



# VERATTI

## PRODUCT OVERVIEW



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VR Manual

DM 4-20mA Current Signal

DP Pulse Signal

DC RS485 Communication Protocol

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up to 20 bar, up to 55 L/h

### Motor Driven Dosing Pump

**16** NDJ/L

up to 10 bar, up to 180 L/h

**17** NDWS

up to 16 bar, up to 1440 L/h

**18** NDWL

up to 10 bar, up to 2400 L/h

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up to 30 bar, up to 480 L/h

**22** Electric Adjuster

4-20mA current signal input  
power supply independent  
from the pump

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**25** up to 10 bar, up to 180 L/h

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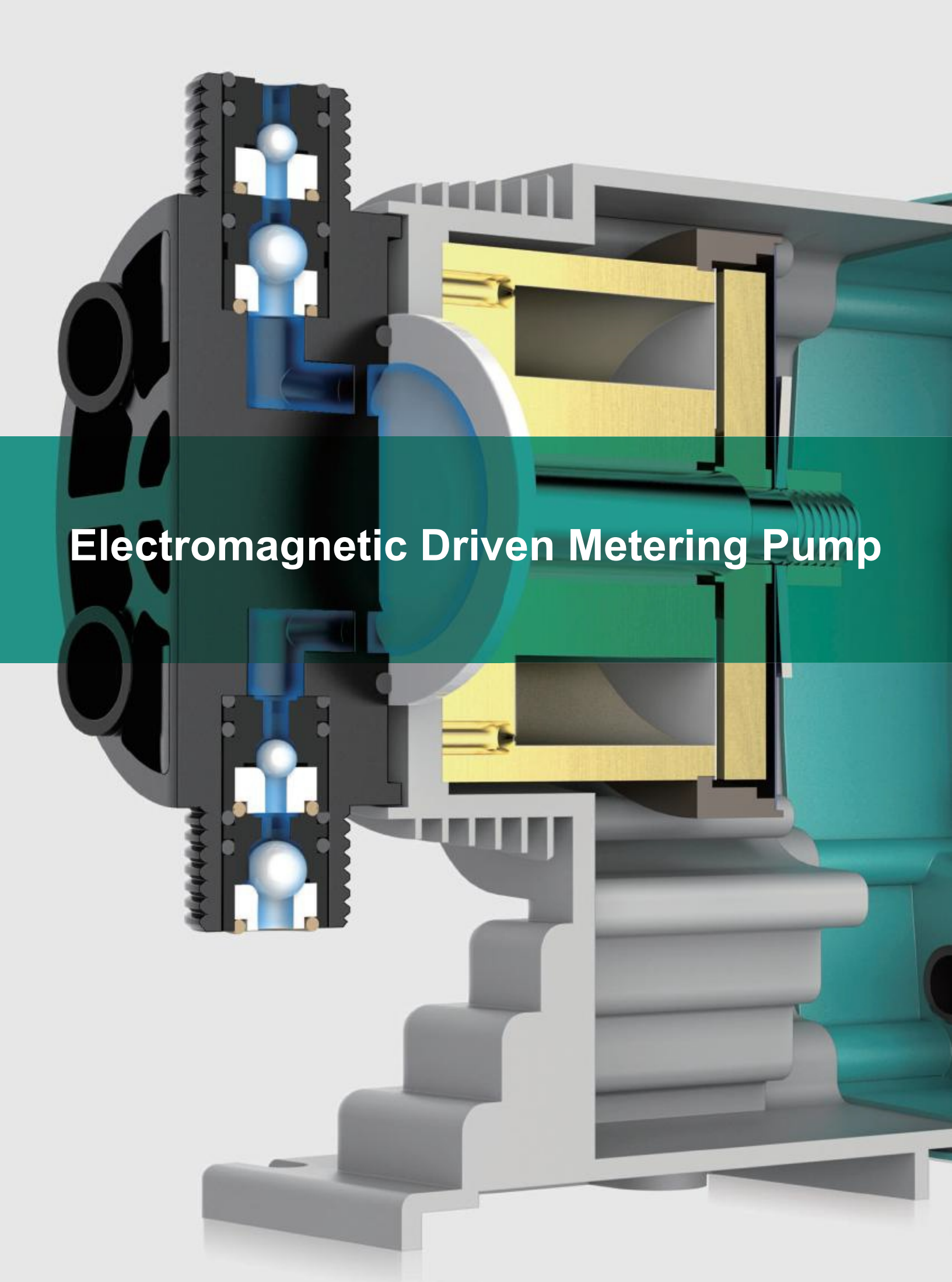
**27** up to 7 bar, up to 18 L/h

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Flow meter    pH meter    O RP Conductivity



This technical cutaway diagram illustrates the internal components of an electromagnetic driven metering pump. The pump is shown in a cross-section, revealing the internal flow path and the drive mechanism. The flow path is indicated by blue lines and spheres, showing the fluid entering from the top, passing through a valve, and then being pumped out. The drive mechanism consists of a central shaft with a rotor and a stator, which is connected to an electromagnetic coil. The pump is mounted on a base with a series of steps or a staircase-like structure. The text "Electromagnetic Driven Metering Pump" is overlaid on the diagram.

# Electromagnetic Driven Metering Pump

## Advantages and Features

01

### High Efficiency

**Accurate dosing, compact design:** Benefiting from our independent circuit R&D ability and excellent electromagnetic design experiences, the pump realizes the output capacity the same as that of similar products by lower power and smaller volume to cut cost, and it's high efficiency.

02

### Excellent Compact Structure

**Adopt space technology to reinforce the strong corrosion resistance:** Valve seat, made of PTFE material, has better overall tolerance of liquid contact part, not only guarantees the leakproofness but also protects the rubber ring valve seat against expansion and corrosion after longtime use, or the tightness would decrease and inaccurate dosing may be caused.

03

### Optimized Pump Head Structure

**Pump head, made of high modified material, full chemical compatibility:** As verified in practice, the internal structure of pump head effectively avoids flash gas and cavitation inside pump head, meanwhile, optimizes the procedure of liquid flow, and drops the ultra-large shear force on liquid to maintain the conveying capacity and improve the overall efficiency of pump.



04

### Ultra-low Maintenance Cost

**Full pure PTFE diaphragm, five-year warranty:** Diaphragm is made of full pure PTFE, with superexcellent tolerance and long service life, which will sharply cut the maintenance cost of product. Moreover, we provide five-year lifetime warranty for the diaphragm of dosing pump.

05

### Idling to be Allowed

**Unique idling capacity:** With improved full pure PTFE diaphragm, the dosing pump can still work safely without damage upon diaphragm after quite a long time once the chemical liquid in dosing barrel is used out, and without timely feed or any misoperation occurs.



100% PTFE Diaphragm

06

### Simplify Operation

Simple and visual digital display mode and clear parameter setting save time and cut cost, and guarantee the perfect connection of control process.

07

### Convenient to Manage Stocking

Uniform valve group, made up of universal size one-way valves, reduces the confusion among parts and components.

08

### Customizable Service

Reasonable and flexible internal design makes customization realizable. We can provide solutions for you according to user demand and special working conditions to avoid the embarrassing modification of process design upon the unsuitability of product. We stick to the principle of providing clients with more professional and quicker support all the time. Through the experience and accumulation in the past years, we have comprehended both pumps and the water treatment industry more profoundly. Our strong technical team can provide individualized products or compact dosing system centering on dosing pump for your production process according to your particular requirements.



## Model Code

Code:

Control  
Version

**VR** ---- Manual Operation  
**DM** ---- Manual & Current Signal ( 4-20mA )  
**DP** ---- Manual & Pulse Operation  
**DC** ---- Manual & RS485 Communication Protocol

Capacity

**L/h**

Pressure

**Mpa**

Model

**M/NX/LM/GX/L/X**

Dosing Head  
Material

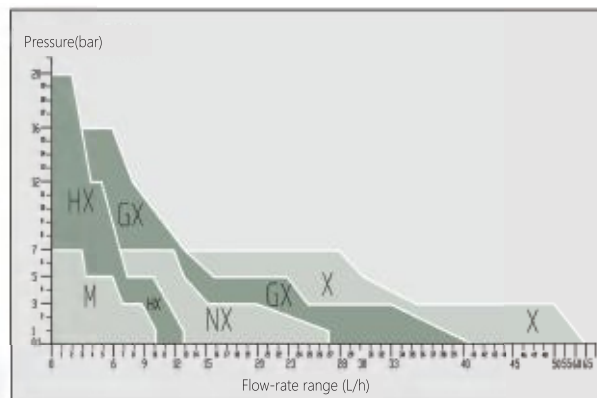
|                 | Pump Head | Diaphragm | Valve Seat | Valve Ball | Seal Ring |
|-----------------|-----------|-----------|------------|------------|-----------|
| <b>PPV</b> ---- | PP        | PTFE      | PTFE       | Ceramic    | FKM       |
| <b>PVT</b> ---- | PVC       | PTFE      | PTFE       | Ceramic    | FKM       |
| <b>PTF</b> ---- | PTFE      | PTFE      | PTFE       | Ceramic    | --        |
| <b>SST</b> ---- | SS316     | PTFE      | SS316      | SS316      | FKM       |

Electric Power  
Supply

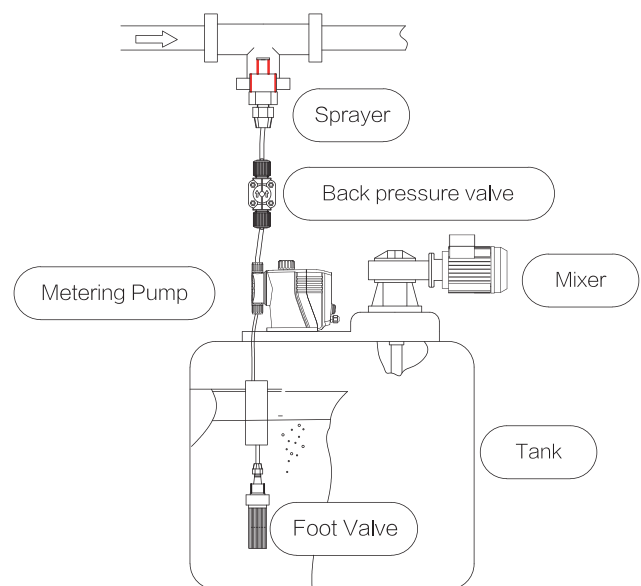
**A**----- 1ph 220V 50/60Hz  
**B**----- 1ph 110V 50/60Hz  
**C**----- Special requirements, otherwise noted

**VR 02 07 M PPV A**

## Flow rate-pressure range diagram



## Typical Installation Diagram



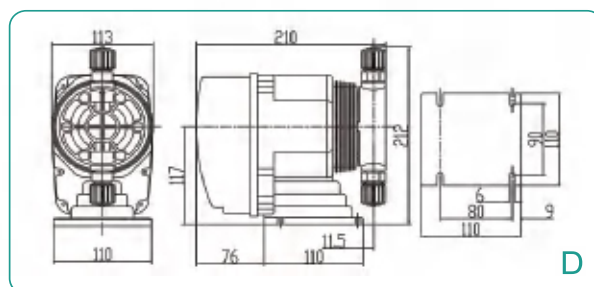
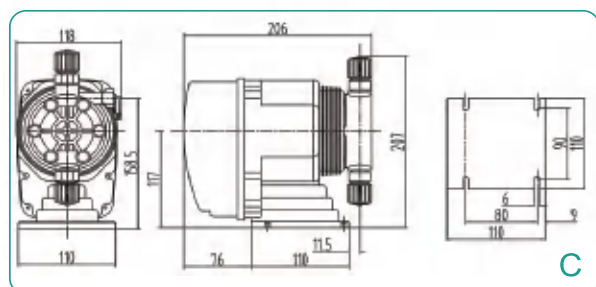
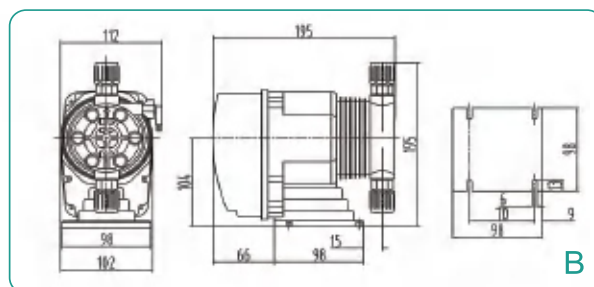
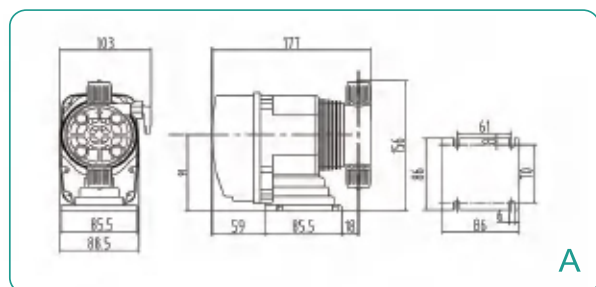
# Code

