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skylink

Electric Diaphragm Pump

VARLDEN
Specialist in Fluid Transfer

skylink

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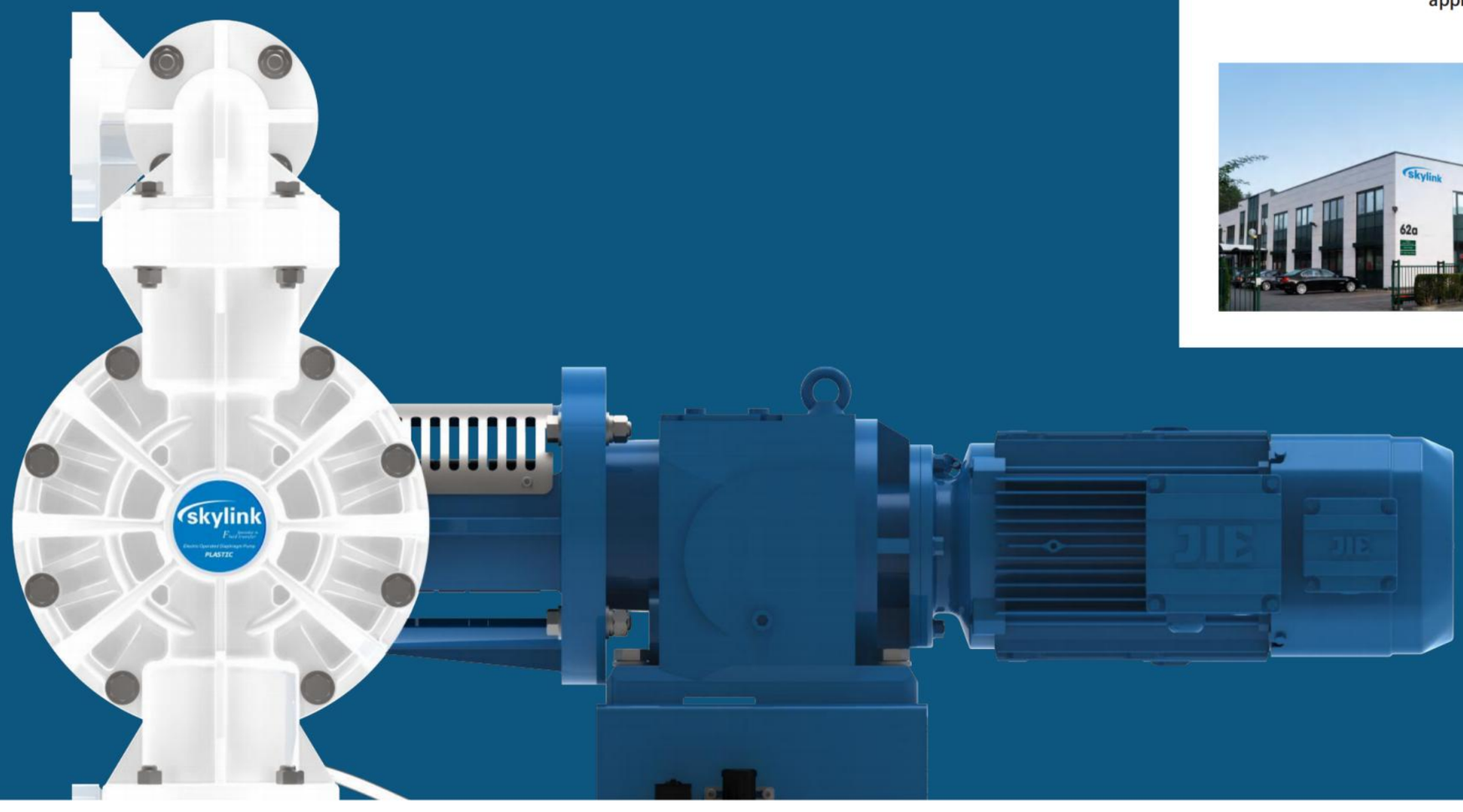


Company Pro le

Since the brand inception, SKYLINK, a globally renowned diaphragm pump manufacturer, has focused on fluid delivery, providing solutions to users around the world.

Our main products include AODD Pump, EODD Pump,External Gear Pump, Micro Magnetically Gear Pump, Rotary Lobe Pump and In-Line Measurement.

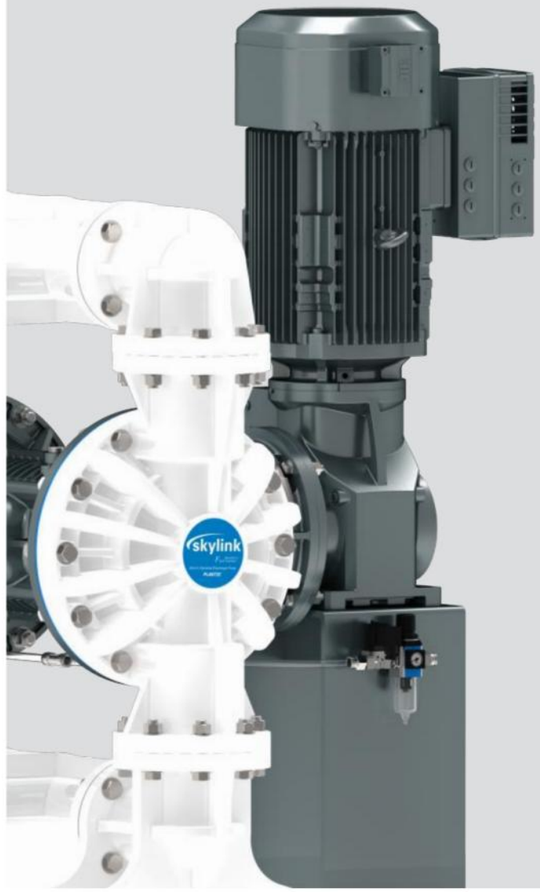
Our core markets include lithium batteries, environmentally friendly water treatment, pharmaceutical, chemical, coating, mining, electronics and other industrial applications.

As an experienced industrial pump manufacturer, Skyforce diaphragm pump series of products can also deliver ordinary fluid medium, corrosive medium, high wear medium, high viscosity medium and powder particle medium. Skeli provides reasonable and efficient fluid delivery solutions based on applications and customer needs.

