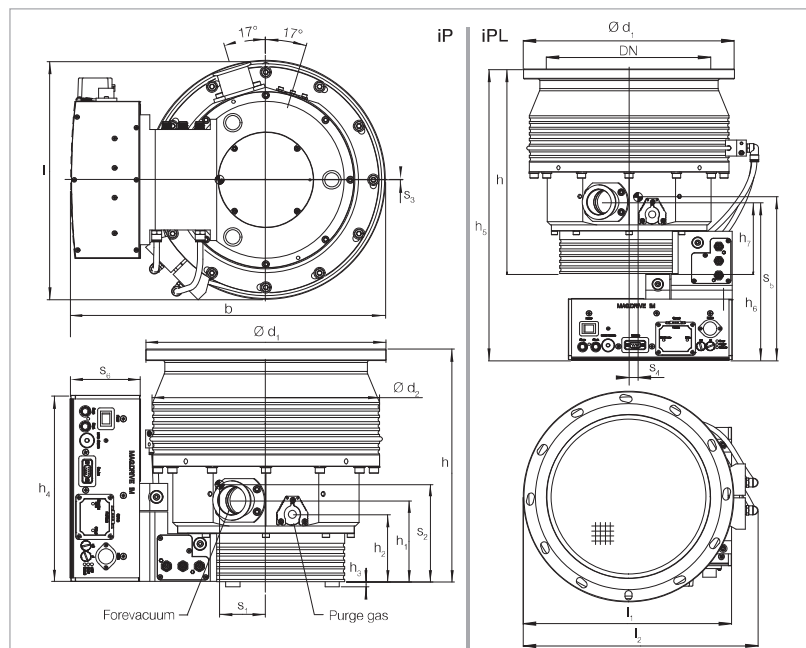


# MAG INTEGRA - Magnetic Rotor Suspension with integrated Frequency Converter, with Compound Stage

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



Similar



Type	DN		b	d <sub>1</sub>	d <sub>2</sub>	h	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	h <sub>5</sub>	h <sub>6</sub>
MAG W 1300	200 ISO-F	mm	420 <sup>1)</sup>	285	285	305	114	94	7	260	442	251
		in.	16.54 <sup>1)</sup>	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 <sub>7</sub>	l	l <sub>1</sub>	l <sub>2</sub>	s <sub>1</sub>	s <sub>2</sub>	s <sub>3</sub>	s <sub>4</sub>	s <sub>5</sub>	s <sub>6</sub>
MAG W 1300	200 ISO-F	mm	114	311 <sup>1)</sup>	311 <sup>1)</sup>	332 <sup>1)</sup>	42	140	0	15	241	98
		in.	4.49	12.24 <sup>1)</sup>	12.24 <sup>1)</sup>	13.07 <sup>1)</sup>	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

<sup>1)</sup> 4 mm (0.16 in.) for cooling coil

Dimensional drawing for the MAG INTEGRA, dimensions in mm

### 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
- CE and RoHS compliant; fulfilment of UL requirements
- 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, ...

### 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 <sub>2</sub>	l x s <sup>-1</sup>	1100	1600	1610	2100
Ar	l x s <sup>-1</sup>	1050	1470	1480	1900
H <sub>2</sub>	l x s <sup>-1</sup>	1220	1770	1710	2050
He	l x s <sup>-1</sup>	1130	1570	1660	1750
Operating speed	min <sup>-1</sup>	37 800	33 000	33 000	30 600
standby speed adjustable from to nominal speed	min <sup>-1</sup>	13 800 (230 Hz)	13 800 (230 Hz)	13 800 (230 Hz)	13 800 (230 Hz)
Compression ratio					
N <sub>2</sub>		> 10 <sup>8</sup>	> 10 <sup>7</sup>	> 10 <sup>8</sup>	> 10 <sup>8</sup>
Ar		> 10 <sup>8</sup>	> 10 <sup>7</sup>	> 10 <sup>8</sup>	> 10 <sup>8</sup>
H <sub>2</sub> at 1 sccm		8.0 x 10 <sup>3</sup>	1.0 x 10 <sup>3</sup>	4.0 x 10 <sup>3</sup>	5.0 x 10 <sup>3</sup>
He at 1 sccm		2.0 x 10 <sup>5</sup>	6.0 x 10 <sup>4</sup>	2.0 x 10 <sup>5</sup>	5.0 x 10 <sup>4</sup>
Max. gas throughput					
N <sub>2</sub> briefly, e.g. during pumpdown	mbar x l x s <sup>-1</sup>	30	60	30	30
N <sub>2</sub> in continuous operation	mbar x l x s <sup>-1</sup>	20	30	20	20
Ar briefly, e.g. during pumpdown	mbar x l x s <sup>-1</sup>	20	30	20	20
Ar in continuous operation	mbar x l x s <sup>-1</sup>	15	20	15	15
Ultimate pressure					
ISO-F flange	mbar (Torr)	< 10 <sup>-8</sup> (< 7.5 x 10 <sup>-9</sup> )	< 10 <sup>-8</sup> (< 7.5 x 10 <sup>-9</sup> )	< 10 <sup>-8</sup> (< 7.5 x 10 <sup>-9</sup> )	< 10 <sup>-8</sup> (< 7.5 x 10 <sup>-9</sup> )
CF flange	mbar (Torr)	< 10 <sup>-9</sup> (< 7.5 x 10 <sup>-10</sup> )	—	< 10 <sup>-9</sup> (< 7.5 x 10 <sup>-10</sup> )	< 10 <sup>-9</sup> (< 7.5 x 10 <sup>-10</sup> )
Max. degassing temperature	°C (°F)	80 (176)	80 (176)	80 (176)	80 (176)
Max. foreline pressure					
N <sub>2</sub>	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	< 7	< 7	< 7	< 7
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