## Pump Series

|    |                                                                                     |
|----|-------------------------------------------------------------------------------------|
| VR | Manual operation                                                                    |
| DP | Pulse signal input, can be connected with ARK flow meter.                           |
| DM | 4–20mA current signal input, can be connected with ARK pH, ORP, Conductivity Meter. |
| DC | RS485 communication protocol, can be connected with computer.                       |

| Series & Model |       |       |      |       | Flow Rate | Pressure     | Stroke Capacity | Stroke Number | Tube Size | Consumption | Power Supply                 | Dimension               | Weight            | Carton Size |
|----------------|-------|-------|------|-------|-----------|--------------|-----------------|---------------|-----------|-------------|------------------------------|-------------------------|-------------------|-------------|
|                |       |       |      | Size  | L/h       | bar          | ml/stroke       | stroke/min    | mm        | W           |                              |                         | kg                | cm          |
| VR             | -     | -     | -    | M     | 1         | 7            | 0.14            | 120           | 4*6       | 30          | 110V 50/60Hz<br>220V 50/60Hz | A                       | 2.3               | 26x15x28    |
|                |       |       |      |       | 2         | 7            | 0.28            |               |           |             |                              |                         |                   |             |
|                |       |       |      |       | 3         | 7            | 0.42            |               |           |             |                              |                         |                   |             |
|                |       |       |      |       | 6         | 5            | 0.56            | 180           |           | 40          |                              |                         |                   |             |
|                |       |       |      |       | 9         | 3            | 0.83            |               |           |             |                              |                         |                   |             |
| -              | DP-LM | DM-LM | DC-L | LM, L | 1         | 7            | 0.14            | 120           |           | 30          |                              | LM: Size B<br>L: Size C | LM: 3.2<br>L: 3.8 |             |
|                |       |       |      |       | 2         | 7            | 0.28            |               |           |             |                              |                         |                   |             |
|                |       |       |      |       | 3         | 7            | 0.42            |               |           | 140         |                              |                         |                   |             |
|                |       |       |      |       | 6         | 5            | 0.71            |               |           |             |                              |                         |                   |             |
|                |       |       |      |       | 9         | 3            | 0.94            | 160           |           |             |                              |                         |                   |             |
| VR             | DP    | DM    | -    | NX    | 4         | 12           | 0.56            | 120           | 6*9       | 40          | 220V 50Hz                    | B                       | 3.2               |             |
|                |       |       |      |       | 5/6       | 10/8         | 0.69/0.83       |               |           |             |                              |                         |                   |             |
|                |       |       |      |       | 9         | 7            | 0.94            | 160           |           |             |                              |                         |                   |             |
|                |       |       |      |       | 12        | 7            | 1.25            |               |           |             |                              |                         |                   |             |
|                |       |       |      |       | 15        | 4            | 1.25            | 200           |           |             |                              |                         |                   |             |
|                |       |       |      |       | 20        | 3            | 1.67            |               |           |             |                              |                         |                   |             |
|                |       |       |      |       | 25        | 2            | 2.08            |               |           |             |                              |                         |                   |             |
|                |       |       | DC   | GX    | 3         | 20           | 0.31            | 160           | 4*6       | 60          | 220V 50/60Hz                 | C                       | 4                 |             |
|                |       |       |      |       | 6         | 16           | 0.5             | 200           |           |             |                              |                         |                   |             |
|                |       |       |      |       | 10        | 10           | 0.83            |               |           |             |                              |                         |                   |             |
|                |       |       |      |       | 20        | 6            | 1.67            |               |           |             |                              |                         |                   |             |
|                |       |       |      |       | 23        | 5            | 1.92            |               | 6*9       |             |                              |                         | 4.5               |             |
|                |       |       |      |       | 33        | 3            | 2.75            |               |           |             |                              |                         |                   |             |
|                |       |       |      |       | 55        | 0.1          | 3.82            | 240           |           |             |                              |                         |                   |             |
|                |       |       |      | X     | 2         | 16           | 0.28            | 120           | 4*6       | 65          | 110V 50/60Hz<br>220V 50/60Hz |                         | 3.8               |             |
| 6              | 7     | 0.56  |      |       |           |              |                 |               |           |             |                              |                         |                   |             |
| 9              | 7     | 0.83  |      |       |           |              |                 |               |           |             |                              |                         |                   |             |
| 12             | 7     | 1.67  |      |       |           |              |                 |               |           |             |                              |                         |                   |             |
| 15             | 3     | 2.08  | 160  |       | 6*9       | 220V 50/60Hz | D               | 4.5           |           |             |                              |                         |                   |             |
| 20             | 3     | 2.08  |      |       |           |              |                 |               |           |             |                              |                         |                   |             |
| 30             | 3     | 3.13  |      |       |           |              |                 |               |           |             |                              |                         |                   |             |
| 50             | 2     | 3.47  | 240  |       |           |              |                 |               |           |             |                              |                         |                   |             |

## Installation Dimension Drawing



## Installation Fittings

### 1. Standard fittings



2m PVC inlet pipe



1.5m PE outlet pipe



Injector



Filter



Three-piece connection

### 2. Other optional accessories



Nonadjustable  
back pressure valve



Adjustable back  
pressure valve



Connector for DN15



High viscosity valves



Diaphragm



## VR Series—Manual Operation

- Manual operation
- Frequency numbers (1–maximum)
- Liquid level switch or time relay interface is optional.

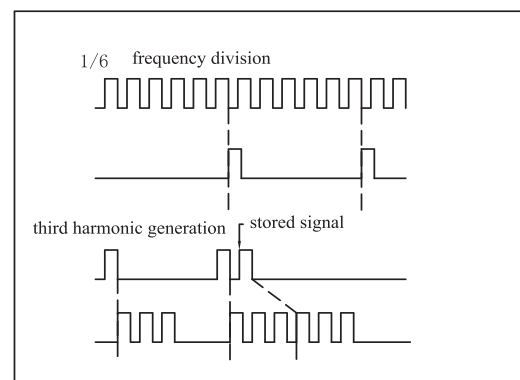
## DP Series—Pulse signal

- Manual operation
- Dosing proportionally via external pulse signal.
- Division mode: the frequency division mode is used when input impulse frequency is bigger than maximum working frequency of the dosing pump.
- Multiplication mode: the frequency multiplication mode is used when input impulse frequency is smaller than maximum working frequency of the dosing pump.



### Pulse signal control:

1. The impulse signals (square wave or dry contact signals) that any instruments directly sends out can be received.
2. DP pump has both manual control and automatic control mode. In manual mode, stroke frequency of the pump can be adjusted by means of a control button, no matter whether the pump is running or in stop state.
3. In automatic mode, two control modes can be set, named frequency division control and frequency multiplication control.
4. In the frequency division mode, when input impulse number is larger than maximum working frequency, the pump should be set as the frequency division mode. According to user's set, the pump identifies and receive the impulse signal, then dose chemicals in proportion.
5. In the frequency multiplication mode, when input impulse number is far less than maximum working frequency of the pump, the pump should be set as the frequency multiplication mode and the pump identify and receive the impulse signal, then dose chemicals in proportion depending on user's set. But when the received impulse interval is less than the interval time of the corresponding pump output, the signal received later will be stored (the pump could still work even though no signal received at this moment), the pump will not stop until it is consumed completely.



Division and Multiplication mode

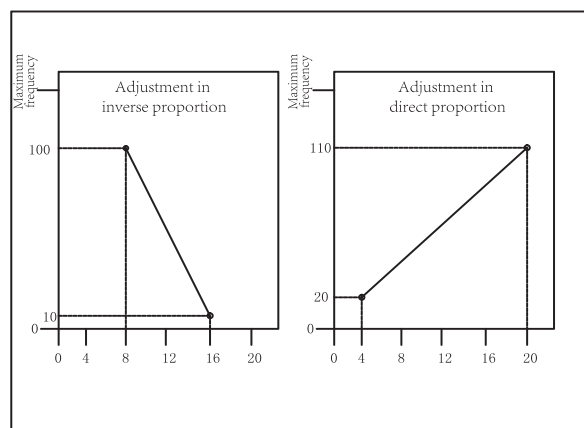
## DM Series—4–20 mA Signal



- Manual and 4–20mA signal remote control mode.
- Flow rate can be adjusted Proportional or inverse proportional according to the current signal.
- Proportional adjustment: set when the input signal is 4mA, the stroke number set as A, when the input signal is 20mA, the stroke number set as B,  $A < B$ .
- Inverse proportional adjustment: set when the input signal is 4mA, the stroke number set as A, when the input signal is 20mA, the stroke number set as B,  $A > B$ .
- Liquid level switch interface is optional.

### Current Signal Control (4–20mA):

1. Analog signal can be directly input into the dosing pump, without need of an extra control instrument.
2. DM pump has both manual control and automatic control modes. In manual mode, stroke frequency of the pump can be adjusted by means of a control button, no matter whether the pump is running or in stop state.
3. Set two points and their corresponding frequency within 4–20mA, so as to control dosage.
4. The mode could be set in direct and inverse proportions adjustment. The direct proportion means impulse frequency of a pump increases with increase of current signal; adjustment in inverse proportion: impulse frequency of a pump increases with decrease of current signal.



Division and Multiplication mode

## DC Series——RS485 Communication Protocol

- Manual and RS485 communication protocol control mode.
- The communication with the upper computer can be achieved; online start and stop and control can be achieved; the pump is suitable for the high-automation production process under centralized control.
- A controller equipped with touch screen can be provided that a simple control system can control at most 128 DC dosing pumps simultaneously, to achieve quick and simple control, without need of complicated control instruments; state parameter of dosing pump is visually displayed;
- Liquid level switch interface is optional.



### DC Pumps Application Case

#### Batch control of DC pumps

##### 1. Nice and decent look, easy to monitor

Display screen replaces former old enclosure, bringing full feel of technology. Both working state and stroke frequency of pumps are easy to monitor.

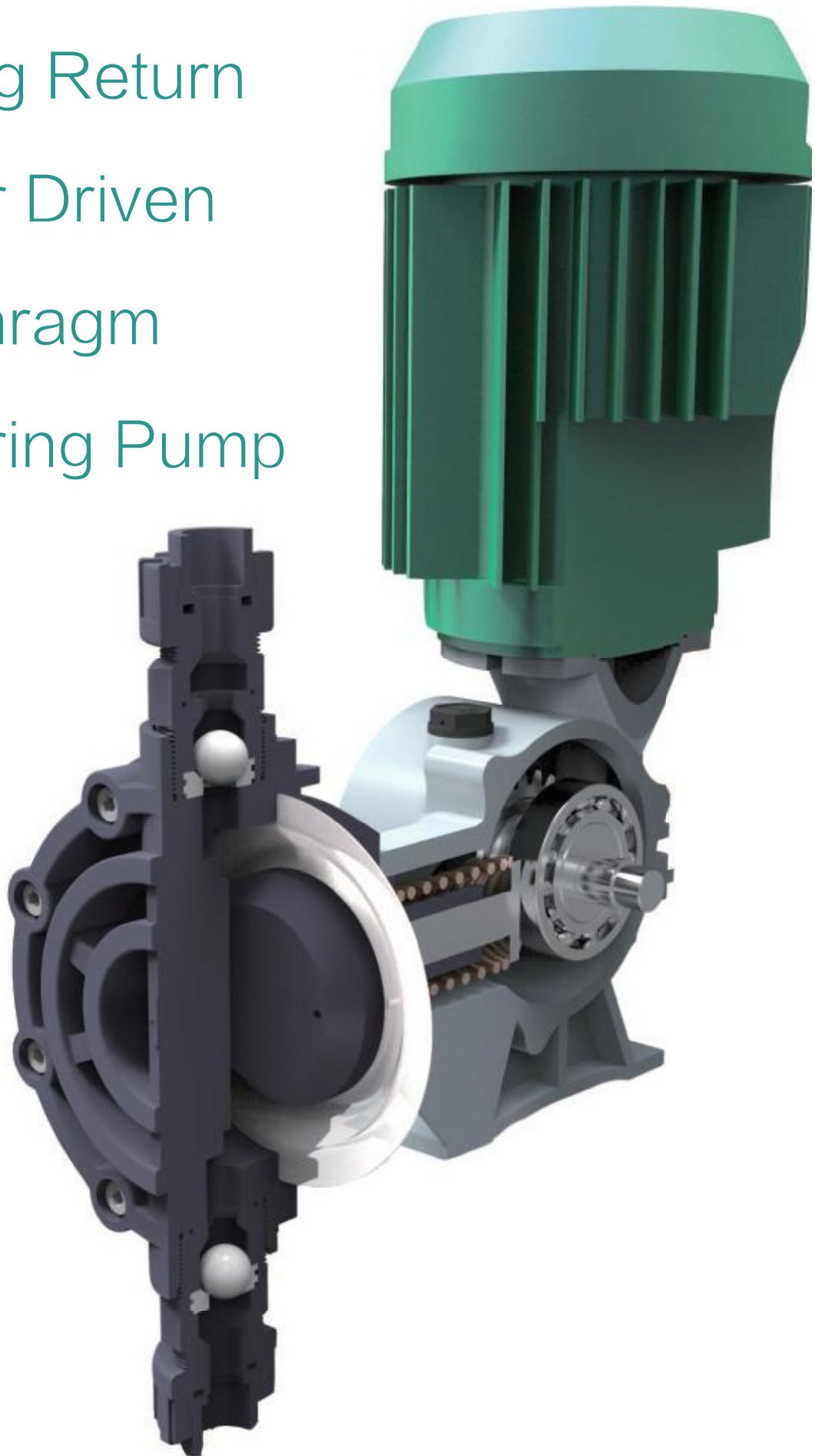
##### 2. Space saving, convenient installation

The size of control unit is minimized. Only need to make holes in the enclosure of equipment and put the screen in, so the equipment installation is quick and easy.

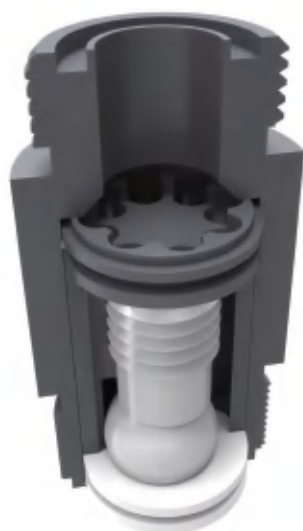
Simple operation, quick control

##### 3. Pump start/stop and stroke frequency can be controlled by touch screen instead of adjusting by one side of pump, and the control response is quick and accurate.

