

High Temperature Sliding Gate Valve 8024

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



Pneumatic sliding gate valve optionally with integrated positioner for regulating or shutting off liquid and gaseous media for industrial high temperature applications

- Integral top mounted positioner
- High rangeability
- Durable sliding gate seat design
- Light weight self aligning ANSI wafer flange
- 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 sizes | 1/2" up to 10" | | |
| Nominal pressure | 580 psi (fits also to 145-365psi) | 1/2" - 6" | |
| acc. DIN 2401 | 1450 psi | 1/2" - 3" | |
| for flanges with facing type B | 235 psi | 8" - 10" | |
| Nominal pressure | ANSI 150 | 1/2" - 10" | |
| acc. ANSI | ANSI 300 | 1/2" - 6" | |
| for flanges acc. ASME B16.5 RF | ANSI 600 | 1/2" - 3" | |
| Nominal pressure | 10K | 1/2" - 2" | |
| acc. JIS | 20K | 1/2" - 1 1/2" | |
| for „raiced face“ flanges | | | |
| Supply air pressure | max. 90 psi | | |
| Media temperature | -76°F up to +842°F for function unit carbon-stainless steel -76°F up to +842°F for function unit STN2 -76°F up to +572°F for function unit SFC up to +990°F with bellows from Inconel 625 and function unit STN2 | | |
| Ambient temperature* | digital positioner +14°F up to +167°F analog positioner +5°F up to +140°F | | |
| Leakage ** | Disc pair Carbon-stainless steel | Disc pair SFC | Disc pair STN 2 |
| % of Kvs | < 0,0001 | < 0,0005 | < 0,001 |
| IEC 60534-4 | IV-S1 | IV-S1 | IV |
| EN 12266-1 | E | F | F |
| Marking ATEX non electric | II 2G Ex h IIC T6...T1 X Gb II 2D Ex h IIIC 85°C...530°C X Db | | |
| Spezific leakage rate shaft and body sealing | ISO FE-BH-CC3-SSA0-t(-40°C/+350°C)-PN40-ISO 15848-1 | | |

* Please consider the limitation of use of the positioner!

** With DN15 with reduction of less than 25%, different leakage rates possible.

Kvs-values see data sheet 8001.

High Temperature Sliding Gate Valve 8024-GS3



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] | 986 | 986 | 986 | 986 | 986 | 986 |
| Body material carbon steel with stainless steel body cover | | | | | | |
| Tmin [°F] | -76 | -76 | 14 | -4 | -4 | 14 |
| Tmax [°F] | 842 | 842 | 842 | 842 | 842 | 842 |

Materials

| | | |
|------------------|--|----------------------------------|
| Valve Body | Stainless steel CF8M | Carbon steel ASTM A216 WCB |
| Head Section | Stainless steel 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, stellite coated | STN2-disc |
| Sliding disc | special carbon material | SFC-disc (max. +572°F) STN2-disc |

Positioner

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

High Temperature Sliding Gate Valve 8024-GS3

with integrated digital positioner, Type 8049



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

Disc pair: carbon - stainless steel, coated
SFC - stainless steel, coated

| Actuator Size | 20 in ² | | 40 in ² | | 80 in ² | |
|-----------------------|----------------------|--------------|----------------------|--------------|----------------------|--------|
| Supply Pressure (psi) | 65 | 80 | 44 | 58 | 44 | 65 |
| Size | maximum pressure psi | | maximum pressure psi | | maximum pressure psi | |
| 1/2" | 1450 | 1450 | 1450 | 1450 | - | - |
| 3/4" | 1450 | 1450 | 1450 | 1450 | - | - |
| 1" | 1276 (1450)* | 1276 (1450)* | 1276 (1450)* | 1276 (1450)* | - | - |
| 1 1/4" | 1276 | 1450 | 1450 | 1450 | - | - |
| 1 1/2" | 972 | 1204 | 1276 (1450)* | 1276 (1450)* | - | - |
| 2" | 638 | 783 | 1088 | 1320 | 1450 | 1450 |
| 2 1/2" | 537 | 653 | 914 | 1102 | 1160 | 1160 |
| 3" | 334 | 421 | 580 | 696 | 696 | 696 |
| 4" | 218 | 232 | 363 | 450 | 479 | 479 |
| 5" | 145 | 160 | 247 | 305 | 334 | 334 |
| 6" | 102 | 116 | 189 | 218 | 232 | 232 |
| 8" | 51 | 65 | 102 | 131 | 218 | 232 |
| 10" | 39 | 49 | 67 | 81 | 138 | 152 |
| Spring Configuration | Code 3 (Standard) | Code 4 | Code 3 (Standard) | Code 4 | Code 6 (Standard) | Code 8 |

Standard

*: 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 | | | |

Disc pair: STN2

| Actuator Size | 20 in ² | | 40 in ² | | 80 in ² | |
|-----------------------|----------------------|--------|----------------------|-------------|----------------------|-------------|
| Supply Pressure (psi) | 65 | 80 | 44 | 58 | 44 | 65 |
| Size | maximum pressure psi | | maximum pressure psi | | maximum pressure psi | |
| 1/2" | 1450 | 1450 | 1450 | 1450 | - | - |
| 3/4" | 1175 | 1450 | 1450 | 1450 | - | - |
| 1" | 870 | 1088 | 1276 (1450) | 1276 (1450) | 1276 (1450) | 1276 (1450) |
| 1 1/4" | 653 | 812 | 1117 | 1349 | 1450 | 1450 |
| 1 1/2" | 450 | 551 | 769 | 928 | 1044 | 1044 |
| 2" | 261 | 319 | 450 | 551 | 928 | 1117 |
| 2 1/2" | 218 | 261 | 377 | 450 | 769 | 899 |
| 3" | 131 | 145 | 218 | 276 | 464 | 522 |
| 4" | 65 | 87 | 131 | 160 | 276 | 334 |
| 5" | 44 | 51 | 87 | 94 | 189 | 232 |
| 6" | 29 | 36 | 58 | 65 | 131 | 160 |
| 8" | 29 | 29 | 44 | 44 | 87 | 102 |
| Spring Configuration | Code 3 (Standard) | Code 4 | Code 3 (Standard) | Code 4 | Code 6 (Standard) | Code 8 |

