

EV ROTARY VANE PUMPS

Edwards' range of EV rotary vane pumps are designed to be used in a wide range of industrial and scientific applications. They can be used individually or with mechanical booster pumps to increase both performance and ultimate vacuum. They can operate continuously from atmosphere to ultimate.



With reliability and ease of service in mind, the EV range of pumps are designed for the industrial and scientific markets. Edwards Applications Specialists have unrivalled knowledge and can advise on pump selection, configuration and operation to suit any customers requirements. The EV range can be supplied individually or as part of pre-engineered combinations using either Edwards EH or HV mechanical boosters.

Features and Benefits

- *Continuous operation from atmosphere to ultimate vacuum*
- *High pumping speed at low pressure*
- *Gas ballast valve fitted as standard*
- *Low noise and vibration*
- *Air cooled - only power is required; no cooling water is needed*
- *Good water vapor tolerance*
- *Integral anti-suckback valve*
- *Low maintenance and simple service*
- *Backed by Edwards global service network*
- *Efficient mist filter for economical operation and environmental protection*
- *Dual frequency, wide band motor operates in most countries worldwide*

EV ROTARY VANE PUMPS

Applications

The EV series of rotary vane pumps are ideally suited to a wide range of industrial and scientific applications, including, but not limited to, the following:

- Furnaces and metallurgy industries
- Food processing and packaging
- Lifting
- Vacuum coating
- Vacuum transporting
- Conveying and handling
- Automotive industry
- Thermoforming
- Vacuum drying
- Power industry
- Medical technology
- Central vacuum systems

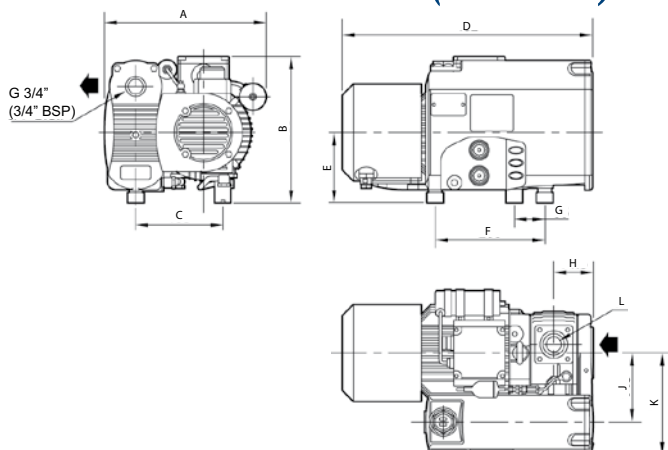
Edwards' applications specialists throughout the world are able to advise on the most suitable vacuum equipment for your application.

Materials of Construction

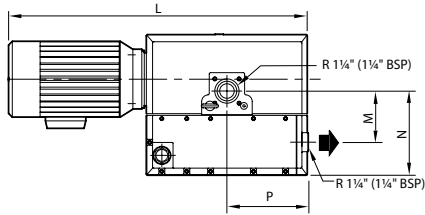
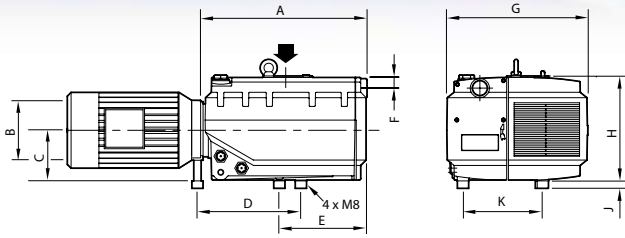
Components in Pump	Material for component
Inlet port	Aluminium
Anti-suckback valve	Plastic - Polyamide
Inlet screen	Steel, Copper
Pump body - stator and rotor	Cast Iron
Vanes	Epoxy resin with glass fibres
Oil separator housing	Aluminium
Oil separator (rough)	Steel
Oil separator (fine)	Glass fibres, Polyester
Oil tubes	Brass
Oil sight glass	Aluminium, Glass
Oil return valve	Cork, Brass
Exhaust valve	Stainless steel, Polyamide
Seals	Fluoroelastomer lip seals Nitrile or Fluoroelastomer 'O' rings Filled metals seals Asbestos free gaskets
Radiator	Aluminium

