

GS 3 series, DN 15 up to DN 250

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 Valve

Design	flangeless design further versions see data sheet 8036-GS3		
Nominal size	DN 15 up to DN 250		
Nominal pressure acc. DIN 2401 for flanges with facing type B	PN 40 (fits also to PN 10-25) PN 100 PN 16	DN 15 - DN 150 DN 15 - DN 80 DN 200 - DN 250	
Nominal pressure acc. ANSI for flanges acc. ASME B16.5 RF	ANSI 150 ANSI 300 ANSI 600	DN 15 - DN 250 DN 15 - DN 150 DN 15 - DN 80	
Nominal pressure acc. JIS for „raised face“ flanges	10K 20K	DN 15 - DN 50 DN 15 - DN 40	
Media temperature	Versions from -60°C up to +350°C		
Rangeability	30 : 1		
Leakage (% of Kvs)	disc pair carbon-stainless steel < 0,0001	disc pair SFC < 0,0005	disc pair STN 2 < 0,001
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 [°C]	-60	-60	-60	-29	-29	-29
Tmax [°C]	350	350	350	350	350	350
Body material cpl. carbon steel						
Tmin [°C]	-60	-60	-10	-20	-20	-10
Tmax [°C]	300	300	300	300	300	300
Body material carbon steel with stainless steel body cover						
Tmin [°C]	-60	-60	-10	-20	-20	-20
Tmax [°C]	350	350	350	350	350	350

Materials

Body	stainless steel 1.4571 /1.4581 or 1.4404 /1.4408	carbon steel 1.0570 /1.0619
Head section	stainless steel 1.4571 /1.4581 or 1.4404 /1.4408	
Packing	PTFE (carbon filled), spring 1.4310	
Actuating stem	stainless steel, roller burnished	
Bellow	stainless steel 1.4571	
Fixed disc	stainless steel 1.4571, plated	STN2-disc
Sliding disc	standard: special carbon material	SFC-disc STN2-disc
Coupling ring for disc	stainless steel 1.4581	

Actuator with Electronic Positioner

Technical Information

Driving force	2,3 kN
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	-20°C up to +60°C
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.)

DN	Stroking speed for the complete stroke		
	0,45 mm/s (50%)	0,67 mm/s (75%)	0,9 mm/s (100%)
15 - 40	13,9	9,3	6,9
50 - 80	18,4	12,3	9,2
100 - 250	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 differential pressures (For temperatures of up to 120°C with PN-rating up to 38°C with ANSI-rating)

**For temperatures of 120°C (PN)
or 38°C (ANSI) and above:
obey application limits !**

DN	max. differential pressure (bar)			
	carbon/SFC - stainless steel coated control	carbon/SFC - stainless steel coated on - off	STN2 control	STN2 on - off
15	102,1	102,1	102,1	102,1
20	102,1	102,1	102,1	102,1
25	88 (102,1)*	88 (102,1)*	88	88 (102,1)*
32	102,1	102,1	65,6	102,1
40	88 (97,3)*	88 (100)*	45	72,6
50	63,8	100	26,9	53,8
65	53,7	80	22	44,1
80	34,1	48	13,3	26,7
100	21,8	33	8,3	16,5
125	14,8	23	5,5	11
150	11	16	4,1	8,2
200	6,4	12,8	-	-
250	4	7,9	-	-

*: figures in brackets for bodys made of carbon steel

	Upper limits for admissible pressures in bar					
	PN16	PN40	PN100	ANSI150	ANSI 300	ANSI 600
P max. carbon steel	16	40	100	19,6	51,1	102,1
P max. stainless steel				19,0	49,6	99,3

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

Technical Information

Driving force	1 kN, 2 kN, 4,5 kN
Type of duty	S2 30min
(according VDE 0530)	S4 - 1200 c/h 50%ED
Power connections	24 V AC
	110/120V AC
	230 V AC
Ambient temperature	-20°C bis +80°C (S2) / -20°C bis +60°C (S4)
Mounting position	choice horizontal or vertical actuator only
Protection class (EN 60529)	IP 65
max. Power consumption	1 kN: 26W, 2 kN: 30W , 4,5kN: 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.)

