



Introduction of IWAKI Products

for Semiconductor Manufacturing Process



Solutions for chemical handling applications

Iwaki delivers the best solutions to every pump requirement in semiconductor manufacturing processes including chemical distribution and point-of-use dispensing, recirculation and filtration, photoresist application and CMP delivery.

The FLP series reduces discharge pulsation without the use of a dampener, reducing the total cost of installation.

Wafer cleaning chemistry delivery

Pneumatic Drive Low Pulsation Bellows Pumps

PULSELASER FLP

The unique design of the Iwaki FLP bellows pump achieves low pulsation and high pressure sustaining capability. This produces a stable discharge capacity and pressure without the use of a dampener. Reduced air consumption up to 30% compared to our previous models is also achieved.

• FLP-60W only



Low pulsation

The unique drive mechanism of the system determines and maintains optimum movement of the bellows and supply-air switching to give minimum discharge pulsation.

Reduction of air consumption (FLP-60W)

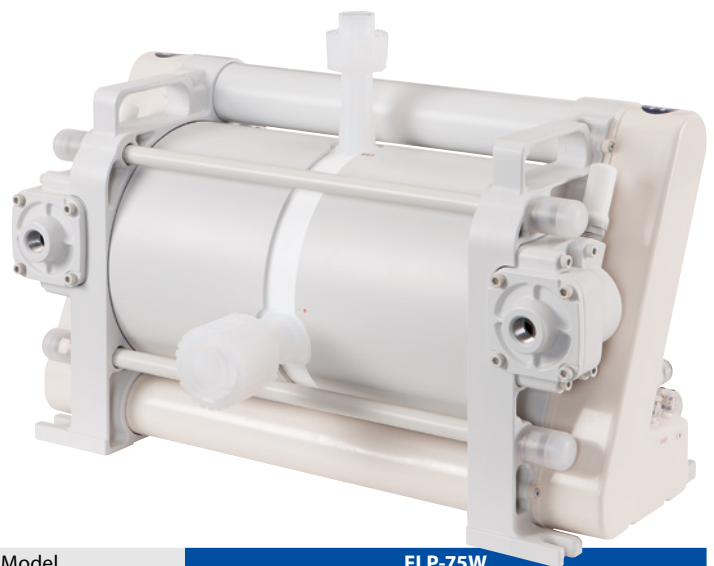
Reduced air consumption up to 30% compared to our previous models is achieved with no reduction of pump performance.

High sustained pressure capability

The optimum bellows movement improves pressure sustaining capability to maintain stable discharge capacity and pressure under frequent load change, especially in single wafer processing.

Elimination of a dampener

The pump works without the use of a dampener, saving space inside equipment & installation costs such as fluoroplastic joints. The total weight/size of the equipment is also minimized.



FLP-60W					Model	FLP-75W				
50					Max. discharge capacity ^{Note}	92				
0.41 ~ 0.5	0.31 ~ 0.4	0.21 ~ 0.3	0.11 ~ 0.2	0.1	L/min	0.41 ~ 0.5	0.31 ~ 0.4	0.21 ~ 0.3	0.11 ~ 0.2	0.10
120	140	155	160		Supply air pressure range	MPa	90	105	150	125
464	419	338	252	116	Max. stroke rate	spm	647	608	615	355
					Max. air consumption	NL/min				99

Note: The max. discharge capacity is based on pumping ambient clean water at supply air pressure of 0.2MPa. (FLP-75W: 0.3MPa)
 • Liquid temperature range: 5 ~ 100°C (0.5MPa), 101 ~ 150°C (0.4MPa), 151 ~ 180°C (0.3MPa)
 • Max. viscosity: 50mPa·s, • Suction lift: 1m (The suction lift is based on pumping ambient clean water at the maximum spm.) • Mass: FLP-60W: 22kg, FLP-75W: 42kg

