

MAG INTEGRA - Magnetic Rotor Suspension with integrated Frequency Converter, with Compound Stage

TURBOVAC MAG W 1300 iP(L) to 2200 iP(L)

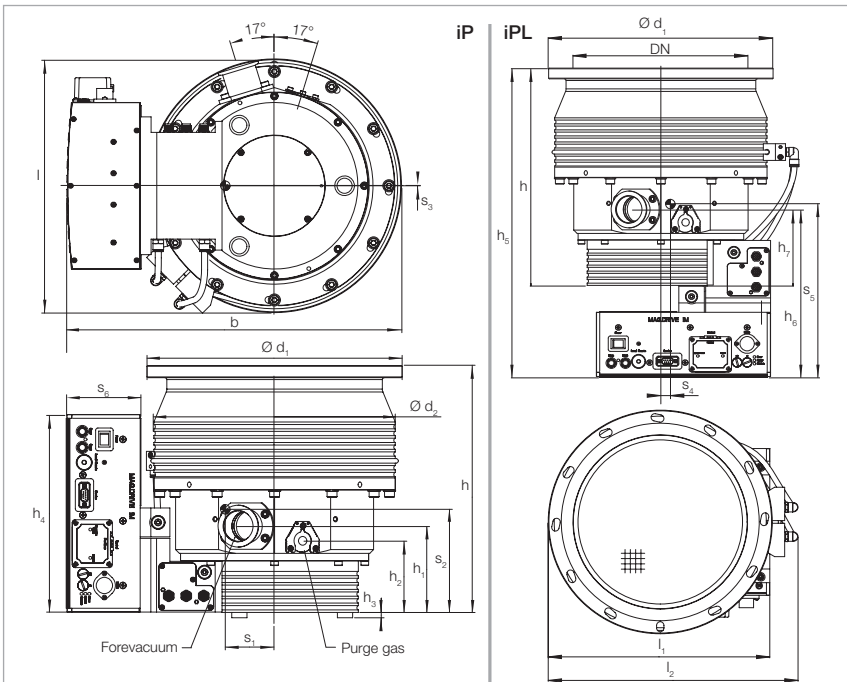


Typical Applications

- PVD coatings systems
- Coating of architectural glass
- Optical coatings
- LC displays
- Flat panels
- Research
- Analytical systems

Technical Features

- Installation in any orientation
- DN 200 and/or 250 in ISO-F and/or CF high vacuum connection
- DN 40 KF forevacuum connection
- Purge gas/venting connection DN 16 KF with clamped connection (purge/vent)
- Water cooling
- Protection class IP 54
- 2 slots for industrial communications modules
- Standard ProfiBus
- RS 232 C in Service Slot
- further interfaces can be fitted: RS 485 C, 9 pin 24 V PLC, DeviceNet, EtherNet IP, EtherCat



Type	DN		b	d ₁	d ₂	h	h ₁	h ₂	h ₃	h ₄	h ₅	h ₆
MAG W 1300	200 ISO-F	mm	420 ¹⁾	285	285	305	114	94	7	260	442	251
		in.	16.54 ¹⁾	11.22	11.22	12.01	4.49	3.70	0.38	10.24	17.40	9.88
	200 CF	mm	416	254	285	335	114	94	7	260	472	251
		in.	16.38	10.00	11.22	13.19	4.49	3.70	0.38	10.24	18.58	9.88
MAG W 1600/1700	250 ISO-F	mm	442	335	317	325	114	94	7	260	463	251
		in.	17.40	13.19	12.48	12.80	4.49	3.70	0.38	10.24	18.23	9.88
	250 CF	mm	432	305	317	330	114	94	7	260	467	251
		in.	17.01	12.01	12.48	12.99	4.49	3.70	0.38	10.24	18.39	9.88
MAG W 2200	250 ISO-F	mm	450	335	349	355	114	94	7	260	492	251
		in.	17.18	13.19	13.74	13.19	4.49	3.70	0.38	10.24	19.37	9.88
	250 CF	mm	446	305	349	372	114	94	7	260	506	251
		in.	17.56	12.01	13.74	14.65	4.49	3.70	0.38	10.24	19.92	9.88
			h ₇	l	l ₁	l ₂	s ₁	s ₂	s ₃	s ₄	s ₅	s ₆
MAG W 1300	200 ISO-F	mm	114	311 ¹⁾	311 ¹⁾	332 ¹⁾	42	140	0	15	241	98
		in.	4.49	12.24 ¹⁾	12.24 ¹⁾	13.07 ¹⁾	1.65	5.51	0	0.59	9.49	3.86
	200 CF	mm	114	307	307	-	32	164	0	-	-	98
		in.	4.49	12.09	12.09	-	1.26	6.46	0	-	-	3.86
MAG W 1600/1700	250 ISO-F	mm	114	335	331	374	39	154	0	14	259	98
		in.	4.49	13.19	12.24	14.72	1.54	6.06	0	0.55	10.20	3.86
	250 CF	mm	114	335	322	-	29	173	0	9	285	98
		in.	4.49	13.19	12.68	-	1.14	6.81	0	0.35	11.22	3.86
MAG W 2200	250 ISO-F	mm	114	343	340	392	34	165	0	12	272	98
		in.	4.49	13.50	13.39	15.43	1.34	6.50	0	0.47	10.71	3.86
	250 CF	mm	114	339	340	-	26	187	0	8	302	98
		in.	4.49	13.35	13.39	-	1.02	7.36	0	0.32	11.89	3.86

