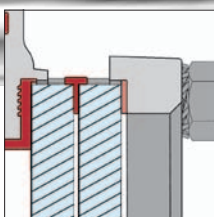
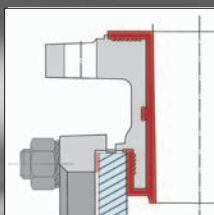


Richter Lined 2- and 3-way Sight Glasses

PSG, TSG, SGS, SR



Corrosion-resistant
PFA and PTFE lining

Indication of flow even at
very low flow rates

Optionally with integrated
check valve



RICHTER
Process Pumps & Valves

IDEX
FLUID & METERING

Richter Lined 2- and 3-way Sight Glasses

Observation of flow, filling level, condition, colour and gas contents of liquids in pipes and vessels and near pumps.

Richter sight glasses are designed

- for media where stainless steel and plastics such as PVC, PP, PVDF etc. are not adequately corrosion-resistant
- as alternative to valves made of special metals (Hastelloy, Monel, tantalum etc.) and to glass-lined valves
- for pure and slightly solids-laden media
- for metal-reactive media, e.g. H_2O_2
- for pure media where good cleaning possibilities and anti-adhesive surfaces are important.

Operating range

Depending on design and material

- -75 to 400 °F (-60 to 200 °C), series SGS max. 300 °F (150 °C)
- vacuum to 235 psi (16 bar), series SGS max. 87 psi (6 bar)
- horizontal to vertical installation

Product features

- Series PSG +TSG: very sturdy design, ductile cast iron with thick-walled lining
- Face-to-face lengths to ISO 5752 basic series 1 (DIN EN 558-1, basic series 1), SGS series additionally with face-to-face lengths up to 40" (1.000 mm) on request.
- Flange connecting dimensions: ISO 7005-2, shape B (DIN EN 1092-2, shape B), series PSG +TSG on request drilled to ASME (ANSI) Cl. 150
- Various other options, see page 5

Type codes for sight glasses

- | | |
|---------------------------------|---------|
| • 2-way design | PSG/... |
| • 3-way design | TSG/... |
| • 2-way cylindrical sight glass | SGS/... |

Lining

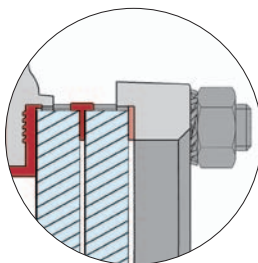
- | | |
|---|---------|
| • Perfluoroalkoxy (PFA) and
Polytetrafluoroethylene (PTFE) | .../F |
| • Antistatic PFA-L | .../F-L |

Other product features

- ① **Pressure-bearing shell made of ductile cast iron** ASTM A395 (EN-JS 1049) absorbs system and pipe forces.
- ② **Thick-walled lining made of virgin, pure PFA and PTFE**
 - Suitable for almost all media including corrosive, high-purity, hot and highly permeating media
 - Vacuum-resistant anchoring
 - Conductive lining optional
 - Universal use for a wide variety of media, also in multi-purpose and test plants
- ③ **Glass panes and cylinders**
 - Tempered borosilicate glass to DIN 7080
 - Large free field of vision
 - PSG+TSG series: sight glass panes and covers to DIN 3237-2, screwed individually to body
 - SGS series: cylindrical glass with all-round vision, optionally cavity-free for high-purity media
- ④ **Integrated drip lip with 1/2"-4" (DN 15-100)** also indicates very low flow rates.
- ⑤ **External corrosion protection**
Epoxy coating, nuts and bolts of stainless steel.
- ⑥ **Identification**
to ANSI B16.42, DIN EN 19
- ⑦ **European Pressure Equipment Directive**
The sight glasses are suitable for vapours, gases, liquids of group 1.

Options

- Double sight glass panes
- Lighting unit, e.g. for opaque media or poor lighting conditions
- Fluoroplastic coating of the wetted panes for greater chemical resistance

