

# Cryogenic Valve 8026

with integrated positioner

GS 3 series

1/2" up to 4"

## Pneumatic cryogenic valve with integrated positioner for control of cold fluids down to - 328 °F

- Space saving wafer type construction
- Lowest possible weight
- Quiet operation
- Fast response time
- Control of high differential pressures with small actuators
- Greatly reduced energy consumption rates due to short strokes and low actuating forces on the throttle element
- High Cv-values

### Technical Information

Design	ANSI flange wafer (self-aligning)	
Nominal Sizes	1/2" - 4"	
Nominal pressure acc. DIN 2401 for flanges with facing type B	580 psi (fits also to 145 up to 365 psi)	1/2" - 4"
Nominal pressure acc. ANSI for flanges acc. ASME B 16.5 RF	ANSI 150 ANSI 300	1/2" - 4" 1/2" - 4"
Nominal pressure acc. JIS for "raiced face" flanges	10K 20K	1/2" - 2" 1/2" - 1 1/2"
Fluid Temperature	down to -328°F	
Leakage	Disc pair Carbon-stainless steel < 0,0001 IV-S1 D	
% of Kvs IEC 60534-4 EN 12266-1		

Cv-values see data sheet 8001

### Materials

Valve Body	Stainless steel CF8M
Body extension	Stainless steel 316 L
Bodycover	Stainless steel 316 L or 316 Ti
Diaphragm Casing	Aluminium, KTL-coated
Actuator Springs	Stainless steel 301
Packing	Carbon-filled PTFE (spring SST 301)
Valve Stem	Stainless steel 316 Ti, roller burnished
Fixed disc	Stainless steel 316 Ti, Stellite
Sliding disc	Special Carbon material

### Positioner

For technical information of our positioners please refer to the corresponding data sheets.



### Options

- Stainless steel bellow
- Positioner
  - pneumatic
  - electropneumatic
  - electropneumatic (Ex ib IIC T6)
  - digital
- external i/p-converter

# Cryogenic Valve 8026-GS3



with integrated positioner

## Pilot and operating pressures (for temperatures to -328°F)

digital positioner, Type 8049  
(also on-off valves and valves with other side-mounted positioner)

Actuator Size	20 in <sup>2</sup>		40 in <sup>2</sup>		80 in <sup>2</sup>	
	65	80	44	58	44	65
Supply Pressure (psi)						
Size	maximum pressure psi		maximum pressure psi		maximum pressure psi	
1/2"	479	479	479	479	-	-
3/4"	479	479	479	479	-	-
1"	479	479	479	479	-	-
1 1/4"	479	479	479	479	-	-
1 1/2"	479	479	479	479	-	-
2"	479	479	479	479	479	479
2 1/2"	479	479	479	479	479	479
3"	334	421	479	479	479	479
4"	218	232	363	450	479	479
Spring Configuration	Code 3 (Standard)	Code 4	Code 3 (Standard)	Code 4	Code 6 (Standard)	Code 8

Standard

	Pressure limits DIN and ANSI in psi					
	ANSI 150 carbon steel	ANSI 150 stainless steel	ANSI 300 carbon steel	ANSI 300 stainless steel	PN16	PN40
P max.	284	276	741	719	232	580

p/p- and i/p-positioner, Type 8047

Actuator size	20 in <sup>2</sup>				40 in <sup>2</sup>				80 in <sup>2</sup>			
	22 to 44		26 to 55		17 to 32		22 to 39		17 to 32		22 to 39	
Spring Range (psi)												
Supply Pressure (psi)	58		73		44		58		44		65	
Size	maximum pressure psi				maximum pressure psi				maximum pressure psi			
	Control	On-Off	Control	On-Off	Control	On-Off	Control	On-Off	Control	On-Off	Control	On-Off
1/2"	479	479	479	479	479	479	479	479	-	-	-	-
3/4"	479	479	479	479	479	479	479	479	-	-	-	-
1"	479	479	479	479	479	479	479	479	479	479	479	479
1 1/4"	479	479	479	479	479	479	479	479	479	479	479	479
1 1/2"	421	421	479	479	479	479	479	479	479	479	479	479
2"	247	276	305	421	421	421	479	479	479	479	479	479
2 1/2"	203	232	247	348	348	348	421	479	479	479	479	479
3"	116	145	145	218	203	203	247	319	421	421	479	479
4"	73	87	87	145	131	131	145	203	261	261	319	406
Spring Configuration	Code 3 (Standard)		Code 4		Code 3 (Standard)		Code 4		Code 3 (Standard)		Code 4	

