MECAFLOW DIAPHRAGM DOSING PUMP

P02-MCF-FT-001

Product data sheet · Mechanical dosing pumps

Mechanically driven diaphragm dosing pump, from 4 to 1,000 L/h and up to 14 bar depending on the model. Four diaphragm diameters (D80, D110, D140, D170), pump head in PP, PVDF or 316L stainless steel, flow rate adjustable by the stroke length.



Technical data

Type	Positive displacement diaphragm dosing pump, mechanically driven by an electric motor
Flow rate range	4 to 1,000 L/h depending on the model
Maximum pressure	Up to 14 bar depending on the model
Diaphragm	PTFE, diameter 80, 110, 140 or 170 mm
Materials in contact with the dosed product	PP, PVDF or 316L stainless steel depending on the construction; FPM or PTFE seals
Flow rate adjustment	Stroke length, from 0 to 100 %, using the adjuster at the rear of the pump
Motor	Three-phase 230/400 Vac, 0.18 kW (D80, D110) or 0.37 kW (D140, D170)
Connection	BSP, from 1/4" to 1" depending on the diaphragm diameter
Internal safety valve	None: external pressure relief valve required on the discharge

Description

The MecaFlow dosing pump is a positive displacement diaphragm pump driven by an electric motor. The range combines several pump heads, stroke lengths and materials, so that the pump can be matched to the dosed product and the required flow rate.

A diaphragm pump does not leak: it is suitable for installations where the chemical leaks of a piston pump are not acceptable.



Main components

1. PTFE diaphragm
2. Return spring
3. Eccentric shaft
4. Stroke length adjuster

The flow rate is adjusted by changing the stroke length, from 0 to 100 %, using the adjuster at the rear of the pump. Standard models have a three-phase 230/400 Vac motor: 0.18 kW for the D80 and D110 diaphragms, 0.37 kW for the D140 and D170 diaphragms. Other motor options (single-phase, direct current, integrated drive) and control by 4-20 mA or 0-10 V signal or by variable frequency drive are available on request.

Applications

The pump head material is chosen according to the dosed product. Before commissioning, check that the materials of the pump supplied are chemically resistant to the product to be injected.



PP pump head



PVDF pump head



316L stainless steel pump head

PP pump head:

- water treatment: sulphuric acid, polyaluminium chloride, sodium hypochlorite;
- fertigation;
- paper industry;
- acid or neutral chemicals.

PVDF pump head:

- water treatment: fluorides, chromium, sodium hypochlorite;
- fertigation;
- neutral chemicals;
- strong acids.

316L stainless steel pump head:

- beverage industry;
- water and wastewater treatment: peracetic acid, polyelectrolyte, nitric acid;
- food industry;
- alkaline or neutral products.

Performance

Each model is defined by its diaphragm diameter, its maximum flow rate at maximum pressure and its maximum pressure. The flow rate / pressure ranges for each diameter are given by the curves P02-MCF-CO-001.

Available models: codes by construction

Diameter	Max. flow rate	Max. pressure	Motor power	Connection	PI	FF	II
80	4	14	0.18	1/4"	D80-Q4-P14-T18-PI-014	D80-Q4-P14-T18-FF-014	D80-Q4-P14-T18-II-014
80	22	12	0.18	1/4"	D80-Q22-P12-T18-PI-014	D80-Q22-P12-T18-FF-014	D80-Q22-P12-T18-II-014
80	39	12	0.18	1/4"	D80-Q39-P12-T18-PI-014	D80-Q39-P12-T18-FF-014	D80-Q39-P12-T18-II-014
80	54	12	0.18	1/4"	D80-Q54-P12-T18-PI-014	D80-Q54-P12-T18-FF-014	D80-Q54-P12-T18-II-014
110	65	8	0.18	3/8"	D110-Q65-P8-T18-PI-038	D110-Q65-P8-T18-FF-038	D110-Q65-P8-T18-II-038
110	150	8	0.18	3/8"	D110-Q150-P8-T18-PI-038	D110-Q150-P8-T18-FF-038	D110-Q150-P8-T18-II-038
110	250	8	0.18	3/8"	D110-Q250-P8-T18-PI-038	D110-Q250-P8-T18-FF-038	D110-Q250-P8-T18-II-038
140	252	8	0.37	3/4"	D140-Q252-P8-T37-PI-034	D140-Q252-P8-T37-FF-034	D140-Q252-P8-T37-II-034
140	305	8	0.37	3/4"	D140-Q305-P8-T37-PI-034	D140-Q305-P8-T37-FF-034	D140-Q305-P8-T37-II-034
140	355	8	0.37	3/4"	D140-Q355-P8-T37-PI-034	D140-Q355-P8-T37-FF-034	D140-Q355-P8-T37-II-034
170	450	5	0.37	1"	D170-Q450-P5-T37-PI-100	D170-Q450-P5-T37-FF-100	D170-Q450-P5-T37-II-100
170	700	4	0.37	1"	D170-Q700-P4-T37-PI-100	D170-Q700-P4-T37-FF-100	D170-Q700-P4-T37-II-100
170	800	4	0.37	1"	D170-Q800-P4-T37-PI-100	D170-Q800-P4-T37-FF-100	D170-Q800-P4-T37-II-100
170	1000	3	0.37	1"	D170-Q1000-P3-T37-PI-100	D170-Q1000-P3-T37-FF-100	D170-Q1000-P3-T37-II-100

