

EVOL PUMP SOLUTIONS



MOTOR DRIVEN METERING PUMPS
HYDRAULIC DOUBLE
DIAPHRAGM METERING PUMPS

ABOUT NEPTUNE

The Neptune series metering pump is a motor-driven, hydraulically-actuated double diaphragm metering pump with a maximum capacity of 300L/h and a maximum pressure of 10MPa. It is a type of reciprocating pump that delivers medium at precise and constant volume.

The metering pump delivers the required dosing liquid by repeating the sequence of suction strokes followed by discharge strokes, resulting in a constant pulsing flow. The liquid is subsequently transmitted to the diaphragm by transmitting the plunger's force through the hydraulic chamber.

In addition, the pump structure is simple, easy to maintain, and cost-effective. It has a high performance sealing without leakage to ensure the quality of metering pump.

Moreover, the Neptune series metering pump is suitable for a wide range of liquids, including high viscosity, high pressure, high temperature, corrosive, volatile, crystalline, flammable, explosive, poisonous, stinky, and organic solvents with high permeability.

Furthermore, Neptune Series metering complies with American Petroleum Institute standard 675 (API 675). As a result, it is suitable for a vast range of application industries such as the oil and natural gas industry, the chemical industry, the food and pharmaceutical industry, water treatment, electricity, and mining.



Flow rate is determined by stroke speed, plunger size, and drive end stroke length. The stroke regulator hand wheel can be used to adjust the stroke length.

The motor drives the main axis via the worm and worm wheel, and the eccentric mechanism with the spindle converts the worm wheel's rotating motion into reciprocating action on the slide bar, resulting in plunger movement. The stroke adjuster controls the eccentricity between the eccentric mechanism and the spindle axis in the 0% - 10% range.

WHY CHOOSE EVOL?



PROFESSIONAL



QUALITY



SAFETY

Wide Range of Professional Services and Application Fields

1

Oil and Natural Gas Industry

- Oil Platform Usage
- Crude Oil Storage



2

Chemical Industry

- Chemical Dosing System for a variety of fields
- Chemical Mixing and Processing



3

Food and Pharmaceutical Industry

- Solids, Concentrations and Cleaning In Place (CIP) cleaning agents
- Precise Dosing of medicine



4

Water Treatment

- Water Purification with the process of filtration, suspended solids removal and chemical injection control
- Waste Water Treatment and Water Reclamation to achieve sustainable environment

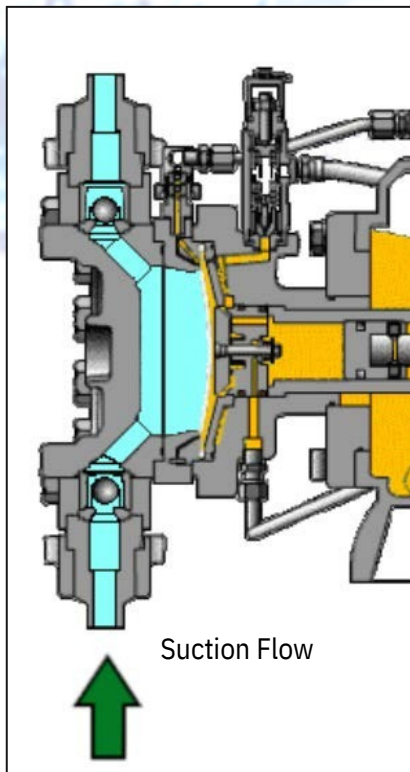


5

Electricity and Mining Industry

- Abrasive and Corrosive Chemical Substances
- Precise Batching for Electroplating Bath



