MM Series

AODD STAINLESS STEEL PUMPS FOR FOOD & BEVERAGE
PRODUCT BROCHURE

PSG a DOVER company

ALMATEC

Where Innovation Flows

ALMATEC®

Almatec® MM Series Air-Operated Double-Diaphragm (AODD) Pumps are meeting the special requirements of the food and beverage industry by using of food-grade wetted materials and a construction based on the cleaning demands.

All materials and the design of the pump are well suited for CIP and SIP cleaning. Depending on the pump specification the hygienic standards FDA, EC1935/2004 and USP Class VI are observed. In addition, the pumps are ATEX conform according to 2014/34/EU directive.

DESIGNED FOR HYGIENIC AND CLEANABILITY DEMANDS

Almatec® MM Series

Stainless-Steel AODD Pumps for the Food & Beverage Industry

- Food-grade wetted materials and a construction based on the cleaning demands
- Modular design for easily exchange of the connections and future technical variations
- Available in three sizes: ½", 1", 1 ½"
- Different hygienic manifold options
- Orientation of inlet and outlet can be adjusted just by turning the manifolds
- Stainless-steel machined housings SS316L, surface finishing grade 3.2 µm
- Easy and good cleanibility (CIP/SIP capability) due to smooth and steady product channels without hidden corners or dirt traps
- Low shear fluid transport including solid handling
- Material conformity to FDA, EC1935, USP Class VI and ATEX
- Good suction head, self-priming and dry run capability
- Easy disassembly of the fluid path
- Stroke counting and diaphragm monitoring available as accessories
- Smooth integral-piston diaphragms without disc
- Diaphragms, ball valves and O-rings made of PTFE or EPDM
- Maintenance-free air control system PERSWING P® without dead spot
- No drives, no rotating parts, no shaft seals within the fluid
- For cleaning processes short-term temperature range up to 130 °C (266 °F)
- Easy to start up, step-less control via the air volume and pressure
- Wear parts compatible to other Almatec pump series

Pump Models:

MM 15: Maximum flow rate of 3.5 m³/h (15.4 gpm)

MM 25: Maximum flow rate of 9.2 m³/h (40 gpm)

MM 40: Maximum flow rate of 20 m³/h (88 gpm)

MM Series | Special Features

The pump design is reflected in the name “MM”, as it refers to “modular metal”. The modularity allows to easily exchanging the connection pieces to the standard the customer requires – a frequent topic in hygienic applications. The orientation of inlet and outlet to each can be adjusted by turning the manifold. The lower manifold, however, is always the pump inlet, the upper one the outlet.

The housing is made from stainless steel 1.4404 (SS316L). The wetted surfaces come with a surface roughness of maximum 3.2 µm. Soft redirections without rotating parts and shaft seals in the product chamber together with the principle-related gentle displacement result in low shear and a special suitability for the supposed applications.

Connection Options

Inlet and outlet orientation can easily be adjusted in between “U-Shape“ (inlet and oulet on the same side) and “Z-Shape“ (inlet and outlet at opposite sides).

The connection options are:

- Code A1 - Screwed aseptic pipe connection (DIN 11864-1)
- Code A2 - Aseptic flange (DIN 11864-2)
- Code A3 - Aseptic clamp pipe connection (DIN 11864-3)
- Code M - Milk pipe connection (DIN 11851)
- Code T - Tri-Clamp® connection (DIN 32676)
- Code S - Open buttwelding end (small and easy to adapt)

Code System

Optional equipment:
C = Stroke counting
D = Diaphragm monitoring
H = EC1935/2004 conformity (only for diaphragms and valves in PTFE)
USP = USP Class VI conformity (only for diaphragms and valves in PTFE)

MM Series | **Size**

M 25 STT - H - T

Housing material:
S = SS316L, 3.2 µm

Diaphragm material:
E = EPDM (FDA)
T = PTFE (FDA)

Ball valve material:
E = EPDM (FDA)
T = PTFE (FDA)

Connection options:
A1 = Screwed aseptic pipe connection (DIN 11864-1)
A2 = Aseptic flange (DIN 11864-2)
A3 = Aseptic clamp pipe connection (DIN 11864-3)
M = Milk pipe connection (DIN 11851)
T = Tri-Clamp® connection (DIN 32676)
S = Open buttwelding end