Standard

	Pressure limits DIN and ANSI in psi					
	ANSI 150 carbon steel	ANSI 150 stainless steel	ANSI 300 carbon steel	ANSI 300 stainless steel	PN16	PN40
P max.	284	276	741	719	232	580

# Cryogenic Valve 8026-GS3

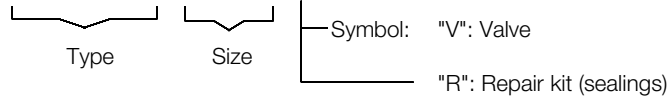


with integrated positioner

## Ordering Number System

8 0 2 6 / V K M Z S

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



1 - 5 : Please quote all 5 sections.  
6 - 12: Quote only if required.

1. Type	2. Body design	3. Body material	4. Safety position	5. Actuator	6. Special versions	7. Springs	8. Stem Sealing
K GS-cryogenic valve with pneumatic actuator	E GS3-flange less design acc. ANSI150	1 stainless steel CF8M / 316 L	0 spring closes	6 diaphragm actuator 20 in <sup>2</sup> (NPT)	M to state if some sections 7 - 16 are quoted	- standard	- PTFE-packing self-adjusting (Standard)
	F GS3-flange less design acc. ANSI 300		1 spring opens	7 diaphragm actuator 40 in <sup>2</sup> (NPT)		4 8 springs	
	G GS3 - flange less design acc. DIN, 145 - 580 psi			8 diaphragm actuator 80 in <sup>2</sup> (NPT)		8 16 springs	1 add. Stainless steel bellow 316 Ti (max. press. 480 psi)

9. Moving disc	10. Fixed disc	11. Cv-Values	12. Characteristic	13. Accessories	14. Positioners	15. Feedback	16. Further special versions
- carbon	- stainless steel/stellite	- 100 % (Stand.)	- linear	Z state, if in following sections accessories are quoted.	- without	- without	S other special versions have to be quoted in letters!
B FUY		A red. auf 63 % 1 red. auf 40 % 2 red. auf 25 % B red. auf 16 % C red. auf 10 % 3 red. auf 6,3 % 4 red. auf 2,5 % 5 red. auf 1 % 6 red. auf 20 % 7 red. auf 12 % 8 red. auf 2 % 9 red. auf 0,4 %	1 equal-%		1 p/p positioner Type 8047 3 i/p positioner Type 8047 6 i/p positioner Type 8047 Eex ib IIC T6 with plug connc. M12x1 8 i/p positioner Type 8047 with plug connc. M12x1 C digital positioner Type 8049, 4-wire R digital positioner Type 8049, 2-wire T digital positioner Type 8049, AS-i version W digital positioner Type 8049, 2-wire ex-version	0 2 limit switches M12x1 10-30V DC PNP	

Ordering example:

8026/050VKE106M-----ZC

GS-cryogenic valve type 8026 with pneumatic actuator, 2", ANSI 150, body material stainless steel, spring closes, standard spring configuration (6 springs), actuator 20 in<sup>2</sup>, PTFE-packing, carbon unit, linear characteristic, digital positioner type 8049, 4-wire

with integrated positioner

## 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

DN	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves								max. admissible pressures for GS3-valves							
	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" - 4"	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

Limitation for SFC-sliding discs: 570°F

### ANSI300

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

Limitation for SFC-sliding discs: 570°F

### ANSI600

DN	Sliding unit: carbon/SFC - stainless steel, coated								Sliding unit: STN2							
	max. admissible pressures for GS3-valves								max. admissible pressures for GS3-valves							
	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 (psi)						maximum pressures for GS3-valves (psi)					
	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

