GM, GB Series Mechanical Diaphragm Metering Pumps

Main Performance Parameters

- Max flow rate: 1800L/h
- Max discharge pressure: 12bar
- Within the flow range of 30% ~ 100%, the stability precision is ± 1% of rated flow
- Maximum suction lift height: 3m water column
- Max inlet pressure: 2bar
- Max ambient temperature: +40℃

GM Series Mechanical Diaphragm Metering Pump
Patent No.: ZL201730590732.5

Major Features

Drive End

- Variable eccentric structural adjustment ensures smooth fluctuations in flow pulsation.
- Upgraded structural for harsh operating environments.
- Wear-resistant ball bearings enable the work more stable.
- With oil bath lubrication, the driving parts are coupled with long working life.
- It can achieve flow adjustment whether in the shutdown or running states, and the adjustment modes can be the manual, electric or frequency conversion.

Fluid End

- Mechanical drive diaphragm and material side without diaphragm are easy for passing the materials.
- Various pump head materials include PVC, PVDF, 316SS, high viscosity, slurry and others. They are suitable for conveying all kinds of materials.
- It adopts self-cleaning check valve structure, which is easy to maintain.

Control Mode

- The electric stroke controller receives the external control signal and adjusts the stroke length.
  Power supply: 220V -50Hz-single phase
  Input signal: 4-20mA analog signal
  Output signal:4-20mA/1-5V analog signal for records display and system controls
- The electric stroke controller receives the external control signal and adjusts the stroke length
  Power supply: 220V-50Hz single phase, 380V-50Hz three phase
  Input signal: 4-20mA analog signa
- Motor controller determines three-phase motor by "on/off" mode, adjusts the output flow
  Power supply: 200-240V/50Hz/60Hz/single phase
  Control mode: 4-20mA analog signal, external pulse signal or manual adjustment

GB Series Mechanical Diaphragm Metering Pump

Main Applications

- The product is extensively used in many fields such as environmental protection, petrochemical, chemical, oil refining, electricity, metallurgy, medicine, food, water treatment and other fields.

Annexes

- The necessary annexes should be provided, such as: filter, calibrator, pulsation damper, safety valve and counter balance valve, among which the safety valve is necessary.
- Metering pumps with Gm0002-GM0050 PVC fluid end, should be equipped with injection valve, foot valve, counterweight and 6m hose, except for the high-viscosity pump head.

Standard Motor Performance Parameters

- Power supply: 380V-50Hz three phase/220V-50Hz single phase
- IP protection grade: IP55
- All motors shall comply with IEC
- Insulation class: Class F

Available Options

- Double diaphragm pump head
- Double diaphragm rupture detecting device, pressure gauge, and pressure switch
- Stroke counting sensor
- PNP output / NPN output / relay output

Main Components of the Fluid End

GM0002-GM0500

The materia of Fluid End	Valve body	Valve seat	Valve ball	Isolating Diaphragm	Seal Ring	Connections
PVC	PVC	PVDF	zirconia	PTFE	Fluororubber	PVC
PVDF	PVDF	PVDF	zirconia	PTFE	Fluororubber	PVDF
316SS	316SS	316SS	316SS	PTFE	Fluororubber	316SS

GB0080-GB1200

The materia of Fluid End	Valve body	Valve seat	Valve ball	Isolating Diaphragm	Seal Ring	Connections
PVC	PVC	PVDF	zirconia	PTFE	Fluororubber	PVC
PVDF	PVDF	PVDF	zirconia	PTFE	Fluororubber	PVDF
316SS	316SS	316SS	316SS	PTFE	Fluororubber/PTFE	316SS

GB1500-GB1800

The materia of Fluid End	Valve body	Valve housing	Valve seat	Valve plate	Spring	Diaphragm	Seal Ring	Connections
PVC	PVC	PVC	PVDF	PVC	Hastelloy alloy C-276	PTFE	Fluororubber	PVC
PVDF	PVDF	PVDF	PVDF	PVDF	Hastelloy alloy C-276	PTFE	Fluororubber	PVDF
316SS	316SS	316SS	316SS	316SS	Hastelloy alloy C-276	PTFE	PTFE	316SS

GM, GBSeries Mechanical Diaphragm Metering Pumps Model Description

Series ☐ Flow ☐ Fluid End ☐ Interface ☐ Electric Motor ☐ Adjustment ☐ Base ☐ Option ☐

