EM Rotary Vane Pump Technology

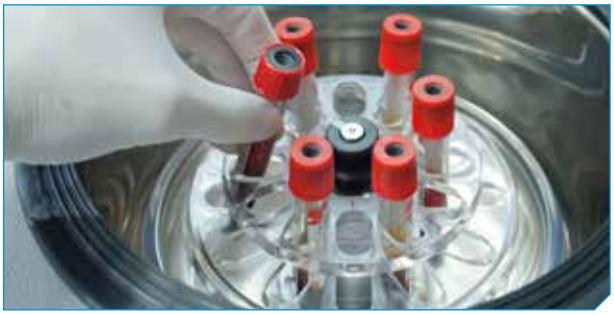
1. Easy control: motor on/off switch
2. Wide voltage motors: all major countries covered with less variants
3. Large water vapour handling capacity: gas ballast valve
4. Low surface temperature: forced air cooling
5. No oil leaks: integrated oil-seals, pressure die cast oil box
6. Visual inspection of oil level and condition: O ring sealed sight glass
7. No customer wiring: integral IEC connector

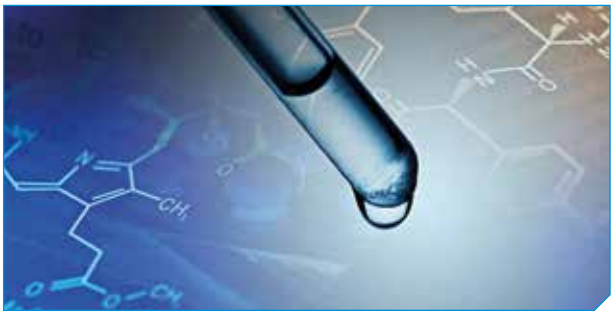
E2M0.7 E2M1.5 E1M18 E2M18 E2M28

Applications

EM pumps are suitable for a wide range of applications requiring low and medium vacuum:

	E2M0.7 E2M1.5	E1M18 E2M18	E2M28
INSTRUMENTATION			
Analytical instruments - GCMS	•		
Analytical instruments - LCMS		•	•
Automotive		•	•
Beam lines and high energy physics		•	•
Centrifuges, ultra-high speed		•	•
Coating		•	•
Cryogenics		•	•
Degassing/curing - oil, epoxy resin		•	•
Distillation/extraction/filtration		•	•
Freeze drying		•	•
Furnaces		•	•
Gas bottle filling/emptying			•
Gel drying		•	•
Glove boxes, ovens		•	•
Laboratory bench top vacuum	•	•	•
GENERAL			
Lasers, gas recovery and re-circulation			•
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	•	•	•





Technical data

	Hz	Units	E2M0.7	E2M1.5	E1M18	E2M18	E2M28
Vacuum Data							
Peak pumping speed	50	m^3h^{-1}	0.75	1.6	17	17	27.5
	60	cfm	0.5	1.2	12.1	12.1	19.5
Ultimate pressure w/o gas ballast	50	mbar	$3.0x10^{-3}$	$3x10^{-3}$	$3x10^{-2}$	$1x10^{-3}$	$1x10^{-3}$
	60	Torr	$2.3x10^{-3}$	$2.3x10^{-3}$	$2.2x10^{-2}$	$7.4x10^{-4}$	$7.5x10^{-4}$
Ultimate pressure with gas ballast	50	mbar	$2x10^{-1}$	$2.5x10^{-2}$	$6.5x10^{-1}$	$1.5x10^{-2}$	$1.5x10^{-2}$
	60	Torr	$1.5x10^{-1}$	$1.9x10^{-2}$	$4.8x10^{-1}$	$1.1x10^{-2}$	$1.1x10^{-2}$
Ultimate pressure with Fomblin®	50	mbar			$3x10^{-1}$	$1x10^{-2}$	$1x10^{-2}$
	60	Torr			$2.3x10^{-1}$	$7.5x10^{-3}$	$7.5x10^{-3}$
Water vapour tolerance		mbar	15	15	50	20	30
		Torr	11	11	38	15	23
Water vapour capacity		g/h	8	16	650	300	700

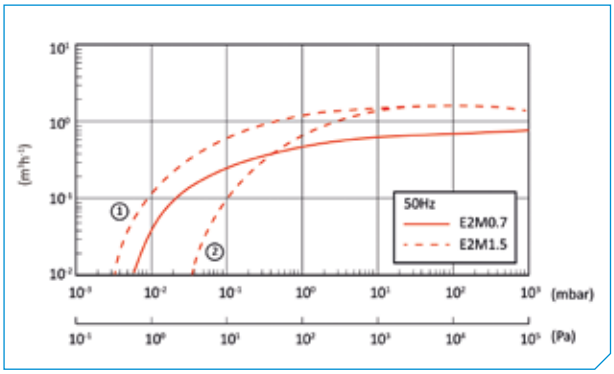
Motor Data	**Hz**	**Units**	**E2M0.7**	**E2M1.5**	**E1M18**	**E2M18**	**E2M28**
Motor power	50	kW	0.09	0.16	0.55		0.75
	60	kW	0.09	0.16	0.75		0.90
Nominal rotation speed	50	rpm	1400	2800	1440		
	60	rpm	1700	3400	1720		
Power connector [1]			IEC EN60320 C13		IEC EN60320 C19		

