

# Alfa Laval Peristaltic Pumps, Series M

## Application

The series M range of peristaltic pumps are the solution to many fluid transfer problems. The versatility of the series M has been proven over a broad span of industries and applications including tank cleaning, water/waste treatment, construction, fire authorities, marine and other transport, brewing, food and chemical processing.

The series M range of peristaltic pumps can be supplied with either fixed or variable speed drives. In addition to electric motor drives, hydraulic, pneumatic, petrol or diesel driven units are also available.

The series M range of pumps offer a practical alternative to the usual large heavy construction of the standard peristaltic type pump. Whilst maintaining the benefits of the peristaltic pumping action, the series M is compact, lightweight and easily portable.

Under normal operation a vacuum is generated within the pump housing, this continuously restores the hose to its full cross section enabling the use of thin wall hoses, whilst maintaining flow rates as high as 20 m<sup>3</sup>/h.



The series M peristaltic pump is ideal for handling difficult media such as liquid/gas mixtures, abrasives, fibrous materials and suspended solids. The pumps are self priming and have a suction lift capability of up to 9 m.

Alfa Laval's peristaltic pump experience covers a wide span of both industries and applications. This, combined with state-of-the-art engineering techniques, forms the basis of the series M development. Advanced production methods and stringent quality control underpin Alfa Laval's leadership in this field of positive pumping.

## Standard Design

### Pump

Pump housings are manufactured from cast aluminium. The NW50 (2") KL camlock quick coupling suction and discharge connections are available in either stainless steel or polypropylene.

### Elastomers

The extensive range of hose materials available means that almost all fluid media can be handled, including acids and other corrosive products. For specific material availability's see page 2.

### Pressure Rating

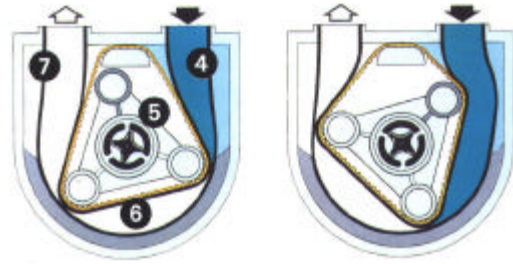
The series M range of pumps are rated to a maximum discharge pressure of 2 bar.

### Drive Options

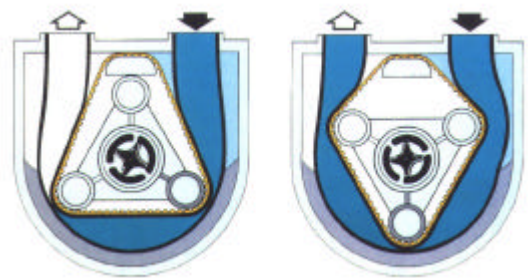
Dependent on pump model the following drive options are available: electric motor, diesel engine, petrol engine, hydraulic motor, water turbine and pneumatic motor.

## Pumping Principle

The M series peristaltic pump has a unique principle of operation. The rotor turns within the separator belt which creates a seal between the suction chamber (4) and the remainder of the pump housing (5). As the rotor turns it reduces the volume of the suction chamber forcing air out of this chamber through a channel to a non return valve located on the pump front cover. As the rotor continues to turn the volume of the suction chamber is enlarged causing a partial vacuum to be created. This vacuum causes the hose to expand to its full cross sectional area pulling media into the pump.



The volume of chamber (6) remains constant, whilst the volume of chamber (7) is reduced as the rotor turns thus forcing the pumped media out of the pump through the discharge connection.



The pressure gauge located on the pump front cover indicates the level of vacuum that is being achieved, this serves as an indicator as to the correct operation of the pump.

## Standard Build and Material of Construction

Pump Model	Code				
M Bareshaft	3	0	0	-	-
M4	0	4	-	-	-
M5	0	5	-	-	-
M7.5	0	7	-	-	-
M10	1	0	-	-	-
M10/5	1	0	/	0	5
M12	1	2	-	-	-
M15	1	5	-	-	-
M15/7.5	1	5	/	0	7
M20	2	0	-	-	-
M20/10	2	0	/	1	0

