



- // For maintaining constant gas/air ratios
- // Cross-connected operation with modulating or high-low control of nozzle mix burners
- // Zero regulator operation for premix burners
- // Precise pressure regulation over wide turndown ranges
- // Low maintenance
- // Valve seat design for consistent low fire repeatability
- // Balanced double diaphragm design allows regulator to operate over a wide range of inlet pressures while minimally affecting outlet pressure
- // CE certified models available

Application

GIK regulators hold constant gas/air ratios on nozzle mix and premix burner systems. Designed and built with precise internal tolerances, they provide highly accurate, repeatable pressure tracking over the turndown range of the burner system. They are suitable for natural, LP and clean dry bio-gas. Special GIK models are available for controlling air pressure.

Specifications

Operating Limits

Ambient temperature range:	GIK 15–50: -4 °F to +158 °F (-20 °C to +70 °C), GIK 65–100: +5 °F to +140 °F (-15 °C to +60 °C)
Maximum inlet pressure:	3 psig (200 mbar)
Maximum operational inlet-to-outlet differential pressure:	1.5 psig (100 mbar)
Combustion air loading pressure:	0.2" to 48" wc (0.5 to 120 mbar)
Outlet pressure range:	0.1" to 47.6" wc (0.2 to 120 mbar)

Material of Construction

GIK regulators have pressure die-cast/sand-cast aluminum alloy valve bodies and diaphragm housings. Diaphragms and sealing elements are nitrile rubber.

GIK 15–50: valve element: plastic, valve disc sealing: NBR, valve seat: aluminium. GIK..B models have pre-drilled bypass screws. Bypass screws are brass.

GIK 65–100: valve disc: aluminium with vulcanised NBR, valve seat: aluminium.

Special Features

When used as cross-connected regulators for nozzle mix burners, GIK regulators provide 1:1 gas pressure/air loading tracking. For leaner or richer low fire ratios, the bias spring can be adjusted to provide an outlet pressure up to 1.2" wc (3 mbar) at the GIK 15–50 and 0.8" wc (2 mbar) at the GIK 65–100 higher or lower than the loading pressure.

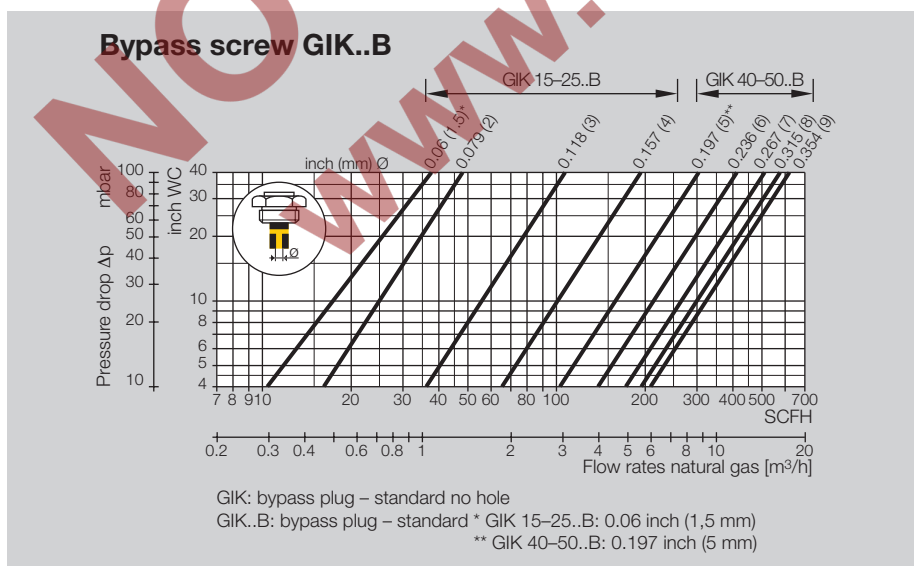
Many burner installations operate at extremely small low fire inputs – frequently only the pilot. This puts a tremendous burden on the control regulator, affecting the same nearly closed position every time the system cycles to low fire.

To overcome this, Kromschroder developed the GIK..B regulator with a fixed internal bypass. When the air impulse is at minimum, the GIK..B's valve closes completely. The low fire gas flow is controlled by the precision-machined internal orifice. The result is precise, repeatable low fire gas flow.

