



Constant and Particle Free Point-of-Use Water Pressure

for High Quality UPW and DI-Water



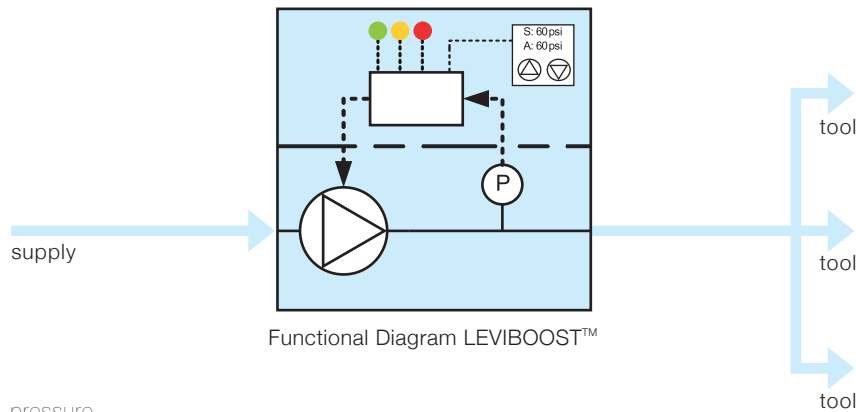
LEVIBOOST™

Always the right pressure.

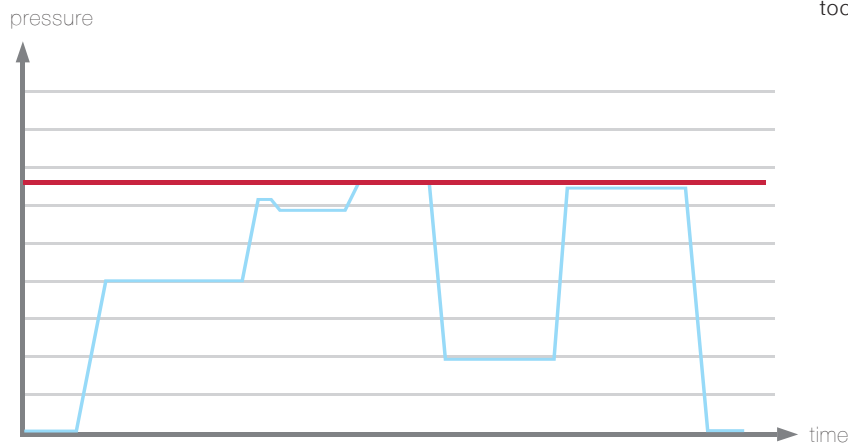
How can the Problem be solved?

Other than with passive elements an actively controlled system not only increases pressure actively but also is able to compensate fluctuations in water consumption.

As a result, a very accurate and constant pressure is provided, independent from water supply pressure and water consumption by the process tools.



Functional Diagram LEVIBOOST™



Graph conveys dynamically controlled pressure

Dynamic Controlled Process

Defined and controlled output pressure

No process disturbances

Particle-free High Purity design

Working Principle

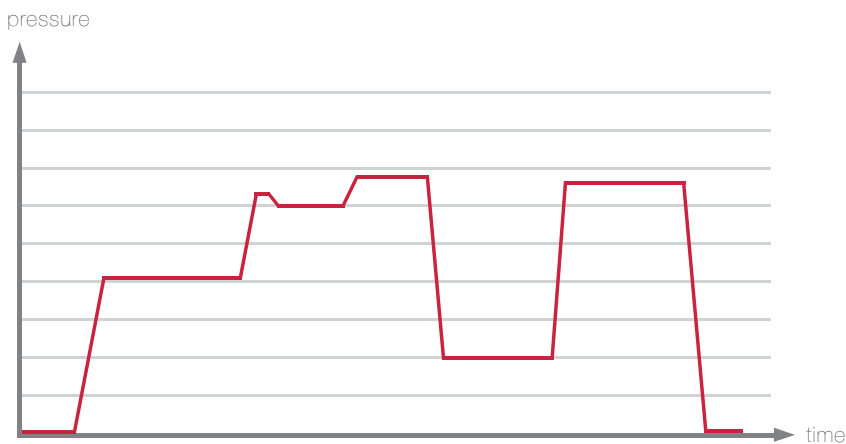
A pressure transducer monitors the current tool incoming pressure and transmits the actual value to the pump controller. Based on the required set pressure, the magnetically levitated and electronically controlled pump dynamically increases the water pressure to the given set point.

