

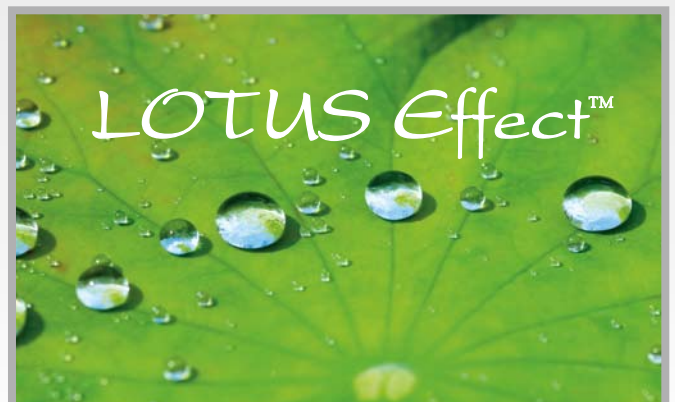


## FMG is proud to be the global leader in the latest dry screw technology

Ceramic coatings are the latest screw technology, replacing Nickel and Teflon. FMG-DRY™ Ceramic coated rotors use Silicon Carbide material and are virtually non-stick. Additional innovation and change, means cleaning our ceramic screws is simple, with our self-cleaning “Auto Clean Function”. Together these technologies are major breakthroughs in dry pump vacuum performance.

## Competitive Attributes

- FMG’s ‘Lotus Effect’ delivers improved uptime and better cost of ownership
- No Elastomer oil seals; no Teflon tip seals; no oil leaks
- Quality shaft seal ‘piston ring’ design, no leakage, no bearing issues
- Hi-Tech Ceramics using silicon carbide protect the rotors and casing, for extreme harsh processes
- Quality, proven electro-mechanical construction giving sustainable performance when you need it. Backed by essential electronics, for online production management



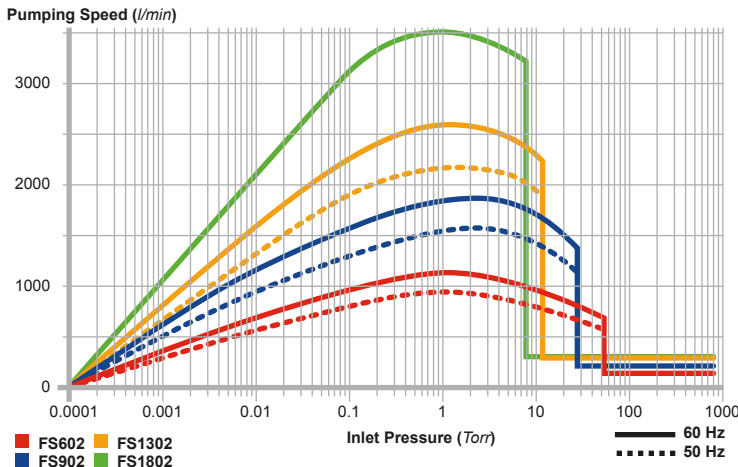
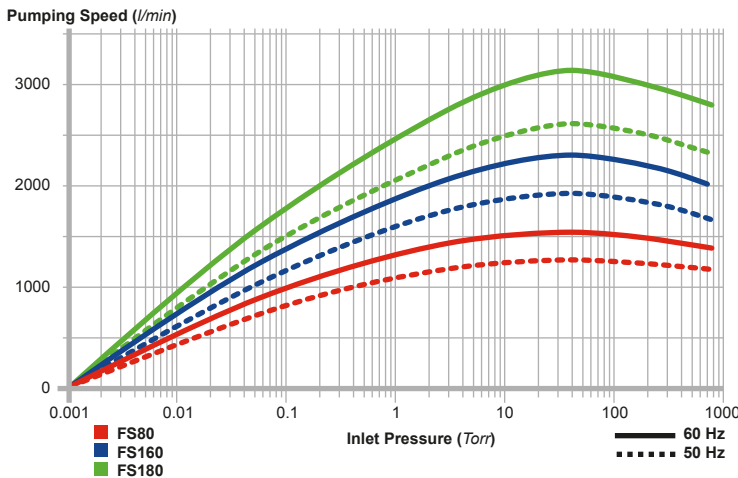


## Professional Advice, Support, Being there when you need it most

FMG's product support solutions helps you design and configure your dry pumps. We work with you to meet your personalized specifications, as well as advising what ancillary attributes you may require. FMG is there help you integrate your pump the way you want it.