Electric Diaphragm Pump

The E-series electric diaphragm pump is a motor-driven, high-energy-e ciency volumetric uid transfer pump designed for diverse materials. It o ers unparalleled safety, stability, low noise, and energy-saving bene ts, making it an ideal choice for uid transfer across a variety of industries.

SKYLINK electric diaphragm pumps are widely used in numerous industries including lithium-ion batteries and materials, biopharmaceuticals, chemical industry, and environmental water treatment.



Safety

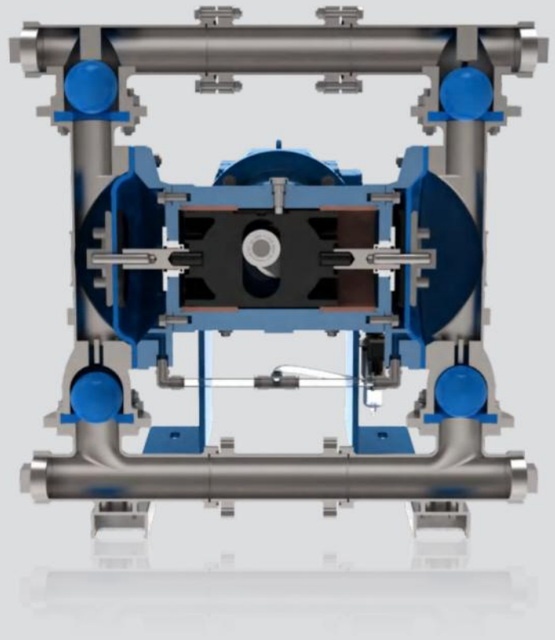
Stable

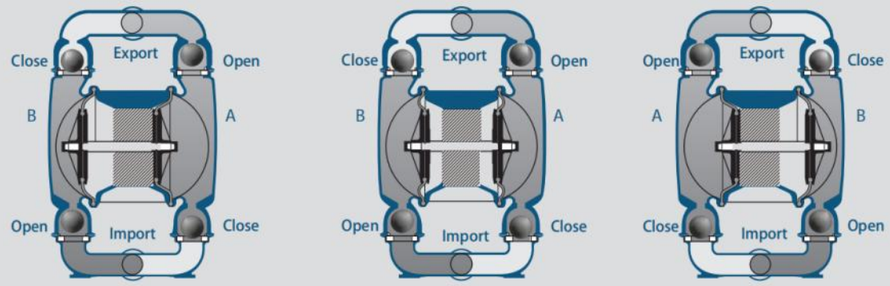
Safe and energy-efficient

Low noise

Working Principle

The electric diaphragm pump is powered by a motor that drives the crankshaft through a torque-limiting coupling. This crankshaft moves a piston, which then pushes an intermediate shaft. The shaft's movement causes the diaphragm to stretch laterally, changing the volumes of the chambers on both sides. This alternating process allows the pump to transfer material efficiently.





Applications

- Hazardous and flammable liquids
- Acidic and alkaline solutions
- Large particle handling
- High viscosity fluids
- Abrasive
- Sensitive materials
- Organic solvents