DN	Stroking speed for the complete stroke		
	1 kN	2 kN	4,5 kN
15 - 40	25	25	12,5
50 - 80	33	33	16,5
100 - 250	35	35	17,5

(other regulating speeds on request)

Admissible differential pressures (For temperatures of up to 120°C with PN-rating up to 38°C with ANSI-rating)

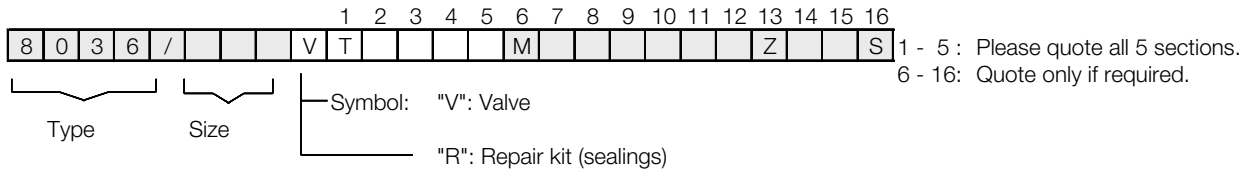
**For temperatures of 120°C (PN)
or 38°C (ANSI) and above:
obey application limits !**

DN	max. differential pressure (bar)					
	disc - pair carbon/SFC stainless steel coated			disc - pair STN2		
	1 kN	2 kN	4,5 kN	1 kN	2 kN	4,5 kN
15	88,3	102,1	102,1	62,7	102,1	102,1
20	76,7	102,1	102,1	48,3	101,9	102,1
25	64,2	88 (102,1)*	88 (102,1)*	36,1	76,1	88 (102,1)*
32	52,6	102,1	102,1	26,8	56,6	102,1
40	39,8	84	88 (100)*	18,4	38,9	72,6
50	26,1	55,1	100	11	23,2	53,8
65	22	46,4	80	9	19	44,1
80	14	29,5	48	5,5	11,5	26,7
100	8,9	18,8	33	3,4	7,1	16,5
125	6,1	12,8	23	2,3	4,8	11
150	4,5	9,5	16	1,7	3,5	8,2
200	2,6	5,5	12,8	-	-	-
250	1,6	3,4	7,9	-	-	-

*: figures in brackets for bodys made of carbon steel

	Upper limits for admissible pressures in bar					
	PN16	PN40	PN100	ANSI150	ANSI 300	ANSI 600
P max. carbon steel	16	40	100	19,6	51,1	102,1
P max. stainless steel				19,0	49,6	99,3

Ordering Number System



1. Function	2. Body design	3. Body material	4. Security position	5. Actuator	6. Special versions	7. Motor voltages	8. Stem sealing
T GS-motor valve (type 8036)	E GS3 - flangeless design acc. ANSI 150 F GS3 - flangeless design acc. ANSI 300 K GS3 - flangeless design acc. ANSI 600 G GS3 - flangeless design acc. DIN, PN10-PN40 H GS3 - flangeless design acc. DIN, PN100	0 carbon-steel 1.0570 / 1.0619 1 stainless steel 1.4571 / 1.4581	- without 1 Safety position closed in the case of power failure 2 Safety position open at power failure	R 2,3 kN, position-electronic, IP65 1 2 kN, IP65 (On - Off) 2 4,5 kN, IP65 (On - Off) 4 1 kN, IP65 (On - Off)	M to state, if some sections 7-16 are quoted A groove and groove acc. DIN EN1092-1 C groove and tongue acc. DIN EN1092-1 E 2x lowered face acc. DIN EN1092-1 H lowered and raised face acc. DIN EN1092-1	- 230V 50/60 Hz (Standard) 1 24V 50/60 Hz 3 24V DC (only with 2,3 kN) 4 115V 50/60 Hz	- PTFE-V-shaped seal, self-adjusting (Standard) 1 additional stainless steel bellow 1.4571 (max. 33 bar pressure)

