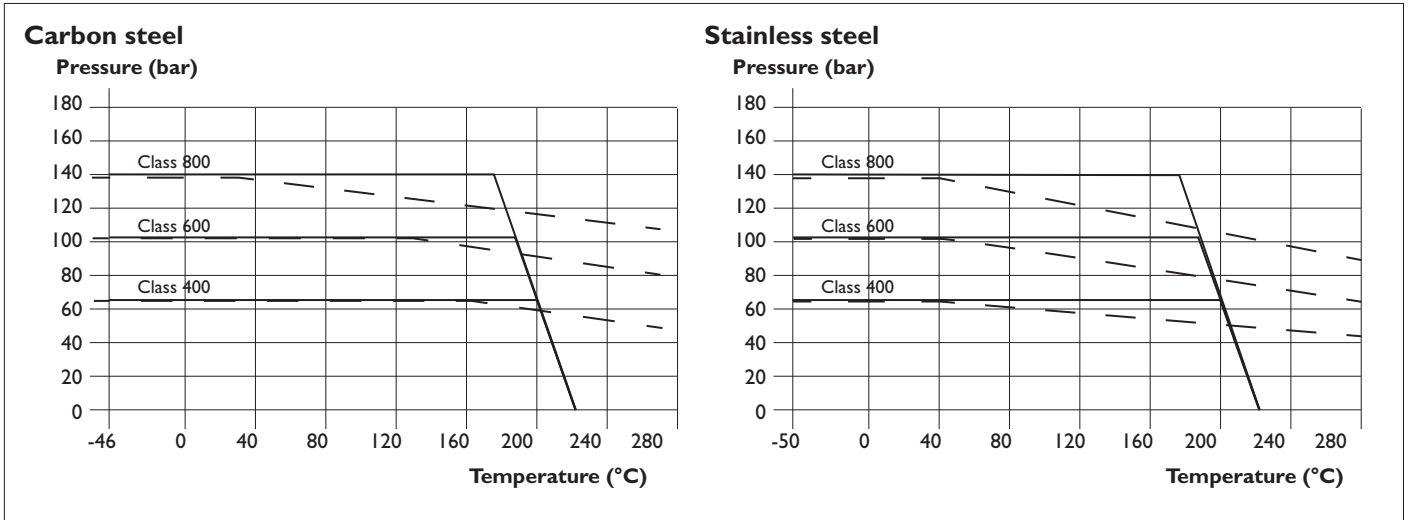
\*\* Some sizes is only available in Sch 40

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### Pressure / Temperature

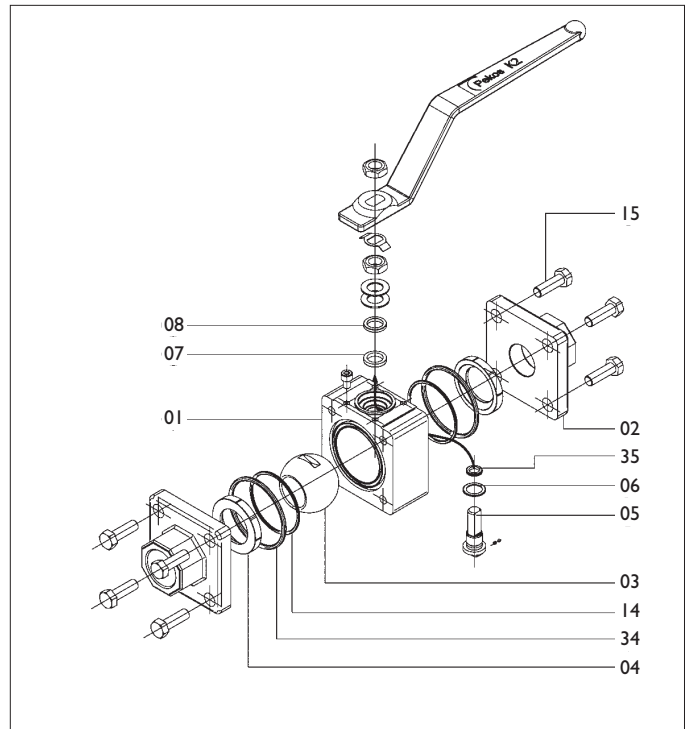
Seat- and packing material: — SGSGV or SGGVV