By doing so, this closed loop pressure control design not only compensates supply pressure fluctuations, but also pressure variations caused by individual water consumption of the process tools in line.

Higher Cost Pressure and More Rigid Specifications

In the Microelectronic world pressure variations in UPW and DI-Water supply lines can be a problem for tools and processes. More and more, sophisticated manufacturing require a highly constant inlet pressure in order to keep the sensitive internal tool operations within the expected process window. As a result, any pressure fluctuations could possibly reduce process yields.

Based on continuously increasing cost pressure however, water treatment systems are often designed at their limits. Further tool expansions often lead to unstable water supply situation. As a result, uncontrolled pressure fluctuations could cause extended cycle time, process interruptions, or even tool shut-downs. Major cost impacts are the consequence.



Graph conveys typical uncontrolled pressure fluctuations

Severe Problems in Manufacturing FABS

In order to cope with these challenges, Microelectronic Manufacturers either face substantial investments in additional water treatment infrastructure or try to optimize the existing installed system.

Unfortunately only passive components such as pressure regulating valves are normally used which often results in a temporary unstable water pressure condition along with high particle contamination levels.

Challenges of Fluctuating Water Supply

Uncontrolled process and increased cycle time

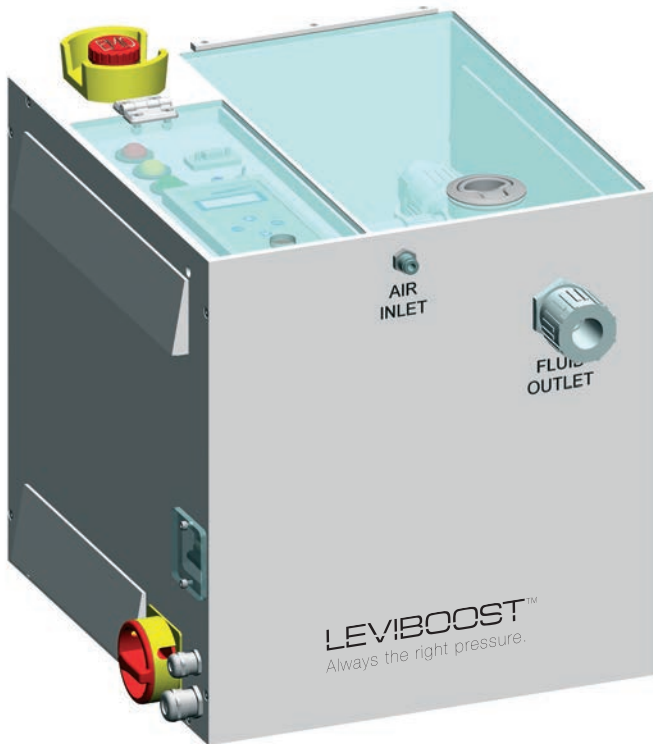
Risk of tool shut-downs

Particle problems caused by passive pressure control components



LEVIBOOST™ Levitronix Water Booster Kit

The innovative Levitronix Water Booster Kit LEVIBOOST™ offers a flexible, highly reliable and cost efficient solution for any UPW and DI-Water booster needs.