# Spring Return Motor Driven Diaphragm Metering Pump



# Ultra-strong Anticorrosive Multifunctional Check Valve



**Check Valve Function:** Overcome the leak defect caused by the small pressure difference between gravity check valve system and pump head cavity.

**Delivery High Viscosity Liquid:** Check valves adopt spring return technology, so the dosing pump can maintain its displacement and linearity better when delivering high viscosity liquid.

**Back Pressure Ability:** The coefficient of elasticity of elastic part can be properly adjusted according to customer's requirements so that the dosing pump outlet has different back pressure values.

**Safety Valve function:** The coefficient of elasticity of elastic element can be properly adjusted according to pipeline system pressure to realize the safety valve function needed by the pipeline system.

**Anticorrosive ElasticPart:** Check valves adopt PTFE elastic components, so as to realize the optimal anticorrosive function.

## Up to 3MPa(435psi)

## 100% PTFE Diaphragm

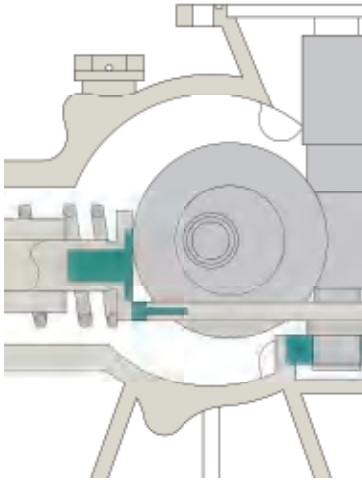
### Excellent Diaphragm Assembly

The diaphragm, which is made of high quality modified PTFE material, and, work together with the matched protection assembly, greatly increase the lift of motor driven diaphragm dosing pump.

The maximum lift is up to 3.0Mpa. Thus some hydraulic diaphragm pumps would be replaced by this pump, thereby saving cost.



## Spring Return Quiet and Steady



With damping stroke sliding bar, all motor pumps not only reserve the advantages of traditional spring return dosing pumps including simple structure, low failure rate and easy to maintain, but also overcome their fatal shortcomings including large pipe shock, large mechanical vibration, part damage, poor flow linearity and high noise brought by ineffective eccentric travel.

## Lightweight Design

**Advanced lightweight structure:** For energy saving and emission reduction, the pumps adopt many high specific strength materials and smart structural design, so the pumps have very high power-displacement ratio.



# Intelligent Stroke Adjuster

## End the Age of Variable Frequency

**Remote Control Electric Stroke Adjuster:** It can receive analog signal (4–20mA) to change the stroke length of dosing pump in real time, further, accurately modify the displacement of dosing pump. The adjuster overcomes all major defects of modifying the capacity of dosing pump by variable frequency speed control.



**Manual Control Electric Stroke Adjuster:** The stroke length of dosing pump can be accurately set and displayed via the operation panel of the adjuster. With error compensation function, the adjuster overcomes the error between actual displacement and its set value directly caused by the random change of stroke length of dosing pump, because traditional knob adjuster doesn't have the self-lock function.

# Model Code

| Code                  | Example                                                                                                                                                                                                                   | NDWL-410-0.6-PVT-A-H |           |            |            |           |  |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------|------------|------------|-----------|--|
| Model                 | <b>VR</b><br><b>NDJL</b><br><b>NDWS</b><br><b>NDWL</b><br><b>ND1000</b><br><b>ND2000</b><br><b>HND</b>                                                                                                                    |                      |           |            |            |           |  |
| Capacity              | <b>L/H</b>                                                                                                                                                                                                                |                      |           |            |            |           |  |
| Pressure              | <b>MPa</b>                                                                                                                                                                                                                |                      |           |            |            |           |  |
| Dosing Head Material  |                                                                                                                                                                                                                           | Pump Head            | Diaphragm | Valve Seat | Valve Ball | Seal Ring |  |
|                       | <b>PVT-----</b>                                                                                                                                                                                                           | PVC                  | PTFE      | PTFE       | Ceramic    | FKM       |  |
|                       | <b>PVDF----</b>                                                                                                                                                                                                           | PVDF                 | PTFE      | PTFE       | Ceramic    | FKM       |  |
|                       | <b>SST-----</b>                                                                                                                                                                                                           | SS316                | PTFE      | SS316      | SS316      | FKM       |  |
|                       | <b>PTF-----</b>                                                                                                                                                                                                           | PTFE                 | PTFE      | PTFE       | Ceramic    | ---       |  |
| Electric power Supply | <b>A-----</b> 3ph 380V 50Hz/60Hz<br><b>VF-----</b> Variable Frequency Motor<br><b>EX-----</b> Explosion-proof Motor Exd II BT4<br><b>B-----</b> 1ph 220v 50Hz/60Hz<br><b>C-----</b> Special requirements, otherwise noted |                      |           |            |            |           |  |
| Control Version       | <b>H-----</b> Manual<br><b>I-----</b> Electric stroke adjuster                                                                                                                                                            |                      |           |            |            |           |  |

## \*Example

1. Maximum lift is 6kg, Capacity is 370L/h, 380V 50Hz, PVC pump head, 3PH 380V 50Hz, adjustment mode: electric stroke adjustment.

Selected model:

NDWL-410/0.6-PVT-A-I

2. Maximum lift is 6kg, Capacity is 370L/h, 380V 50Hz, PVDF pump head, 3PH 380V 50Hz variable frequency motor adjustment mode: manual.

Selected model:

NDWL-410/0.6-PVDF-AVF-H

# NDJ

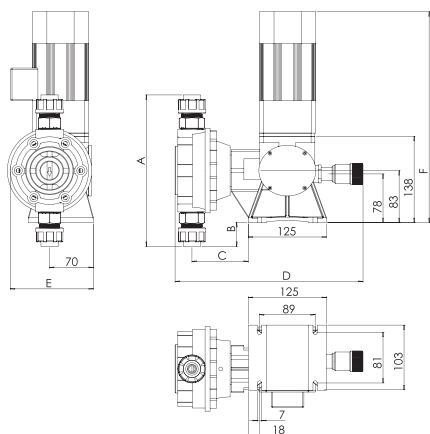
1. Eccentric shaft is supported by bearings in front and rear and the cantilever shaft structure of the most of manufacturers on the market is abandoned; the speed reducing motor does not bear axial force and only transmits torque, and this extends the service life of speed reducing motor and makes the process more stable.
2. Installation and maintenance are simple and convenient; grease is used for lubrication in the box body and grease is added conveniently, making maintenance easy.
3. Stroke length can be adjusted at will during running.
4. PVC, PVDF, PTFE and SS316 materials pump head are applicable to dose different kinds of chemical liquid.
5. The pure PTFE diaphragm that has a super-long service life guarantees the stability and safety of dosing.
6. It can be directly installed on a dosing barrel and this is economical and convenient.



## Technical Specifications

| Model |         | Capacity<br>L/h |      | Max. Pressure<br>Bar |      | Stroke<br>Length<br>(mm) | Diaphragm<br>Diameter<br>(mm) | Pump Speed (SPM) |      | Single-stroke Flow<br>(ml/stroke) | Motor<br>Power<br>(W) |
|-------|---------|-----------------|------|----------------------|------|--------------------------|-------------------------------|------------------|------|-----------------------------------|-----------------------|
|       |         | 50hz            | 60hz | 50hz                 | 60hz |                          |                               | 50hz             | 60hz |                                   |                       |
| VR-   | 40/1.0  | 40              | 48   | 10                   | 8    | 5                        | 90                            | 87               | 104  | 9.7                               | 60                    |
| VR-   | 60/0.5  | 60              | 72   | 5                    | 4    | 5                        | 90                            | 104              | 125  | 9.7                               | 60                    |
| VR-   | 75/0.5  | 75              | 90   | 5                    | 4    | 5                        | 90                            | 130              | 156  | 9.7                               | 60                    |
| VR-   | 100/0.5 | 100             | 120  | 5                    | 4    | 8                        | 90                            | 104              | 125  | 16.5                              | 60                    |
| VR-   | 130/0.5 | 130             | 156  | 5                    | 4    | 8                        | 90                            | 130              | 156  | 16.5                              | 60                    |
| VR-   | 150/0.3 | 150             | 180  | 3                    | 2.4  | 5                        | 105                           | 130              | 156  | 19.2                              | 60                    |
| NDJL- | 70/1.0  | 70              | 84   | 10                   | 8    | 8                        | 90                            | 87               | 104  | 13.4                              | 90                    |
| NDJL- | 80/0.7  | 80              | 96   | 7                    | 5.6  | 5                        | 90                            | 130              | 156  | 10.3                              | 90                    |
| NDJL- | 105/0.7 | 105             | 126  | 7                    | 5.6  | 8                        | 90                            | 104              | 125  | 16.8                              | 90                    |
| NDJL- | 150/0.5 | 150             | 180  | 5                    | 4    | 5                        | 105                           | 130              | 156  | 19.2                              | 90                    |

## Dimensional Drawing



## Pump Head Material and Size

| Model               | Material | A   | B  | C  | D   | E   | F   | Interface Size |                  |
|---------------------|----------|-----|----|----|-----|-----|-----|----------------|------------------|
|                     |          |     |    |    |     |     |     | Thread Size    | Socket Pipe Size |
| VR-40/1.0~130/0.5   | PVC      | 224 | 29 | 90 | 300 | 130 | 310 | G 1"           | G1/2"-DN15       |
|                     | PVDF     | 224 | 29 | 90 | 300 | 130 | 310 | G 1"           | G1/2"-DN15       |
|                     | PTFE     | 178 | 6  | 90 | 300 | 130 | 310 | G 1"           | /                |
|                     | SS316    | 178 | 6  | 97 | 302 | 130 | 310 | G 1"           | /                |
| VR-150/0.3          | PVC      | 239 | 42 | 90 | 300 | 137 | 310 | G 1"           | G1/2"-DN15       |
|                     | PVDF     | 224 | 29 | 90 | 300 | 130 | 310 | G 1"           | G1/2"-DN15       |
|                     | PTFE     | 193 | 14 | 90 | 300 | 137 | 310 | G 1"           | /                |
|                     | SS316    | 193 | 14 | 97 | 302 | 137 | 310 | G 1"           | /                |
| NDJL 70/1.0~105/0.7 | PVC      | 224 | 29 | 90 | 300 | 130 | 325 | G 1"           | G1/2"-DN15       |
|                     | PVDF     | 224 | 29 | 90 | 300 | 130 | 310 | G 1"           | G1/2"-DN15       |
|                     | PTFE     | 178 | 6  | 90 | 300 | 130 | 325 | G 1"           | G1/2"-DN15       |
|                     | SS316    | 178 | 6  | 97 | 302 | 130 | 325 | G 1"           | /                |
| NDJL 150/0.5        | PVC      | 239 | 42 | 90 | 300 | 137 | 325 | G 1"           | G1/2"-DN15       |
|                     | PVDF     | 224 | 29 | 90 | 300 | 130 | 310 | G 1"           | G1/2"-DN15       |
|                     | PTFE     | 193 | 14 | 90 | 300 | 137 | 325 | G 1"           | /                |
|                     | SS316    | 193 | 14 | 97 | 302 | 137 | 325 | G 1"           | /                |

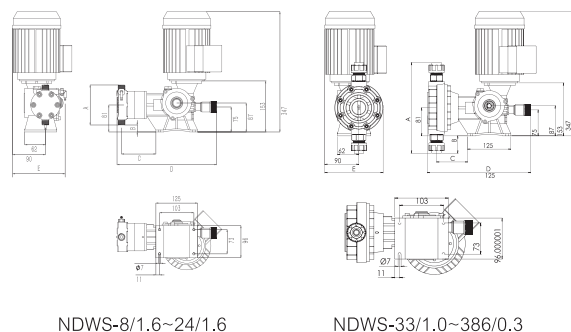
# NDWS

- 1.It is equipped with low pressure die-casting aluminum box with high strength, which ensures solidness and firmness, reduces the mass of the dosing pump and the weight of the overall equipment of later stage.
- 2.The precise worm gear can make the transmission efficiency increase significantly, gain the same pressure displacement, make the motor power smaller and more energy- saving.
- 3.High quality modified PTFE diaphragm manufacturing process can make the maximum pressure of mechanical diaphragm dosing pump reach 30 kg, and make the cost of dosing pump under 12-30 kg pressure system substantially decline.
- 4.The pump head of PVC, PVDF, PTFE, SS316 materials complete series of is suitable for conveying various acids, alkali and salt solutions; non-leakage overflow structure can make sure that the process is stable and orderly.
- 5.Can be equipped with electric stroke adjuster (4-20mA).
- 6.Variable frequency motor and explosion-proof motor are optional.



| Model |         | Capacity L/h |       | Max.Pressure Bar |      | Stroke Length (mm) | Diaphragm Diameter (mm) | Pump Speed (SPM) |      | Single-stroke Flow (ml/stroke) | Motor Power (W) |
|-------|---------|--------------|-------|------------------|------|--------------------|-------------------------|------------------|------|--------------------------------|-----------------|
|       |         | 50hz         | 60hz  | 50hz             | 60hz |                    |                         | 50hz             | 60hz |                                |                 |
| NDWS- | 8/1.6   | 8            | 9.6   | 16               | 12.8 | 2                  | 48                      | 118              | 142  | 1.13                           | 180             |
| NDWS- | 12/1.6  | 12           | 14.4  | 16               | 12.8 | 2                  | 48                      | 177              | 212  | 1.13                           | 180             |
| NDWS- | 18/1.6  | 18           | 21.6  | 16               | 12.8 | 2                  | 60                      | 118              | 142  | 2.54                           | 180             |
| NDWS- | 24/1.6  | 24           | 28.8  | 16               | 12.8 | 2                  | 60                      | 177              | 212  | 2.3                            | 180             |
| NDWS- | 33/1.0  | 33           | 39.6  | 10               | 8    | 4                  | 90                      | 118              | 142  | 4.7                            | 180             |
| NDWS- | 68/1.0  | 68           | 81.6  | 10               | 8    | 6                  | 90                      | 118              | 142  | 9.6                            | 180             |
| NDWS- | 120/0.7 | 120          | 144   | 7                | 5.6  | 4                  | 105                     | 177              | 212  | 11                             | 180             |
| NDWS- | 143/0.6 | 143          | 171.6 | 6                | 4.8  | 6                  | 105                     | 118              | 142  | 20.1                           | 180             |
| NDWS- | 213/0.5 | 213          | 255.6 | 5                | 4    | 6                  | 105                     | 177              | 212  | 20.1                           | 180             |
| NDWS- | 258/0.4 | 258          | 309.6 | 4                | 3.2  | 10                 | 105                     | 118              | 142  | 36.4                           | 180             |
| NDWS- | 386/0.3 | 386          | 463.2 | 3                | 2.4  | 10                 | 105                     | 177              | 212  | 36.4                           | 180             |