## Twenty-seven years of serving the vacuum industry

- Tribal knowledge that can sustain the vacuum market
- 20K sq ft - repair, rebuild and service facility
- Throughput >400 pumps a month
- FMG knows its competition:
  - Knowledge of competitive features and benefits
  - Knowledge of competitions Modus Operandi
- FMG knows reliability, sustainability and performance of any pump type
- Independent, not constrained by any OEM, yet backed by an OEM



Pump Model Type Definition				
Type	Type code	Covers	Controller	N2 Heater
Standard	A Type	✓	✓	
Standard	H Type	✓	✓	✓
Simple	N Type		✓	
Simple	S Type			
Simple	C Type	✓		

Units		FS80	FS160	FS180	FS400	FS602	FS902	FS1302	FS1802
<b>PERFORMANCE</b>									
<i>Pumping Speed</i>	L/min	1300/1600	2150/2600	2500/3000	5500/6600	8300/10000	12500/15000	17500/21000	15000/30000
	m <sup>3</sup> /hr	80/96	130/156	150/180	333/400	500/600	750/900	1050/1260	1500/1800
	cfm	45/57	77/92	88/106	195/235	294/353	441/530	618/742	883/1060
<i>Ultimate Vacuum</i>	Torr	7.50E-03	7.50E-03	7.50E-03	7.50E-03	7.50E-04	7.50E-04	7.50E-04	7.50E-04
	mbar	0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001
<b>POWER</b>									
<b>220v-440v 50/60Hz</b>									
	HP	4	6	6	20	4+4	6+4	6+6	6+6
	KW	2.98	4.47	4.47	7.59/9	2.98+2.98	4.47+2.98	4.47+4.47	4.47+4.47
<b>CONNECTION</b>									
<i>Inlet</i>	NW/ISO	NW50	NW50	NW50	ISO63	ISO100	ISO100	ISO160	ISO160
<i>Outlet</i>	NW	40	40	40	KF50	40	40	40	40
<b>WATER</b>									
<i>Flow</i>	L/Min	3.7	3.7	3.7	10/15 slm	3.7	3.7	3.7	3.7
<i>Tempreture</i>	C	18-30	18-30	18-30	18/28	18-30	18-30	18-30	18-30
<b>INSTALLATION</b>									
<i>Weight</i>	kg	280	300	320	750	450	520	540	545
<i>Noise Level</i>	dB	<68	<70	<70	75	<70	<70	<70	<70
<i>Operating Temp</i>	C	5C-40C	5C-40C	5C-40C		5C-40C	5C-40C	5C-40C	5C-40C
<b>NITROGEN</b>									
<i>Pressure</i>	kg/cm <sup>2</sup>	0.5-1	0.5-1	0.5-1		0.5-1	0.5-1	0.5-1	0.5-1
<i>Dilute Flow</i>	L/Min	0-60	0-60	0-60		0-60	0-60	0-60	0-60
<i>Sealing Flow</i>	L/min	0-20	0-20	0-20	10 slm	0-20	0-20	0-20	0-20