Limitation for SFC-sliding discs: 570°F

### PN100

Size	Sliding unit: carbon/SFC - stainless steel, coated						Paarung: STN 2					
	maximum pressures for GS3-valves (psi)						maximum pressures for GS3-valves (psi)					
	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

with integrated positioner

## 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							Sliding unit: STN2 max. admissible pressures for GS3-valves						
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F
1/2"-4"	285,0	280,0	255,0	230,0	200,0	175,0	150,0	285,0	280,0	255,0	230,0	200,0	175,0	150,0

Limitation for SFC-sliding discs: 570°C

### ANSI300

Size	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves							Sliding unit: STN2 max. admissible pressures for GS3-valves						
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F
1/2"-1 1/4"	740,0	725,0	675,0	655,0	635,0	610,0	285,0	740,0	725,0	675,0	655,0	635,0	610,0	285,0
1 1/2"	740,0	725,0	675,0	655,0	635,0	610,0	285,0	605,0	605,0	605,0	575,0	545,0	485,0	285,0
2"	695,0	695,0	675,0	655,0	635,0	610,0	285,0	530,0	530,0	530,0	505,0	480,0	390,0	285,0
2 1/2"	480,0	480,0	480,0	480,0	480,0	480,0	285,0	480,0	480,0	480,0	460,0	435,0	355,0	285,0
3"	335,0	335,0	335,0	335,0	335,0	335,0	285,0	320,0	320,0	320,0	305,0	290,0	235,0	190,0
4"	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

Limitation for SFC-sliding discs: 570°C

### ANSI600

Size	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves							Sliding unit: STN2 max. admissible pressures for GS3-valves						
	100°F	120°F	210°F	300°F	390°F	480°F	570°F	100°F	120°F	210°F	300°F	390°F	480°F	570°F
1/2"-1"	1480,0	1455,0	1350,0	1310,0	1270,0	1215,0	1155,0	1480,0	1455,0	1350,0	1310,0	1270,0	1215,0	1155,0
1 1/4"	1480,0	1455,0	1350,0	1310,0	1270,0	1215,0	1155,0	1480,0	1455,0	1350,0	1310,0	1270,0	1215,0	1010,0
1 1/2"	1450,0	1450,0	1350,0	1310,0	1270,0	1215,0	1155,0	1050,0	1050,0	1050,0	1000,0	950,0	770,0	630,0
2"	1450,0	1450,0	1350,0	1310,0	1270,0	1215,0	1155,0	1125,0	1125,0	1125,0	1070,0	1020,0	825,0	675,0
2 1/2"	1160,0	1160,0	1160,0	1160,0	1160,0	1160,0	1155,0	905,0	905,0	905,0	865,0	820,0	665,0	545,0
3"	695,0	695,0	695,0	695,0	695,0	695,0	695,0	530,0	530,0	530,0	535,0	480,0	390,0	320,0

Limitation for SFC-sliding discs: 570°C

### PN40

Size	Sliding unit: carbon/SFC - stainless steel, coated max. admissible pressures for GS3-valves					Sliding unit: STN2 max. admissible pressures for GS3-valves				
	210°F	300°F	390°F	480°F	570°F	210°F	300°F	390°F	480°F	570°F
1/2" - 2"	580	580	580	580	580	580	580	580	580	580
2 1/2"	580	580	580	580	580	580	580	580	580	535
3"	580	580	580	580	580	520	495	480	375	320
4"	480	480	480	480	480	480	450	435	350	290

