



# MAXWOR

Focus on Excellence

PUMPS • SEALS • GASKETS • BLOWERS • EXPANSION JOINTS • HEAT EXCHANGERS  
COOLING SYSTEMS • WATER HEATER TANKS • ACCUMULATION TANKS  
BUFFER TANKS • EXPANSION TANKS • SEPERATORS

PRODUCT CATALOGUE  
PUMPS

- ✓ Reliability
- ✓ Sustainability
- ✓ Productivity
- ✓ High Quality
- ✓ Strong Sales Network
- ✓ Service Networks



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## Focus on Excellence

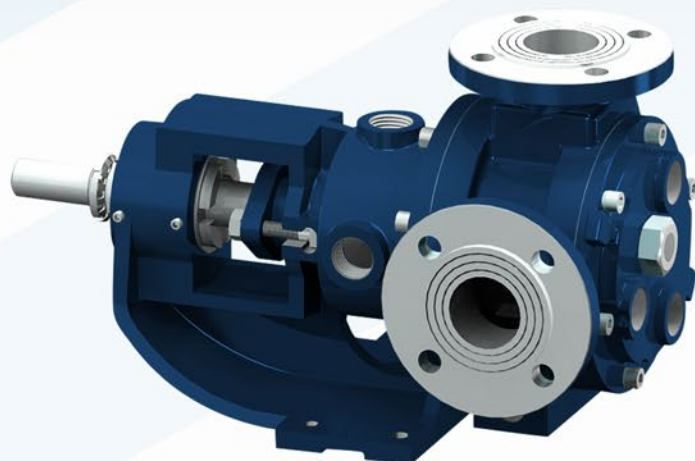
Maxwor Makina is the supplier needed by the leader companies in the sector with its engineering solutions and special products it produces.

Carry out in heating, cooling, transfer and storage of fluids; specializes in technology and process equipment manufacturing and offers sustainable solutions in these areas.

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# P U M P S



- ✓ AODD PUMPS
- ✓ HYGENIC CENTRIFUGAL PUMPS
- ✓ GEAR PUMPS
- ✓ LOBE PUMPS
- ✓ DOSING (METERING) PUMPS



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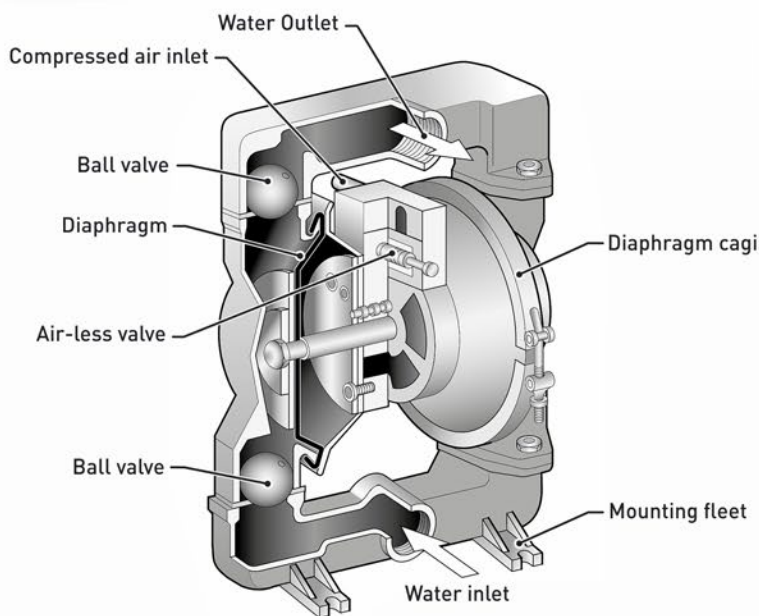
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## **AODD (Air Operated Double Diaphragm) PUMPS**

Maxwor AODD Pumps are air operated pumps with two diaphragms. AODD pumps are widely used fluid transfer equipment in machinery, chemical, food, pharmaceutical, petroleum and many industries.

AODD Pumps can be produced from different materials according to the environment and fluid type in which they are used. In particular, ATEX certified air diaphragm pumps for flammable and combustible fluids are widely used in different industries. Cast iron, aluminum, stainless steel, polypropylene, PVDF, PE or PTFE are the most commonly needed material types for the body. In applications such as food, medicine, cosmetics, beverage etc. where hygiene conditions are important and compliance with FDA standards are required, pumps made of 316L quality stainless steel are used.