Standard

*: 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 | | | |

High Temperature Sliding Gate Valve 8024-GS3



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

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

Disc pair: carbon - stainless steel, coated
SFC - stainless steel, coated

| Actuator size | 20 in ² | | 40 in ² | | 80 in ² | |
|-----------------------|----------------------|----------|--------------------|--------------|--------------------|--------------|
| Spring Range (psi) | 22 to 44 | 26 to 55 | 17 to 32 | 22 to 39 | 17 to 32 | 22 to 39 |
| Supply Pressure (psi) | 58 | 73 | 44 | 58 | 44 | 65 |
| Size | maximum pressure psi | | | | | |
| 1/2" | 1450 | 1450 | 1450 | 1450 | - | - |
| 3/4" | 1117 | 1392 | 1450 | 1450 | - | - |
| 1" | 827 | 1030 | 1276 (1421)* | 1276 (1450)* | 1276 (1450)* | 1276 (1450)* |
| 1 1/4" | 609 | 754 | 1059 | 1276 | 1450 | 1450 |
| 1 1/2" | 421 | 522 | 711 | 870 | 1276 (1450)* | 1276 (1450)* |
| 2" | 247 | 305 | 421 | 508 | 870 | 1044 |
| 2 1/2" | 203 | 247 | 348 | 421 | 711 | 856 |
| 3" | 116 | 145 | 203 | 247 | 421 | 508 |
| 4" | 73 | 87 | 131 | 145 | 261 | 319 |
| 5" | 44 | 58 | 87 | 102 | 174 | 203 |
| 6" | 29 | 44 | 58 | 73 | 131 | 145 |
| 8" | 22 | 26 | 36 | 44 | 73 | 87 |
| 10" | 13 | 16 | 22 | 28 | 46 | 55 |
| Spring Configuration | Code 3 (Standard) | Code 4 | Code 3 (Standard) | Code 4 | Code 3 (Standard) | Code 4 |

Standard

*: 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 | | | |

Disc pair: STN 2

| Actuator Size | 20 in ² | | 40 in ² | | 80 in ² | |
|-----------------------|----------------------|----------|--------------------|----------|--------------------|--------------|
| Spring Range (psi) | 22 to 44 | 26 to 55 | 17 to 32 | 22 to 39 | 17 to 32 | 22 to 39 |
| Supply Pressure (psi) | 58 | 73 | 44 | 58 | 44 | 65 |
| Size | maximum pressure psi | | | | | |
| 1/2" | 798 | 986 | 1378 | 1450 | 1450 | 1450 |
| 3/4" | 537 | 667 | 928 | 1131 | 1450 | 1450 |
| 1" | 363 | 450 | 624 | 769 | 1276 (1290)* | 1276 (1450)* |
| 1 1/4" | 247 | 319 | 435 | 522 | 899 | 1088 |
| 1 1/2" | 160 | 203 | 276 | 348 | 580 | 696 |
| 2" | 87 | 116 | 160 | 189 | 334 | 392 |
| 2 1/2" | 73 | 87 | 131 | 160 | 261 | 319 |
| 3" | 44 | 51 | 73 | 87 | 160 | 189 |
| 4" | 22 | 29 | 44 | 58 | 87 | 116 |
| 5" | - | 22 | 29 | 36 | 58 | 73 |
| 6" | - | 15 | 22 | 26 | 44 | 51 |
| 8" | - | - | 13 | 16 | 26 | 32 |
| Spring Configuration | Code 3 (Standard) | Code 4 | Code 3 (Standard) | Code 4 | Code 6 (Standard) | Code 8 |

Standard

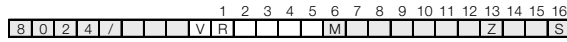
*: figures in brackets for bodys made of carbon steel

| | 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 | | | |

High Temperature Sliding Gate Valve 8024-GS3



Ordering Number System



1 - 5 : Please quote all 5 sections.
6 - 16: Quote only if required.

Symbol: "V": Valve
"R": Repair kit (sealings)

| 1. Valve type | 2. Body design | 3. Body material | 4. Safety function | 5. Actuator | 6. Special version |
|---|---|--|---|---|---|
| R | high temperature sliding gate valve with pneumatic actuator (type 8024) | 0 Carbon-Steel ASTM A216 WCB 1 Stainless Steel CF8M | 0 spring closes 1 spring opens | 3 diaphragm actuator 20 in ² (metric) 6 diaphragm actuator 20 in ² (NPT) 4 diaphragm actuator 40 in ² (metric) 7 diaphragm actuator 40 in ² (NPT) 5 diaphragm actuator 80 in ² (metric) 8 diaphragm actuator 80 in ² (NPT) | M to state if some sections 7 - 16 are quoted |
| | 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, 145-580 psi H GS3 - flangeless design acc. DIN1450 psi | | | | |
| 7. Springs | 8. Stem sealing | 9. Moving disc | 10. Fixed disc | 11. Cv-Values | 12. Flow characteristic |
| - standard 4 8 springs 8 16 springs | - PTFE-packing self-adjusting (Standard) 1 additional bellow 1.4571 3 additional Inconel 625 bellow 2.4856 | - carbon 9 STN2/STN3 S SFC | - stainless steel/ Stellite 1 STN2-plate (only in comb. with the position „9“) 3 STN3 - plate (only in comb. with the position „9“) | - 100 % (Stand.) A red. to 63 % 1 red. to 40 % B red. to 25 % 2 red. to 16 % C red. to 10 % 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-% |
| 13. Accessories | 14. Positioners | 15. Signalling equipment | 16. Further special versions | | |
| Z state, if in following sections accessories are quoted. | - without 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 with Type 8047 plug connc. M12x1 C digital positioner type 8049, 4-wire R digital positioner type 8049, 2-wire W digital positioner type 8049 ExPro, ATEX, IECEx K digital positioner type 8049 ExPro-FM with base plate in stainless steel; Ta = +14°F to +167°F; IS Class I Division 1, Groups A, B, C, D; T4 Entity; Class I Zone 0 AEx ia IIC T4 Entity, IP65 N digital positioner type 8049 IO-Link version Y digital positioner type 8049 ExPro-FM with base plate in stainless steel; Ta = +14°F to +167°F; NI Class I Division 2, Groups A, B, C, D; T4 NIFW, IP65 | - without 0 2 limit switches M12x1 DC 10-30V PNP | S other special versions have to be quoted in letters! | | |

