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Nanfang Pump Industry Co.,Ltd.

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## Metering Pump Selection Manual

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subject to amendments



NANFANG PUMP INDUSTRY CO.,LTD.

# Company Profile



Founded in 1991, Nanfang Pump Industry Co., Ltd. (hereinafter referred to as CNP) has been listed on the Shenzhen Stock Exchange on 9th December 2010; Stock name: CNP; Stock code: 300145.

As the first enterprise specializing in the research and large-scale production of stainless steel stamping welded centrifugal pump in China, CNP is currently the professional manufacturer with the highest volume of production and marketing in that industry. It ranks first in the country in terms of product scope, sales volume, and production quality. The company has set up a complete network of marketing services to meet the requirements of overseas markets as well as domestic needs. The products have seen a wide range of application in the area of pressurization, industry, living water, cycling of air-conditioning water, heat supply, fire extinguishing system, pumping of underground water, treatment of sewage and waste water, chemical industry and desalination of sea water etc.

CNP has now entered into the fast track of development and has taken a major step forward in forging China Strong Pump Enterprise and World's famous brand in the Pump Industry. In order to better meet the client's needs and requirements for expansion, it has set up a wide network of selling and service, as well as offices and service centers in major cities in China, which are aimed at providing timely and effective services for our clients. Meanwhile, our company has successfully penetrated into the world market by forging a good business relationship with more than 50 countries and regions in the Europe, Northern American, and Southeast Asia etc.

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## GW Series Mechanical Diaphragm metering Pump



### Technical Data:

Flow Rate:5L/h-53L/h  
 Maximum discharge pressure:10bar  
 Regulating ratio:10:1, Steady precision: ±2%  
 Suction lift:0.5M  
 Maximum temperature:40°C  
 Maximum suction pressure:1bar

### Main Features:

#### Hydraulic End

- Diaphragm is mechanically driven, no diaphragm protecting plate at the material side ,easy to let material getting through.
- Many kind of pump head material like PVC,PVDF,316SS, fit for all kinds of materials.
- Self-cleaning one-way valve structure.

#### Driving End

- Variable eccentric institutions regulation , insure flow pulsation gently vary.
- Enchanted structure design , suitable for tough operation environment.

#### Control Mode

- Power supply:380V/220V -50Hz/60Hz/single phase/three phase.
- motor controller,control motor with mode "run/stop", adjust output flow.

### Major Applications

Reverse osmosis,industrial water and waste water, swimming pool etc, all kinds of water treatment process.

### Main components material of hydraulic end

#### GW005—GW055

Hydraulic end material	Pump head material	Valve body	Valve seat	Valve ball	Diaphragm	Seal ring	Connection
PVC	PVC	PVDF	PVDF	Ceramic	PTFE	Fluorous rubber	PVC
PVDF	PVDF	PVDF	PVDF	Ceramic	PTFE	PTFE	PVDF
316SS	316SS	316SS	316SS	316SS	PTFE	Fluorous rubber	316SS

### Accessory

- Provide system required accessories as : Filter, Adjusting pillar,Buffer,Safety Valve and Back Pressure valve etc.
- GW 005-GW055 range and pump with PVC pump head , along with the dosing pump to provide injection valve, foot valve, counter weight and 6 meters tube ,except the high viscosity pump head and PVDF pump head.

### Standard configuration motor performance parameters

- Power supply:380V220V -50Hz/60Hz/single phase/three phase
- Protection grade: IP 54
- Insulation class: F
- All the motors accord with international electrical association IEC standard or US electrical committee NEC standards.

### GW series mechanical diaphragm metering pump product code and flow pressure gauge

Code	Series	Flow Rate	Hydraulic end	Port	Motor
	GW				

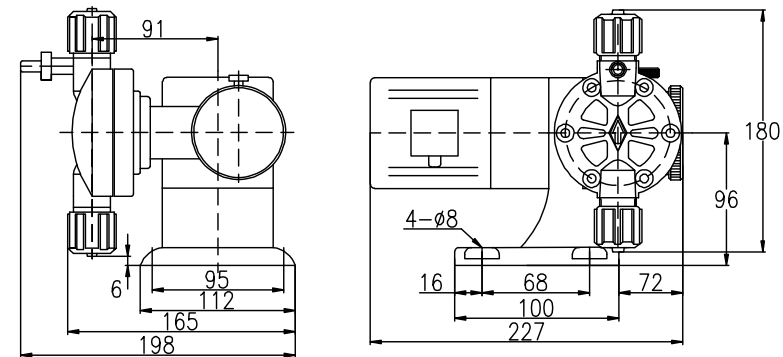
Series	Code	Description
	GW	GW series mechanical diaphragm metering pump

Flow rate	Code	LPH@Pmax	SPM(mm)	Pmax(bar)	stroke (mm)	diagram (mm)	Motor power (W)	Weight (kg)
	GW005	6	30	10	4	60	25	3.5
	GW010	13	50					
	GW025	24	83	7				
	GW030	30	100					
	GW035	36	120	5				
	GW045	46	150	4				
	GW055	53	166	2				

Hydraulic end	Code	Description	Port	GW005-055		
				PVC	PVDF	316
P	PVC hydraulic end			1/2" F	----	1/2" F
S	316 hydraulic end			DN15	----	1/2" F
T	PVDF hydraulic end			8x12	8x12 (**)	----
X		Special port		Consult CNP,indicate when ordering.		

Motor	Code	Description
	1	25W,1440rpm,3-50-380V,IP55/F/TEFC
	2	25W,1440rpm,1-50-220V,IP55/F/TEFC

### Dimension figure



## GD Series Mechanical Diaphragm metering Pump



### Technical Data:

Maximum Flow Rate:130L/H  
 Maximum discharge pressure:10bar  
 Regulating ratio:10:1  
 Steady precision: ±2%  
 Suction lift:2M  
 Maximum suction pressure:2bar  
 Maximum temperature:40°C

### Main Features:

#### Hydraulic End

- ©Diaphragm is mechanically driven, it adopt multi-layer structure with PTFE and elastic rubber, no leaks, durable
- ©No diaphragm protecting plate at the material side ,easy to let material getting through.
- ©Many kind of pump head material like PVC,PVDF,316SS, fit for all kinds of materials.
- ©Self-cleaning one-way valve structure.

#### Driving End

- ©Double cam structure, suitable for tough operation environment, low noise, easy to disassemble and repair .
- ©Oil bath lubrication,driving components have long working life.
- ©Flow regulation in downtime or running state.
- ©The highly accurate worm and gear enables it run smoothly.

#### Major Applications

Deliver chemicals in many areas, e.g. Environmental protection, municipal engineering, pharmacy, food, waste water treatment etc.

### Main components material of hydraulic end

#### GD030-GD050

Hydraulic end material	Valve body	Valve seat	Valve ball	Diaphragm	Seal ring	Connection
PVC	PVC	PVDF	Zirconia	PTFE	Fluorous rubber	PVC
PVDF	PVDF	PVDF	Zirconia	PTFE	Fluorous rubber	PVDF
316SS	316SS	316SS	316SS	PTFE	Fluorous rubber	316SS

#### GD055-GD130

Hydraulic end material	Valve body	Valve seat	Valve ball	Diaphragm	Seal ring	Connection
PVC	PVC	PVDF	Zirconia	PTFE	Fluorous rubber	PVC
PVDF	PVDF	PVDF	Zirconia	PTFE	Fluorous rubber	PVDF
316SS	316SS	316SS	316SS	PTFE	Fluorous rubber	316SS

### Control Mode

- ©Motor controller, control motor with mode "run/stop", adjust output flow through adjusting handle.
- ©Power supply:220V -50Hz-single phase/380V-50Hz-three phase .
- ©Variable frequency controller,accept external control signal,adjust stroke speed.  
 Power supply:200V -50Hz-single phase/380V-50Hz-three phase .  
 Input signal:4-20mA analog signal.

### Accessory

Provide system required accessories as:Filter, Adjusting pillar,Buffer,Safety valve and Back pressure valve etc.

Safety valve is mandatory. (GD030,GD050 and pump with connection code R PVC/PVDF pump head, along with the dosing pump to provide injection valve, foot valve, counter weight and 6 meters tube.





### GD series mechanical diaphragm metering pump product code and flow pressure gauge

Code	Series	Flow Rate	Hydraulic end	Port	Motor
	GD				

Series	Code	Description
	GD	GD series mechanical diaphragm metering pump

Flow rate	Code	LPH@Pmax	Stroke(mm)	SPM	Pmax(bar)	Motor power
	030	34	4	80	10	0.2kW
	050	44	4	116	10	
	055	59	4	96	10	
	070	71	4	116	10	
	085	91	6	80	10	
	100	101	6	96	8	
	130	135	6	116	8	

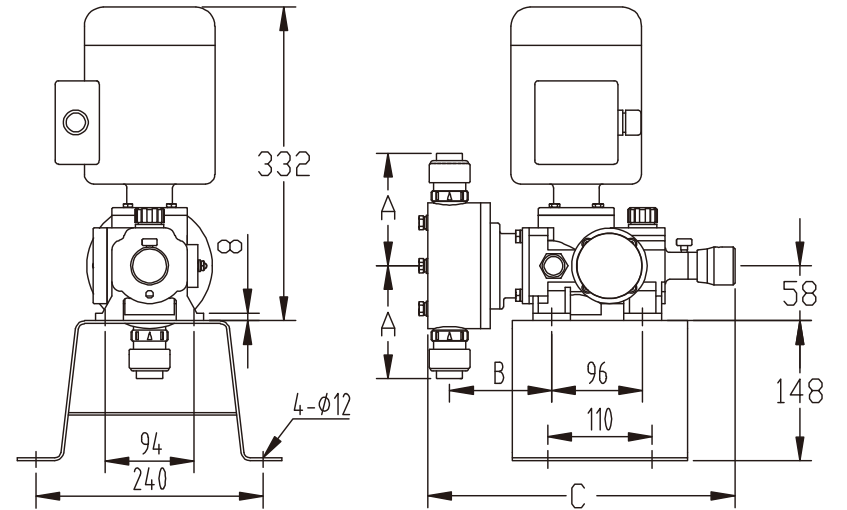
Hydraulic end	Code	Description
	P	PVC hydraulic end
	S	316 hydraulic end
	T	PVDF hydraulic end
	Z	Special material hydraulic end.Consult CNP,indicate when ordering.

Port	Code	Description	GD030-050			GD055-130		
			PVC	PVDF	316	PVC	PVDF	316
	P	NPT threaded port	----	----	1/2" F	1/2" F	1/2" F	1/2" F
	Q	The inner pipe mouth hard tube intubation port	DN15	DN15	----	DN15	DN15	----
	R	Intubation 6x12 Tube	6x12	6x12	----	----	----	----
	X	Special port	Consult CNP,indicate when ordering.					

Motor	Code	Description
	1	200W,1440rpm,3-50-380V. IP55/F/TEFC
	2	200W.Capacitor start. 1440rpm,1-50-220V. IP55/F/TEFC
	3	Others.Consult CNP,indicate when ordering.

Baseplate	Code	Description
	N	No baseplate
	Y	Baseplate

### Dimension figure



Pump head material	GD030-050				GD055-130			
	Port code	A	B	C	Port code	A	B	C
PVC	P	101	91	301	P	119	108	327
	Q	101			Q	119		
	R	108			R			
PVDF	P	101	91	301	P	119	108	327
	Q	101			Q	119		
	R	108			R			
316	P	95	91	301	P	123	108	327
	Q				Q			
	R				R			

## GMGB Series Mechanical Diaphragm Metering Pump



### Main Function Parameter

- ⊙ Single-head maximum flow: 1800L/H
- ⊙ Maximum discharge pressure: 12bar
- ⊙ Regulating ratio 10:1, Steady precision ± 2%
- ⊙ Suction lift: 3m
- ⊙ Maximum suction pressure: 2bar
- ⊙ Maximum temperature: 40°C

### Main features

#### Hydraulic end

- ⊙ Diaphragm is mechanically driven, no diaphragm protecting plate at the material side, ripe for material getting through
- ⊙ Many kind of pump head material like PVC, PVDF, 316SS, high viscosity, sizing agent, fit for all kinds of materials
- ⊙ Self-cleaning one-way valve structure

#### Driving end

- ⊙ Variable eccentric institutions regulation, insure flow pulsation gently vary
- ⊙ Enhanced structure design, suitable for tough operation environment
- ⊙ Wear-resisting ball bearings, running is more stable
- ⊙ Oil bath lubrication, driving components have long working life
- ⊙ Flow regulation in downtime or running state, adjustment mode can be selected manually, motor-driven or frequency conversion

#### Control mode

- ◆ Electric stroke controller, accept external control signal, adjust stroke length
- ⊙ Power supply: 220V-50Hz-single phase
- ⊙ Input signal: 4-20mA analog signal
- ⊙ Output signal: 4-20mA/1-5V analog signal, for records shown and control system usage
- ◆ Variable frequency controller, accept external control signal, adjust stroke speed
- ⊙ Power supply: 220V-50Hz-single phase/380-50Hz-three phase
- ⊙ Input signal: 4-20mA analog signal
- ◆ Motor controller, control three phase motor with mode "run/stop", adjust output flow
- ⊙ Power supply: 200-240V-50/60Hz-single phase
- ⊙ Control mode: can accept 4-20mA analog signal, external pulse signal or manual adjustment

### Major Applications

- ⊙ Municipal, industrial water and waste water, swimming pool etc. all kinds of water treatment process

### Options

- ⊙ Two diaphragm pump heads
- Two diaphragm pump heads, broken pressure gauge detection and pressure switch detection
- ⊙ Stroke count sensor
- PNP output/NPN output/Relay output



