

data sheet

# 85B-100 v-port control valve

stainless steel FNPT standard port 600



**description**

The “Apollo” v-port control valve is an extension of our already proven and robust 85B series. It will use all the same trusted components with the addition of a characterized ball. The 85B v-port control valve is a stainless steel class 600 standard port three-piece design.

The characterized ball, offered with a 30°, 60°, 90° and 1/16” slot, allows for an accurate control of flow where needed. Applications can span across industries like chemical processing, oil and gas, water treatment and HVAC systems, where precise and reliable flow control is essential. These are cast and machined in our South Carolina manufacturing plants, this valve provides trusted performances and a wide range of options.

**size range**

- 3/4” - 2 1/2”

**connections**

- FNPT threaded per ASME B1.20.1

**standard compliance**

- ASME B16.34
- NACE MR0175 (2000)
- MR0103 (2012)
- API 608

**approvals**

- NSF 61/NSF-372
- API-607 fire safe (requires -24 suffix)
- American Iron and Steel Act (AIS) with -UA suffix

**features**

- 3-piece construction w/ enclosed fasteners
- standard port
- stainless steel trim & hardware
- pressure balanced solid ball
- compression controlled spiral wound gaskets
- anti-blowout one-piece bottom entry stem
- statically grounded ball, stem, & body
- live loaded stem packing
- adjustable graphite stem packing
- fully machined ISO 5211 mounting
- cast bosses on the center-section and end caps for bleed & drain ports
- fire safe to API 607 (requires -24 or -EF suffix)
- CE marking, 1 1/4” and larger (add “-CE” suffix)
- 250 psig saturated steam
- manufactured in the USA - AIS compliant with -UA suffix

component	material
body	ASTM A351-CF8M
ball	ASTM A276-316 stainless steel
seat	multi-seal
stem	ASTM A276-316 stainless steel ASTM A564 17-4PH (2” with -38 suffix)
body gasket	graphite spiral wound
body bolts	ASTM A193-gr. B8M3
packing	graphite
packing gland	ASTM A276-316 stainless steel
gland screws	ASTM A193-gr. B8
spring washers	300 series stainless steel
gland	300 series stainless steel
end caps	ASTM A351-CF3M
internal/external grounding spring	300 series stainless steel

**performance rating**

pressure	SWP	temperature	vacuum service
class 600	250 psig	550°F (maximum temperature)	29 in. Hg



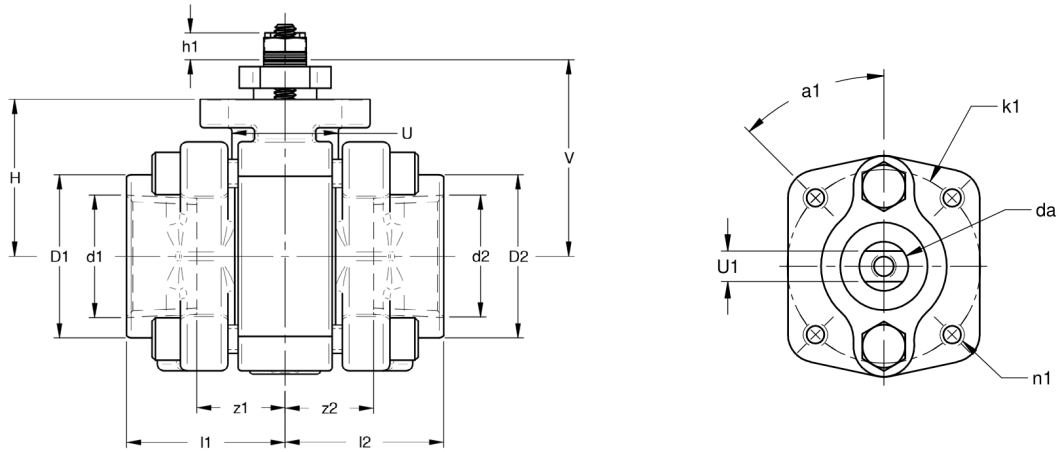
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**Aalberts integrated piping systems**