For specific advice please contact your local Edwards office or agent

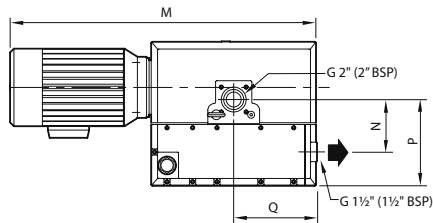
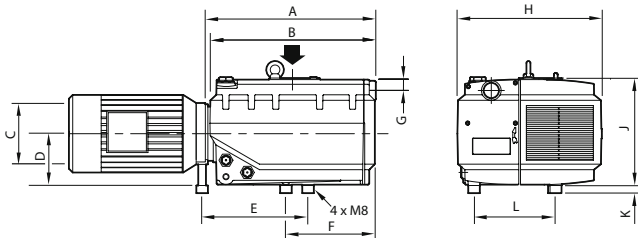
Dimensions - mm (inches)



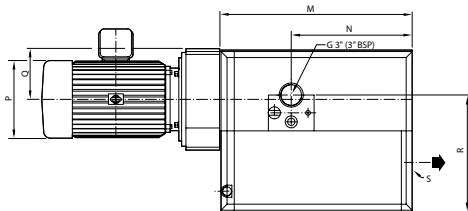
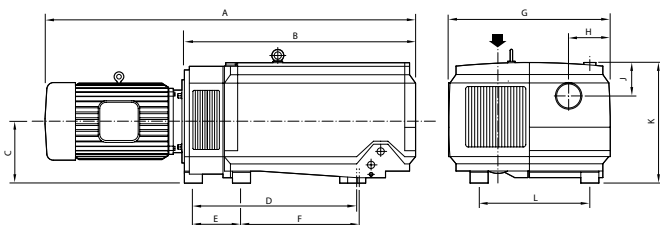
	EV20	EV40
A	305 (12.0)	301 (11.85)
B	208 (8.19)	268 (10.55)
C	148 (5.83)	158 (6.22)
D	336 (13.23)	462 (18.19)
E	107 (4.21)	127 (5.0)
F	172 (6.77)	200 (7.87)
G	26 (1.02)	55 (2.16)
H	64 (2.52)	71.5 (2.81)
J	114 (4.49)	140 (5.51)
K	165 (6.5)	197 (7.75)
L	G 1/2" (1/2" BSP)	G 1" (1" BSP)



	EV70	EV100
A	413 (16.26)	468 (18.43)
B	160 (6.30)	160 (6.30)
C	135 (5.31)	135 (5.31)
D	291 (11.46)	291 (11.46)
E	304 (11.97)	304 (11.97)
F	30 (1.18)	30 (1.18)
G	374 (14.72)	374 (14.72)
H	280 (11.02)	280 (11.02)
J	20 (0.79)	20 (0.79)
K	213 (8.36)	213 (8.36)
L	725 (28.54)	780 (30.71)
M	136.5 (5.37)	136.5 (5.37)
N	222.5 (8.76)	222.5 (8.76)
P	217 (8.54)	217 (8.54)



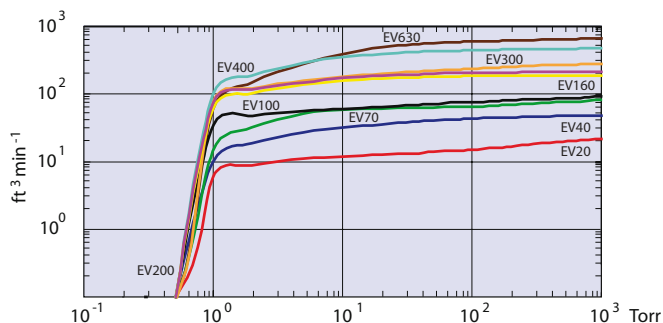
	EV160	EV200	EV300
A	528 (20.79)	624 (24.57)	667 (26.26)
B	486 (19.13)	486 (19.13)	486 (19.13)
C	250 (9.84)	300 (11.81)	300 (11.81)
D	180 (7.09)	180 (7.09)	180 (7.09)
E	302.5 (11.91)	362.5 (14.27)	422 (16.61)
F	445.5 (17.54)	445.5 (17.54)	445.5 (17.54)
G	49 (1.93)	49 (1.93)	49 (1.93)
H	531 (20.90)	531 (20.90)	531 (20.90)
J	385 (15.16)	385 (15.16)	385 (15.16)
K	3 (1.18)	3 (1.18)	3 (1.18)
L	309 (12.16)	309 (12.16)	309 (12.16)
M	900 (35.43)	998 (39.29)	1084 (42.68)
N	261.5 (10.29)	261.5 (10.29)	261.5 (10.29)
P	393 (15.47)	393 (15.47)	393 (15.47)
Q	278 (10.94)	278 (10.94)	278 (10.94)