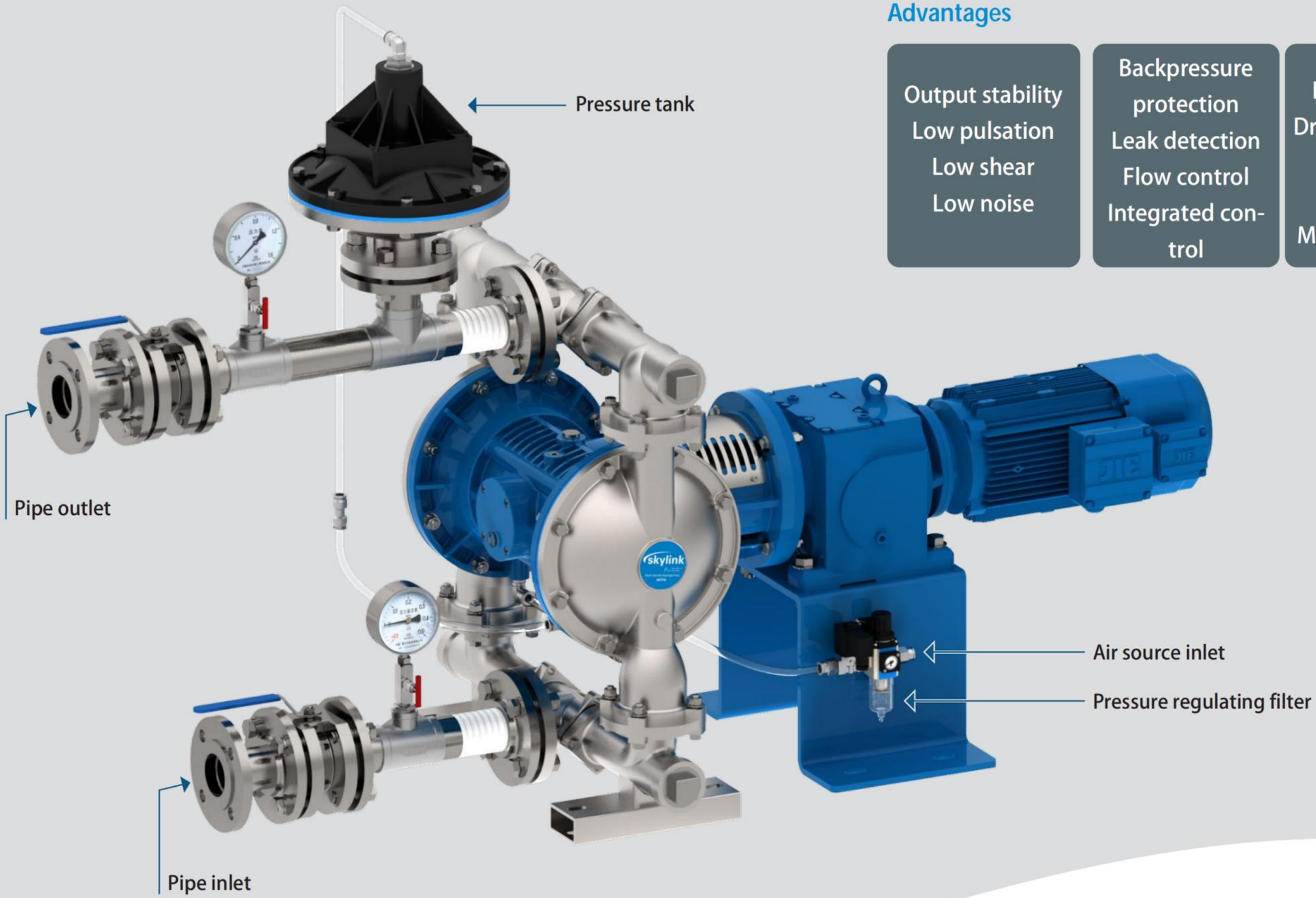

Lithium-ion batteries and materials

Biopharmaceuticals


Chemical industry


Environmental water treatment

Installation Diagram



Advantages

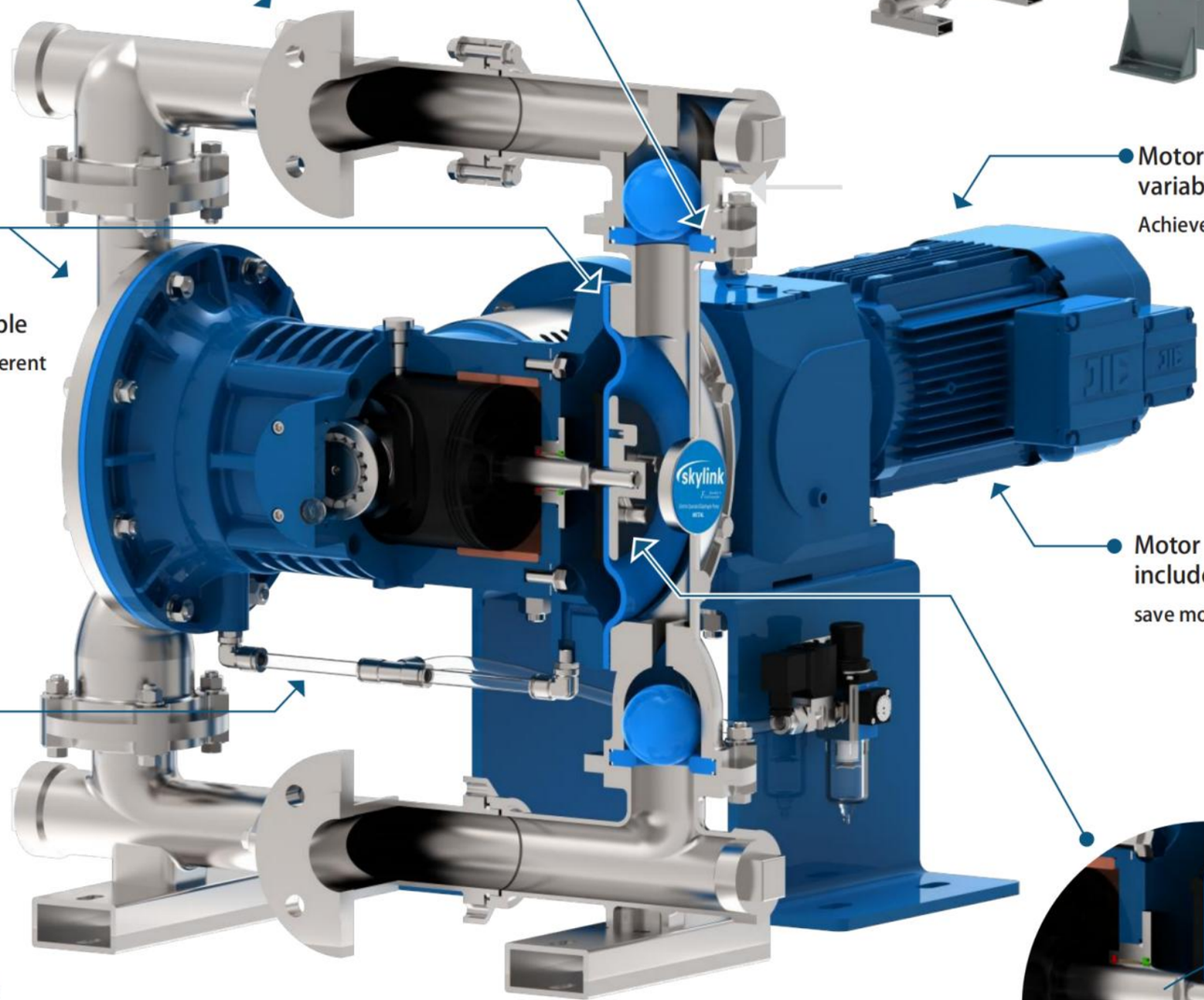
Output stability
Low pulsation
Low shear
Low noise

Backpressure protection
Leak detection
Flow control
Integrated control

Energy-saving
Dry running capability
Self-priming
Mobile operation

Features

Maximum particle diameter passable: 12mm-3"



Connection methods

① BSPT/NPT(Threaded)
② ANSI/DIN/JIS(Flanged)
③ Clamp SMS

Multiple material options available

Various flow components to meet different needs
① PP/PVDF/PPH
② 304/316L/CL/H

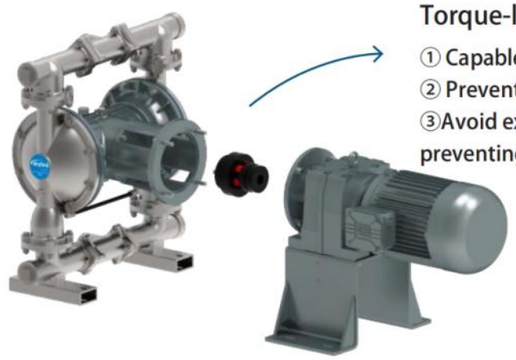
Various diaphragm materials to meet different needs
① SANTOPRENE
② PTFE
③ EPDM
④ double-layer diaphragm

Built-in leak detection sight tube

Fluid flow into the sight tube upon diaphragm rupture can be observed

Backpressure protection

Unique back pressure system design achieves liquid-gas balance on both sides of the diaphragm during operation, significantly extending diaphragm life to over 20 million cycles.