Physical Data	**Hz**	**Units**	**E2M0.7**	**E2M1.5**	**E1M18**	**E2M18**	**E2M28**
Weight		lb	22		82	86	97
		kg	10		37	39	44
Oil type (recommended)			Ultragrade 15		Ultragrade 19		
Oil capacity (maximum)		litre	0.28		1.4	1.05	1.5
Oil capacity (minimum)		litre	0.2		0.9	0.75	1.2
Inlet flange			NW10		NW25		
Exhaust flange [2]			Nozzle 11mm external Ø removable from 3/4 in BSP tapped hole		Nozzle 15 mm external diameter removable from 3/4 in BSP tapped hole		
Operating temperature range		˚C	12-40		13-40		
Noise level at 50 Hz		dB(A)	43	54	57		
Noise with acoustic enclosure [3]		dB(A)	36	47	50		

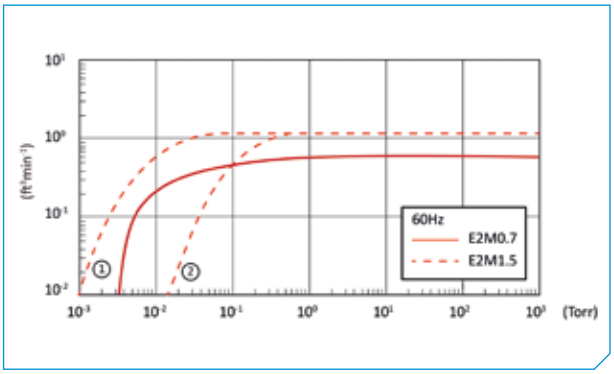
(1) pumps listed with IEC connector only
(2) PFPE variants are supplied with NW25 outlet connection
(3) approx. noise reduction 7 dB(A)

