

# Motor Valve 8037

## ex-version

### 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, for applications in Ex-Zone 1, 2, 21 and 22.**



#### Technical Information Valve

Design	ANSI flange wafer (self-aligning) for flanges acc. ASME B16.5 RF or EN 1092-1 form B		
Nominal size	1/2" up to 10"		
Nominal pressure acc. DIN 2401	580 psi (fits also to 145-365 psi)	1/2" - 6"	
	1450 psi	1/2" - 3"	
	230 psi	8" - 10"	
Nominal pressure acc. ANSI	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 +662°F		
Rangeability	30 : 1		
Leakage (% of Cv)	Carbon, FUJ	SFC	STN 2
	< 0.0001	< 0.0005	< 0.001
	Packing leakage		
	tested according to TA-Luft as defined in DIN EN ISO 15848-1 and VDI 2440		

Cvs-values see data sheet 8001.

#### Technical Information Actuator

driving force	220 lbf, 550lbf, 1100 lbf
stroking speed	0.08 / 0.12 / 0.24 / 0.35 / 0.47 s/inch (adjustable)
power supply	24 ... 230 V AC/DC (longer range power supply )
input signal	3-point 4 - 20 mA or 0 - 10 V
feedback	4 - 20 mA or 0 - 10 V
explosion protection (gas)	II 2G Ex de [ia] IIC T6/T5
explosion protection (dust)	II 2D Ex tD [iaD] A21 IP66 T176°F
protection class	IP 66
ambient temperature	-4...+104°F at T6 / -4...+122°F at T5
operating mode	S3 / 50% ED (max. 600 switching cycle / h)
Hysteresis	ca. ±1.5%
resolution	ca. 100 steps
accommodation	self-learning
heating resistor element	16 Watt self actuating
motor	brushless DC motor
manual override	hexagon key (top of header)

#### Fluid temperature

Rating	PN40	PN 16	PN 100	ANSI 150	ANSI 300	ANSI 600
<b>Body material cpl. stainless steel</b>						
Tmin [°F]	-76	-76	-76	-20	-20	-20
Tmax [°F]	662	662	662	662	662	662
<b>Body material cpl. carbon steel</b>						
Tmin [°F]	-76	-76	14	-4	-4	14
Tmax [°F]	572	572	572	572	572	572
<b>Body material carbon steel with stainless steel body cover</b>						
Tmin [°F]	-76	-76	14	-4	-4	-4
Tmax [°F]	662	662	662	662	662	662

## ex-version

### Stroking times for the complete stroke (sec.):

Speed	2	3	6	9	12
DN 1/2" - 1 1/2"	12.5	18.75	37.5	56.25	75
DN 2" - 3"	16.5	24.75	49.5	74.25	99
DN 4" - 10"	17.5	26.25	52.5	78.75	105

= factory setting

### 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	220 lbf	550 lbf	1100 lbf	220 lbf	550 lbf	1100 lbf
	max. differential pressure (psi)			max. differential pressure (psi)		
	carbon/SFC - stainless steel coated			STN2		
1/2"	1280	1480	1480	910	1480	1480
3/4"	1110	1480	1480	700	1480	1480
1"	930	1276 (1480)*	1276 (1480)*	525	1276 (1395)*	1276 (1480)*
1 1/4"	765	1480	1480	390	1035	1480
1 1/2"	575	1276 (1450)*	1276 (1450)*	265	710	1055
2"	380	1010	1450	160	425	870
2 1/2"	320	850	1160	130	350	710
3"	205	540	695	80	210	430
4"	130	345	480	50	130	265
5"	90	235	335	35	85	180
6"	65	175	230	25	65	130
8"	40	100	205	-	-	-
10"	25	60	130	-	-	-

\*: 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			

### Options

- 2 potential-free limit switches at a separated terminal box
- inductive proximity switches (mounted at the column)
- Version only for zone 2 and zone 22
- Version not ex-actuator

