

- // Precise pressure regulation over wide turndown ranges
- // Compensated for varying inlet pressure
- // Inlet pressure to 5 psig (350 mbar)
- // Internal safety diaphragm
- // Wide selection of outlet pressure ranges
- // Inlet pressure compensation and zero shut-off
- // CE certified models available

Application

GDJ regulators are general-purpose regulators for controlling gas pressure to furnace ovens and other gas-consuming appliances. They are suitable for natural, LP and clean dry bio-gas at inlet pressures up to 5 psig (350 mbar). Special models are available for air.

Specifications

Operating Limits

Ambient temperature range: 5° F to 140° F (-15° C to 60° C)

Maximum inlet pressure: 5 psig (350 mbar)

Mechanical Data

Available pipe sizes: NPT-threaded: ½", ¾", 1", 1½", 2"

Materials of Construction

GDJ Regulators have pressure die-cast aluminium alloy valve bodies and diaphragm housings. Diaphragms and valve discs are nitrile rubber. Valve stems are precision-molded plastic.

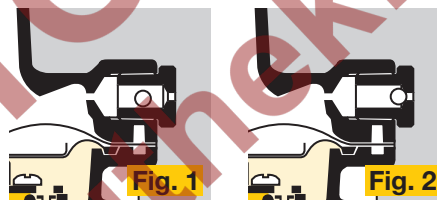
Special Features - Vent Restrictor

A vent restrictor fits into the regulator vent. In the event of a major malfunction it will limit the amount of gas that can escape to atmosphere. Under normal conditions air can pass freely in and out of the top cover, through the vent restrictor (Fig.1). This is necessary for the regulator to work. In the event of a sudden pressure surge, due to equipment failure, the plastic ball inside the unit is blown to the end of internal hole where it blocks the escaping gas (Fig. 2).

The restrictor is built and tested to comply with ANSI Z21.18 1995

Flow rates through restrictor

Pressure		Flow Rate (0.6 sg Gas)		Flow Rate (Air)	
psig	mbar	ft ³ /h	m ³ /h	ft ³ /h	m ³ /h
0.5	34.5	0.995	0.028	1.284	0.036
1.0	69	0.955	0.028	1.284	0.036
1.5	103	1.085	0.031	1.401	0.040
2.0	138	1.447	0.041	1.869	0.053
5.0	345	< 2.0	< 0.56	< 2.5	0.071



Each vent restrictor is tested to ensure that the flow in the fault conditions is less than 2.5 ft³/h (0.6 sg gas) and more than 1 ft³/h (0.6 sg gas). This is to make sure that the device does not slow the regulator response time in normal operation.

Spring table

Standard factory setting for outlet pressure is 20" wc (GDJ 15), 36" wc (GDJ 20 to 50).

The outlet pressure ranges are adjustable by inserting different spring (see table).

Type	Outlet pressure range		Color	Order. No.
	" wc	mbar		
GDJ 15T	1-6	2-16	yellow	03089042
	4-8	10-20	black	03089043
	7-11	16-28	orange	03089044
	9-16	22-40	brown	03089045
	16-22*	40-55*	light green/light blue*	03089047
GDJ 20T	2-6	5-15	yellow	03089048
GDJ 25T	5-10	12.5-25	black	03089049
	9-14	22.5-35	orange	03089050
	10-30	25-75	yellow/black	03089051
	28-40*	70-100*	pink/gold*	03089052
	36-64	90-160	yellow/orange	03089056
GDJ 40T	2-6	5-15	red/yellow	03089053
	5-10	12.5-25	red/black	03089054
	9-14	22.5-35	red/orange	03089055
	10-30	25-75	yellow/orange	03089056
	28-40*	70-100*	pink/silver*	03089057
GDJ 50T	36-64	90-160	grey/gold	03089062
	2-6	5-15	dark blue/yellow	03089058
	5-10	12.5-25	dark blue/black	03089059
	9-14	22.5-35	dark blue/orange	03089060
	10-30	25-75	yellow/dark green	03089061
	28-40*	70-100*	grey/gold*	03089062

* Standard spring

Sizing

Type	Inlet pressure 5 psig outlet pressure 20" wc max. flow at		Inlet pressure 2 psig outlet pressure 20" wc max. flow at		Max. recommended outlet pressure (normal service)		Max. recommended outlet pressure (abnormal service)	
	SCFH	m ³ /h	SCFH	m ³ /h	"wc	mbar	psig	mbar
GDJ 15T	558	15.8	477	13.5	16	40	7.25*	500
GDJ 20T	1218	34.5	1123	31.8	64	160	7.25*	500
GDJ 25T	2514	71.2	2207	62.5	64	160	7.25*	500
GDJ 40T	4343	123	3955	112	64	160	7.25*	500
GDJ 50T	5141	146.6	4696	133	40	100	7.25*	500