Performance Curves

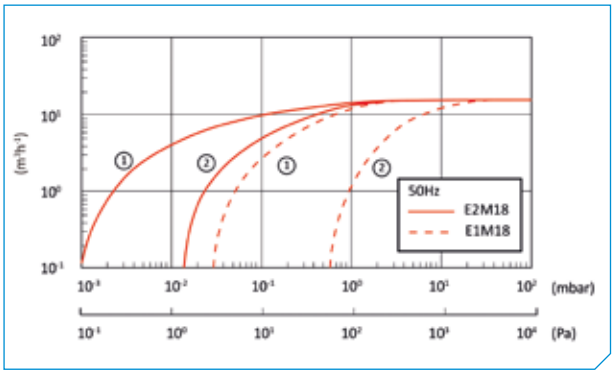
E2M0.7 and E2M1.5
50 Hz



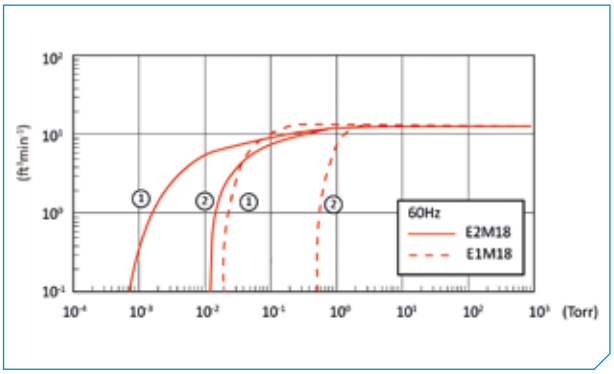
E2M0.7 and E2M1.5
60 Hz



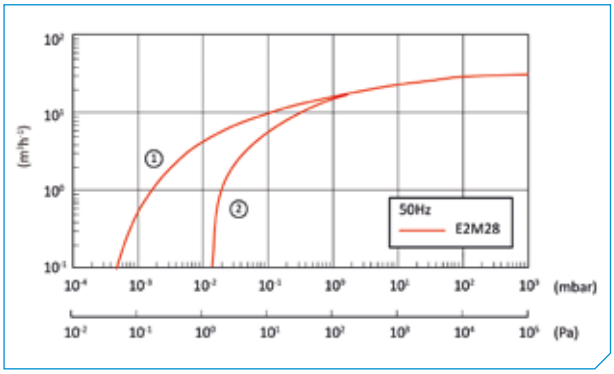
E1M18 and E2M18
50 Hz



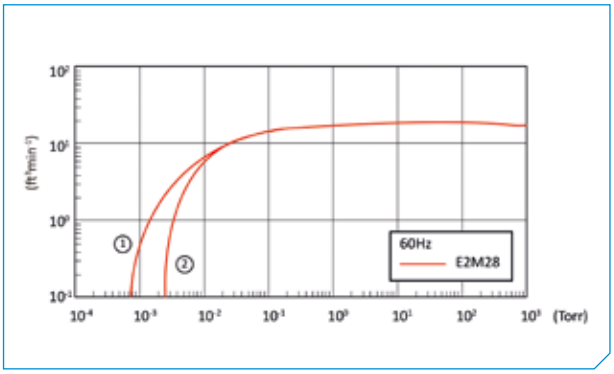
E1M18 and E2M18
60 Hz



E2M28
50 Hz



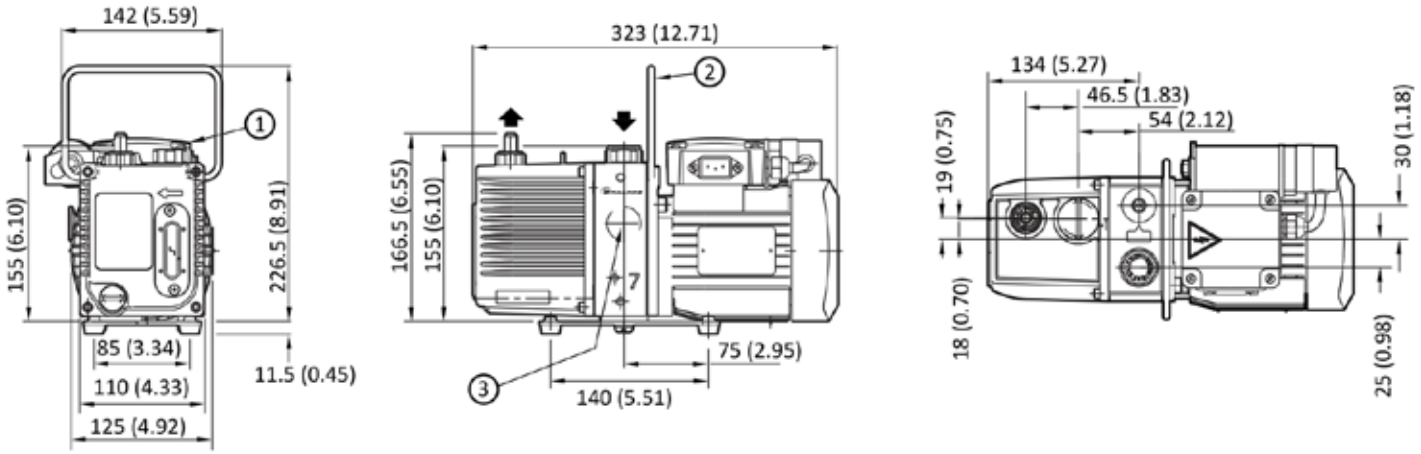
E2M28
60 Hz



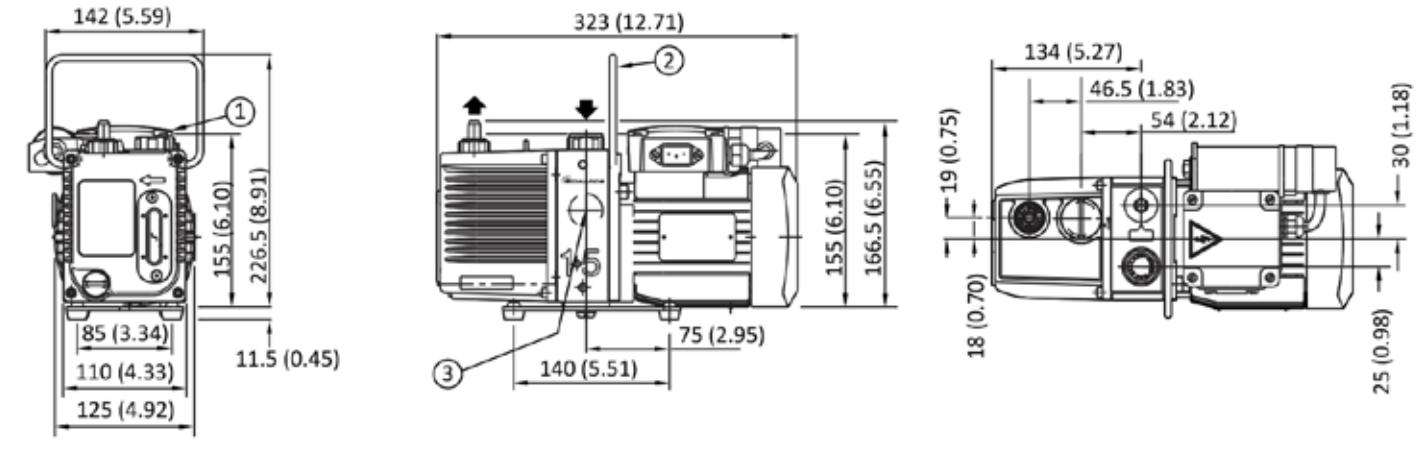
1. Gas Ballast off
2. Gas Ballast on

Dimensions

E2M0.7



E2M1.5

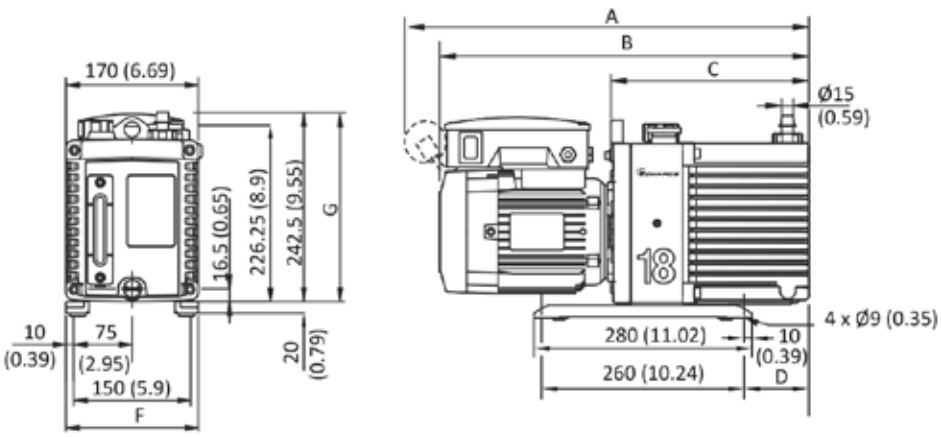


1. 220-240 V motor
2. Handle (can be removed)