Torque-limiting coupling

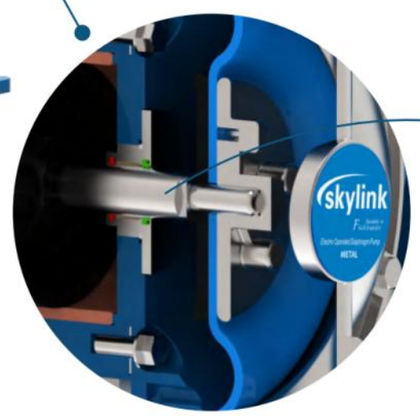
① Capable of back pressure shutdown
② Prevent overload, ensuring normal operation of the motor
③Avoid excessive pressure within the pump chamber, preventing burst pipes or chambers

Motor options explosion-proof or variable frequency

Achieve flow control

Motor installation options include vertical mounting

save more space



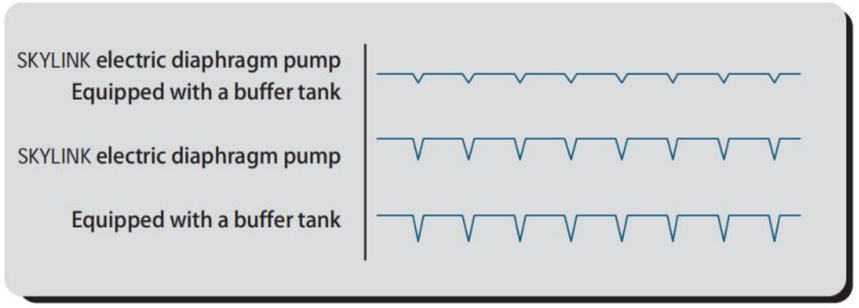
Double seal

Material leakage into the isolation chamber is contained by a double seal design, effectively preventing contamination of the power components

Designed for Stable Output

Output stability

- With constant outlet pressure, the motor delivers stable power output and consistent flow



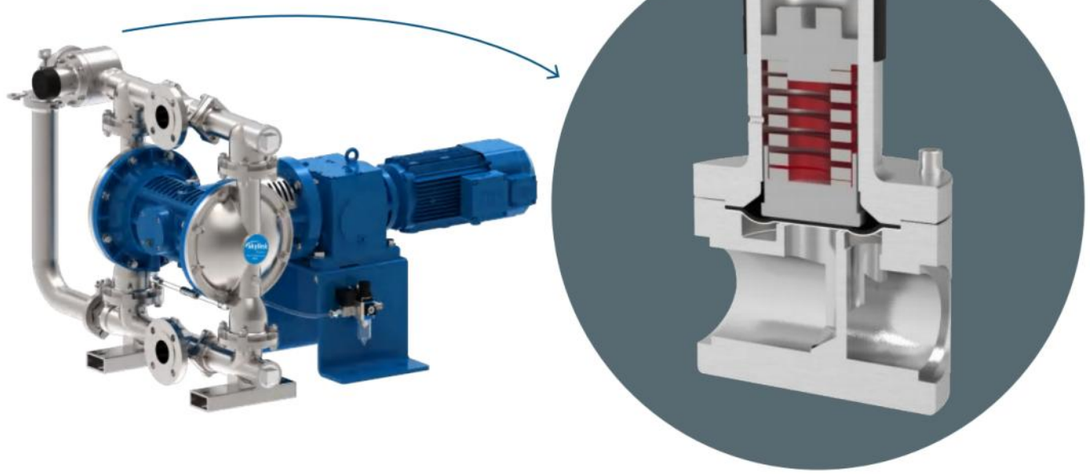
Designed for Safety

Diaphragm alarm device (optional)

- Add a backing diaphragm with a vacuum pressure gauge between the two diaphragms
- In case of rupture on either side, pressure changes between the diaphragms are monitored, triggering the pressure switch to activate an alarm, which can be observed locally or transmitted remotely, allowing for an automatic shutdown.
- Explosion-proof option available

Bypass relief valve (optional)

- Outlet pipe blockage or increased outlet pressure
- When exceeding the set pressure, the relief valve opens
- The liquid at the outlet flows in the direction of the arrow, returning to the inlet
- achieving pressure relief



Integrated Control

External PLC control available

- Provide more possibilities for integrated control in smart workshops

Other Con guration Options

Higher flow rate available

- Option to double the flow rate with a dual pump head setup
- Maximum flow rate achievable 1333 lpm

Pressure Stabilization Tank

- Can reduce pulse amplitude by 50%-60% to stabilize pressure
- Enhance pipeline safety, preventing excessive impacts
- Reduce pipeline vibrations and noise
- Simple installation

Selection Table

Model	Diameter	Casing material	Diaphragm material	Valve ball base material	Ball valve material	Others	Pump performance grade	Motor type	Auxiliary device
E501/XNTTT/BVT/1A00	E501	X	NT	T	T	BVT	1	A	0

口径 E501

E501 **Dual-chamber**
E502 **Four-chamber**

Casing material X

I=**Cast iron**
X=316L **Stainless steel**
S=304 **Stainless steel**
H=**Alloy-C**
P=**Polypropylene**
K=PVDF **Polytetrafluo-roethylene**

Diaphragm material NT

NE=**Neoprene**
NT=**Teflon/Neoprene**
BN=**Nitrile rubber**
VT=**Fluoroelastomer**
GT=**Teflon/EPDM**
GG=EPDM
LT=**Leak detection diaphragm**
EE=**Santoprene**
ET=**Teflon/santoprene**

Valve ball base material T

P=**Polypropylene**
T=**Teflon**
X=316L **Stainless steel**
A=**Aluminum alloy**
K=PVDF **Polytetrafluo-roethylene**
E=**Santoprene**

Valve ball material T

N=**Neoprene**
B=**Nitrile rubber**
V=**Fluoroelastomer**
T=**Teflon**
X=316L **Stainless steel**
C=**Ceramic**
G=EPDM
E=**Santoprene**

