

GV Manual and Pneumatic Gate Valves



The Edwards GV range of stainless steel, bellows sealed gate valves is designed for applications requiring overall leak tightness and a minimum of hydrocarbon in the residual atmosphere.

These superior quality valves offer high vacuum integrity coupled with maximum conductance. The valves are available with flange options of ISO, CF (metal sealed) for applications at ultra high vacuum requiring increased bakeout temperatures.

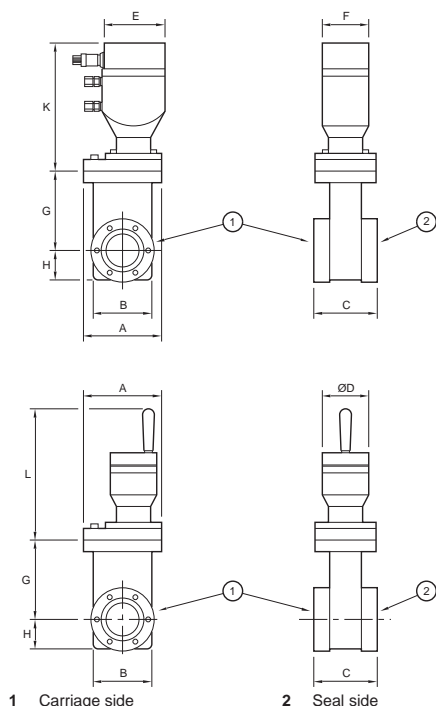
The stainless steel valve bodies are vacuum brazed, a special process which includes a bakeout at 1100 °C. This eliminates any possibility of virtual leaks and ensures a product with low outgassing characteristics.

A laser welded stainless steel bellows effectively seals the actuator from the valve. The concept provides ease of servicing and allows the gate and linkage mechanism to be removed while the valve remains in situ.

Features & Benefits

- In situ removal of gate and linkage mechanism for easy servicing
- Virtual leaks eliminated due to vacuum brazed manufacture
- Electropolished finish inside and outside
- Compact design with high conductance
- Manual or pneumatic options
- Microswitch position indicator as standard on pneumatic version
- Long periods of use between maintenance
- Low vibration and shock
- Free choice of orientation
- Wide range from 40 mm / 1.56 inch bore up to 320 mm / 12.48 inch bore
- Flange options – ISO, CF (metal sealed)
- High reliability – 1000000 cycle option
- Optional 3 position operation
- Vacuum brazed to 1100 °C to eliminate virtual leaks

Dimensions



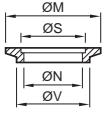
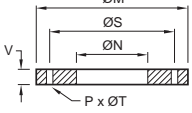
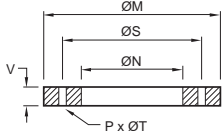
Technical Data

Pressure range	10 ⁻⁹ mbar to 1 bar (absolute) / 8 x 10 ⁻¹⁰ – 750 Torr
Leak rate	< 10 ⁻⁹ mbar l s ⁻¹ / 8 x 10 ⁻¹⁰ Torr l s ⁻¹
Maximum differential pressure on the valve plate	1 bar / 750 Torr in either direction
Maximum differential pressure on the valve plate at opening	20 mbar / 15 Torr
Position indicator switch, breaking capacity	24 V d.c., 5 A
Material of construction	
Body, valve plate	AISI 304 stainless steel
Mechanism	AISI 304 stainless steel
Bearings	Hardened high carbon chrome steel
Circlips	SS PH 15-7 Mo
Bellows	AM 350 stainless steel
Seals, valve plate	Fluoroelastomer
Bonnet	
Metal sealed valves	OFHC
Other valves	Fluoroelastomer
Bakeout temperature	
Valve body, valve open	150 °C (fluoroelastomer bonnet seal)
Valve body, valve open	250 °C (metal bonnet seal)
Valve closed	200 °C
Actuator, manual	200 °C
Actuator, pneumatic	100 °C
Average life until first service*	100000 closures
Mounting position	Any orientation
Pneumatic operating pressure	4 – 5.5 bar / 60 – 80 psi

* Dependent on the vacuum environment and the opening and closing speed

Flange Bore	Conductance in High Vacuum l s ⁻¹	Pneumatic Valve Minimum Closing & Opening Time at 5 bar, Seconds	Approx Weight, kg
mm	in		
40	1.5	0.5	5
50	2	0.5	6
63	2.5	1	8
100	4	1.5	15
160	6	1.5	23
200	8	2 (close) 3 (open)	34
250	10	3 (close) 4 (open)	73
320	12	3 (close) 4 (open)	77

* Special versions available, including 1 million cycle types, 3 position types, larger valves, and pneumatic versions with reed switch position indicators.