High Vacuum Pumps

## 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)**

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

## With integrated Frequency Converter and Power Supply



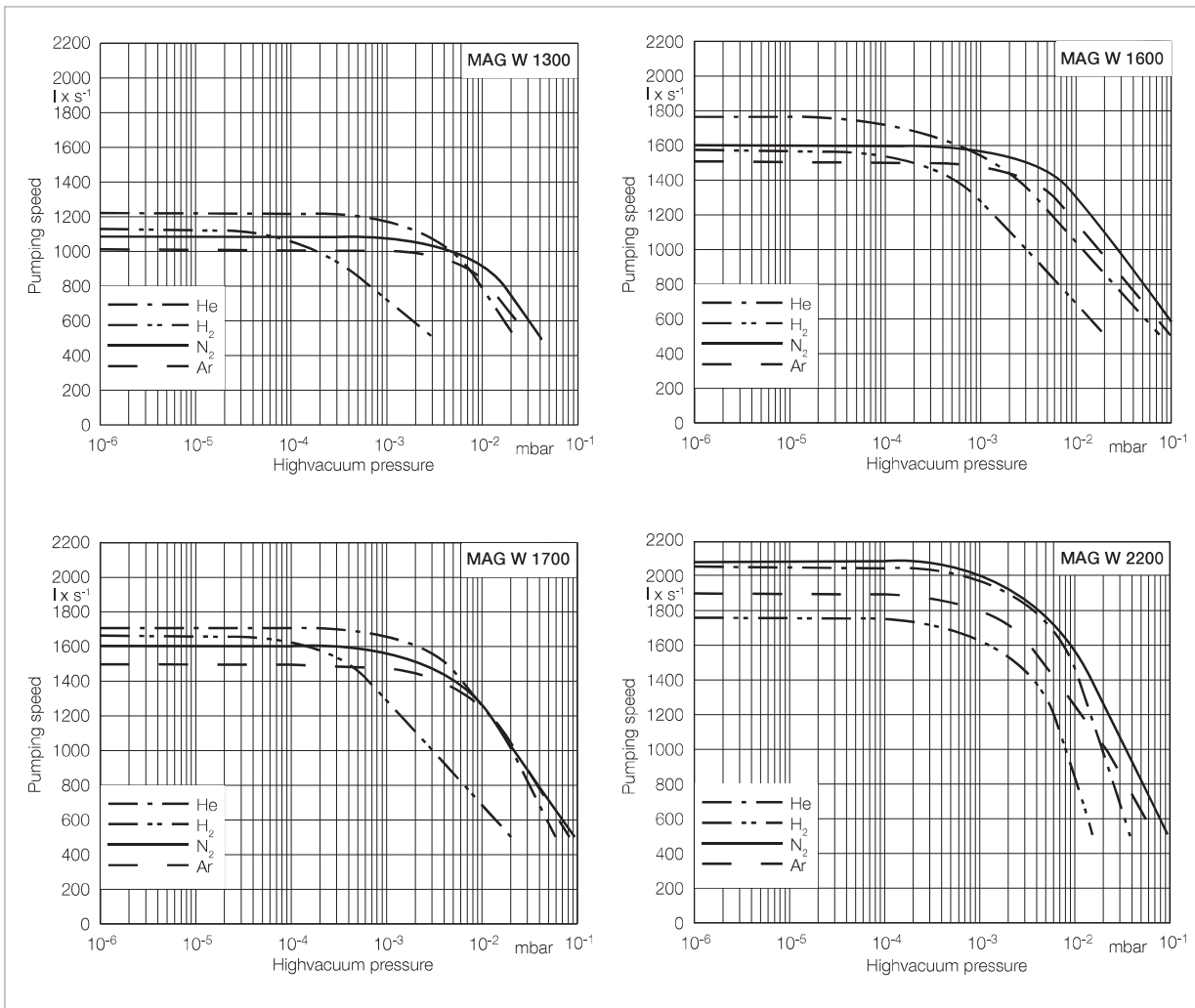
MAG W 1300 iP(L),  
 MAG W 1600 iP(L) Booster,  
 MAG W 1700 iP(L),  
 MAG W 2200 iP(L)

### 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 12 x 35		<b>400153V0012</b> <b>400153V0010</b>
Centering with O-ring Al/FPM DN 200 DN 250 Stainless steel/FPM DN 200 DN 250		<b>268 44</b> <b>268 45</b> <b>887 02</b> <b>887 08</b>
Set of bolts, nuts and washers for CF flange (12 each) Bolts M 8 x 40 (For DN 200, 3 sets are required; for DN 250, 4 sets)		<b>400153V0016</b>
Copper gasket rings for CF flange DN 200 (Set of 10 pieces) DN 250 (Set of 5 pieces)		<b>839 47</b> <b>839 48</b>
Set of hex. bolts with nuts, bolts and washers for CF flange DN 200 DN 250 (2 sets required)		<b>839 07</b> <b>839 07</b>
Accessories, optional	P FC PS	
Mains cable, 2.5 m (8.75 ft) with EURO plug with US plug		<b>411310V03</b> <b>411320V03</b>
Seal Kit DN 250 Metal		<b>200 07 901</b>
Seal kit, metal, for other flanges		<b>upon request</b>
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		<b>121 33</b> <b>800152V0010</b> <b>411300V01</b>
Cooling water valve kit		<b>411300V02</b>
Spare Parts Inlet screen DN 200 ISO-F and DN 200 CF DN 250 ISO-F and DN 250 CF		<b>E 200 04 558</b> <b>E 200 04 557</b>
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