Ordering Example: 8024/050VRE103M-----Z8
high temperature sliding gate valve Type 8024 with pneumatic actuator, 2", flangeless design acc. ANSI 150, body material stainless steel, spring close, actuator 20 in², PTFE-V-shaped sealings, function unit: carbon-stainless steel 316 Ti coated, linear characteristic, i/p-positioner

Operation limits for GS3-valves from stainless steel

These pressures on stainless steel GS-valves series GS3 must not be exceeded even if the actuator thrust would allow it.

PN40

| Size | Sliding unit: carbon/SFC - stainless steel, coated | | | | | | | |
|-------------------|---|-------|-------|-------|-------|-------|-------|-------|
| | maximum pressures for GS3-valves in stainless steel (psi) | | | | | | | |
| | 210°F | 300°F | 390°F | 480°F | 570°F | 660°F | 750°F | 840°F |
| 1/2" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 3/4" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 1" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 550 |
| 1/2" - 1 1/4" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 1 1/2" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 550 |
| 2" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 2 1/2" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 3" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 505 |
| 4" | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 |
| 5" | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 |
| 6" | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 |
| 8" (only 235psi) | 230 | 230 | 220 | 190 | 175 | 160 | 145 | 130 |
| 10" (only 235psi) | 145 | 130 | 130 | 115 | 100 | 85 | 85 | 70 |

| Size | Sliding unit: STN2 | | | | | | | | | |
|-------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | maximum pressures for GS3-valves in stainless steel (psi) | | | | | | | | | |
| | 210°F | 300°F | 390°F | 480°F | 570°F | 660°F | 750°F | 840°F | 930°F | 990°F |
| 1/2" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 565 | 450 |
| 3/4" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 480 | 390 |
| 1" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 550 | 375 | 305 |
| 1/2" - 1 1/4" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 435 | 350 |
| 1 1/2" | 580 | 580 | 580 | 580 | 580 | 535 | 465 | 420 | 375 | 305 |
| 2" | 580 | 580 | 580 | 580 | 580 | 580 | 510 | 450 | 405 | 375 |
| 2 1/2" | 580 | 580 | 580 | 580 | 535 | 465 | 405 | 365 | 320 | 305 |
| 3" | 520 | 495 | 480 | 375 | 320 | 275 | 230 | 205 | 190 | 175 |
| 4" | 465 | 450 | 435 | 350 | 290 | 245 | 220 | 190 | 175 | 160 |
| 5" | 305 | 305 | 275 | 230 | 190 | 160 | 145 | 115 | 115 | 100 |
| 6" | 220 | 220 | 205 | 160 | 130 | 115 | 100 | 85 | 75 | 75 |
| 8" (only 235psi) | 120 | 110 | 100 | 80 | 65 | 55 | 45 | 40 | 35 | 35 |
| 10" (only 235psi) | - | - | - | - | - | - | - | - | - | - |

Limitation for SFC-sliding discs: 570°F

PN100

| Size | Sliding unit: carbon/SFC - stainless steel, coated | | | | | | | |
|--------|---|-------|-------|-------|-------|-------|-------|-------|
| | maximum pressures for GS3-valves in stainless steel (psi) | | | | | | | |
| | 210°F | 300°F | 390°F | 480°F | 570°F | 660°F | 750°F | 840°F |
| 1/2" | 1450 | 1450 | 1450 | 1350 | 1220 | 1145 | 1075 | 800 |
| 3/4" | 1450 | 1450 | 1290 | 1175 | 1060 | 985 | 930 | 695 |
| 1" | 1275 | 1175 | 1015 | 915 | 825 | 785 | 740 | 550 |
| 1 1/4" | 1450 | 1350 | 1160 | 1060 | 945 | 900 | 840 | 625 |
| 1 1/2" | 1275 | 1175 | 1015 | 915 | 825 | 785 | 740 | 550 |
| 2" | 1450 | 1450 | 1450 | 1450 | 1450 | 1365 | 1260 | 1100 |
| 2 1/2" | 1160 | 1160 | 1160 | 1145 | 1030 | 970 | 915 | 680 |
| 3" | 695 | 695 | 695 | 695 | 695 | 640 | 595 | 510 |

| Size | Sliding unit: STN2 | | | | | | | | | |
|--------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | maximum pressures for GS3-valves in stainless steel (psi) | | | | | | | | | |
| | 210°F | 300°F | 390°F | 480°F | 570°F | 660°F | 750°F | 840°F | 930°F | 990°F |
| 1/2" | 1450 | 1450 | 1450 | 1350 | 1220 | 1145 | 1075 | 800 | 565 | 450 |
| 3/4" | 1450 | 1450 | 1290 | 1175 | 1060 | 985 | 930 | 695 | 480 | 390 |
| 1" | 1275 | 1175 | 1015 | 915 | 825 | 785 | 740 | 550 | 375 | 305 |
| 1 1/4" | 1450 | 1350 | 1160 | 1060 | 945 | 870 | 755 | 625 | 435 | 350 |
| 1 1/2" | 1045 | 1000 | 945 | 770 | 625 | 535 | 465 | 420 | 375 | 305 |
| 2" | 1115 | 1060 | 1015 | 810 | 665 | 580 | 510 | 450 | 405 | 375 |
| 2 1/2" | 900 | 855 | 810 | 655 | 535 | 465 | 405 | 365 | 320 | 305 |
| 3" | 520 | 495 | 480 | 375 | 320 | 275 | 230 | 205 | 190 | 175 |