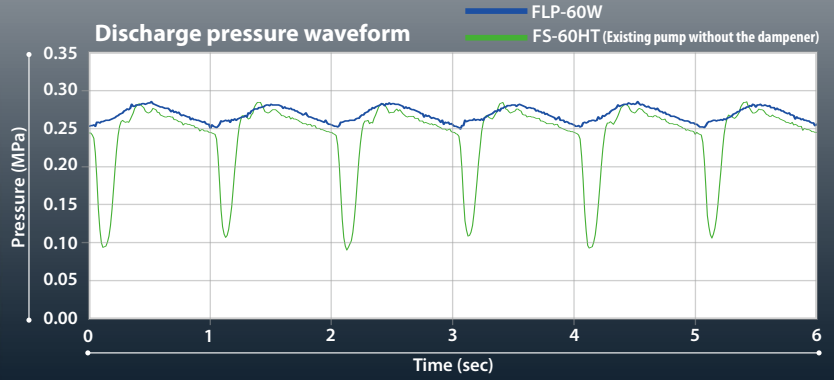
of a separate dampener,



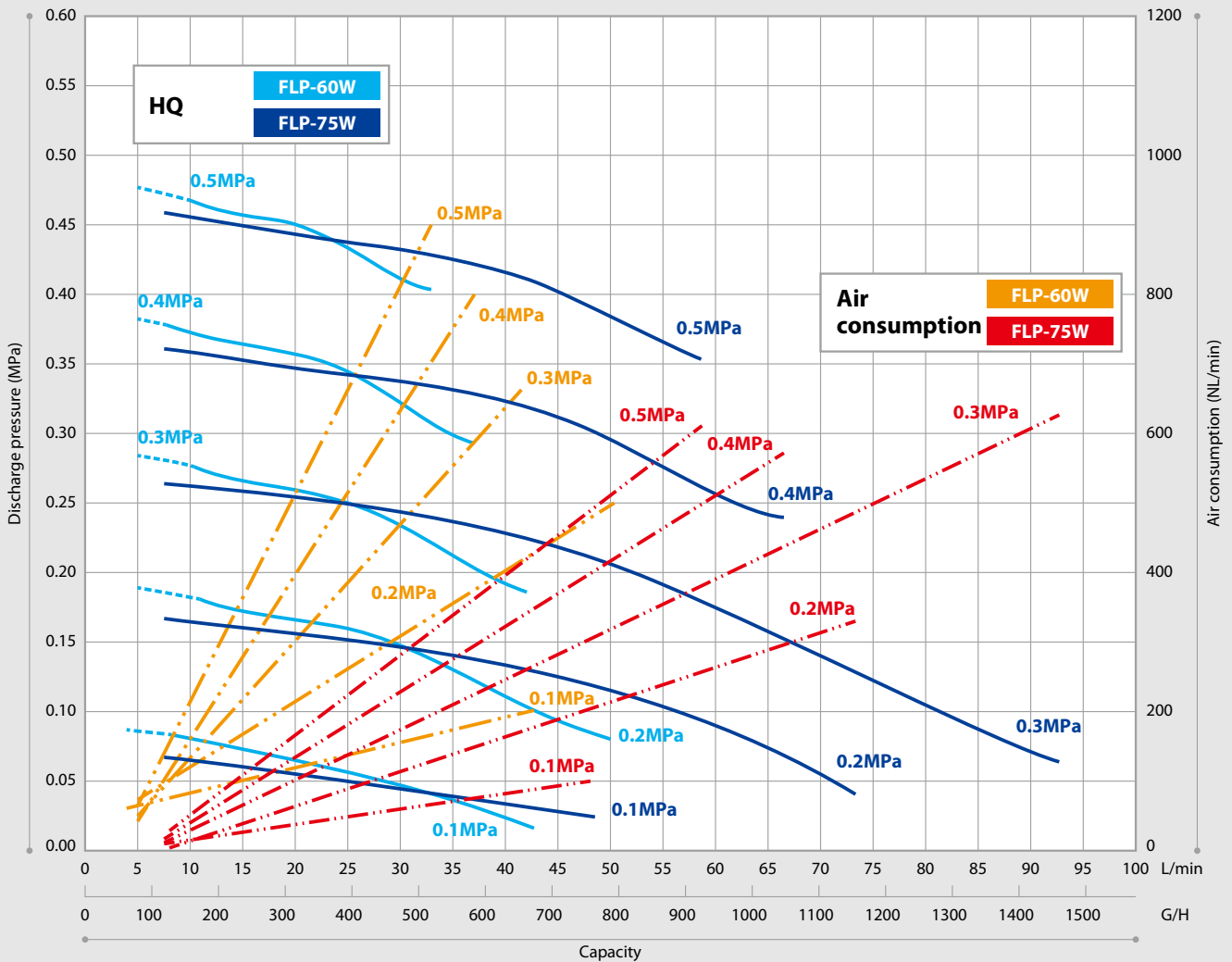
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Pump controller
LCP-1