9. Sliding disc	10. Fixed disc	11. Kvs-values	12. Seat characteristics	13. Accessories	14. Input signal	15. Limit switches	16. Special versions
- Carbon material 9 STN2 S SFC	- stainless steel 1.4581, hard-chrome plated 1 STN2 (only in combination with the position "9" STN2-disc)	- 100 % (Stand.) A red. to 63 % 1 red. to 40 % 2 red. to 16 % 3 red. to 6,3 % 4 red. to 2,5 % 5 red. to 1 % 6 red. to 20 % 7 red. to 12 % 8 red. to 2 % 9 red. to 0,4 %	- linear 1 equal percentage	Z to state, if in sections 14 and 15 accessories are quoted	- Standard with electronic positioner 4-20 mA 3 0-10 V 4 2-10 V	- without 2 2 limit switches	S Other special versions have to be quoted in letters

17. Stroking time	18. Special treatment	19. Positioner
- Standard 1 0,9 mm/sec (2,3 kN) 2 0,45 mm/sec (2,3 kN)	-	- Standard (for controlling as input signal) 2 feed back 4-20 mA, 2 wire for open/close

Ordering example: 8036/100VTG11RM- - - - - Z-2
 GS3-control valve with motor actuator, DN 100, PN 10/40, stainless steel, safety position closed, actuator 2,3kN, 230 V 50/60 Hz, PTFE-packing, discs: carbon - stainless steel 1.4571 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.

PN40

DN	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°C	150°C	200°C	250°C	300°C	350°C	100°C	150°C	200°C	250°C	300°C	350°C
15-32	40	40	40	40	40	40	40	40	40	40	40	40
40	40	40	40	40	40	40	40	40	40	40	40	37
50	40	40	40	40	40	40	40	40	40	40	40	40
65	40	40	40	40	40	40	40	40	40	40	37	32
80	40	40	40	40	40	40	36	34	33	26	22	19
100	33	33	33	33	33	33	32	31	30	24	20	17
125	23	23	23	23	23	23	21	21	19	16	13	11
150	16	16	16	16	16	16	15	15	14	11	9	8
200 (only PN16)	16	16	15	13	12	11	-	-	-	-	-	-
250 (only PN16)	10	9	9	8	7	6	-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

PN100

DN	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°C	150°C	200°C	250°C	300°C	350°C	100°C	150°C	200°C	250°C	300°C	350°C
15	100	100	100	93	84	79	100	100	100	93	84	79
20	100	100	89	81	73	68	100	100	89	81	73	68
25	88	81	70	63	57	54	88	81	70	63	57	54
32	100	93	80	73	65	62	100	93	80	73	65	60
40	88	81	70	63	57	54	72	69	65	53	43	37
50	100	100	100	100	100	94	77	73	70	56	46	40
65	80	80	80	79	71	67	62	59	56	45	37	32
80	48	48	48	48	48	44	36	34	33	26	22	19

Limitation for SFC-sliding discs: 300°C

ANSI150

DN	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							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
15-125	19,0	18,4	16,2	14,8	13,7	12,1	10,2	8,4	19,0	18,4	16,2	14,8	13,7	12,1	10,2	8,4
150	16,0	16,0	16,0	14,8	13,7	12,1	10,2	8,4	16,2	16,2	16,2	14,8	13,7	11,8	9,7	8,4
200	16,0	16,0	16,0	14,8	13,7	12,1	10,2	8,4	-	-	-	-	-	-	-	-
250	10,4	10,4	10,4	9,9	9,4	8,4	7,4	6,8	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

ANSI300

DN	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							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
15-65	49,6	48,1	42,2	38,5	35,7	33,4	31,6	30,3	49,6	48,1	42,2	38,5	35,7	33,4	31,6	30,3
80	48,0	48,0	42,2	38,5	35,7	33,4	31,6	30,3	36,6	36,6	36,6	34,8	33,0	26,8	22,0	19,0
100	33,0	33,0	33,0	33,0	33,0	33,0	31,6	30,3	33,0	33,0	33,0	31,7	30,1	24,4	20,1	17,3
125	23,0	23,0	23,0	23,0	23,0	23,0	23,0	23,0	22,0	22,0	22,0	21,0	19,9	16,1	13,2	11,5
150	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	15,4	14,6	11,8	9,7	8,4