Components of the Almatec® MM Series Pump

PUMP HOUSING

- Wetted housing part
- Material: 1.4404 (SS316L)
- Surface roughness of ≤ 3.2 µm

CENTER BLOCK

- Solid construction
- Non-wetted housing part
- Material: Conductive Polyethylene

DIAPHRAGMS

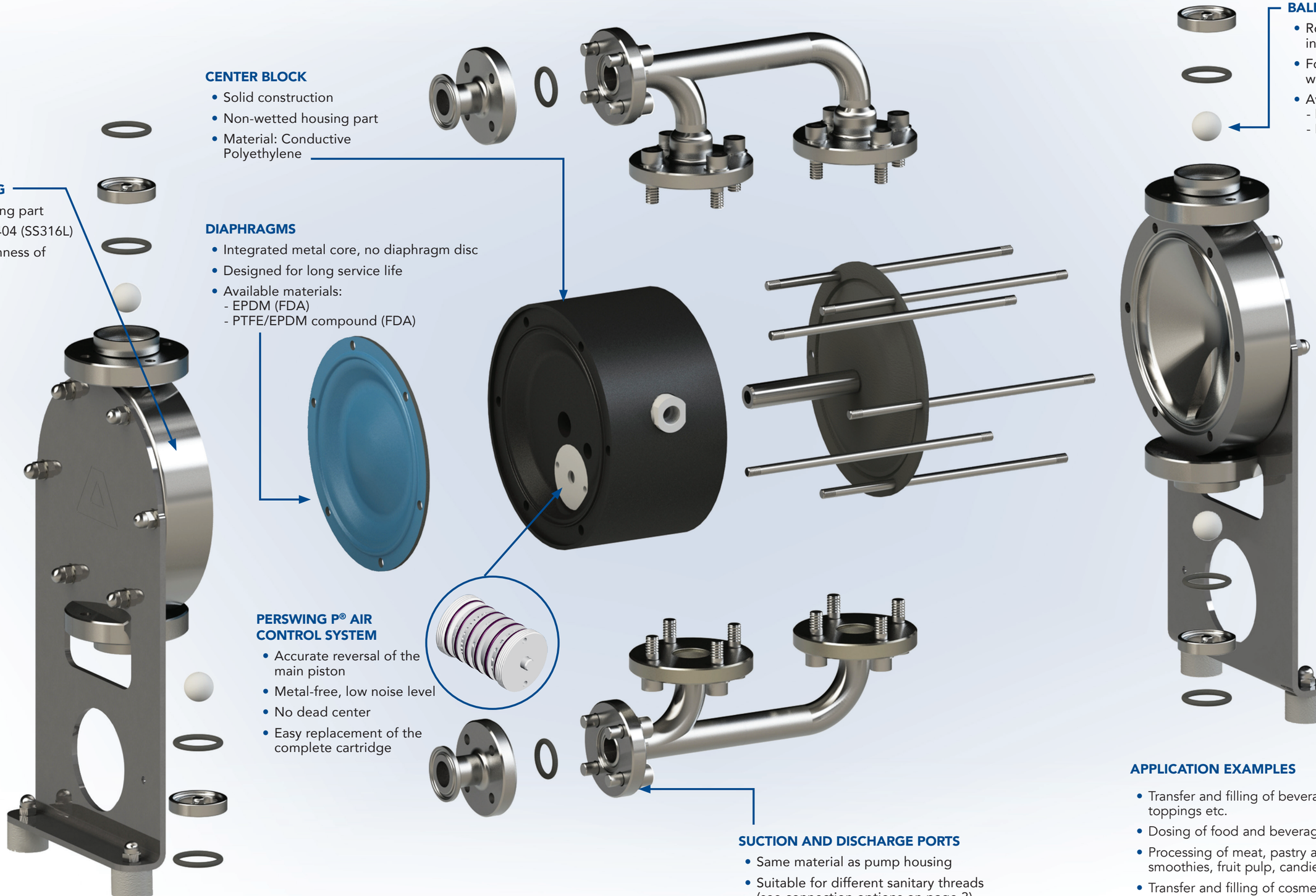
- Integrated metal core, no diaphragm disc
- Designed for long service life
- Available materials:
  - EPDM (FDA)
  - PTFE/EPDM compound (FDA)