Additional Features

Bypass Sizing:

1. Correct the low fire bypass flow you want with the same factors used to size the regulator.
2. Find this flow at the bottom of the bypass orifice sizing chart and read up to the pressure drop that will be available across the regulator. (At low fire, this nearly equals the inlet pressure to the regulator, so you can simply use the inlet pressure.)
3. Use the nearest flow rate curve for determination (interpolation) of the needed orifice diameter.



Sizing

To size a regulator, determine the required SCFH of natural gas and the pressure drop available at high fire. Select a regulator from the table below. Choose the smallest regulator that will meet or exceed the required SCFH. Never choose a regulator capacity based on more than 27" wc pressure drop (even if available).

Type	Size	$\Delta p = 2''$ wc (5 mbar)		$\Delta p = 4''$ wc (10 mbar)		$\Delta p = 10''$ wc (25 mbar)		$\Delta p = 20''$ wc (50 mbar)		$\Delta p = 27''$ wc (68 mbar)	
		SCFH	m ³ /h	SCFH	m ³ /h	SCFH	m ³ /h	SCFH	m ³ /h	SCFH	m ³ /h
GIK 15T	½"	481	13.6	547	15.5	606	17.2	622	17.6	638	18.1
GIK 20T	¾"	655	18.5	915	25.9	1,417	40.1	1,880	53.2	2,138	60.6
GIK 25T	1"	784	22.2	1,124	31.8	1,786	50.6	2,495	70.7	2,912	82.5
GIK 40T	1½"	1,741	49.3	2,251	63.7	3,066	86.8	3,766	106.6	4,174	118.2
GIK 50T	2"	2,912	82.5	3,965	112.3	5,832	165.1	7,740	219.2	8,829	250
GIK 65T	2½"	5,540	156.9	7,942	224.9	12,948	366.6	18,562	525.6	22,225	629.3
GIK 80T	3"	8,361	236.8	12,299	348.3	19,046	539.2	28,015	793.3	32,692	925.7
GIK 100T	4"	13,987	396.1	19,542	553.4	31,861	902.2	44,516	1,260.5	53,300	1,509.3

Flows in table above based on natural gas at sea level altitude, 1 psig (69 mbar) line pressure and 60 °F (16 °C). Mass flows will decrease at higher temperatures, line pressure and altitudes. To estimate flows at other pressure drops through the regulator, divide figures in the next tables by these factors.

Flow Correction Factors Tables

Specific Gravity	Factor
Air (1.0 s. g.)	1.27
Propane (1.56 s. g.)	1.61
Butane (2.00 s. g.)	1.83
Propane/Air (1.29 s. g.)	1.47
Coke Oven (0.45 s. g.)	0.87

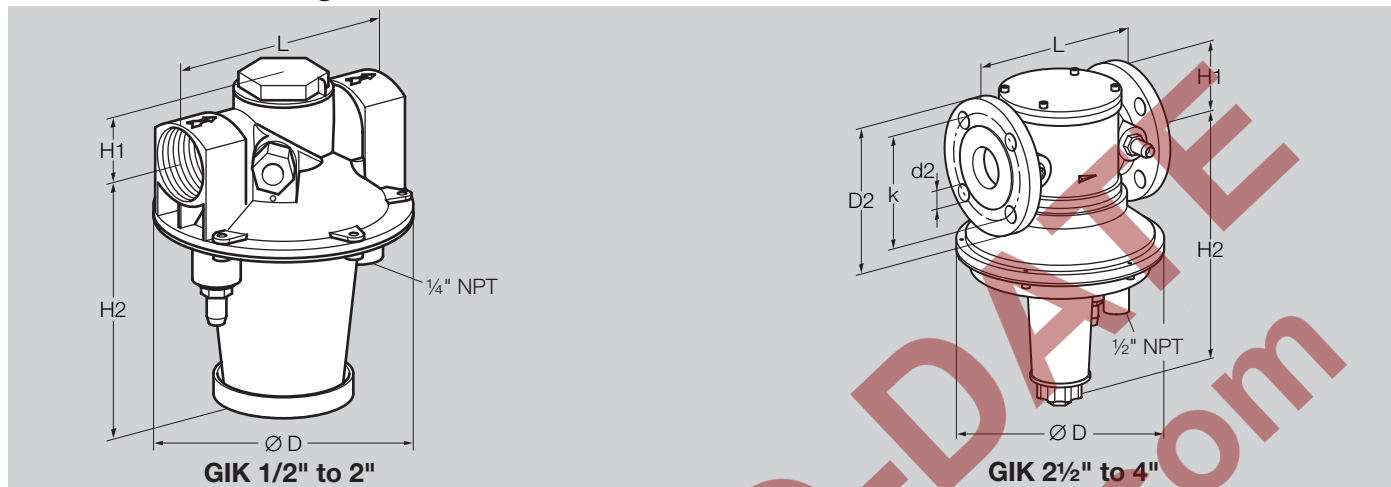
Temperature	Factor
60 °F (16 °C)	1.0
100 °F (38 °C)	0.96
120 °F (46 °C)	0.95