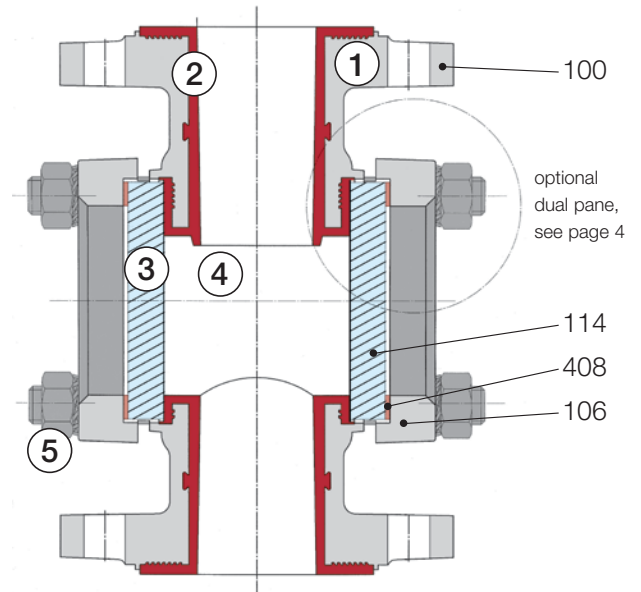
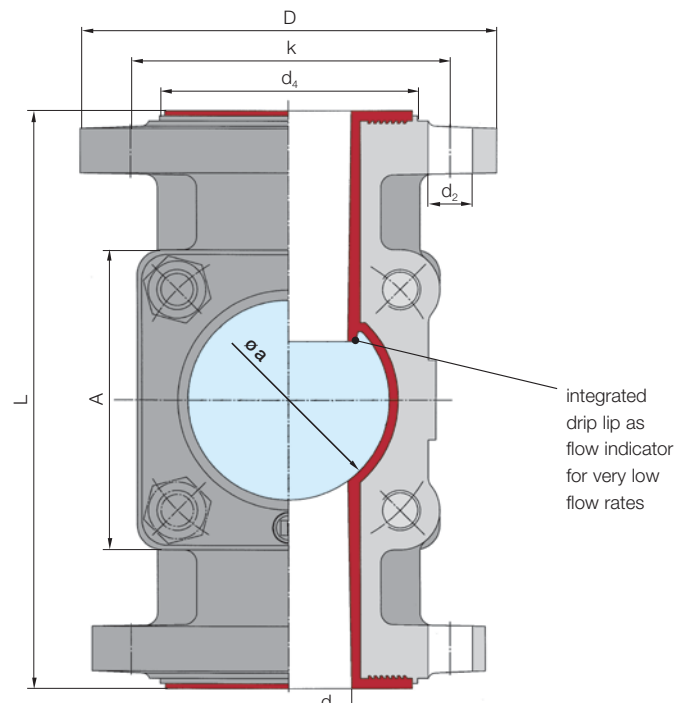


Double sight glass panes

2-way sight glass

PSG series

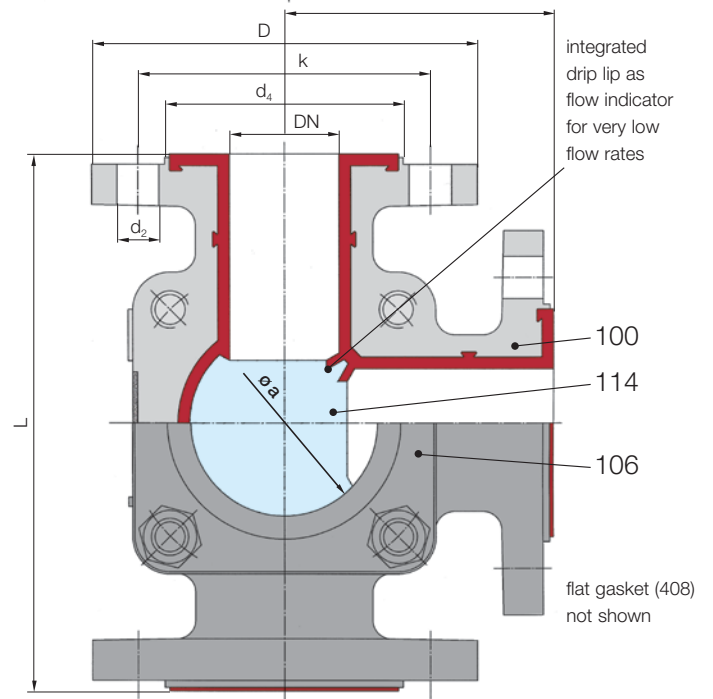
- 1"-6" (DN 25-150): PFA lining
- 8" (DN 200): PTFE lining, deviating design
- 10"+12" (DN 250+300): on request
- Antistatic lining optional