## Dimensional Drawing



NDWS-8/1.6~24/1.6

NDWS-33/1.0~386/0.3

## Pump Head Material and Size

| Model                | Material | A   | B  | C  | D   | E     | Connection                         |                          |
|----------------------|----------|-----|----|----|-----|-------|------------------------------------|--------------------------|
|                      |          |     |    |    |     |       | Thread Size                        | Socket Pipe Size         |
| NDWS-8/1.6~18/1.6    | PVC      | 95  | 5  | 70 | 290 | 150   | Flexible tube<br>φ6"9 or<br>φ10"14 | Hard tube<br>connections |
|                      | PVDF     | 105 | 10 | 75 | 285 | 150   |                                    |                          |
|                      | PTFE     | 105 | 10 | 75 | 285 | 150   |                                    |                          |
|                      | SS316    | 105 | 10 | 75 | 285 | 150   |                                    |                          |
| NDWS-33/1.0~68/1.0   | PVC      | 224 | 31 | 90 | 310 | 150   | G 1"                               | G1/2"-DN15               |
|                      | PVDF     | 224 | 31 | 90 | 310 | 150   | G 1"                               | G1/2"-DN15               |
|                      | PTFE     | 178 | 8  | 90 | 310 | 150   | G 1"                               | /                        |
|                      | SS316    | 178 | 8  | 97 | 310 | 150   | G 1"                               | /                        |
| NDWS-120/0.7~386/0.3 | PVC      | 239 | 38 | 90 | 310 | 157.5 | G 1"                               | G1/2"-DN15               |
|                      | PVDF     | 224 | 31 | 90 | 310 | 150   | G 1"                               | G1/2"-DN15               |
|                      | PTFE     | 193 | 18 | 90 | 310 | 157.5 | G 1"                               | /                        |
|                      | SS316    | 193 | 18 | 97 | 310 | 157.5 | G 1"                               | /                        |

# NDWL

1. Eccentric shaft is supported by bearings in front and rear and the cantilever shaft structure of the most of manufacturers on the market is abandoned; the speed reducing motor does not bear axial force and only transmits torque, and this extends the service life of speed reducing motor and makes the process more stable.
2. Installation and maintenance are simple and convenient; grease is used for lubrication in the box body and grease is added conveniently, making maintenance easy.
3. Stroke length can be adjusted at will during running.
4. PVC, PVDF, PTFE and SS316 materials pump head are applicable to dosing of different kinds of chemical liquid.
5. The pure PTFE diaphragm that has a super-long service life guarantees the stability and safety of dosing.
6. Can be equipped with electric stroke adjuster (4~20mA).
7. Variable frequency motor and explosion-proof motor are optional.



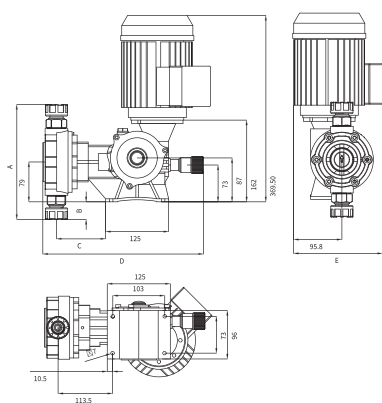
## Technical Specifications

| Model         | Capacity L/h |      | Max. Pressure Bar |      | Stroke Length (mm) | Diaphragm Diameter (mm) | Pump Speed (SPM) |      | Single-stroke Flow (ml/stroke) | Motor Power (W) |
|---------------|--------------|------|-------------------|------|--------------------|-------------------------|------------------|------|--------------------------------|-----------------|
|               | 50hz         | 60hz | 50hz              | 60hz |                    |                         | 50hz             | 60hz |                                |                 |
| NDWL 90/1.2   | 90           | 108  | 12                | 9.6  | 8                  | 90                      | 177              | 212  | 12.8                           | 370             |
| NDWL 120/1.2  | 120          | 144  | 12                | 9.6  | 8                  | 105                     | 118              | 142  | 17.1                           | 370             |
| NDWL 180/1.0  | 180          | 216  | 10                | 8    | 8                  | 105                     | 118              | 142  | 25.5                           | 370             |
| NDWL 200/0.8  | 200          | 240  | 8                 | 6    | 7                  | 105                     | 177              | 212  | 28.3                           | 370             |
| NDWL 275/0.7  | 275          | 330  | 7                 | 5.6  | 8                  | 120                     | 118              | 142  | 38.7                           | 370             |
| NDWL 355/0.7  | 355          | 426  | 7                 | 5.6  | 10                 | 120                     | 118              | 142  | 50                             | 370             |
| NDWL 410/0.6  | 410          | 492  | 6                 | 4.8  | 8                  | 120                     | 177              | 212  | 38.7                           | 370             |
| NDWL 530/0.45 | 530          | 636  | 4.5               | 3.6  | 10                 | 120                     | 177              | 212  | 50                             | 370             |

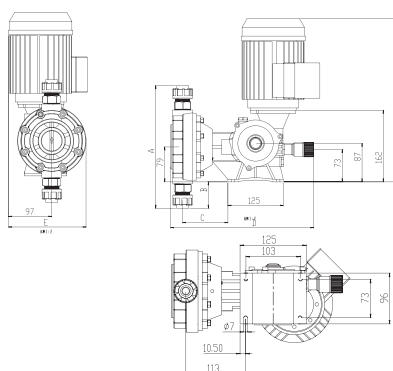
## Pump Head Material and Size

| Model                 | Material | A   | B  | C     | D   | E   | Connection  |                  |
|-----------------------|----------|-----|----|-------|-----|-----|-------------|------------------|
|                       |          |     |    |       |     |     | Thread Size | Socket Pipe Size |
| NDWL-90/1.2           | PVC      | 224 | 35 | 97    | 340 | 175 | G 1"        | G1/2" -DN15      |
|                       | PVDF     | 224 | 35 | 97    | 340 | 175 | G 1"        | G1/2" -DN15      |
|                       | PTFE     | 178 | 11 | 97    | 345 | 175 | G 1"        | /                |
|                       | SS316    | 178 | 11 | 97    | 345 | 175 | G 1"        | /                |
| NDWL-120/1.2~180/1.0  | PVC      | 248 | 45 | 97    | 345 | 175 | G 1"        | G1/2" -DN15      |
|                       | PVDF     | 248 | 45 | 97    | 345 | 175 | G 1"        | G1/2" -DN15      |
|                       | PTFE     | 193 | 25 | 97    | 350 | 175 | G 1"        | /                |
|                       | SS316    | 193 | 25 | 97    | 350 | 175 | G 1"        | /                |
| NDWL-275/0.7~530/0.45 | PVC      | 259 | 51 | 102.5 | 340 | 175 | G 1"        | G1/2" -DN15      |
|                       | PVDF     | 259 | 51 | 102.5 | 340 | 175 | G 1"        | G1/2" -DN15      |
|                       | PTFE     | 213 | 28 | 102.5 | 340 | 175 | G 1"        | /                |
|                       | SS316    | 213 | 28 | 110   | 340 | 175 | G 1"        | /                |

## Dimensional Drawing



NDWL-90/1.2~200/0.8



NDWL-275/0.7~530/0.45

# ND1000

1. Motor-driven diaphragm assembly is of simple operation and easy maintenance that the pump head won't leak.
2. The operation is smooth and steady, and the noise is much low.
3. The high precision and high strength transmission components can make the dosing pump efficiently output, at the same time, its maintenance cost is ultra-low.
4. High quality modified PTFE diaphragm assembly can greatly improve the life span of the diaphragm, making it not easy to become a wearing part.
5. PVC, PVDF, PTFE and SS316 materials pump head are applicable to dose different kinds of chemical liquids.
6. Can be equipped with electric stroke adjuster (4-20mA).
7. Variable frequency motor and explosion-proof motor are optional.



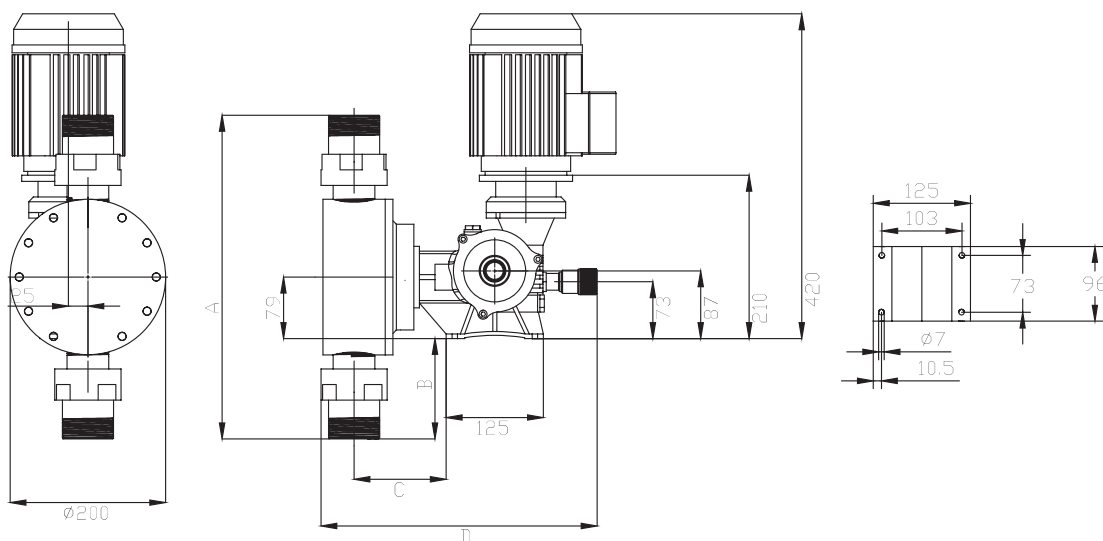
## Technical Specifications

| Type   | Model  |          | Capacity (L/H) | Maximum Pressure (bar) | Stroke Length (mm) | Diaphragm Diameter (mm) | Pump Speed (SPM) | Single-stroke Flow (ml/stroke) | Motor Power (W) |
|--------|--------|----------|----------------|------------------------|--------------------|-------------------------|------------------|--------------------------------|-----------------|
| ND1000 | ND1000 | 660/0.5  | 660            | 5                      | 10                 | 160                     | 118              | 93                             | 750             |
|        | ND1000 | 1000/0.4 | 1000           | 4                      | 10                 | 160                     | 177              | 93                             | 750             |
|        | ND1000 | 1200/0.3 | 1200           | 3                      | 12                 | 160                     | 177              | 113                            | 750             |

## Pump Head Material and Size

| Model                   | Material | A   | B  | C   | D   | E   | Connection    |
|-------------------------|----------|-----|----|-----|-----|-----|---------------|
| ND1000-660/0.5~1200/0.3 | PVC      | 340 | 90 | 120 | 370 | 197 | G2-1/4" -DN40 |
|                         | PVDF     | 340 | 90 | 120 | 370 | 197 | G2-1/4" -DN40 |
|                         | PTFE     | 340 | 90 | 120 | 370 | 197 | G2-1/4" -DN40 |
|                         | SS316    | 340 | 95 | 125 | 370 | 197 | G2-1/4" -DN40 |

## Dimensional Drawings



# ND2000

- 1.The high-strength casting aluminum box body is used and it is sturdy and durable, and moreover, total weight is reduced greatly.
- 2.The motor directly drives the eccentric shaft and the spring return structure is used; the structure is simple and stable and easy to maintain.
- 3.The damping sliding bar structure is applied to overcome the vital shortcomings: large pipe shock, excessive mechanical vibration, parts damage, poor flow linearity and high noise, arising from invalid eccentric travel.
- 4.High-quality modified PTFE diaphragm assembly is durable and the lift of dosing pump is greatly increased.
- 5.PVC, PVDF, PTFE and SS316 materials pump head are applicable to dose different kinds of chemical liquids.
- 6.Can be equipped with electric stroke adjuster (4–20mA).
- 7.Variable frequency motor and explosion-proof motor are optional.