Limitation for SFC-sliding discs: 570°F

### PN100

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

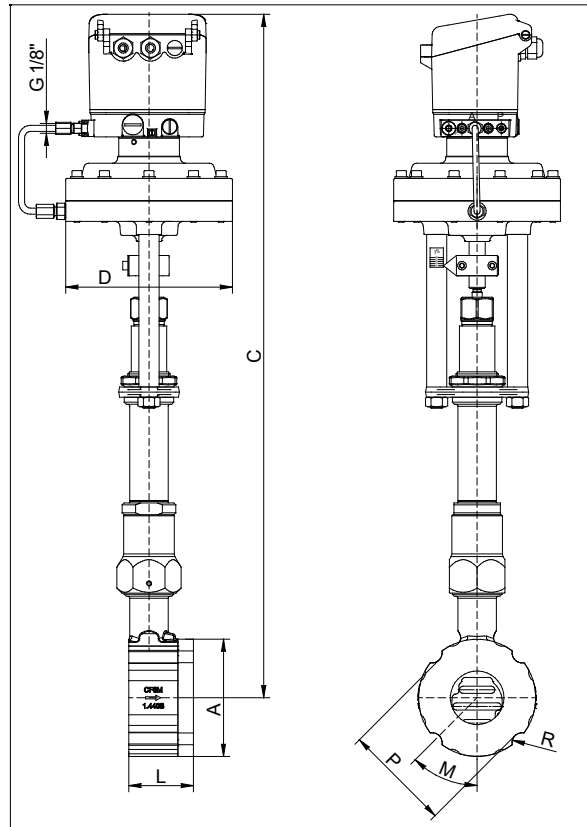
Limitation for SFC-sliding discs: 570°F

# Cryogenic Valve 8026-GS3



with integrated digital positioner, Type 8049

## Dimensions and Weights



digital positioner  
Type 8049

Size	Ø A	C	K	Ø D for actuator		PN 40		ANSI 150		ANSI 300		R	L	Stroke	Weight (lbs) for actuator	
				D 125	D250	P	M	P	M	P	M				D 125	D 250
1/2"	2.5	25.8	23.45	6.5	8.75	2.1	1.75	1.9	1.75	2.1	1.75	0.3	2.2	0.24	24	29
3/4"	2.85	26	23.6	6.5	8.75	2.5	1.75	2.3	1.75	2.7	1.75	0.4	2.2	0.24	25	29
1"	3.25	26.2	23.8	6.5	8.75	2.85	1.75	2.65	1.75	2.85	1.75	0.4	2.2	0.24	26	30
1 1/4"	3.5	26.4	23.9	6.5	8.75	3.25	1.75	3.05	1.75	3.25	1.75	0.4	2.2	0.24	26	31
1 1/2"	3.9	26.55	24.1	6.5	8.75	3.7	1.75	3.45	1.75	3.7	1.75	0.4	2.2	0.24	27	32
2"	4.55	26.95	24.45	6.5	8.75	4.55	1.75	4.15	1.75	4.4	0.9	0.4	2.5	0.31	31	36
2 1/2"	5.45	27.35	24.8	6.5	8.75	5.1	0.9	4.9	1.75	5.1	0.9	0.4	2.7	0.31	35	40
3"	6	27.75	25.1	6.5	8.75	5.65	0.9	5.45	1.75	5.9	0.9	0.4	2.75	0.31	37	42
4"	7.25	28.15	25.65	6.5	8.75	6.45	0.9	6.95	0.9	7.15	0.9	0.4	2.95	0.33	45	50