### Material specification

No	Qty	Part	Material	
			K809 SGSGV KRB809 SGSGV	K806 SGSGV KRB806 SGSGV
01	1	Body 1	A350 LF2/A105	A182 F316/316L
02	2	Body 2	A350 LF2/A105	A182 316L
03	1	Ball	AISI 316	
• 04	2	Seats	(S) PTFE (modified) + CG	
05	1	Stem	AISI 316	
06	1	Stem seals	(S) PTFE (modified) + CG	
07	1	Packing ring	(G) Graphite	
08	1	Gland Packing	AISI 316	
• 14	2	Body seal 1	(S) PTFE (modified) + CG	
15	8-12-16	Body bolt	A320 L7M	A193 B8MA
• 34	2	Body seal 2	(G) Graphite	
• 35	1	Oring stem	Viton® (V) (FKM)	

Other material on request. • Included in packing kit



**4+4 bolts** Full bore DN 8-20  
and reduced bore DN 15-25.



**4+4 bolts** Full bore DN 25-40  
and reduced bore DN 32-50.



**6+6 bolts** Full bore DN 50-65  
and reduced bore DN 65-80.

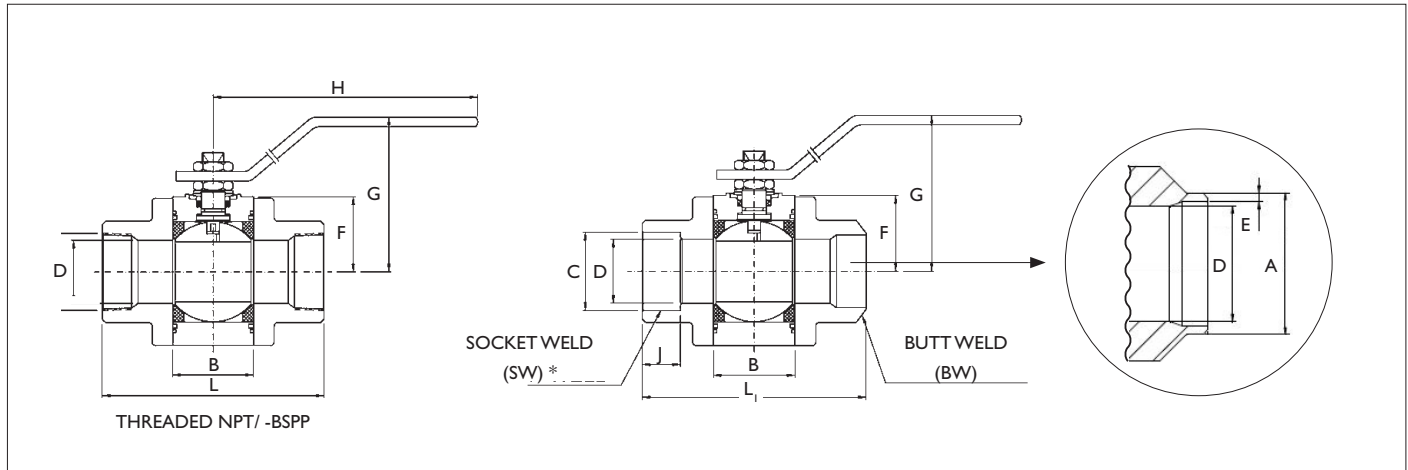


**8+8 bolts** Full bore DN 80  
and reduced bore DN 100.

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### Dimensions



### Full bore

DN	Class	A	B	C	D	E (Schedule 80)	F	G	H	J (min)	L	L <sub>1</sub>	Kv value (m <sup>3</sup> /h)	Weight (kg)
8	800	13,7	19	14,5	11	2,41	31	82	145	9,5	75	75	9	1,0
10		17,1	19	18	11	3,02	31	82	145	9,5	75	75	10	1,0
15		21,3	21	22	15	3,73	34	85	145	9,5	80	80	20	1,2
20		26,7	28	27,5	21	3,91	39	101	180	12,5	100	100	44	2,2
25		33,4	37	34	25	4,55	38	105	180	12,5	110	110	88	3,1
32		42,2	44	43	32	4,85	41	108	180	12,5	120	120	78	4,5
40		48,3	51	49	38	5,08	47	110	233	12,5	140	140	200	5,5
50	600	60,3	60	61,5	49	5,54	58	119	233	16	142	191	310	10,0
65		73	72	74	62	7,01	70	143	425	16	170	210	480	13,5
80	400	88,9	72	90	76	7,62	88	170	425	16	305	305	960	17,5