Other BVT

B00=BSPT Thread
N00=NPT Thread
D00=DIN Flange
A00=ANSI Flange
J00=JIS Flange
K00=Clamp SMS
0V0=**With overflow valve at outlet**
00T=**Equipped with a torque-lim-iting coupling**

Pump performance grade 1

1
2
3
4
5, **Motor mounted vertically**
6, **Motor mounted vertically**
7, **Motor mounted vertically**
8, **Motor mounted vertically**

Motor type A

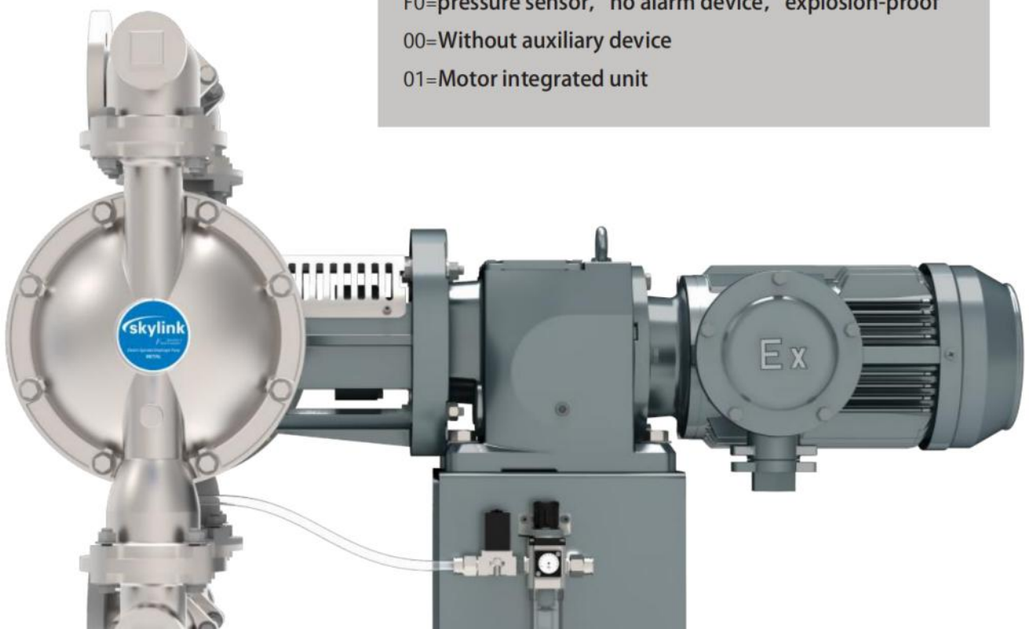
A=**Non-variable frequency, non-explosion-proof**
B=**variable frequency, non-explosion-proof**
C=**Non-variable frequency, explosion-proof**
D=**variable frequency, explosion-proof**

Auxiliary device 0

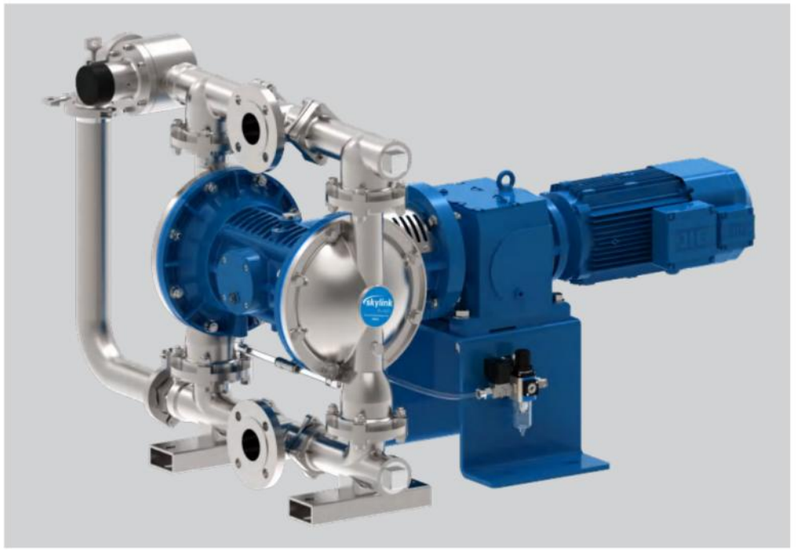
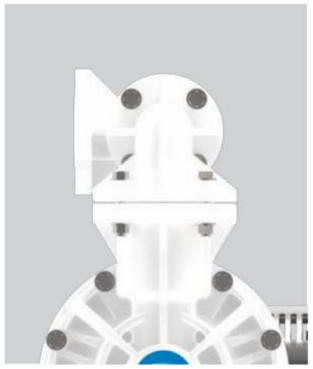
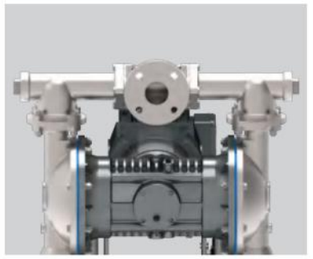
V0=**Visual leakage detection, no alarm device**
A0=**Pressure switch, With alarm device**
B0=**Pressure switch, no alarm device**
C0=**pressure sensor, With alarm device**
D0=**pressure sensor, no alarm device**
E0=**pressure sensor, With alarm device & explosion-proof**
F0=**pressure sensor, no alarm device, explosion-proof**
00=**Without auxiliary device**
01=**Motor integrated unit**

Flow Parameters Table

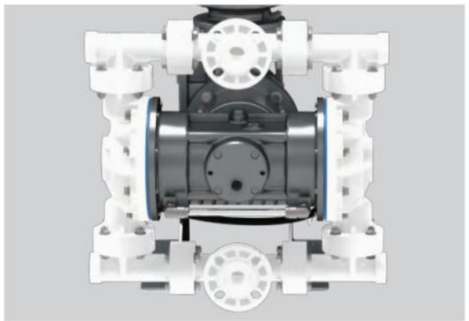
Model	grade	flow rate(l/min)	maximum flow(m^3/h)	maximum pressure(Bar)	speed(r/min)	motor power(kW)
E25	1	23	1.38	5	35	0.75
	2	68	4.08	4	66	1.5
E40	1	80.7	4.8	5	27	1.5
	2	180	10.8	4	60	2.2
E50	1	107	6.4	5	29	2.2
	2	222	13.3	4	60	3
E80	1	233	14	5	26	4
	2	333	20	4	34	5.5
	3	533	32	4	61	5.5

