



# PROVAC

## SALES

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# Varian TV-551, TV-701, TV-1001

## Technical Specifications

|                                   | Turbo-V 551 Navigator |                       | Turbo-V 701 Navigator |                       | Turbo-V 1001 Navigator |                       |
|-----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|
| Pump Specification                | DN 100                | DN 160                | DN 200                | DN 160                | DN 200                 | DN 250                |
| Pumping Speed, l/s                |                       |                       |                       |                       |                        |                       |
| Nitrogen                          | 350                   | 550                   | 690                   | 790                   | 950                    | 1,050                 |
| Helium                            | 450                   | 600                   | 620                   | 820                   | 870                    | 900                   |
| Hydrogen                          | 450                   | 510                   | 510                   | 860                   | 900                    | 920                   |
| Compression Ratio                 |                       |                       |                       |                       |                        |                       |
| Nitrogen                          | $> 1 \times 10^9$     | $> 1 \times 10^9$     | $1 \times 10^9$       | $1 \times 10^9$       | $1 \times 10^9$        | $1 \times 10^9$       |
| Helium                            | $1 \times 10^7$       | $1 \times 10^7$       | $1 \times 10^7$       | $1 \times 10^7$       | $1 \times 10^7$        | $1 \times 10^7$       |
| Hydrogen                          | $1 \times 10^6$       | $1 \times 10^6$       | $1 \times 10^6$       | $1 \times 10^6$       | $1 \times 10^6$        | $1 \times 10^6$       |
| Base pressure, mbar               |                       |                       |                       |                       |                        |                       |
| with recommended mechanical pump  | $< 1 \times 10^{-10}$ | $< 1 \times 10^{-10}$ | $< 1 \times 10^{-10}$ | $< 1 \times 10^{-10}$ | $< 1 \times 10^{-10}$  | $< 1 \times 10^{-10}$ |
| with recommended dry pump         | $< 1 \times 10^{-10}$ | $< 1 \times 10^{-10}$ | $< 1 \times 10^{-10}$ | $< 1 \times 10^{-10}$ | $< 1 \times 10^{-10}$  | $< 1 \times 10^{-10}$ |
| Startup Time, min                 | < 5                   | < 5                   | < 5                   | < 4                   | < 4                    | < 4                   |
| Rotational Speed, rpm             | 42,000                | 42,000                | 42,000                | 38,000                | 38,000                 | 38,000                |
| Recommended Forepump              |                       |                       |                       |                       |                        |                       |
| Two-stage mechanical pump         | DS 302                | DS 302                | DS 402                | DS 402                | DS 402                 | DS 402                |
| Dry pump                          | TS300                 | TS300                 | TS300                 | TS300                 | TS300                  | TS300                 |
| Inlet Flange, nominal diameter    |                       |                       |                       |                       |                        |                       |
| Klamp Flange, mm                  | -                     | -                     | -                     | -                     | -                      | -                     |
| ConFlat®, mm (inches OD)          | 100 (6)               | 160 (8)               | 200 (10)              | -                     | 200 (10)               | -                     |
| ISO clamp style, mm               | -                     | 160                   | 200                   | 160                   | 200                    | 250                   |
| ISO-F bolted, mm                  | -                     | 160-F bolted          | 200-F bolted          | -                     | 200-F bolted           | 250-F bolted          |
| Foreline Flange, nominal diameter |                       |                       |                       |                       |                        |                       |
| Klamp Flange                      | NW25                  | NW25                  | NW25                  | NW40                  | NW40                   | NW40                  |
| SEM Version Available on Request  | •                     | •                     | •                     | •                     | •                      | •                     |
| Controllers                       |                       |                       |                       |                       |                        |                       |
| Rack Controller                   | •                     | •                     | •                     | •                     | •                      | •                     |
| Navigator on board Controller     | •                     | •                     | •                     | •                     | •                      | •                     |
| Integrated Electronics            | -                     | -                     | -                     | -                     | -                      | -                     |
| PCB Controller                    |                       |                       |                       |                       |                        |                       |



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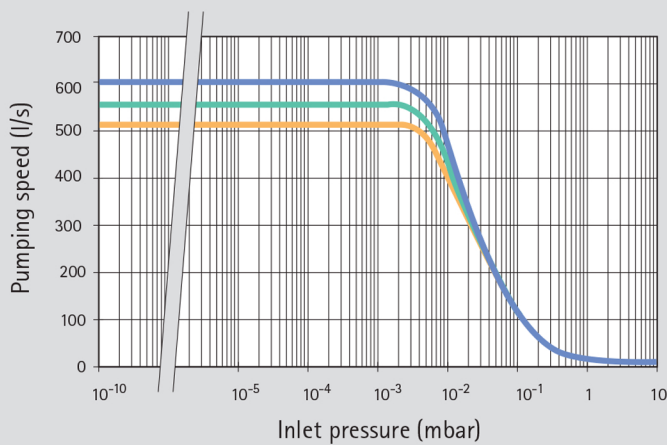
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# Varian TV-551, TV-701, TV-1001