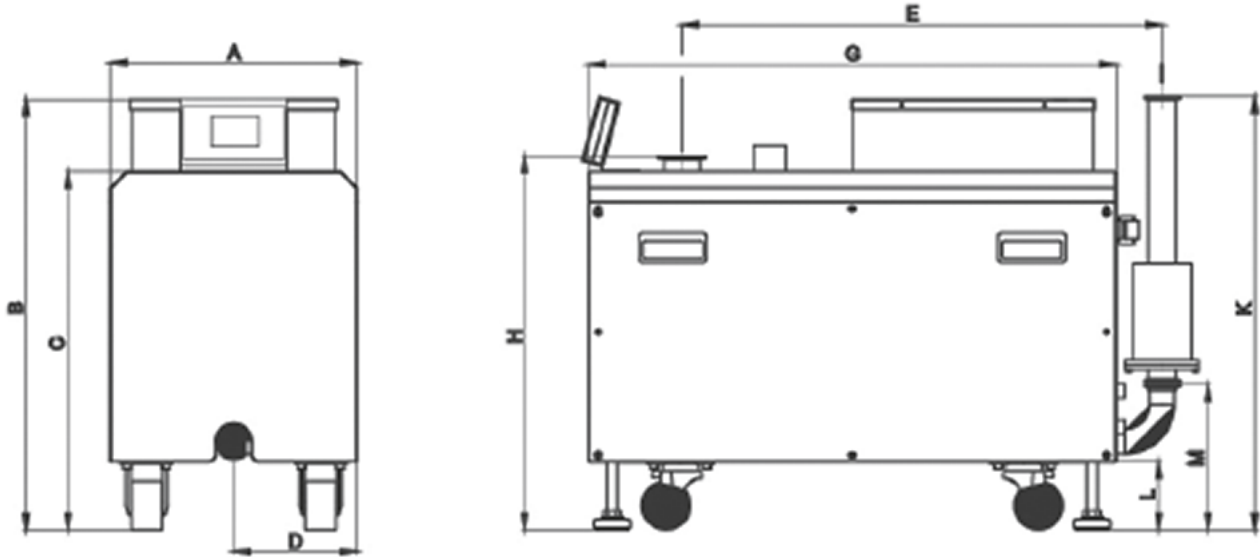
### Typical Operating Pressure in mbar

Industrial Vacuum	Semiconductor	Thin Film Deposition	Instrumentation	Rough Pumps	Process Vacuum	R&D
10 <sup>-2</sup> - 10 <sup>-6</sup>	1 - 10 <sup>-8</sup>	10 <sup>-3</sup> - 10 <sup>-8</sup>	10 <sup>-6</sup> - 10 <sup>-10</sup>	>1	>10 <sup>-2</sup>	10 <sup>-2</sup> - 10 <sup>-11</sup>

### FMG-DRY Pump Markets

Full range	Full Range	Full Range	Full Range	PS80, PS160, PS180	PS80, PS160, PS180	PS80, PS160, PS180
≤1 - 10 <sup>-3</sup>	≤1 - 10 <sup>-3</sup>	≤1 - 10 <sup>-3</sup>	≤1 - 10 <sup>-3</sup>	≤1 - 10 <sup>-2</sup>	≤1 - 10 <sup>-2</sup>	≤1 - 10 <sup>-2</sup>
MARKETS	MARKETS	MARKETS	MARKETS	MARKETS	MARKETS	MARKETS
Air Conditioning	Compound	Data storage CD/DVD	Defect systems for Semi	Central Vacuum	Beverage	Government Labs
Automotive	Crystal pulling	Field Emission Display	Electron Beam systems	Medical	Ceramics	Laboratories
Electron tubes	Etch	Glass/Optical Coating	Electron microscopes	Packaging	Chemical	Scientific Research
Heat treatment	MBE	Organic LED	Gas Analysis	Paper handling	Food	Space Simulation
Lamps Bulbs	MEMS	Photovoltaics-Solar	Inspection	Pick up & conveying	Freeze drying	Universities
Laser Technology	Process Equip	Plasma Display Panels	Leak detectors	Printing	Paper	
Leak detection	PVD, CVD	Surface coating	Mass Spec		Petrochemical	
Metallurgy	Silicon	TF Heads	Metrology		Pharmaceutical	
Refrigeration	TFT-LCD displays		MRI		Plastics	
			Nuclear Mag Resolution		Power	
			Surface Analysis		Textile	
			X-Ray Analysis			

Dimensions (mm)	A	B	C	D	E	G	H	K	L	M
FS-80	380	663	552	190	740	814	576	668	105	224
FS-160	405	678	567	180	837	895	582	645	105	201
FS-180	425	650	539	190	883	920	560	627	73	184



Dimensions (mm)	A	B	C	D	E	G	H	K	L	M
FS-602	380	908	797	190	652	814	797	668	105	224
FS-902	405	943	832	180	813	895	832	645	105	201
FS-1301	425	957	846	190	734	920	846	627	73	184
FS-1801	425	1047	846	190	734	920	846	627	73	184