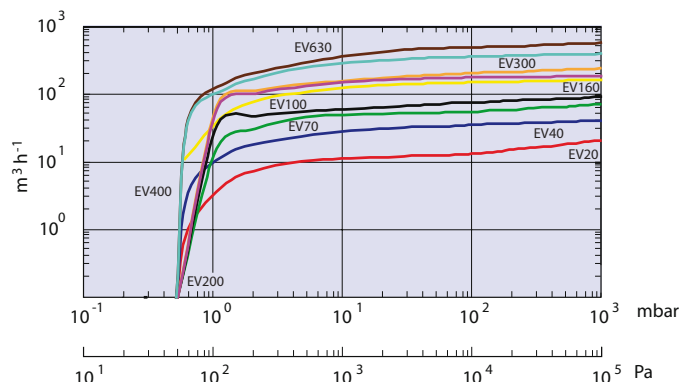
	EV400	EV630
A	1312 (51.65)	1540 (60.63)
B	789 (31.06)	959 (37.75)
C	257 (10.12)	257 (10.12)
D	486 (19.13)	646 (25.43)
E	200 (7.87)	200 (7.87)
F	479 (18.86)	479 (18.86)
G	672 (26.46)	672 (26.46)
H	173 (6.81)	173 (6.81)
J	136 (5.35)	136 (5.35)
K	501 (19.72)	501 (19.72)
L	475 (18.70)	475 (18.70)
M	625 (24.61)	795 (31.30)
N	333 (13.11)	503 (19.80)
P	393 (15.47)	393 (15.47)
Q	205 (8.07)	205 (8.07)
R	485 (19.09)	485 (19.09)
S	G 3" (3" BSP)	G 4" (4" BSP)

Performance Curves

60 Hz supply - gas ballast off



50 Hz supply - gas ballast off



Note: Pump/booster combination performance curves available on request.

Technical Specification

Ordering Number	A35010940	A35015940	A35020940	A35025940	A35030940	A35035934	A35035934	A35035940	A35040934	A35040940	A35045934	A35045940	A35050934	A35050940
Product description	EV20 dual frequency motor	EV40 dual frequency motor	EV70 dual frequency motor	EV100 dual frequency motor	EV160 dual frequency motor	EV200 200V 50/60 Hz motor	EV200 dual frequency motor	EV300 200V 50/60 Hz motor	EV300 dual frequency motor	EV400 200V 50/60 Hz motor	EV400 dual frequency motor	EV630 200V 50/60 Hz motor	EV630 dual frequency motor	EV630 dual frequency motor
Pumping Speed														
50 Hz	m³/h cfm	18/11	41/25	58/35	100/60	160/96	184/111	184/111	240/145	240/145	400/241	400/241	630/380	630/380
60 Hz	m³/h/cfm	21/13	48/29	73/44	117/70	192/116	221/133	221/133	274/165	274/165	480/289	480/289	750/452	750/452
Ultimate total pressure without gas ballast	mbar/Torr	0.5/0.4	0.5/0.4	0.5/0.4	0.5/0.4	0.5/0.4	0.5/0.4	0.5/0.4	0.5/0.4	0.5/0.4	0.5/0.4	0.5/0.4	0.5/0.4	0.5/0.4
Ultimate comparative partial pressure (DIN 28426) without gas ballast	mbar/Torr	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06	0.08/0.06
Water vapor capacity														
@ 10 mbar	kg/h / lbs/h	0.4/0.9	0.3/0.7	0.57/1.3	0.36/0.8	1.2/2.6	1.33/2.9	1.33/2.9	1.4/3.1	1.4/3.1	6.0/13.2	6.0/13.2		
@ 4 mbar	kg/h / lbs/h												10.4/22.9	10.4/22.9
Electrical supply (3-phase) Volts *														
50 Hz		175-260/300-450	190-255/330-440	190-255/330-440	190-255/330-440	190-255/330-440	200	340-430/588-745	200	340-430/588-745	200	340-430/588/745	200	400/690
60 Hz		190-290/330-500	190-290/330-500	190-290/330-500	190-290/330-500	190-290/330-500	200	340-500/590/865	200	340-500/590/865	200	340-500/590/865	200	400/690
Motor Power														
50 Hz	kW/hp	0.55/0.75	1.5/2.0	2.4/3.25	2.4/3.25	4/5.5	5.5/7.5	5.5/7.5	7.8/10.5	7.8/10.5	11.0/15.0	11.0/15.0	15.0/20.0	15.0/20.0
60 Hz	kW/hp	0.66/1.0	1.8/2.5	3.0/4.0	3.0/4.0	4.8/6.5	6.4/8.5	6.4/8.5	9.3/12.5	9.3/12.5	12.5/17.0	12.5/17.0	18.5/25.0	18.5/25.0
Noise														
50 Hz	dB(A)	63	69	67	67.5	71	73	73	73	73	78	78	80	80
60 Hz	dB(A)	67	71	68.5	69	74	76	76	76	76	81	81	83	83
Weight	kg/lbs	20/44	38/84	62/136	65/143	129/284	163/359	163/359	178/392	178/392	400/880	400/880	525/1155	525/1155
Oil capacity (Ultragrade 20)	liters/US gal	0.5/0.13	1/0.26	2/0.53	2/0.53	7/1.84	7/1.84	7/1.84	7/1.84	7/1.84	14/3.68	14/3.68	14/3.68	14/3.68