# Motor Valve 8037-GS3



## ex-version

### Ordering Number System

pos. 1 up to 4 please quote all 6 sections.  
 pos. 5 up to 13 quote only if required.  
 from pos. 14 if required, quoted by the manufacturer

Ordering Number:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
8037/			H				M								Z	...
Nominal Size																
e.g. DN 1" = 025	xxx															
Article																
valve			V													
lower part			U													
repair-kit			R													
Function																
ex-proofed motor actuator (Type 8037)			H													
Body design																
GS3 - flangeless design acc. DIN, 145 psi - 580 psi, (DN200 235 psi)							G									
GS3 - flangeless design acc. DIN, 1450 psi							H									
GS3 - flangeless design, acc. ANSI 150							E									
GS3 - flangeless design, acc. ANSI 300							F									
Body material																
C-steel ASTM A572-50 alternatively ASTM A216							0									
stainless steel 316 Ti/ 318 or 316 L/ CF8M							1									
Safety position																
without safety position							0									
Actuator																
without actuator							0									
220 lbf driving force, on /off, 3-point, IP65, 24...230V AC/DC, II 2GEx de [ia] IIC T5/T6							1									
550 lbf driving force, on /off, 3-point, IP65, 24...230V AC/DC, II 2GEx de [ia] IIC T5/T6							2									
1100 lbf driving force, on /off, 3-point, IP65, 24...230V AC/DC, II 2GEx de [ia] IIC T5/T6							3									
1 kN driving force with electronic positioner, IP65, 24...230V AC/DC, control signal 4-20mA/0-10V, feedback 4-20 mA/0-10V, II2G Ex de [ia] IIC T5/T6							A									
2,5 kN driving force with electronic positioner, IP65, 24...230V AC/DC, control signal 4-20mA/0-10V, feedback 4-20 mA/0-10V, II2G Ex de [ia] IIC T5/T6							B									
5 kN driving force with electronic positioner, IP65, 24...230V AC/DC, control signal 4-20mA/0-10V, feedback 4-20 mA/0-10V, II2G Ex de [ia] IIC T5/T6							C									
Motor voltage																
24...230V AC/DC (standard)							-									
Stem sealing																
standard ( PTFE-V-shaped seal, self-adjusting)							-									
additional stainless steel bellows							1									
Sliding disc																
carbon steel							-									
STN2/STN3							9									
SFC							S									
Fixed disc																
standard coated, stainless steel 316 Ti							-									
STN2							1									
STN3							2									
Cv-value																
100% (standard)							-									
red. 63%							A									
red. 40%							1									
red. 25%							B									
red. 16%							2									
red. 10%							C									
further reductions on request (see data sheet 8001)							...									
Seat characteristics																
linear							-									
equal percentage							1									
Accessories																
please note															Z	

pos. 1 up to 4 please quote all 6 sections.  
 pos. 5 up to 13 quote only if required.  
 from pos. 14 if required, quoted by the manufacturer

**On request further versions are possible!**

## ex-version

### 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"	275,0	265,0	235,0	215,0	200,0	175,0	150,0	120,0	275,0	265,0	235,0	215,0	200,0	175,0	150,0	120,0
6"	230,0	230,0	230,0	215,0	200,0	175,0	150,0	120,0	235,0	235,0	235,0	215,0	200,0	170,0	140,0	120,0
8"	230,0	230,0	230,0	215,0	200,0	175,0	150,0	120,0	-	-	-	-	-	-	-	-
10"	150,0	150,0	150,0	145,0	135,0	120,0	105,0	100,0	-	-	-	-	-	-	-	-

