

Motor Valve 8036

GS 3 series, 1/2" up to 10"

Motor valve for control and switching of neutral through to highly aggressive media in process engineering, chemical industries and for plant equipment.

- Space saving wafer type construction
- Lowest possible weight (especially in larger sizes)
- Low operation noise level (quiet operation)
- Control of high differential pressures with small actuators
- Fast response time

Technical Information

Design	ANSI flange wafer (self-aligning)		
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)	1/2" - 6"	
	1450 psi	1/2" - 3"	
	230 psi	8" - 10"	
Nominal pressure acc. ANSI for flanges acc. ASME B16.5 RF	ANSI 150	1/2" - 10"	
	ANSI 300	1/2" - 6"	
	ANSI 600	1/2" - 3"	
Nominal pressure acc. JIS for „raised face“ flanges	10K	1/2" - 2"	
	20K	1/2" - 1 1/2"	
Media temperature	Versions from -76°F up to +660°F		
Rangeability	30 : 1		
Leakage (% of Cv) IEC 60534-4 EN 12266-1	Disc pair Carbon-stainless steel	Disc pair SFC	Disc pair STN 2
	< 0,0001	< 0,0005	< 0,001
	IV-S1	IV-S1	IV
EN 12266-1	E	F	F
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						
Tmin [°F]	-76	-76	14	-4	-4	-4
Tmax [°F]	662	662	662	662	662	662

Materials

Body	Carbon steel ASTM A216 WCB	Stainless steel CF8M
Bodycover	Carbon steel ASTM A572-50	
Bonnet	chrome plated brass (actuator ø 2", ø 3")	
	aluminium corrosion resistant coating (actuator ø 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:	SFC-disc
	special carbon material	STN2-disc
Coupling ring for discs	stainless steel 318	

Actuator with Position Electronic

Technical Information

Driving force	510 lbf
Type of duty (according IEC-34)	S2 30min S4 - 1200 c/h 50% ED
Power connections	24 V DC
	24 V AC
	110/120 V AC
	230 V AC
Ambient temperature	-5°F up to +140°F
Mounting position	choice horizontal or vertical actuator only
Protection class (DIN 60529)	IP 65
max. Power consumption	30 Watt
Set point range	adjustable 0 - 20 mA, 0 - 10 V
Feed back	adjustable 0 - 20 mA, 0 - 10 V
Self Monitoring	torque, set point, temperature
Diagnostic function	storage of motor and total service life, number of motor starts, etc.
Valve adaptation	automatic stroke adjustment to suit valve limits

Stroking Time (sec.)

Size	Stroking speed for the complete stroke		
	0,02 inch/s (50%)	0,03 inch/s (75%)	0,04 inch/s (100%)
1/2" - 1 1/2"	13,9	9,3	6,9
2" - 3"	18,4	12,3	9,2
4" - 10"	19,5	13,1	9,7

= Standard

Options

2 additional stroke limit switches	free adjustable volt free contacts (open/close)
Heater	anti condensation heater
Process controller	PI - process controller integrated in the actuator
Fair Safe Protection	via battery pack
	open or closed
Local control	mounted on the actuator
Communication software	by use of data care to configure actuator

Admissible Pressures

(For temperatures of up to 100°F for ANSI-classes and up to 250°F for PN-classes)

For temperatures exceeding 100°F (ANSI) or 250°F (PN): consider operation limits

Size	max. pressure (psi)			
	carbon/SFC - stainless steel coated control	carbon/SFC - stainless steel coated on - off	STN2 control	STN2 on - off
1/2"	1480	1480	1480	1480
3/4"	1480	1480	1480	1480
1"	1276 (1480)*	1276 (1480)*	1276	1276 (1480)*
1 1/4"	1480	1480	950	1480
1 1/2"	1276 (1411)*	1276 (1450)*	655	1055
2"	925	1450	390	780
2 1/2"	780	1160	320	640
3"	495	695	195	385
4"	315	480	120	240
5"	215	335	80	160
6"	160	230	60	120
8"	95	185	-	-
10"	60	115	-	-

*: figures in brackets for bodys made of carbon steel

	Pressure limits ANSI and DIN in psi					
	ANSI150	ANSI 300	ANSI 600	PN16	PN40	PN100
P max. carbon steel	284	741	1480	232	580	1450
P max. stainless steel	276	719	1440			

Actuator without Position Electronic (function: open/close or 3-step-drive)

Technical Information

Driving force	220 lbf, 450 lbf, 990 lbf
Type of duty (according VDE 0530)	S2 30min S4 - 1200 c/h 50%ED
Power connections	24 V AC 110/120V AC 230 V AC
Ambient temperature	-5°F bis +175°F (S2) / -5°F bis +140°F (S4)
Mounting position	free of choice, but motor not top-down
Protection class (EN 60529)	IP 65
max. Power consumption	220lbf: 26W, 450lbf: 30W, 990lbf: 47 W
Actuator protection	torque switch

Options

2 additional stroke limit switches	free adjustable volt free contacts (open/close)
Heater	anti condensation heater
Feed back 4-20 mA	in 2-wire or 3-wire design
Local control	mounted key pad on actuator

Stroking Time (sec.)