Series

Code	Description
GM	GM Series Mechanical Diaphragm Metering Pump

Code	Description
GB	GB Series Mechanical Diaphragm Metering Pump

Flow

Code	Max flow (L/h)	Max pressure (bar)	Stroke frequency (min⁻¹)	Motor power (kW)
GM0002	2.25	12	36	
GM0005	4.5		36	
GM0010	9		36	
GM0025	25		72	
GM0050	50	10	144	0.25 ■
GM0090	85	7	72	0.37 ■
GM0120	115		72	
GM0170	170		144	
GM0240	235		144	
GM0330	315	5	144	
GM0400	400		144	0.37
GM0500	500		180	
GB0080	82	10	36	
GB0180	167		72	
GB0250	237		102	
GB0350	334		144	0.55 ●
GB0450	416		180	0.75 ●
GB0500	464	7	144	
GB0600	583		180	
GB0700	656	3.5	102	
GB1000	946		144	
GB1200	1200		180	
GB1500	1500	3	180	0.75
GB1800	1800		206	

■ For three-phase constant-speed motor
● For three-phase constant-speed motor, explosion-proof motor
■ For single-phase, explosion proof, variable frequency motor
● For single-phase, variable frequency motor

Fluid End

Code	Description
P	PVC fluid end
S	316 fluid end
T	PVDF fluid end
F	Sodium hypochlorite application: PVC fluid end ■

Code	Description
V	High viscosity application: PVC fluid end
K	Slurry application: GM0025-0500 316 fluid end; GB PVC fluid end
M	Mixture application, GM: PVDF fluid end
Z	As for special fluid end, please consult Nanfang Pump, and indicate in order

■ GM, GB series: EPDM material O-ring

Interface

Code	Description	GM0002-0050			GM0090-0500			GB0080-0450			GB0500-1200			GB1500-1800		
		PVC	PVDF	316	PVC	PVDF	316	PVC	PVDF	316	PVC	PVDF	316	PVC	PVDF	316
P	NPT thread	1/2"F	1/2"F	1/2"F	1/2"F	1/2"F	1/2"F	1/2"F	1/2"F	1/2"F	1"F	1"F	1"M	1-1/2"F	1-1/2"F	1-1/2"M
Q	Hard pipe fittings of inner pipe nozzle	DN15	---	---	DN15	---	---	DN15	---	---	DN25	---	---	DN40	---	---
R	Hose connector	6x12	6.35×9.52 ■	---	---	---	---	---	---	---	---	---	---	---	---	---
H	GM hose with high viscosity only	12×18	---	---	20×28	---	---	---	---	---	---	---	---	---	---	---
X	Special interface	Please consult Nanfang pump, and indicate in order														

Note: The red parameters stand for standard configuration. As for high-viscosity pump head V, slurry pump head K, mixture pump head M, if no special options, all interfaces are selected according to the fluid end material.

■ The product is not equipped with injection valve,foot valve, counterweight and PTFE hose by default.Please make additional inquiry to the factory.

Electric Motor

Code	GM description	GB description
1	250W,IEC71,1440rpm,3-50-380V,IP55/F/TEFC	550W,IEC71,1440rpm,3-50-380V,IP55/F/TEFC
2	1/3hp,NEMA,56C,1440rpm,3-50-380V,NEMA3/TEFC	1hp,NEMA,56C,1440rpm,3-50-380V,NEMA3/TEFC
3	370W,IEC71,1440rpm,3-50-380V,IP55/F/TEFC/Ex-dⅡBT4	550W,IEC80,1440rpm,3-50-380V,IP55/F/TEFC/Ex-dⅡBT4
4	370W,IEC71,1440rpm,3-50-380V,IP55/F/TEFC	750W,IEC80,1440rpm,3-50-380V,IP55/F/TEFC
5	250W, capacitor-start motor, IEC71,1440rpm,1 -50-220V,IP55/F/TEFC	750W,IEC80,1440rpm,3-50-380V,IP55/F/TEFC/Ex-dⅡBT4
6	250W, variable frequency motor, IEC71,1440rpm,380V,IP55/F/ IC416	550W, capacitor-start motor, IEC80,1440rpm,1-50-220V,IP55/F/TEFC
7	370W, variable frequency motor, IEC71,1440rpm,380V,IP55/F/ IC416	750W, capacitor-start motor, ,IEC80,1440rpm,1 -50-220V,IP55/F/TEFC
8	----------	550W,IEC80,1440rpm,3-50-380V,IP55/F/TEFC
9(5)	The pump is not equipped with the motor and retains the IEC71 interface	The pump is not equipped with the motor and retains the IEC71 interface
9(6)	370W,capacitor-start motor, IEC71,1440rpm,1 -50-220V,IP55/F/TEFC	----------
9(8)	----------	The pump is not equipped with the motor and retains the IEC80 interface
9	Consult Nanfang Pump for other motors	Consult Nanfang Pump for other motors

Note: The single-phase motor can not be used with the motor switch controller at the same time.