3-way sight glass

TSG series

- 1", 2" and 3" (DN 25, 50 and 80): PFA lining
- Antistatic lining optional



2-way cylindrical sight glass

SGS series

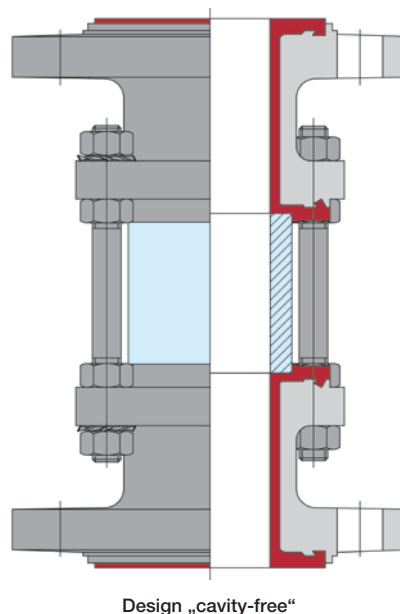
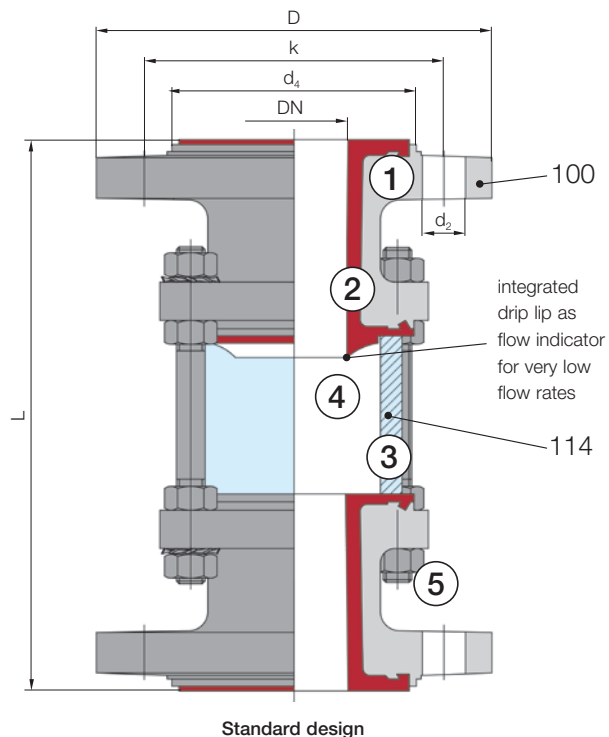
- 1/2"-4" (DN 15-100): PFA lining.
- Antistatic lining optional
- Max. 87 psi (6 bar), max. 300 °F (150 °C)
- Face-to-face lengths to ISO 5752, basic series 1 (DIN EN 558-1, basic series 1) and to customer's request up to appr. 40" (1.000 mm) on request
- Cylindrical glass PU coatings on the atmosphere side as protection against impacts, scratches and splintering (no protection against bursting, reduced transparency). T max. 285 °F (140 °C).



Optional „cavity-free“ design for pure and high-purity fluids e.g. in pharmaceutical and fine chemical applications.

On the wetted side the cylindrical glass evenly flushes with the valve lining. This prevents from residues and optimises cleanability.

Design „cavity-free“ goes without drip lip.



Dimensions, materials, weights, pressure/temperature diagram

Installation and connecting dimensions (mm)

inch	DN	L ⁶⁾		D		d ₄		k		nxd ₂		k		nxd ₂		a ¹⁾		b		A	
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
1/2"	15	5.12	130	3.74	95	1.77	45	2.38	60.5 ⁵⁾	4x1 1/2 ⁶⁾	4x1 1/2 ⁶⁾	2.56	65	4x0.55	4x14	—	—	—	—	—	—
3/4"	20	5.91	150	4.13	105	2.28	58	2.76	70	4x0.63	4x16	2.95	75	4x0.55	4x14	—	—	—	—	—	—
1"	25	6.3	160	4.53	115	2.68	68	3.13	79.5	4x0.63	4x16	3.35	85	4x0.55	4x14	1.89 ²⁾	48 ²⁾	3.15	80	3.35	85
1 1/4"	32	7.09	180	5.51	140	3.07	78	3.5	89	4x0.63	4x16	3.94	100	4x0.71	4x18	—	—	—	—	—	—
1 1/2"	40	7.87	200	5.91	150	3.46	88	3.88	98.5	4x0.63	4x16	4.33	110	4x0.71	4x18	2.56	65	—	—	4.33	110
2"	50	9.06	230	6.5	165	4.02	102	4.74	120.5	4x0.75	4x19	4.92	125	4x0.71	4x18	3.15	80	4.53	115	4.72	120
2 1/2"	65	11.42	290	7.28	185	4.72 ³⁾	120 ³⁾	5.49	139.5	4x0.75	4x19	5.71	145	4x0.71	4x18	3.15	80	—	—	ø6.89	ø175
3"	80	12.2	310	7.87	200	5.43	138	6	152.5	4x0.75	4x19	6.3	160	8x0.75	8x18	3.94	100	6.1	155	ø7.48	ø190
4"	100	13.78	350	8.86 ⁴⁾	225 ⁴⁾	6.22	158	7.5	190.5	8x0.75	8x19	7.09	180	8x0.75	8x18	4.92	125	—	—	ø8.27	ø210
6"	150	18.9	480	11.22	285	8.35	212	9.51	241.5	8x0.89	8x22.5	9.45	240	8x0.87	8x22	5.39	137	—	—	ø9.84	ø250
8"	200	on request, deviating design																			

