

Sliding Gate Valve 8040

GS 3 series - 1/2" up to 8"

Pneumatic sliding gate valve for shutting off liquid and gaseous media for industrial applications

- Space saving wafer-type construction
- Rapid actuation response (<100 ms)
- Light in weight
- Low operation noise level
- High differential pressure capability with small actuators
- Low energy consumption
- Meets the requirements of TA-Luft 2021



Technical Information

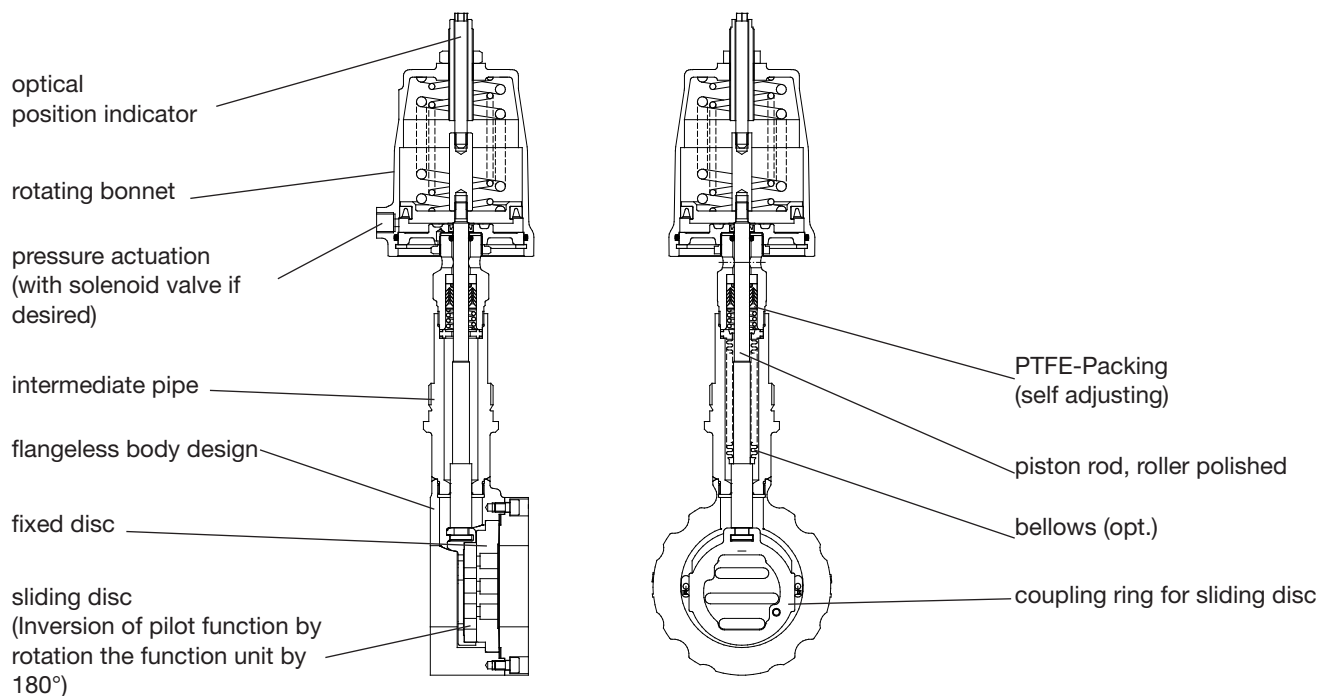
Body design	ANSI flange wafer (self-aligning) for flanges acc. ASME B16.5 RF or DIN EN 1092-1 Form B		
Nominal size	1/2" up to 10"		
Nominal pressure acc. DIN 2401 for flanges with facing type B	580 psi (fits also to 145-365 psi) 235 psi and 363 psi	1/2" - 6" 8" - 10"	
Nominal pressure acc. ANSI for flanges acc. ASME B16.5 RF	ANSI 150 ANSI 300	1/2" - 10" 1/2" - 6"	
Nominal pressure acc. JIS for „raised face“ flanges	10K 20K	1/2" - 2" 1/2" - 1 1/2"	
Flange gaskets (customer side)	ANSI B16.21 or DIN EN 1514-1 in the respective nominal pressure rating		
Media temperature	Versions from -76°F up to +662°F		
Ambient temperature*	+5°F up to +140°F (special versions from -40°F up to +212°F)		
Pilot pressure	maximum 145 psi (higher on demand)		
Leakage (% of Kvs) EN 12266-1	disc pair carbon-stainless steel < 0,0001 E	disc pair SFC < 0,0005 F	disc pair STN 2 < 0,001 F
Marking ATEX non electric	II 2G Ex h IIC T6...T1 X Gb II 2D Ex h IIIC 85°C...350°C X Db		
Specific leakage rate shaft and body sealing	ISO FE-BH-CC3-SSA0-t(-40°C/+350°C)-PN40-ISO 15848-1		