¹⁾ 4 mm (0.16 in.) for cooling coil

Dimensional drawing for the MAG INTEGRA, dimensions in mm

Advantages to the User

- Highest pumping speed and gas throughput from a very small size
- Rugged and reliable operation in industrial applications
- Sets new benchmarks for maintenance-free systems
- Suited for vibration sensitive applications in the areas of analytical, thin-film, electron microscopy, research and development among others.
- Flexibility through the modular concept; the converter is either attached to the side or under the pump

Technical Data

TURBOVAC MAG W

		1300 iP(L)	1600 iP(L) Booster	1700 iP(L)	2200 iP(L)
Inlet flange	DN	200 ISO-F 200 CF	250 ISO-F	250 ISO-F 250 CF	250 ISO-F 250 CF
Pumping speed					
N ₂	l x s ⁻¹	1100	1600	1610	2100
Ar	l x s ⁻¹	1050	1470	1480	1900
He	l x s ⁻¹	1220	1770	1710	2050
H ₂	l x s ⁻¹	1130	1570	1660	1750
Operating speed	min ⁻¹	37 800	33 000	33 000	30 600
standby speed adjustable from to nominal speed	min ⁻¹	13 800 (230 Hz)	13 800 (230 Hz)	13 800 (230 Hz)	13 800 (230 Hz)
Max. compression ratio					
N ₂		> 10 ⁸	> 10 ⁷	> 10 ⁸	> 10 ⁸
Ar		> 10 ⁸	> 10 ⁷	> 10 ⁸	> 10 ⁸
He at 1 sccm		2.0 x 10 ⁵	6.0 x 10 ⁴	2.0 x 10 ⁵	5.0 x 10 ⁴
H ₂ at 1 sccm		8.0 x 10 ³	1.0 x 10 ³	4.0 x 10 ³	5.0 x 10 ³
Max. gas throughput					
N ₂ briefly, e.g. during pumpdown	mbar x l x s ⁻¹	30	60	30	30
N ₂ in continuous operation	mbar x l x s ⁻¹	20	30	20	17
Ar briefly, e.g. during pumpdown	mbar x l x s ⁻¹	20	30	20	20
Ar in continuous operation	mbar x l x s ⁻¹	15	20	15	12
Ultimate pressure					
ISO-F flange	mbar (Torr)	< 10 ⁻⁸ (< 7.5 x 10 ⁻⁹)	< 10 ⁻⁸ (< 7.5 x 10 ⁻⁹)	< 10 ⁻⁸ (< 7.5 x 10 ⁻⁹)	< 10 ⁻⁸ (< 7.5 x 10 ⁻⁹)
CF flange	mbar (Torr)	< 10 ⁻¹⁰ (< 7.5 x 10 ⁻¹¹)	–	< 10 ⁻¹⁰ (< 7.5 x 10 ⁻¹¹)	< 10 ⁻¹⁰ (< 7.5 x 10 ⁻¹¹)
Max. degassing temperature	°C (°F)	80 (176)	80 (176)	80 (176)	80 (176)
Max. foreline pressure					
N ₂	mbar (Torr)	4.0 (3.00)	1.0 (0.75)	4.0 (3.00)	2.5 (1.9)
Ar	mbar (Torr)	0.6 (0.45)	1.0 (0.75)	0.6 (0.45)	2.5 (1.9)
Recommended backing pump		TRIVAC B or dry compressing pumps			
Run-up time	min	< 5	< 7	< 7	< 10
Foreline flange	DN	40 KF	40 KF	40 KF	40 KF
Purge / vent port (clamped)	DN	16 KF	16 KF	16 KF	16 KF
Water cooling connection	G	1/8"	1/8"	1/8"	1/8"
Weight, approx.	kg (lbs)	40 (88)	45 (99)	45 (99)	50 (110)
Noise level acc. ISO 3744	dB(A)	< 41	< 41	< 41	< 41
Vibration level at high vacuum flange at max. speed	µm	0.01	0.01	0.01	0.01