Sharp drops of discharge pressure are minimized, reducing the pulsation compared to existing pumps. (FLP-60W only)



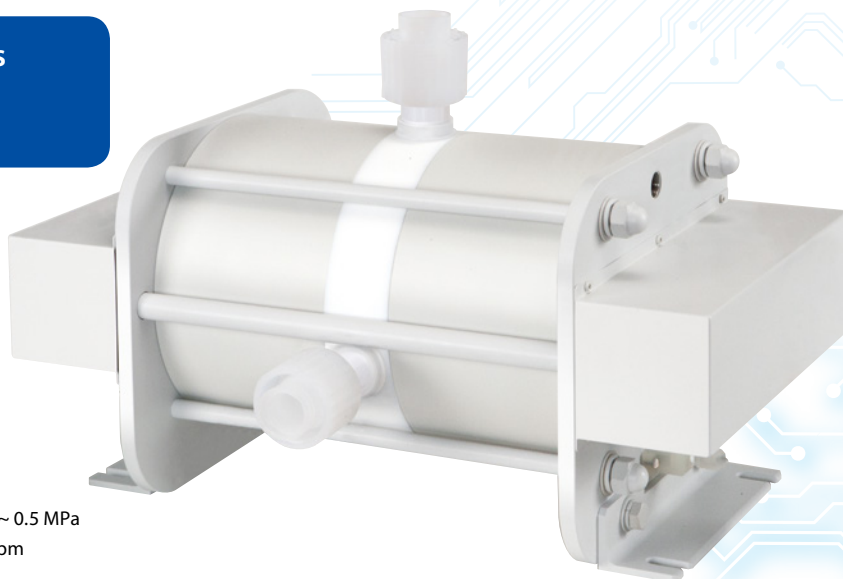
CMP slurry and wafer cleaning chemistry delivery

High temperature liquid delivery enhances cleaning efficiency.

Pneumatic Drive Bellows Pumps

FS-100HT2

Maximum flow rate of up to 100 L/min with 180°C liquid. This allows delivery of CARO (SPM) or H₃PO₄ at a flow rate 1.8 times higher than our existing pumps (55 L/min).



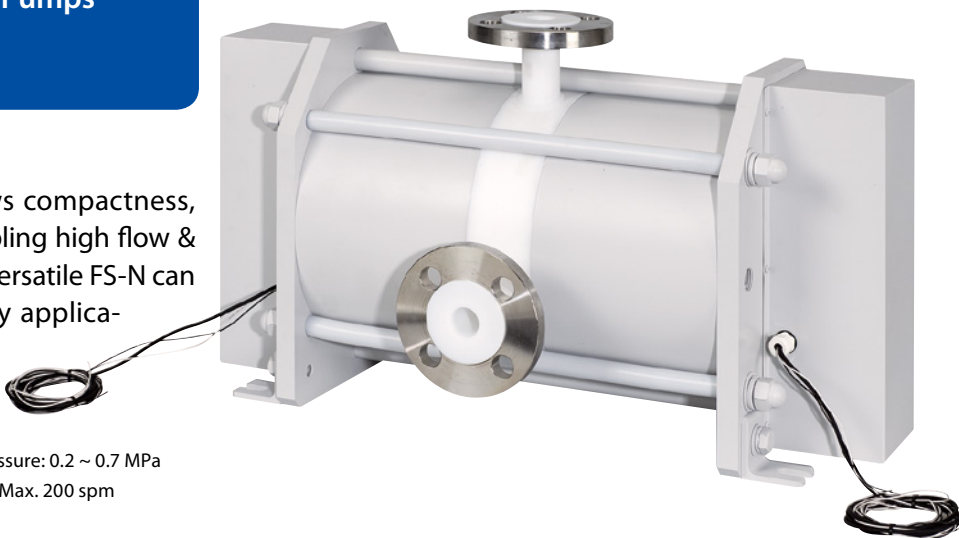
- Max. discharge capacity: 100 L/min
- Supply air pressure: 0.15 ~ 0.5 MPa
- Liquid temp. range: 10 ~ 180 °C
- Stroke speed: Max. 120 spm

Max. discharge capacity 100 L/min, Max. supplied air pressure 0.7MPa

Pneumatic Drive Bellows Pumps

FS-N

The pump's fast stroke speed allows compactness, light weight and low cost while enabling high flow & pressure capabilities. (FS-80NT) The versatile FS-N can be used for various chemical supply applications in semi-conductor / LCD manufacturing processes.