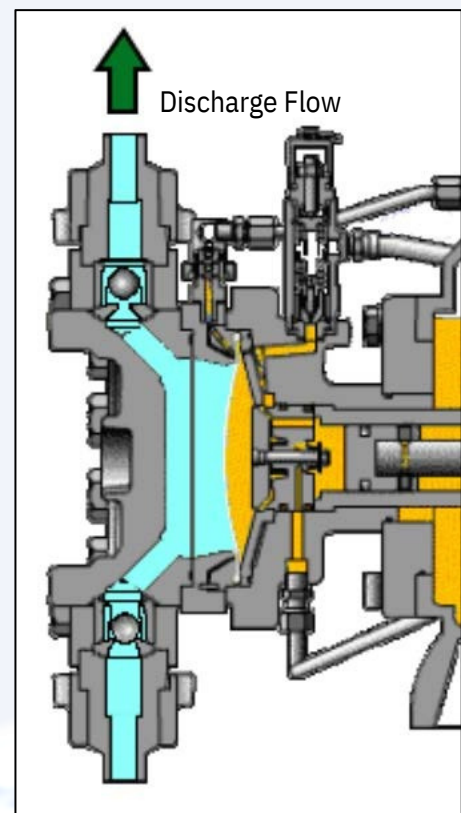


Suction Stroke Phase Mechanism

When the metering pump is in the suction stroke phase, the connecting rod drives the packing plunger to move backward via the slide bar. The volume within the cylinder sleeve increases, resulting in negative pressure and pulling the diaphragm into the rear final position. The discharge check valve shuts and the suction check valve opens as the capacity of the pump head increases. The liquid is able to enter the pump head via the suction line. When the suction stroke reaches its limit, the diaphragm stops moving. The pressures at the pump head and the suction line are now balanced, and the suction check valve has been reset.

Suction Stroke Phase Mechanism

When the metering pump is in the discharge stroke phase, the connecting rod drives the packing plunger to move forward via the slide bar. The diaphragm is pushed into the front final position via hydraulic fluid. As the pressure in the pump head rises, the suction valve closes, and liquid flows from the pump head via the discharge valve into the pressurized pipe. When the discharge stroke reaches its end limit, the diaphragm stops moving. The pressures at the pump head and discharge line have now been balanced, and the discharge check valve has been reset for the next cycle.



FEATURES & SPECIFICATIONS

Stroke Adjuster

- Precision stroke adjustment can be operated while pump is running or stopped
- Steady state accuracy $\pm 1\%$ of full capacity over 10 to 1 turn down ratio
- Flow rate adjustment mode: manual, electrical, pneumatic or frequency conversion.

Motor

- Robust metallic, worm gear drive coupled with the industrial duty variable eccentric stroke adjustment mechanism yields a 10 to 1 turn down ratio
- Integrated "Oude" worm gear pair has the low noise and high efficiency

Built-in safety protection technology

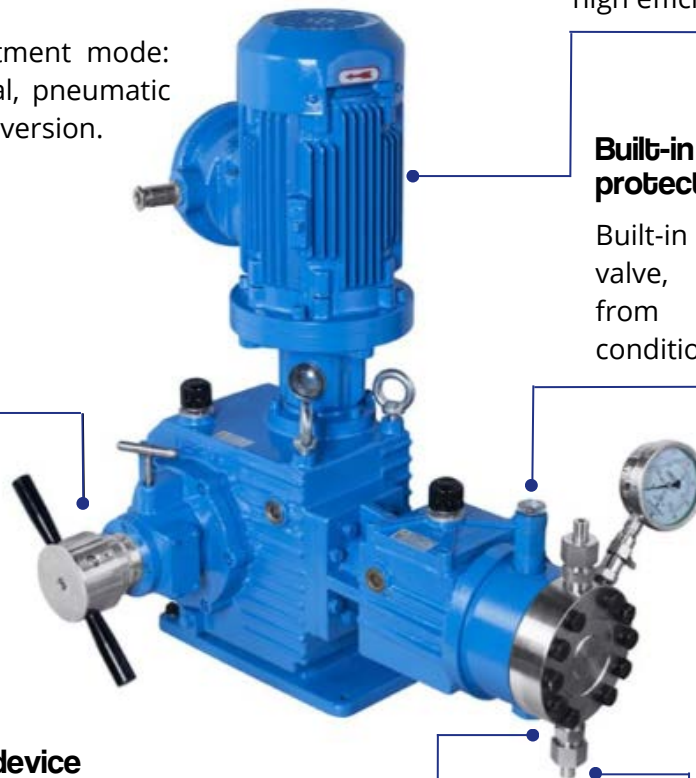
Built-in pressure relief valve, protecting pump from over pressure conditions.

Liquid delivery device

- Hydraulically actuated diaphragm liquid end eliminates flow restrictions
- The PTFE, high performance, diaphragm design increases diaphragm life by eliminating the stresses inherent in most designs
- Suitable for corrosive, vapour, flammable, explosive or toxic solutions. It is also able to transport suspended liquid or moderately viscous liquid.

Inlet and outlet check valve

High precision ball valve with strong corrosive resistance and linear sealing to ensure metering accuracy and effective fluidity.