Limitation for SFC-sliding discs: 300°C

ANSI600

DN	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							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
15-20	99,3	96,2	84,4	77,0	71,3	66,8	63,2	60,7	99,3	96,2	84,4	77,0	71,3	66,8	63,2	60,7
25	88,0	88,0	84,4	77,0	70,1	63,7	57,3	54,2	88,0	88,0	84,4	77,0	70,1	63,7	57,3	54,2
32	99,3	96,2	84,4	77,0	71,3	66,8	63,2	60,7	99,3	96,2	84,4	77,0	71,3	66,8	63,2	60,2
40	88,0	88,0	84,4	77,0	70,1	63,7	57,3	54,2	72,5	72,5	72,5	69,0	65,5	53,1	43,6	37,7
50	99,3	96,2	84,4	77,0	71,3	66,8	63,2	60,7	77,7	77,7	77,7	73,9	70,2	56,9	46,7	40,4
65	80,0	80,0	80,0	77,0	71,3	66,8	63,2	60,7	62,5	62,5	41,7	59,5	56,4	45,8	37,6	32,5
80	48,0	48,0	48,0	48,0	48,0	48,0	48,0	44,5	36,6	36,6	36,6	34,8	33,0	26,8	22,0	19,0

Limitation for SFC-sliding discs: 300°C

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

DN	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°C	150°C	200°C	250°C	300°C	350°C	100°C	150°C	200°C	250°C	300°C	350°C
15-50	40	40	40	40	40	40	40	40	40	40	40	40
65	40	40	40	40	40	40	40	40	40	37	32	
80	40	40	40	40	40	40	36	34	33	26	22	19
100	33	33	33	33	33	33	33	31	30	24	20	17
125	23	23	23	23	23	23	22	21	19	16	13	11
150	16	16	16	16	16	16	16	15	14	11	9	8
200 (nur PN 16)	16	16	15	13	12	11	-	-	-	-	-	-
250 (nur PN 16)	10	9	9	8	7	6	-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

PN100

DN	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°C	150°C	200°C	250°C	300°C	350°C	100°C	150°C	200°C	250°C	300°C	350°C
15 - 20	100	100	100	100	100	100	100	100	100	100	100	100
25	100	100	100	100	100	94	100	100	100	94	87	
32	100	100	100	100	100	100	100	100	100	84	69	60
40	100	100	100	100	100	94	72	69	65	53	43	37
50	100	100	100	100	100	94	77	73	70	56	46	40
65	80	80	80	80	80	76	62	59	56	45	37	32
80	48	48	48	48	48	44	36	34	33	26	22	19

Limitation for SFC-sliding discs: 300°C

ANSI150

DN	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							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
15-125	19,6	19,2	17,7	15,8	13,8	12,1	10,2	8,4	19,6	19,2	17,7	15,8	13,8	12,1	10,2	8,4
150	16,0	16,0	16,0	15,8	13,8	12,1	10,2	8,4	16,2	16,2	16,2	15,4	13,8	11,8	9,7	8,0
200	16,0	16,0	16,0	15,8	13,8	12,1	10,2	8,4	-	-	-	-	-	-	-	-
250	10,5	10,5	10,5	9,9	9,4	8,4	7,4	6,0	-	-	-	-	-	-	-	-

Limitation for SFC-sliding discs: 300°C

ANSI300

DN	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							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
15-50	51,1	50,1	46,6	45,1	43,8	41,9	19,8	40,0	51,1	50,1	46,6	45,1	43,8	41,9	39,8	37,6
65	51,1	50,1	46,6	45,1	43,8	41,9	19,8	40,0	41,7	41,7	41,7	39,7	37,6	33,5	37,6	32,5
80	48,0	48,0	46,6	45,1	43,8	41,9	19,8	40,0	36,6	36,6	36,6	34,8	33,0	26,8	22,0	19,0
100	33,0	33,0	33,0	33,0	33,0	33,0	19,8	33,0	33,0	33,0	33,0	31,7	30,1	24,4	20,0	17,0
125	23,0	23,0	23,0	23,0	23,0	23,0	19,8	23,0	22,1	22,1	22,1	21,0	19,9	16,1	13,2	11,0
150	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	15,4	14,6	11,8	9,7	8,0

