Alfa Laval M Gear

Gear Pumps

Introduction

The Alfa Laval M Gear is an external gear pump that efficiently transfers low-volume fluids for filling applications. Precision alignment, easy cleaning and simple maintenance make the stainless-steel M Gear pump a solid choice for dosing, sampling and filling machines. This proven rotary positive displacement pump easily adapts to OEM filling machines.

Application

The Alfa Laval M Gear is designed for uninterrupted production in a broad range of hygienic and industrial applications across the food, chemical, personal care, and many other industries.

Benefits

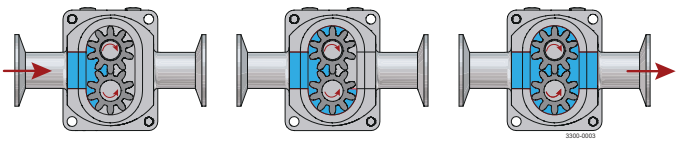
- Wide performance envelope and increased pressure capabilities cover a broad range of process requirements
- Proven performance and predictable, consistent output due to FDA-approved contacting gears
- Increased production with reduced carbon footprint due to high efficiency and low energy consumption
- More uptime and quick, cost-effective maintenance due to fast dismantling for routine service or parts replacement
- Flexible, compact design for easy installation in tight spaces and integration with OEM filling machines

Working principle

The positive displacement of the pump is created by contacting, contra-rotating multi-lobe gears, where one gear drive drives the secondary within a fully swept pump chamber. The pump is capable of bi-rotational flow without requiring modification.

Fluid is carried through the pump in the cavities formed between the contacting gear and the interior of the case. As the blades disengage, a cavity forms, filling with fluid. As the blades engage, the cavity diminishes, displacing fluid into the outlet port.

The gears are mounted between specially developed PTFE bush bearings, all fitted within the main pump body to ensure precision alignment and high-performance efficiency.



Certificates

(EC) No. 1935/2004

FDA

TECHNICAL DATA

Standard Specification	
Pump gears:	PTFE Impregnated 316L or Plain 316L
Other product wetted steel parts:	316L / 1.4404
Bush Bearings:	FDA approved premium grade PTFE resin
Inside surface finish:	Mech Ra ≤ 0.8 µm / Mech Ra ≤ 32 µin
Bracket - Flange Frame Adaptor	Aluminum
Coupling guard:	304 (1.2 mm thick)
Max process temperature:	60°C / 140°F
Connections:	½" Females Connections: BSP Thread, Bore Hole (No thread)
	1" Male Connections: Tri-Clamp, SMS, DIN11851

Motor

	Model		
	200	**210**	**220**
Power (kW)	0.25	0.37	0.55
Poles	6 or 8	6	6
Speed (rpm)	960 or 720	960	960
Coupling	D71 or D80	D80	D80
Drive Specification:	IEC Induction Motor, C-Face / Foot mounted, TEFC, IP55		
Voltages:	400v/3ph/50Hz or 460v/3ph/60Hz.		

Warranty

Standard 1-years warranty on M Gear pumps. The warranty covers all non-wear parts on the condition that genuine Alfa Laval Spare Parts are used.

Shaft seals

Only one single mechanical seal required for the drive shaft for maximum leakage control.

Rotary seal face:	Carbon or Silicon Carbide
Stationary seal face:	Stainless Steel or Silicon Carbide
Elastomers:	EPDM or FPM (FDA conforming)

Note: Only possible combinations are Stainless Steel / Carbon or Silicon Carbide / Silicon Carbide