PERSWING P® AIR CONTROL SYSTEM

- Accurate reversal of the main piston
- Metal-free, low noise level
- No dead center
- Easy replacement of the complete cartridge

SUCTION AND DISCHARGE PORTS

- Same material as pump housing
- Suitable for different sanitary threads (see connection options on page 3)



The Almatec® Advantage

BALL VALVES

- Robust and insensitive to solids
- Form a linear seal with the valve seat
- Available materials:
  - EPDM (FDA)
  - PTFE (FDA)

APPLICATION EXAMPLES

- Transfer and filling of beverages, sauces, toppings etc.
- Dosing of food and beverage ingredients
- Processing of meat, pastry and dough, smoothies, fruit pulp, candies
- Transfer and filling of cosmetics

MM Series | Technical Data

Pump Size		MM15	MM25	MM40
Dimensions – mm (inch):	Length Width Height	150 (5.9) 303 (11.9) 413 (16.3)	200 (7.9) 362 (14.3) 553 (21.8)	270 (10.6) 439 (17.3) 740 (29.1)
Nominal port size		1/2"	1"	1 1/2"
Air connection (BSP)		1/4"	1/4"	1/4"
Weight – kg (lbs)		14 (31)	33 (73)	82 (181)
Max. particle size of solids – mm (inch)		4 (0.16)	7 (0.28)	11 (0.43)
Suction head, dry – mWC (ftWC)		3 (9.8)	3 (9.8)	4 (13.1)
Suction head, wet – mWC (ftWC)		9 (29.5)	9 (29.5)	9 (29.5)
Max. permissible driving pressure – bar (psig)		7 (100)	7 (100)	7 (100)
Max. permissible operating temperature - °C (°F)		80 (176)	80 (176)	80 (176)
Max. capacities	m^3/h l/min gpm	3.5 58 15	9.2 153 40	20 333 88

MM 15

Optional Equipment

Diaphragm Monitoring (code D)

A capacitive sensor installed in the pump muffler detects all liquids and in case of a diaphragm rupture it outputs a corresponding signal to a controller which then triggers an alarm or disconnects the pump via a connected solenoid valve.

Stroke counting (code C)

A sensor is installed in the center block of the pump to count the strokes. The diaphragm movement is scanned without contact. The issued sensor pulses can be output to existing detectors or to a stroke counter (can also be supplied). When the preset value is reached, the stroke counter outputs a signal which can then be processed further, for instance in order to shut down the pump via a solenoid valve.

Hygienic Certifications (codes H and USP)

Since certifications are an important aspect in the food and beverage market, an EC1935/2004 conformity declaration can be issued for MM pumps with PTFE internals for the applicability of the pump material for food contact (code H). Also an "USP Class VI" certification for the wetted pump materials of such pumps are available (code USP).