* With DN15 with reduction of less than 25%, different leakage rates possible.
K_{vs} -values see data sheet 8001.

Fluid temperature

Rating	PN40	PN 16	PN 100	ANSI 150	ANSI 300	ANSI 600
Body material cpl. stainless steel						
Tmin [°F]	-76	-76	-76	-20	-20	-20
Tmax [°F]	662	662	662	662	662	662
Body material carbon steel with stainless steel body cover						
Tmin [°F]	-76	-76	14	-4	-4	-4
Tmax [°F]	662	662	662	662	662	662

Sliding Gate Valve 8040-GS3



Materials

Body	Stainless steel CF8M	Carbon steel ASTM A216 WCB	
Bodycover	Stainless steel 316Ti or 316L		
Bonnet	chrome plated brass (actuator \varnothing 2", \varnothing 3") aluminium corrosion resitant coating (actuator \varnothing 5")		
Springs	stainless steel 304 (actuator 2", 3") spring steel wire C, coated (actuator 5")		
Packing	PTFE (carbon filled)		
Valve stem	stainless steel 316 Ti, roller burnished		
Bellows	stainless steel 316Ti		
Fixed plate	stainless steel 1.4571, plated		STN2-disc
Sliding disc	standard: special carbon material	SFC-disc	STN2-disc
Coupling ring for discs	stainless steel 318		

Admissible Pressures (For temperatures of up to 250°F)

**For temperatures exceeding 250°F:
consider operation limits**

Disc pair carbon/SFC - stainless steel				STN2-disc pair			
size	actuator	max. working pressure (psi)	required pilot pressure (psi)	size	actuator	max. working pressure (psi)	required pilot pressure (psi)
1/2"	2"	480	55	1/2"	2"	340	55
3/4"	2"	420	55	3/4"	2"	265	60
1"	2"	350	55	1"	2"	195	65
1 1/4"	2"	285	55	1 1/4"	2"	145	65
1 1/2"	2"	220	60	1 1/2"	2"	100	70
2"	2"	140	70	2"	2"	60	75
2 1/2"	2"	120	75	2 1/2"	2"	50	80
3"	2"	75	75	3"	2"	30	80
4"	2"	50	80	4"	2"	20	80
5"	2"	35	80	5"	2"	-	-
6"	2"	25	80	6"	2"	-	-
1/2"	3"	740	45	1/2"	3"	740	45
3/4"	3"	740	45	3/4"	3"	705	50
1"	3"	740	45	1"	3"	525	55
1 1/4"	3"	740	45	1 1/4"	3"	390	60
1 1/2"	3"	580	50	1 1/2"	3"	270	60
2"	3"	380	60	2"	3"	160	65
2 1/2"	3"	320	60	2 1/2"	3"	130	65
3"	3"	205	65	3"	3"	80	70
4"	3"	130	70	4"	3"	50	70
5"	3"	90	70	5"	3"	35	70
6"	3"	65	70	6"	3"	25	70
8"	3"	40	70	8"	3"	13	73
10*	3"	20	75	10"	3"	7	73
1/2"	5"	740	25	1/2"	5"	740	25
3/4"	5"	740	25	3/4"	5"	740	30
1"	5"	740	25	1"	5"	740	30
1 1/4"	5"	740	25	1 1/4"	5"	575	35
1 1/2"	5"	740	30	1 1/2"	5"	395	35
2"	5"	560	35	2"	5"	235	40
2 1/2"	5"	470	35	2 1/2"	5"	195	40
3"	5"	300	40	3"	5"	115	40
4"	5"	190	40	4"	5"	75	40
5"	5"	130	40	5"	5"	50	40
6"	5"	95	40	6"	5"	35	40
8"	5"	55	40	8"	5"	20	40
10"	5"	30	40	10"	5"	12	42

	Pressure limits ANSI and DIN in psi			
	ANSI150	ANSI 300	PN16	PN40
P max. carbon steel	284	741	232	580
P max. stainless steel	276	719		

Application limitations for GS3 valves in stainless steel

These pressure must not be exceeded for GS-valves from the GS3-series made of stainless steel, even though the actuator power might allow it.