Process data

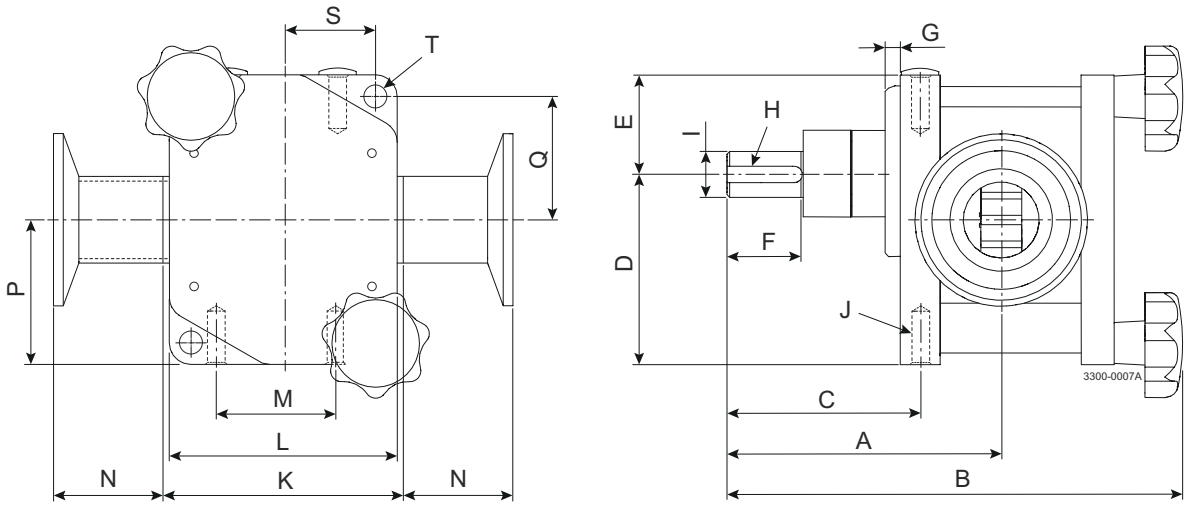
M Gear Model	Connection	Displacement	Differential pressure	Max. speed	Bare-shaft weight
	mm	l/rev	bar	rev/min	kg
M200	12.5 or 25	0.006	7	1360	2
M210	12.5 or 25	0.010	7	1360	2.2
M220	12.5 or 25	0.018	4	1360	2.9

½" (DN12.5) connections only possible with Female Thread connections.

Pump Performance (at viscosity 65 cP)

Pump Model + Speed		**Pressure**														
		0 bar			**2 bar**			**4 bar**			**6 bar**			**7 bar**		
		Flow	**Power**	**Motor**	**Flow**	**Power**	**Motor**	**Flow**	**Power**	**Motor**	**Flow**	**Power**	**Motor**	**Flow**	**Power**	**Motor**
	rev/min	**l/h**	**kW**	**Frame**	**l/h**	**kW**	**Frame**	**l/h**	**kW**	**Frame**	**l/h**	**kW**	**Frame**	**l/h**	**kW**	**Frame**
M200	**690**	250	0.12	71	225	0.12	71	195	0.12	71	160	0.12	71	145	0.12	71
	900	325	0.18	71	295	0.18	71	255	0.18	71	210	0.18	71	190	0.25	80
	1360	485	0.25	71	440	0.25	71	380	0.25	71			-			
M210	**690**	400	0.12	71	390	0.12	71	370	0.12	71	358	0.18	80	345	0.18	80
	900	525	0.18	71	515	0.18	71	490	0.18	71	470	0.25	80	455	0.25	80
	1360	780	0.25	71	770	0.25	71	735	0.25	71			-			
M220	**690**	770	0.12	71	735	0.12	71	690	0.18	80			-			
	900	1000	0.18	71	960	0.18	71	900	0.25	80			-			
	1360	1500	0.25	71	1440	0.25	71					-				

Bareshaft Pump Dimensions



Dimensions (mm)

Models	A	B			C	D	E	F	G	H	I	J	K	L	M	N	P	Q	S	T
		1	2	3																
M200	75.5	132	132	132	52	57	28	20	3	5*3	14	M6*12	70	67	32	52	42.5	36	27	ø6.5
M210	75.5	132	132	132	52	57	28	20	3	5*3	14	M6*12	70	67	32	52	42.5	36	27	ø6.5
M220	89	159	159	159	52	57	28	20	3	5*3	14	M6*12	70	67	32	52	42.5	36	27	ø6.5

1 1/2" BSP

2 1" Triclamp / SM

3 1" DIN11851

This document and its contents are subject to copyrights and other intellectual property rights owned by Alfa Laval AB (publ) or any of its affiliates (jointly "Alfa Laval"). No part of this document may be copied, re-produced or transmitted in any form or by any means, or for any purpose, without Alfa Laval's prior express written permission. Information and services provided in this document are made as a benefit and service to the user, and no representations or warranties are made about the accuracy or suitability of this information and these services for any purpose. All rights are reserved.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com