1935-2004

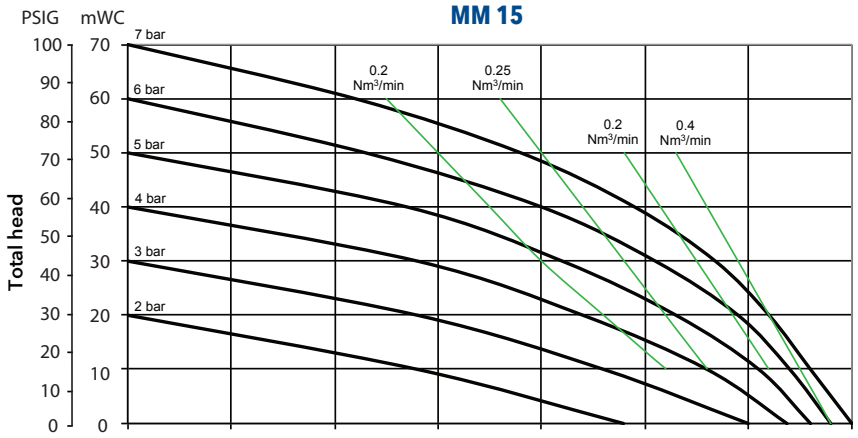
USP CLASS VI

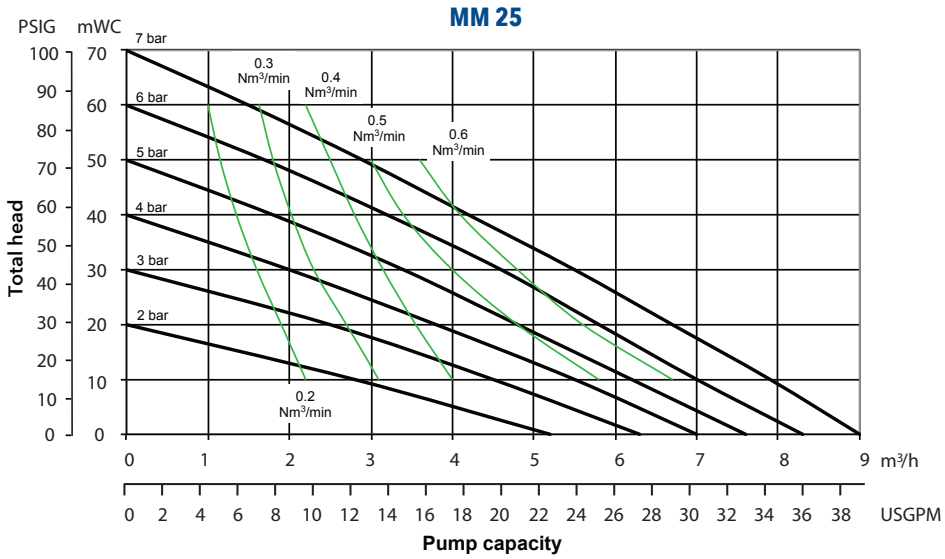
Spare Part Kits

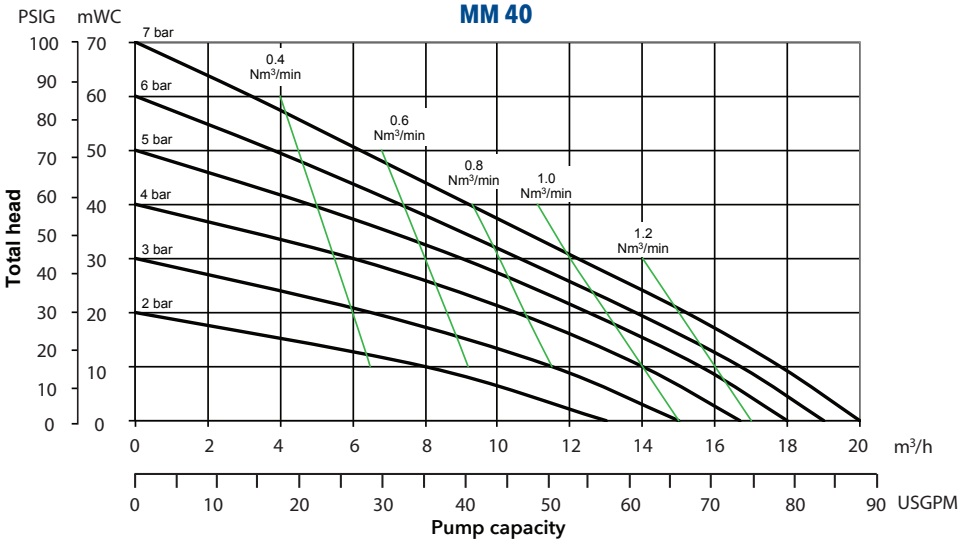
Spare parts kits ensure that the correct replacement parts are always available in the required quantities. This helps to avoid production stoppages and ensures that the Almatec air-operated double diaphragm pumps are always ready for action. We strongly recommend not to install non-genuine spare parts into your Almatec pumps and pulsation dampers. Any certificates on material conformity according to FDA, EC1935/2004 or USP VI and all CE–and ATEX-certificates for our products are invalid when using spare parts of non-genuine origin.

MM Series | Performance Charts

The following data refer to water at 20°C / 68°F (referring to DIN EN ISO 9906).
The green lines state the air consumption (in Nm³/min, independent from the pressure).







ALMATEC

PSG Germany GmbH
Hochstraße 150-152
47228 Duisburg, Germany
P: +49 (0) (2065) 89205-0
info@almatec.de
almatec.de

PSG
a DOVER company

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