Drive Detail	Code	Enclosure	Code	Detail	Code
Type					
None Bareshaft Pump	-	Not Applicable	-	Not Applicable	-
Petrol	B	Eex d	D	Electric Starter	E
Electric	E	Eex e	E	Hand Crank Starter	H
Diesel	D	TEFC	T	Pull Cord Starter	P
Hydraulic	H	Honda Petrol	H	Variable Speed Drive	R
Pneumatic	L	Yanmar Diesel	Y	Single Phase Supply	W
Water Turbine	W	Hatz Diesel	Z	Two Speed Push Button	X

Pump Construction	Code	Hose Material	Code	Frame Type	Code
Connection Material					
Aluminium	A	Nitrile (NBR)	B	None Bareshaft Pump	-
Polypropylene	K	Hypalon (CSM)	C	Fire Dept. Stainless Steel	E
Bronze	R	Butyle (IIR)	J	Fire Dept. Galvanised Steel	F
Stainless Steel	S	Matural Rubber (NR)	N	Std Aluminium/Galvanised Steel	T
		Polyurethane (PUR)	P		

Note: Not all build options are available for all pump models. See specification book for availability detail.

## Model Range Availability

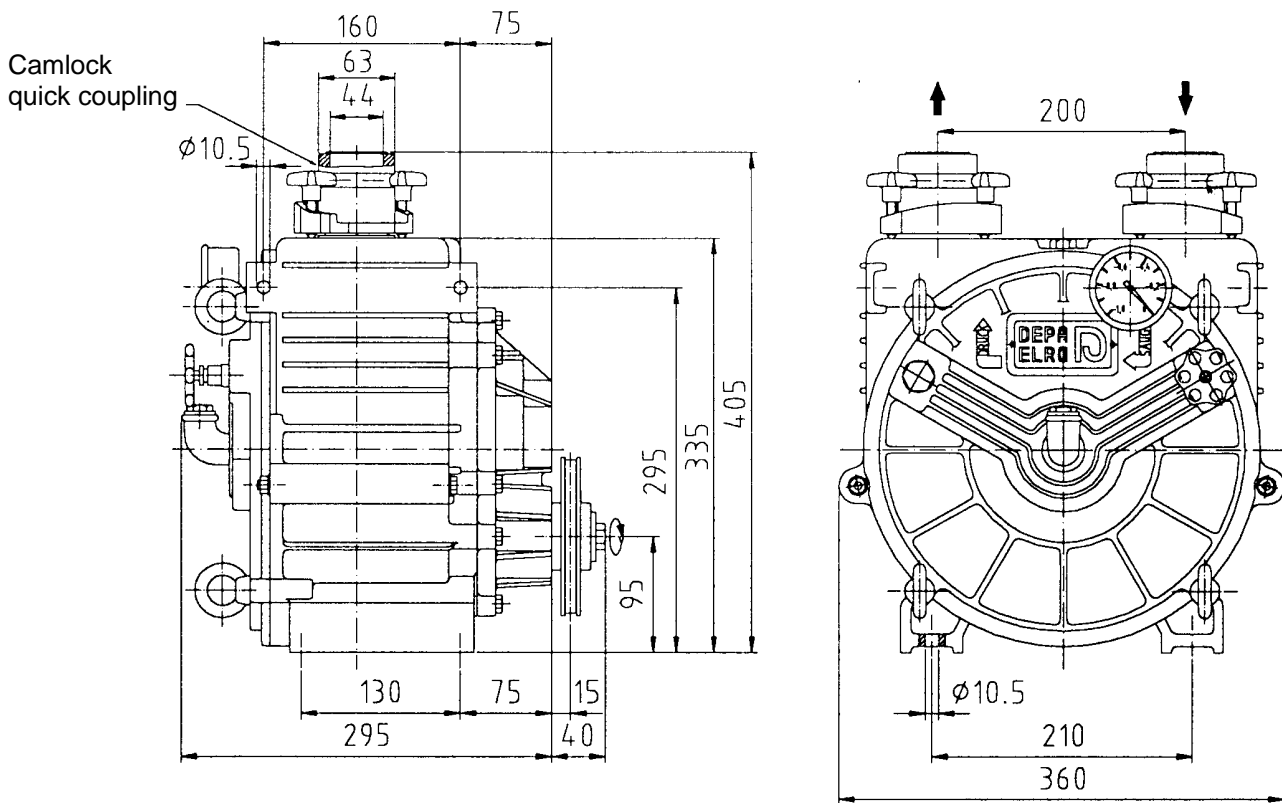
Pump Model	Approximate Flow Rate m <sup>3</sup> /h	Drive Description	Power kw	Approximate Drive Speed rpm	Weight kg
M300	-	Bareshaft Pump Only	-	-	18
5E	5	3 Phase TEFV IP55	1.5	935	55
5EX	5	3 Phase Eex e IIC T3 IP55	1.36	935	60
10E	10	3 Phase TEFV IP55	2.2	1400	55
10EX	10	3 Phase Eex e IIC T3 IP55	2.0	1400	60
10/5E	10/5	3 Phase TEFV IP55	1.6/1.1	1400/750	55
15E	15	3 Phase TEFV IP55	2.2	2800	55
15EX	15	3 Phase Eex e IIC T3 IP55	2.5	2800	62
15R	15	3 Phase TEFV IP55	3.0	2000/310	96
15RX	15	3 Phase Eex e IIC T3 IP55	2.5	2800	96
15/7.5E	15/7.5	3 Phase TEFV IP55	3.1/2.6	2800/1400	62
20E	20	3 Phase TEFV IP55	3.0	2800	62
20EX	20	3 Phase Eex e IIC T3 IP55	2.5	2800	65
20EXD	20	3 Phase Eex d IP55	2.9	2800	70
20/10E	20/10	3 Phase Eex d IP55	3.1/2.6	2800/1400	62
20/10EX	20/10	3 Phase Eex e IIC T3 IP55	2.75/2.1	2800/1400	62
15D	15	Yanmar diesel engine	3.5	3600	73
20D	20	Hatz diesel engine	4.15	3600	85
20B	20	Honda petrol engine	4.0	4000	50
20H	20	Hydraulic drive	3.0	3600 max	55
20W	20	Water turbine	3.0	3600 max	55
20L	20	Pneumatic motor	3.0	3600 max	55