* Note - other voltages can be supplied on application

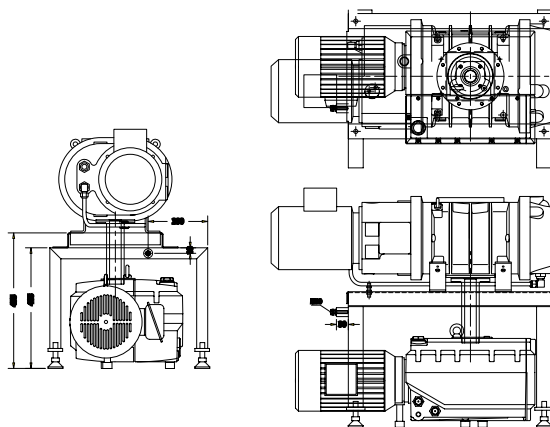
EV Rotary Vane Combinations

Edwards are able to offer a range of EV rotary vane pumps and mechanical boosters, complete with connection kits to mount the mechanical booster. The fitting of a mechanical booster to an EV rotary vane pump significantly increases pumping speed and vacuum performance of your system, as well as increasing the ultimate vacuum attainable by approximately one decade of pressure. Edwards applications specialists are able to assist in the selection of the combination most suited to your requirements.

Individual data sheets are available on request for all combinations showing the pumping speed of each combination together with an installation drawing to assist in the design of your system.

There is a choice of two ranges of industry proven mechanical boosters:

- The EH range of mechanical boosters (250-4200 m³/h, 150-2500 cfm), with their unique hydrokinetic drive allowing continuous operation from atmosphere to ultimate vacuum, cutting pump down times by up to 50%.
- The HV range of mechanical boosters (1700-6630 m³/h, 1000-3900 cfm) are simpler lower cost boosters ideally suited to many industrial applications. They are available either as direct drive machines or fitted with variable speed drives that offer similar characteristics to the EH hydrokinetic drive.



Accessories

OIL LEVEL SWITCH

An oil level switch is available to order as a separate item that can be fitted to give an indication or warning of low oil level in the pump. This allows the user to remotely monitor the oil level and add oil or plan maintenance to prevent potentially serious damage occurring to the pump.

INLET FILTER

A full range of inlet filters for all models are available for use when there is the possibility of harmful dust or debris entering the pump during operation and potentially causing damage or increased wear to the pump mechanism. Inlet filters are supplied as kits comprising:

- Filter body
- Paper filter
- Pipework to couple to pump
- PTFE thread joint sealer

TEMPERATURE CONTROL

On the EV100 and larger pump a PT100 is fitted as standard. This allows the oil temperature to be monitored and can be used to give an indication of low oil level as well as monitoring pump operating temperature.

