

# RV ROTARY VANE PUMPS



RV oil sealed pumps have been the industry standard rotary vane pump for laboratory applications for many years thanks to design features that make them low cost to operate and maintain versus other rotary pumps.

With their unique mode selector, one pump can be used for both high throughput and high vacuum applications; self-centring mechanism, no dowels to set and can replace any component; high vapour pumping capability and broad range of accessories makes RV pumps the best long term proposition for laboratory applications.



## PRODUCT FEATURES

### UNIQUE MODE SELECTOR SWITCH

enables high vacuum and high throughput operation from a single pump.

### HIGH GAS BALLAST FLOW RATE

for up to 220  $\text{gh}^{-1}$  water vapour pumping capacity.

### FAST ACTING INLET VALVE

with controlled opening for system protection.

### HIGH QUALITY OILS

with additives to prolong life whilst not impacting vapour pressure.

### LOW NOISE

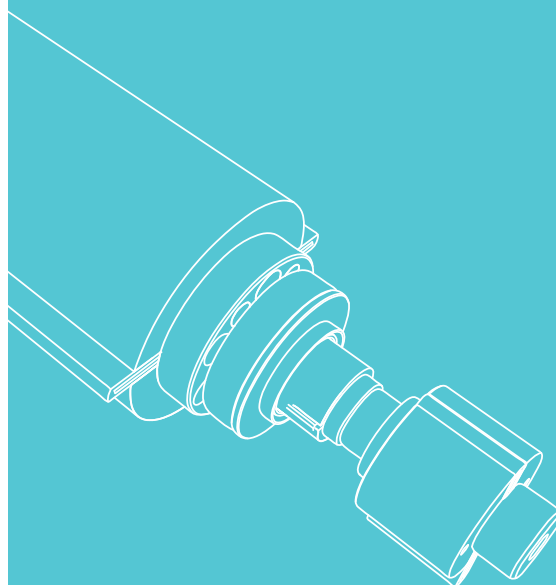
at just 48 dB(A).

### O RING SEALED SIGHT GLASS

allows visual inspection of oil level condition.

### FORCED AIR COOLING

ensures low pump surface temperature.