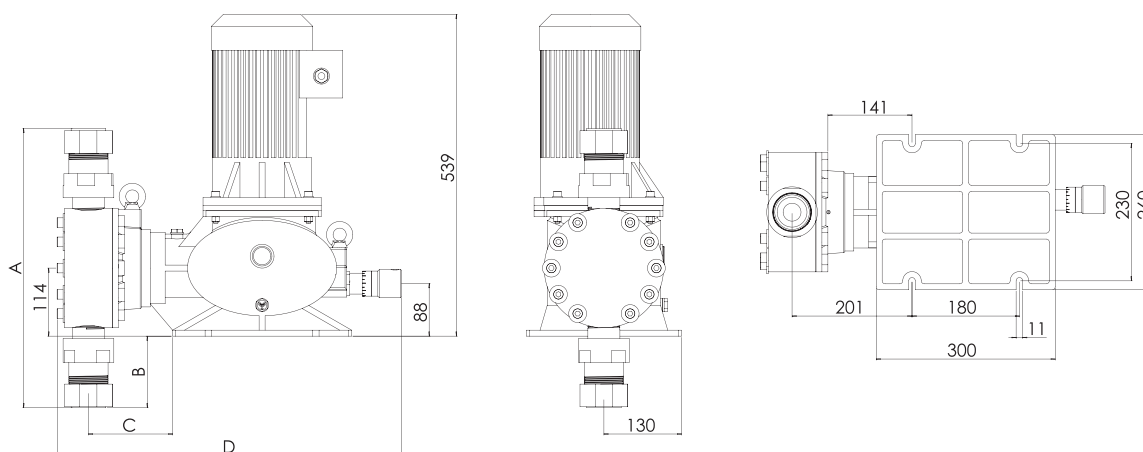
## Technical Specifications

| Model           | Capacity<br>L/h |      | Max.Pressure<br>Bar |      | Stroke<br>Length<br>(mm) | Diaphragm<br>Diameter<br>(mm) | Pump Speed (SPM) |      | Single-stroke Flow<br>(ml/stroke) | Motor<br>Power<br>(W) |
|-----------------|-----------------|------|---------------------|------|--------------------------|-------------------------------|------------------|------|-----------------------------------|-----------------------|
|                 | 50hz            | 60hz | 50hz                | 60hz |                          |                               | 50hz             | 60hz |                                   |                       |
| ND2000 500/1.0  | 500             | 600  | 10                  | 8    | 8                        | 155                           | 200              | 240  | 42                                | 750                   |
| ND2000 700/0.9  | 700             | 840  | 9                   | 7.2  | 10                       | 155                           | 200              | 240  | 58                                | 750                   |
| ND2000 1000/0.6 | 1000            | 1200 | 6                   | 4.8  | 12                       | 160                           | 200              | 240  | 83                                | 750                   |
| ND2000 1300/0.4 | 1300            | 1560 | 4                   | 3.2  | 14                       | 160                           | 200              | 240  | 108                               | 750                   |
| ND2000 1600/0.3 | 1600            | 1920 | 3                   | 2.4  | 15                       | 160                           | 200              | 240  | 135                               | 750                   |
| ND2000 2000/0.3 | 2000            | 2400 | 3                   | 2.4  | 16                       | 160                           | 200              | 240  | 166                               | 750                   |

## Pump Head Material and Size

| Model                    | Material | A   | B   | C     | D   | Connection    |
|--------------------------|----------|-----|-----|-------|-----|---------------|
| ND2000-500/1.0~1000/0.6  | PVC      | 340 | 51  | 102.5 | 340 | G2-1/4" -DN40 |
|                          | PVDF     | 340 | 51  | 102.5 | 340 | G2-1/4" -DN40 |
|                          | PTFE     | 340 | 28  | 102.5 | 340 | G2-1/4" -DN40 |
|                          | SS316    | 340 | 28  | 110   | 340 | G2-1/4" -DN40 |
| ND2000-1300/0.4~2000/0.3 | PVC      | 460 | 120 | 140   | 580 | G2-1/4" -DN40 |
|                          | PVDF     | 460 | 120 | 140   | 580 | G2-1/4" -DN40 |
|                          | PTFE     | 460 | 120 | 140   | 580 | G2-1/4" -DN40 |
|                          | SS316    | 460 | 90  | 147   | 580 | G2-1/4" -DN40 |

## Dimensional Drawings



# HND

- 1.The diaphragm is mechanically driven and spring returned, and the structure is simple and easy to maintain.
- 2.High-quality modified diaphragm assembly with maximum pressure of 30 Bar can replace low pressure hydraulic diaphragm dosing pumps in a part of application places, greatly reducing the user's initial input cost.
- 3.In the post-maintenance, because there is no hydraulic oil chamber and other hydraulic assemblies, the maintenance become very simple. As the high-quality modified PTFE diaphragm assembly is applied, extending the service life of the diaphragm and reducing the post-maintenance cost greatly.
- 4.Application of damping sliding bar makes the dosing pump run smoothly, with extremely low noise.
- 5.PTFE elastic component and one-way valve are optional and the high-viscosity corrosive liquid can be conveyed; outlet end has back pressure.
- 6.It can be matched with electric stroke adjuster (4-20mA).
- 7.Variable frequency motor and explosion-proof motor are optional.



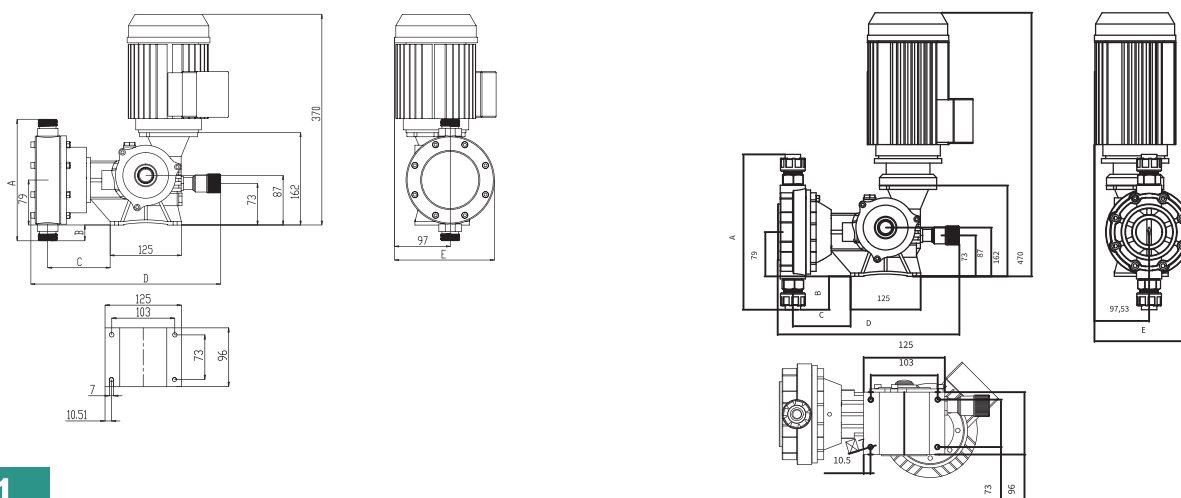
## Technical Specifications

| Model       | Capacity L/h |      | Max. Pressure Bar |      | Stroke Length (mm) | Diaphragm Diameter (mm) | Pump Speed (SPM) |      | Single-stroke Flow (ml/stroke) | Motor Power (W) |
|-------------|--------------|------|-------------------|------|--------------------|-------------------------|------------------|------|--------------------------------|-----------------|
|             | 50hz         | 60hz | 50hz              | 60hz |                    |                         | 50hz             | 60hz |                                |                 |
| HND 47/3.0  | 47           | 56.4 | 30                | 24   | 4                  | 90                      | 118              | 142  | 6.6                            | 370             |
| HND 70/2.0  | 70           | 84   | 20                | 16   | 4                  | 90                      | 177              | 212  | 6.6                            | 370             |
| HND 115/1.8 | 115          | 138  | 18                | 14.4 | 6                  | 105                     | 118              | 142  | 16.2                           | 750             |
| HND 135/1.6 | 135          | 162  | 16                | 12.8 | 7                  | 105                     | 118              | 142  | 19                             | 750             |
| HND 160/1.2 | 160          | 192  | 12                | 9.6  | 8                  | 105                     | 118              | 142  | 22.6                           | 750             |
| HND 330/1.0 | 330          | 396  | 10                | 8    | 7                  | 120                     | 118              | 142  | 31.1                           | 750             |
| HND 400/0.8 | 400          | 480  | 8                 | 6.4  | 6                  | 120                     | 177              | 142  | 37.7                           | 750             |

## Pump Head Material and Size

| Model               | Pump head | A   | B  | C     | D   | E   | Connection |             |
|---------------------|-----------|-----|----|-------|-----|-----|------------|-------------|
|                     |           |     |    |       |     |     | Threaded   | Socket pipe |
| HND-47/3.0~70/2.0   | SS316     | 178 | 10 | 105   | 334 | 157 | G 1"       | G1/2"-DN15  |
| HND-115/1.8~400/0.8 | SS316     | 193 | 18 | 105   | 335 | 166 | G 1"       | G1/2"-DN15  |
|                     | PVC       | 259 | 51 | 102.5 | 345 | 175 | G 1"       | G1/2"-DN15  |
| HND-330/1.0~400/0.8 | PVDF      | 259 | 51 | 102.5 | 345 | 175 | G 1"       | G1/2"-DN15  |
|                     | PTFE      | 213 | 28 | 102.5 | 350 | 175 | G 1"       | /           |
|                     | SS317     | 213 | 28 | 110   | 350 | 175 | G 1"       | /           |

## Dimensional Drawings



# Electric Stroke Adjuster

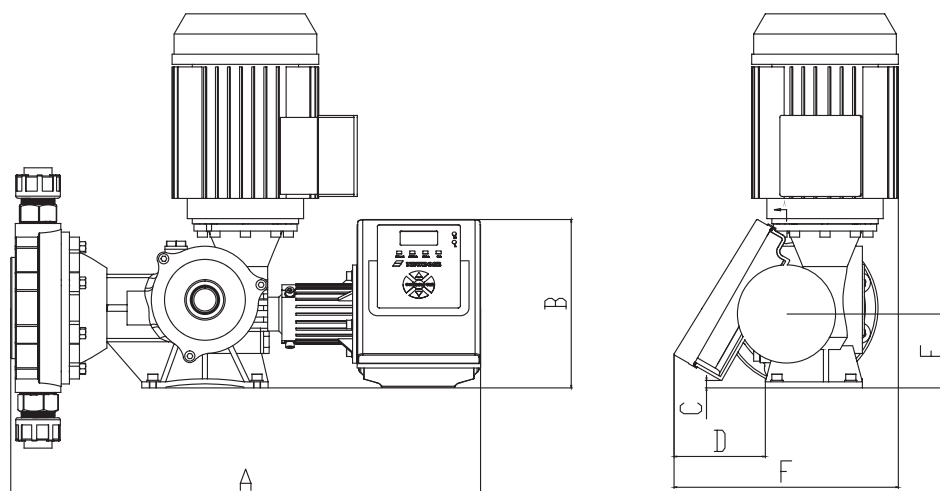
1. The adjuster can be both manual operation and current signal control.
2. In manual mode, stroke length of dosing pump can be accurately set and displayed via the operation panel of the adjuster. With error compensation function, the adjuster overcomes the error between actual displacement and its set value directly caused by the random change of stroke length of dosing pump because traditional knob adjuster doesn't have the self-lock function.
3. The return-to-zero operation in the functions, simply and effectively calibrates the accuracy of electric stroke adjuster, making dosing more accurate.
4. In the analog signal (4–20mA) control mode, dosing in direct proportion or in inverse proportion can be achieved according to the user requirements. And the stroke length of dosing pump could be adjusted in real time, further, accurately modify the displacement of dosing pump.
5. Modular interface design can customize a linkage to change the dosing pumps that only allow variable frequency adjustment into the dosing pumps of which stroke length can be adjusted intelligently.



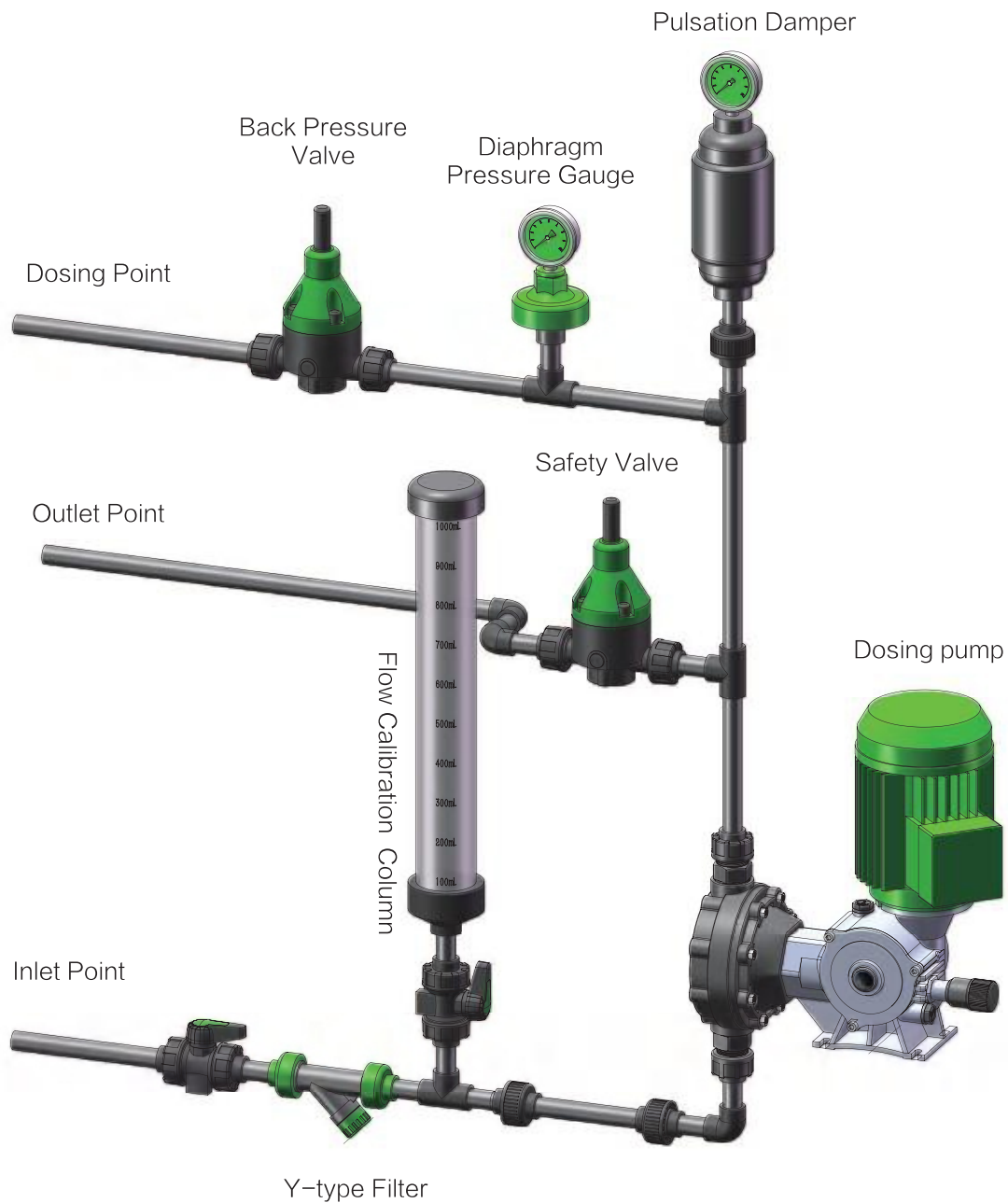
## Pumps and Adjuster Size

| Model                   | A   | B   | C  | D  | E  | F   |
|-------------------------|-----|-----|----|----|----|-----|
| NDWS-33/1.0~68/1.0      | 445 | 170 | 8  | 90 | 73 | 205 |
| NDWS-117/0.7~386/0.3    | 455 | 170 | 8  | 90 | 73 | 205 |
| NDWL-90/1.2~530/0.45    | 470 | 170 | 8  | 90 | 73 | 222 |
| ND1000-660/0.5~1200/0.3 | 515 | 170 | 8  | 90 | 73 | 273 |
| ND2000-500/1.0~2000/0.3 | 702 | 182 | 16 | 2  | 88 | 262 |
| HND-47/3.0~70/2.0       | 470 | 170 | 8  | 90 | 73 | 222 |
| HND-115/1.8~400/0.8     | 490 | 170 | 8  | 90 | 73 | 245 |

