

# *RV ROTARY VANE PUMPS*



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INNOVATIVE PRODUCTS

GLOBAL STRENGTH

LOCAL SUPPORT

VACUUM EXPERTISE

# Proven performance that sets the industry standard

Edwards 30 years of experience in scientific applications affords us a deep understanding of research practices and the critical role that vacuum plays within them. From this platform, and through collaboration with the major analytical instrument manufacturers, we develop and support innovative vacuum products that underpin our clients' entire research process.

Edwards RV pumps have become the industry standard for scientific primary pumping applications. RV pumps are uniquely capable of delivering high throughputs with high ultimate vacuum. This, combined with ultra-low noise levels, makes them ideal for a wide range of applications and environments.

All pumps are approved to UL and CSA standards by an external test house. Edwards has a global network, providing world-wide support for product applications and service.

## Typical Applications

|                                     | RV 3/5 | RV 8/12 |
|-------------------------------------|--------|---------|
| Analytical instruments - GCMS       | •      |         |
| Analytical instruments - LCMS       |        | •       |
| Centrifuges, ultra-high speed       | •      | •       |
| Coating                             | •      | •       |
| Degassing/curing - oil, epoxy resin | •      | •       |
| Distillation/extraction/filtration  | •      | •       |
| Freeze drying                       | •      | •       |
| Furnaces                            | •      | •       |
| Gas bottle filling/emptying         | •      | •       |
| Gel drying                          | •      | •       |
| Glove boxes, ovens                  | •      | •       |
| Laboratory bench top vacuum         | •      | •       |
| Leak detectors, Helium              | •      | •       |
| Load locks and transfer chambers    | •      | •       |
| Refrigeration manufacture           | •      | •       |
| Research and development            | •      | •       |
| Rotary, centrifugal evaporators     | •      | •       |
| Scanning electron microscopes - SEM | •      | •       |
| SEM/FIB (ion beam repair)           | •      | •       |
| Solvent recovery                    | •      | •       |
| Surface science instruments         | •      | •       |
| Turbomolecular backing pumps        | •      | •       |

### Adjustable gas ballast

Excellent water vapor handling capacity

### Patented inlet valve

Smooth opening, fast closing

### Integral air bleed

Quiet operation

### Wide voltage motors

All major countries covered with less stock holding

### Integral IEC 60320 connector

No customer wiring

**All pumps externally approved to EN61010, CSA C22.2 1010, UL 61010 standards**

Safe product



**Motor on/off switch**

Easy controls

**Patented mode switch**

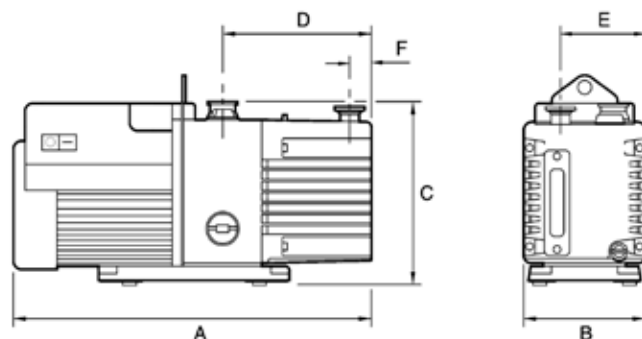
High vacuum or high throughput in one pump



## Dimensions - mm

|      | A   | B   | C   | D   | E   | F  |
|------|-----|-----|-----|-----|-----|----|
| RV3  | 430 | 158 | 225 | 156 | 111 | 29 |
| RV5  | 430 | 158 | 225 | 156 | 111 | 29 |
| RV8  | 470 | 158 | 225 | 196 | 111 | 35 |
| RV12 | 490 | 158 | 225 | 216 | 111 | 35 |

Note: Single phase pump diagram shown, 3 phase pumps look different but share the same dimensions