	Model No.	Body Dimensions (mm)										Flange Dimensions (mm)					
		A	B	C	Ø D	E	F	G	H	K	L	Ø M	Ø N	P	Ø S	Ø T	V
NW 	GVI 040	84.1	26.2	50.5	50.8	69.3	50.7	86.1	33.0	134.9	91.7	55.0	38.1	-	41.2	-	12.7
	GVI 050	96.8	75.2	50.5	50.8	69.3	50.7	104.5	37.6	134.9	91.7	75.0	50.8	-	52.2	-	12.7
ISO 	GVI 063	111.0	89.4	51.6	50.8	69.3	50.7	122.1	43.1	134.9	91.7	130.1	63.5	4	110.0	M8	12.7
	GVI 080	125.0	109.1	51.6	50.8	69.3	50.7	145.9	72.8	134.9	91.7	145.1	75.9	8	126.0	M8	12.7
	GVI 100	177.8	143.5	61.2	75.5	93.5	76.2	206.4	66.9	175.6	201.3	165.1	101.6	8	145.0	M8	12.7
	GVI 160	222.3	191.8	67.0	75.5	93.5	76.2	270.5	87.6	175.6	201.3	225.0	152.4	8	200.0	M10	16.0
	GVI 200	285.8	254.5	67.6	75.5	93.5	76.2	353.4	114.6	175.6	201.3	285.8	203.2	12	260.0	M10	15.9
	GVI 250	341.1	303.5	80.0	88.9	120.4	120.4	460.6	146.6	240.7	231.7	335.0	254.0	12	310.0	M10	19.0
	GVI 320	408.2	362.7	80.0	88.9	120.4	120.4	560.5	174.9	240.7	231.7	425.0	304.8	12	395.0	M12	19.0
CF 	GVC 015	84.1	62.5	51.6	50.8	69.3	50.7	86.1	33.0	134.9	91.7	69.3	38.1	6	58.7	M6	12.7
	GVC 020	96.8	75.2	57.9	50.8	69.3	50.7	104.5	37.6	134.9	91.7	85.7	50.8	8	72.4	M8	15.9
	GVC 025	111.0	89.4	61.2	50.8	69.3	50.7	122.1	43.1	134.9	91.7	113.5	63.5	8	92.2	M8	17.5
	GVC 040	177.8	143.5	75.4	75.9	93.5	76.2	206.4	66.9	175.6	190.6	151.6	101.9	16	130.3	M8	19.8
	GVC 060	222.3	191.8	80.5	75.9	93.5	76.2	270.5	87.6	175.6	200.2	202.4	152.4	20	181.1	M8	22.4
	GVC 080	285.8	254.5	85.1	75.9	93.5	76.2	353.4	114.6	175.6	200.2	253.2	203.2	24	231.9	M8	24.6
	GVC 100	341.4	303.5	98.8	88.9	120.4	101.6	460.6	146.6	240.7	231.7	304.8	254.0	32	284.0	M8	28.5
	GVC 120	403.2	362.7	98.8	88.9	120.4	101.6	560.5	174.9	240.7	231.7	354.6	304.8	30	325.4	M10	28.5

Ordering Information

Type	Model	Flange seals	No. seals*	Fixing kit	No. kits†
ISO	GVI 063	B27158170	1	B22417187	1
	GVI 100	B27158171	1	B22417187	2
	GVI 160	B27158172	1	B22417217	2
	GVI 200	B27158081	1	B22417217	2
	GVI 250	B27158143	1	B22417247	2
	GVI 320	B27158166	1	B22417247	2
CF	GVC 015	C10001290	10	B22417157	2
	GVC 020	C10005290	10	B22417187	2
	GVC 025	C10007490	10	B22417188	2
	GVC 040	C10009290	10	B22417189	2
	GVC 060	C10011290	5	B22417190	2
	GVC 080	C10012290	5	B22417190	2
	GVC 100	C10013290	5	B22417190	2

* Number of seals in each pack.

† Number of fixing kits that are needed to mount both flanges of the valve.

Ordering Information

Type	Flange	Nominal		Valve Ordering (Number)
		Bore mm/in	Model	
ISO Manual	NW40	40/1½	GVI040	B65001000
	NW50	50/2	GVI050	B65101000
	ISO63	63/2½	GVI063	B65201000
	ISO80	75/3	GVI080	N03933800
	ISO100	100/4	GVI100	B65301000
	ISO160	160/6	GVI160	B65401000
	ISO200	200/8	GVI200	B65501000
	ISO250	250/10	GVI250	B65601000
	ISO320	320/12	GVI320	B65701000
	ISO Pneumatic	NW40	40/1½	GVI040
NW50		50/2	GVI050	B65151000
ISO63		63/2½	GVI063	B65251000
ISO80		75/3	GVI080	U30002092
ISO100		100/4	GVI100	B65351000
ISO160		160/6	GVI160	B65451000
ISO200		200/8	GVI200	B65551000
ISO250		250/10	GVI250	B65651000
ISO320		320/12	GVI320	B65751000
CF Manual		2.37 inch od CF	40/1½	GVC015
	3.37 inch od CF	50/2	GVC020	B65103000
	4.47 inch od CF	63/2½	GVC025	B65203000
	6.00 inch od CF	100/4	GVC040	B65303000
	8.00 inch od CF	160/6	GVC060	B65403000
	10.00 inch od CF	200/8	GVC080	B65503000
	12.00 inch od CF	250/10	GVC100	B65603000
14.00 inch od CF	320/12	GVC120	B65703000	
CF Pneumatic	2.37 inch od CF	40/1½	GVC015	B65053000
	3.37 inch od CF	50/2	GVC020	B65153000
	4.47 inch od CF	63/2½	GVC025	B65253000
	6.00 inch od CF	100/4	GVC040	B65353000
	8.00 inch od CF	160/6	GVC060	B65453000
	10.00 inch od CF	200/8	GVC080	B65553000
	2.00 inch od CF	250/10	GVC100	B65653000
	14.00 inch od CF	320/12	GVC120	B65753000