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"	720,0	695,0	610,0	560,0	520,0	485,0	460,0	440,0	720,0	695,0	610,0	560,0	520,0	485,0	460,0	440,0
3"	695,0	695,0	610,0	560,0	520,0	485,0	460,0	440,0	530,0	530,0	530,0	505,0	480,0	390,0	320,0	275,0
4"	480,0	480,0	480,0	480,0	480,0	480,0	460,0	440,0	480,0	480,0	480,0	460,0	435,0	355,0	290,0	250,0
5"	335,0	335,0	335,0	335,0	335,0	335,0	335,0	335,0	320,0	320,0	320,0	305,0	290,0	235,0	190,0	165,0
6"	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	230,0	225,0	210,0	170,0	140,0	120,0

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"	1440,0	1395,0	1225,0	1115,0	1035,0	970,0	915,0	880,0	1440,0	1395,0	1225,0	1115,0	1035,0	970,0	915,0	880,0
1"	1275,0	1275,0	1225,0	1115,0	1015,0	925,0	830,0	785,0	1275,0	1275,0	1225,0	1115,0	1015,0	925,0	830,0	785,0
1 1/4"	1440,0	1395,0	1225,0	1115,0	1035,0	970,0	915,0	880,0	1440,0	1395,0	1225,0	1115,0	1035,0	970,0	915,0	875,0
1 1/2"	1275,0	1275,0	1225,0	1115,0	1015,0	925,0	830,0	785,0	1050,0	1050,0	1050,0	1000,0	950,0	770,0	630,0	545,0
2"	1440,0	1395,0	1225,0	1115,0	1035,0	970,0	915,0	880,0	1125,0	1125,0	1125,0	1070,0	1020,0	825,0	675,0	585,0
2 1/2"	1160,0	1160,0	1160,0	1115,0	1035,0	970,0	915,0	880,0	905,0	905,0	605,0	865,0	820,0	665,0	545,0	470,0
3"	695,0	695,0	695,0	695,0	695,0	695,0	695,0	645,0	530,0	530,0	530,0	505,0	480,0	390,0	320,0	275,0

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

## ex-version

### 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	-	-	-	-	-	-	-	-
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	285	580	740	725	675	655	635	610	285	545
2 1/2"	740	725	675	655	635	610	285	580	605	605	605	575	545	485	285	470
3"	695	695	675	655	635	610	285	580	530	530	530	505	480	390	285	275
4"	480	480	480	480	480	480	285	475	480	480	480	460	435	355	285	245
5"	335	335	335	335	335	335	285	330	320	320	320	305	290	235	190	155
6"	230	230	230	230	230	230	230	230	230	230	230	225	210	170	140	115