Limitation for SFC-sliding discs: 570°F

High Temperature Sliding Gate Valve 8024-GS3



ANSI150

| Size | Sliding unit: carbon/SFC - stainless steel, coated | | | | | | | | | |
|-----------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 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 | 750°F | 840°F |
| 1/2" - 5" | 275 | 265 | 235 | 215 | 200 | 175 | 150 | 120 | 95 | 65 |
| 6" | 230 | 230 | 230 | 215 | 200 | 175 | 150 | 120 | 95 | 65 |
| 8" | 230 | 230 | 230 | 215 | 200 | 175 | 150 | 120 | 95 | 65 |
| 10" | 150 | 150 | 150 | 145 | 135 | 120 | 105 | 100 | 90 | 65 |

| Size | Sliding unit: STN2 | | | | | | | | | | | |
|-----------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 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 | 750°F | 840°F | 930°F | 990°F |
| 1/2" - 5" | 275 | 265 | 235 | 215 | 200 | 175 | 150 | 120 | 95 | 65 | 30 | - |
| 6" | 235 | 235 | 235 | 215 | 200 | 170 | 140 | 120 | 95 | 65 | 30 | - |
| 8" | 150 | 145 | 120 | 110 | 100 | 80 | 65 | 55 | 45 | 40 | 30 | - |
| 10" | - | - | - | - | - | - | - | - | - | - | - | - |

Limitation for SFC-sliding discs: 570°F

ANSI300

| Size | Sliding unit: carbon/SFC - stainless steel, coated | | | | | | | | | |
|-------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 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 | 750°F | 840°F |
| 1/2"-2 1/2" | 720 | 695 | 610 | 560 | 520 | 485 | 460 | 440 | 425 | 420 |
| 3" | 695 | 695 | 610 | 560 | 520 | 485 | 460 | 440 | 425 | 420 |
| 4" | 480 | 480 | 480 | 480 | 480 | 480 | 460 | 440 | 425 | 420 |
| 5" | 335 | 335 | 335 | 335 | 335 | 335 | 335 | 335 | 335 | 335 |
| 6" | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 |
| 8" | 230 | 230 | 220 | 200 | 180 | 155 | 140 | 130 | 120 | 110 |

| Size | Sliding unit: STN2 | | | | | | | | | | | |
|--------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 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 | 750°F | 840°F | 930°F | 990°F |
| 1/2" | 720 | 695 | 610 | 560 | 520 | 485 | 460 | 440 | 425 | 420 | 400 | 375 |
| 3/4" | 720 | 695 | 610 | 560 | 520 | 485 | 460 | 440 | 425 | 420 | 400 | 375 |
| 1" | 720 | 695 | 610 | 560 | 520 | 485 | 460 | 440 | 425 | 420 | 385 | 315 |
| 1 1/4" | 720 | 695 | 610 | 560 | 520 | 485 | 460 | 440 | 425 | 420 | 400 | 360 |
| 1 1/2" | 720 | 695 | 610 | 560 | 520 | 485 | 460 | 440 | 425 | 420 | 385 | 315 |
| 2" | 720 | 695 | 610 | 560 | 520 | 485 | 460 | 440 | 425 | 420 | 400 | 375 |
| 2 1/2" | 720 | 695 | 610 | 560 | 520 | 485 | 460 | 440 | 410 | 365 | 330 | 315 |
| 3" | 530 | 530 | 530 | 505 | 480 | 390 | 320 | 275 | 240 | 215 | 195 | 180 |
| 4" | 480 | 480 | 480 | 460 | 435 | 355 | 290 | 250 | 220 | 195 | 175 | 165 |
| 5" | 320 | 320 | 320 | 305 | 290 | 235 | 190 | 165 | 145 | 130 | 115 | 110 |
| 6" | 230 | 230 | 230 | 225 | 210 | 170 | 140 | 120 | 105 | 95 | 85 | 80 |
| 8" | 150 | 145 | 120 | 110 | 100 | 80 | 65 | 55 | 45 | 40 | 35 | 35 |

Limitation for SFC-sliding discs: 570°F

ANSI600

| Size | Sliding unit: carbon/SFC - stainless steel, coated | | | | | | | | | |
|--------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 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 | 750°F | 840°F |
| 1/2" | 1440 | 1395 | 1225 | 1115 | 1035 | 970 | 915 | 880 | 865 | 810 |
| 3/4" | 1440 | 1395 | 1225 | 1115 | 1035 | 970 | 915 | 880 | 865 | 700 |
| 1" | 1275 | 1275 | 1225 | 1115 | 1015 | 925 | 830 | 785 | 740 | 550 |
| 1 1/4" | 1440 | 1395 | 1225 | 1115 | 1035 | 970 | 915 | 880 | 850 | 630 |
| 1 1/2" | 1275 | 1275 | 1225 | 1115 | 1015 | 925 | 830 | 785 | 740 | 550 |
| 2" | 1440 | 1395 | 1225 | 1115 | 1035 | 970 | 915 | 880 | 865 | 835 |
| 2 1/2" | 1160 | 1160 | 1160 | 1115 | 1035 | 970 | 915 | 880 | 865 | 690 |
| 3" | 695 | 695 | 695 | 695 | 695 | 695 | 695 | 645 | 595 | 515 |