Adjustment

Code	GM description	GB description	Remarks
M	Manual stroke adjustment	Manual stroke adjustment	Standard configuration
N	Electric stroke adjustment, 4-20mA, 1PH-50Hz-220V	Electric stroke adjustment, 4-20mA,1PH-50Hz-220V	---------
E	----------	Electric stroke adjustment, 4-20mA, 220VAC-1Ph,Ex,Proof	---------
F	Frequency conversion control	Frequency conversion control	---------

Base

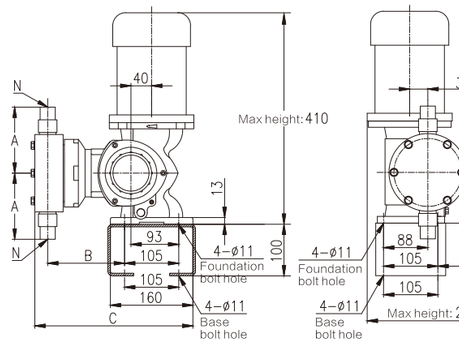
Code	GM description	GB description	Remarks
N	No base	No base	Standard configuration
Y	Base ■	Base ■	-------

Option

Code	GM description	GB description	Remarks
N	No options	No options	---------
B	Diaphragm rupture detecting device and pressure gauges	Diaphragm rupture detecting device and pressure gauges	Pressure gauge
C	Diaphragm rupture detecting ■ device and pressure switch	Diaphragm rupture detecting ■ device and pressure switch	Non-explosion-proof pressure switch with base
D	Diaphragm rupture detecting device, pressure ■ gauge, and explosion-proof pressure switch	Diaphragm rupture detecting device, pressure ■ gauge, and explosion-proof pressure switch	Explosion-proof pressure switch and pressure gauge, with base
X	Consult Nanfang Pump for other information	Consult Nanfang Pump for other information	Please specify special configuration in the contract

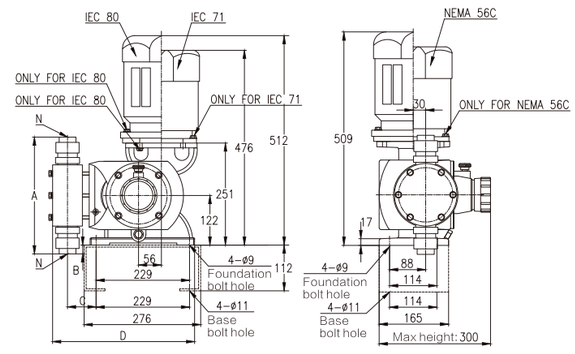
■ GM, GB series select double diaphragm pressure switch, the base is included automatically, its option should be chose "Y"

GM Series Dimensions



GM series side view　　GM series front view

GB Series Dimensions



GB series side view　　GB series front view

GM Series Mounting Dimensions

GM0002-GM0050

Pump Head Material	Interface code	A(mm)	B(mm)	C(mm)
PVC	R	100	102	250
PVDF	P	100		
316	P	101		

GM0090-GM0500

Pump Head Material	Interface code	A(mm)	B(mm)	C(mm)
PVC	P	127	150	307
PVDF	P	131		
316	P	131		

GB Series Mounting Dimensions

Size \ Model	GB0080-0450		GB0500-0600		GB0700-1200		GB1500-1800	
	Plastic	Metallic	Plastic	Metallic	Plastic	Metallic	Plastic	Metallic
A	256	264	286	348	362	423	419	458
B	5	10	21	52	59	89.5	87.5	107
C	71	65	71	79	96	100	96	100
D	350	332	350	350	373	370	373	370
N	1/2"F NPT	1/2"F NPT	1"F NPT	1"M NPT	1"F NPT	1"M NPT	1"F NPT	1-1/2"M NPT
	DN15 (PVC pump head only)	-------	DN25 (PVC pump head only)	-------	DN25 (PVC pump head only)	-------	-------	-------