Altitude	Line Pressure [psig]		
	1	2	3
Sea Level	1.00	1.03	1.06
1000' (305 m)	0.98	1.01	1.05
2000' (610 m)	0.97	1.00	1.03
3000' (915 m)	0.95	0.98	1.01
4000' (1220 m)	0.93	0.97	1.00
5000' (1525 m)	0.92	0.95	0.98
6000' (1830 m)	0.90	0.94	0.97
7000' (2135 m)	0.88	0.92	0.95

Selection

For premix and modulating control of nozzle mix burners, select the GIK. For high-low control of nozzle mix burners, including pulse firing, use the GIK..B regulator with the internal bypass.

Dimensions and Weights



Type	Connection	Dimensions								Flange ANSI (ASA) B 16.5 150lb.sq.in.						Drill	Weight	
		L		Ø D		H1		H2		D2		d2		k			No.	lbs
	NPT	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	No.	lbs	kg
GIK 15T	NPT ½"	4.72	120	5.28	134	1.34	34	5.20	132	—	—	—	—	—	—	—	2.20	1.0
GIK 20T	NPT ¾"	4.92	125	5.28	134	1.34	34	5.20	132	—	—	—	—	—	—	—	2.40	1.1
GIK 25T	NPT 1"	4.92	125	5.28	134	1.34	34	5.20	132	—	—	—	—	—	—	—	2.40	1.1
GIK 40T	NPT 1½"	6.10	155	7.29	185	1.77	45	5.87	149	—	—	—	—	—	—	—	4.00	1.8
GIK 50T	NPT 2"	7.97	200	9.21	234	2.03	52	6.57	167	—	—	—	—	—	—	—	6.20	2.8
GIK 65T	ANSI 2½"	11.42	290	10.24	260	3.50	89	16.22	412	7	178	¾	19	5½	140	4	26.42	12.0
GIK 80T	ANSI 3"	12.20	310	12.20	310	3.94	100	17.56	446	7½	191	¾	19	6	152	4	35.49	16.1
GIK 100T	ANSI 4"	13.78	350	15.59	396	4.53	115	19.72	501	91/32	229	¾	19	717/32	191	8	57.32	26.0

Order Information

Air/Gas Ratio Control GIK

GIK	air/gas ratio control
1/2" to 4" (DN 15 to 100)	nominal diameter
T	T-product
N	NPT-internal thread
A	ANSI flanged
02	max inlet pressure 3 psig (200 mbar)
-3	screw plug at the inlet and outlet
-5	pressure test point in outlet
L	only for air
B	Bypass screw

Selection

Type	N	A	2	-3	-5	L	B
GIK 15T	●	—	●	—	●	○	○
GIK 20T	●	—	●	—	●	○	○
GIK 25T	●	—	●	—	●	○	○
GIK 40T	●	—	●	—	●	○	○
GIK 50T	●	—	●	—	●	○	○
GIK 65T	—	●	●	●	—	—	—
GIK 80T	—	●	●	●	—	—	—
GIK 100T	—	●	●	●	—	—	—

● = Standard, ○ = Option, — = unavailable

Accessories



Conversion kit for zero-pressure regulations.
Order Number: GIK 15–50: 03351039
GIK 65–100: 74910853

Warning:

Situations dangerous to personnel and property can result from the misapplication and incorrect operation of combustion equipment. Kromschroder advises compliance with the National Fire Protection Association standards that apply for related equipment and Insurance Underwriters recommendation, and care of operation.

We reserve the right to make technical changes designed to improve our products without prior notice.
For current product information, visit our website at www.kromschroder.com.