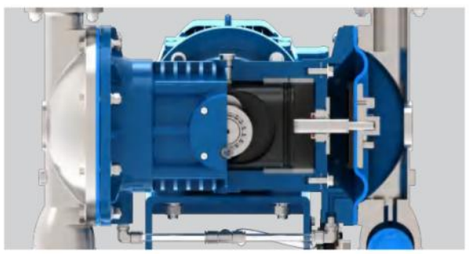


Products





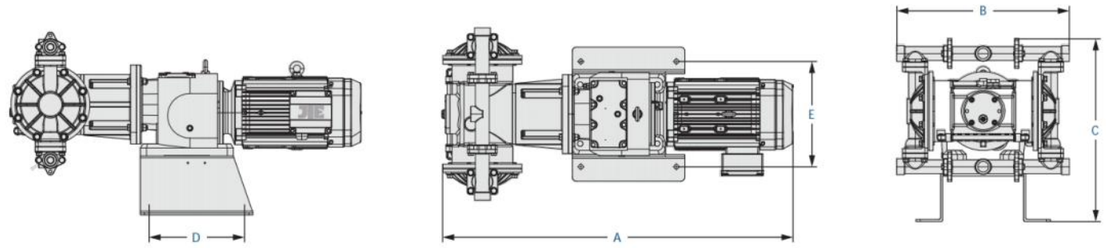



E25

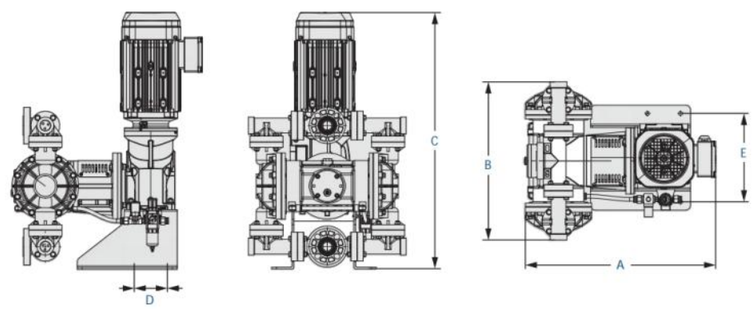

Product specifications

- **Inlet:** 25mm
- **Outlet:** 25mm
- **Maximum particle diameter:** 6mm
- **Maximum flow rate:** 23lpm/68lpm
- **Connection methods:**
  Threaded(BSPT/NPT)
  Flanged (ANSI/DIN/JIS)
  Clamp SMS
- **Maximum dry suction height:** 3.5m
- **Maximum wet suction height:** 9.2m
- **Maximum operating pressure:** 5Bar
- **Motor power:** 0.75kw/1.5kw
- **Product weight (for reference):** 93KG

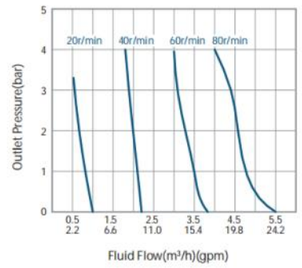
Dimensions（horizontal）



Dimensions（vertical）



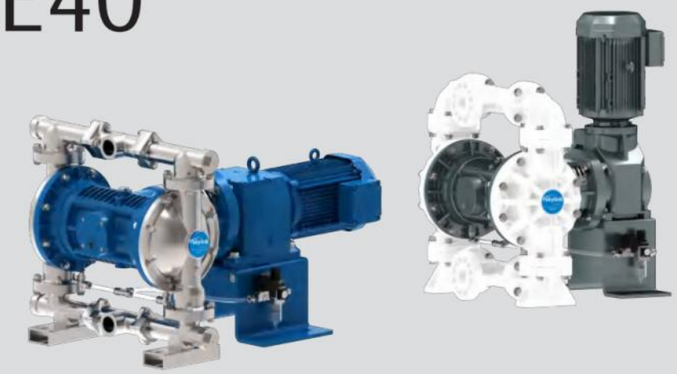
Performance curve



E25		A	B	C	D	E
horizontal	Metal	887	438	464	242	267
	Plastic	887	477	518	242	267
vertical	Metal	575	438	776	100	267
	Plastic	575	477	776	100	267

This dimension diagram is only applicable to the 1.5kW standard motor size. For dimension diagrams of configurations such as variable frequency or explosion-proof motors, please contact us for further details.

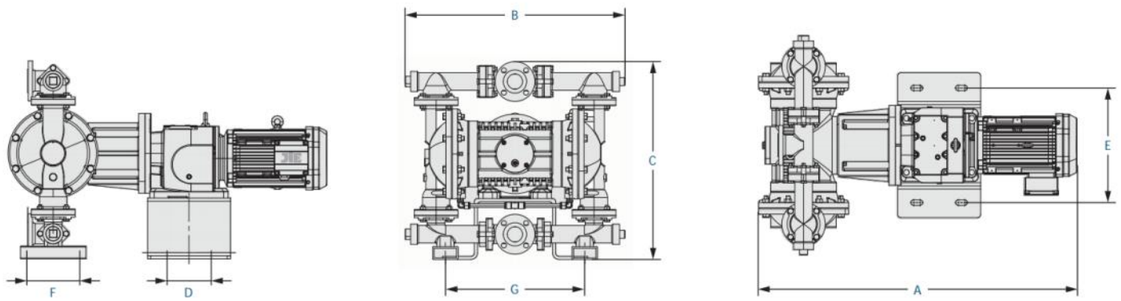
E40



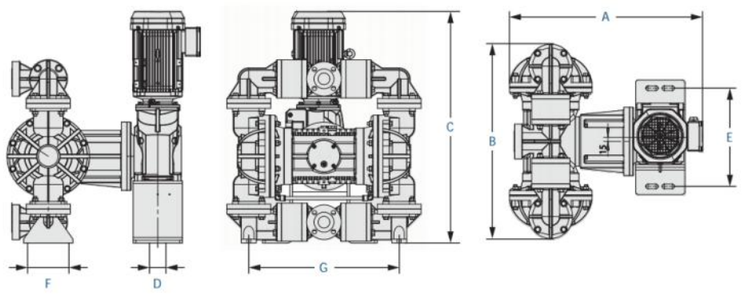
Product specifications

- **Inlet:** 38mm
- **Outlet:** 38mm
- **Maximum particle diameter:** 6.3mm
- **Maximum flow rate:** 80.7lpm/180lpm
- **Connection methods:**
  Threaded(BSPT/NPT)
  Flanged (ANSI/DIN/JIS)
  Clamp SMS
- **Maximum dry suction height:** 3.5m
- **Maximum wet suction height:** 9.2m
- **Maximum operating pressure:** 5Bar
- **Motor power:** 1.5kW/2.2kW
- **Product weight (for reference):** 178KG