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job name	
job location	
engineer	
contractor	
tag	
PO#	
rep	
wholesaler dist	

data sheet



dimensions

part number	size	D1	D2	d1	d2	l1	l2	z1	z2	V	U	h1	H	k1	n1	a1	U1	da
85B-104-2477VX	3/4"	1.44"	1.44"	1.05"	1.05"	1.40"	1.40"	0.78"	0.78"	1.87"	0.94"	0.24"	1.39"	1.42"	10-24	45°	0.25"	0.38"
85B-105-2477VX	1"	1.76"	1.76"	1.32"	1.32"	1.85"	1.85"	1.17"	1.17"	2.27"	1.20"	0.24"	1.65"	1.97"	¼"-20	45°	0.31"	0.50"
85B-107-2477VX	1-1/2"	2.39"	2.39"	1.90"	1.90"	2.29"	2.29"	1.51"	1.51"	3.07"	1.50"	0.72"	2.39"	2.76"	⅝"-18	45°	0.41"	0.63"
85B-108-2477VX	2"	2.93"	2.93"	2.38"	2.38"	2.49"	2.49"	1.68"	1.68"	3.21"	1.50"	0.69"	2.49"	2.76"	⅝"-18	45°	0.41"	0.63"
85B-109-2477VX	2-1/2"	3.57"	3.57"	2.88"	2.88"	2.93"	2.93"	1.75"	1.75"	3.97"	1.86"	0.77"	3.17"	2.76"	⅝"-18	45°	0.48"	0.75"

options

option	component	size
(-24)	graphite packing	all
(-49)	no lubrication, assembled dry.	all
(-57)	cleaned for oxygen service	all
(-76)	live loaded (lever operated)	all

option	component	size
(-77)	live loaded (actuated)	all
(-CE)	CE marking	1 ¼" - 2 ½"
(-EF)	graphite packing (API 641 compliant)	all
(-UA)	AIS (American iron & steel) compliant	all

Cv values

valve size	profile shape	percent open (degrees open)										
		0 (0°)	10 (9°)	20 (18°)	30 (27°)	40 (36°)	50 (45°)	60 (54°)	70 (63°)	80 (72°)	90 (81°)	100 (90°)
¾"	30° V	0.00	0.00	0.00	0.03	0.18	0.39	0.71	1.12	1.55	2.05	2.67
	60° V	0.00	0.00	0.00	0.04	0.19	0.43	0.78	1.33	2.27	3.47	5.03
	90° V	0.00	0.00	0.00	0.05	0.23	0.55	1.09	1.87	3.00	4.78	7.14
	⅜" slot	0.00	0.00	0.00	0.06	0.16	0.27	0.38	0.48	0.59	0.70	0.80
1"	30° V	0.00	0.00	0.01	0.24	0.59	1.06	1.72	2.59	3.52	4.51	5.93
	60° V	0.00	0.00	0.01	0.25	0.65	1.28	2.13	3.43	5.44	8.31	11.69
	90° V	0.00	0.00	0.02	0.28	0.83	1.66	2.86	4.73	7.59	12.10	17.94
	⅜" slot	0.00	0.00	0.03	0.17	0.31	0.45	0.59	0.72	0.86	1.00	1.14
1 ½"	30° V	0.00	0.00	0.02	0.71	1.56	2.57	4.15	6.32	8.76	11.28	14.46
	60° V	0.00	0.00	0.07	0.85	2.09	3.82	6.26	10.10	15.32	20.83	29.83
	90° V	0.00	0.00	0.09	1.49	3.06	5.55	9.25	14.50	22.67	34.71	53.00
	⅜" slot	0.00	0.00	0.06	0.30	0.55	0.80	1.05	1.30	1.55	1.80	2.05
2"	30° V	0.00	0.00	0.27	0.90	2.17	3.65	5.93	8.85	11.73	16.00	20.66
	60° V	0.00	0.00	0.33	1.53	3.63	6.39	10.21	15.45	22.44	30.13	40.72
	90° V	0.00	0.00	0.39	1.81	3.90	7.43	12.15	19.60	30.25	45.47	65.83
	⅜" slot	0.00	0.00	0.16	0.44	0.73	1.01	1.29	1.58	1.86	2.15	2.44
2 ½"	30° V	0.00	0.00	0.31	1.50	3.43	6.18	10.13	15.85	22.28	28.63	36.12
	60° V	0.00	0.00	0.69	3.15	5.87	10.73	17.58	26.00	38.00	55.00	76.64
	90° V	0.00	0.00	0.90	3.63	7.19	13.78	23.94	37.33	57.12	87.07	129.18
	⅜" slot	0.00	0.00	0.20	0.57	0.94	1.30	1.67	2.03	2.40	2.77	3.14

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pressure/temperature ratings  
engineering data

stainless steel

graph 1

ASTM A351-CF8M (stainless steel): class 600