## Technical data

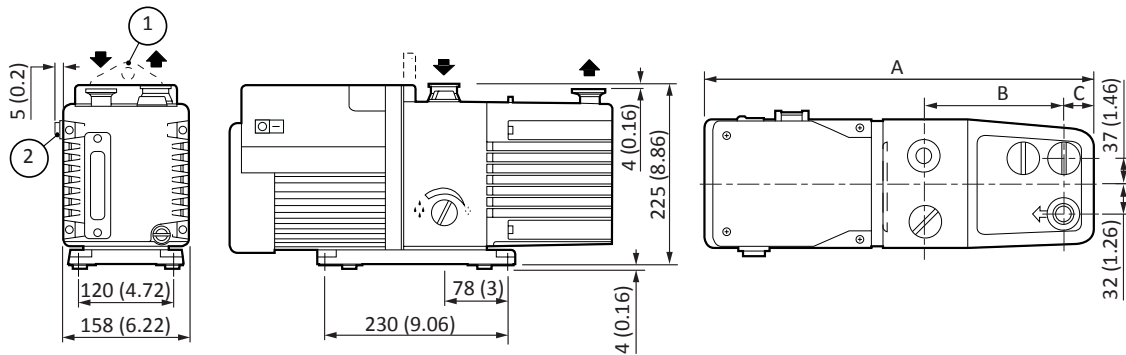
	Units	RV3	RV5	RV8	RV12
<b>VACUUM DATA</b>					
Peak pumping speed, 50 Hz (60 Hz)	m <sup>3</sup> h <sup>-1</sup> (cfm)	3.3 (2.3)	5.1 (3.6)	8.5 (5.9)	12 (8.4)
Ultimate vacuum <sup>(1)</sup>	mbar (Torr)	2.0 x 10 <sup>-3</sup> (1.5 x 10 <sup>-3</sup> ); 2.0 x 10 <sup>-2</sup> (1.5 x 10 <sup>-2</sup> ) with PFPE oil			
Ultimate vacuum with gas ballast 1	mbar (Torr)	3.0 x 10 <sup>-2</sup> (2.3 x 10 <sup>-2</sup> )			
Ultimate vacuum with gas ballast 2	mbar (Torr)	1.2 x 10 <sup>-1</sup> (9.1 x 10 <sup>-2</sup> )		6.0 x 10 <sup>-2</sup> (4.6 x 10 <sup>-2</sup> )	1.2 x 10 <sup>-1</sup> (9.1 x 10 <sup>-2</sup> )
Ultimate vacuum in high throughput mode	mbar (Torr)	3.0 x 10 <sup>-2</sup> (2.3 x 10 <sup>-2</sup> )			
Water vapour tolerance	mbar (Torr)	80 (60)	50 (38)	60 (45)	32 (24)
Water vapour handling capacity	gh <sup>-1</sup>	220			290
Maximum continuous inlet pressure <sup>(2)</sup>	mbar a (Torr a)	1013 (760)			
Maximum gas ballast/purge pressure	bar gauge (psig)	0.5 (7)			
<b>MOTOR DATA</b>					
Motor rating 1 phase (nominal), 50 Hz (60 Hz)	W	450 (550)			
Motor rating 3 phase, 50 Hz (60 Hz)	W	250 (300)	450 (550)		
Nominal rotational speed, 50 Hz (60 Hz)	rpm	1470 (1760)			
<b>PHYSICAL DATA</b>					
Weight	kg (lb)	25 (55)		28 (61.6)	29 (63.8)
Oil type (recommended)		Ultragrade 19			
Oil capacity (min - max)	litres	0.42 - 0.7		0.45 - 0.75	0.65 - 1.0
Inlet connection		NW25			
Exhaust connection		NW25			
Noise level at ultimate (50 Hz)	dB(A)	48			
Noise level with Acoustic Enclosure (50 Hz)	dB(A)	41			
Vibration at inlet flange	mm <sup>-1</sup> (rms)	< 4.5			
Operating temperature range	°C (°F)	12 to 40 (54 to 104)			

(1) measured as total pressure

(2) pump should be operated in high throughput mode for continuous operation above 100 mbar



# Dimensions



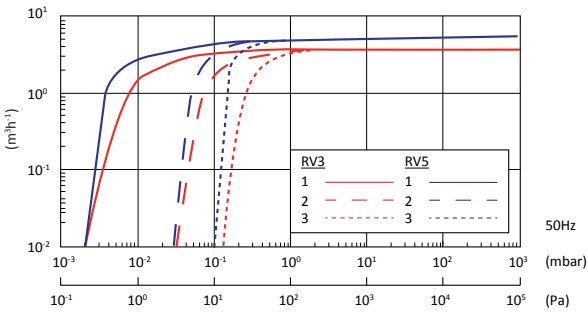
1. Lifting bracket (RV8 and RV12 pumps only; a lifting handle is fitted to the RV3 and RV5 pumps).
2. On-off switch (single-phase pumps only).

	A	B	C	D	E	F
RV3	430 (16.93)	158 (6.22)	225 (8.86)	156 (6.41)	111 (4.37)	29 (1.14)
RV5	430 (16.93)	158 (6.22)	225 (8.86)	156 (6.41)	111 (4.37)	29 (1.14)
RV8	470 (18.50)	158 (6.22)	225 (8.86)	196 (7.72)	111 (4.37)	35 (1.38)
RV12	490 (19.29)	158 (6.22)	225 (8.86)	216 (8.50)	111 (4.37)	35 (1.38)

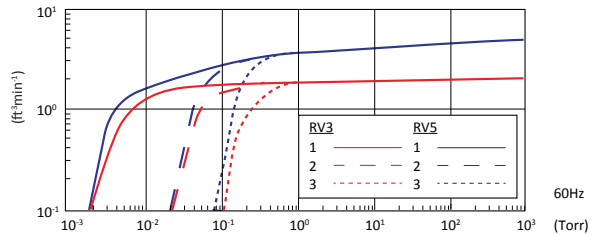
Single phase pump diagram shown, 3 phase pumps look different but share the same dimensions.  
Dimensions shown in mm(inch).