## Dimensional Drawings



# Typical Installation Diagram



## ◆ E series motor dosing pump

- Flow rate: 9-150 L/H
- Maximum Pressure: 7 Bar
- Power Supply: 220V single phase, 380V three-phase
- Pump Head:
  - PP with ceramic ball valves, FKM seal
  - PVC, PTFE and SS316 are optional
- Stroke length adjustment: Manual control 0-100%
- Function:
  - 220V, can be equipped with switch box (start/stop) and the float switch.
  - 380V, manual operation
- Installation Kit: 2m each of suction and delivery tube, foot valve, connectors for hard pipe.



## ◆ Technical Specifications

| Model     | Capacity L/h |      | Pressure Bar |      | Stroke Length | Diaphragm Diameter | Pump Speed spm |      | Single Stroke Capacity | Pipe Size | Power | Electricity                                   |
|-----------|--------------|------|--------------|------|---------------|--------------------|----------------|------|------------------------|-----------|-------|-----------------------------------------------|
|           | 50Hz         | 60Hz | 50Hz         | 60Hz | mm            | mm                 | 50Hz           | 60Hz | mL/stroke              | mm        | W     |                                               |
| E-9/1.0   | 9            | 10.8 | 10           | 8    | 2             | 70                 | 54             | 65   | 2.8                    | 6*9       | 40    | A: 380V<br>3-phase<br>B: 220V<br>single phase |
| E-15/1.0  | 15           | 18   | 10           | 8    | 2             | 70                 | 90             | 108  | 2.8                    | 6*9       |       |                                               |
| E-30/0.7  | 30           | 36   | 7            | 5.6  | 4             | 70                 | 90             | 108  | 5.6                    | 6*9       |       |                                               |
| E-42/0.7  | 42           | 50.4 | 7            | 5.6  | 3             | 70                 | 180            | 216  | 3.9                    | 6*9       |       |                                               |
| E-60/0.5  | 60           | 72   | 5            | 4    | 4             | 70                 | 180            | 216  | 5.6                    | 6*9       |       |                                               |
| E-72/0.5  | 72           | 86.4 | 5            | 4    | 5             | 70                 | 180            | 216  | 6.67                   | 6*9       |       |                                               |
| E-90/0.3  | 90           | 108  | 3            | 2.4  | 3             | 88                 | 180            | 216  | 8.34                   | 10*14     |       |                                               |
| E-120/0.3 | 120          | 144  | 3            | 2.4  | 4             | 88                 | 180            | 216  | 11.11                  | 10*14     |       |                                               |
| E-150/0.3 | 150          | 180  | 3            | 2.4  | 5             | 88                 | 174            | 209  | 14.37                  | 10*14     |       |                                               |

## ◆ Technical Features

- The unique structure design is in high efficiency and energy saving that reduce much more energy consumption than equality motor.
- The diaphragm part is made of 100% PTFE material /Teflon with best quality under the long-term experience, that the pump could work without liquids and no damage to diaphragm.
- The duckbill valve are being applied in foot valve, no reversed flow, even the pressure become higher and the valve will be sealed better.
- There are independent switch and fuse in the multi-functional terminal box. It can work with float switch to control the start-stop, being widely used in single pump dosing system.

## ◆ Installation Kit



Sprayer



Filter



PE Delivery tube  
2m, 6x9mm

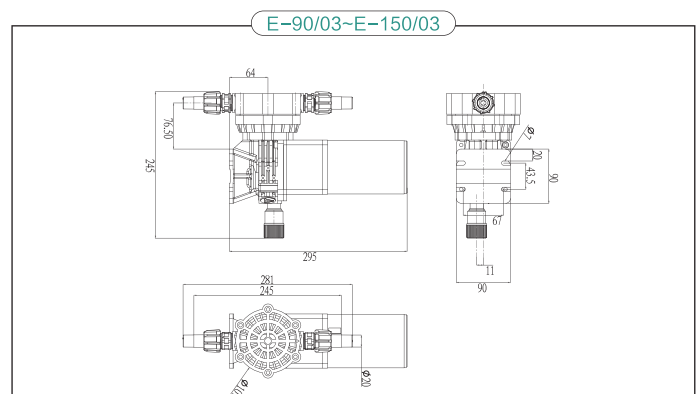
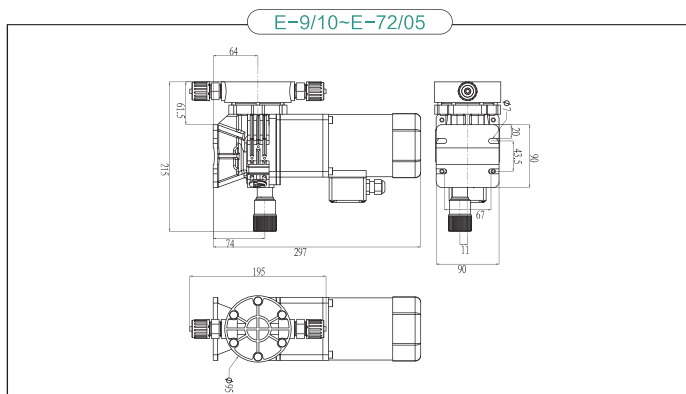


PVC Suction tube  
2m, 6x9mm



DN15 pipe adapter (optional)

## ◆ Installation Dimensional Drawing



# Motor X Micro Mechanical Metering Pump

## Function Introduction:

1. Full PTFE material diaphragm
2. Integrated pump head with check valves
3. 2% metering accuracy
4. Various operation position
5. Lower noise
6. Higher protection class IP65
7. Capacity adjust by stroke length 10~100%
8. Power supply: 220V 50Hz single phase



## Technical Parameter Sheet

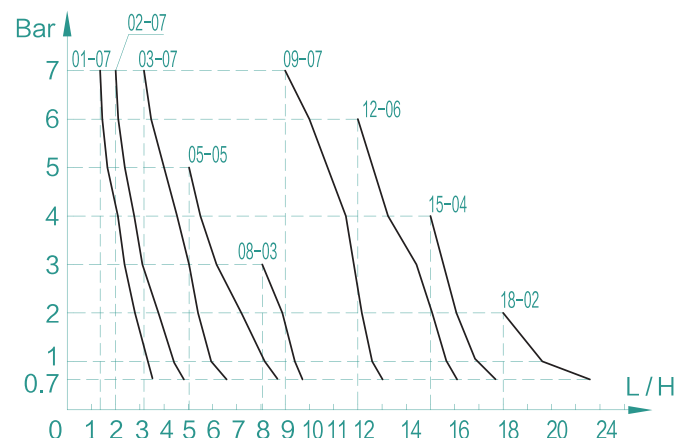
| Specification Model |       | Capacity | Pressure | Stroke Length | Diaphragm Diameter | Speed | Motor |
|---------------------|-------|----------|----------|---------------|--------------------|-------|-------|
|                     |       | L/h      | Bar      | mm            | mm                 | spm   | w     |
| MX30                | 01-07 | 1        | 7        | 1             | 35                 | 80    | 28    |
|                     | 02-07 | 2        | 7        | 2             | 35                 | 115   | 28    |
|                     | 03-07 | 3        | 7        | 2             | 35                 | 80    | 28    |
|                     | 05-05 | 5        | 5        | 2.5           | 35                 | 80    | 28    |
|                     | 08-03 | 8        | 3        | 3             | 35                 | 115   | 28    |
| MX40                | 09-07 | 9        | 7        | 2             | 47                 | 115   | 41    |
|                     | 12-06 | 12       | 6        | 3             | 47                 | 80    | 41    |
|                     | 15-04 | 15       | 4        | 3             | 47                 | 115   | 41    |
|                     | 18-02 | 18       | 2        | 4             | 47                 | 115   | 41    |

## Material Sheet

### Pump Head Assembly

|            | PPV      | PVT     | PTF     | SST   |
|------------|----------|---------|---------|-------|
| PUMP HEAD  | PP(FRPP) | PVC     | PTFE    | SS316 |
| DIAPHRAGM  | PTFE     | PTFE    | PTFE    | PTFE  |
| VALVE BALL | CERAMIC  | CERAMIC | CERAMIC | SS316 |
| VALVE SEAT | PTFE     | PTFE    | PTFE    | SS316 |
| VALVE BODY | PP(FRPP) | PVC     | PTFE    | SS316 |
| SEALS      | FKM      | FKM     | PTFE    | PTFE  |

## Pump Flow Diagram



## Kits



Foot valve



Injection valve

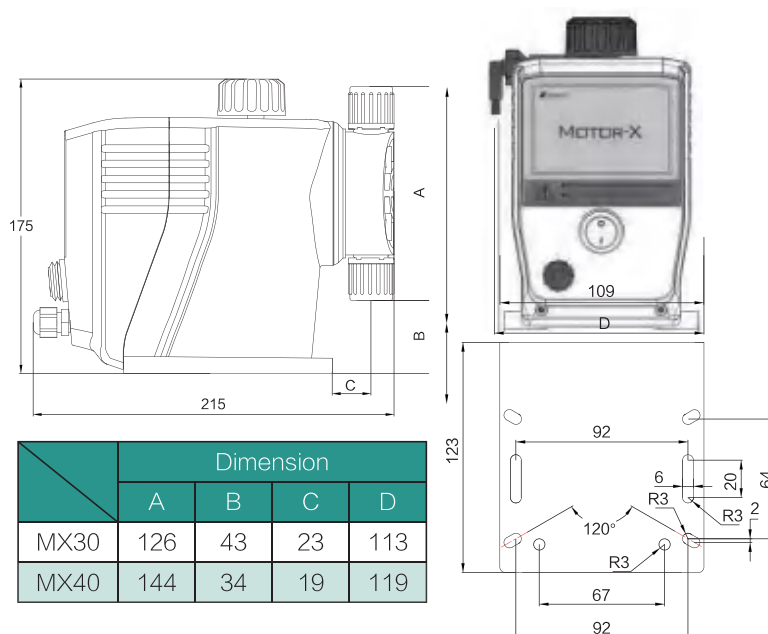


PE Delivery tube  
2m,6x9mm

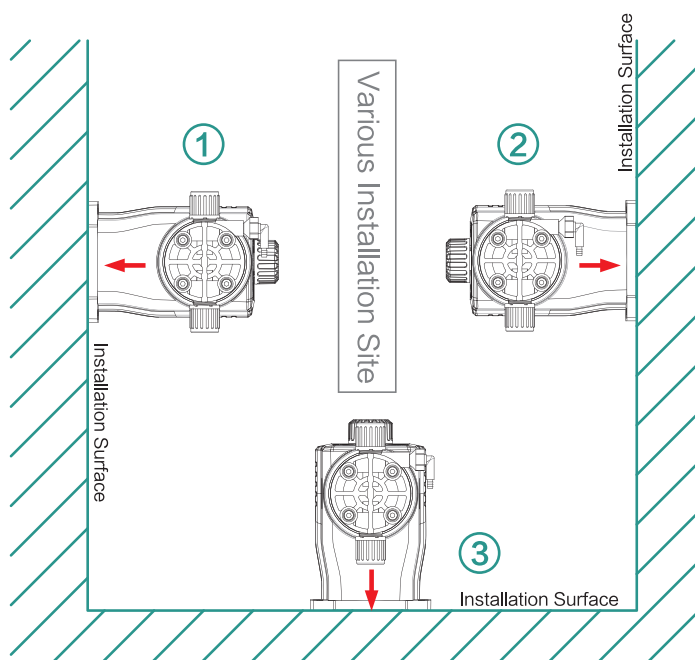


PVC Suction tube  
2m,6x9mm

## Installation Drawing



The base support could be installed to the wall in various direction, only need to ensure the check valves be perpendicular to the ground.





