

# F24 BOC Edwards Rotary Vane Vacuum Pumps

## Vacuum Pump Selection Guide

BOC Edwards provides a wide range of mechanical rotary vane vacuum pumps with pumping speeds up to 56.5 cfm. These pumps combine high performance with high reliability.

### RV Pumps

The RV pumps provide enhanced performance, improved reliability and greater flexibility for a wide range of difficult applications. The unique RV design features:

- High performance
  - Continuous high inlet pressure operation with high gas loads
  - Superior water vapor handling capability.
  - Quiet operation (less than 48 dBA)
- Versatility
  - Dual pumping modes to optimize gas throughput or ultimate vacuum
  - One motor for 50/60 Hz and 115/230 V operation
- Enhanced reliability
  - Corrosion-resistant polymer blades
  - Printed gasket technology
  - Unidirectional outer shaft seal
  - Electronic start relay
  - IEC 1010/IP 44/CSA/CE approvals
  - CSA NRTL/C approval on entire pump (conforms to UL 3101-1)

### EM Pumps

Using the direct-drive rotary vane principle, BOC Edwards' EM rotary vacuum pumps are compact and vibration free. They offer the following capabilities:

- Comprehensive range - 0.56 to 19.4 cfm
- Good ultimate vacuum - down to  $7.5 \times 10^{-5}$  torr
- Made from high quality, corrosion-resistant materials
- Advanced, positive pressure oil lubrication endures reliable performance even at high gas loads
- Easy maintenance and service

BOC Edwards incorporates a proven positive pressure oil lubrication system to ensure correct oil lubrication in all duty modes and to prevent oil starvation at high gas loads. The use of this system means that oil reservoir levels are less critical.

### Medium Size Pumps

BOC Edwards offers a wide range of roughing pumps that include the medium mechanical rotary pumps (29.7 cfm and 56.5 cfm). These pumps cover a comprehensive range, as well as provide high ultimate vacuum down to  $7.5 \times 10^{-4}$  torr, with low noise levels and vibration levels.

A special feature of the medium EM pumps is their central vacuum inlet that allows you to fit a mechanical booster pump with a minimum overhang, to create an extremely compact combination pumping system. The medium mechanical rotary pumps are fan cooled

## BOC Edwards Vacuum Pump Specifications

Product	E2M1.5	RV3	RV5	RV8	RV12	E1M18
<b>Displacement @ 60Hz, ft<sup>3</sup>min<sup>-1</sup> (m<sup>3</sup>h<sup>-1</sup>)</b>	1.3 (2.2)	2.6 (4.5)	4.1 (7.0)	6.9 (11.7)	10 (17.0)	14.7 (25.0)
<b>Speed (Pneurop) @ 60Hz, ft<sup>3</sup>min<sup>-1</sup> (m<sup>3</sup>h<sup>-1</sup>)</b>	1.2 (2.0)	2.3 (3.9)	3.6 (6.2)	5.9 (10)	8.4 (14.2)	12 (20.4)
<b>Number of Stages</b>	2	2	2	2	2	1
<b>Ultimate vacuum mbar - high vacuum mode</b>						
gas ballast closed	$2.5 \times 10^{-3}$	$2.0 \times 10^{-3}$	$2.0 \times 10^{-3}$	$2.0 \times 10^{-3}$	$2.0 \times 10^{-3}$	$3.0 \times 10^{-3}$
gas ballast open	$2.5 \times 10^{-3}$	$3.0 \times 10^{-2}$	$3.0 \times 10^{-2}$	$3.0 \times 10^{-2}$	$3.0 \times 10^{-2}$	$6.5 \times 10^{-1}$
<b>Ultimate vacuum mbar - high throughput mode</b>						
gas ballast closed	-	$3.0 \times 10^{-2}$	$3.0 \times 10^{-2}$	$3.0 \times 10^{-2}$	$3.0 \times 10^{-2}$	-
gas ballast open	-	$6.0 \times 10^{-2}$	$6.0 \times 10^{-2}$	$4.0 \times 10^{-2}$	$2.0 \times 10^{-2}$	-
<b>Max. water vapor pumping rate kg hr<sup>-1</sup></b>						
	0.0016	0.22	0.22	0.22	0.22	0.65
<b>Inlet connection</b>	NW10	NW25	NW25	NW25	NW25	NW25
<b>Outlet connection</b>	11 mm nozzle	NW25	NW25	NW25	NW25	15 mm nozzle
<b>Weight lb.(kg.)</b>	22 (10)	42.3 (21.6)	43 (21.5)	57 (26.0)	58 (26.3)	70 (32)
<b>Noise dB(A)</b>	54	48	48	48	48	-
<b>Motor power hp (kW)</b>	1/4 (0.16)	1/2 (0.3)	1/2 (0.3)	3/4 (0.55)	3/4 (0.55)	1 (0.75)
<b>Oil capacity (litre) max.</b>	0.28	0.7	0.7	0.75	1.0	1.4
<b>Oil Capacity (litre) min.</b>	0.2	0.42	0.42	0.45	0.65	0.9
<b>Accessories and Repair Kits</b>						
<b>Oil Mist Filter</b>	EMF3	EMF10	EMF10	EMF10	EMF10	EMF20
<b>Clean and Overhaul Kit</b>	A371-01-131	A652-01-131	A652-01-131	A652-01-131	A652-01-131	A363-01-131
<b>Blade Kit</b>	A371-01-132	A652-01-130	A653-01-130	A654-01-130	A655-01-130	A343-01-041