### The material of the main components of hydraulic end

#### ⊙ GM0002 ~ GM0050

Hydraulic end material	Hydraulic end cover	Valve body	Valve seat	Valve ball	Diaphragm	Seal ring	Connection
PVC	PVC	PVDF	PVDF	Ceramic	PTFE	Fluorous rubber	PVC
PVDF	PVDF	PVDF	PVDF	Ceramic	PTFE	PTFE	PVDF
316 SS	316 SS	316 SS	316 SS	316 SS	PTFE	Fluorous rubber	316 SS

#### ⊙ GM0090 ~ GM0500

Hydraulic end material	Hydraulic end cover	Valve body	Valve seat	Valve ball	Diaphragm	Seal ring	Connection
PVC	PVC	PVC	PVC	Glass	PTFE	Fluorous rubber	PVC
PVDF	PVDF	PVDF	PVDF	Ceramic	PTFE	PTFE	PVDF
316 SS	316 SS	316 SS	316 SS	316 SS	PTFE	Fluorous rubber	316 SS

#### ⊙ GB0080 ~ GB1200

Hydraulic end material	Hydraulic end cover	Valve body	Valve seat	Valve ball	Diaphragm	Seal ring	Connection
PVC	PVC	PVC	PVC	Ceramic	PTFE	Fluorous rubber	PVC
PVDF	PVDF	PVDF	PVDF	Ceramic	PTFE	PTFE	PVDF
316 SS	316 SS	316 SS	316 SS	316 SS	PTFE	Fluorous rubber/PTFE	316 SS

#### ⊙ GM1500-GM1800

Hydraulic end material	Hydraulic end cover	Valve body /Bush	Valve plate /Lift limit plate	Spring	Diaphragm	Seal ring	Connection
PVC	PVC	PVC/PVC	PVC/PVC	Hastelloy c	PTFE	Fluorous rubber	PVC
PVDF	PVDF	PVDF/PVDF	PVDF/PVDF	Hastelloy c	PTFE	PTFE	PVDF
316 SS	316 SS	316 SS /316 SS	316 SS /316 SS	Hastelloy c	PTFE	Fluorous rubber	316 SS

### Accessory

Provide system required accessories as: Filter, Adjusting pillar, Buffer, Safety valve and Back pressure valve etc., Safety valve is mandatory.  
(GM0002-GM0050 range and pump with PVC/PVDF pump head, along with the dosing pump to provide injection valve, foot valve, counter weight and 6 meters tube, except the high viscosity pump head)

### Standard configuration motor performance parameters

Power supply: 380V-50Hz-three phase/220V-50Hz-single phase  
Protection grade: IP55  
Insulation class: F

Explosion-proof motor, 60Hz motor can be chosen, All the motors accord with international electrical association IEC standard or US electrical committee NEC standards

## GM&GB series mechanical diaphragm metering pump product code and flow pressure table

Code	Series	Flow	Hydraulic end	Port	Motor	Adjustment	Baseplate	Option		
Series	<b>Code</b>	<b>Description</b>			<b>Code</b>	<b>Description</b>				
	GM	GM series mechanical diaphragm dosing pump			GB	GB series mechanical diaphragm dosing pump				
Flow	<b>Code</b>	<b>LPH@Pmax</b>	<b>SPM</b>	<b>Pmax(bar)</b>	<b>Motor rate</b>	<b>Code</b>	<b>LPH@Pmax</b>	<b>SPM</b>	<b>Pmax(bar)</b>	<b>Motor rate</b>
	GM0002	2.25	36	12	0.25kW <sup>①</sup>	GB0080	82	36	10	0.55kW 0.75kW <sup>②</sup>
	GM0005	4.5	72			GB0180	167	72		
	GM0010	9	144			GB0250	237	102		
	GM0025	25	72			GB0350	334	144		
	GM0050	50	144	10	GB0450	416	180	7	0.75kW	
	GM0090	85	72	GB0500	464	144				
	GM0120	115	72	GB0600	583	180				
	GM0170	170	144	7	GB0700	656	102			
	GM0240	235	144	5	0.37kW <sup>③</sup>	GB1000	946	144	3.5	0.75kW
	GM0330	315	144			GB1200	1200	180		
	GM0400	400	144			GB1500	1500	180		
	GM0500	500	180			GB1800	1800	206		

1) This power is available for constant speed or frequency conversion 5-50Hz conversion need to use inverter motor;  
2) This power is available for single phase and inverter motor.

Hydraulic end	Code	Description	Code	Description
	P	PVC hydraulic end	V	High viscosity application, PVC hydraulic end
	S	316 hydraulic end	K	Sizing agent application, GM0025-0500, 316 hydraulic end; GB: PVC hydraulic end
	T	PVDF hydraulic end	M	Mixture application, GM: PVDF hydraulic end
	F	NaClO application; PVC hydraulic end*	Z	Special materials hydraulic end, consult CNP, indicate when ordering

(\*) GM0002-0050: EPDM O ring; GM0090-0500, GB: PTFE covering O ring

Port	Code	Description	GM0002-0050			GM0090-0500			GB0080-0450			GB0500-1200			GB1500			GB1800		
			PVC	PVDF	316	PVC	PVDF	316	PVC	PVDF	316	PVC	PVDF	316	PVC	PVDF	316	PVC	PVDF	316
P	NPT	threaded port	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	
Q	The inner pipe mouth hard tube	intubation port	DN15	---	---	DN15	---	---	DN15	---	---	DN25	---	---	DN40	---	---	---	---	
R	Intubation	6 x 12 Tube	6 x 12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
H	GM tube	High viscosity application dedication	15 x 23 9 x 12	---	---	DN15	---	---	---	---	---	---	---	---	---	---	---	---	---	
X	Special port	Consult CNP, indicate when ordering	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

Dash area is standard configuration, firstly high viscosity pump head V, sizing agent K mixture pump head M, if no special optional, choose port according hydraulic end (\*), the default features configured tube is PVC material, if need PVDF tube (6m), order additionally, and enquiry to factory.

Motor	Code	Description (GM)	Description (GB)
	1	250W IEC71, 1440rpm, 3-50-220/380V, IP55/F/TEFC	550W, IEC71, 1440rpm, 3-50-220/380V, IP55/TEFC
	2	1/3hp, NEMA 56C, 1440rpm, 3-50-220/380V, NEMA 3/TEFC	1hp, NEMA 56C, 1440rpm, 3-50-220/380V, NEMA 3/TEFC
	3	370W IEC71, 1440rpm, 3-50-220/380V, IP55/F/TEFC, Ex- <del>II</del> BT4	550W, IEC71, 1440rpm, 3-50-220/380V, IP55/F/TEFC, Ex- <del>II</del> BT4
	4	370W IEC71, 1440rpm, 3-50-220/380V, IP55/F/TEFC	750W, IEC80, 1440rpm, 3-50-220/380V, IP55/F/TEFC
	5	250W Capacitor start type, IEC71, 1440rpm, 1-50-220V, IP55/F/TEFC	750W, IEC80, 1440rpm, 3-50-220/380V, IP55/F/TEFC, Ex- <del>II</del> BT4
	6	250W IEC71, 1440rpm, 3-50-200/400V, 3-60-230/480V, IP55/F/TEFC	550W, Capacitor start type, IEC80, 1440rpm, 1-50-220V, IP55/F/TEFC
	7	370W IEC71, 1440rpm, 3-50-200/380V, 3-60-230/480V, IP55/F/TEFC	750W, Capacitor start type, IEC80, 1440rpm, 1-50-220V, IP55/F/TEFC
	8	---	550W, IEC80, 1440rpm, 3-50-220/380V, IP55/F/TEFC
	9(5)	Pump default without motor, retain IEC71 port	Pump default without motor, retain IEC71 port
	9(8)	370W Capacitor start type, IEC71, 1440rpm, 1-50-220V, IP55/F/TEFC	Pump default without motor, retain IEC80 port
	9	Other, pls consult CNP company	Other, pls consult CNP company

Single phase motor can not be used with the motor switch at the same time.

Adjustment	Code	Description (GM)	Description (GB)	Remarks
	M	Manual stroke adjusting	Manual stroke adjusting	---
	N	Electric stroke adjusting, 4-20mA, 220VAC-1Ph	Electric stroke adjusting, 4-20mA, 220VAC-1Ph	---
	E	---	Electric stroke adjusting, 4-20mA, 220VAC-1Ph, Ex, Proof	---
	F	Frequency conversion control	Frequency conversion control	---
	T	Motor switch controller and electric stroke adjusting	---	Apply to GM series
	P	Motor switch controller (1Ph-50Hz-220VAC)	---	Apply to GM series

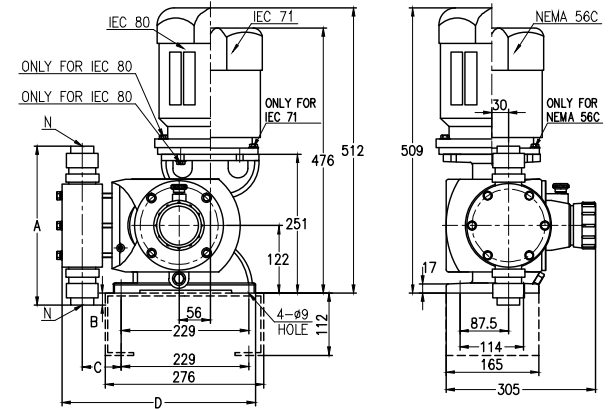
Baseplate	Code	Description (GM)	Description (GB)	Remarks
	N	No baseplate	No baseplate	---
	Y	Baseplate(2)	Baseplate	---

Options	Code	Description (GM)	Description (GB)	Remarks
	N	No option	No option	---
	A	Stroke count sensor	Stroke count sensor	---
	B	The diaphragm rupture test and pressure gauge	The diaphragm rupture test and pressure gauge	Pressure gauge
	C	The diaphragm rupture test and pressure gauge switch(2)	The diaphragm rupture test and pressure gauge switch	Normal pressure switch, including baseplate
	D	The diaphragm rupture test and pressure gauge, explosion-proof pressure switch(2)	The diaphragm rupture test and pressure gauge, explosion-proof pressure switch	Normal pressure switch and pressure gauge, including baseplate
	X	Other, pls consult CNP company	Other, pls consult CNP company	Special configuration indicated in the contract

Remarks: This code is used for G series dosing pump made by CNP, this code apply to the usage in marketing.  
(2), GM series two diaphragm with pressure switch, default with baseplate, and should choose "N" in the options of baseplate

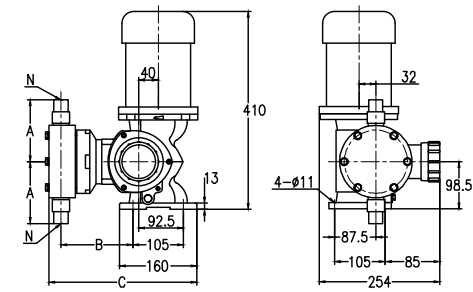
## GB pump

Model	GB40(80-450)		GB60(500-600)		GB80(700-1200)		GB80(1500)		GB80(1800)	
	Plastics	Metal	Plastics	Metal	Plastics	Metal	Plastics	Metal	Plastics	Metal
A	237	260	296	338	362	414	374	448	420	458
B	5	4	19	46	59	85	84	100	87	102
C	60.3	60.3	71.4	76.2	96.4	100	96.4	100	96.4	100
D	333	333	351.2	348	373.1	373.1	373.1	373.1	373.1	373.1
N	1.2" F NPT (PVC pump head only)	1/2" F NPT	1" F NPT	1" M NPT	1" F NPT	1" M NPT	1" F NPT	1" M NPT	1 1/2" M NPT	1 1/2" M NPT



## GM pump

Pump head	GM0002 - GM0500						GM0090 - GM0500		
	Material	Port code	A	B	C	Port code	A	B	C
PVC	P	108	116	250	---	Q	127	159	322
PVDF	P	108				N	131		
S16	N	102	---	---	---	N	131	---	---



## GX Series Mechanical Diaphragm Metering Pump



### Technical Data:

Single-end maximum Flow Rate:2100L/h  
 Maximum discharge pressure:9bar  
 Regulating ratio:10:1  
 Steady precision: ±2%  
 Suction lift:2.5M  
 Maximum temperature:40°C

### Main features

- ©Diaphragm is mechanically driven, no diaphragm protecting plate at the material side, easy to let material getting through.
- ©Many kind of pump head material like PVC,PVDF,316SS, high viscosity, sizing agent,fit for all kinds of materials. Self-cleaning one-way valve structure.
- ©variable eccentric institution regulation , insure flow pulsation gently vary. Suitable for tough operation environment.
- ©Oil bath lubrication, driving components have long working life.
- ©Flow regulation in downtime or running state.

### Major Applications

- ©municipal , industrial water and waste water, swimming pool etc.
- ©Petrochemical industry,chemical industry, Electricity, Metallurgy,Pharmacy,Food industry,etc.

### Main components material of hydraulic end

Hydraulic end material	Pump head	Pump body	Valve seat	Valve ball	Diaphragm	Oring	Connection
PVC	PVDF	PVC	PVDF	Ceramic/PVDF	PTFE	Fluorous rubber	PVC
PVDF	PVDF	PVDF	PVDF	Ceramic/PVDF	PTFE	Fluorous rubber	PVDF
316SS	316SS	316SS	Hastelloy C	316SS	PTFE	Fluorous rubber	316SS

### Control mode

- ©Power supply:380V/220V -50Hz/60Hz/single phase/three phase.
- ©Variable frequency controller,accept external control signal,adjust stroke speed.Input signal:4-20mA analog signal.
- ©Motor controller,control three phase motor with mode "run/stop", adjust output flow.