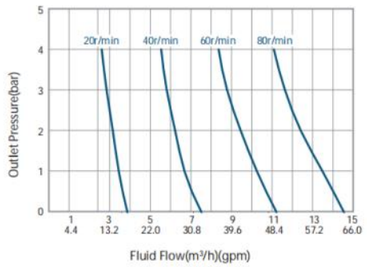
Dimensions（horizontal）



Dimensions（vertical）



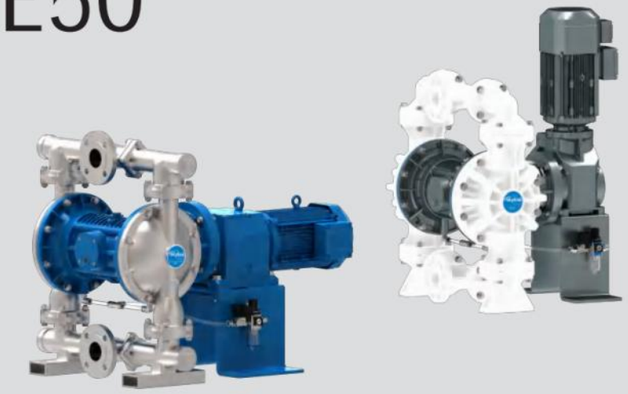
Performance curve



E40		A	B	C	D	E	F	G
horizontal	Metal	999	689	620.5	140	360	165	436.8
	Plastic	1008.75	712	671.4	140	360	152	551
vertical	Metal	698	689	863	60	360	165	436.8
	Plastic	731	712	848.45	60	360	152	551

This dimension diagram is only applicable to the 2.2kW standard motor size. For dimension diagrams of configurations such as variable frequency or explosion-proof motors, please contact us for further details.

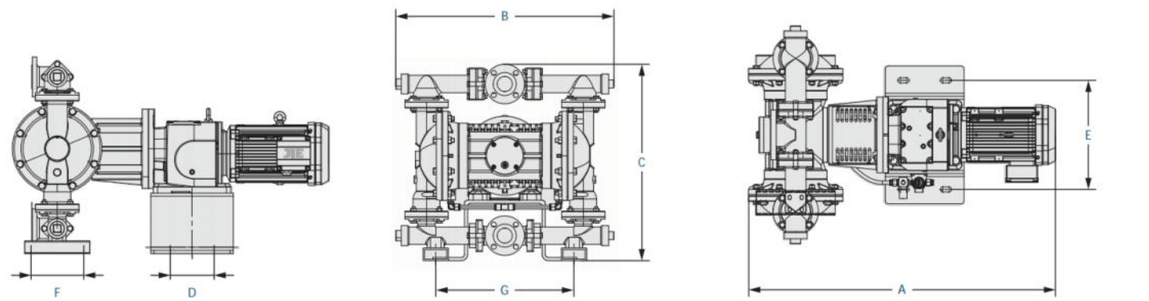
E50



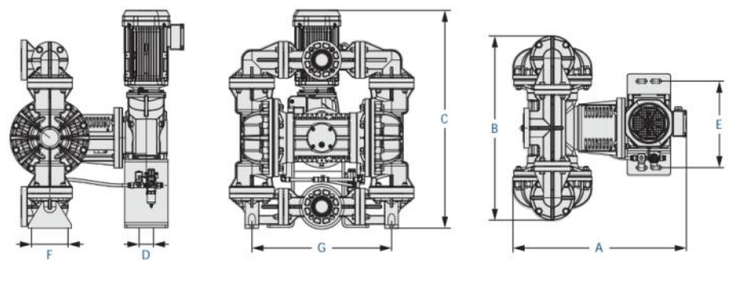
Product specifications

- **Inlet:** 51mm
- **Outlet:** 51mm
- **Maximum particle diameter:** 9mm
- **Maximum flow rate:** 107lpm/202lpm
- **Connection methods:**
  Threaded(BSPT/NPT)
  Flanged (ANSI/DIN/JIS)
  Clamp SMS
- **Maximum dry suction height:** 5m
- **Maximum wet suction height:** 9.2m
- **Maximum operating pressure:** 5Bar
- **Motor power:** 2.2kW/3kW
- **Product weight (for reference):** 190KG

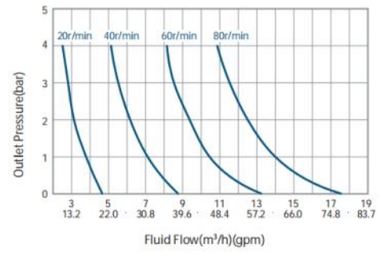
Dimensions（horizontal）



Dimensions（vertical）



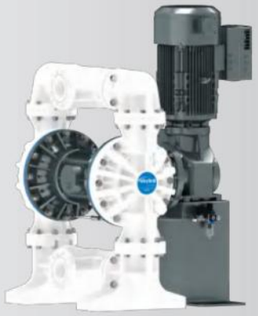
Performance curve



E50		A	B	C	D	E	F	G
horizontal	Metal	1013.25	717	766.5	140	360	214	442.5
	Plastic	1021.75	767	767	140	360	152	575
vertical	Metal	712.5	717	932	60	360	214	442.5
	Plastic	721	767	906.75	60	360	152	575

This dimension diagram is only applicable to the 3kW standard motor size. For dimension diagrams of configurations such as variable frequency or explosion-proof motors, please contact us for further details.