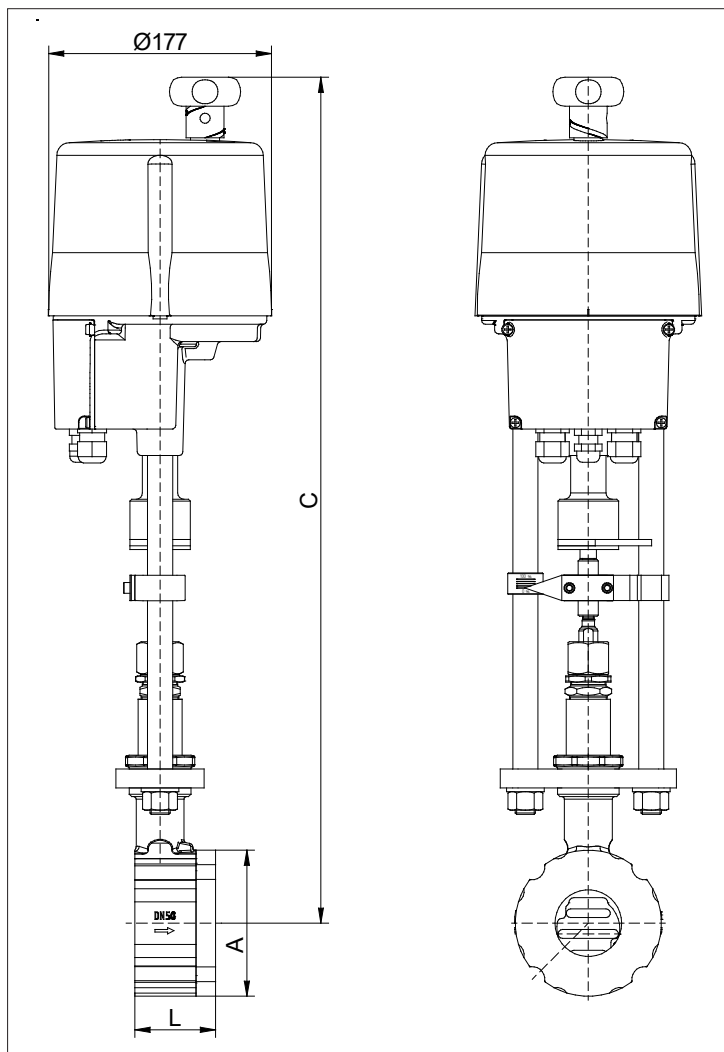
Limitation for SFC-sliding discs: 300°C

ANSI600

DN	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							
	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C	38°C	50°C	100°C	150°C	200°C	250°C	300°C	350°C
15-25	102,1	100,2	93,2	90,2	87,6	83,9	79,6	75,1	102,1	100,2	93,2	90,2	87,6	83,9	79,6	75,1
32	102,1	100,2	93,2	90,2	87,6	83,9	79,6	75,1	102,1	100,2	93,2	90,2	87,6	83,9	69,6	60,0
40	100,0	100,0	93,2	90,2	87,6	83,9	79,6	75,1	72,5	72,5	72,5	69,0	65,5	53,1	43,6	37,0
50	100,0	100,0	93,2	90,2	87,6	83,9	79,6	75,1	77,7	77,7	77,7	73,9	70,2	56,9	46,7	40,0
65	80,0	80,0	80,0	80,0	80,0	80,0	79,6	75,1	62,5	62,5	62,5	59,5	56,4	45,8	37,6	32,0
80	48,0	48,0	48,0	48,0	48,0	48,0	48,0	44,0	36,6	36,6	36,6	36,8	33,0	26,8	22,0	19,0

Limitation for SFC-sliding discs: 300°C

Dimensions and Weights



DN	$\text{Ø}A$ mm	C mm	L mm	Stroke mm	Weight kg
15	64	592	56	6	8,2
20	72	597	56	6	8,4
25	82	602	56	6	8,7
32	89	607	56	6	8,7
40	99	612	56	6	9,3
50	116	622	64	8	10,8
65	138	632	68	8	12,3
80	153	637	70	8	13,6
100	184	652	75	8,5	16,7
125	212	667	80	8,5	19,1
150	242	682	80	8,5	22,7
200	302	712	93	8,5	39,5
250	360	738	96	8,5	44,8

Dimensions in mm