Size	Stroking speed for the complete stroke		
	220 lbf	450 lbf	990 lbf
1/2" - 1 1/2"	25	25	12,5
2" - 3"	33	33	16,5
4" - 10"	35	35	17,5

(other regulating speeds on request)

Admissible Pressures (For temperatures of up to 100°F for ANSI-classes and up to 250°F for PN-classes)

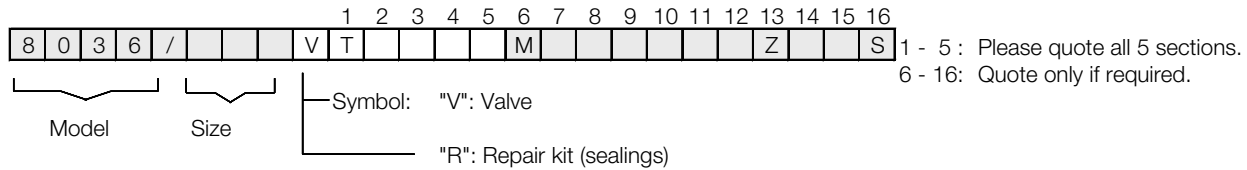
**For temperatures exceeding 100°F
(ANSI) or 250°F (PN):
consider operation limits**

Size	max. pressure (psi)					
	carbon/SFC - stainless steel coated			STN2		
	220 lbf	450 lbf	990 lbf	220 lbf	450 lbf	990 lbf
1/2"	1280	1480	1480	910	1480	1480
3/4"	1110	1480	1480	700	1480	1480
1"	930	1276 (1480)*	1276 (1480)*	525	1105	1276 (1480)*
1 1/4"	765	1480	1480	390	820	1480
1 1/2"	575	1220	1276 (1450)*	265	565	1055
2"	380	800	1450	160	335	780
2 1/2"	320	675	1160	130	275	640
3"	205	430	695	80	165	385
4"	130	275	480	50	105	240
5"	90	185	335	35	70	160
6"	65	140	230	25	50	120
8"	40	80	185	-	-	-
10"	25	50	115	-	-	-

*: figures in brackets for bodies made of carbon steel

	Pressure limits ANSI and DIN in psi					
	ANSI150	ANSI 300	ANSI 600	PN16	PN40	PN100
P max. carbon steel	284	741	1480	232	580	1450
P max. stainless steel	276	719	1440			

Ordering Number System



1.	Function	2.	Body design	3.	Body material	4.	Security position	5.	Actuator	6.	Special versions	7.	Motor voltages
T	GS-motor valve (type 8036)	E	GS3 - flangeless design acc. ANSI 150	0	carbon-steel ASTM A216	-	without	R	510 lbf, position-electronic, IP65	M	to state, if some sections 7-16 are quoted	-	230V 50/60 Hz (Standard)
		F	GS3 - flangeless design acc. ANSI 300	1	stainless steel CF8M	1	Safety position closed in the case of power failure	1	450 lbf, IP65 (On - Off)			1	24V 50/60 Hz
		K	GS3 - flangeless design acc. ANSI 600			2	Safety position open at power failure	2	990 lbf, IP65 (On - Off)			3	24V DC (only with 510 lbf)
		G	GS3 - flangeless design acc. DIN, 145-580 psi					4	220 lbf, IP65 (On - Off)			4	115V 50/60 Hz
		H	GS3 - flangeless design acc. DIN, 1450 psi										
8.	Stem sealing	9.	Sliding disc	10.	Fixed disc	11.	Cvs-values	12.	Seat characteristics	13.	Accessories	14.	Input signal
-	PTFE-V-shaped seal, self-adjusting (Standard)	-	Carbon material	-	stainless steel/stellite	-	100 % (Stand.)	-	linear	Z	to state, if in sections 14 and 15 accessories are quoted	-	Standard with electronic positioner 4-20 mA
1	additional stain-steel bellow 316 Ti (max. 479 psi pressure)	9	STN2/STN3	1	STN2 (only in combination with the position „9“ STN2-disc)	A	red. to 63 %	1	equal percentage			3	0-10 V
		S	SFC	3	STN3 (only in combination with the position „9“ STN3-disc)	1	red. to 40 %	2				4	2-10 V
						2	red. to 16 %	3					
						3	red. to 6.3 %	4					
						4	red. to 2.5 %	5					
						5	red. to 1 %	6					
						6	red. to 20 %	7					
						7	red. to 12 %	8					
						8	red. to 2 %	9					
						9	red. to 0,4 %						
15.	Limit switches	16.	Special versions	17.	Stroking time	18.	Special treatment	19.	Positioner				
-	without	S	Other special versions have to be quoted in letters	-	Standard	-		-	Standard (for controlling as input signal)				
2	2 limit switches			1	0,04 inch/sec 510 lbf)			2	feed back 4-20 mA, 2 wire for open/close				
				2	0,02 inch/sec 510 lbf)								

Ordering example: 8036/100VTE11RM- - - - - Z-2
 GS3-control valve with motor actuator, size 4", ANSI 150, stainless steel, safety position closed, actuator 510 lbf, 230 V 50/60 Hz, PTFE-packing, discs: carbon - stainless steel coated, seat characteristics linear, 2 limit switches

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.