### Reduced bore

DN	Class	A	B	C	D	E (Schedule 80)	F	G	H	J (min)	L	L <sub>1</sub>	Kv value (m <sup>3</sup> /h)	Weight (kg)
15	800	21,3	19	22	11	3,73	31	82	145	9,5	75	75	10	1,0
20		26,7	21	27,5	15	3,91	34	85	145	9,5	80	80	20	1,2
25		33,4	28	34	21	4,55	39	101	180	12,5	100	100	44	2,2
32		42,2	37	43	25	4,85	38	105	180	12,5	110	110	88	3,1
40		48,3	44	49	32	5,08	41	108	180	12,5	120	120	78	4,5
50		60,3	51	61,5	38	5,54	47	110	233	12,5	140	140	200	5,5
65	600	73	60	74	49	7,01	58	119	233	16	142	191	310	10,0
80		88,9	72	90	62	7,62	70	143	425	16	170	210	480	13,5
100	400	114,3	72	115,5	76	8,56	88	170	425	16	305	305	960	16,0

\* Optional, not standard

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### Torque table

Ventilstorlek		Nm	Nm 30% safety factor at different pressures (bar)					Media dimensioned for 16 bar water with 30% safety factor supply air 6 bar				
		* Measured with execution SGGVV (PTFE + CG) roomtempered water										
DN Full bore	DN Reduced bore	Opening Torque / moment of rotation DP = 0	PN16	PN40	Class 400 PN 63	Class 600 PN 100	Class 800 (138bar)	AL 77		AL 78	AL79	
								DA	SR		DA	SR
8	–	6/5	10	10	10	12	12	210-DA	210-SR	AL78-003	045U-DA	101U-SR
10	15	6/5	10	10	10	12	12	210-DA	210-SR	AL78-003	045U-DA	101U-SR
15	20	8/7	12	13	13	14	16	210-DA	210-SR	AL78-003	045U-DA	101U-SR
20	25	12/10	20	21	21	22	23	210-DA	220-SR	AL78-003	051U-DA	201U-SR
25	32	18/15	29	29	30	31	33	210-DA	220-SR	AL78-003	101U-DA	201U-SR
32	40	22/19	31	33	34	36	39	210-DA	220-SR	AL78-005	101U-DA	251U-SR
40	50	24/21	35	38	40	40	46	210-DA	220-SR	AL78-005	101U-DA	251U-SR
50	65	31/28	46	59	82	101	–	220-DA	230-SR	AL78-005	201U-DA	301U-SR
65	80	37/33	52	85	101	118	–	220-DA	230-SR	AL78-006	201U-DA	301U-SR
80	100	60/55	85	104	156	–	–	230-DA	240-SR	AL78-009	251U-DA	351U-SR

\* Material coefficients for moment: PEEK 1,20 PTFE 0,8 PTFE + CG 1,00

### Mounting plate ISO 521 I

DN		ISO 521 I	X	V	Z	Y	Nm
Full	Reduced						
8	–	F03	5,5	M10X1	9	7	17
10	15					7	
15	20				8		
20	25	F04	7,5	M12X1,25	15	13	34
25	32				20	14	
32	40	F05	9	M15X1,5	28	21	65
40	50				28	18	
50	65				24	16	
65	80	F07	16	M22X1,5	31	22	234
80	100				18	M24X2	

#### Adjusting torques for different applications

##### Media factors:

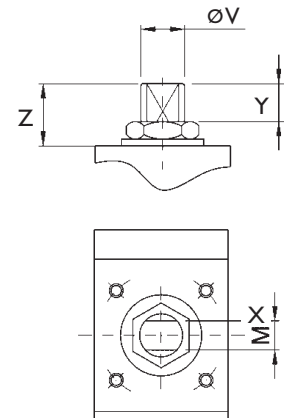
Degreased, particles & dirty gases = 1,2  
Steam = 1,3

##### Service factors:

1 time/day = 1,0  
1 time/week = 1,2  
1 time/month = 1,5

##### Media- and service factors are counted together. Example:

Steam + 1 time/month  
(0,3 + 0,5 + 1 = 1,8) x torque in table above.



### Optional

- Other seat materials, for example PEEK
- Stem extension
- Lockable hand lever
- Electric or pneumatic actuator
- Flange connection