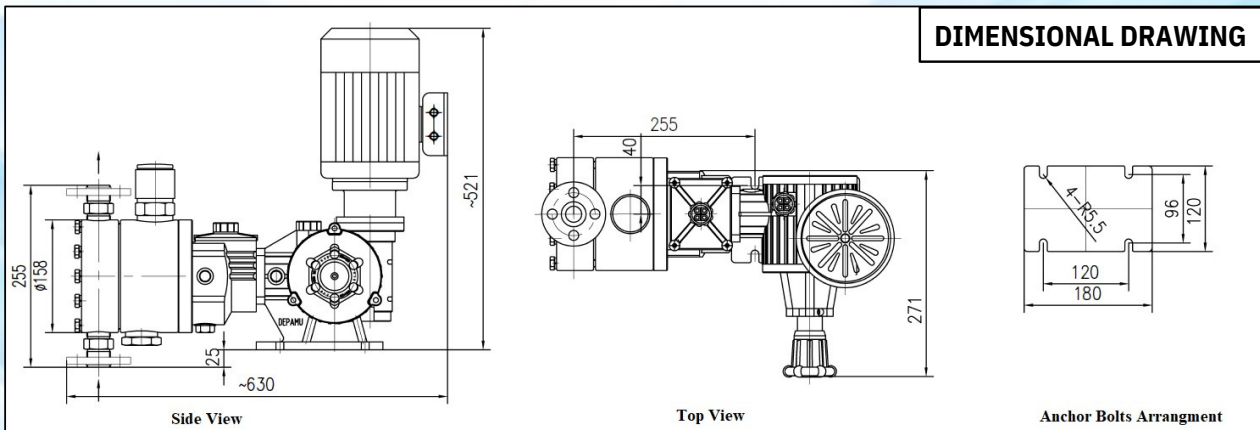


NEPTUNE SERIES



EVWA

- Maximum flow rate up to 60 litres per hour
- Maximum discharge pressure up to 6MPa (60 bar)
- Adjustment range within the scope of 10% - 100%
- Metering accuracy within $\pm 0.5\%$
- Explosion proof motor with rating of 0.55kW
- Hydraulically actuated double diaphragm
- Built-in type relief valve
- Oil-immersed type lubrication to ensure reliability