### GX series mechanical diaphragm metering pump product code and flow pressure gauge

Code	Series	Flow Rate	Hydraulic end	Port	Motor
	GX				

Series	Code	Description
	GX	GX series mechanical diaphragm metering pump

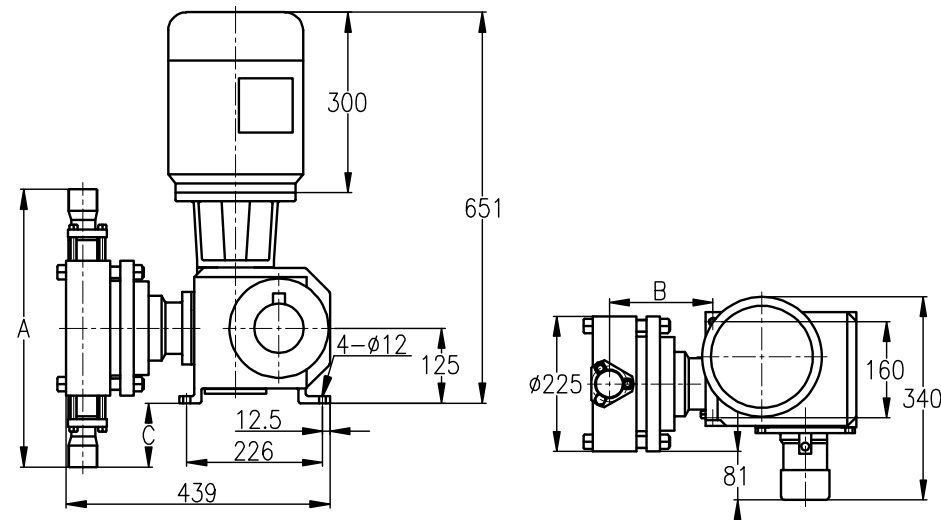
Flow rate	Code	LPH@Pmax	Pmax(Mpa)	SPM (min-1)	Stroke(mm)	Motor power(kw)	Weight(kg)
GX900	910	0.6(PVC/PVDF)	89	20	1.5	75±10	
	910	0.8(316SS)	89				
GX1350	1350	0.6(PVC/PVDF)	130				
	1350	0.8(316SS)	130				
Gx1800	1820	0.6	178				
GX2100	2100	0.6	203				

Hydraulic end	Code	Description
	P	PVC hydraulic end
	T	PVDF hydraulic end
	S	316SS hydraulic end

Port	Code	Description	GX 900			GX1350/1800/2100		
			PVC	PVDF	316	PVC	PVDF	316
	P	NPT threaded port	1" F	1" F	1" M	1/2" F	1-1/2" F	1-1/2" F
	Q	The inner pipe mouth hard tube intubation port	DN25	DN25	----	----	----	----
	X	Special port	Consult CNP, indicate when ordering.					

Motor	Code	Description
	1	Three-phase 200V/380V..1440rpm. IP55/F
	2	220V.50Hz. 1440rpm.1-50-220V. IP55/F
	3	Three-phase explosion-proof 220/380V.50Hz.1440rpm.IP55/F,DIIBT4
	4	Three-phase frequency conversion 220/380V.50Hz.1440rpm.IP55/F
	5	Pump default without motor, retain IEC90 port.
	6	Other motors. Consult CNP, indicate when ordering.

### Dimension figure



Pump head material	GX900			GX1350/1800/2100				
	Port code	A	B	C	Port code	A	B	C
PVC	P	362	165.5	56	P	420	165.5	85
	Q	362	165.5	56	Q	420	165.5	85
PVDF	P	362	165.5	56	P	420	165.5	85
	Q	362	165.5	56	Q	420	165.5	85
316SS	P	433	172.5	91.5	P	462	172.5	106

## GH Series Hydraulic Diaphragm Metering Pump



### Technical Data:

Maximum Flow Rate: 500L/h  
 Maximum discharge pressure: 40bar  
 Regulating ratio: 10:1  
 Steady precision: ±2%  
 Suction lift: 3M

### Main features

#### Driving end

- ◎ Eccentric institutions drive, compact structure, less space required;
- ◎ Unique worm / gear structure ensure the steady working of the mechanical parts.
- ◎ The tampered roller bearings at the end of gear ensure stable operation under heavy load for a long time.
- ◎ Oil bath lubrication, change oil regularly, no need special maintenance for lubrication system.
- ◎ All the working components are oil bath, they have long working life.
- ◎ Flow regulation in downtime or running state. Adjustment mode can be selected manually, motor-driven, pneumatic-driven or frequency conversion.

### Control mode

#### Hydraulic end

- ◎ Diaphragm is hydraulic -driven, long service life.
- ◎ The high precision design of one way check valve ensure the accuracy of the pump.
- ◎ The built-in structure of pressure relief valve will protect pump head and diaphragm automatically.
- ◎ Many kind of pump head material like PVC, PVDF, 316SS, Alloy 20, Hastelloy Alloy, suit for variable materials.
- ◎ Option: pressure double diaphragm leak detection (local/long-distance) alarm.

### Major Applications

- ◎ Petrochemical industry, chemical industry, refinery process
- ◎ Power plant boiler water treatment

## GH series hydraulic diaphragm dosing pump product code

Series	Flow Rate	Pressure	Material	Motor	Port	Adjustment	Detection	Baseplate
Code GH	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Series	Code	Description
	GH	GH Series hydraulic diaphragm metering pump

Flow rate	Description
	e. g. 025 stand for the flow rate is 25l/h

Pressure	Code	G	A	B	C	D	E	F
Implication		40 bar	30 bar	25 bar	20 bar	15 bar	12 bar	10 bar

Hydraulic end	Code	P	S	T	A	B
Material		PVC	316SS	PVDF	Alloy20	Alloy22

Motor	Code	Description
	1	550W.IEC71, 1440rpm, 3-50-220/380V, IP55/F/TEFC
	2	550W.IEC80, 1440rpm, 1-50-220V, IP55/F/TEFC
	3	550W.IEC71, 1440rpm, 3-50-220/380V, IP55/F/TEFC/Ex-dIIBT4
	4	750W.IEC80, 1440rpm, 3-50-220/380V, IP55/F/TEFC
	5	750W.IEC80, 1440rpm, 1-50-220V, IP55/F/TEFC
	6	750W.IEC80, 1440rpm, 3-50-220/380V, IP55/F/TEFC/Ex-dIIBT4
	7	Pump default without motor, retain IEC71 port.
	8	Pump default without motor, retain IEC80 port.

Adjustment	Code	Description
	M	Manual stroke adjusting
	N	Manual stroke adjusting, 4-20mA, 220VAC-1Ph
	E	Electric stroke adjusting 4-20mA, 220VAC-1Ph, Ex, Proof
	F	Frequency conversion control, (0.55kw increase to 0.75kw, no 0.75KW)

Port	Code	Description	Note
	P	NPT threaded port	1/2" F
	Q	The inner pipe mouth hard tube intubation port	DN15(PVC hydraulic end only)
	X	Special port	Consult CNP, indicate when ordering.

Detection	Code	Description	Note
	N	No detection	Single hydraulic diaphragm
	B	Diaphragm break detection and pressure gauge	Double hydraulic diaphragm
	C	Diaphragm break detection, pressure gauge and explosion-proof pressure switch	

Baseplate	Code	Description
	N	No baseplate
	Y	Baseplate

Remarks: (1) This code is used for GH series dosing pump made by CNP, this code apply to the usage in marketing;  
 (2) Beyond (less or more than) the flow or pressure range in the catalogue, or beyond the content, please consult CNP.

### GH series hydraulic diaphragm metering pump flow pressure gauge

Series	plunger diameter	Stroke (mm)	Code	Speed Ratio	SPM	LPH@Pmax	Pmax(bar)	Motor power(KW)
GH	Φ30mm	16mm	GH015G	40:1	36	15	40	0.55
			GH030G	20:1	72	30	40	
			GH040G	14:1	102	40	40	
			GH060G	10:1	144	60	40	
			GH080G	8:1	180	80	40	
	Φ35mm		GH090G	7:1	206	90	40	0.75
			GH025A	40:1	36	25	30	
			GH050A	20:1	72	50	30	
			GH075A	14:1	102	75	30	
			GH105A	10:1	144	105	30	
	Φ40mm		GH130A	8:1	180	130	30	0.75
			GH145A	7:1	206	145	30	
			GH032B	40:1	36	32	25	
			GH065B	20:1	72	65	25	
			GH100B	14:1	102	100	25	
	Φ45mm		GH125B	10:1	144	125	25	0.55
			GH150B	8:1	180	150	25	
			GH200B	7:1	206	200	25	
			GH045C	40:1	36	45	20	
			GH090C	20:1	72	90	20	
	Φ50mm		GH130C	14:1	102	130	20	0.55
			GH190C	10:1	144	190	20	
			GH220C	8:1	180	220	20	
			GH270C	7:1	206	270	20	
			GH060D	40:1	36	60	15	
	Φ55mm		GH120D	20:1	72	120	15	0.55
			GH160D	14:1	102	160	15	
			GH230D	10:1	144	230	15	
			GH300D	8:1	180	300	15	
			GH340D	7:1	206	340	15	
Φ60mm	GH070E	40:1	36	70	12	0.55		
	GH140E	20:1	72	140	12			
	GH200E	14:1	102	200	12			
	GH280E	10:1	144	280	12			
	GH360E	8:1	180	360	12			
Φ60mm	GH400E	7:1	206	400	12	0.75		
	GH085F	40:1	36	85	10			
	GH170F	20:1	72	170	10			
	GH240F	14:1	102	240	10			
	GH350F	10:1	144	350	10			
Φ60mm	GH450F	8:1	180	450	10	0.75		
	GH500F	7:1	206	500	10			

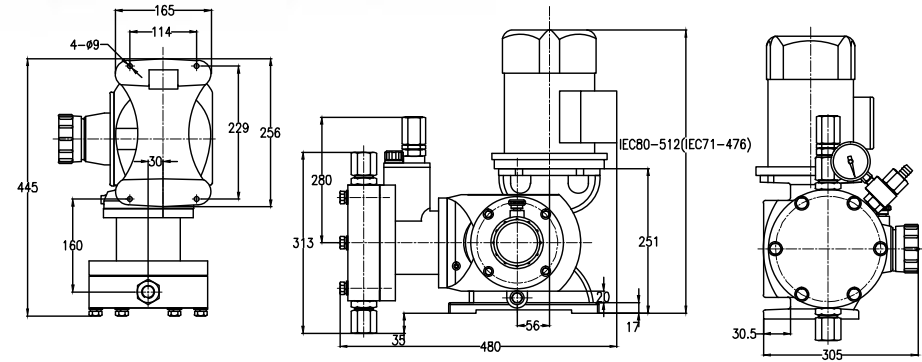
Remarks :The Speed Ratio in the gauge refers to nominal Speed Ratio  
The Pmax of plastic hydraulic end is less than 10 bar.

#### Accessory

Provide system required accessories as:Filter,Buffer,Safety valve and Back pressure valve etc.



Dimension figure







### Main components material of Pump head

Hydraulic end material	Pump head	Valve body	Valve seat	Valve ball	Diagram	Seal ring	Spring
PVC	PVC	PVC	PVDF	Ceramic	PTFE	Fluorous rubber	--
PVDF	PVDF	PVDF	PVDF	Ceramic	PTFE	Fluorous rubber	--
316SS	316SS	316SS	316SS	316SS	PTFE	Fluorous rubber	316SS
Alloy20	Alloy20	Alloy20	Alloy20	Alloy20	PTFE	Fluorous rubber	HastelloyC276
HastelloyC22	HastelloyC22	HastelloyC22	HastelloyC22	HastelloyC22	PTFE	Fluorous rubber	HastelloyC276

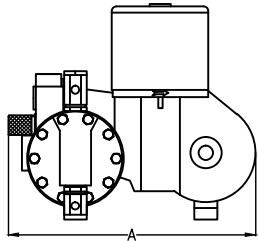
### Accessory

Provide system required accessories as:Filter,Buffer,Safety valve and Back pressure valve etc.

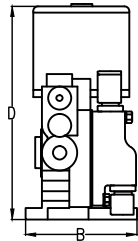
### The outline drawing of FROY series hydraulic diaphragm metering pump

#### Product Dimensions

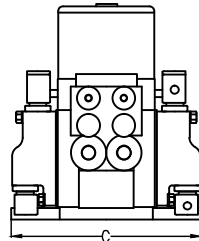
Series	A(mm)	B(mm)	C(mm)	D(max)(mm)
RA,RH,RP	302	152	267	609
RB	476	192	343	650
RT	384	165	N/A	497
RW	567	204	N/A	705



Side view of single-head pump & double-head pump

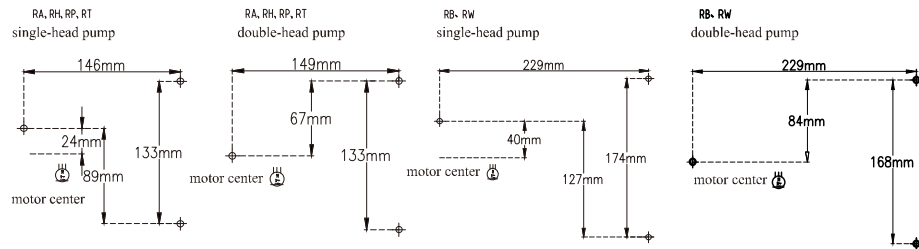


Front view of single-head pump



Front view of double-head pump

### Footing size



### FROY series hydraulic diaphragm metering pump flow rate and pressure gauge

Series	Plunger diameter	Stroke (mm)	Model	Speed Ratio	SPM(ref) 1425rpm	Maximum Consistency CP	Metal pump head(l/h)-1425rpm				Plastic pump head		motor
							7bar	14bar	20bar	24bar	7bar	10bar	
A	7/16" (Φ11.1mm)	20.8	<i>RA002</i>	48:1	30	1760	<b>2.3</b>	2.2	2.1	2.0			0.25kw
			<i>RA008</i>	15:1	96	310	<b>7.9</b>	7.7	7.3	7.2			
			<i>RA005</i>	48:1	30	1760	<b>5.0</b>	4.7	4.5	4.4			
	1-1/16" (Φ27.0mm)	<i>RA020</i>	48:1	30	150	<b>19</b>	19	18	17	<b>18</b>	18		
		<i>RA040</i>	24:1	60	75	<b>39</b>	38	36	36	<b>36</b>	35		
		<i>RA060</i>	15:1	96	40	<b>61</b>	60	58	57	<b>57</b>	57		
<i>RA090</i>	9.5:1	152	35	<b>94</b>	91	---	---	---	---	---			
<i>RA120</i>	8:1	178	30	<b>116</b>	112	---	---	---	---	---			