PN40

Size	Sliding unit: carbon/SFC - stainless steel, coated						Paarung: STN 2					
	maximum pressures for GS3-valves in stainless steel						maximum pressures for GS3-valves in stainless steel					
	210°F	300°F	390°F	480°F	570°F	660°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"-1 1/4"	580	580	580	580	580	580	580	580	580	580	580	580
1 1/2"	580	580	580	580	580	580	580	580	580	580	580	535
2"	580	580	580	580	580	580	580	580	580	580	580	580
2 1/2"	580	580	580	580	580	580	580	580	580	580	535	465
3"	580	580	580	580	580	580	520	495	480	375	320	275
4"	480	480	480	480	480	480	465	450	435	350	290	245
5"	335	335	335	335	335	335	305	305	275	230	190	160
6"	230	230	230	230	230	230	220	220	205	160	130	115
8" (only PN16)	230	230	220	190	175	160	120	110	100	80	65	55
10" (only PN16)	145	130	130	115	100	85	85	80	75	60	50	40

Limitation for SFC-sliding discs: 570°F

PN100

Size	Sliding unit: carbon/SFC - stainless steel, coated						Paarung: STN 2					
	maximum pressures for GS3-valves in stainless steel						maximum pressures for GS3-valves in stainless steel					
	210°F	300°F	390°F	480°F	570°F	660°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"	1450	1450	1450	1350	1220	1145	1450	1450	1450	1350	1220	1145
3/4"	1450	1450	1290	1175	1060	985	1450	1450	1290	1175	1060	985
1"	1275	1175	1015	915	825	785	1275	1175	1015	915	825	785
1 1/4"	1450	1350	1160	1060	945	900	1450	1350	1160	1060	945	870
1 1/2"	1275	1175	1015	915	825	785	1045	1000	945	770	625	535
2"	1450	1450	1450	1450	1450	1365	1115	1060	1015	810	665	580
2 1/2"	1160	1160	1160	1145	1030	970	900	855	810	655	535	465
3"	695	695	695	695	695	640	520	495	480	375	320	275

Limitation for SFC-sliding discs: 570°F

ANSI150

Size	Sliding unit: carbon/SFC - stainless steel, coated							Sliding unit: STN2								
	max. admissible pressures for GS3-valves in stainless steel							max. admissible pressures for GS3-valves in stainless steel								
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 5"	275	265	235	215	200	175	150	120	275	265	235	215	200	175	150	120
6"	230	230	230	215	200	175	150	120	235	235	235	215	200	170	140	120
8"	230	230	230	215	200	175	150	120	150	145	120	110	100	80	65	55
10"	150	150	150	145	135	120	105	100	85	85	85	80	75	60	50	40

Limitation for SFC-sliding discs: 570°F

ANSI300

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in stainless steel								max. admissible pressures for GS3-valves in stainless steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 2 1/2"	720	695	610	560	520	485	460	440	720	695	610	560	520	485	460	440
3"	695	695	610	560	520	485	460	440	530	530	530	505	480	390	320	275
4"	480	480	480	480	480	480	460	440	480	480	480	460	435	355	290	250
5"	335	335	335	335	335	335	335	335	320	320	320	305	290	235	190	165
6"	230	230	230	230	230	230	230	230	230	230	230	225	210	170	140	120
8"	230	230	230	145	135	120	105	100	230	230	220	200	180	155	140	130

Limitation for SFC-sliding discs: 570°F

ANSI600

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in stainless steel								max. admissible pressures for GS3-valves in stainless steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 3/4"	1440	1395	1225	1115	1035	970	915	880	1440	1395	1225	1115	1035	970	915	880
1"	1275	1275	1225	1115	1015	925	830	785	1275	1275	1225	1115	1015	925	830	785
1 1/4"	1440	1395	1225	1115	1035	970	915	880	1440	1395	1225	1115	1035	970	915	875
1 1/2"	1275	1275	1225	1115	1015	925	830	785	1050	1050	1050	1000	950	770	630	545
2"	1440	1395	1225	1115	1035	970	915	880	1125	1125	1125	1070	1020	825	675	585
2 1/2"	1160	1160	1160	1115	1035	970	915	880	905	905	605	865	820	665	545	470
3"	695	695	695	695	695	695	695	645	530	530	530	505	480	390	320	275

Limitation for SFC-sliding discs: 570°F

Application limitations for GS3 valves in carbon steel

These pressure must not be exceeded for GS-valves from the GS3-series made of carbon steel, even though the actuator power might allow it.