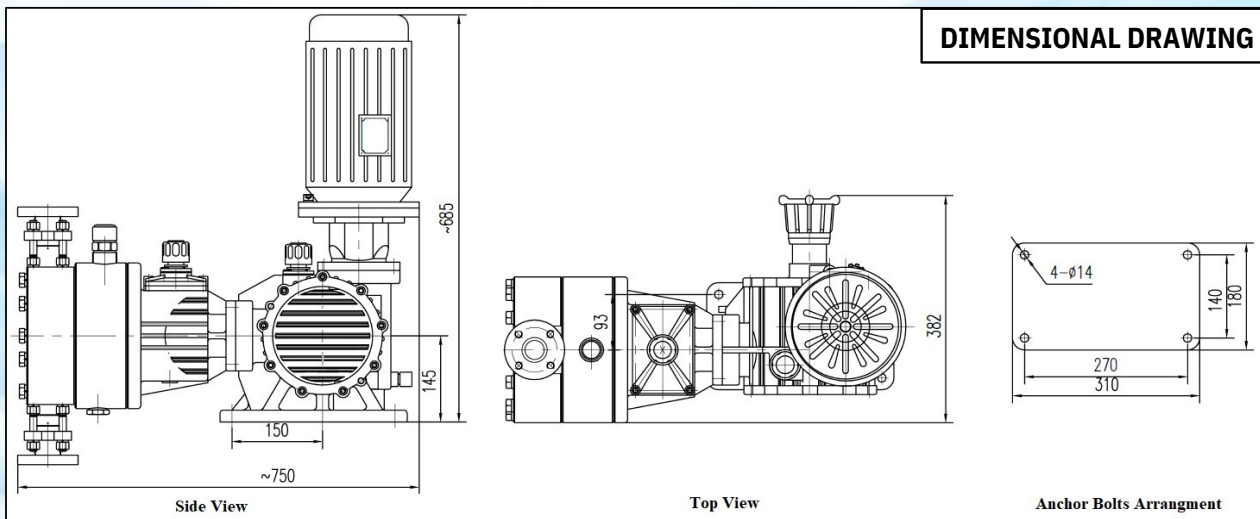


TECHNICAL PARAMETERS		
Model Type	EVWA30	EVWA60
Maximum Discharge Volume (L/h)	30	60
Maximum Discharge Pressure (MPa)	6	3
Motor Power Supply	3 phase / 415V / 50Hz	3 phase / 415V / 50Hz
Motor Power Rating (kW)	0.55	0.55
Connection Size and Type		
Suction	1/2" 150 # / RF Flange	1/2" 150 # / RF Flange
Discharge	1/2" 600 # / RJ Flange	1/2" 300 # / RF Flange
Wetted Part Material		
Pump Head	SS316	SS316
Diaphragm	PTFE	PTFE
Check Valve	SS316	SS316
Weight (kg)	50	50

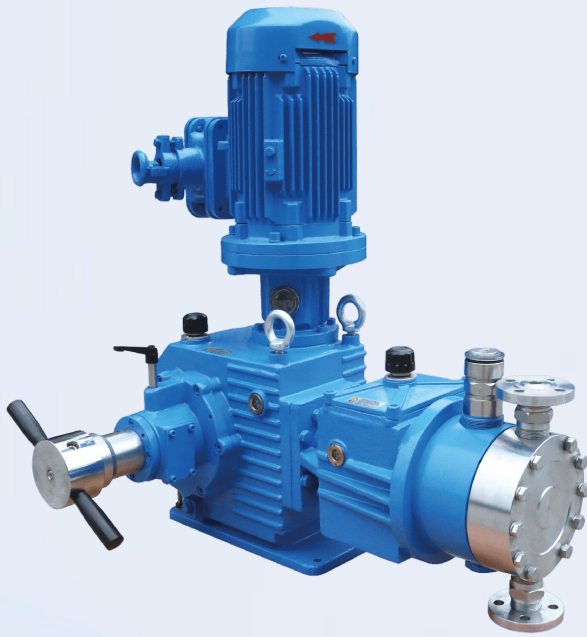


EVXAA

- Maximum flow rate up to 60 litres per hour
- Maximum discharge pressure up to 10MPa (100 bar)
- Adjustment range within the scope of 10% - 100%
- Metering accuracy within $\pm 0.5\%$
- Explosion proof motor with rating of 1.5kW
- Hydraulically actuated double diaphragm
- Built-in type relief valve
- Oil-immersed type lubrication to ensure reliability

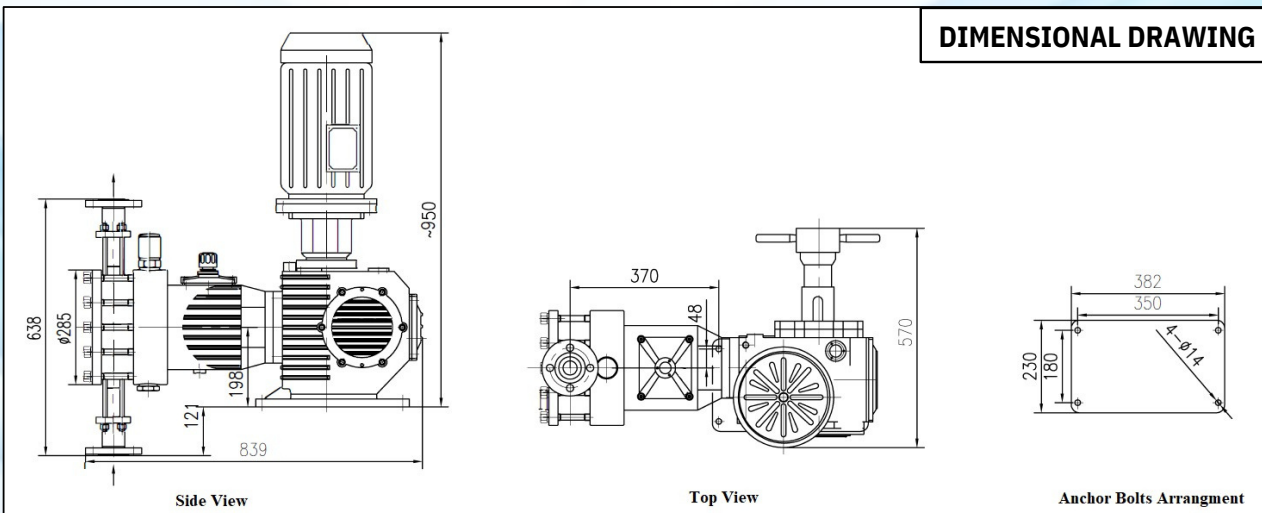


TECHNICAL PARAMETERS	
Model Type	EVXAA60
Maximum Discharge Volume (L/h)	60
Maximum Discharge Pressure (MPa)	10
Motor Power Supply	3 phase / 415V / 50Hz
Motor Power Rating (kW)	1.5
Connection Size and Type	
Suction	1/2" 150 # / RF Flange
Discharge	1/2" 600 # / RJ Flange
Wetted Part Material	
Pump Head	SS316
Diaphragm	PTFE
Check Valve	SS316
Weight (kg)	125