Series	Plunger diameter	Stroke (mm)	Model	Speed Ratio	SPM(ref) 1425rpm	Maximum Consistency CP	Metal pump head(l/h)-1425rpm				Plastic pump head		motor	
							7bar	17bar	24bar	28bar	103bar	7bar		10bar
B	19/32" (Φ15.1mm)	40.6	<i>RB020</i>	25:1	60	102	<b>22</b>	22	21	21	19	18	---	Standard Configuration is 0.75kw 1.1kw is optional when regulating speed.
			<i>RB030</i>	19:1	80	74	<b>30</b>	29	28	28	22	22	---	
			<i>RB040</i>	12:1	120	44	<b>42</b>	40	40	40	38	36	---	
	7/8" (Φ22.2mm)	<i>RB050</i>	9.5:1	152	38	<b>55</b>	54	53	53	49	47	---		
		<i>RB070</i>	19:1	80	169	<b>66</b>	64	62	61	50	---	<b>66</b>	66	
		<i>RB090</i>	12:1	120	114	<b>96</b>	94	92	91	80	---	<b>96</b>	95	
1-7/16" (Φ36.5mm)	<i>RB120</i>	9.5:1	152	88	<b>125</b>	122	120	119	105	---	<b>125</b>	124		
	<i>RB180</i>	19:1	80	58	<b>179</b>	171	166	160	---	---	<b>179</b>	176		
	<i>RB270</i>	12:1	120	34	<b>267</b>	259	254	248	---	---	<b>267</b>	264		
D	1-7/16" (double-head B) (Φ36.5mm)	40.6	<i>RD260</i>	25:1	60	80	<b>264</b>	246 <sup>(1)</sup>	236 <sup>(1)</sup>	---	---	---	<b>264</b>	258
			<i>RD360</i>	19:1	80	58	<b>358</b>	340 <sup>(2)</sup>	---	---	---	---	<b>358</b>	352
			<i>RD530</i>	12:1	120	34	<b>534</b>	516 <sup>(3)</sup>	---	---	---	---	<b>534</b>	528
	1-7/16" (Φ36.5mm)	<i>RD660</i>	9.5:1	152	26	<b>659</b>	639 <sup>(3)</sup>	---	---	---	---	<b>659</b>	651	

(1) The maximum pressure is 24bar. (2) The maximum pressure is 17bar. (3) Metal pump head only.

Series	Plunger diameter	Stroke (mm)	Model	Speed Ratio	SPM(ref) 1425rpm	Maximum Consistency CP	Metal pump head(l/h)-1425rpm					motor	
							7bar	28bar	55bar	83bar	103bar		124bar
H	7/16" (Φ11.1mm)	20.8	<i>RH002</i>	77:1	19	2660	<b>1.8</b>	1.7	1.6	1.4	1.4	1.2	0.25kw
			<i>RH003</i>	48:1	30	1760	<b>2.5</b>	2.2	1.9	1.9	1.9	1.9	
			<i>RH005</i>	24:1	60	720	<b>5.3</b>	5.0	4.7	4.4	4.1	3.8	
			<i>RH009</i>	15:1	96	310	<b>8.8</b>	8.2	7.9	7.2	6.6	6.3	
			<i>RH014</i>	9.5:1	152	210	<b>14.0</b>	12.9	12.6	11.4	10.4	9.7	
			<i>RH015</i>	8:1	178	180	<b>17.0</b>	15.8	15.4	13.9	12.7	12.0	

Series	Plunger diameter	Stroke (mm)	Model	Speed Ratio	SPM(ref) 1425rpm	Maximum Consistency CP	Metal pump head(l/h)-1425rpm				motor
							7bar	14bar	20bar	24bar	
P High viscosity application	7/16" (Φ11.1mm)	20.8	<i>RP001</i>	77:1	19	12200	<b>1.6</b>	1.6	1.5	1.5	0.25kw
			<i>RP002</i>	48:1	30	7500	<b>2.3</b>	2.2	2.1	2.0	
	<i>RP008</i>		15:1	96	2000	<b>7.9</b>	7.7	7.3	7.2		
	5/8" (Φ15.9mm)		<i>RP005</i>	48:1	30	5000	<b>5.0</b>	4.7	4.5	4.4	
			<i>RP011</i>	24:1	60	2500	<b>11.0</b>	10.7	10.3	10.0	
	1-1/16" (Φ27.0mm)		<i>RP015</i>	15:1	96	1250	<b>17.6</b>	17.0	16.7	16.0	
			<i>RP020</i>	12:1	120	600	<b>21.9</b>	21.1	20.7	19.9	
			<i>RP035</i>	24:1	60	1000	<b>34.6</b>	33.9	32.1	31.1	
			<i>RP050</i>	15:1	96	500	<b>55.0</b>	54.4	52.2	50.9	
			<i>RP070</i>	12:1	120	300	<b>68.4</b>	67.6	64.9	63.3	

Series	Plunger diameter	Stroke (mm)	Model	Speed Ratio	SPM(ref) 1425rpm	Maximum Consistency CP	Metal pump head(l/h)-1425rpm			motor
							140bar	175bar	211bar	
T	11/32" (Φ8.7mm)	20.8	<i>RT001</i>	48:1	30	1760	1.4	1.3	<b>1.2</b>	0.55kw
			<i>RT002</i>	24:1	60	700	2.8	2.5	<b>2.3</b>	
			<i>RT004</i>	15:1	96	337	4.3	4.0	<b>3.8</b>	
			<i>RT006</i>	9.5:1	152	143	6.8	6.4	<b>6.0</b>	
			<i>RT007</i>	8:1	180	95	8.1	7.6	<b>7.1</b>	
			<i>RW008</i>	38:1	40	650	8.8	8.4	<b>7.8</b>	
W	1/2" (Φ12.7mm)	40.6	<i>RW012</i>	25:1	60	265	13.5	12.6	<b>11.9</b>	1.1kw
			<i>RW015</i>	19:1	80	160	18.3	17.0	<b>15.8</b>	
			<i>RW025</i>	12:1	120	43	29.0	27.1	<b>25.2</b>	
			<i>RW030</i>	9.5:1	152	41	34.1	31.9	<b>29.7</b>	

Remarks : 1. The Speed Ratio above is nominal.  
2. The parts which font is bold and italic, the flow rate is rated.

## JX Series Plunger Metering Pump



### Technical Data:

Single-end Maximum Flow Rate:940L/h  
 Maximum discharge pressure:50MPa  
 Regulating ratio:10:1  
 Steady precision : ±1%  
 Suction lift: : 2.5m  
 Medium temperature:-10°C-100°C  
 Maximum ambient temperature:40°C  
 Maximum Altitude:1000m

### Main features

- ◎Solid and compact structure,pump head size is small, optimizable connection.
- ◎High volumetric efficiency
- ◎High measure precision and steady precision can reach ±1%.
- ◎Fit for high pressure environment, it can convey media with high viscosity. Corrosive medium and dangerous chemicals are not recommended.
- ◎Variable eccentric institution regulation, insure flow pulsation gently vary.
- ◎The application of imported hydraulic composite seal enables the good performance of leak-proof and long service life.

### Control Mode:

- ◎Power supply:380V/220V -50Hz/60Hz/single phase/three phase
- ◎Variable frequency controller,accept external control signal,adjust stroke speed; input signal:4-20mA analog signal.
- ◎Motor controller,control three phase motor with mode"run/stop", adjust output flow..

### Major Applications:

◎Petrochemical /Electricity/Metallurgy/Pharmaceuticals Industry /Food Industry, Especially outstanding in the area of high precision, high pressure, high temperature.

### Main components material of hydraulic end

Hydraulic end material	Pump head material	Valve seat/ Valve body	Valve bal	Plunger	Filler	Oring
304SS	304SS	304SS	316SS/ Ceramic	316SS+Ceramic	Fluorous rubber	Fluorous rubber
316SS	316SS	316SS	316SS/ Ceramic	316SS+Ceramic	Fluorous rubber	Fluorous rubber

### JX series series plunger metering pump product code

Code	Series	Flow Rate pressure	Hydraulic end	Port	Motor
	JX				

Series	Code	Description
JX		JX series plunger metering pump

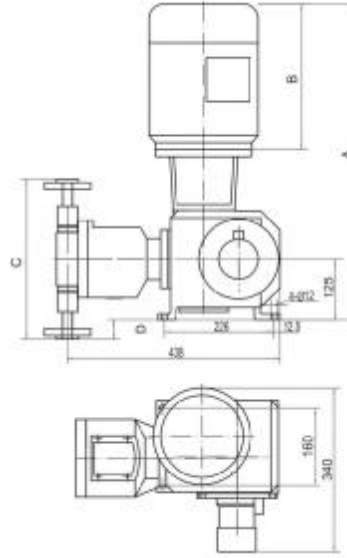
### Flow rate /Pressure

Code	LPH@Pmax (L/h)	Pmax(Mpa)	Plunger diameter (mm)	SPM (min-1)	Stroke (mm)	Motor (kw)	Weight (kg)
JX940/0.9	940	0.9	90	130	20	1.5	87
JX940/0.7		0.7				1.1	
JX940/0.5		0.5				0.75	
JX840/1.1	840	1.1	85			1.5	
JX840/0.8		0.8				1.1	
JX840/0.5		0.5				0.75	
JX740/1.2	740	1.2	80			1.5	
JX740/0.9		0.9				1.1	
JX740/0.6		0.6				0.75	
JX650/1.4	650	1.4	75			1.5	
JX650/1.0		1				1.1	
JX650/0.7		0.7				0.75	
JX570/1.6	570	1.6	70			1.5	
JX570/1.1		1.1				1.1	
JX570/0.8		0.8				0.75	
JX490/1.8	490	1.8	65			1.5	
JX490/1.3		1.3				1.1	
JX490/0.9		0.9				0.75	
JX410/2.1	410	2.1	60	1.5			
JX410/1.6		1.6		1.1			
JX410/1.1		1.1		0.75			
JX360/2.4	360	2.4	56	1.5			
JX360/1.8		1.8		1.1			
JX360/1.2		1.2		0.75			
JX280/3.1	280	3.1	50	1.5			
JX280/2.2		2.2		1.1			
JX280/1.5		1.5		0.75			
JX230/3.8	230	3.8	45	1.5			
JX230/2.8		2.8		1.1			
JX230/1.9		1.9		0.75			
JX180/4.8	180	4.8	40	1.5			
JX180/3.5		3.5		1.1			
JX180/2.4		2.4		0.75			
JX140/6.2	140	6.2	35	1.5			
JX140/4.6		4.6		1.1			
JX140/3.1		3.1		0.75			

Flow rate /Pressure

Code	LPH@Pmax (L/h)	Pmax(Mpa)	Plunger diameter (mm)	SPM (min-1)	Stroke (mm)	Motor (kw)	Weight (kg)
JX100/8.5	100	8.5	30	130	20	1.5	82
JX100/6.2		6.2				1.1	
JX100/4.2		4.2				0.75	
JX70/12.0	70	12	25			1.5	
JX70/8.8		8.8				1.1	
JX70/6.0		6				0.75	
JX55/15.8	55	15.8	22			1.5	78
JX55/11.7		11.7				1.1	
JX55/8.0		8				0.75	
JX45/19	45	19	20			1.5	
JX45/13.9		13.9				1.1	
JX45/9.5		9.5				0.75	
JX35/23.5	35	23.5	18	1.5			
JX35/17.0		17		1.1			
JX35/12.0		12		0.75			
JX25/34.0	25	34	15	1.5			
JX25/25.0		25		1.1			
JX25/17.0		17		0.75			
JX15/50.0	15	50	12	1.5			
JX15/36.0		36		1.1			
JX15/25.0		25		0.75			
JX10/50.0	10	50	10	1.5			
JX10/36.0		36		1.1			
JX10/25.0		25		0.75			

Dimension figure



Installation dimension of JX series plunger metering pump

Model	A	B	C	D	Power (kw)	Weight (kg)
JX410/2.1	655	300	225	-13	1.5	83
JX410/1.6	635	280	225	-13	1.1	
JX410/1.1	615	260	225	-13	0.75	
JX360/2.4	655	300	220	-15	1.5	
JX360/1.8	635	280	220	-15	1.1	
JX360/1.2	615	260	220	-15	0.75	
JX280/3.1	655	300	215	-18	1.5	
JX280/2.2	635	280	215	-18	1.1	
JX280/1.5	615	260	215	-18	0.75	
JX230/3.8	655	300	210	-20	1.5	
JX230/2.8	635	280	210	-20	1.1	
JX230/1.9	615	260	210	-20	0.75	
JX180/4.8	655	300	205	-23	1.5	
JX180/3.5	635	280	205	-23	1.1	
JX180/2.4	615	260	205	-23	0.75	
JX140/6.2	655	300	200	-25	1.5	
JX140/4.6	635	280	200	-25	1.1	
JX140/3.1	615	260	200	-25	0.75	
JX100/8.5	655	300	195	-28	1.5	
JX100/6.2	635	280	195	-28	1.1	
JX100/4.2	615	260	195	-28	0.75	
JX70/12.0	655	300	190	-30	1.5	
JX70/8.8	635	280	190	-30	1.1	
JX70/6.0	615	260	190	-30	0.75	
JX55/15.8	655	300	265	8	1.5	77
JX55/11.7	635	280	265	8	1.1	
JX55/8.0	615	260	265	8	0.75	
JX45/19.0	655	300	260	5	1.5	
JX45/13.9	635	280	260	5	1.1	
JX45/9.5	615	260	260	5	0.75	
JX35/23.5	655	300	260	5	1.5	
JX35/17.0	635	280	260	5	1.1	
JX35/12.0	615	260	260	5	0.75	
JX25/34.0	655	300	260	5	1.5	
JX25/25.0	635	280	260	5	1.1	
JX25/17.0	615	260	260	5	0.75	
JX15/50.0	655	300	260	5	1.5	
JX15/36.0	635	280	260	5	1.1	
JX15/25.0	615	260	260	5	0.75	
JX10/50.0	655	300	260	5	1.5	
JX10/36.0	635	280	260	5	1.1	
JX10/25.0	615	260	260	5	0.75	

