

# 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

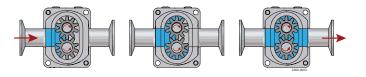
## Working principle

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





# **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 $\leq$ 0.8 $\mu m$ / Mech Ra $\leq$ 32 $\mu in$				
Bracket - Flange Frame Adaptor	Aluminum				
Coupling guard:	304 (1.2 mm thick)				
Max process temperature:	60°C / 140°F				
Connectioner	1/2" Females Connections: BSP Thread, Bore Hole (No thread)				
Connections:	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 <u>or</u> Silicon Carbide / Silicon Carbide

# Process data

M Gear Model	Connection	Displacement	Differential pressure	Max. speed	Bare-shaft weight
	inch	US gal/100 rev	psi	rev/min	lbs
M200	1/2" or 1"	0.159	100	1360	4.4
M210	1/2" or 1"	0.264	100	1360	4.8
M220	1/2" or 1"	0.476	60	1360	6.4

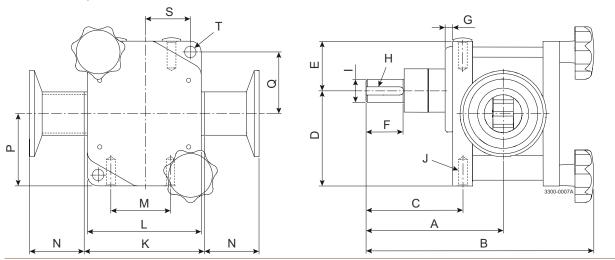


1/2" connections only possible with Female Thread connections.

# Pump Performance (at viscosity 65 cP)

Pump N	/lodel +	Pressu															
Speed			0 PSI			29 PSI			58 PSI			87 PSI		101 PSI			
		Flow	Power	Motor	Flow	Power	Motor	Flow	Power	Motor	Flow	Power	Motor	Flow	Power	Motor	
	rev/min	GMP	HP	Frame	GMP	HP	Frame	GMP	HP	Frame	GMP	HP	Frame	GMP	HP	Frame	
M200	690	1.1	0.16	80	0.99	0.16	80	0.86	0.16	80	0.7	0.16	80	0.63	0.16	80	
	900	1.43	0.24	80	1.3	0.24	80	1.12	0.24	80	0.92	0.24	80	0.84	0.34	80	
	1360	2.13	0.34	80	1.94	0.34	80	1.67	0.34	80				-			
M210	690	1.76	0.16	80	1.72	0.16	80	1.63	0.16	80	1.58	0.24	80	1.52	0.24	80	
	900	2.31	0.24	80	2.27	0.24	80	2.16	0.24	80	2.07	0.34	80	2	0.34	80	
	1360	3.43	0.34	80	3.39	0.34	80	3.24	0.16	80				-			
M220	690	3.4	0.16	80	3.24	0.16	80	3.04	0.24	80				-			
	900	4.4	0.24	80	4.23	0.24	80	3.96	0.34	80				-			
	1360	6.6	0.34	80	6.34	0.34	80	-				-					

# **Bareshaft Pump Dimensions**



Models	A	,	в		С	D	Е	F	G	н	1	J	к	1	м	Ν	Р	Q	s	т
				0				· ·			· ·									
		1	2	3																
M200	2.97	5.19	5.19	5.19	2.05	2.24	1.1	0.79	0.12	0.2*0.1	0.55	7/32"	2.75	2.64	1.26	2.05	1.67	1.42	1.06	ø0.25
M210	2.97	5.19	5.19	5.19	2.05	2.24	1.1	0.79	0.12	0.2*0.1	0.55	7/32"	2.75	2.64	1.26	2.05	1.67	1.42	1.06	ø0.25
M220	3.5	6.25	6.25	6.25	2.05	2.24	1.1	0.79	0.12	0.2*0.1	0.55	7/32"	2.75	2.64	1.26	2.05	1.67	1.42	1.06	ø0.25

1 1/2" BSP

<sup>2</sup> 1" Triclamp / SM

<sup>3</sup> 1" DIN11851

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