Depending on the purpose of use and fluid flow, we have models that can work between 20 lt / min and 1000 lt / min.

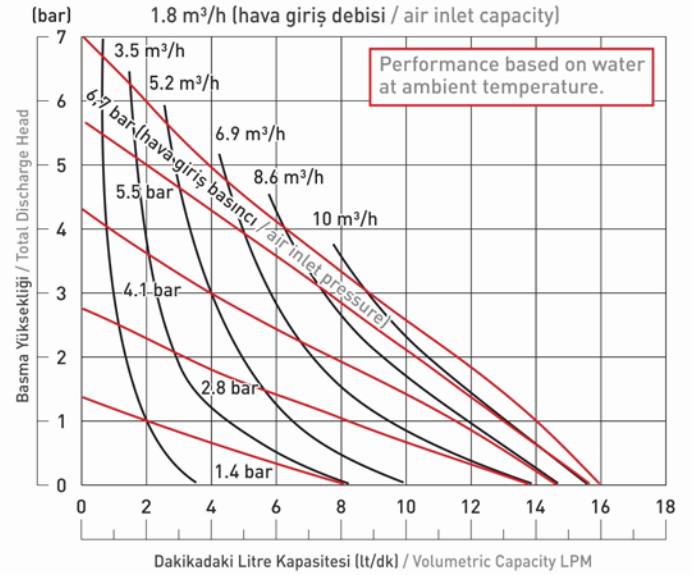




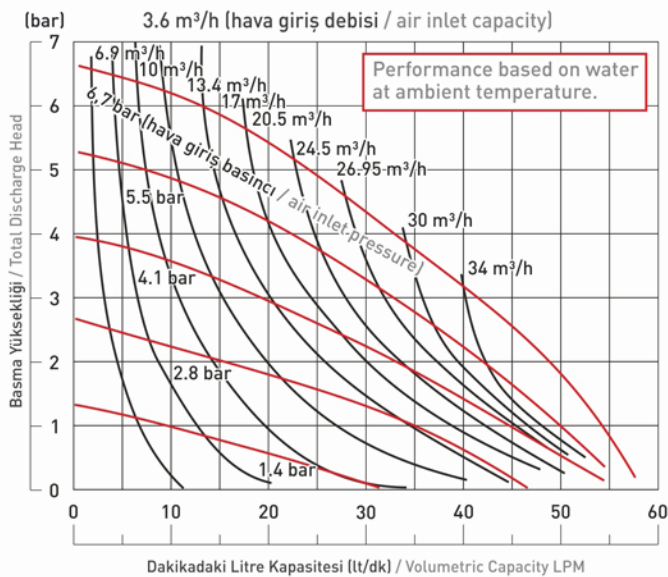
	ADP25	ADP75	ADM75	ADP100	ADM100
Pump Inlet-Outlet	1/4"	3/4"	3/4"	1"	1"
Max Capacity	16 lt/min	56 lt/min	56 lt/min	160 lt/min	160 lt/min
Total Discharged Head (max)	70 m	70 m	70 m	70 m	70 m
Operating Pressure (max)	7 bar	7 bar	7 bar	7 bar	7 bar
Suction Lift (max)	6-7 m	6-7 m	6-7 m	6-7 m	6-7 m
Operating Temperature	0-100°C	0-100°C	-18-100°C	0-100°C	-18-100°C
Air Inlet	1/4"	1/4"	1/4"	1/2"	1/2"
Particle Size (max)	1 mm	3 mm	3 mm	4 mm	4 mm
Elastomers	S, N, B, E, V, T	S, N, B, E, V, T	S, N, B, E, V, T	S, N, B, E, V, T	S, N, B, E, V, T
Wetted Material	PP-PVDF	PP-PVDF	SS, AL	PP-PVDF	SS, AL
Weight	1,5 kg (PP)	4,2 kg (PP)	4,9 kg (AL)	8 kg (PP)	9 kg (AL)