| Size | Sliding unit: STN2 | | | | | | | | | | | |
|--------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 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 | 750°F | 840°F | 930°F | 990°F |
| 1/2" | 1440 | 1395 | 1225 | 1115 | 1035 | 970 | 915 | 880 | 865 | 810 | 565 | 460 |
| 3/4" | 1440 | 1395 | 1225 | 1115 | 1035 | 970 | 915 | 880 | 865 | 700 | 490 | 400 |
| 1" | 1275 | 1275 | 1225 | 1115 | 1015 | 925 | 830 | 785 | 740 | 550 | 385 | 315 |
| 1 1/4" | 1440 | 1395 | 1225 | 1115 | 1035 | 970 | 915 | 875 | 765 | 630 | 440 | 360 |
| 1 1/2" | 1050 | 1050 | 1050 | 1000 | 950 | 770 | 630 | 545 | 475 | 425 | 385 | 315 |
| 2" | 1125 | 1125 | 1125 | 1070 | 1020 | 825 | 675 | 585 | 510 | 455 | 410 | 390 |
| 2 1/2" | 905 | 905 | 605 | 865 | 820 | 665 | 545 | 470 | 410 | 365 | 330 | 315 |
| 3" | 530 | 530 | 530 | 505 | 480 | 390 | 320 | 275 | 240 | 215 | 195 | 185 |

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 | | | | | | | |
|-----------------|--|-------|-------|-------|-------|-------|-------|-------|
| | max. admissible pressures for GS3-valves in carbon steel | | | | | | | |
| | 210°F | 300°F | 390°F | 480°F | 570°F | 660°F | 750°F | 840°F |
| 1/2"-1 1/4" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 1 1/2" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 2" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 2 1/2" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 3" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 550 |
| 4" | 480 | 480 | 480 | 480 | 480 | 475 | 475 | 475 |
| 5" | 335 | 335 | 335 | 335 | 335 | 330 | 330 | 330 |
| 6" | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 |
| 8" (only PN16) | 230 | 230 | 220 | 190 | 175 | 155 | 145 | 140 |
| 10" (only PN16) | 145 | 130 | 130 | 115 | 100 | 85 | 85 | 75 |

| Size | Sliding unit: STN2 | | | | | | | |
|-----------------|--|-------|-------|-------|-------|-------|-------|-------|
| | max. admissible pressures for GS3-valves in carbon steel | | | | | | | |
| | 210°F | 300°F | 390°F | 480°F | 570°F | 660°F | 750°F | 840°F |
| 1/2"-1 1/4" | 580 | 580 | 580 | 580 | 580 | 580 | 580 | 580 |
| 1 1/2" | 580 | 580 | 580 | 580 | 580 | 580 | 460 | 420 |
| 2" | 580 | 580 | 580 | 580 | 580 | 580 | 505 | 450 |
| 2 1/2" | 580 | 580 | 580 | 580 | 535 | 460 | 405 | 360 |
| 3" | 520 | 495 | 480 | 375 | 320 | 275 | 230 | 200 |
| 4" | 480 | 450 | 435 | 350 | 290 | 245 | 215 | 190 |
| 5" | 320 | 305 | 275 | 230 | 190 | 155 | 145 | 115 |
| 6" | 230 | 220 | 205 | 160 | 130 | 115 | 100 | 85 |
| 8" (only PN16) | 120 | 110 | 100 | 80 | 65 | 55 | 45 | 40 |
| 10" (only PN16) | - | - | - | - | - | - | - | - |

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 | | | | | | | |
| | 210°F | 300°F | 390°F | 480°F | 570°F | 660°F | 750°F | 840°F |
| 1/2" | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1350 | 1030 |
| 3/4" | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1160 |
| 1" | 1450 | 1450 | 1450 | 1450 | 1365 | 1260 | 1170 | 900 |
| 1 1/4" | 1450 | 1450 | 1450 | 1450 | 1450 | 1435 | 1350 | 1040 |
| 1 1/2" | 1450 | 1450 | 1450 | 1450 | 1365 | 1260 | 1170 | 910 |
| 2" | 1450 | 1450 | 1450 | 1450 | 1450 | 1360 | 1260 | 1175 |
| 2 1/2" | 1160 | 1160 | 1160 | 1160 | 1160 | 1100 | 1010 | 940 |
| 3" | 695 | 695 | 695 | 695 | 695 | 635 | 595 | 550 |

| Size | Sliding unit: STN2 | | | | | | | |
|--------|--|-------|-------|-------|-------|-------|-------|-------|
| | max. admissible pressures for GS3-valves in carbon steel | | | | | | | |
| | 210°F | 300°F | 390°F | 480°F | 570°F | 660°F | 750°F | 840°F |
| 1/2" | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1350 | 1030 |
| 3/4" | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1160 |
| 1" | 1450 | 1450 | 1450 | 1450 | 1365 | 1260 | 1100 | 900 |
| 1 1/4" | 1450 | 1450 | 1450 | 1220 | 1000 | 870 | 750 | 665 |
| 1 1/2" | 1045 | 1000 | 945 | 770 | 625 | 535 | 460 | 420 |
| 2" | 1115 | 1060 | 1015 | 810 | 665 | 580 | 505 | 450 |
| 2 1/2" | 900 | 855 | 810 | 655 | 535 | 460 | 405 | 360 |
| 3" | 520 | 495 | 480 | 375 | 320 | 275 | 230 | 200 |