1) free field of vision

2) series SGS: 4.8" (122 mm)

3) threaded holes

4) only for series PSG + TSG

5) series TSG: 1.77" (45 mm)

6) series SGS: 8.66" (220 mm)

7) series SGS: face-to-face L up to appr. 39.37 (1,000 mm) possible

Nominal sizes and lining materials

inch	DN	PSG		TSG		SGS	
		lbs	kg	lbs	kg	lbs	kg
1/2"	15	—	—	—	—	PFA, PFA-L ¹⁾	
3/4"	20	—	—	—	—	PFA, PFA-L ¹⁾	
1"	25	PFA, PFA-L ¹⁾		PFA, PFA-L ¹⁾		PFA, PFA-L ¹⁾	
1 1/4"	32	—	—	—	—	PFA, PFA-L ¹⁾	
1 1/2"	40	PFA, PFA-L ¹⁾		—	—	PFA, PFA-L ¹⁾	
2"	50	PFA, PFA-L ¹⁾		PFA, PFA-L ¹⁾		PFA, PFA-L ¹⁾	
2 1/2"	65	PFA, PFA-L ¹⁾		—	—	PFA, PFA-L ¹⁾	
3"	80	PFA, PFA-L ¹⁾		PFA, PFA-L ¹⁾		PFA, PFA-L ¹⁾	
4"	100	PFA, PFA-L ¹⁾		—	—	PFA, PFA-L ¹⁾	
6"	150	PFA		—	—	—	
8"	200	PTFE		—	—	—	

1) PFA-L = PFA antistatic

Approx. weights (kg)

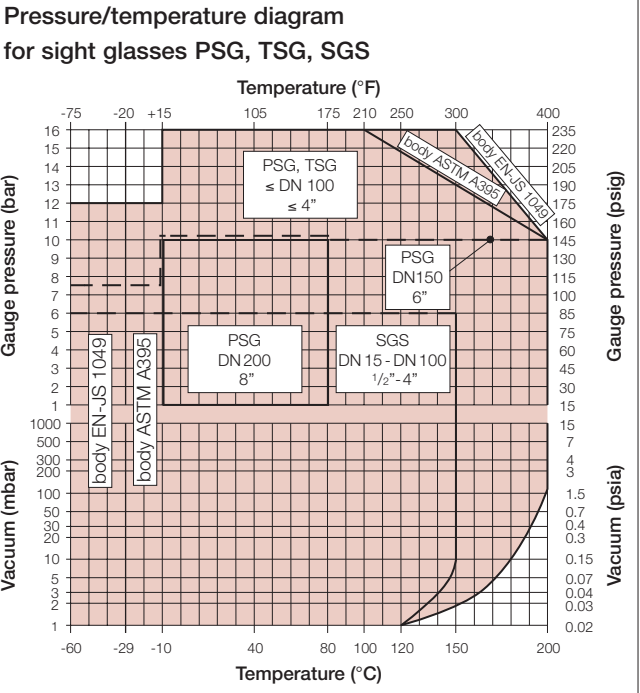
inch	DN	PSG		TSG		SGS	
		lbs	kg	lbs	kg	lbs	kg
1/2"	15	—	—	—	—	6.6	3
3/4"	20	—	—	—	—	6,6	3
1"	25	13.2	6	15.4	7	8.8	4
1 1/4"	32	—	—	—	—	11	5
1 1/2"	40	19.8	9	—	—	17.6	8
2"	50	30.9	14	35.3	16	22.1	10
2 1/2"	65	35.3	16	—	—	28.7	13
3"	80	48.5	22	86	39	44.1	20
4"	100	79.4	36	—	—	66.1	30
6"	150	161	73	—	—	—	—
8"	200	on request		—	—	—	—