MATERIALS of AODD PUMPS		
PUMPS BODY MATERIALS	PLASTIC	PVDF PP
	METAL	Aluminum Cast Iron Stainless Steel
POMPS INTERNAL MATERIALS (ELASTOMERS)		Santoprene Neoprene Buna-N EPDM Viton PTFE (Teflon)

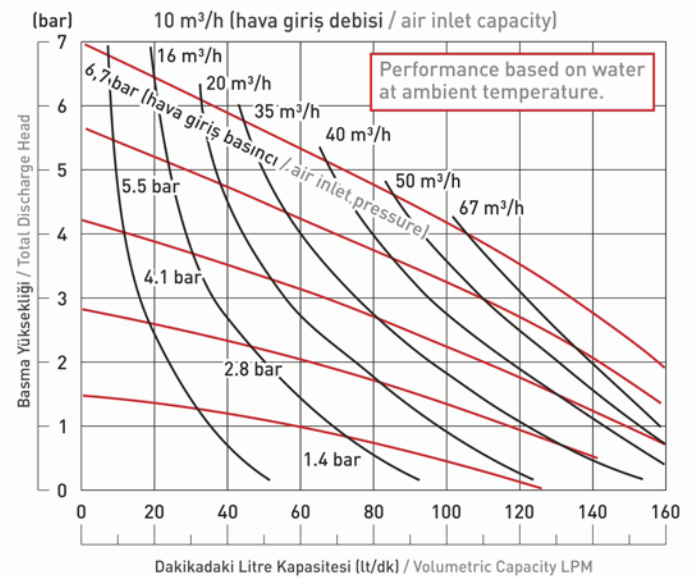
ADP25 Performance Curve



ADP75 ve ADM75 Performance Curve



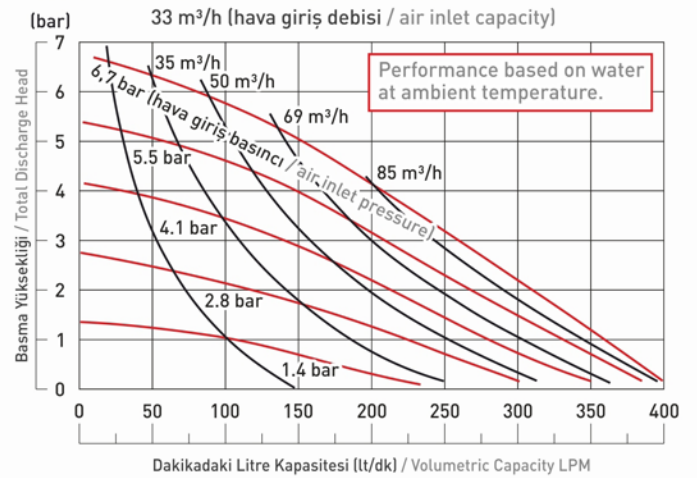
ADP100 ve ADM100 Performance Curve



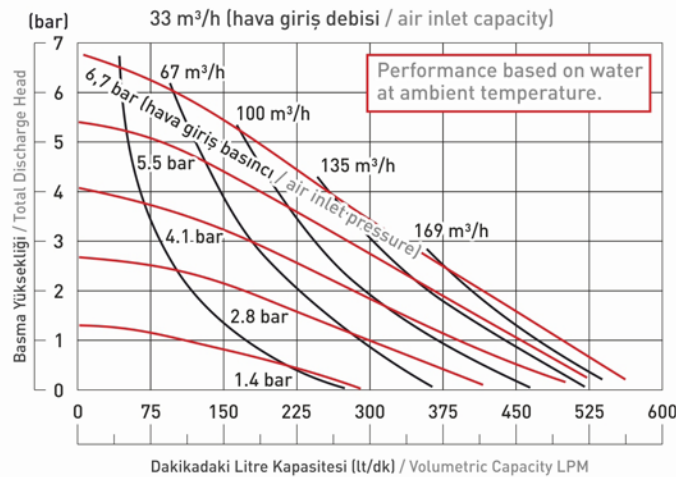
	ADP150	ADM150	ADP200	ADM200	ADP300	ADM300
Pump Inlet-Outlet	1 1/2"	1 1/2"	2"	2"	3"	3"
Max Capacity	400 lt/min	400 lt/min	560 lt/min	560 lt/min	900 lt/min	900 lt/dk
Total Discharged Head (max)	70 m	70 m	70 m	70 m	75 m	75 m
Operating Pressure (max)	8 bar	8 bar	8 bar	8 bar	8 bar	8 bar
Suction Lift (max)	6-7 m	6-7 m	6-7 m	6-7 m	6-7 m	6-7 m
Operating Temperature	0-100°C	-18-100°C	0-100°C	-18-100°C	0-100°C	-18-100°C
Air Inlet	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Particle Size (max)	6 mm	6 mm	6 mm	6 mm	9 mm	9 mm
Elastomers	S, N, B, E, V, T	S, N, B, E, V, T	S, N, B, E, V, T	S, N, B, E, V, T	S, N, B, E, V, T	S, N, B, E, V, T
Wetted Material	PP-PVDF	SS, AL, DD	PP-PVDF	SS, AL, DD	PP-PVDF	SS, AL, DD
Weight	20,5 kg (PP)	25 kg (AL)	29,5 kg (PP)	32 kg (AL)	48 kg (PP)	51 kg (AL)