Limitation for SFC-sliding discs: 570°F

High Temperature Sliding Gate Valve 8024-GS3



ANSI 150

| Size | Sliding unit: carbon/SFC - stainless steel, coated | | | | | | | | | |
|---------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 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 | 750°F | 840°F |
| 1/2"-5" | 285 | 280 | 255 | 230 | 200 | 175 | 150 | 120 | 90 | 65 |
| 6" | 230 | 230 | 230 | 230 | 200 | 175 | 150 | 120 | 90 | 65 |
| 8" | 230 | 230 | 230 | 230 | 200 | 175 | 150 | 120 | 90 | 65 |
| 10" | 150 | 150 | 150 | 145 | 135 | 120 | 105 | 87 | 90 | 65 |

| Size | 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 | 750°F | 840°F |
| 1/2"-5" | 285 | 280 | 255 | 230 | 200 | 175 | 150 | 120 | 90 | 65 |
| 6" | 235 | 235 | 235 | 225 | 200 | 170 | 140 | 115 | 90 | 65 |
| 8" | 150 | 145 | 120 | 110 | 100 | 65 | 65 | 55 | 50 | 40 |
| 10" | - | - | - | - | - | - | - | - | - | - |

Limitation for SFC-sliding discs: 570°F

ANSI 300

| Size | Sliding unit: carbon/SFC - stainless steel, coated | | | | | | | | | |
|---------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 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 | 750°F | 840°F |
| 1/2"-1" | 740 | 725 | 675 | 655 | 635 | 610 | 577 | 580 | 500 | 330 |
| 1 1/4" | 740 | 725 | 675 | 655 | 635 | 610 | 285 | 580 | 500 | 330 |
| 1 1/2" | 740 | 725 | 675 | 655 | 635 | 610 | 285 | 580 | 500 | 330 |
| 2" | 740 | 725 | 675 | 655 | 635 | 610 | 285 | 580 | 500 | 330 |
| 2 1/2" | 740 | 725 | 675 | 655 | 635 | 610 | 285 | 580 | 500 | 330 |
| 3" | 695 | 695 | 675 | 655 | 635 | 610 | 285 | 580 | 500 | 330 |
| 4" | 480 | 480 | 480 | 480 | 480 | 480 | 285 | 475 | 330 | 330 |
| 5" | 335 | 335 | 335 | 335 | 335 | 335 | 285 | 330 | 330 | 330 |
| 6" | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 |
| 8" | 230 | 230 | 220 | 200 | 180 | 155 | 140 | 130 | 120 | 110 |

| Size | 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 | 750°F | 840°F |
| 1/2"-1" | 740 | 725 | 675 | 655 | 635 | 610 | 577 | 545 | 500 | 330 |
| 1 1/4" | 740 | 725 | 675 | 655 | 635 | 610 | 577 | 545 | 500 | 330 |
| 1 1/2" | 740 | 725 | 675 | 655 | 635 | 610 | 577 | 545 | 475 | 330 |
| 2" | 740 | 725 | 675 | 655 | 635 | 610 | 577 | 545 | 500 | 330 |
| 2 1/2" | 605 | 605 | 605 | 575 | 545 | 485 | 545 | 470 | 410 | 330 |
| 3" | 530 | 530 | 530 | 505 | 480 | 390 | 319 | 275 | 240 | 210 |
| 4" | 480 | 480 | 480 | 460 | 435 | 355 | 290 | 245 | 215 | 190 |
| 5" | 320 | 320 | 320 | 305 | 290 | 235 | 191 | 155 | 145 | 125 |
| 6" | 230 | 230 | 230 | 225 | 210 | 170 | 141 | 115 | 105 | 90 |
| 8" | 150 | 145 | 120 | 110 | 100 | 65 | 65 | 55 | 45 | 40 |

Limitation for SFC-sliding discs: 570°F

ANSI 600

| Size | Sliding unit: carbon/SFC - stainless steel, coated | | | | | | | | | |
|---------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 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 | 750°F | 840°F |
| 1/2"-1" | 1480 | 1455 | 1350 | 1310 | 1270 | 1215 | 1155 | 1085 | 1000 | 665 |
| 1 1/4" | 1480 | 1455 | 1350 | 1310 | 1270 | 1215 | 1155 | 1085 | 1000 | 665 |
| 1 1/2" | 1450 | 1450 | 1350 | 1310 | 1270 | 1215 | 1155 | 1085 | 1000 | 665 |
| 2" | 1450 | 1450 | 1350 | 1310 | 1270 | 1215 | 1155 | 1085 | 1000 | 665 |
| 2 1/2" | 1160 | 1160 | 1160 | 1160 | 1160 | 1160 | 1155 | 1085 | 1000 | 665 |
| 3" | 695 | 695 | 695 | 695 | 695 | 695 | 695 | 635 | 595 | 555 |

| Size | 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 | 750°F | 840°F |
| 1/2"-1" | 1480 | 1455 | 1350 | 1310 | 1270 | 1215 | 1155 | 1085 | 1000 | 665 |
| 1 1/4" | 1480 | 1455 | 1350 | 1310 | 1270 | 1215 | 1010 | 870 | 760 | 665 |
| 1 1/2" | 1050 | 1050 | 1050 | 1000 | 950 | 770 | 630 | 535 | 475 | 420 |
| 2" | 1125 | 1125 | 1125 | 1070 | 1020 | 825 | 675 | 580 | 510 | 450 |
| 2 1/2" | 905 | 905 | 905 | 865 | 820 | 665 | 545 | 460 | 410 | 365 |
| 3" | 530 | 530 | 530 | 535 | 480 | 390 | 320 | 275 | 240 | 210 |