Technical Data


Integrated Frequency Converter

MAG.DRIVE iM

Power supply	V	200 - 240 ±10%
Mains frequency	Hz	50 / 60
Power consumption		
maximum	W	750
at ultimate pressure	W	150
Contact rating for the relays, max.		32 V, 0.5 A
Permissible ambient temperature		
during operation	°C (°F)	+10 to +45 (+50 to +113)
during storage	°C (°F)	-10 to +60 (+14 to +140)
Relative humidity of the air, non-condensing	%	5 to 85
Protection class	IP	54
Overvoltage category		II
Pollution category		2

Ordering Information

**TURBOVAC MAG
W 1300/1600/1700/2200 iP(L)**

TURBOVAC MAG W 1300 with Integrated Frequency Converter and Purge Gas Connection	P FC PS	Part No.	
MAG W 1300 iP, DN 200 ISO-F, Profibus		411300V0504	
MAG W 1300 iP, DN 200 ISO-F, 24 V SPS interface		411300V0514	
MAG W 1300 iP, DN 200 CF, Profibus		411300V0506	
MAG W 1300 iP, DN 200 CF, 24 V SPS interface		411300V0516	
MAG W 1300 iPL, DN 200 ISO-F, Profibus		411300V0704	
MAG W 1300 iPL, DN 200 ISO-F, 24 V SPS interface		411300V0714	
MAG W 1300 iPL, DN 200 CF, Profibus		411300V0706	
MAG W 1300 iPL, DN 200 CF 24 V SPS interface		411300V0716	
TURBOVAC MAG W 1600 Booster with Integrated Frequency Converter and Purge Gas Connection	P FC PS		
MAG W 1600 iP Booster, DN 250 ISO-F, Profibus		411600V0504	
MAG W 1600 iP Booster, DN 250 ISO-F, 24 V SPS interface		411600V0514	
MAG W 1600 iPL Booster, DN 250 ISO-F, Profibus		411600V0704	
MAG W 1600 iPL Booster, DN 250 ISO-F, 24 V SPS interface		411600V0714	
TURBOVAC MAG W 1700 with Integrated Frequency Converter and Purge Gas Connection	P FC PS		
MAG W 1700 iP, DN 250 ISO-F, Profibus		411700V0504	
MAG W 1700 iP, DN 250 ISO-F, 24 V SPS interface		411700V0514	
MAG W 1700 iP, DN 250 CF, Profibus		411700V0506	
MAG W 1700 iP, DN 250 CF, 24 V SPS interface		411700V0516	
MAG W 1700 iPL, DN 250 ISO-F, Profibus		411700V0704	
MAG W 1700 iPL, DN 250 ISO-F, 24 V SPS interface		411700V0714	
MAG W 1700 iPL, DN 250 CF, Profibus		411700V0706	
MAG W 1700 iPL, DN 250 CF, 24 V SPS interface		411700V0716	
TURBOVAC MAG W 2200 with Integrated Frequency Converter and Purge Gas Connection	P FC PS		
MAG W 2200 iP, DN 250 ISO-F, Profibus		412200V0504	
MAG W 2200 iP, DN 250 ISO-F, 24 V SPS interface		412200V0514	
MAG W 2200 iP, DN 250 CF, Profibus		412200V0506	
MAG W 2200 iP, DN 250 CF, 24 V SPS interface		412200V0516	
MAG W 2200 iPL, DN 250 ISO-F, Profibus		412200V0704	
MAG W 2200 iPL, DN 250 ISO-F, 24 V SPS interface		412200V0714	
MAG W 2200 iPL, DN 250 CF, Profibus		412200V0706	
MAG W 2200 iPL, DN 250 CF, 24 V SPS interface		412200V0716	
Other interfaces upon request			