MATERIALS of AODD PUMPS		
PUMPS BODY MATERIALS	PLASTIC	PVDF PP
	METAL	Aluminum Cast Iron Stainless Steel
POMPS INTERNAL MATERIALS (ELASTOMERS)		Santoprene Neoprene Buna-N EPDM Viton PTFE (Teflon)

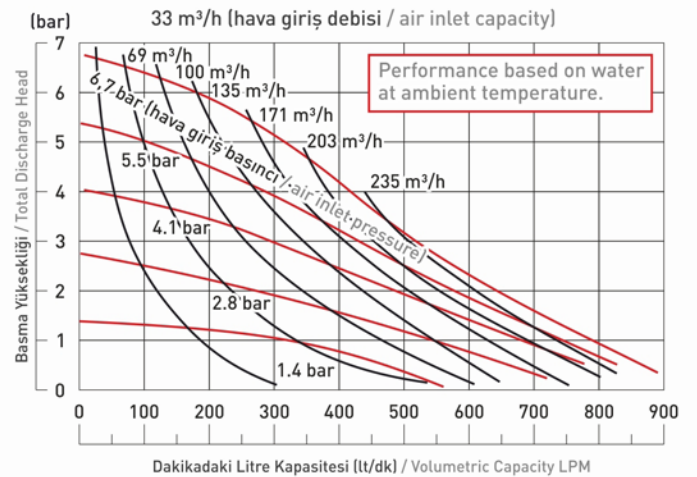
ADP150 ve ADM150 Performance Curve



ADP200 ve ADM200 Performance Curve



ADP300 ve ADM300 Performance Curve





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## **HYGENIC CENTRIFUGAL PUMPS**

Maxwor Hygienic Centrifugal Pumps are produced with the body and interior parts. Our hygienic pumps have the necessary features for the transfer of all liquids in the milk, beer, soft drinks, pharmaceutical and chemical sectors where hygienic work is at the forefront, especially such as cleaning and drainage ability. Our pumps have high corrosion resistance. For this reason, it is not only used for transferring low or medium viscosity fluids, but also for transferring suspension and abrasive fluids.

Parts of Maxwor Hygienic Centrifugal Pump : motor, fan, pump chamber, and mechanical seal. Thanks to the easy disassembly feature of these parts and special mechanical seals structure. Our pumps provide the opportunity to be easily disassembled, cleaned and controlled.

Thanks to the special design of the cover and fan, friction is reduced and unhygienic blind spots are eliminated. Another convenience provided by its special structure is that the fluid can reach its maximum performance in the pump and reach all points during cleaning in terms of hygiene.



### **MATERIAL PROPERTIES OF THE HYGENIC PUMPS**

- ✓ Surfaces in contact with the product, Stainless Steel 304 and 316,
- ✓ Seals in contact with the product are FDA approved EPDM material,
- ✓ Other steel surfaces, Stainless Steel 304,
- ✓ Outer surface is matt, inner surface is glossy