LEVIBOOST™ 75

up to 75 l/min | up to 20 gpm

see performance details on Flow/Pressure Curves

100-40009 LEVIBOOST™ 75 Flare

100-40011 LEVIBOOST™ 75 Pillar

LEVIBOOST™ 140

up to 140 l/min | up to 37 gpm

see performance details on Flow/Pressure Curves

100-40010 LEVIBOOST™ 140 Flare

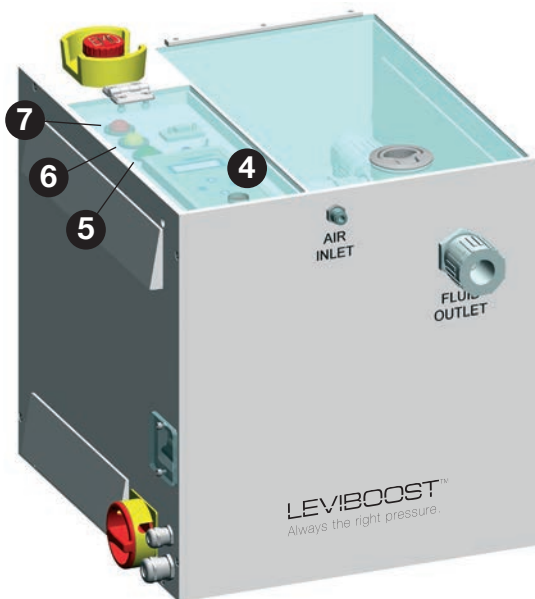
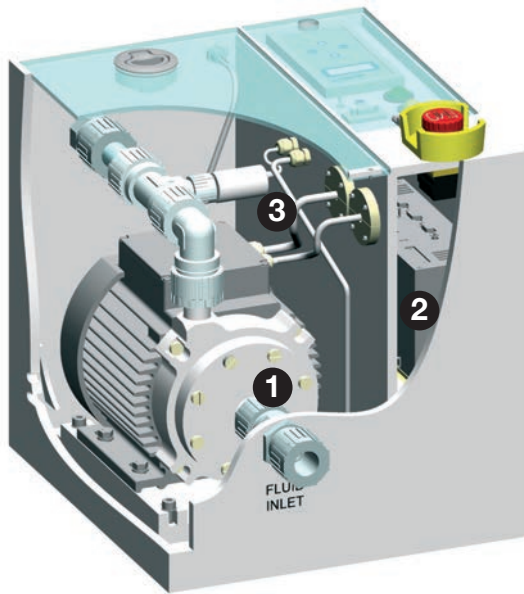
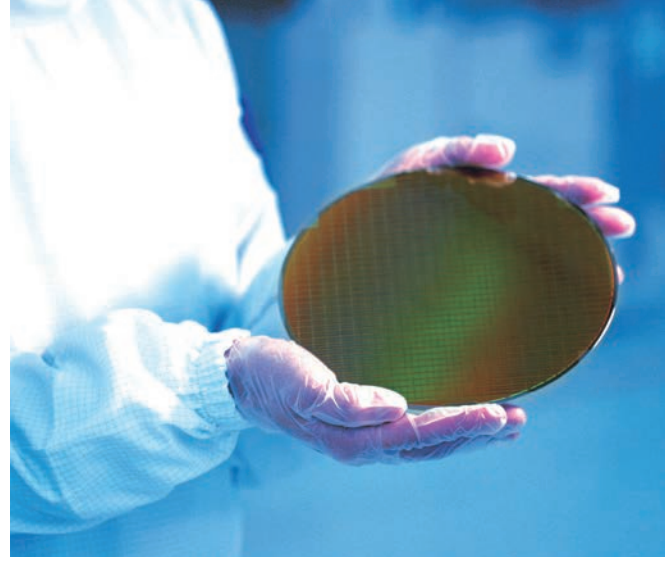
100-40012 LEVIBOOST™ 140 Pillar


Features


- Absolute accurate and constant water pressure
- Independent from variations in water supply
- Independent from variations in water consumption
- No particle generation based on the revolutionary magnetic levitated pump, contact-free operation
- Minimal foot print required - ultra compact design allows sub-floor installation
- Flexible performance
~1 l to 140 l/min
~0,25 to 37 gpm
up to 280 l/min / 74 gpm on request
- Very economical - no water system infrastructure modifications required
- Low cost of ownership - no maintenance required
- Global service and application support


LEVIBOOST™ Main Components


Proven High Purity components guarantee long life time, low maintenance and low particle contamination levels. Plug-and-Play installation.





- 1



Levitronix Motor
with Pump Head and Cooling Module (optional)
- 2


Levitronix Pump Controller
for dynamic flow control
- 3


Pressure Transducer
provides actual output pressure data
- 4


User Interface
Start, Stop, Set pressure, display set and actual pressure
- 5


System Status
Active: System runs in Control loop
- 6


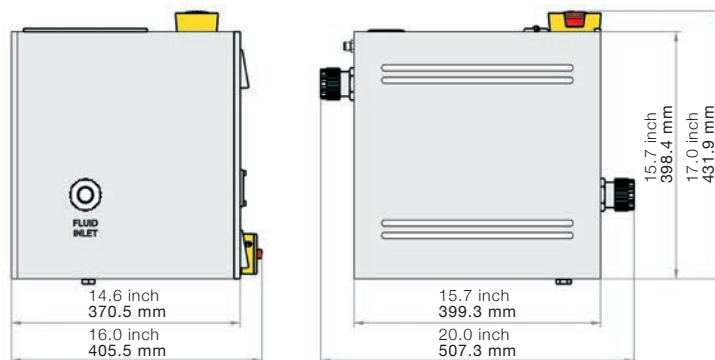
System Warning
Active: Pump is running but system needs attention
- 7