# Performance

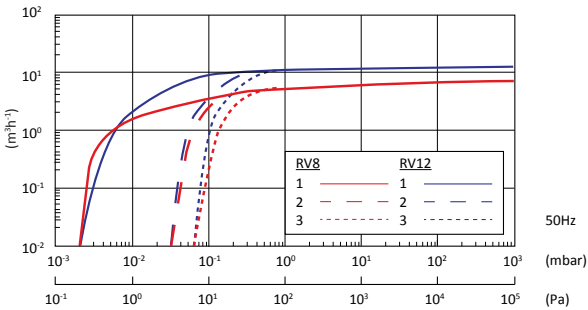
## RV3/RV5 50 Hz



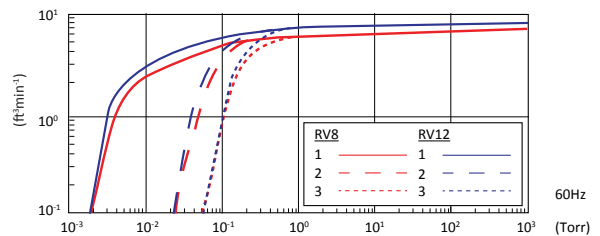
## RV3/RV5 60 Hz



## RV8/RV12 50 Hz



## RV8/RV12 60 Hz



1. High vacuum mode, gas ballast = 0
2. High throughput mode, gas ballast = 0, High vacuum mode, gas ballast = I
3. High throughput and vacuum mode, gas ballast = II

## Ordering information

### Pumps:

Product description		Order no.	Order no.
		Ultragrade Oil	PFPE prepared <sup>(1)</sup>
RV3	115/230V, 50/60Hz set to 230V	A65201903	A65209903
	100/200V, 50/60Hz	A65201904	A65209904
	200-220/380-415V, 50Hz 200-230/460V, 60Hz, 3 phase	A65201905	A65209905
	115/230V, 50/60Hz set to 115V	A65201906	A65209906
RV5	115/230V, 50/60Hz set to 230V	A65301903	A65309903
	100/200V, 50/60Hz	A65301904	A65309904
	200-220/380-415V, 50Hz 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
	200-220/380-415V, 50Hz 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
	200-220/380-415V, 50Hz 200-230/460V, 60Hz, 3 phase	A65501905	A65509905
	115/230V, 50/60Hz set to 115V	A65501906	A65509906

(1) PFPE fluid not included

### Accessories and spares:

	Product description	Order no.
Accessories	Foreline trap - FL20K	A13305000
	Oil mist filter - EMF10	A46226000
	Oil mist filter - EMF20	A46229000
	Clean application oil return kit	A50419000
	Adjustable gas ballast oil return kit	A50523000
	Vibration isolators (pack of 4)	A24801404
	Acoustic enclosure 110-120V	NRD317000
	Acoustic enclosure 200-240V	NRD318000
Spares	Clean and overhaul kit	A65201131
	RV3 blade kit	A65201130
	RV5 blade kit	A65301130
	RV8 blade kit	A65401130
Oil	RV12 blade kit	A65501130
	Ultragrade 19, 1 litre bottle	H11025015
	Ultragrade 19, 4 litre bottle	H11025013
	Fomblin YVAC 06/6 1 kg (532 ml)	H11301019
Cord sets	Fomblin YVAC 06/6 5 kg	H11301020
	UK, three pin plug	A50505000
	North European plug	A50506000
	North American plug	A50507000
	No plug	A50508000

Pumps fitted with ATEX approved motors are available, contact Edwards for details  
Pumps are supplied with initial charge of Ultragrade oil.

### Extended warranty:

Product	2 year extension	3 year extension
RV3	EW2AA5015	EW3AA5015
RV3 PFPE	EW2AA5016	EW3AA5016
RV5	EW2AA5017	EW3AA5017
RV5 PFPE	EW2AA5018	EW3AA5018
RV8	EW2AA5019	EW3AA5019
RV8 PFPE	EW2AA5020	EW3AA5020
RV12	EW2AA5021	EW3AA5021
RV12 PFPE	EW2AA5022	EW3AA5022