Constructions:

- PI: PP cylinder, stainless steel balls, stainless steel seat, FPM seals;
- FF: PVDF cylinder, PTFE balls, PVDF seat, PTFE seals;
- II: stainless steel cylinder, stainless steel balls, stainless steel seat, PTFE seals.

The code indicates the diaphragm diameter (D), the maximum flow rate at maximum pressure in L/h (Q), the maximum pressure in bar (P), the motor (T18: three-phase 0.18 kW; T37: three-phase 0.37 kW), the construction and the connection. The full coding is detailed in the manual P02-MCF-MA-001.

Installation

Fix the pump on a stable support, or on the stainless steel mounting plate if it has been ordered. Recommended minimum installation: a suction strainer, a pressure relief valve on the discharge and an injection valve at the injection point.

Electrical and hydraulic connection, oil filling and calibration are described in the manual P02-MCF-MA-001.

Maintenance

Visual check every week or every 60 operating hours. The diaphragm, valves, seals and oil are replaced every 24 months or every 8,000 operating hours. Detailed schedule, replacement diaphragms and oil: manual P02-MCF-MA-001. Spare parts: exploded views P02-MCF-VE-001.

Safety

MecaFlow pumps have no internal safety valve. Install an external pressure relief valve on the discharge, close to the pump and upstream of any other accessory. The working pressure must never exceed the maximum pressure stated on the rating plate of the pump.

Related documents : P02-MCF-CO-001, P02-MCF-MA-001, P02-MCF-VE-001

Product codes : D80-Q4-P14-T18-FF-014, D80-Q4-P14-T18-II-014, D80-Q4-P14-T18-PI-014, D80-Q22-P12-T18-FF-014, D80-Q22-P12-T18-II-014, D80-Q22-P12-T18-PI-014, D80-Q39-P12-T18-FF-014, D80-Q39-P12-T18-II-014, D80-Q39-P12-T18-PI-014, D80-Q54-P12-T18-FF-014, D80-Q54-P12-T18-II-014, D80-Q54-P12-T18-PI-014, D110-Q65-P8-T18-FF-038, D110-Q65-P8-T18-II-038, D110-Q65-P8-T18-PI-038, D110-Q150-P8-T18-FF-038, D110-Q150-P8-T18-II-038, D110-Q150-P8-T18-PI-038, D110-Q250-P8-T18-FF-038, D110-Q250-P8-T18-II-038, D110-Q250-P8-T18-PI-038, D140-Q252-P8-T37-FF-034, D140-Q252-P8-T37-II-034, D140-Q252-P8-T37-PI-034, D140-Q305-P8-T37-FF-034, D140-Q305-P8-T37-II-034, D140-Q305-P8-T37-PI-034, D140-Q355-P8-T37-FF-034, D140-Q355-P8-T37-II-034, D140-Q355-P8-T37-PI-034, D170-Q450-P5-T37-FF-100, D170-Q450-P5-T37-II-100, D170-Q450-P5-T37-PI-100, D170-Q700-P4-T37-FF-100, D170-Q700-P4-T37-II-100, D170-Q700-P4-T37-PI-100, D170-Q800-P4-T37-FF-100, D170-Q800-P4-T37-II-100, D170-Q800-P4-T37-PI-100, D170-Q1000-P3-T37-FF-100, D170-Q1000-P3-T37-II-100, D170-Q1000-P3-T37-PI-100