## Specifications

|                                 | Hz    | Units             | RV3                    | RV5                    | RV8                    | RV12                   |
|---------------------------------|-------|-------------------|------------------------|------------------------|------------------------|------------------------|
| <b>VACUUM DATA</b>              |       |                   |                        |                        |                        |                        |
| Peak pumping speed              | 60    | cfm               | 2.3                    | 3.6                    | 5.9                    | 8.4                    |
|                                 | 50    | m <sup>3</sup> /h | 3.3                    | 5.1                    | 8.5                    | 12                     |
| Ultimate pressure (Total)       | 60    | Torr              | 1.5 x 10 <sup>-3</sup> | 1.5 x 10 <sup>-3</sup> | 1.5 x 10 <sup>-3</sup> | 1.5 x 10 <sup>-3</sup> |
|                                 | 50    | mbar              | 2.0 x 10 <sup>-3</sup> | 2.0 x 10 <sup>-3</sup> | 2.0 x 10 <sup>-3</sup> | 2.0 x 10 <sup>-3</sup> |
| Ultimate pressure GB I (Total)  | 50/60 | Torr              | 2.3 x 10 <sup>-2</sup> | 2.3 x 10 <sup>-2</sup> | 2.3 x 10 <sup>-2</sup> | 2.3 x 10 <sup>-2</sup> |
|                                 |       | mbar              | 3.0 x 10 <sup>-2</sup> | 3.0 x 10 <sup>-2</sup> | 3.0 x 10 <sup>-2</sup> | 3.0 x 10 <sup>-2</sup> |
| Ultimate pressure GB II (Total) | 50/60 | Torr              | 9.1 x 10 <sup>-2</sup> | 9.1 x 10 <sup>-2</sup> | 4.6 x 10 <sup>-2</sup> | 9.1 x 10 <sup>-2</sup> |
|                                 |       | mbar              | 1.2 x 10 <sup>-1</sup> | 1.2 x 10 <sup>-1</sup> | 6.0 x 10 <sup>-2</sup> | 1.2 x 10 <sup>-1</sup> |
| High throughput mode            | 50/60 | Torr              | 2.3 x 10 <sup>-2</sup> | 2.3 x 10 <sup>-2</sup> | 2.3 x 10 <sup>-2</sup> | 2.3 x 10 <sup>-2</sup> |
|                                 |       | mbar              | 3.0 x 10 <sup>-2</sup> | 3.0 x 10 <sup>-2</sup> | 3.0 x 10 <sup>-2</sup> | 3.0 x 10 <sup>-2</sup> |
| Water vapor tolerance           |       | Torr              | 60                     | 38                     | 38                     | 24                     |
|                                 |       | mbar              | 80                     | 50                     | 60                     | 32                     |
| Water vapor capacity - GB I     |       | g/h               | 60                     | 60                     | 60                     | 60                     |
| Water vapor capacity - GB II    |       | g/h               | 220                    | 220                    | 220                    | 290                    |
| <b>MOTOR DATA</b>               |       |                   |                        |                        |                        |                        |
| Motor rating 1 phase (nominal)  | 60    | W                 | 550                    | 550                    | 550                    | 550                    |
|                                 | 50    | W                 | 450                    | 450                    | 450                    | 450                    |
| Motor rating 3 phase            | 60    | W                 | 300                    | 300                    | 550                    | 550                    |
|                                 | 50    | W                 | 250                    | 250                    | 450                    | 450                    |
| Nominal rotation speed          | 60    | rpm               | 1800                   | 1800                   | 1800                   | 1800                   |
|                                 | 50    | rpm               | 1500                   | 1500                   | 1500                   | 1500                   |
| <b>PHYSICAL DATA</b>            |       |                   |                        |                        |                        |                        |
| Weight                          |       | lb                | 55                     | 55                     | 61.6                   | 63.8                   |
|                                 |       | kg                | 25                     | 25                     | 28                     | 29                     |
| Oil capacity                    |       | liters            | 0.7                    | 0.7                    | 0.75                   | 1                      |
| Oil type (Ultragrade)           |       |                   | 19                     | 19                     | 19                     | 19                     |
| Inlet flange                    |       |                   | NW25                   | NW25                   | NW25                   | NW25                   |
| Exhaust flange                  |       |                   | NW25                   | NW25                   | NW25                   | NW25                   |
| Noise level                     | 50    | dBA               | 48                     | 48                     | 48                     | 48                     |
| Operating temperature range     |       | °C                | 12 to 40               | 12 to 40               | 12 to 40               | 12 to 40               |