MODEL	CAPACITY		Motor kW	INLET & OUTLET
	m <sup>3</sup> /h	Meter		
HPS114	1	14	0,55	DN40/DN32
HPS316	3	16	0,75	DN40/DN40
HPS516	5	16	1,1	DN40/DN40
HPS324	3	24	1,5	DN50/DN40
HPS330	3	30	2,2	DN50/DN40
HPS524	5	24	1,5	DN50/DN40
HPS530	5	30	2,2	DN50/DN40
HPS1024	10	24	2,2	DN50/DN40
HPS1036	10	36	3	DN50/DN40
HPS1524	15	24	3	DN50/DN50
HPS2024	20	24	4	DN50/DN50
HPS2036	20	36	5,5	DN50/DN50
HPS2535	25	35	5,5	DN50/DN50
HPS3024	30	24	5,5	DN65/DN50
HPS3036	30	36	7,5	DN65/DN50
HPS4024	40	24	7,5	DN65/DN50
HPS2060	20	60	11	DN65/DN50
HPS3050	30	50	11	DN65/DN65
HPS4035	40	35	11	DN65/DN65
HPS4050	40	50	15	DN80/DN65
HPS6030	60	30	15	DN80/DN65
HPS3060	30	60	15	DN80/DN50



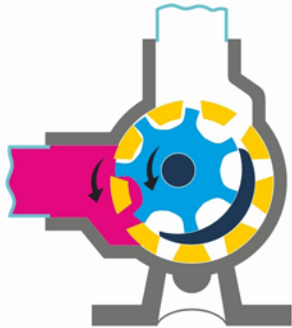


## GEAR PUMPS

### INTERNAL ECCENTRIC GEAR PUMP

Internal eccentric gear pumps are positive displacement pumps and can be used for many purposes. These pumps have two basic movable parts, perimeter gear and idler gear. Therefore, they are easy to maintain, durable and safe. It is designed specifically for every conditions and processes by our expert engineers.

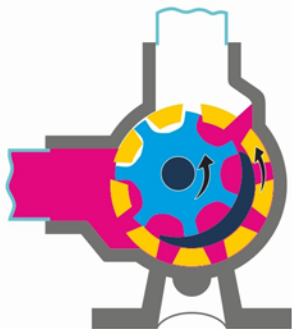
#### Working Principle



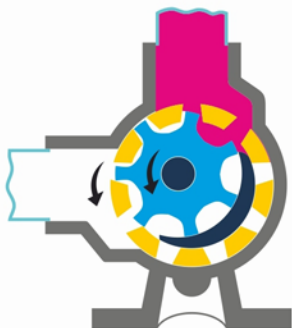
1- While the peripheral gear (rotor) rotates in the direction of the arrow with the circular motion it receives from the motor; the inner idler gear (star) rotates and separates from the ring gear. The fluid fills the gap created by the separation of the gears.



2- The half moon (crescent) in the pump cover and the gears are separated from each other. Thanks to by gear gaps are transported the fluid.



3- While the ring gear and idler gear are intertwined, the fluid is thrown into the discharge channel.



4- The fluid thrown into the discharge channel moves through the installation and the fluid is transferred.



#### USAGE AREAS

- ✓ Fuel Oil Service Tanks, Gas Oil, Diesel Tankers
- ✓ Resin and Polymers
- ✓ Asphalt and Bitumen
- ✓ Paper and Paint Industry
- ✓ Small scaled hot oil circulation
- ✓ Pharmaceutical, chemical and detergent industry
- ✓ Food Industry

## ADVANTAGES

- ✓ They occupy less space than external gear pumps that provide the same flow and flow conditions.
- ✓ It is easy to maintain and durable.
- ✓ Suitable for high viscosity liquids.
- ✓ It provides a regular discharge flow.
- ✓ It has a high suction capacity.

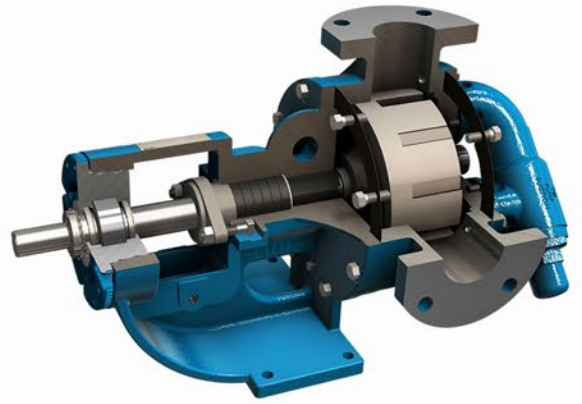
## MATERIAL OPTIONS

Pump Body, Covers : Cast (cast iron), Ductile iron, Cast steel, Stainless AISI 304- AISI 316 casting