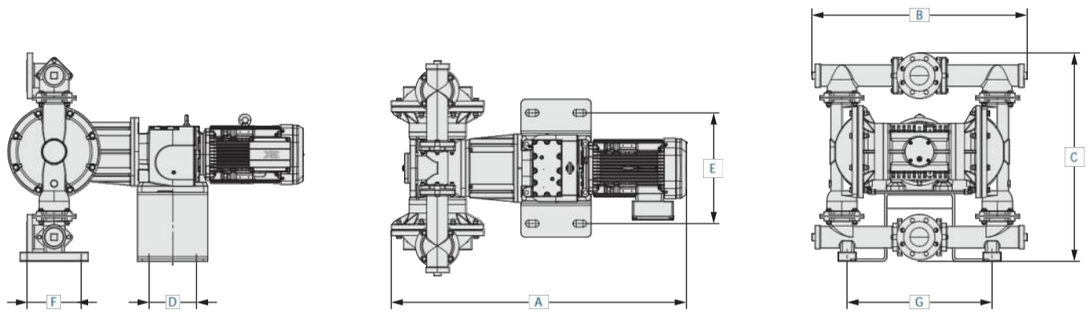
E80



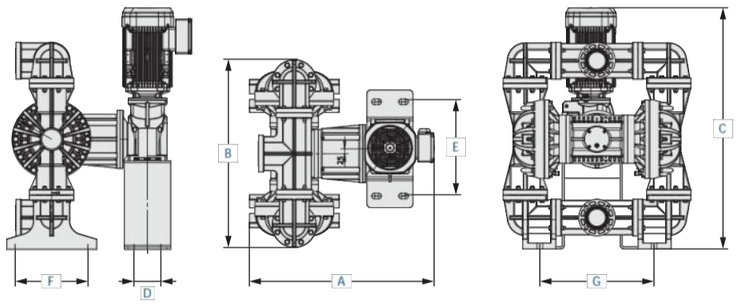
Product specifications

- Inlet：76mm
- Outlet：76mm
- Maximum particle diameter：12mm
- Maximum flow rate：
  233lpm/333lpm/533lpm
- Connection methods：
  Threaded(BSPT/NPT)
  Flanged (ANSI/DIN/JIS)
  Clamp SMS
- Maximum dry suction height：5m
- Maximum wet suction height：9.5m
- Maximum operating pressure：5Bar
- Motor power：4kW/5.5kW
- Product weight (for reference)：350KG

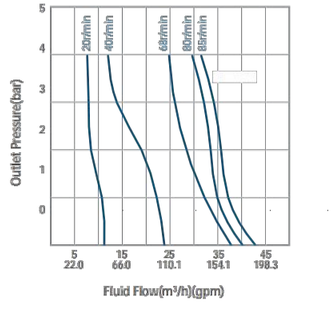
Dimensions（horizontal）



Dimensions（vertical）



Performance curve



E80		A	B	C	D	E	F	G
horizontal	Metal	1227	953	922	210	490	240	641
	Plastic	1255	975	1072.5	210	490	377	592
vertical	Metal	930	953	1067	140	490	240	641
	Plastic	959	975	1152	140	490	377	592

This dimension diagram is only applicable to the 5.5kW standard motor size. For dimension diagrams of configurations such as variable frequency or explosion-proof motors, please contact us for further details.

Material Description

Casing

		TEMP ⇧	TEMP ⇩
Polypropylene	Thermoplastic polymer. Moderate tensile strength and flexural strength. Resistant to strong acids and bases. However, it is susceptible to erosion by chlorine gas, fuming nitric acid, and other strong oxidizers.	175°F 79℃	35°F 2℃
PVDF	This highly durable fluoroplastic offers excellent chemical resistance and is ideal for UV applications, featuring high tensile strength and impact resistance.	200°F 93℃	10°F -12℃
Stainless steel	Equivalent to or exceed ASTM specification A743CF-BW, suitable for general-purpose corrosion-resistant ferrous, iron-chromium-nickel, and nickel-based alloy castings. Commonly referred to as 316 stainless steels in the pump industry.	572°F 300℃	-40°F -40℃
Cast iron	Ductile iron of ferritic type, with high toughness and plasticity. At low temperatures, toughness shifts to brittleness, but it maintains a high impact value at low temperatures, with certain resistance to sudden temperature changes and corrosion, widely used.	572°F 300℃	-40°F -40℃
Alloy C	Compliant with ASTM494 CW-12M-1 specifications for nickel and nickel alloys.	572°F 300℃	-40°F -40℃

Diaphragm/Valve ball Valve ball base

		TEMP ⇧	TEMP ⇩
Virgin PTFE	Chemically almost completely impermeable, PTFE is resistant to nearly all chemicals, except molten alkaline metals, turbulent liquids or gaseous fluorine, and certain chlorinated chemicals that release free fluorine at high temperatures (e.g., chlorine trifluoride, difluorine monoxide, etc.).	225°F 107℃	40°F 4℃
Santoprene	Injection molded thermoplastic elastomer, without fabric layers, with a long mechanical flex life. Exhibits excellent wear resistance.	225°F 107℃	-40°F -40℃
Neoprene	Widely used, resistant to vegetable oils. Generally unaffected by mild chemicals, fats, greases, and many oils and solvents. Typically corroded by strong oxidizing acids, ketones, esters, nitro hydrocarbons, and chlorinated aromatics.	200°F 93℃	0°F -18℃
Buna	General-purpose, oil-resistant. Have good resistance to solvents, oils, water, and hydraulic properties. Not compatible with strong polar solvents such as diketones and MEK, ozone, chlorinated hydrocarbons, and nitro hydrocarbons.	180°F 82℃	10°F -12℃
Viton	Exhibits excellent resistance to oils and solvents, especially aliphatic, aromatic, and halogenated hydrocarbons, acids, and animal and vegetable oils.	350°F 177℃	-40°F -40℃
EPDM	These materials offer strong resistance to water and chemicals but have poor oil and solvent tolerance. However, their properties remain stable in the presence of ketones and ethers.	280°F 138℃	-60°F -51℃

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