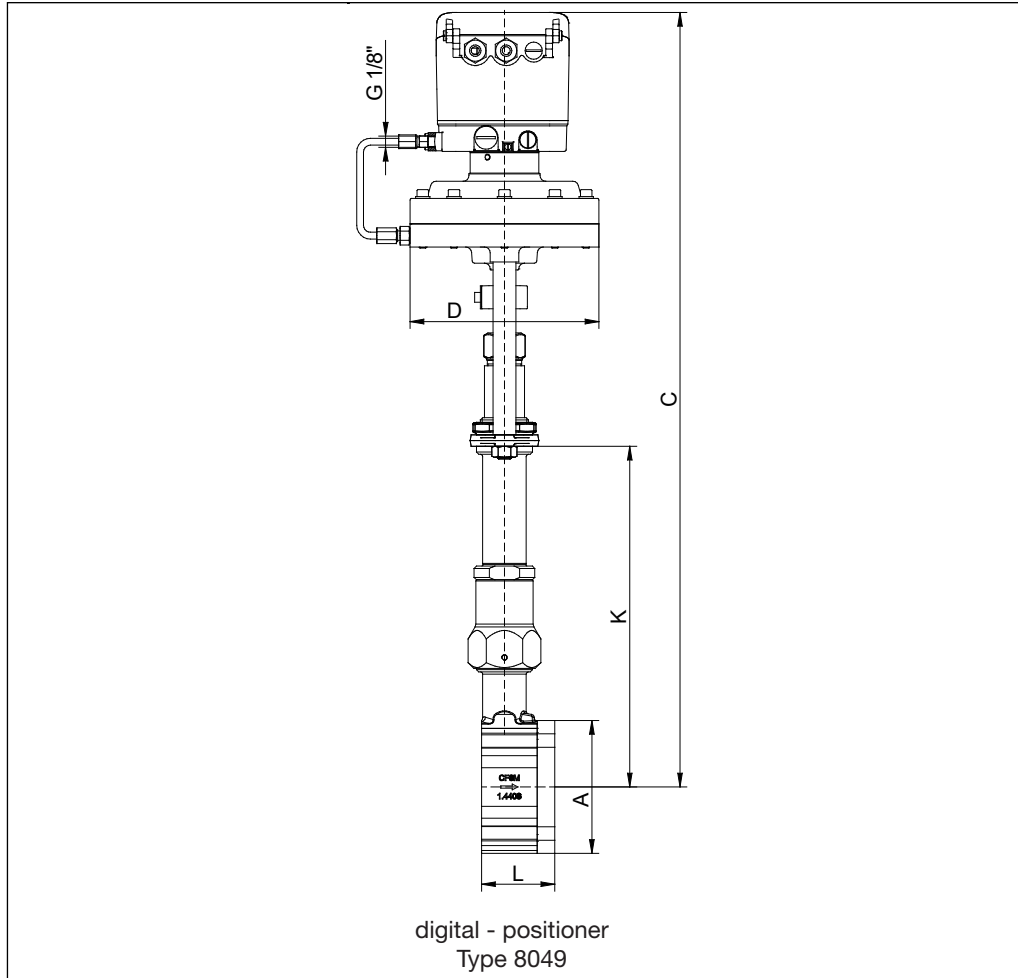
Limitation for SFC-sliding discs: 570°F

High Temperature Sliding Gate Valve 8024-GS3

with integrated digital positioner, Type 8049



Dimensions and Weights



| Size | Ø A | C * | Ø D for actuator | | | L | Stroke | Weight (lbs) for actuator | | |
|--------|-------|-------|---------------------|--------------------|--------------------|------|--------|------------------------------|--------------------|--------------------|
| | | | 20 in ² | 40 in ² | 80 in ² | | | 20 in ² | 40 in ² | 80 in ² |
| 1/2" | 2.52 | 25.79 | 6.5 | 8.74 | 8.74 | 2.2 | 0.24 | 18.7 | 23.5 | 31.7 |
| 3/4" | 2.83 | 25.98 | 6.5 | 8.74 | 8.74 | 2.2 | 0.24 | 19.1 | 24 | 32.1 |
| 1" | 3.23 | 26.18 | 6.5 | 8.74 | 8.74 | 2.2 | 0.24 | 20 | 24.9 | 33 |
| 1 1/4" | 3.5 | 26.38 | 6.5 | 8.74 | 8.74 | 2.2 | 0.24 | 20.9 | 25.7 | 33.9 |
| 1 1/2" | 3.9 | 26.57 | 6.5 | 8.74 | 8.74 | 2.2 | 0.24 | 21.8 | 26.6 | 34.8 |
| 2" | 4.57 | 26.97 | 6.5 | 8.74 | 8.74 | 2.52 | 0.31 | 25.3 | 30.1 | 38.3 |
| 2 1/2" | 5.43 | 27.36 | 6.5 | 8.74 | 8.74 | 2.68 | 0.31 | 29.3 | 34.1 | 42.2 |
| 3" | 6.02 | 27.76 | 6.5 | 8.74 | 8.74 | 2.76 | 0.31 | 31.7 | 36.5 | 44.7 |
| 4" | 7.24 | 28.15 | 6.5 | 8.74 | 8.74 | 2.95 | 0.33 | 39.4 | 44.2 | 52.4 |
| 5" | 8.35 | 28.74 | 6.5 | 8.74 | 8.74 | 3.15 | 0.33 | 48.6 | 53.5 | 61.6 |
| 6" | 9.53 | 29.33 | 6.5 | 8.74 | 8.74 | 3.15 | 0.33 | 56.8 | 61.6 | 69.7 |
| 8" | 11.89 | 30.51 | 6.5 | 8.74 | 8.74 | 3.66 | 0.33 | 93.9 | 98.8 | 106.9 |
| 10" | 14.17 | 31.5 | 6.5 | 8.74 | 8.74 | 3.78 | 0.33 | 105.4 | 110.2 | 118.4 |

* for actuator 80 in² + 1,9 "