Installation dimension of JX series plunger metering pump

Model	A	B	C	D	Power (kw)	Weight (kg)
JX940/0.9	655	300	360	55	1.5	88
JX940/0.7	635	280	360	55	1.1	
JX940/0.5	615	260	360	55	0.75	
JX840/1.1	655	300	360	55	1.5	
JX840/0.8	635	280	360	55	1.1	
JX840/0.5	615	260	360	55	0.75	
JX740/1.2	655	300	360	55	1.5	
JX740/0.9	635	280	360	55	1.1	
JX740/0.6	615	260	360	55	0.75	
JX650/1.4	655	300	360	55	1.5	
JX650/1.0	635	280	360	55	1.1	
JX650/0.7	615	260	360	55	0.75	
JX570/1.6	655	300	360	55	1.5	
JX570/1.0	635	280	360	55	1.1	
JX570/0.8	615	260	360	55	0.75	
JX490/1.8	655	300	360	55	1.5	
JX490/1.3	635	280	360	55	1.1	
JX490/0.9	615	260	360	55	0.75	

Hydraulic end	Code	Description
	S	304SS
	L	316SS

Port	Code	Description	JX10-55	JX70-410	JX490-940
	P	NPT threaded port	1/2" M	1/2" F	1" F
	F	Flange port	DN15	DN20	DN25
	K	Cutting sleeve	DN10	DN15	None
	X	Special port	Consult CNP, indicate when ordering		

Motor	Code	Description
	1	Three-phase 200V/380V..1440rpm. IP55/F
	2	200V.50Hz. 1440rpm.1-50-220V. IP55/F
	3	Three-phase explosion-proof 220/380V.50Hz.1440rpm.IP55/Ex-dIIBT4
	4	Three-phase frequency conversion 220/380V.50Hz.1440rpm.IP55/F
	5	Pump default without motor, retain IEC90 port.
	6	Other motors. Consult CNP, indicate when ordering.

## JMX Series Hydraulic Diaphragm Metering Pump



### Technical Data:

Flow rate: 45L/h ~ 1100L/h  
 Maximum discharge pressure: 19MPa  
 Regulating ratio 10:1  
 Steady precision: ±1%  
 Maximum suction lift: 2m  
 Medium temperature: -10°C ~ 100°C  
 Maximum ambient temperature: +40°C  
 Maximum altitude: 1000m

### Main features

- ◎ Solid, compact design; fixed seal, no leakage, the seal performance is better than plunger pump
- ◎ Variable eccentric institutions regulation, ensure flow pulsation gently vary
- ◎ High metering precision, steady precision can be ±1%
- ◎ Built-in limited fill oil valve to ensure liquid oil capacity, built-in safety valve to ensure diaphragm to avoid liquid
- ◎ When deliver corrosive slurry and flammable and explosive chemicals, you can choose double diaphragm, which is equip with diaphragm break alarm.

### Control Mode:

- ◎ Supply power: 380V/220V-50Hz/60Hz/Three phase/Single phase
- ◎ Variable frequency controller, accept external control signal, adjust stroke speed, input signal: 4-20mA analog signal
- ◎ Motor controller, control three phase motor with run/stop, adjust output flow

### Major Applications:

- ◎ Environmental protection, petrochemical industry, chemical industry, electricity, metallurgy, Pharmacy, Food Etc., excellent performance especially in the condition of high precision, high pressure, high temperature

### Main components material of hydraulic end

Hydraulic end material	Pump head /Valve body	Valve seat	Valve ball	Diagram	Plunger	Filling	Seal ring
304SS	304SS	316SS	316ss/Ceramic	PTFE	316+Ceramic	Fluorours rubber	PTFE
316SS	316SS	316SS	316ss/Ceramic	PTFE	316+Ceramic	Fluorours rubber	PTFE
PVC	PVC	PVDF	Ceramic	PTFE	316+Ceramic	Fluorours rubber	PTFE
PVDF	PVDF	PVDF	Ceramic	PTFE	316+Ceramic	Fluorours rubber	PTFE

### JMX series hydraulic diaphragm metering pump product code

Series	Flow rate /Pressure	Hydraulic end	Port	Motor	Option
Code JMX	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Series	Code	Description	Code	Description
	JMX	JMX Series Hydraulic Diaphragm Metering Pump	J2MX	JMX series hydraulic double diaphragm metering pump

### Flow rate /Pressure

Code	LPH@Pmax (L/h)	Pmax(Mpa)	Plunger diameter (mm)	SPM (min-1)	Stroke (mm)	Motor (kw)
JMX1100/0.5	1100	0.5	100	130	20	1.5
JMX1100/0.3		0.3				1.1
JMX1100/0.2		0.2				0.75
JMX1000/0.7	1000	0.7	95			1.5
JMX1000/0.5		0.5				1.1
JMX1000/0.3		0.3				0.75
JMX940/0.9	940	0.9	90			1.5
JMX940/0.7		0.7				1.1
JMX940/0.5		0.5				0.75
JMX840/1.1	840	1.1	85			1.5
JMX840/0.7		0.7				1.1
JMX840/0.5		0.5				0.75
JMX740/1.2	740	1.2	80	1.5		
JMX740/0.9		0.9		1.1		
JMX740/0.6		0.6		0.75		
JMX650/1.4	650	1.4	75	1.5		
JMX650/1.0		1		1.1		
JMX650/0.7		0.7		0.75		
JMX570/1.6	570	1.6	70	1.5		
JMX570/1.1		1.1		1.1		
JMX570/0.8		0.8		0.75		
JMX490/1.8	490	1.8	65	1.5		
JMX490/1.3		1.3		1.1		
JMX490/0.9		0.9		0.75		
JMX410/2.1	410	2.1	60	1.5		
JMX410/1.6		1.6		1.1		
JMX410/1.1		1.1		0.75		
JMX360/2.4	360	2.4	56	1.5		
JMX360/1.8		1.8		1.1		
JMX360/1.2		1.2		0.75		



Flow rate / Pressure	Code	LPH@Pmax (L/h)	Pmax(Mpa)	Plunger diameter (mm)	SPM (min-1)	Stroke (mm)	Motor (KW)
	JMX280/3.1	280	3.1	50	130	20	1.5
	JMX280/2.2		2.2				1.1
	JMX280/1.5		1.5				0.75
	JMX230/3.8	230	3.8	45			1.5
	JMX230/2.8		2.8				1.1
	JMX230/1.9		1.9				0.75
	JMX180/4.8	180	4.8	40			1.5
	JMX180/3.5		3.5				1.1
	JMX180/2.4		2.4				0.75
	JMX140/6.2	140	6.2	35			1.5
	JMX140/4.6		4.6				1.1
	JMX140/3.1		3.1				0.75
	JMX100/8.5	100	8.5	30			1.5
	JMX100/6.2		6.2				1.1
	JMX100/4.2		4.2				0.75
	JMX70/12.0	70	12	25			1.5
	JMX70/8.8		8.8				1.1
	JMX70/6.0		6				0.75
	JMX55/15.8	55	15.8	22	1.5		
	JMX55/11.7		11.7		1.1		
	JMX55/8.0		8		0.75		
	JMX45/19	45	19	20	1.5		
	JMX45/13.9		13.9		1.1		
	JMX45/9.5		9.5		0.75		

Hydraulic end	Code	Material	Remark	Code	Material	Remark
	S	304SS	-----	P	PVC	PVC&PVDF hydraulic end only suit for flow rate 570L/h to 1100L/h. The maximum bearing pressure of plastic hydraulic end is 10bar.
	L	316SS	-----	T	PVDF	
	Z	Special material hydraulic end. Consult CNP,indicate when ordering.				

Port	Code	Description	JMX570-1100			
			JMX45-55	JMX70-490	Metal hydraulic end	Plastic hydraulic end
	P	NPT threaded port	1/2"M	1/2"F	1"M	1"F
	F	Flange port	DN15	DN20	DN25	
	K	Cutting sleeve	DN10	DN15	NO	
	X	Special port	Consult CNP,indicate when ordering			

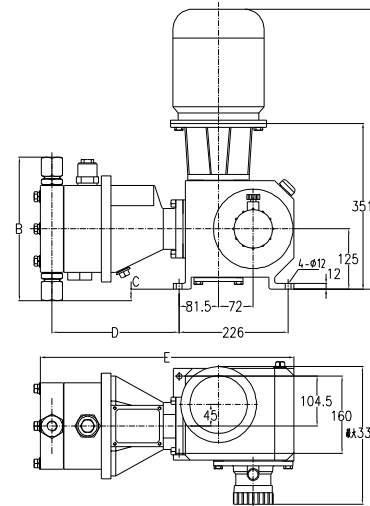
Dash area is standard configuration.

Motor	Code	Description	Code	Description
	1	Three-phase 220V/380V,50Hz,1440rpm,IP55/F dIIBT4	4 <sup>(1)</sup>	Three-phase variable frequency 220V/380V,50Hz,1440rpm,IP55/F
	2	Single-phase 220V,50Hz,1440rpm,IP55/F	5 <sup>(1)</sup>	Pump default without motor, retain IEC90 port.
	3	Three-phase explosion-proof 380V,50Hz,1440rpm,IP55/F dIIBT4	6 <sup>(1)</sup>	Other motors. Consult CNP,indicate when ordering.

Option	Code	Description	Remark
	N	No option	-----
	B <sup>(2)</sup>	The diaphragm rupture test and pressure gauge	With pressure gauge
	C <sup>(2)</sup>	The diaphragm rupture test and pressure gauge,pressure switch	With normal pressure switch and pressuregauge
	D <sup>(2)</sup>	The diaphragm rupture test and pressure gauge,explosion-proof pressure switch	With explosion-proof pressure switch and pressure gauge

1.When you choose variable frequency motor ,the power lever should be one grade more than normal.  
2.If you choose double diaphragm rupture test, the flow rate will decrease 5%

### Dimension figure



### JMX installation dimension

Model	Motor Power (kW)	A (mm)	B(mm) Metal pump head	B(mm) Plastic pump head	C(mm) Metal pump head	C(mm) Plastic pump head	D(mm) Metal pump head	D(mm) Plastic pump head	E(mm) Metal pump head	E(mm) Plastic pump head
JMX1100/0.2	0.75	591	356	53	278.5	552				
JMX1100/0.3	1.1	620	356	53	278.5	552				
JMX1100/0.5	1.5	666	356	53	278.5	552				
JMX1000/0.3	0.75	591	356	53	278.5	552				
JMX1000/0.5	1.1	620	356	53	278.5	552				
JMX1000/0.7	1.5	666	356	53	278.5	552				
JMX940/0.5	0.75	591	356	53	278.5	552				
JMX940/0.7	1.1	620	356	53	278.5	552				
JMX940/0.9	1.5	666	356	53	278.5	552				
JMX840/0.5	0.75	591	356	53	278.5	552				
JMX840/0.7	1.1	620	418	84	53	266.5	278.5	550	552	
JMX840/1.1	1.5	666								
JMX740/0.6	0.75	591	356	53	278.5	552				
JMX740/0.9	1.1	620	356	53	278.5	552				
JMX740/1.2	1.5	666								
JMX850/0.7	0.75	591	356	53	278.5	552				
JMX650/1.0	1.1	620	356	53	278.5	552				
JMX650/1.4	1.5	666								
JMX570/0.8	0.75	591	356	53	278.5	552				
JMX570/1.1	1.1	620								
JMX570/1.6	1.5	666								

### JMX installation dimension

Model	Motor Power (kW)	A (mm)	B(mm) Metal pump head	B(mm) Plastic pump head	C(mm) Metal pump head	C(mm) Plastic pump head	D(mm) Metal pump head	D(mm) Plastic pump head	E(mm) Metal pump head	E(mm) Plastic pump head
JMX490/0.9	0.75	591	298	24	264.5	527				
JMX490/1.3	1.1	620								
JMX490/1.8	1.5	666								
JMX410/1.1	0.75	591								
JMX410/1.6	1.1	620								
JMX410/2.1	1.5	666								
JMX360/1.2	0.75	591								
JMX360/1.8	1.1	620								
JMX360/2.4	1.5	666								
JMX280/1.5	0.75	591								
JMX280/2.2	1.1	620								
JMX280/3.1	1.5	666								
JMX230/1.9	0.75	591	278	14	264.5	527				
JMX230/2.8	1.1	620								
JMX230/3.8	1.5	666								
JMX180/2.4	0.75	591								
JMX180/3.5	1.1	620								
JMX180/4.8	1.5	666								
JMX140/3.1	0.75	591								
JMX140/4.6	1.1	620								
JMX140/6.2	1.5	666								
JMX100/4.2	0.75	591								
JMX100/6.2	1.1	620								
JMX100/8.5	1.5	666								
JMX70/6.0	0.75	591								
JMX70/8.8	1.1	620								
JMX70/12.0	1.5	666								
JMX55/8.0	0.75	591	332	41	264.5	527				
JMX55/11.7	1.1	620								
JMX55/15.8	1.5	666								
JMX45/9.5	0.75	591								
JMX45/13.9	1.1	620								
JMX45/19.0	1.5	666								

## J(M)XS Metering Pump

### Performance description

- ◎ Pump head can be hydraulic diaphragm type, plunger type and piston type.
- ◎ Hydraulic balance diaphragm pump with built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.
- ◎ All-in-one structure of variable worm gearing, low noise, efficient.
- ◎ U-cam regulating structure, compact and reliable, able to adjust stroke from 0-100%.
- ◎ The check valve fitted with high lever anti-corrosion ball valve and linear seal, the measure is smooth and accurate.
- ◎ High-performance plunger and imported filler, diaphragm and seal assembly, long service life, good seal ability
- ◎ Oil bath lubrication, driving components have long working life.
- ◎ Adjustable range: 0-100%; measurement precision : ±0.5%.
- ◎ Adjustment mode can be selected manually, motor-driven, frequency conversion driven, automatically driven..
- ◎ Many kind of pump head material like 45 steel, 304SS, 316SS and high polymer materials.