## Pumping Curves

### TV-551

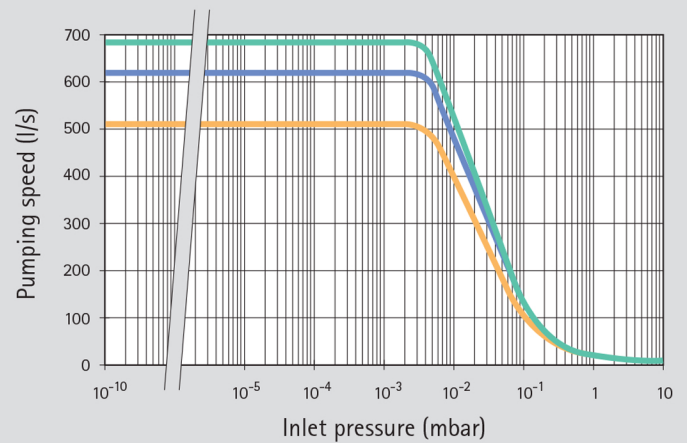
Pumping Speed vs Inlet Pressure (DN 160 only)



— Nitrogen — Helium — Hydrogen

### Tv-701

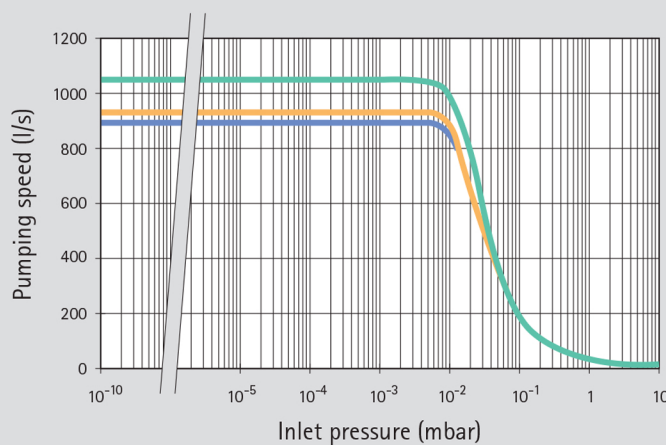
Pumping Speed vs Inlet Pressure (DN 200 only)



— Nitrogen — Helium — Hydrogen

### TV-1001

Pumping Speed vs Inlet Pressure (DN 250 only)