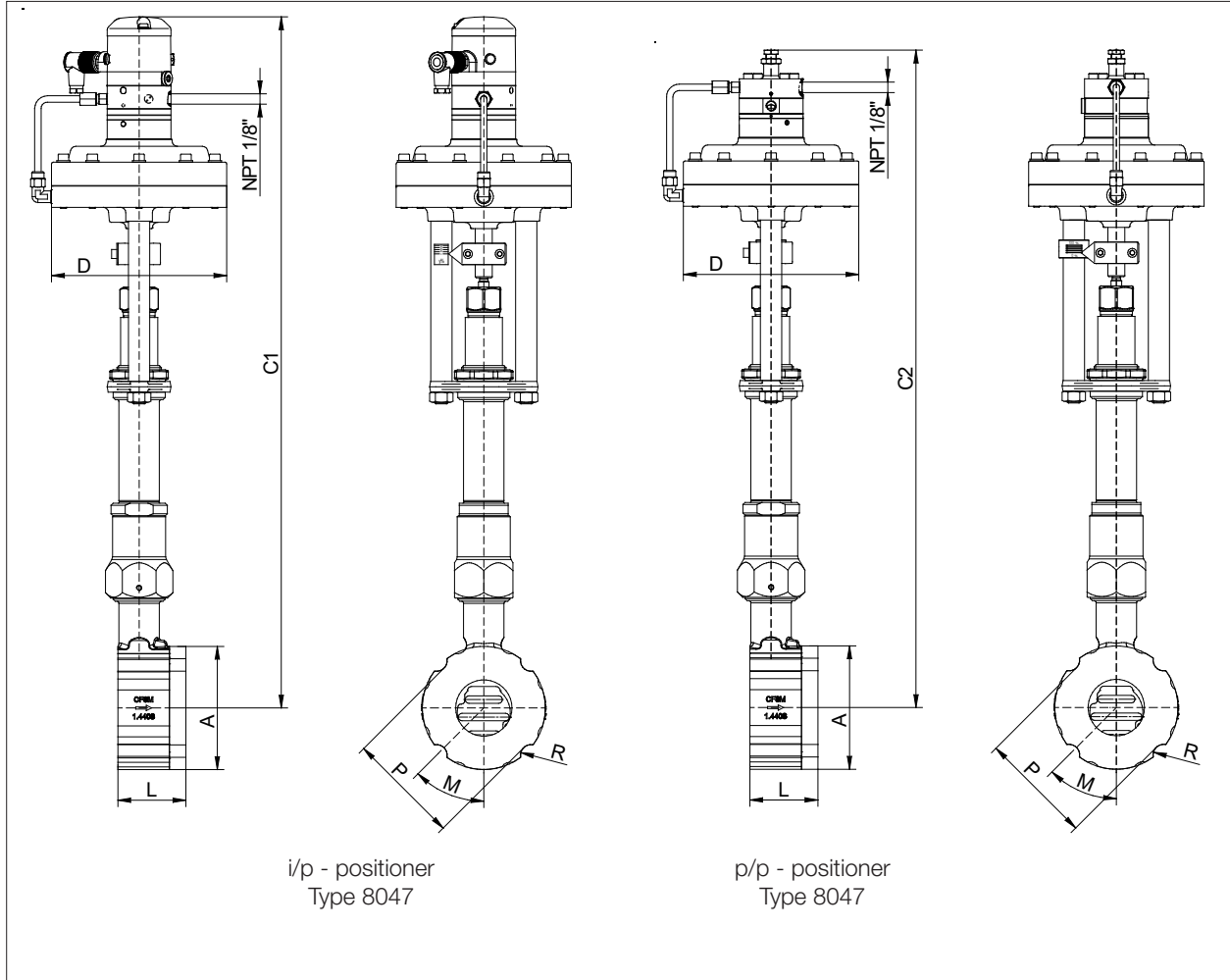
Dimensions in inch

# Cryogenic Valve 8026-GS3



with integrated i/p and p/p positioner, Type 8047

## Dimensions and Weights



Size	Ø A	C1	C2	Ø D for actuator		PN 40		ANSI 150		ANSI 300		R	L	Stroke	Weight (lbs) for actuator	
				D 125	D250	P	M	P	M	P	M				D 125	D 250
1/2"	2.5	24.6	23.25	6.5	8.75	2.1	1.75	1.9	1.75	2.1	1.75	0.3	2.2	0.24	24	29
3/4"	2.85	24.8	23.45	6.5	8.75	2.5	1.75	2.3	1.75	2.7	1.75	0.4	2.2	0.24	25	29
1"	3.25	25	23.6	6.5	8.75	2.85	1.75	2.65	1.75	2.85	1.75	0.4	2.2	0.24	26	30
1 1/4"	3.5	25.2	23.8	6.5	8.75	3.25	1.75	3.05	1.75	3.25	1.75	0.4	2.2	0.24	26	31
1 1/2"	3.9	25.4	24	6.5	8.75	3.7	1.75	3.45	1.75	3.7	1.75	0.4	2.2	0.24	27	32
2"	4.55	25.8	24.4	6.5	8.75	4.15	1.75	4.15	1.75	4.4	0.9	0.4	2.5	0.31	31	36
2 1/2"	5.45	26.2	24.8	6.5	8.75	5.1	0.9	4.9	1.75	5.1	0.9	0.4	2.7	0.31	35	40
3"	6	26.55	25.2	6.5	8.75	5.65	0.9	5.45	1.75	5.9	0.9	0.4	2.75	0.31	37	42
4"	7.25	26.95	25.6	6.5	8.75	6.45	0.9	6.95	0.9	7.15	0.9	0.4	2.95	0.33	45	50

Dimensions in inch

## 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.	-												

Text and pictures are not binding. We reserve the right to alter the equipment.