

data sheet

84B-140 v-port control valve

carbon steel FNPT standard port 600



description

The "Apollo" v-port control valve is an extension of our already proven and robust 84B series. It will use all the same trusted components with the addition of a characterized ball. The 84B v-port control valve is a carbon 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

valve design

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

approvals

- 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 A216-WCB |
| 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 A216-WCB |
| 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 |



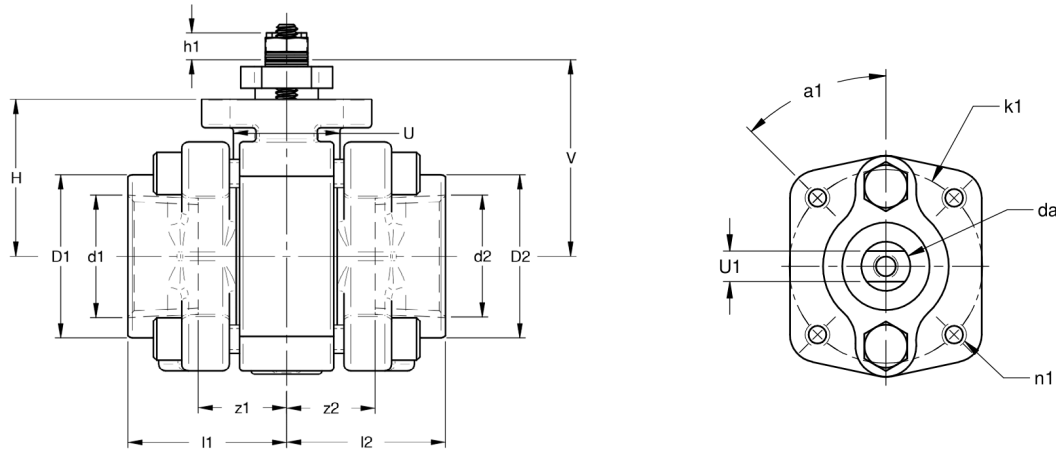
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Aalberts integrated piping systems

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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 |
|----------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-------|-------|
| 84B-144-2477VX | 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" |
| 84B-145-2477VX | 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" |
| 84B-147-2477VX | 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" |
| 84B-148-2477VX | 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" |
| 84B-149-2477VX | 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 |
| | ⅛" 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 |
| | ⅛" 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 |
| | ⅛" 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 |
| | ⅛" 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 |
| | ⅛" slot | 0.00 | 0.00 | 0.20 | 0.57 | 0.94 | 1.30 | 1.67 | 2.03 | 2.40 | 2.77 | 3.14 |

data sheet

pressure/temperature ratings
engineering data

carbon steel

graph 1

ASTM A216 WCB (carbon steel): class 600