System Error
Active: Pump is not running based on system error

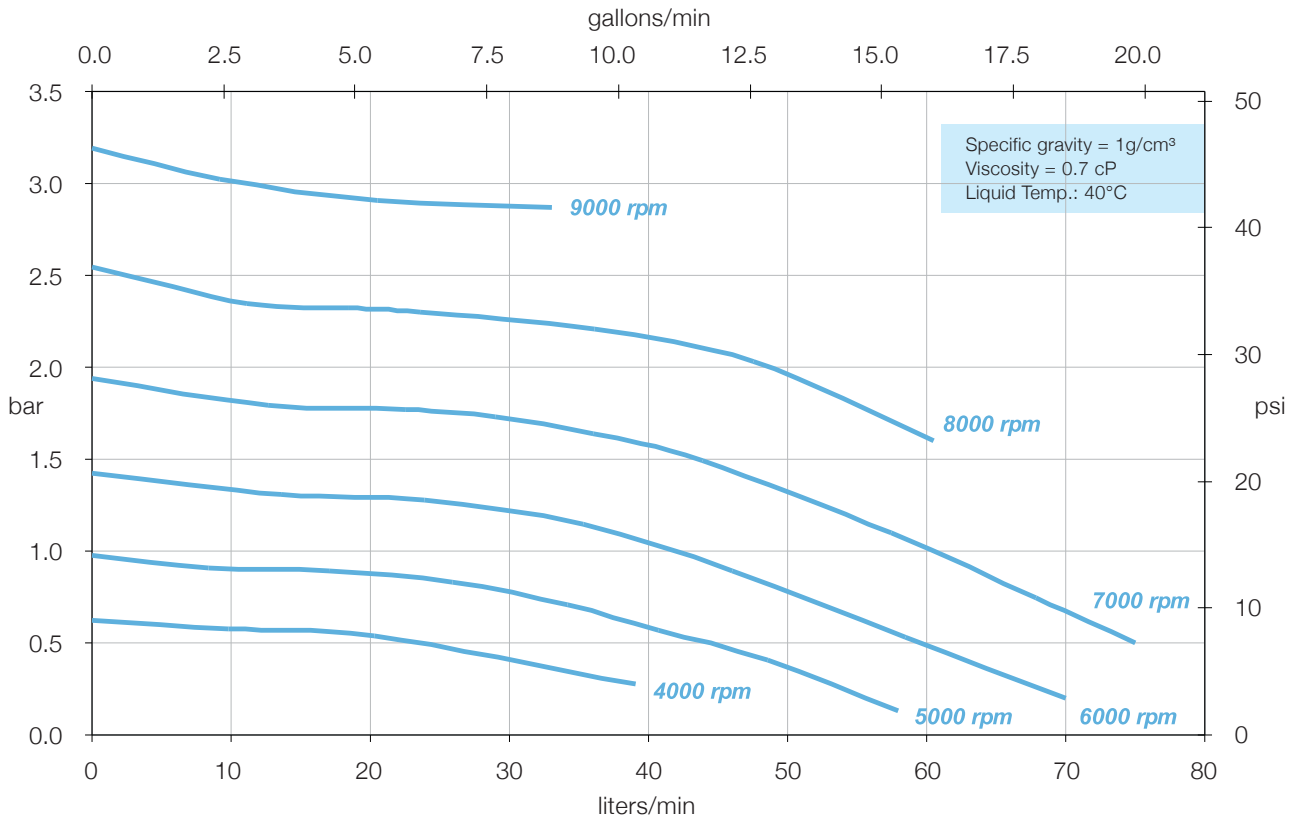
LEVIBOOST™ Design Elements

	Element	Description
Cabinet	Cabinet construction	PP and PVC (FM4910 approved, fire retardant)
	Cabinet Drain	3/8" FNPT (With plug when not in use)
	Leak Detection	Turn off the pump and System Error will be active
	Exhaust	Venting slots
	Air supply	CDA or N ₂ (for pump cooling - optional)
		Connection: 1/4" On-touch tube fitting
		Inlet Pressure: ~ 1- 3 bar (14 - 43 psi)
		Air Consumption: 110 Liter/min = 3.8 SCFM @ 1 bar
		210 Liter/min = 7.4 SCFM @ 2 bar
		Air flow regulator integrated
Hydraulic	Wetted Components	High purity PFA or PTFE (Others on request)
	Pressure Boost	LEVIBOOST™ 75 up to 42 l/min at Δp 2.5 bar, 11 gpm at Δp 35 psi LEVIBOOST™ 140 up to 115 l/min at Δp 2.5 bar, 30 gpm at Δp 35 psi
	Media	UPW, Hot UPW and DI-water up to 18.2 MOhm and up to 90°C/194°F Acids and caustics ≤ 90°C/194°F after technical consultation
	Connection Inlet and Outlet	Flare or Pillar connection 1"
Electronic	Power Supply	1 x 230 V, ± 10 %, 50/60 Hz LEVIBOOST™ 75 3 A / LEVIBOOST™ 140 8 A (rms)
	EMO	With switch guard External input for turn off
	Safety	Internal circuit breaker
	Interfaces	RS232: Service Port Digital Input: Remote Interface (remote EMO)