## Ordering information

|                                                        | Product description                                    | Order No.<br>Ultragrade Oil   | Order No.<br>PFPE prepared* |           |
|--------------------------------------------------------|--------------------------------------------------------|-------------------------------|-----------------------------|-----------|
| RV3                                                    | 115/230V, 50/60Hz set to 230V                          | A65201903                     | A65209903                   |           |
|                                                        | 100/200V, 50/60Hz                                      | A65201904                     | A65209904                   |           |
|                                                        | 200-220v/380-415V, 50Hz<br>200-230/460V, 60Hz, 3 phase | A65201905                     | A65209905                   |           |
| RV5                                                    | 115/230V, 50/60Hz set to 115V                          | A65201906                     | A65209906                   |           |
|                                                        | 115/230V, 50/60Hz set to 230V                          | A65301903                     | A65309903                   |           |
|                                                        | 100/200V, 50/60Hz                                      | A65301904                     | A65309904                   |           |
|                                                        | 200-220v/380-415V, 50Hz<br>200-230/460V, 60Hz, 3 phase | A65301905                     | A65309905                   |           |
|                                                        | 115/230V, 50/60Hz set to 115V                          | A65301906                     | A65309906                   |           |
|                                                        | RV8                                                    | 115/230V, 50/60Hz set to 230V | A65401903                   | A65409903 |
| 100/200V, 50/60Hz                                      |                                                        | A65401904                     | A65409904                   |           |
| 200-220v/380-415V, 50Hz<br>200-230/460V, 60Hz, 3 phase |                                                        | A65401905                     | A65409905                   |           |
|                                                        | 115/230V, 50/60Hz set to 115V                          | A65401906                     | A65409906                   |           |
|                                                        | RV12                                                   | 115/230V, 50/60Hz set to 230V | A65501903                   | A65509903 |
|                                                        |                                                        | 100/200V, 50/60Hz             | A65501904                   | A65509904 |
| 200-220v/380-415V, 50Hz<br>200-230/460V, 60Hz, 3 phase |                                                        | A65501905                     | A65509905                   |           |
|                                                        | 115/230V, 50/60Hz set to 115V                          | A65501906                     | A65509906                   |           |

ATEX pumps also available - see Edwards product catalogue

Pumps are supplied with initial charge of Ultragrade oil

\*PFPE fluid not included

|                     | Product description                | Order No. |
|---------------------|------------------------------------|-----------|
| Cord sets           | UK, three pin plug                 | A50505000 |
|                     | North European plug                | A50506000 |
|                     | North American plug                | A50507000 |
|                     | No plug                            | A50508000 |
| Oil                 | Ultragrade 19, 1 liter bottle      | H11025015 |
|                     | Fomblin YVAC 06/6 1kg (532 ml)     | H11301019 |
| Inlet accessories   | Foreline trap - FL20K              | A13305000 |
| Outlet accessories  | Oil mist filter - EMF10            | A46226000 |
|                     | Oil mist filter - EMF20            | A46229000 |
| Oil return kits     | Clean application (no gas ballast) | A50420000 |
|                     | Adjustable gas ballast             | A50523000 |
| Vibration isolators |                                    | A24801404 |
| Spares kits         | Clean and overhaul kit             | A65201131 |

## Accessories



Edwards – the company you have known and trusted for nearly 100 years - continues to deliver innovative vacuum pumps and related systems. We strive to lower your cost of ownership, increase your productivity and enhance your final product quality. Edwards products are based on a solid foundation of manufacturing excellence, field-proven technologies and are supported by a renowned global services network.

Edwards stands behind each product with exceptional integrity and strength, supporting our customers beyond standard expectations. Edwards is essential to your process.

### **PRODUCTS:**

- Dry Vacuum Pumps
- Oil-sealed Vacuum Pumps
- Turbomolecular Pumps
- Exhaust Management
- Integrated Vacuum and Abatement
- Liquid Abatement
- Chillers
- Vacuum System Components

### **SERVICES:**

- Equipment Service and Repair
- Product Exchange
- Refurbished Equipment
- Field and On-site Services
- Remote e-Diagnostics
- Product Training

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