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

#### 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	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

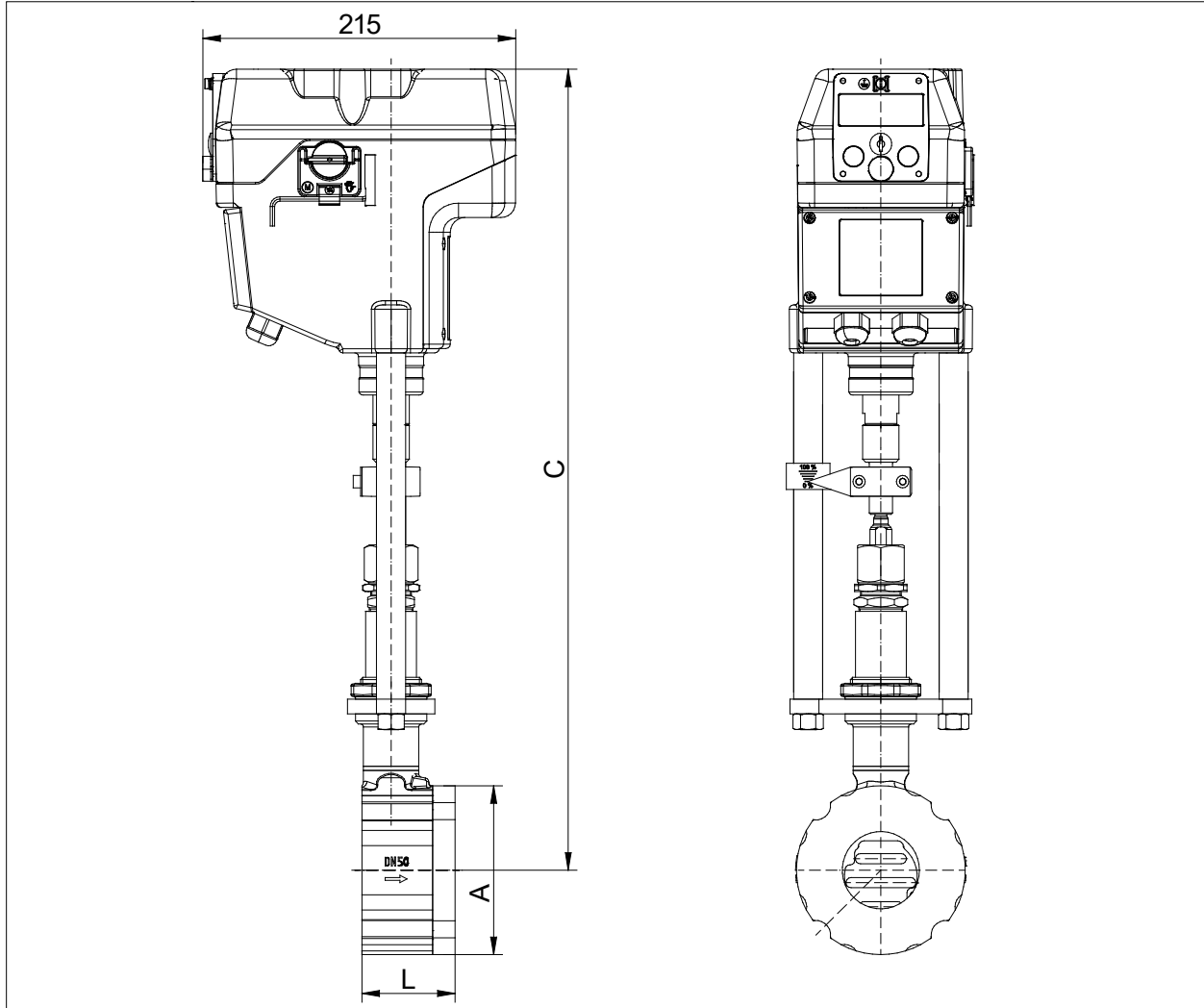
#### PN100

Size	Sliding unit: carbon/SFC - stainless steel, coated						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

ex-version

## Dimensions and Weights



Size	A	C	L	Weight (lbs)	Stroke
1/2"	2.5	20.45	2.2	24.5	0.24
3/4"	2.85	20.65	2.2	25	0.24
1"	3.25	20.85	2.2	26	0.24
1 1/4"	3.5	21.05	2.2	27	0.24
1 1/2"	3.9	21.25	2.2	28	0.24
2"	4.55	21.65	2.5	31.5	0.31
2 1/2"	5.45	22.05	2.7	35.5	0.31
3"	6	22.45	2.75	37.5	0.31
4"	7.25	22.85	2.95	45.5	0.33
5"	8.35	23.45	3.15	54.5	0.33
6"	9.55	24	3.15	62.5	0.33
8"	11.9	25.2	3.65	100	0.35
10"	14.15	26.05	3.8	111.5	0.35

Dimensions in inch

# Motor Valve 8037-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	-
	eq. perc.	2	-	1.3	-	-	-	-	-	0.12	-	-	-	-
3/4"	(mod.) lin.	7.4	-	-	-	-	1.16	-	-	-	-	0.15	-	-
	eq. perc.	3.5	-	-	-	-	-	-	-	-	-	-	-	-
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.	-	-	-										
10"	(mod.) linear	1056												
	eq.perc.	-												