### Technical Data:

Model	Flow rate (L/h)	motor power			Plunger diameter (mm)	Dimension figure
		0.25kw	0.37kw	0.55kw		
J(M)XS0.8/40/50/60	0.8	40	50	60	3	
J(M)XS3.3/20/28/36	3.3	20	28	36	6	
J(M)XS7.3/11/14/20	7.3	11	14	20	9	
J(M)XS15/5.5/8/11	15	5.5	8.0	11	13	
J(M)XS30/2.5/3.2/5	30	2.5	3.2	5.0	18	
J(M)XS48/1.5/2/3	48	1.5	2.0	3.0	23	
J(M)XS70/1/1.5/2	70	1.0	1.5	2.0	28	
J(M)XS100/0.8/1.2/1.5	100	0.8	1.2	1.5	33	
J(M)XS130/0.7/0.9/1.2	130	0.7	0.9	1.2	38	
J(M)XS165/0.5/0.6/1.0	165	0.5	0.6	1.0	43	
J(M)XS210/0.4/0.5/0.8	210	0.4	0.5	0.8	48	
J(M)XS255/0.3/0.4/0.6	255	0.3	0.4	0.6	53	
J(M)XS305/0.2/0.3/0.5	305	0.2	0.3	0.5	58	

## J(M)XL Metering Pump

### Performance description

- ◎ Pump head can be hydraulic diaphragm type, plunger type and piston type.
- ◎ Hydraulic balance diaphragm pump with built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.
- ◎ All-in-one structure of variable worm gearing, low noise, efficient.
- ◎ U-cam regulating structure, compact and reliable, able to adjust stroke from 0-100%.
- ◎ The check valve fitted with high lever anti-corrosion ball valve and linear seal, the measure is smooth and accurate.
- ◎ High-performance plunger and imported filler, diaphragm and seal assembly, long service life, good seal ability
- ◎ Oil bath lubrication, driving components have long working life.
- ◎ Adjustable range: 0-100%; measurement precision : ±0.5%.
- ◎ Adjustment mode can be selected manually, motor-driven, frequency conversion driven, automatically driven..
- ◎ Many kind of pump head material like 45 steel, 304SS, 316SS and high polymer materials.



### Technical Data:

Model	Flow rate (L/h)	motor power			Plunger diameter (mm)	Dimension figure
		0.25kw	0.37kw	0.55kw		
J(M)XL0.8/40/50/55	0.8	40	50	55	3	
J(M)XL3.3/30/32/40	3.0	30	32	40	6	
J(M)XL7.2/20/22/30	7.0	20	22	30	8	
J(M)XL14/12/15/19	14	12	15	19	13	
J(M)XL27/6/8/13	27	6.0	8.0	13	18	
J(M)XL45/3.3/6/8.2	45	3.3	6.0	8.2	23	
J(M)XL65/2/3/4.2	65	2.0	3.0	4.2	28	
J(M)XL90/1.5/2/3.5	90	1.5	2.0	3.5	33	
J(M)XL120/1.2/1.7/2.5	120	1.2	1.7	2.5	38	
J(M)XL150/1/1.5/2.2	150	1.0	1.5	2.2	43	
J(M)XL195/0.8/1.3/2.1	195	0.8	1.3	2.1	48	
J(M)XL235/0.7/1/1.9	235	0.7	1.0	1.9	53	
J(M)XL285/0.5/0.8/1.5	285	0.5	0.8	1.5	58	
J(M)XL330/0.4/0.7/1.3	330	0.4	0.7	1.3	63	
J(M)XL390/0.3/0.4/0.8	390	0.3	0.4	0.8	68	
J(M)XL450/0.2/0.3/0.6	450	0.2	0.3	0.6	73	

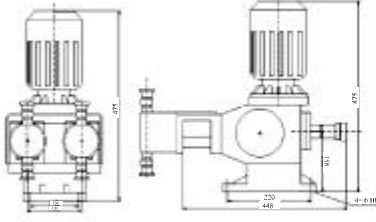
## J(M)X Metering Pump

### Performance description

- ◎ Pump head can be hydraulic diaphragm type, plunger type and piston type.
- ◎ Hydraulic balance diaphragm pump with Built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.
- ◎ All-in-one structure of variable worm gearing, low noise, efficient.
- ◎ U-cam regulating structure, compact and reliable, able to adjust stroke from 0-100%.
- ◎ The check valve fitted with high lever anti-corrosion ball valve and linear seal, the measure is smooth and accurate.
- ◎ High-performance plunger and imported filler, diaphragm and seal assembly, long service life, good seal ability
- ◎ Oil bath lubrication, driving components have long working life.
- ◎ Adjustable range: 0-100%, measurement precision:  $\pm 0.5\%$ .
- ◎ Adjustment mode can be selected manually, motor-driven, frequency conversion driven, automatically driven..
- ◎ Many kind of pump head material like 45 steel, 304SS, 316SS and high polymer materials.



Technical Data:

Model	Flow rate (L/h)	motor power		Plunger diameter (mm)	Dimension figure
		0.37kw	0.55kw		
		Outlet pressure(Mpa)			
2J(M)X270/100	2.0	70	100	5	
2J(M)X6/25/46	6.0	25	46	8	
2J(M)X10/15/29	10	15	29	10	
2J(M)X16/12/22	16	12	22	12	
2J(M)X26/7.5/13	26	7.5	13	15	
2J(M)X50/4.2/8	50	4.2	8.0	20	
2J(M)X76/2.6/4.8	76	2.6	4.8	25	
2J(M)X110/1.8/3.2	110	1.8	3.2	30	
2J(M)X150/1.3/2.4	150	1.3	2.4	35	
2J(M)X200/1/1.8	200	1.0	1.8	40	
2J(M)X250/0.8/1.5	250	0.8	1.5	45	
2J(M)X310/0.65/1.2	310	0.65	1.2	50	
2J(M)X390/0.5/1	390	0.5	1.0	55	
2J(M)X340/1/1.8	340	1.0	1.8	40	
2J(M)X420/0.8/1.5	420	0.8	1.5	45	
2J(M)X520/0.65/1.2	520	0.65	1.2	50	
2J(M)X640/0.5/1	640	0.5	1.0	55	

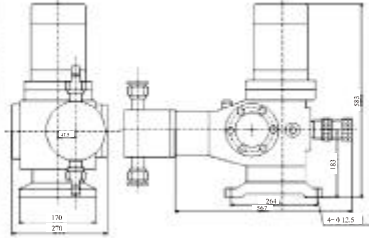
## J(M)ZS Metering Pump

### Performance description

- ◎ Pump head can be hydraulic diaphragm type, plunger type and piston type.
- ◎ Hydraulic balance diaphragm pump with Built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.
- ◎ All-in-one structure of variable worm gearing, low noise, efficient.
- ◎ With high quality N-crankshaft regulating structure, able to adjust linear stroke with power on or off
- ◎ The check valve fitted with high lever anti-corrosion ball valve and linear seal, the measure is smooth and accurate.
- ◎ High-performance plunger and imported filler, diaphragm and seal assembly, long service life, good seal ability.
- ◎ Adjustable range: 0-100%, measurement precision:  $\pm 0.5\%$ .
- ◎ Adjustment mode can be selected manually, motor-driven, frequency conversion driven, automatically driven.
- ◎ Many kind of pump head material like 45 steel, 304SS, 316SS and high polymer materials.



Technical Data:

Model	Flow rate (L/h)	motor power		Plunger diameter (mm)	Dimension figure
		0.75kw	1.5kw		
		Outlet pressure(Mpa)			
J(M)ZS16/16/40	16	16	40	8	
J(M)ZS30/12/30	30	12	30	13	
J(M)ZS60/7/15	60	7.0	15	18	
J(M)ZS100/4.5/10	100	4.5	10	23	
J(M)ZS150/2.5/7	150	2.5	7.0	28	
J(M)ZS210/2.1/5	210	2.1	5.0	33	
J(M)ZS280/1.5/4	280	1.5	4.0	38	
J(M)ZS360/1.2/3	360	1.2	3.0	43	
J(M)ZS450/1/2.5	450	1.0	2.5	48	
J(M)ZS550/0.8/2	550	0.8	2.0	53	
J(M)ZS660/0.6/1.5	660	0.6	1.5	58	
J(M)ZS780/0.5/1.2	780	0.5	1.2	63	
J(M)ZS900/0.45/1	900	0.45	1.0	68	
J(M)ZS1000/0.4/0.8	1000	0.4	0.8	73	
J(M)ZS1200/0.32/0.6	1200	0.32	0.6	78	
J(M)ZS1360/0.3/0.5	1360	0.3	0.5	83	
J(M)ZS1500/0.25/0.4	1500	0.25	0.4	88	

## J(M)Z Metering Pump

### Performance description

- ◎ Pump head can be hydraulic diaphragm type, plunger type and piston type.
- ◎ Hydraulic balance diaphragm pump with Built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.
- ◎ With high quality N-crankshaft regulating structure, able to adjust linear stroke with power on or off
- ◎ Mechanical diaphragm pump no need plunger to seal, it use high performance diaphragm, failure free period is longer than normal pump. No pump head leakage in diaphragm warranty period.
- ◎ Simple structure, convenient operation and maintenance.
- ◎ The check valve fitted with high precision anti-corrosion and abrasive resistance check emery ceramic ball, linear seal to ensure the measurement smooth and accurate.
- ◎ Adjustable range: 0-100%, measurement precision : ±0.5%.
- ◎ Adjustment mode can be selected manually, motor-driven, frequency conversion driven, automatically driven.
- ◎ Many kind of pump head material like 45 steel, 304SS, 316SS and high polymer materials.



### Technical Data:

Model	Flow rate	Pressure	motor power	Dimension figure
J(M)Z320/1.0	320	1.0	0.55	
J(M)Z400/0.8	400	0.8	0.55	
J(M)Z550/0.6	550	0.6	0.55	
J(M)Z670/0.6	670	0.6	0.55	
J(M)Z800/0.7	800	0.7	0.75	
J(M)Z1000/0.6	1000	0.6	0.75	
J(M)Z1200/0.5	1200	0.5	0.75	
J(M)Z1500/0.5	1500	0.5	0.75	
J(M)Z1800/0.4	1800	0.4	0.75	

## J(M)ZL Metering Pump

### Performance description

- ◎ Pump head can be hydraulic diaphragm type, plunger type and piston type.
- ◎ Hydraulic balance diaphragm pump with Built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.
- ◎ With high quality N-crankshaft regulating structure, able to adjust linear stroke with power on or off
- ◎ The check valve fitted with high lever anti-corrosion ball valve and linear seal, the measure is smooth and accurate.
- ◎ High-performance plunger and imported filler, diaphragm and seal assembly, long service life, good seal ability.
- ◎ Adjustable range: 0-100%, measurement precision : ±0.5%.
- ◎ Adjustment mode can be selected manually, motor-driven, frequency conversion driven, automatically driven.
- ◎ Many kind of pump head material like 45 steel, 304SS, 316SS and high polymer materials.



### Technical Data:

Model	Flow rate (L/h)	motor power		Plunger diameter (mm)	Dimension figure
		0.75kw	1.5kw		
J(M)ZL16/16/50	16	16	50	8	
J(M)ZL36/12/35	30	12	35	13	
J(M)ZL60/7/20	60	7.0	20	18	
J(M)ZL100/4.5/13	100	4.5	13	23	
J(M)ZL150/2.5/8	150	2.5	8.0	28	
J(M)ZL210/2.1/6	210	2.1	6.0	33	
J(M)ZL280/1.5/5	280	1.5	5.0	38	
J(M)ZL360/1.2/3.5	360	1.2	3.5	43	
J(M)ZL450/1/3	450	1.0	3.0	48	
J(M)ZL550/0.8/2.5	550	0.8	2.5	53	
J(M)ZL660/0.6/2	660	0.6	2.0	58	
J(M)ZL780/0.5/1.6	780	0.5	1.6	63	
J(M)ZL900/0.45/1.4	900	0.45	1.4	68	
J(M)ZL1000/0.4/1.2	1000	0.4	1.2	73	
J(M)ZL1200/0.32/1	1200	0.32	1.0	78	
J(M)ZL1360/0.3/0.8	1360	0.3	0.8	83	
J(M)ZL1500/0.23/0.7	1500	0.23	0.7	88	
J(M)ZL1700/0.2/0.6	1700	0.2	0.6	93	
J(M)ZL1900/0.15/0.5	1900	0.15	0.5	98	
J(M)ZL2300/0.13/0.4	2300	0.13	0.4	108	
J(M)ZL2750/0.1/0.3	2750	0.1	0.3	118	
J(M)ZL3200/0.1/0.3	3200	0.1	0.3	128	



## J(M)Z Metering Pump

### Performance description

- ⊙ Pump head can be hydraulic diaphragm type, plunger type and piston type.
- ⊙ Hydraulic balance diaphragm pump with Built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.
- ⊙ With high quality N-crankshaft regulating structure, able to adjust linear stroke with power on or off
- ⊙ The check valve fitted with high lever anti-corrosion ball valve and linear seal, the measure is smooth and accurate.
- ⊙ High-performance plunger and imported filler, diaphragm and seal assembly, long service life, good seal ability.
- ⊙ Adjustable range: 0-100%; measurement precision :  $\pm 0.5\%$ .
- ⊙ Adjustment mode can be selected manually, motor-driven, frequency conversion driven, automatically driven.
- ⊙ Many kind of pump head material like 45 steel, 304SS, 316SS and high polymer materials.
- ⊙ Can connect in parallel (from 2 to 12 sets) as proportioning pump, pulse smooth.