— Nitrogen — Helium — Hydrogen



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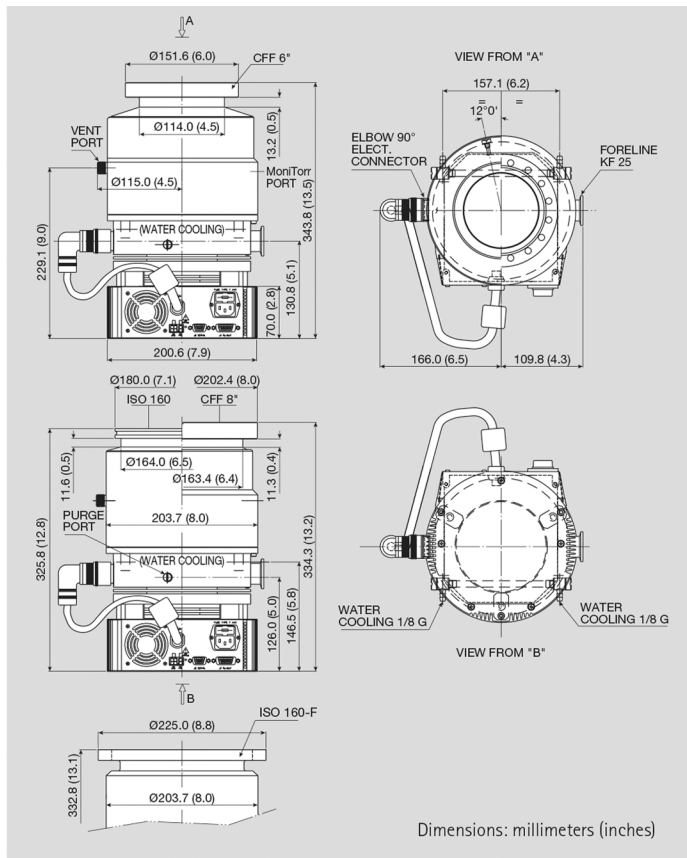
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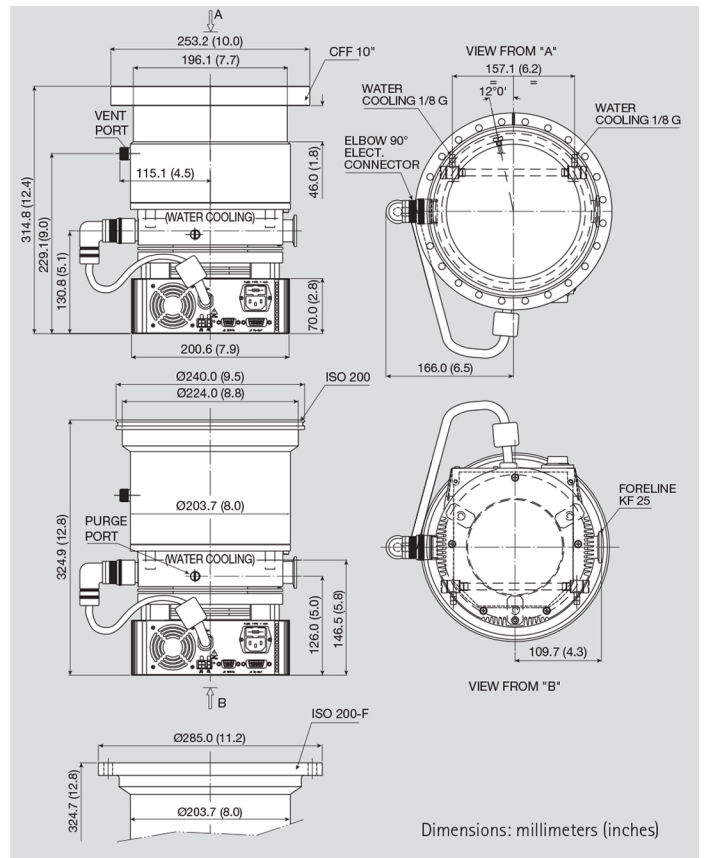
# Varian TV-551, TV-701, TV-1001

## Dimensions

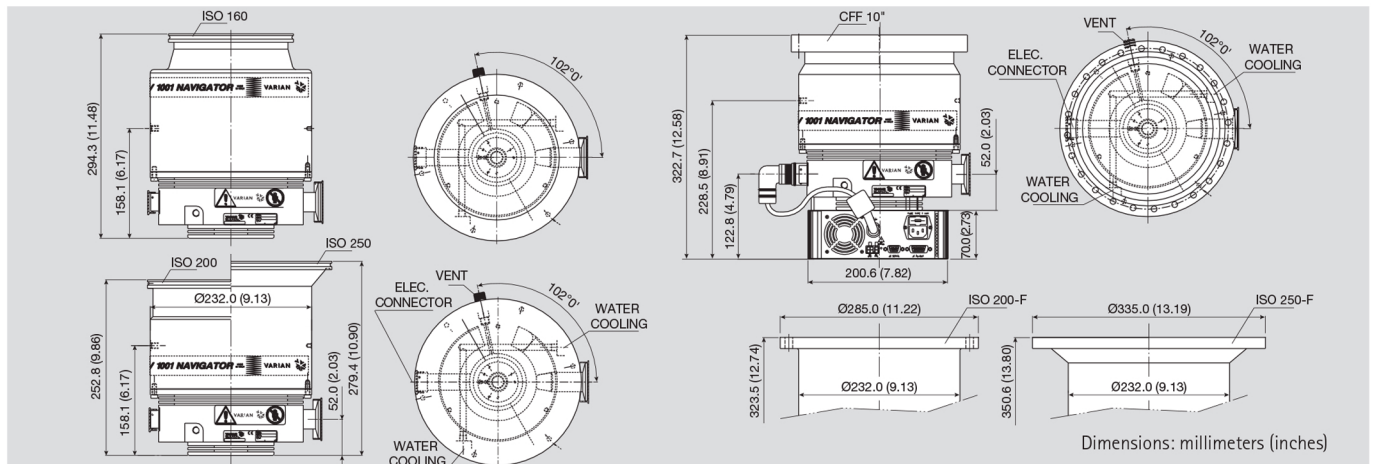
### TV-551



### Tv-701



### TV-1001





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# Varian TV-551, TV-701, TV-1001

## Features & Benefits

- high compression ratio, pressure differential, and foreline pressure
- rugged, simple, efficient motor
- ceramic ball bearings
- oil-free permanent lubrication
- thermal efficiency
- temperature distribution control



## Applications

- high energy physics • research laboratories • nanotechnologies • ion beam systems • electron microscopy • surface analysis • mass spectrometry • industrial vacuum processing • thin film deposition
- device processing • general industrial processes