PN40

Size	Sliding unit: carbon/SFC - stainless steel, coated						Sliding unit: STN2					
	max. admissible pressures for GS3-valves in carbon steel						max. admissible pressures for GS3-valves in carbon steel					
	210°F	300°F	390°F	480°F	570°F	660°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 2"	580	580	580	580	580	580	580	580	580	580	580	580
2 1/2"	580	580	580	580	580	580	580	580	580	535	460	
3"	580	580	580	580	580	580	520	495	480	375	320	275
4"	480	480	480	480	480	475	480	450	435	350	290	245
5"	335	335	335	335	335	330	320	305	275	230	190	155
6"	230	230	230	230	230	230	230	220	205	160	130	115
8" (max 365 psi)	230	230	220	190	175	155	120	110	100	80	65	55
10" (max 365 psi)	145	130	130	115	100	87	85	80	75	60	50	40

Limitation for SFC-sliding discs: 570°F

PN100

Size	Sliding unit: carbon/SFC - stainless steel, coated						Sliding unit: STN2					
	max. admissible pressures for GS3-valves in carbon steel						max. admissible pressures for GS3-valves in carbon steel					
	210°F	300°F	390°F	480°F	570°F	660°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2" - 3/4"	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450
1"	1450	1450	1450	1450	1365	1260	1450	1450	1450	1450	1365	1260
1 1/4"	1450	1450	1450	1450	1450	1435	1450	1450	1450	1220	1000	870
1 1/2"	1450	1450	1450	1450	1365	1260	1045	1000	945	770	625	535
2"	1450	1450	1450	1450	1450	1360	1115	1060	1015	810	665	580
2 1/2"	1160	1160	1160	1160	1160	1100	900	855	810	655	535	460
3"	695	695	695	695	695	635	520	495	480	375	320	275

Limitation for SFC-sliding discs: 570°F

PN16

Size	Sliding unit: carbon/SFC - stainless steel, coated						Sliding unit: STN2					
	max. admissible pressures for GS3-valves in carbon steel						max. admissible pressures for GS3-valves in carbon steel					
	210°F	300°F	390°F	480°F	570°F	660°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"-4"	230	230	230	230	230	230	230	230	230	230	230	230
5"	230	230	230	230	230	230	230	230	230	190	155	
6"	230	230	230	230	230	230	230	220	205	160	130	115
8"	230	230	220	190	175	155	120	110	100	80	65	55
10"	145	130	130	115	100	87	-	-	-	-	-	-

Limitation for SFC-sliding discs: 570°F

Application limitations for GS3 valves in carbon steel

These pressure must not be exceeded for GS-valves from the GS3-series made of carbon steel, even though the actuator power might allow it.

ANSI150

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in carbon steel								max. admissible pressures for GS3-valves in carbon steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"-5"	285	280	255	230	200	175	150	120	285	280	255	230	200	175	150	120
6"	230	230	230	230	200	175	150	120	235	235	235	225	200	170	140	115
8"	230	230	230	230	200	175	150	120	150	145	120	110	100	65	65	55
10"	150	150	150	145	135	120	105	87	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 570°F

ANSI300

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in carbon steel								max. admissible pressures for GS3-valves in carbon steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"-2"	740	725	675	655	635	610	565	535	740	725	675	655	635	610	565	535
2 1/2"	740	725	675	655	635	610	565	535	605	605	605	575	545	485	550	470
3"	695	695	675	655	635	610	565	535	530	530	530	505	480	390	319	275
4"	480	480	480	480	480	480	475	475	480	480	480	460	435	355	290	245
5"	335	335	335	335	335	335	330	330	320	320	320	305	290	235	191	155
6"	230	230	230	230	230	230	230	230	230	230	230	225	210	170	141	115
8"	230	230	220	200	180	155	140	130	150	145	120	110	100	65	65	55