## J(M)DL Metering Pump

### Performance description

- ⊙ Pump head can be hydraulic diaphragm type, plunger type and piston type.
- ⊙ Hydraulic balance diaphragm pump with Built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.
- ⊙ With high quality N-crankshaft regulating structure, able to adjust linear stroke with power on or off
- ⊙ The check valve fitted with high lever anti-corrosion ball valve and linear seal, the measure is smooth and accurate.
- ⊙ High-performance plunger and imported filler, diaphragm and seal assembly, long service life, good seal ability.
- ⊙ Adjustable range: 0-100%; measurement precision :  $\pm 0.5\%$ .
- ⊙ Adjustment mode can be selected manually, motor-driven, frequency conversion driven, automatically driven.
- ⊙ Many kind of pump head material like 45 steel, 304SS, 316SS and high polymer materials.



### Technical Data:

Model	Flow rate (L/h)	motor power		Plunger diameter (mm)	Dimension figure
		0.75kw	1.5kw		
2J(M)Z20/40/64	20	40	64	10	
2J(M)Z34/23/56	34	23	56	12	
2J(M)Z56/15/34	56	15	34	15	
2J(M)Z96/8/19	96	8.0	19	20	
2J(M)Z160/5.2/12	160	5.2	12	25	
2J(M)Z230/4.4/8.8	230	4.4	8.8	30	
2J(M)Z310/3.2/6.5	310	3.2	6.5	35	
2J(M)Z400/2.4/4.8	400	2.4	4.8	40	
2J(M)Z520/2/3.7	520	2.0	3.7	45	
2J(M)Z640/1.6/3	640	1.6	3.0	50	
2J(M)Z780/1.3/2.4	780	1.3	2.4	55	
2J(M)Z920/1/2	920	1.0	2.0	60	
2J(M)Z1090/0.8/1.7	1090	0.8	1.7	65	
2J(M)Z1260/0.65/1.5	1260	0.65	1.5	70	
2J(M)Z1450/0.56/1.3	1450	0.56	1.3	75	
2J(M)Z1650/0.45/1.2	1650	0.45	1.2	80	
2J(M)Z1860/0.4/1	1860	0.4	1.0	85	
2J(M)Z2090/0.36/0.9	2090	0.36	0.9	90	
2J(M)Z2320/0.32/0.8	2320	0.32	0.8	95	
2J(M)Z2580/0.25/0.7	2580	0.25	0.7	100	
2J(M)Z2840/0.2/0.65	2840	0.2	0.65	85	
2J(M)Z3130/0.18/0.6	3130	0.18	0.6	90	
2J(M)Z3490/0.56/0.5	3490	0.56	0.5	95	
2J(M)Z3860/0.5/0.4	3860	0.5	0.4	100	

### Technical Data:

Model	Flow rate (L/h)	motor power			Plunger diameter (mm)	Dimension figure
		4kw	5.5kw	7.5kw		
J(M)DL42/85/90/95	42	85	90	95	15	
J(M)DL75/60/73/90	75	50	73	90	20	
J(M)DL125/34.5/50/70	125	34.5	50	70	25	
J(M)DL182/23/34/48	182	23	34	48	30	
J(M)DL247/16/25/35	247	16	25	35	35	
J(M)DL320/12.5/19/26	320	12.5	19	26	40	
J(M)DL405/9.5/14/20	405	9.5	14	20	45	
J(M)DL505/7.5/11.5/16	505	7.5	11.5	16	50	
J(M)DL612/6.2/9.2/13.2	612	6.2	9.2	13.2	55	
J(M)DL725/5.3/7.8/11	725	5.3	7.8	11	60	
J(M)DL855/4.3/6.4/9	855	4.3	6.4	9.0	65	
J(M)DL900/3.7/5.5/7.8	900	3.7	5.5	7.8	70	
J(M)DL1135/3.3/5/7	1135	3.3	5.0	7.0	75	
J(M)DL1295/2.8/4.2/6	1295	2.8	4.2	6.0	80	
J(M)DL1480/2.5/3.7/5	1480	2.5	3.7	5.0	85	
J(M)DL1660/2.2/3.2/4.6	1660	2.2	3.2	4.6	90	
J(M)DL1850/2/3/4.2	1850	2.0	3.0	4.2	95	
J(M)DL2050/1.8/2.6/3.7	2050	1.8	2.6	3.7	100	
J(M)DL2500/1.5/2.1/3	2500	1.5	2.1	3.0	110	
J(M)DL2960/1.2/1.8/2.6	2960	1.2	1.8	2.6	120	
J(M)DL3500/1.1/1.6/2.2	3500	1.1	1.6	2.2	130	
J(M)DL4050/0.9/1.3/1.7	4050	0.9	1.3	1.7	140	
J(M)DL4680/0.8/1.2/1.7	4680	0.8	1.2	1.7	150	
J(M)DL5320/0.7/1/1.5	5320	0.7	1.0	1.5	160	
J(M)DL5980/0.6/0.9/1.3	5980	0.6	0.9	1.3	170	

## J(M)TS Metering Pump

### Performance description

- Pump head can be hydraulic diaphragm type, plunger type and piston type.
- Hydraulic balance diaphragm pump with Built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.
- With high quality N-crankshaft regulating structure, able to adjust linear stroke with power on or off
- The check valve fitted with high lever anti-corrosion ball valve and linear seal, the measure is smooth and accurate.
- High-performance plunger and imported filler, diaphragm and seal assembly, long service life, good seal ability.
- Adjustable range: 0-100%, measurement precision:  $\pm 0.5\%$ .
- Adjustment mode can be selected manually, motor-driven, frequency conversion driven, automatically driven.
- Many kind of pump head material like 45 steel, 304SS, 316SS and high polymer materials.



## J(M)TF Metering Pump

### Performance description

- Pump head can be hydraulic diaphragm type, plunger type and piston type.
- Hydraulic balance diaphragm pump with Built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.
- With high quality N-crankshaft regulating structure, able to adjust linear stroke with power on or off
- The check valve fitted with high lever anti-corrosion ball valve and linear seal, the measure is smooth and accurate.
- High-performance plunger and imported filler, diaphragm and seal assembly, long service life, good seal ability.
- Adjustable range: 0-100%, measurement precision:  $\pm 0.5\%$ .
- Adjustment mode can be selected manually, motor-driven, frequency conversion driven, automatically driven.
- Many kind of pump head material like 45 steel, 304SS, 316SS and high polymer materials.
- Can connect in parallel (from 2 to 12 sets) as proportioning pump, pulse smooth.



### Technical Data:

Model	Flow rate (L/h)	motor power			Plunger diameter (mm)	Dimension figure
		7.5kw	11kw	15kw		
J(M)TS175/60/80/100	175	60	80	100	25	
J(M)TS255/45/60/80	255	45	60	80	30	
J(M)TS350/28/37/54	350	28	37	54	35	
J(M)TS455/19/26/38	455	19	26	38	40	
J(M)TS715/13/17/26	715	13	17	26	50	
J(M)TS865/10/13.6/20	865	10	13.6	20	55	
J(M)TS1030/8/10.8/15.8	1030	8.0	10.8	15.8	60	
J(M)TS1200/6.4/8.8/12.8	1200	6.4	8.8	12.8	65	
J(M)TS1610/5.2/7.2/10.4	1610	5.2	7.2	10.4	75	
J(M)TS1830/4.5/6/8.9	1830	4.5	6.0	8.9	80	
J(M)TS2070/3.8/5.3/7.8	2070	3.8	5.3	7.8	85	
J(M)TS2320/3.3/4.5/6.6	2320	3.3	4.5	6.6	90	
J(M)TS2585/2.9/4/5.8	2585	2.9	4.0	5.8	95	
J(M)TS3150/2.5/3.5/5	3150	2.5	3.5	5.0	105	
J(M)TS3465/2.2/3/4.4	3465	2.2	3.0	4.4	110	
J(M)TS3800/2.2/3/3.9	3800	2.0	2.7	3.9	115	
J(M)TS4350/1.8/2.4/3.5	4350	1.8	2.4	3.5	100	
J(M)TS4800/1.6/2.2/3.2	4800	1.6	2.2	3.2	105	
J(M)TS5800/1.3/1.8/2.6	5800	1.3	1.8	2.6	115	
J(M)TS7000/1.1/1.5/2.2	7000	1.1	1.5	2.2	120	
J(M)TS8500/0.9/1.2/1.8	8500	0.9	1.2	1.8	140	
J(M)TS9300/0.8/1.1/1.6	9300	0.8	1.1	1.6	145	
J(M)TS9800/0.7/1/1.5	9800	0.7	1.0	1.5	150	
J(M)TS11200/0.6/0.8/1.3	11200	0.6	0.8	1.3	160	

### Technical Data:

Model	Flow rate (L/h)	motor power			Plunger diameter (mm)	Dimension figure
		15kw	22kw	37kw		
J(M)TF235/64/92/120	235	64	92	120	25	
J(M)TF365/41/60/82	365	41	60	82	30	
J(M)TF510/29/43/58	510	29	43	58	35	
J(M)TF680/22/32/44	680	22	32	44	40	
J(M)TF860/17.5/25.5/34.5	860	17.5	25.5	34.5	45	
J(M)TF1050/14.3/21/27	1050	14.3	21	27	50	
J(M)TF1280/12/17/23	1280	12	17	23	55	
J(M)TF1510/10/14.5/19.7	1510	10	14.5	19.7	60	
J(M)TF1780/8.5/12/16.2	1780	8.5	12	16.2	65	
J(M)TF2080/7.2/11/15.4	2080	7.2	11	15.4	70	
J(M)TF2430/6/10/14	2430	6	10	14	75	
J(M)TF2750/5.5/9/12.6	2750	5.5	9.0	12.6	80	
J(M)TF3120/4.8/8/11.6	3120	4.8	8.0	11.6	85	
J(M)TF3520/4.2/7/10.5	3520	4.2	7.0	10.5	90	
J(M)TF3920/3.8/6/9.4	3920	3.8	6.3	9.4	95	
J(M)TF4350/3.5/5.7/8.5	4350	3.5	5.7	8.5	100	
J(M)TF5280/2.8/4.7/7.3	5280	2.8	4.7	7.3	110	
J(M)TF6350/2.4/4/6.2	6350	2.4	4.0	6.2	120	
J(M)TF7480/2/3/5.2	7480	2.0	2.3	5.2	130	
J(M)TF8620/1.7/2.9/4.6	8620	1.7	2.9	4.6	140	
J(M)TF9960/1.5/2.5/4.0	9960	1.5	2.5	4.0	150	
J(M)TF11380/1.3/2.2/3.5	11380	1.3	2.2	3.5	160	
J(M)TF12860/1.1/1.9/3.0	12860	1.1	1.9	3.0	170	
J(M)TF14410/1/1.7/2.7	14410	1.0	1.7	2.7	180	
J(M)TF16000/0.9/1.55/2.4	16000	0.9	1.55	2.4	190	
J(M)TF17800/0.8/1.4/2.1	17800	0.8	1.4	2.1	200	
J(M)TF19500/0.7/1.25/1.8	19500	0.7	1.25	1.8	210	
J(M)TF21600/0.6/1/1.5	21600	0.6	1.1	1.5	220	

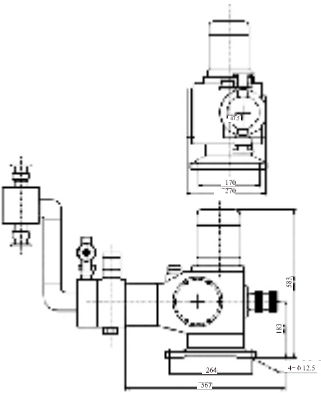
## J(M)G Metering Pump

### Performance description

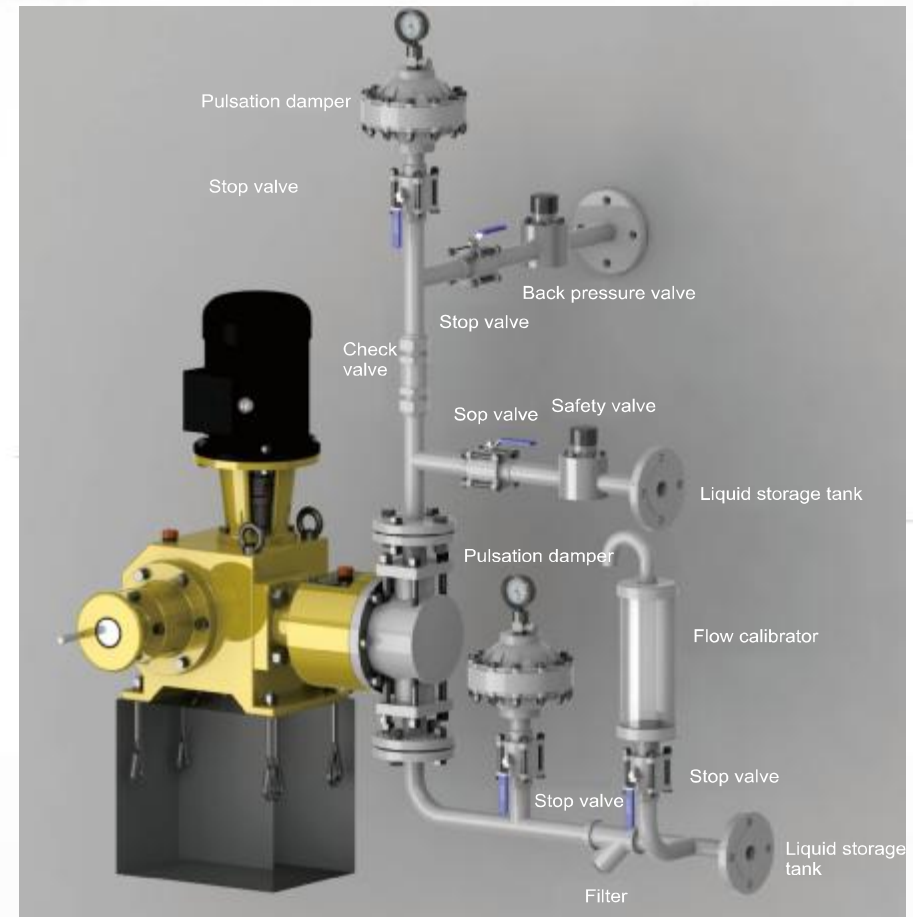
- ⊙The pump head is equipped with remote handling device, because poly-tetrafluoroethylene has the feature of thermal expansion.
- ⊙The design of remote pump head shorten the distance between suction valve and discharge valve. It makes the pump able to convey dangerous liquid.
- ⊙Electric heating appliance attached to remote handling device, so the pump can convey liquid which is 280 °C.
- ⊙Hydraulic end applies double diaphragm with diaphragm state monitor, the pump can work even when one diaphragm is broken. The material of ball valve is emery grains.
- ⊙The hydraulic system applying German technologies. It consists of safety valve and limit valve. Built-in function of emptying, pressure-relieving and oil adding, superior performance, zero leakage and high safety.