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	-	-	-	-	-	-	-	-
10"	150	150	150	145	135	120	105	100	-	-	-	-	-	-	-	-

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	-	-	-	-	-	-	-	-

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

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	-	-	-	-	-	-
10" (only PN16)	145	130	130	115	100	85	-	-	-	-	-	-

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

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 max. admissible pressures for GS3-valves in carbon steel								Sliding unit: STN2 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	-	-	-	-	-	-	-	-
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 max. admissible pressures for GS3-valves in carbon steel								Sliding unit: STN2 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	230	145	135	120	105	87	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 570°F

ANSI600

Size	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves in carbon steel								Sliding unit: STN2 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

PN40

Size	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves in carbon steel							Sliding unit: STN2 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	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" (only 235 psi)	230	230	220	190	175	155	-	-	-	-	-	-	
10" (only 235 psi)	145	130	130	115	100	87	-	-	-	-	-	-	

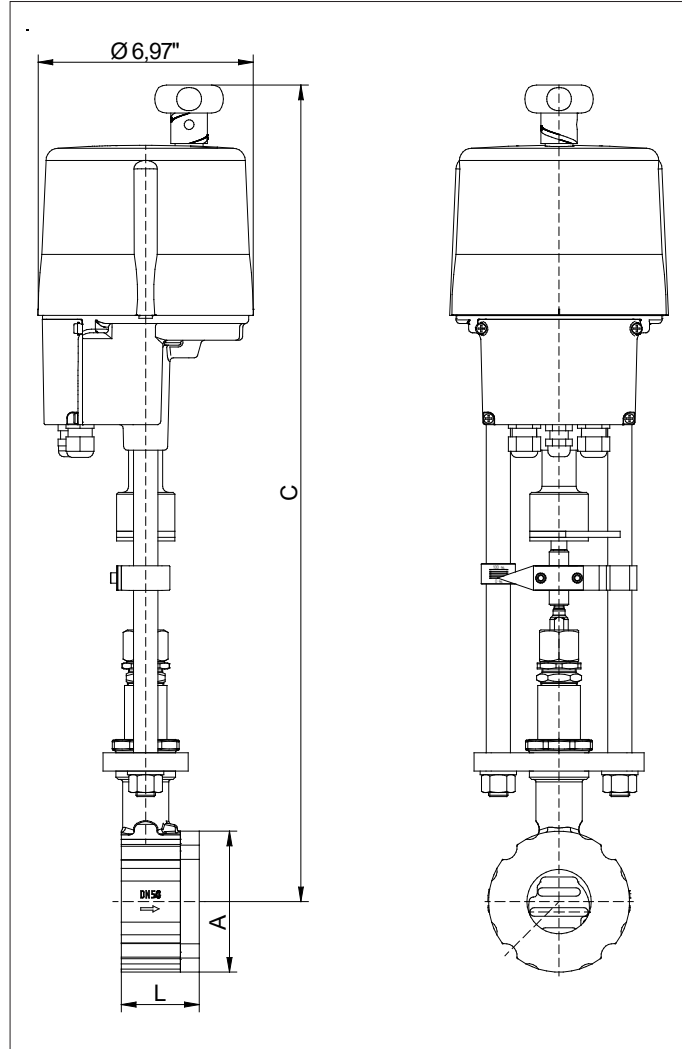
Limitation for SFC-sliding discs: 570°F

PN100

Size	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves in carbon steel							Sliding unit: STN2 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

Dimensions and Weights



Size	$\text{Ø}A$ inch	C inch	L inch	Stroke inch	Weight lbs
1/2"	2.52	23.31	2.2	0.24	18
3/4"	2.83	23.5	2.2	0.24	18
1"	3.23	23.7	2.2	0.24	19
1 1/4"	3.5	23.9	2.2	0.24	19
1 1/2"	3.9	24.09	2.2	0.24	20
2"	4.57	24.49	2.52	0.31	24
2 1/2"	5.43	24.88	2.68	0.31	27
3"	6.02	25.08	2.76	0.31	30
4"	7.24	25.67	2.95	0.33	37
5"	8.35	26.26	3.15	0.33	42
6"	9.53	26.85	3.15	0.33	50
8"	11.89	28.03	3.66	0.33	87
10"	14.17	29.06	3.78	0.33	99

Dimensions in inch

Motor Valve 8036-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	-	-	-	-	-	-	-	-
1 1/4"	(mod.) linear	19	12	-	-	-	-	-	-	-	-	-	-	-
	eq. perc.	9.3	-	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-
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.	296	-	-	-	-	-	-	-	-	-	-	-	-
10"	(mod.) linear	1056	667	-	-	-	-	-	-	-	-	-	-	-
	eq.perc.	-	-	-	-	-	-	-	-	-	-	-	-	-