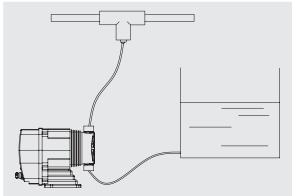
## TANK60 Integrated Dosing System

- ◆ Can be equipped with NEWDOSE electromagnetic dosing pumps;
- ◆ The flow calibration tube shows the liquid level in real time;
- ◆ Simple installation, disassembly and washing, and sewage can be discharged at any time;
- ◆ Multiple safety protection design to prevent damage caused by liquid leakage and corrosion;
- ◆ Integrated design, without the need to prepare other accessories as a base;
- ◆ Can be equipped with mixer, liquid level sensor, controller, electrical panel, fault alarm, remote signal adjustment;
- ◆ The integrated complete set of dosing device is safe, efficient, simple and beautiful.

### Model Table

| Model       | Volume<br>L | Pump Quantity<br>Unit | Pump Model                              |
|-------------|-------------|-----------------------|-----------------------------------------|
| TANK 60-1-M | 60          | 1                     | All solenoid dosing pump series/Motor-X |
| TANK120-2-M | 120         | 2                     | All solenoid dosing pump series/Motor-X |

## Multifunctional Integrated Design



Ideal installation position: the position of the pump in the system is the best condition, and cavitation is not easy to produce, the amount of gas generated and accumulated inside the pipe is small, and it is not easy to produce blockage of gas.



Flow Calibration: Turn the knob clockwise to calibrate and calibrate the dosing pump flow.

Actual flow = difference between initial and final liquid level \* 2 \* 60 (L/h)



Unscrew the outer cable plug to drain, easy to operate, and the maintenance barrel and pipe can be cleaned at any time.



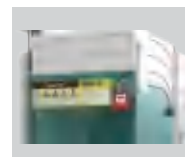
PVC calibration tube, clean and read the value of the liquid level in the barrel.



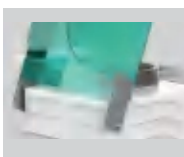
Three sets of bolt holes are reserved at the bottom of the barrel, which can be fitted with a full range of new Dotz electromagnetic pumps and Motor-X miniature mechanical diaphragm pumps.



The installation position of the mixer is reserved at the top to perform the mixing function.



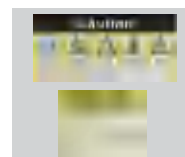
Equipped with a transparent bucket cover to protect the pump and prevent malfunction by on-site personnel.



The connection between the barrel cap and the barrel is made of a stainless steel plate, which is durable and not brittle.



The bottom is equipped with fixing bolts to prevent accidental operation falling off.

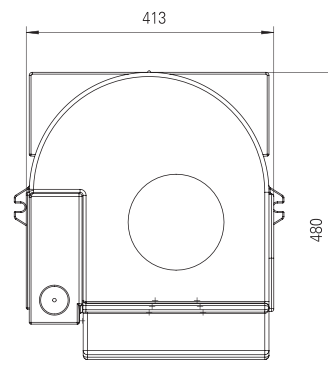
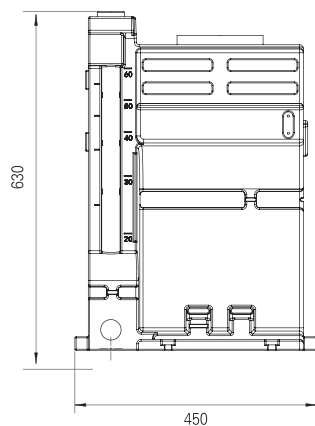
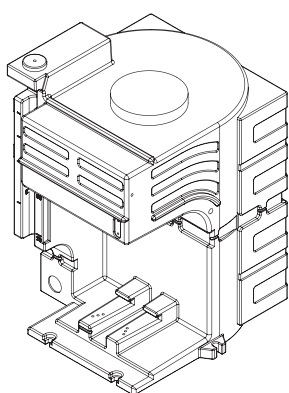


Equipped with safety stickers to warn the scene and standardize the operation.

## Parameters Table

| Model       | Volume(L) | Material | Water contact Material | Weight(KG) |
|-------------|-----------|----------|------------------------|------------|
| TANK 60-1-M | 60        | PE       | PE,PVC,PP,FPM etc.     | 9.5        |
| TANK120-2-M | 120       | PE       | PE,PVC,PP,FPM etc.     | /          |

## Dimension



## Pump Mode



All electromagnetic series / Motor-X



All electromagnetic series / Motor-X

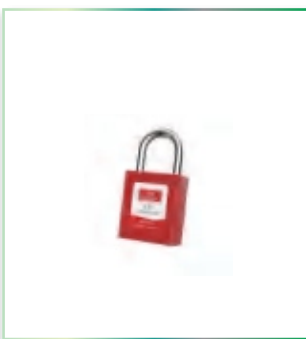
## Optional equipments



Stirrer



liquid level sensor



safety lock



meter or controller

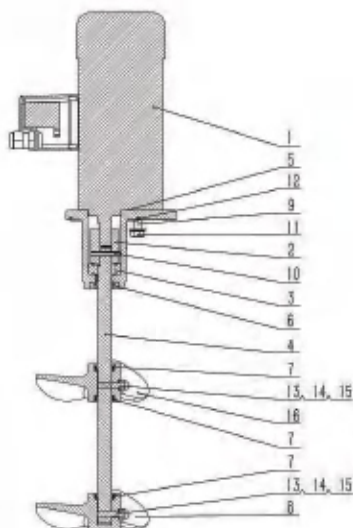
# NDM Top Entry Mixer

## DESIGN FEATURES

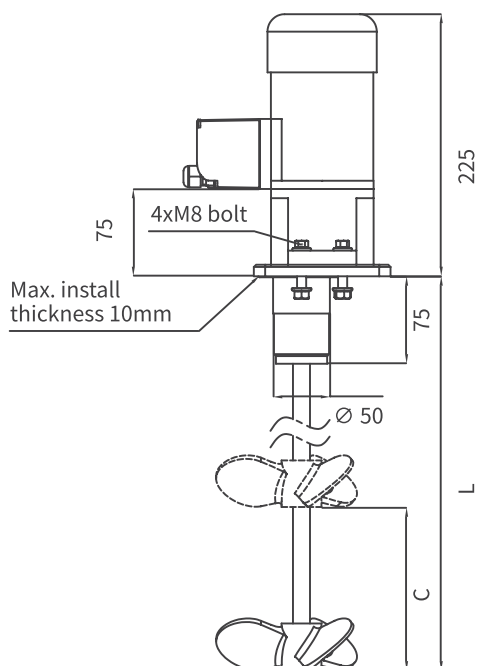
- » The mixer propeller is processed and molded by high-pressure injection molding, which can use a variety of materials, such as PP, PVC, PVDF and other materials. It can mix a variety of concentrations, media, suspended substances and even some complex applications.
- » The way of high-pressure injection molding method can realize the precise manufacture of complex curved surfaces, which greatly reduces the resistance of the paddle when advancing and reduces the shear force, greatly enhancing the efficiency of advancing mixing and stirring, and by efficiently promoting the movement of the water in the pool (barrel), thus fully combining and reacting with the water, shortening the mixing time between the chemical and the water, and greatly improving the efficiency of using the chemical.
- » A base with rolling bearings is a feature of the entire mixing system. When the mixer is in use, the swinging causes oscillation to lessen and increase mixing effectiveness.
- » The mixer life is effectively extended, the vibration and noise levels are dramatically lowered, the motor shaft radial force is greatly reduced, and the operation is more stable.
- » The mixer base is outfitted with shaft seals to handle erratic mixing situations and stop the internal base components from corroding. The quality of the operating environment outside can be substantially enhanced by installing seals on the base and the barrel (kettle) to stop gas leakage. The mixer is easy to store and travel thanks to the quick assembly module, which can also be put together and used right away.



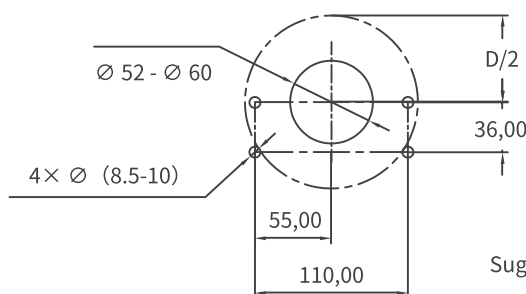
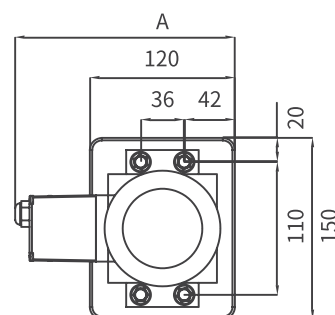
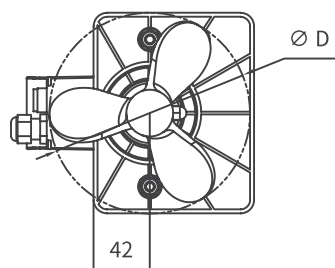
## PART NUMBER



| Part No. | Designation              | Qt. |
|----------|--------------------------|-----|
| 1        | Motor                    | 1   |
| 2        | D type shaft cover       | 1   |
| 3        | Deep groove ball bearing | 1   |
| 4        | Complete shaft           | 1   |
| 5        | Support plate            | 1   |
| 6/7      | Rotary oil seal          | 1   |
| 8        | Impeller                 | 1   |
| 9/11     | Nuts&Bolts               | 4   |
| 10       | Spring pin               | 1   |
| 12       | Sealing ring             | 1   |
| 13/14/15 | Screws, nuts and gasket  | 1   |



D: propeller diameter



Suggested hole size

## SELECTION GUIDE

| Model | Tank Volume | Propeller Diameter | Shaft Length | Rated Power | Speed Ratio rpm |     | Rotation Speed | Shaft Material                                     | Propeller Material              | Power Supply                                              |
|-------|-------------|--------------------|--------------|-------------|-----------------|-----|----------------|----------------------------------------------------|---------------------------------|-----------------------------------------------------------|
|       | L           |                    |              |             | mm              | mm  |                |                                                    |                                 |                                                           |
| NDM-  | 100         | 150                | 600          | 40          | 200             | 240 | 7.5            | Outside: PVC<br>Shaft: Stainless steel<br>S: SS304 | Standard: PP<br>Optional: SS304 | A: 380V 50Hz 3-phase<br>B: 220V 50Hz 1-phase<br>C: Others |
| NDM-  | 200         | 220                | 700          | 40          |                 |     |                |                                                    |                                 |                                                           |
| NDM-  | 300         | 220                | 800          | 40          | 150             | 180 | 10             |                                                    |                                 |                                                           |
| NDM-  | 500         | 280                | 800          | 40          |                 |     |                |                                                    |                                 |                                                           |
| NDM-  | 1000        | 330                | 1000         | 40          | 100             | 120 | 15             |                                                    |                                 |                                                           |
| NDM-  | 1500        | 330                | 1200         | 40          |                 |     |                |                                                    |                                 |                                                           |
| NDM-  | 2000        | 330                | 1500         | 40          | 75              | 90  | 20             |                                                    |                                 |                                                           |

### Remarks

1. Propeller code: S — Stainless steel 304 D — Double Propellers

2. Model Example:

NDM100-150BD

Default configuration: It's for 100L tank, 150rpm, with 3-propeller double-deck, PP material propeller, diameter is 150mm, shaft is PVC column and 600mm length. The motor is 40w, power supply is 220V 50Hz single phase.

## ARK81 Flow Transmitting Controller



- Digital circuit design, high level against interruption.
- SMT bonding process, highly integrated, stable measurement, low power dissipation, good repeatability for electric unit.
- Powerful function, combined with transmitting and controlling ability, control flow in batch.
- Wonderful appearance, strong structure, anticorrosion from chemicals, disc-mounting or wall surface.

## Technical Parameters

| ARK81 Flow Transmitting Controller                                     |  | • Output:                                                |
|------------------------------------------------------------------------|--|----------------------------------------------------------|
| • Measuring Scale: 0–10KHz (n < 120000rpm)                             |  | • Instant flow on and low output (relay output)          |
| • Accuracy:                                                            |  | • 4–20mA proportional control/transmitting output        |
| Linearity: $\pm 1\%$                                                   |  | • RS485 communication output                             |
| Repeatability: $\pm 0.5\%$                                             |  | • Pulse signal output                                    |
| • Environment Requirement                                              |  | • Installation: Disc, wall surface, integrated mounting  |
| Temperature: $-20 - 70^{\circ}\text{C}$ ( $-4 - 158^{\circ}\text{F}$ ) |  | • Display: LCD of lattice with lights of the background. |
| Humidity: 0–95% RH, no hydrometeor.                                    |  | • Protection Glass IP65, anticorrosive from chemicals    |
| • Input                                                                |  | • Power Supply: DC24V, 220V adaptor is optional.         |
| • ARK61 plug-in impeller flow sensor                                   |  | • Size: 96*96*48 mm                                      |
| • Others of the same type (impulse) flow sensor.                       |  | • Power: 1W                                              |

## Instruction

## Order Code



Disc-mounting

90.5 × 90.5 × 40mm



Hole size of disc-mounting

|                                                                                      |   |                       |
|--------------------------------------------------------------------------------------|---|-----------------------|
| Installation                                                                         | 1 | Disc-mounting         |
|                                                                                      | 2 | Wall surface mounting |
| Work Mode                                                                            | 1 | Transmitting mode     |
|                                                                                      | 2 | Multi-functional mode |
| For example: ARK81-21<br>Installation: Disc-mounting<br>Work Mode: Transmitting mode |   |                       |



Wall surface mounting



Integrated mounting

## ARK61 Rotor Flow Sensor

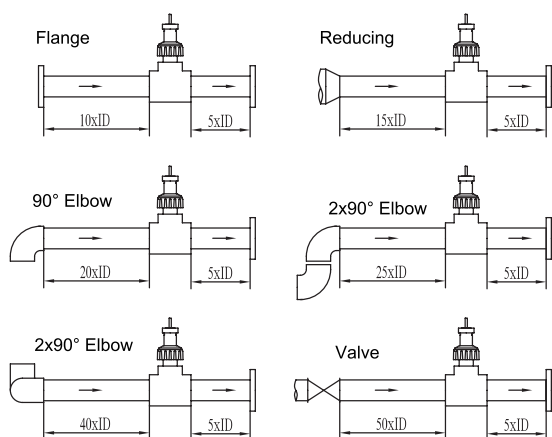


- Output with Hal implulse, stable rectagle waves with open collector NPN, strong capacity of driving.
- Anticorrosive materials(PP, SS316) for the flowing pipeline, superior abrasion-fesistance.
- Solely output of impulse signals, directly control execution device.
- Simple to install, tee, flange, saddle, weld ways for installation, strong struction,can be installed with transmitter as seperated or integrated ways, suit to complex project environments.
- IP68, can be used in cruel environments.
- High reliabity and without any maintenance.