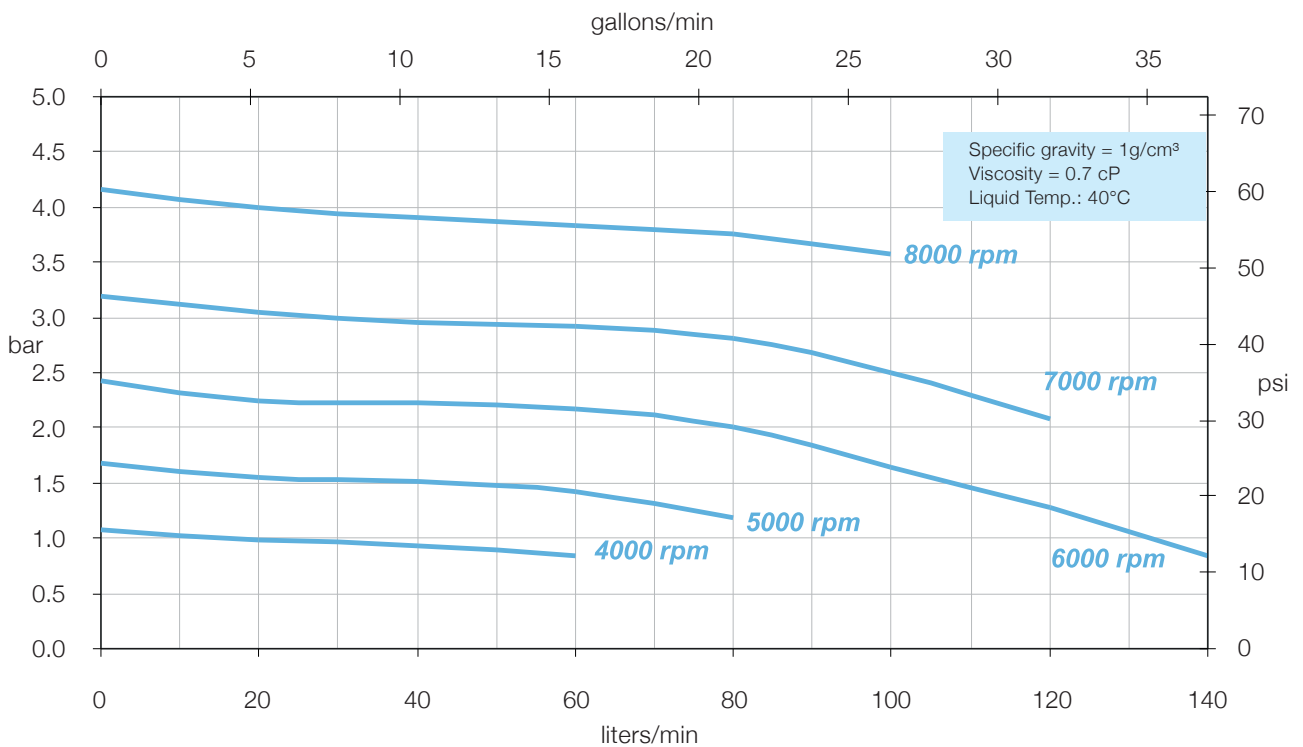
Dimensions



Flow/Pressure Curves LEVIBOOST™ 75



Flow/Pressure Curves LEVIBOOST™ 140



LEVITRONIX® The Company

Levitronix is the world-wide leader in magnetically levitated bearingless motor technology. Levitronix was the first company to introduce bearingless motor

technology to the medical and industrial markets. The company is ISO 13485, EN 46001 and EN ISO 9001 certified. Production and quality control facilities are

located in Switzerland. In addition, the Levitronix R&D team provides third party contract services in cooperation with other research groups.



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