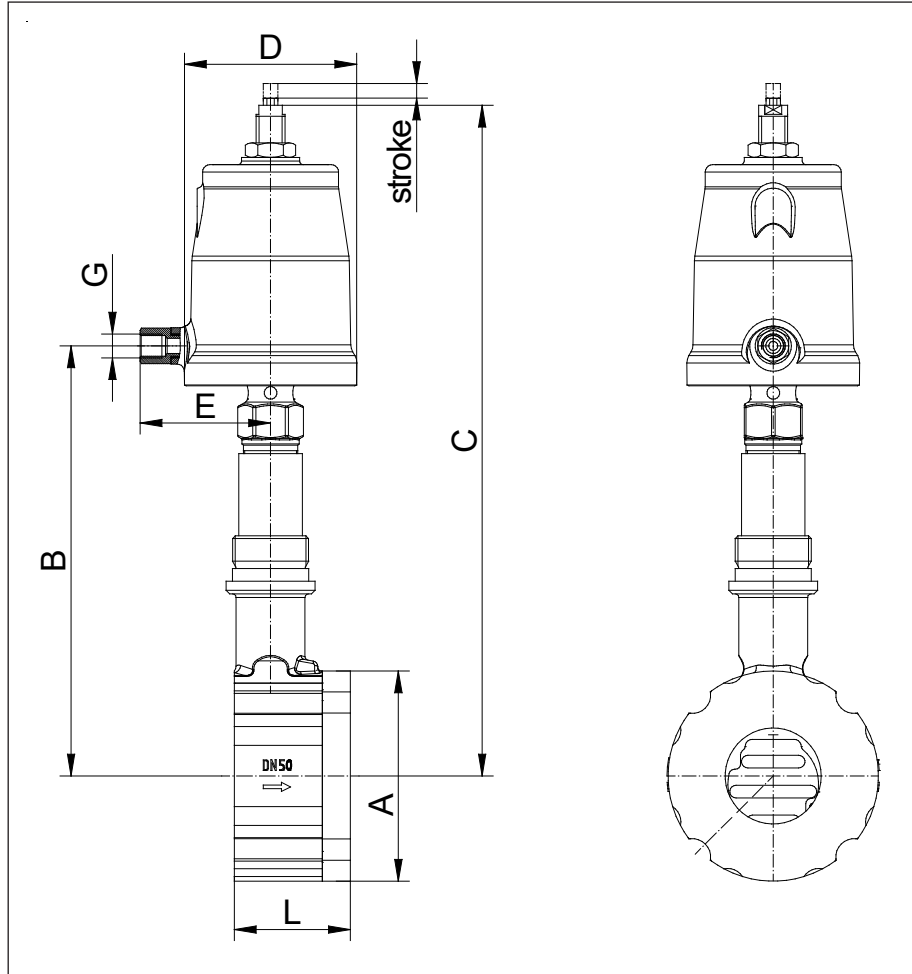
Limitation for SFC-sliding discs: 570°F

ANSI600

Size	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves in carbon steel								max. admissible pressures for GS3-valves in carbon steel							
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F	660°F
1/2"-1"	1480	1455	1350	1310	1270	1215	1155	1085	1480	1455	1350	1310	1270	1215	1155	1085
1 1/4"	1480	1455	1350	1310	1270	1215	1155	1085	1480	1455	1350	1310	1270	1215	1010	870
1 1/2"	1450	1450	1350	1310	1270	1215	1155	1085	1050	1050	1050	1000	950	770	630	535
2"	1450	1450	1350	1310	1270	1215	1155	1085	1125	1125	1125	1070	1020	825	675	580
2 1/2"	1160	1160	1160	1160	1160	1160	1155	1085	905	905	905	865	820	665	545	460
3"	695	695	695	695	695	695	695	635	530	530	530	535	480	390	320	275