- Max. discharge capacity: 100 L/min
- Supply air pressure: 0.2 ~ 0.7 MPa
- Liquid temp. range: 5 ~ 60 °C
- Stroke speed: Max. 200 spm

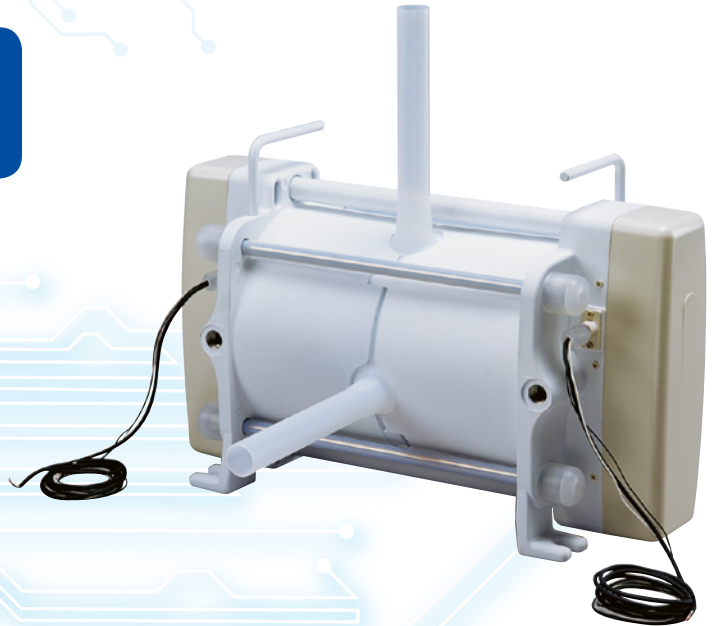
Max. discharge capacity (L/min)	Max. supplied air pressure (MPa)	Model	Max. air consumption (NL/min)	Temperature range (C)	Main materials	
					PTFE	PFA
92	0.41	FLP	647	5 ~ 180	○	○
100	0.5	FS-H	1210	5 ~ 180	○	○
100	0.7	FS-N	1495	5 ~ 60	○	○
80	0.5	FW	820	10 ~ 100	○	○
40	0.5	FW-H	480	10 ~ 180	○	○
22	0.3	FF	180	5 ~ 100	○	○
40	0.2	FF-H	200	20 ~ 180	○	○
40	0.4	FA	200	5 ~ 100	○	○

Wide range of liquid temperatures/High-pressure discharge.

Pneumatic Drive Bellows Pumps

FS-H

A small, lightweight and cost effective solution.



- Max. discharge capacity: 55 L/min
- Supply air pressure: 0.15 ~ 0.5 MPa
- Liquid temp. range: 5 ~ 180 °C
- Stroke speed: Max. 240 spm

Energy efficient design consumes less air.

Pneumatic Drive Bellows Pumps

FF/FF-H

The FF series is designed for use with medium temperature liquids (Al cylinder type: 5 to 100°C, PVC cylinder type: 5 to 50°C) and the FF-H series is designed for temperatures ranging from 20 to 180°.