## Accessories

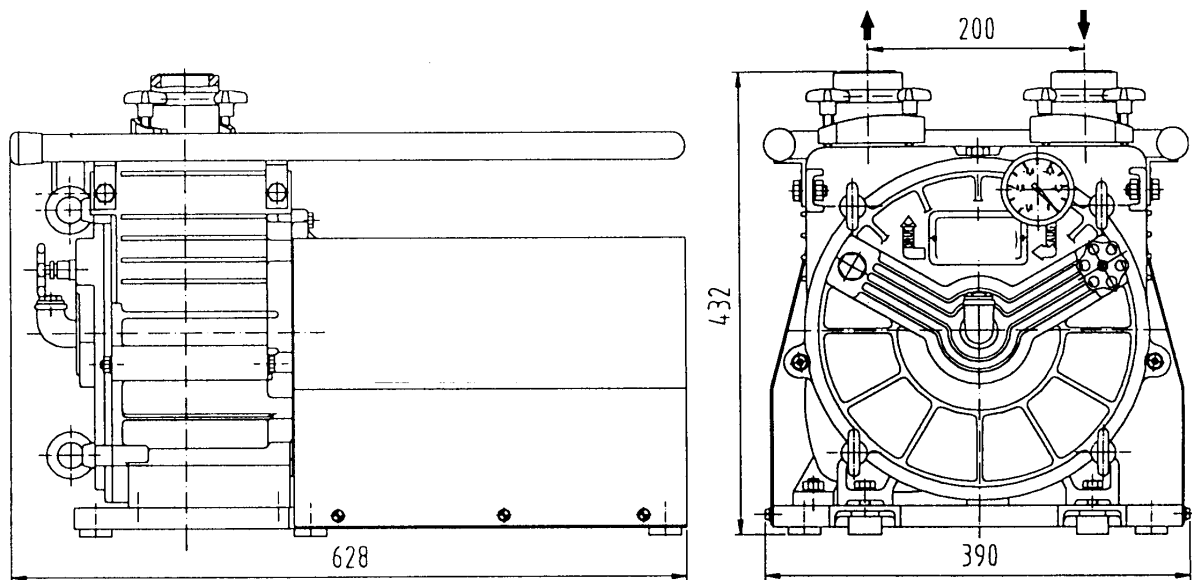
A full range of accessories is available for the M series peristaltic pump. A few of which are illustrated below, for full details please contact Alfa Laval.



### Dimensions, Bareshaft Pump



### Dimensions, mounted unit



Note: The above general arrangement drawing giving dimensional detail of the M series mounted unit is for guidance only. Dimensions will vary dependant on drive arrangement.

All information contained herein is correct at the time of publication but may be subject to change without prior notice.