* Maximum outlet pressure without damage to internal parts

Flows in table above are based on 1 psig, 60° F at sea level (14.7 psia) and natural gas with a specific gravity of 0.62. Flows will change if the ambient temperature or altitude increase and if the specific gravity increases. To correct for conditions other than the ones used in table multiply the flows by the factors calculated with below equation.

$$\text{Flow factor} = \sqrt{\frac{0.62}{\text{S.G.}}} \times \frac{520}{460 + ^\circ\text{F}} \times \frac{\text{PSIA} + \text{PSIG}}{15.7}$$

°F = Gas temperature through regulator

S.G. = Specific gravity of gas – air (1.0 s.g.), propane (1.56 s.g.), butane (2.0 s.g.)

PSIA = Barometric pressure

PSIG = Supply pressure to regulator

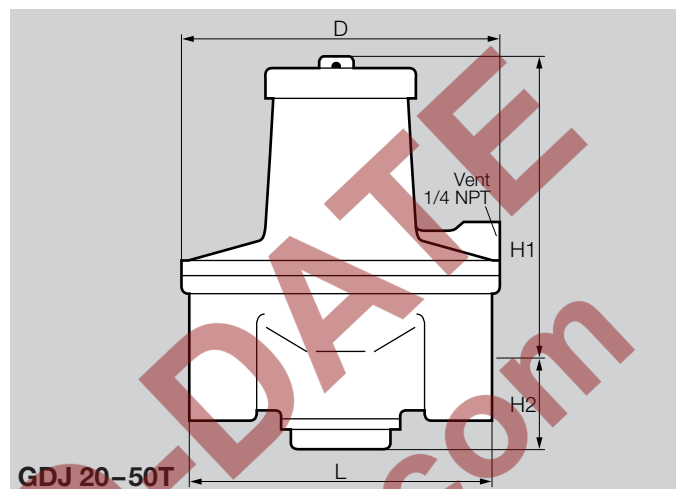
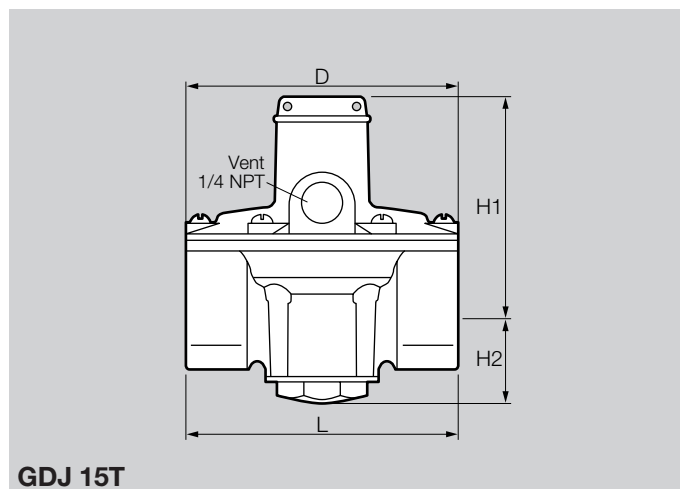
Estimated barometric pressure at various altitudes:

Sea level	14.7 psia
1000 ft	14.2 psia
2000 ft	13.7 psia
3000 ft	13.2 psia
4000 ft	12.7 psia
5000 ft	12.2 psia
6000 ft	11.8 psia
7000 ft	11.3 psia

To estimate flows for other medias across the regulator, divide figures in the table above by these factors:

Medium	Air	Propane	Butane
Flow Factor	1.27	1.61	1.83

Dimensions and Weights



Type	Connection	Dimensions								Weight	
		L		øD		H1		H2		lbs	kg
	NPT	inch	mm	inch	mm	inch	mm	inch	mm		
GDJ 15T	1/2	3.93	100	3.93	100	3.54	90	1.18	30	1.32	0.6
GDJ 20T	3/4	4.92	125	5.28	134	5.20	132	1.34	34	2.20	1.0
GDJ 25T	1	4.92	125	5.28	134	5.20	132	1.34	34	2.20	1.0
GDJ 40T	1 1/2	6.10	155	7.29	185	5.87	149	1.77	45	4.19	1.9
GDJ 50T	2	7.97	200	9.21	234	6.57	167	2.03	52	6.82	3.1

Order Information

Pressure Reducing Regulator GDJ

GDJ	pressure reducing regulator
1/2" to 2" (DN 15 to 50)	nominal diameter
T	T-product
N	NPT-internal thread
04	max inlet pressure 5 psig (350 mbar)
-0	without pressure test point
L	only for air

Warning:

Situations dangerous to personnel and property can result from the misapplication and incorrect operation of combustion equipment. Elster 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.