- Max. discharge capacity: 40 L/min
- Supply air pressure: 0.15 ~ 0.3 MPa
- Liquid temp. range: 5 ~ 180 °C
- Stroke speed: Max. 120 spm

Applications

⊙ Usable

○ Usable depend on condition

Application	Model	FLP	FS-H	FS-N	FW	FW-H	FF	FF-H	FA	CFD
Wafer wet-bench	Cleaning (Batch process)	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	—
	Cleaning (Single wafer)	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	—
Chemical supply equipment		○	⊙	⊙	⊙	—	○	—	○	—
CMP process	Mixed-liquid circulation/Transfer	⊙	⊙	⊙	⊙	—	○	—	○	—
	Cleaning	⊙	⊙	⊙	⊙	—	⊙	—	⊙	—
Chemical replenishing equipment		—	—	—	—	—	—	—	—	⊙

Wide Range, Wide Variations

Chemical replenishing

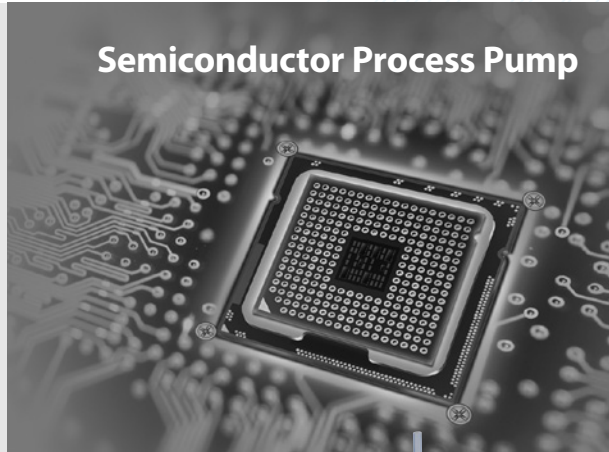
Chemical replenishing pumps
CFD



High-precision chemical replenishment pump systems.

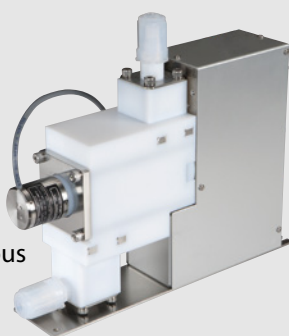
- Capacity range: 1 or 8 mL/shot
- Max. discharge pressure: 0.05 MPa
- Liquid temperature range: 20 ~ 60 °C
- Stroke speed: Max. 30 spm

Semiconductor Process Pump



Photoresist dispensing

Photoresist dispensing pumps
PDS-H115

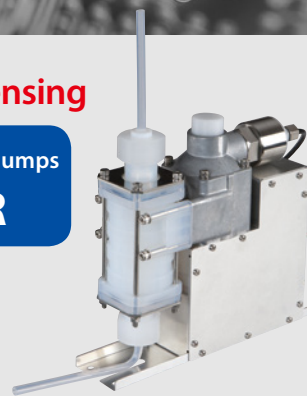


Capable of dispensing highly-viscous photoresist in LED or MEMS manufacturing.

- Max. discharge capacity: 12.0 mL/shot
- Max. discharge pressure: 1.0 MPa
- Repeatability: $\pm 0.3\%$ or below (F.S.)
- Viscosity range: 100 ~ 10,000 mPa·s

Photoresist dispensing

Photoresist dispensing pumps
PDS-105R



High accuracy,
Compact size, Low cost.

- Max. discharge capacity: 5.0 mL/shot
- Max. discharge pressure: 0.15 MPa
- Repeatability: $\pm 0.3\%$ or below (F.S.)
- Max. allowable viscosity: 200 mPa·s

Compact and simple with a seal-less structure

Direct drive pumps
NRD



- Max. discharge capacity: 23.5 L/min
- Max. head: 11.5 m
- Main materials: GFRPPE, GFRPP

Magnetic drive pumps
MD-F



- Max. discharge capacity: 125/135 L/min (50/60Hz)
- Max. head: 10.5/11.5 m (50/60Hz)
- Main materials: CFRETFE

Magnetic drive gear pumps
MDG



- Max. discharge capacity: 14/17 L/min (50/60Hz)
- Max. discharge pressure: 0.6 MPa
- Main materials: SUS316, CFRPEEK, PPS

Chiller coolant circulation pumps

Valveless plunger pumps

Hi-cera pumps
V

- Max. discharge capacity: 0.3/0.4 ~ 1400/1682 mL/min (50/60Hz)
- Max. discharge pressure: 0.7 MPa
- Main materials: Al₂O₃, SiC, SUS, PTFE



Highly accurate feed pumps

Process magnetic drive pumps

MDM

Magnetic drive processing pump
with dry running capability

- Max. discharge capacity: 84 m³/hr
- Max. head: 74.5/106 m (50/60Hz)
- Main materials: CFRETFE, PFA