## Technical Parameters

|                |                                    |                       |                                |                           |
|----------------|------------------------------------|-----------------------|--------------------------------|---------------------------|
| Flowing Scale  | 0.1–6 m/s(0.3–20 inch/s)           | Flowing Part Material | Sensor body: PP/PTFE/SS316     |                           |
| Pipe Diamter   | DN15–DN600(1/2–24inch)             |                       | O–ring: FPM                    |                           |
| Output Signal  | Impulse signal, open collector NPN |                       | Rotor: PP/PTFE                 |                           |
| Supply Voltage | DC 5–24V                           |                       | Bearing: Zirconia (Ceramics)   |                           |
| IP             | IP68                               | Pressure /Temp        | Spin Axis: Zirconia (Ceramics) |                           |
| Accuracy       | Linearity: $\pm 5\%$               |                       | PP                             | 10bar @ 25°C, 1.5bar@90°C |
|                | Repeatability: $\pm 0.5\%$         |                       | SS316                          | 25bar @ 100°C             |

## Installation Method



## Order Code

|                  |   |                         |
|------------------|---|-------------------------|
| Piping Selection | 1 | DN25–DN100              |
|                  | 2 | DN125–DN600             |
| Installation     | 1 | Integrated installation |
|                  | 2 | Separate installation   |
| Sensor Body      | P | PP(Standard)            |
|                  | S | SS316(Strong acid)      |

For example: ARK61–1–2–P  
DN50(Specify Diameter)/Separate/PP material

## ARK82 PH Transmitting Controller



- Digital circuit design, high level against interruption.
- Resistance reach to  $10^{16}\Omega$ , high accuracy, good repeatability.
- SMT bonding process, highly integrated, stable test, low power dissipation, good repeatability for electric unit.
- Powerful function integrated with transmitting and controlling, high&low limit, control output for relay.two outputs 4–20mA.
- RS485 interface output, connect directly with digital system.
- Can be disc, wall surface or integrated mounting.

## Technical Parameters

| ARK82 PH Transmitting Controller                                                                      |                                                                                                            |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Measuring Scale: pH: 0–14 pH</li> </ul>                      | <ul style="list-style-type: none"> <li>• Output:</li> </ul>                                                |
| <ul style="list-style-type: none"> <li>• Accuracy(the whole system) pH: 0.01pH Temp: 0.01℃</li> </ul> | <ul style="list-style-type: none"> <li>• Instant flow on and low output(relay output)</li> </ul>           |
| <ul style="list-style-type: none"> <li>• Environment Requirement</li> </ul>                           | <ul style="list-style-type: none"> <li>• 4–20mA proportional control/transmitting output</li> </ul>        |
| Temperature: –20~70℃                                                                                  | <ul style="list-style-type: none"> <li>• RS485 communication output</li> </ul>                             |
| Humidity: 0–95%, no hydrometeor.                                                                      | <ul style="list-style-type: none"> <li>• Installation: Disc, wall surface, integrated mounting</li> </ul>  |
| Others: no oscilation, no interruption of magnetic field.                                             | <ul style="list-style-type: none"> <li>• Display: LCD of lattice with lights of the background.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Input</li> </ul>                                             | <ul style="list-style-type: none"> <li>• Protection Glass IP65, anticorrosive from chemicals</li> </ul>    |
| <ul style="list-style-type: none"> <li>• ARK62 Series pH electrode</li> </ul>                         | <ul style="list-style-type: none"> <li>• Power Supply: DC24V, 220V adaptor is optional.</li> </ul>         |
| <ul style="list-style-type: none"> <li>• Other pH electrode of same type.</li> </ul>                  | <ul style="list-style-type: none"> <li>• Size: 96*96*48 mm</li> </ul>                                      |
|                                                                                                       | <ul style="list-style-type: none"> <li>• Power:1W</li> </ul>                                               |

## Instrucction



Disc-mounting

90.5 × 90.5 × 40mm



Hole size of disc-mounting



Wall surface mounting



Integrated mounting

## Order Code

|                                                     |   |                       |
|-----------------------------------------------------|---|-----------------------|
| Installation                                        | 1 | Integrated mounting   |
|                                                     | 2 | Disc-mounting         |
|                                                     | 3 | Wall surface mounting |
| For example: ARK82–2<br>Installation: Disc–mounting |   |                       |

| Accessories   |  |
|---------------|--|
| Disc-Mounting |  |
| Wall Mounting |  |

## ARK83 ORP Transmitting Controller



- Digital circuit design, high level against interruption.
- Resistance reach to  $10^{16}\Omega$ , high accuracy, good repeatability.
- SMT bonding process, highly integrated, stable test, low power dissipation, good repeatability for electric unit.
- Powerful function integrated with transmitting and controlling, high&low limit, control output for relay.two outputs 4–20mA.
- RS485 interface output, connect directly with digital system.
- Can be disc, wall surface or integrated mounting.

## Technical Parameters

| ARK83 ORP Transmitting Controller                         |                                                          |
|-----------------------------------------------------------|----------------------------------------------------------|
| • Measuring Scale: ORP: -2000mV-2000mV                    | • Output:                                                |
| • Accuracy: ORP: 1 mV Temp: 0.01°C                        | • Instant flow on and low output(relay output)           |
| • Environment Requirement                                 | • 4–20mA proportional control/transmitting output        |
| Temperature: -20~70°C                                     | • RS485 communication output                             |
| Humidity: 0–95%, no hydrometeor.                          | • Installation: Disc, wall surface, integrated mounting  |
| Others: no oscilation, no interruption of magnetic field. | • Display: LCD of lattice with lights of the background. |
| • Input                                                   | • Protection Glass IP65, anticorrosive from chemicals    |
| • ARK63 Series ORP electrode                              | • Power Supply: DC24V, 220V adaptor is optional.         |
| • Other ORP electrode of same type.                       | • Size: 96*96*48 mm                                      |
|                                                           | • Power:1W                                               |

## Instrucction



Disc-mounting

90.5 × 90.5 × 40mm



Hole size of disc-mounting



Wall surface mounting

## Order Code

| Installation                                        | 1 | Disc-mounting         |
|-----------------------------------------------------|---|-----------------------|
|                                                     | 2 | Wall surface mounting |
| For example: ARK83-1<br>Installation: Disc-mounting |   |                       |

| Accessories   |  |
|---------------|--|
| Disc-Mounting |  |
| Wall Mounting |  |

## ARK84 Conductivity Transmitting Controller



- Digital circuit design, high level against interruption.
- SMT bonding process, highly integrated, stable test, low power dissipation, good repeatability for electric unit.
- Powerful function integrated with transmitting and controlling, high & low limit, control output for relay, two outputs 4–20mA.
- RS485 interface output, connect directly with digital system.
- Can be disc, wall surface or integrated mounting.

### Technical Parameters

| ARK84 Con. Transmitting Controller         |  | • Input                                                  |
|--------------------------------------------|--|----------------------------------------------------------|
| • Measuring Scale:                         |  | • ARK64 Series CM electrode                              |
| Conductivity: K=0.01 0.055—20 $\mu$ s/cm   |  | • Other CM electrode of same type.                       |
| K=0.1 0.0—200 $\mu$ s/cm                   |  | • Output:                                                |
| K=1.0 1.0—2000 $\mu$ s/cm                  |  | • Instant flow on and low output (relay output)          |
| K=10 10—20000 $\mu$ s/cm                   |  | • 4–20mA proportional control/transmitting output        |
| Temp: 0.00—130.00°C                        |  | • RS485 communication output                             |
| • Temp Compensation:                       |  | • Installation: Disc, wall surface, integrated mounting  |
| Auto Temp Compensation: PT1000 Mode        |  | • Display: LCD of lattice with lights of the background. |
| Manual Temp Compensation: Buttons Settings |  | • Protection Glass IP65, anticorrosive from chemicals    |
| • Environment Requirement                  |  | • Power Supply: DC24V.                                   |
| Temperature: -20~70°C                      |  | • Size: 96*96*48 mm                                      |
| Humidity: 0–95%, no hydrometeor.           |  | • Power: 1W                                              |

### Instruction



Disc-mounting

90.5 × 90.5 × 40mm



Hole size of disc-mounting



Wall surface mounting

### Order Code

|                                                     |   |                       |
|-----------------------------------------------------|---|-----------------------|
| Installation                                        | 1 | Disc-mounting         |
|                                                     | 2 | Wall surface mounting |
| For example: ARK84-1<br>Installation: Disc-mounting |   |                       |

| Accessories   |  |
|---------------|--|
| Disc-Mounting |  |
| Wall Mounting |  |

## ARK Electrode

### pH electrode

- Cable for output reach to 800m, stable signal.
- Use large quantity of ethylene solution as interface, not easily to be blocked up, stable penetration.
- Use high polymer as electrolyte and solid gel salt bridge, assure stability of electrode measurement and even extend lifetime.
- Use low-resistance&sensitive glass film and salt ring of Germany technology.
- Eliminate all kinds of interruption effectively, increase stock of ion, respond fast, stable, long-lifetime.

### ORP electrode

- Use Teflon diaphragm of ring- shape with large dimension, against pollution, blocked up, meanwhile keep stable potential in the solution.
- Solid gel as reference electrolyte, no need to compensate electrolyte solution.
- Use special sealing technology to protect electrode from corrosion of strong acid&alkali, assure its reliability in bad environment.

### Conductivity electrode

- Stable performance, long lifetime.
- Convenient to install, uninstall, and clean.
- Compatible with all the geneal con.transmitter in worldwide.

All the above probes could be used in industrial waste water, electroplating, pool water and other water disposal system and chemical industry, dyeing, biological medication, papermaking, food&drink area, RO, purified-water disposal, chemical industry cleanness, sea-water desalting, circulated cool water etc.

#### PH sensor



ARK62-11



ARK62-21



ARK63-1

#### ORP sensor



ARK64-1



ARK64-2



ARK64-3



ARK64-4

#### Conductivity Sensor

| Model               | ARK62-1                                | ARK62-2           | ARK63-1           | ARK64-1             | ARK64-2            | ARK64-3           | ARK64-4           |
|---------------------|----------------------------------------|-------------------|-------------------|---------------------|--------------------|-------------------|-------------------|
| Electrode Type      | ARK62-11 pH                            |                   | ORP               | Conductivity Sensor |                    |                   |                   |
| Constant            | Co. > 0.1 $\mu$ S/CM pure water        | waste water       |                   | 0.01 $\pm$ 0.002    | 0.1 $\pm$ 0.02     | 1.0 $\pm$ 0.2     | 10 $\pm$ 2.0      |
| Measuring Scale     | 2-12                                   | 2-12              | -2000~2000        | 0.055-20            | 0-200              | 1-2000            | 10-20000          |
| Measuring Unit      | pH                                     | pH                | mV                | $\mu$ S/cm          | $\mu$ S/cm         | $\mu$ S/cm        | $\mu$ S/cm        |
| Accuracy            | 0.01 pH 0.01 $^{\circ}$ C              |                   | 1 mV              | $\pm$ 1%/0.3        |                    |                   |                   |
| Temp. Compensation  | PT100/1000                             |                   |                   | PT100/1000          |                    |                   |                   |
| Electrode Structure | Bipolar                                | Bipolar           | Bipolar           | Bipolar             | Bipolar            | Bipolar           | Bipolar           |
| Max. Pressure       | 0.6 Mpa                                |                   |                   | 1.0 Mpa             |                    |                   |                   |
| Temp. Scale         | 0-60 $^{\circ}$ C                      | 0-60 $^{\circ}$ C | 0-80 $^{\circ}$ C | 0-120 $^{\circ}$ C  | 0-120 $^{\circ}$ C | 0-80 $^{\circ}$ C | 0-80 $^{\circ}$ C |
| Body Material       | PPS                                    | PPS               | PPS               | SS316               | SS316              | PPS               | PPS               |
| Electrode Material  |                                        |                   |                   | SS316               | SS316              | Platinum          | Graphite Platinum |
| Connection          | 3/4NPT, flow-through, submersible type |                   |                   |                     |                    |                   |                   |
| Cable Length        | Standard 5m                            |                   |                   |                     |                    |                   |                   |

## ARK91 Meters Installation Accessories

| Item    | Product                          | Specification                                              | Diagram                                                                             |
|---------|----------------------------------|------------------------------------------------------------|-------------------------------------------------------------------------------------|
| ARK91-1 | Three-way Installation Part(PVC) | DN25 DN32 DN40                                             |  |
| ARK91-2 | Flange Installation Part(PP)     | DN50 DN65 DN80 DN100 DN125<br>DN150 DN200 DN250 DN300      |  |
| ARK91-3 | Welded Installation Part(SS316)  | DN40 DN50 DN65 DN80 DN100 DN125<br>DN150 DN200 DN250 DN300 |  |

## pH/ORP Electrode Series