With integrated Frequency Converter and Power Supply



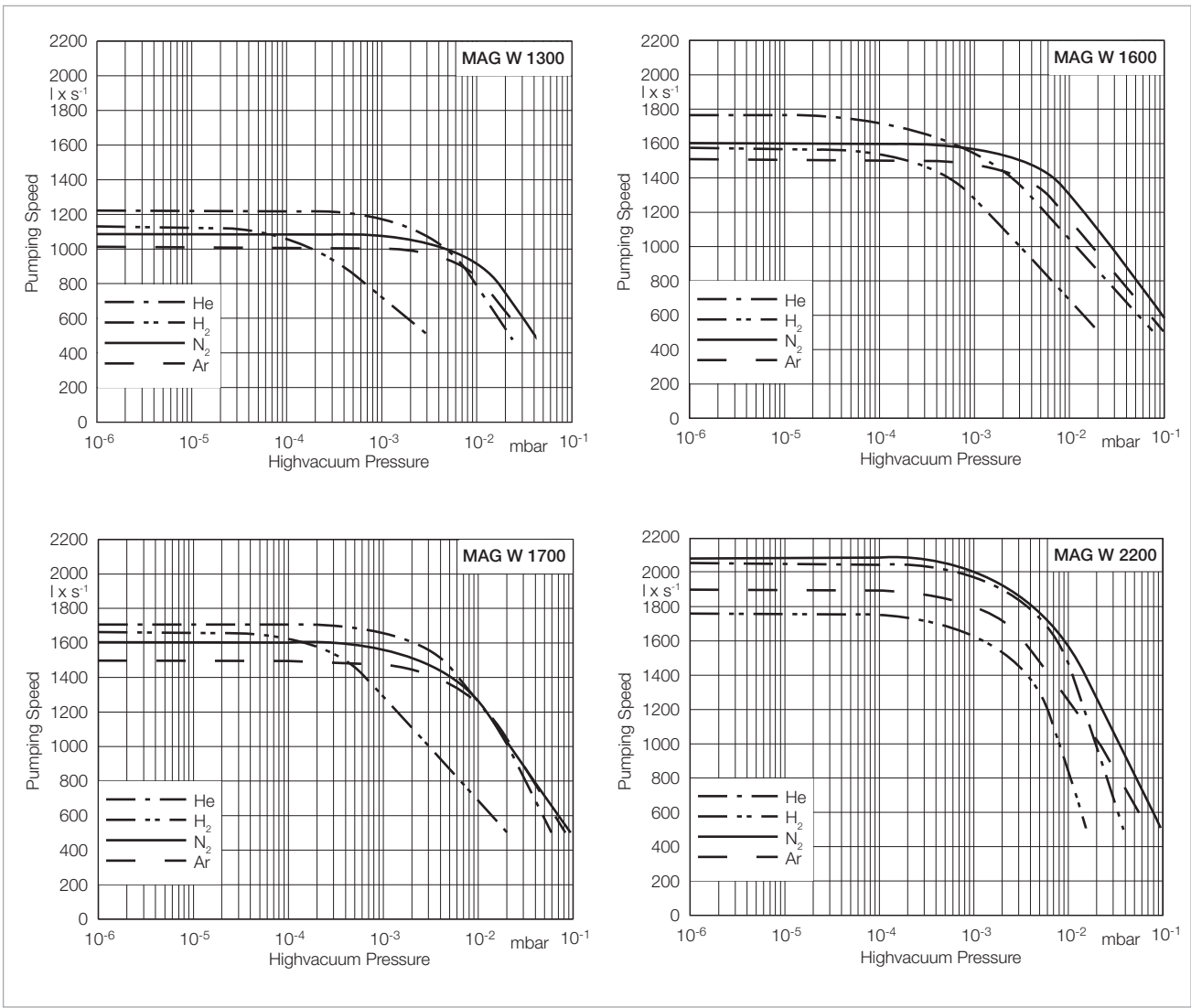
MAG W 1300 iP(L),
 MAG W 1600 iP(L) Booster,
 MAG W 1700 iP(L),
 MAG W 2200 iP(L)

Ordering Information

TURBOVAC MAG W 1300/1600/1700/2200 iP(L)

High Vacuum Pumps

Mandatory Accessories	P	Part No.
Set of bolts, nuts and washers for ISO-F flange (12 each) Bolts M 10 x 50 Bolts M 10 x 35		400153V0012 400153V0010
Centering with O-ring Al/FPM DN 200 DN 250 Stainless steel/FPM DN 200 DN 250		268 44 268 45 887 02 887 08
Set of bolts, nuts and washers for CF flange (8 each) Bolts M 8 x 40 (For DN 200, 3 sets are required; for DN 250, 4 sets)		400153V0016
Copper gasket rings for CF flange DN 200 (Set of 10 pieces) DN 250 (Set of 5 pieces)		839 47 839 48
Set of hex. bolts with nuts, bolts and washers for CF flange DN 200 DN 250 (2 sets required)		839 07 839 07
Accessories, optional	P FC PS	
Mains cable, 2.5 m (8.75 ft) with EURO plug with US plug		411310V03 411320V03
Seal Kit DN 250 Metal		200 07 901
Seal kit, metal, for other flanges		upon request
Purge gas and venting valve 24 V DC 0.6 mbar-l/s at 1.5 to 6 bar 0.6 mbar-l/s at 1 to 1.5 bar Cable set (2 pieces) for connection to the pump		121 33 800152V0010 411300V01
Cooling water valve kit		411300V02
Spare Parts Inlet screen DN 200 ISO-F and DN 200 CF DN 250 ISO-F and DN 250 CF		E 200 04 558 E 200 04 557
Included in the Delivery of the Pump	P	
Flanges for forevacuum, venting and purge gas are blank-flanged		
Converter-side mains plug (IP 54)		
Inlet screen		



Pumping speed curves of the MAG W 1300, W 1600, W 1700 and W 2200