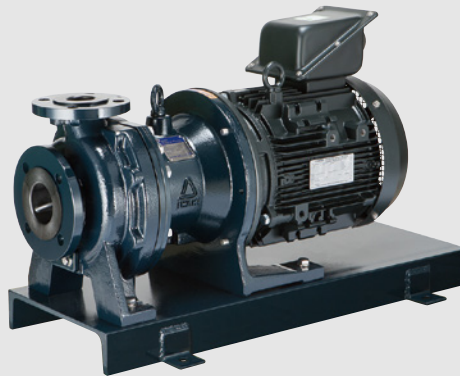
LCD panel manufacturing
process pumps

Process magnetic drive pumps

AMP

Polypropylene magnetic drive
process pumps

- Max. discharge capacity: 1000 L/min
- Max. head: 36/47.5 m (50/60Hz)
- Main materials: CFRPP



Process magnetic drive pumps

MXM

Magnetic drive pumps with an
excellent balance of features and
performance

- Max. discharge capacity: 600L/min
- Max. head: 29/41.5 m (50/60Hz)
- Main materials: CFRETFE



Self-priming magnetic drive pumps

SMX-F

Versatile self-priming magnetic
drive pump with enhanced dura-
bility under abnormal operation

- Max. discharge capacity: 440/520 L/min (50/60Hz)
- Max. head: 24/35 m (50/60Hz)
- Main materials: CFRETFE



Process magnetic drive pumps

MX-F

Reliable & energy efficient
magnetic drive pumps

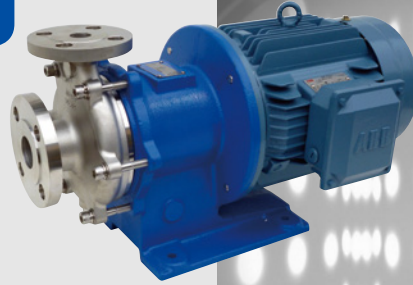
- Max. discharge capacity: 510 L/min
- Max. head: 29.5/26.5 m (50/60Hz)
- Main materials: CFRETFE



Metallic Centrifugal Magnet Drive Pumps
MP

Small/Medium sized standard centrifugal pump

- Max. discharge capacity: 1100/1300 L/min (50/60Hz)
- Max. head: 80/120 m (50/60Hz)
- Main materials: 316SS



LCD panel manufacturing
process pumps



Metallic Centrifugal Magnet Drive Pumps
M

Small sized standard centrifugal pumps

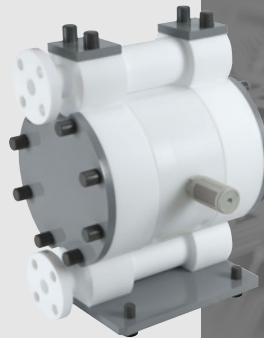
- Max. discharge capacity: 260/360 L/min (50/60Hz)
- Max. head: 39/28 m (50/60Hz)
- Main materials: 304SS



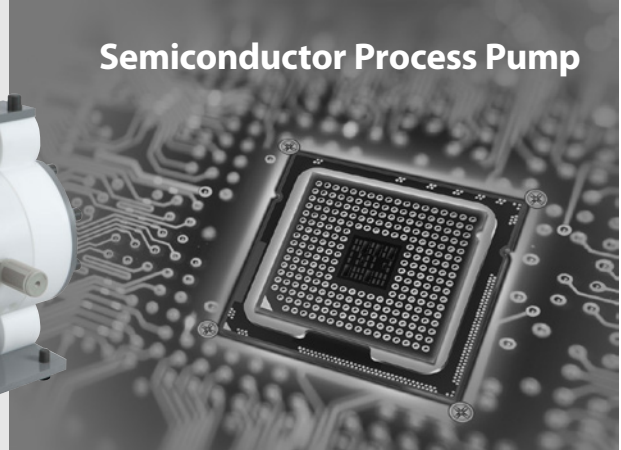
PTFE Double Diaphragm pumps
TCT

Specifically designed to transfer highly corrosive chemicals

- Max. discharge capacity: 150 L/min
- Max. discharge pressure: 0.7 MPa
- Main materials: PTFE



Semiconductor Process Pump



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