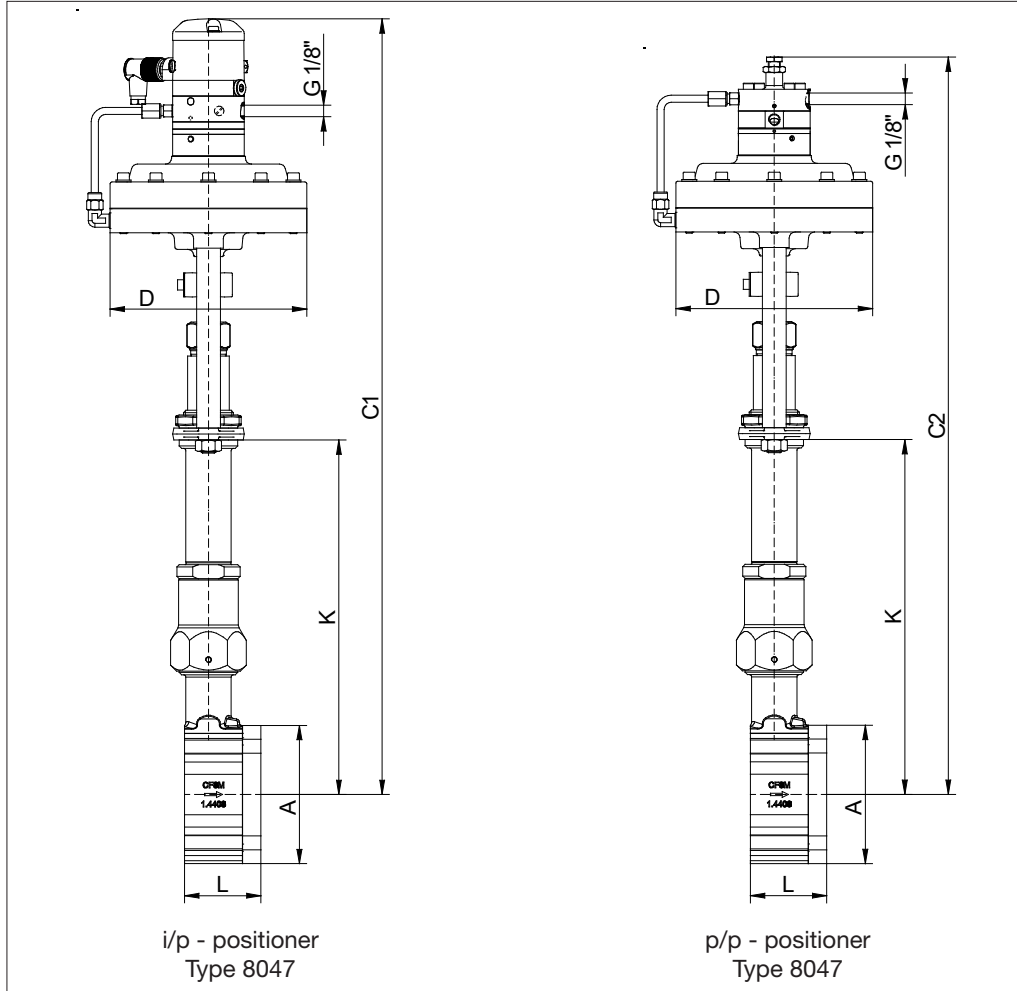
Dimensions in inch

High Temperature Sliding Gate Valve 8024-GS3

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



Dimensions and Weights



| Size | Ø A | C1 * | C2 * | Ø D for actuator | | | L | Stroke | Weight (lbs) for actuator | | |
|--------|-------|-------|-------|---------------------|--------------------|--------------------|------|--------|------------------------------|--------------------|--------------------|
| | | | | 20 in ² | 40 in ² | 80 in ² | | | 20 in ² | 40 in ² | 80 in ² |
| 1/2" | 2.5 | 24.6 | 23.25 | 6.5 | 8.75 | 8.75 | 2.2 | 0.25 | 18.7 | 23.5 | 31.7 |
| 3/4" | 2.85 | 24.8 | 23.45 | 6.5 | 8.75 | 8.75 | 2.2 | 0.25 | 19.1 | 24 | 32.1 |
| 1" | 3.25 | 25 | 23.6 | 6.5 | 8.75 | 8.75 | 2.2 | 0.25 | 20 | 24.9 | 33 |
| 1 1/4" | 3.5 | 25.2 | 23.8 | 6.5 | 8.75 | 8.75 | 2.2 | 0.25 | 20.9 | 25.7 | 33.9 |
| 1 1/2" | 3.9 | 25.4 | 24 | 6.5 | 8.75 | 8.75 | 2.2 | 0.25 | 21.8 | 26.6 | 34.8 |
| 2" | 4.55 | 25.8 | 24.4 | 6.5 | 8.75 | 8.75 | 2.5 | 0.3 | 25.3 | 30.1 | 38.3 |
| 2 1/2" | 5.45 | 26.2 | 24.8 | 6.5 | 8.75 | 8.75 | 2.7 | 0.3 | 29.3 | 34.1 | 42.2 |
| 3" | 6 | 26.55 | 25.2 | 6.5 | 8.75 | 8.75 | 2.75 | 0.3 | 31.7 | 36.5 | 44.7 |
| 4" | 7.25 | 26.95 | 25.6 | 6.5 | 8.75 | 8.75 | 2.95 | 0.35 | 39.4 | 44.2 | 52.4 |
| 5" | 8.35 | 27.55 | 26.2 | 6.5 | 8.75 | 8.75 | 3.15 | 0.35 | 48.6 | 53.5 | 61.6 |
| 6" | 9.55 | 28.15 | 26.75 | 6.5 | 8.75 | 8.75 | 3.15 | 0.35 | 56.8 | 61.6 | 69.7 |
| 8" | 11.9 | 29.35 | 27.95 | 6.5 | 8.75 | 8.75 | 3.65 | 0.35 | 93.9 | 98.8 | 106.9 |
| 10" | 14.15 | 30.3 | 28.95 | 6.5 | 8.75 | 8.75 | 3.8 | 0.35 | 105.4 | 110.2 | 118.4 |

* for actuator 80 in² + 1,9 "

Dimensions in inch

High Temperature Sliding Gate Valve 8024-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" | (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" | (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. | - | - | - | - | - | - | - | - | - | - | - | - | - |