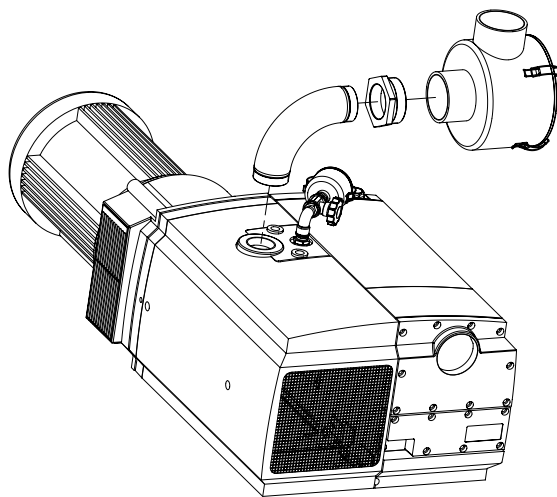
PUMP MAINTENANCE

A full range of maintenance kits are available.

The filter kit contains: oil separation elements, seals and washers

The service kit contains: appropriate filter kit plus vanes, coupling disc and oil

The overhaul kit contains: appropriate service kit plus bearings, shaft seals and filter



EV ROTARY VANE PUMPS

EV/Mechanical Booster Combinations

Specifying a combination is simply a process of selecting the EV rotary vane pump (see Technical Specification), selecting the required mechanical booster (from catalogue) and the appropriate connection kit shown below. The connection kits are supplied as a kit of parts that allows them to be easily assembled, together with the EV rotary vane pump and mechanical booster, on site. Clear and concise instructions are included within the kits to make this a very simple process.

		BOOSTER								
		EH250	EH500	EH1200	607MV05	EH2600	615MV10 61BMV10	EH4200	615MV15 61BMV25	622MV25
PRIMARY PUMP	EV100	NR7001000	NR7002000	NR7003000	NR7046000					
	EV160		NR7006000	NR7007000	NR7047000		NR7050000			
	EV200		NR7010000	NR7011000			NR7050000			
	EV300		NR7014000	NR7015000		NR7016000	NR7050000	NR7017000	NR7050000	
	EV400			NR7021000		NR7022000	NR7056000	NR7023000	NR7056000	
	EV630			NR7028000		NR7029000	NR7056000	NR7030000	NR7056000	NR7064000

Accessories and Spares

MAINTENANCE KITS

Ordering No.	Product Description	Ordering No.	Product Description	Ordering No.	Product Description
A35010800	Filter kit EV20	A35025810	Service kit EV100	A35040820	Overhaul kit EV300
A35010810	Service kit EV20	A35025820	Overhaul kit EV100	A35045800	Filter kit EV400
A35010820	Overhaul kit EV20	A35030800	Filter kit EV160	A35045810	Service kit EV400
A35015800	Filter kit EV40	A35030810	Service kit EV160	A35045820	Overhaul kit EV400
A35015810	Service kit EV40	A35030820	Overhaul kit EV160	A35050800	Filter kit EV630
A35015820	Overhaul kit EV40	A35035800	Filter kit EV200	A35050810	Service kit EV630
A35020800	Filter kit EV70	A35035810	Service kit EV200	A35050820	Overhaul kit EV630
A35020810	Service kit EV70	A35035820	Overhaul kit EV200		
A35020820	Overhaul kit EV70	A35040800	Filter kit EV300		
A35025800	Filter kit EV100	A35040810	Service kit EV300		

Service Kit includes Filter Kit
Overhaul Kit includes Service Kit

ACCESSORIES

Ordering No.	Product Description
A35010300	Oil level switch EV20, 40
A35020300	Oil level switch EV70,100,160,200,300,400,630
A35010310	Inlet filter kit EV20
A35015310	Inlet filter kit EV40
A35025310	Inlet filter kit EV70, 100
A35030310	Inlet filter kit EV160, 200, 300
A35045310	Inlet filter kit EV400, 630

Inlet filter kit consists of filter body with replaceable paper filter element and coupling hardware.

SPARES

Ordering No.	Product Description
A35010700	Inlet filter element EV20
A35015700	Inlet filter element EV40
A35025700	Inlet filter element EV70, 100
A35030700	Inlet filter element EV160, 200, 300
A35045700	Inlet filter element EV400, 630
H11024015	Ultragrade 20 Oil 1 Litre
H11024013	Ultragrade 20 Oil 4 Litres
H11024011	Ultragrade 20 Oil 4 X 4 Litres

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Rev 01/2008
Publication Number: A35010895, Issue B
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