Limitation for SFC-sliding discs: 570°F

Dimensions and Weights



Size	A	B actuator			C max actuator			L	Weight lbs actuator			Stroke H
		2"	3"	5"	2"	3"	5"		2"	3"	5"	
1/2"	2.52	8.23	8.39	8.46	12.05	13.54	14.25	2.2	7.5	12.5	15.5	0.24
3/4"	2.83	8.39	8.54	8.62	12.2	13.7	14.41	2.2	8	13	16	0.24
1"	3.23	8.58	8.74	8.82	12.4	13.9	14.61	2.2	8.5	13.5	16.5	0.24
1 1/4"	3.5	8.66	8.82	8.9	12.48	13.98	14.69	2.2	9	14	17	0.24
1 1/2"	3.9	8.9	9.06	9.13	12.72	14.21	14.92	2.2	9.5	14.5	17.5	0.24
2"	4.57	9.21	9.37	9.45	13.11	14.61	15.31	2.52	13	18	21	0.31
2 1/2"	5.43	9.57	9.72	9.8	13.46	14.96	15.67	2.68	16.5	21	24	0.31
3"	6.02	9.92	10.08	10.16	13.82	15.31	16.02	2.76	19	24	27	0.31
4"	7.24	10.43	10.59	10.67	14.33	15.83	16.54	2.95	26	31	34	0.33
5"	8.35	10.98	11.14	11.22	14.88	16.38	17.09	3.15	31	36	39	0.33
6"	9.53	11.5	11.65	11.73	15.39	16.89	17.6	3.15	39.5	44	47.5	0.33
8"	11.89	12.6	12.76	12.83	16.5	17.99	18.7	3.66	76.5	81.5	84.5	0.33

Actuator inch	D	G	E
2"	2,45	1/8"	1,35
3"	3,80	1/4"	2,15
5"	5,75	1/4"	3,15

Dimensions in inch

Dimension C „reduced design“ shortened by 1"

Sliding Gate Valve 8040-GS3



Flow Coefficients - Cv-values

Ordering code	-	A	1	B	6	2	7	C	3	4	8	5	9	
Size	Charact.	100 %	63 %	40 %	25 %	20%	16 %	12 %	10 %	6,3 %	2,5 %	2 %	1 %	0,4%
1/2"	(mod.) linear	4.6	3	2	1.6	-	0.82	0.57	0.51	0.3	0.16	0.09	0.05	0.021
	eq. perc.	2	-	1.3	-	0.4	-	-	-	0.12	-	-	-	-
3/4"	(mod.) lin.	7.4	-	-	-	-	1.16	-	-	-	-	0.15	-	-
	eq. perc.	3.5	-	1.7	-	-	-	-	-	-	-	-	-	-
1"	(mod.) linear	13	7.4	4.6	-	-	1.9	-	1.08	0.72	0.3	-	0.16	0.05
	eq. perc.	5.8	-	2.8	-	1.3	-	-	-	0.41	-	-	-	-
1 1/4"	(mod.) linear	19	12	-	-	-	-	-	-	-	-	-	-	-
	eq. perc.	9.3	5.45	-	-	-	-	-	-	-	-	-	-	-
1 1/2"	(mod.) lin.	30	19	13	8.1	-	-	-	-	-	-	-	-	-
	eq. perc.	13	9.9	-	3.2	-	-	-	-	-	-	-	-	-
2"	(mod.) linear	52	32	23	14	12	-	-	-	-	-	-	-	-
	eq. perc.	22	14	-	-	-	-	3.5	-	-	-	-	-	-
2 1/2"	(mod.) linear	60	41	-	17	-	-	-	-	-	-	-	-	-
	eq. perc.	35	-	-	9.3	-	-	-	-	-	-	-	-	-
3"	(mod.) linear	107	67	46	-	-	-	-	-	-	-	-	-	-
	eq.perc.	56	41	-	-	-	-	-	-	-	-	-	-	-
4"	(mod.) linear	179	110	72	-	-	-	-	-	-	-	-	-	-
	eq.perc.	89	56	-	-	-	-	-	-	-	-	-	-	-
5"	(mod.) linear	275	-	110	-	-	-	-	-	-	-	-	-	-
	eq.perc.	135	-	-	-	-	-	-	-	-	-	-	-	-
6"	(mod.) linear	392	246	-	-	-	-	-	-	-	-	-	-	-
	eq.perc.	171	104	-	-	-	-	-	-	-	-	-	-	-
8"	(mod.) linear	650	408	-	-	-	-	-	-	-	-	-	-	-
	eq.perc.	329	-	-	-	-	-	-	-	-	-	-	-	-
10"	(mod.) linear	1056	667	-	-	-	-	-	-	-	-	-	-	-
	eq.perc.	-	-	-	-	-	-	-	-	-	-	-	-	-