Components and materials

Pos.	Designation		Materials
100	Body	Shell	Ductile cast iron* ASTM A395 (EN-JS 1049)
		Lining	see separate table
102	Body end piece	Shell	Ductile cast iron* ASTM A395 (EN-JS 1049)
		Lining	see separate table
106	Cover		Ductile cast iron* EN-JS 1049 (ASTM A395)
114	Sight glass pane and sight glass cylinder		Borosilicate glass (e.g. MAXOS®, DURAN®)
408	Flat gasket		Aramide
w/o No.	Screws, nuts		Stainless steel

* for 1/2"-6" (DN 15-150), for 8" (DN 200) on request

Kalrez® = TM of Du Pont
Richter = TM of Richter Chemie-Technik GmbH
Maxos®, Duran® = TM of Schott AG



Sight glasses with integrated check valve

SR series: with solid ball
SR-B series: with solid ball and soft seat seal
SRV series: with hollow ball
SRV-B series: with hollow ball and soft seat seal
SRZ-V series: with hollow plug and soft seat seal
For details on operating range, pressure/temperature installation position etc.: see publication Check Valves.



SR series with check ball

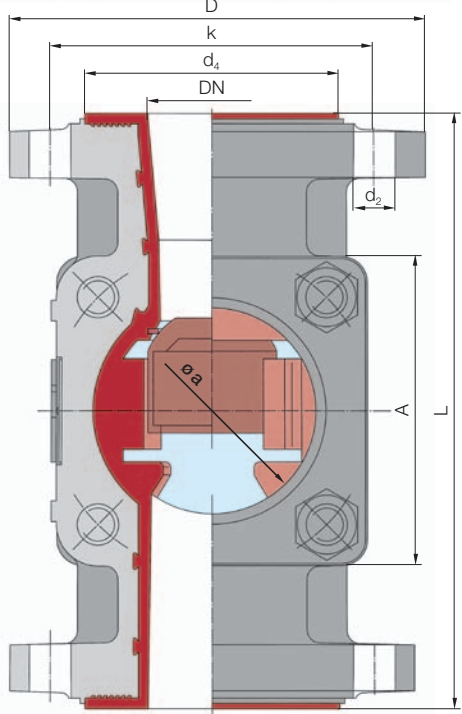
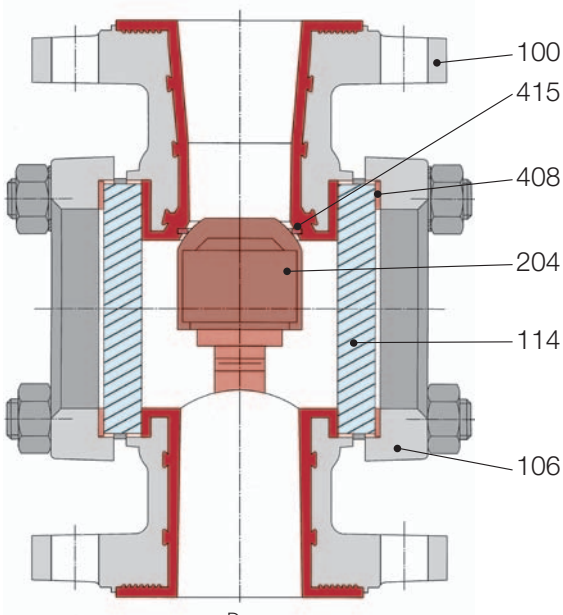
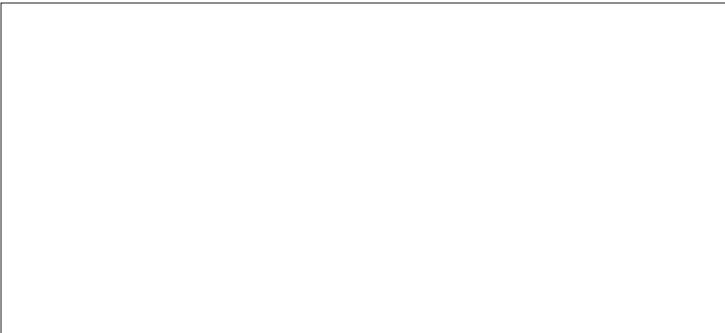
Components and materials

see page 5 for further components

Item	Designation	Materials
204	Plug or ball	PTFE
415	Seat seal	FFKM or FKM

Kalrez® = Trademark of DuPont
Richter = Trademark of Richter Chemie-Technik GmbH
MAXOS®, DURAN® = Trademark of Schott AG

Presented by:



SRZ-V series with hollow plug and soft-sealing seat made of fluorocautchouc (e.g. Kalrez®)



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