### Technical Data:

Model	Flow rate (L/h)	motor power		Plunger diameter (mm)	Dimension figure
		2.2kw	4kw		
		Outlet pressure(Mpa)			
J(M)G 40/45/67.5	40	45	67.5	15	
J(M)G 77/25/37.5	77	25	37.5	20	
J(M)G 120/17/25.5	120	17	25.5	25	
J(M)G 175/11/16.5	175	11	16.5	30	
J(M)G 238/8.5/13.6	238	8.5	13.6	35	
J(M)G 310/6.9/11	310	6.9	11	40	
J(M)G 395/5/8	395	5.0	8.0	45	
J(M)G 486/4.2/7.1	486	4.2	7.1	50	
J(M)G 588/3.4/5.7	588	3.4	5.7	55	
J(M)G 700/2.8/4.8	700	2.8	4.8	60	
J(M)G 820/2.4/4.2	820	2.4	4.2	65	
J(M)G 950/2/3.8	950	2.0	3.8	70	
J(M)G 1100/1.8/3.2	1100	1.8	3.2	75	
J(M)G 1250/1.6/2.8	1250	1.6	2.8	80	
J(M)G 1400/1.4/2.5	1400	1.4	2.5	85	
J(M)G 1580/1.2/2.1	1580	1.2	2.1	90	
J(M)G 1750/1.1/1.9	1750	1.1	1.9	95	
J(M)G 1960/1/1.8	1960	1.0	1.8	100	
J(M)G 2380/0.8/1.4	2380	0.8	1.4	110	
J(M)G 2800/0.7/1.3	2800	0.7	1.3	120	
J(M)G 3300/0.6/1.1	3300	0.6	1.1	130	

### Installation drawing





## JY series Chemical Dosing System



To meet the market demand and facilitate customers, CNP introduced advanced technology from USA, Germany and Japan, combining the actual conditions in our country, developed JY series chemical dosing system. The JY series chemical dosing system can be widely used in power plant dosing, wastewater treatment, water treatment, steel mill etc. There are many advantages: can equip as a complete set, advanced technics, high degree of automation, easy operation, easy installation, easy maintenance, it can suit for variable working condition.

There are a variety of specifications for JY Series chemical dosing pump. It contains one tank one pump, one tank two pumps, two tanks two pumps, three tanks three pumps and many tanks many pumps. The system is chosen by dosing pump quantity and discharge. You can choose the system according to the catalogue. And also, we can design and produce special products according your special requirement, for example, put the whole system meter and liquid-level signal into DCS control system, to control the whole system with run/stop, running control and alarm.

### Structure and work principle

#### 1. Structure

JY series chemical dosing system consists of dosing pump, solution tank, liquid indicator, impact damper, filter, valves, blender, baseplate, stair railing, control circuit, full set of pipeline and accessories.

#### 2. Work principle

According to the demanded concentration of the liquor, operators make up the liquor by blender in the agitator tank, then put it in solution tank and convey it through dosing pump to the specified place.

#### 3. Advantages:

Beautiful appearance, reliable performance, compact structure, facilitate maintenance.

### The function of the valves of JY series chemical dosing system

#### 1. Safety valve

When the pipeline is blocked or closed by mis-operation, the safe valve will automatically open and discharge the liquor to reduce pressure, so the safety of the dosing pump and the pipeline system can be ensured.

#### 2. Pulse damper

Pulse damper can smooth the effect of pulse, as a result, the liquor can be evenly conveyed.

#### 3. filter

The application of Y type filter prevents foreign particles from entering the pump head, easy cleaning

Mesh material: PTEF

#### 4. Check valve

The check valve installed at the suction pipe, can avoid positive pressure flow. The check valve equipped at the discharge pipe can avoid negative pressure and siphon.

#### 5. Flow calibrator

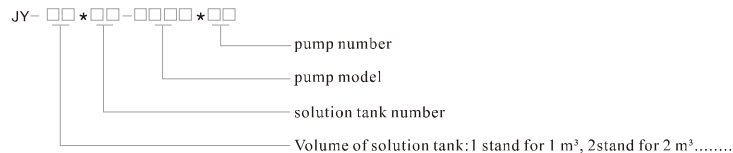
Can estimate the flow rate through the flow calibrator. Generally installed at the pump inlet end.

#### 6. Back pressure valve

Back pressure valve installed at pressure pipe, bring constant back pressure, it can remain measurement accurately. Avoid liquor flow by gravity or siphoning.



### JY series Chemical Dosing System product code



### JY series Chemical Dosing System Technical Parameters

System	Type	Dissolving drug tank size (M)	Dosing pump			Dosing method	
			Type	Flow(L/h)	Pressure(Mpa)		
Hydrazine chemical dosing system	two tanks two pumps	1.0	Plunger type	30	1.6	Manual	
	two tanks three pumps			40	2.4		
	two tanks two pumps			50	4.0		
PH adjustment ammonification dosing system	two tanks three pumps	1.5	Mechanical diaphragm type	60	6.3	Automatic	
	two tanks two pumps			80	16		
	two tanks three pumps			100	20		
Phosphates dosing system	two tanks two pumps	2.0	Hydraulic diaphragm type	100	20	Automatic	
	two tanks three pumps			200	24		
	two tanks two pumps			40	0.6		Manual
Coagulants feeding equipment	two tanks three pumps	1.0	Mechanical diaphragm type	60	1.0	Automatic	
	two tanks two pumps			90	1.4		
	two tanks three pumps			160	1.4		
Inhibitor feeding equipmen	two tanks two pumps	1.5	Hydraulic diaphragm type	330		Automatic	
	two tanks three pumps						
	two tanks two pumps						
PH adjustment Alkali feeding equipment	two tanks two pumps	3.0	Centrifugal	2-4m <sup>3</sup> /h	0.4	Manual	
	two tanks three pumps						
Ferrous sulfate coating dosing system	one tank one pump						
	two tanks two pumps						

### JY series Chemical Dosing System Parameter Selection Table

User's name	
Application	Quantity set
Operation parameter	
Medium	Medium temperature ℃
Concentration %	Liquor density kg/m <sup>3</sup>
Dosing point	Flow rate of Dosing point 1/h
Back Pressure of Dosing point Mpa	Dosing distance m
Status <input type="checkbox"/> discontinuous	<input type="checkbox"/> continuous
Structural parameters	
Dissolving drug tank size m <sup>3</sup>	
Material <input type="checkbox"/> stainless steel <input type="checkbox"/> carbon steel <input type="checkbox"/> carbon steel foil <input type="checkbox"/> non-metallic <input type="checkbox"/> others	
Type <input type="checkbox"/> Mechanical diaphragm <input type="checkbox"/> hydraulic diaphragm <input type="checkbox"/> plunger pump	quantity set
Flow rate 1/h	pressure Mpa
Control mode <input type="checkbox"/> Manual adjustment <input type="checkbox"/> automatic adjustment	
Pipeline material <input type="checkbox"/> stainless steel <input type="checkbox"/> carbon steel <input type="checkbox"/> U PVC <input type="checkbox"/> others	
Other requirement	

Remarks: 1. Buyers fill the form in detail when purchasing.  
2. If users have any other specific requirement, please note at the "other requirement" line or contract CNP for more information.

### Corrosivity parallel table

Corrosive medium	concentration	stainless steel			FRPP			PVDF			Phenolic glass fiber reinforced plastics		
		25°C	50°C	100°C	25°C	50°C	100°C	25°C	50°C	100°C	25°C	50°C	100°C
Sulfuric acid	0-50	×	×	×	✓	✓	○	✓	✓	✓	✓	✓	✓
Sulfuric acid	50-98	×	×	×	✓	○	×	✓	✓	✓	✓	✓	○
Nitric Acid	10-70	✓	✓	✓	✓	✓	○	✓	✓	✓	✓	×	×
Nitric Acid	70-100	✓	✓	✓	×	×	×	✓	✓	✓	✓	×	×
Hydrochloric acid	arbitrarily	×	×	×	○	○	○	✓	✓	✓	✓	✓	✓
Phosphoric acid	0-90	×	×	×	✓	✓	○	✓	✓	✓	✓	✓	✓
Hydrofluoric Acid	0-50	×	×	×	✓	✓	✓	✓	✓	✓	×	×	×
Hydrobromic acid	arbitrarily	×	×	×	✓	✓	○	✓	✓	✓	✓	✓	✓
Hydrocyanic acid	arbitrarily	×	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lactic acid	0-50	×	×	×	✓	✓	×	✓	✓	✓	×	×	×
Hypofluorous acid	arbitrarily	×	×	×	✓	✓	×	✓	✓	✓	✓	○	×
Hexafluorosilicic acid	arbitrarily	×	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓
Aqua regia		×	×	×	×	×	×	✓	✓	✓	✓	×	×
Formic acid	arbitrarily	×	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓
Acetic acid	arbitrarily	○	○	○	✓	✓	○	✓	✓	✓	✓	✓	○
Butyric acid	arbitrarily	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lactic acid	arbitrarily	✓	✓	×	✓	✓	×	✓	✓	✓	✓	✓	○
Oxalic acid	arbitrarily	○	○	×	✓	○	×	✓	✓	✓	✓	✓	✓
Fatty Acid	arbitrarily	✓	✓	✓	✓	○	×	✓	✓	✓	✓	✓	✓
Benzoic acid	arbitrarily	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	✓	✓
Citric acid	arbitrarily	✓	✓	✓	✓	○	×	✓	✓	✓	✓	✓	✓
Benzene sulfonic acid	arbitrarily	✓	✓	○	○	×	×	✓	✓	✓	✓	✓	✓
Chloroacetic acid	arbitrarily	×	×	×	✓	✓	×	✓	✓	✓	○	○	○
Potassium hydroxide	arbitrarily	✓	✓	×	✓	✓	✓	✓	✓	✓	×	×	×
Sodium hydroxide	arbitrarily	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	×	×
Ammonium sulfate	arbitrarily	×	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ammonium carbonate	arbitrarily	✓	✓	×	✓	○	×	✓	✓	✓	✓	✓	✓
Ammonium chloride	arbitrarily	×	×	✓	✓	✓	○	✓	✓	✓	✓	✓	✓
Sodium fluosulfate	arbitrarily	○	○	×	✓	✓	✓	✓	✓	✓	×	×	×
Ammonium fluoride	arbitrarily	×	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sodium hypochlorite	0-25	×	×	×	✓	○	×	✓	✓	✓	×	×	×
Aluminium Sulfate	arbitrarily	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lead Acetate	arbitrarily	✓	✓	✓	✓	✓	○	✓	✓	✓	✓	✓	✓
Calcium hypochlorite	0-25	×	×	×	✓	○	○	✓	✓	✓	○	○	×
Methanol	arbitrarily	✓	✓	✓	✓	○	○	✓	✓	✓	○	×	×
Ethanol	arbitrarily	✓	✓	✓	✓	○	○	✓	✓	✓	○	○	×
Toluene	arbitrarily	✓	✓	✓	×	×	×	✓	✓	✓	○	○	○
Dichloroethane	arbitrarily	✓	✓	✓	×	×	×	✓	✓	✓	✓	○	○
Chloric acid	arbitrarily	×	×	×	✓	✓	×	✓	✓	✓	✓	○	○
Potassium chlorate	arbitrarily	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Boric acid	arbitrarily	✓	✓	○	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sodium phosphate	arbitrarily	✓	✓	✓	✓	○	×	✓	✓	✓	✓	✓	✓
Borax	arbitrarily	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Potassium permanganate	arbitrarily	✓	✓	✓	✓	✓	×	✓	✓	✓	○	○	○
Sulfurous acid	arbitrarily	✓	✓	○	✓	✓	✓	✓	✓	✓	✓	✓	✓
Silicic acid	arbitrarily	×	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hypochlorous acid	arbitrarily	×	×	×	✓	✓	✓	✓	✓	✓	✓	✓	○
Nickel sulfate	arbitrarily	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	✓
Aluminium chloride	arbitrarily	○	×	×	✓	✓	✓	✓	✓	✓	✓	✓	✓

Remarks: ✓ stands for work well, ○ stands for able to use, × stands for forbidden.  
Medium data beyond the above table, please consult CNP.