3. Alternative inlet port position

All measurements indicated are shown in mm (inches)

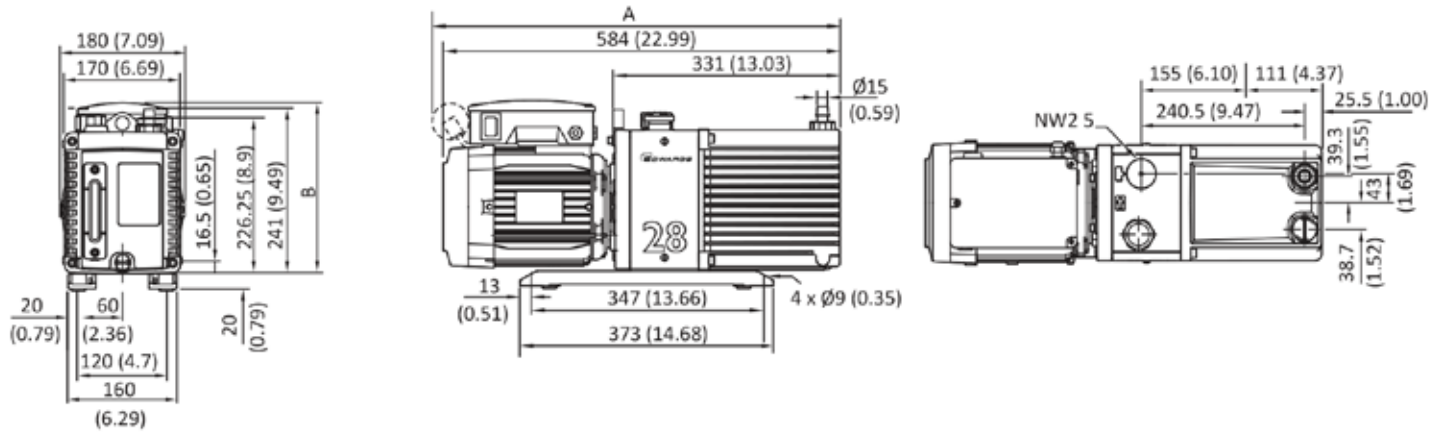
Dimensions

E1M18 one stage - E2M18 two stage Dimensions



Ordering No.	A	B	C	D	E	F	G
A34310940	-	474	247	83	159	171.4	217
A34315904	518	474	247	83	159	171.4	241
A34317984	-	504	247	83	159	171.4	251
A36310940	-	520	295	131	207	171.4	217
A36315904	564	520	295	131	207	171.4	241
A36317984	-	550	295	131	207	171.4	251

E2M28



Ordering No.	A	B
A37315904	598	251
A37317984	-	251
A37333940	-	229

All measurements indicated are shown in mm (inches)