EVZA

- Maximum flow rate up to 300 litres per hour
- Maximum discharge pressure up to 10MPa (100 bar)
- Adjustment range within the scope of 10% - 100%
- Metering accuracy within $\pm 0.5\%$
- Explosion proof motor with rating of 1.5kW
- Hydraulically actuated double diaphragm
- Built-in type relief valve
- Oil-immersed type lubrication to ensure reliability



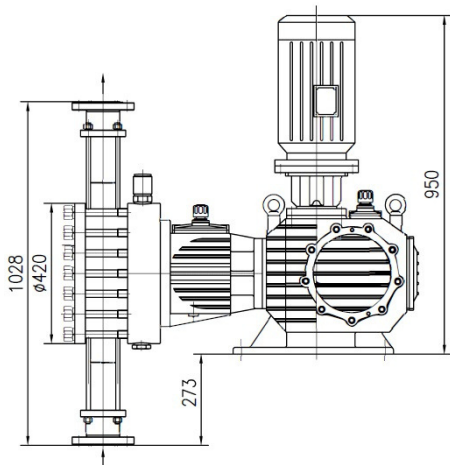
TECHNICAL PARAMETERS		
Model Type	EVZA100	EVZA300
Maximum Discharge Volume (L/h)	100	300
Maximum Discharge Pressure (MPa)	10	3
Motor Power Supply	3 phase / 415V / 50Hz	3 phase / 415V / 50Hz
Motor Power Rating (kW)	1.5	1.5
Connection Size and Type		
Suction	1/2" 150 # / RF Flange	3/4" 150 # / RF Flange
Discharge	1/2" 600 # / RJ Flange	3/4" 300 # / RF Flange
Wetted Part Material		
Pump Head	SS316	SS316
Diaphragm	PTFE	PTFE
Check Valve	SS316	SS316
Weight (kg)	215	215



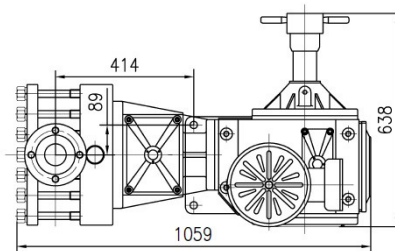
EVZAA

- Maximum flow rate up to 300 litres per hour
- Maximum discharge pressure up to 10MPa (100 bar)
- Adjustment range within the scope of 10% - 100%
- Metering accuracy within $\pm 0.5\%$
- Explosion proof motor with rating of 5.5kW
- Hydraulically actuated double diaphragm
- Built-in type relief valve
- Oil-immersed type lubrication to ensure reliability

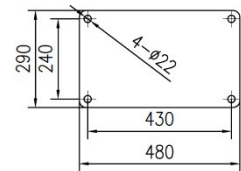
DIMENSIONAL DRAWING



Side View



Top View



Anchor Bolts Arrangement

TECHNICAL PARAMETERS

Model Type	EVZAA300
Maximum Discharge Volume (L/h)	300
Maximum Discharge Pressure (MPa)	10
Motor Power Supply	3 phase / 415V / 50Hz
Motor Power Rating (kW)	5.5
Connection Size and Type	
Suction	3/4" 150 # / RF Flange
Discharge	3/4" 600 # / RJ Flange
Wetted Part Material	
Pump Head	SS316
Diaphragm	PTFE
Check Valve	SS316
Weight (kg)	570



EVOL TECHNOLOGIES

Address: Lot 1739, Eastwood Valley Industrial Park, Block 3,
Jalan Miri By-Pass, 98000 Miri, Sarawak, Malaysia.

Tel: +085-418832

Fax: +085-433801

Email: enquiry@evol-technologies.com

Website: www.evol-technologies.com

Products are subject to change without prior notice.

Revision: EV-PB-NP-23-00