Gears : Ductile iron, Cast steel, Stainless AISI 304- AISI 316 casting

Bearings : Snbz 12 bronze, carbon graphite, Silicon Carbide, Hard Metal Coating, Bearing

Sealing : Soft Seal, Mechanical seal, Sealed System



## PUMP RATINGS

Capacity (Q) : 0,1 m<sup>3</sup>/h - 250 m<sup>3</sup>/h

Pressure (P) : 1-14 bar

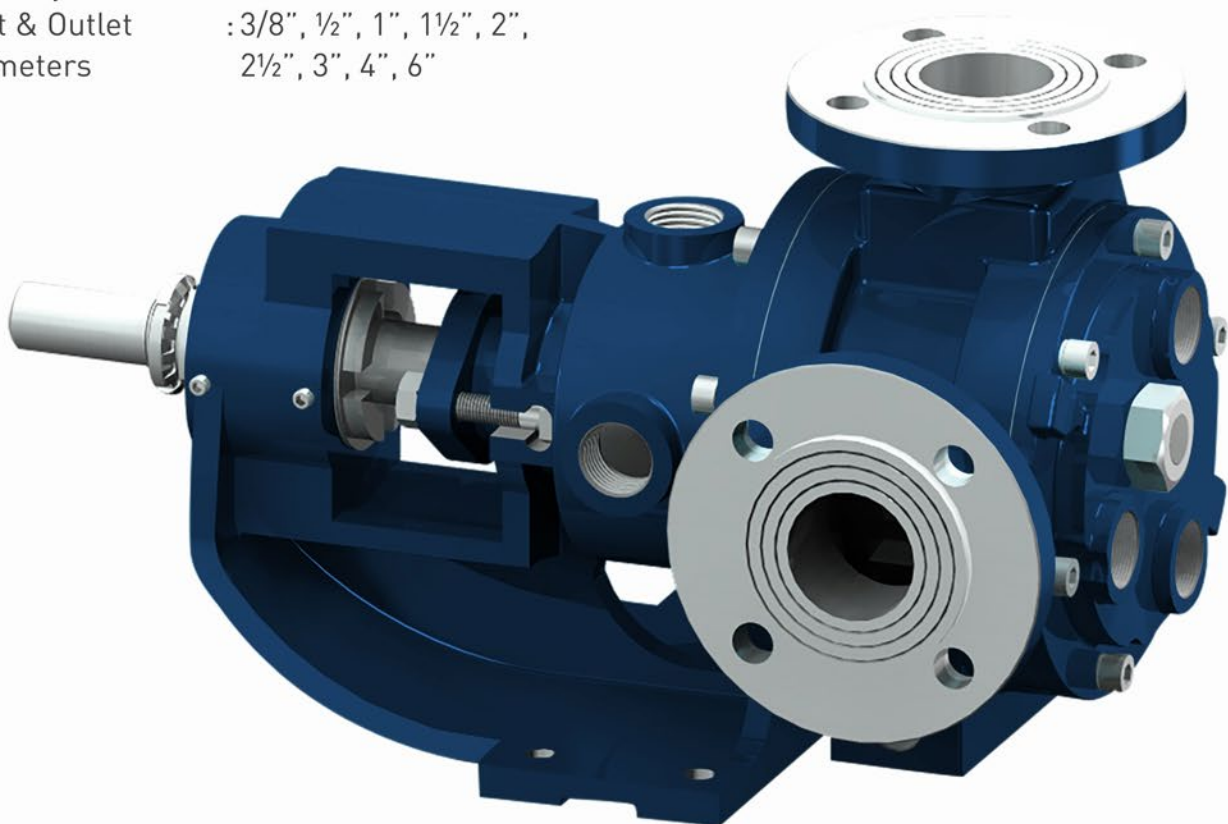
Temperature : 0 ~ 200 °C

Cycle (n) : 20 - 1720 rpm

Viscosity : 20 ~ 50.000 cP

Inlet & Outlet : 3/8", 1/2", 1", 1 1/2", 2",

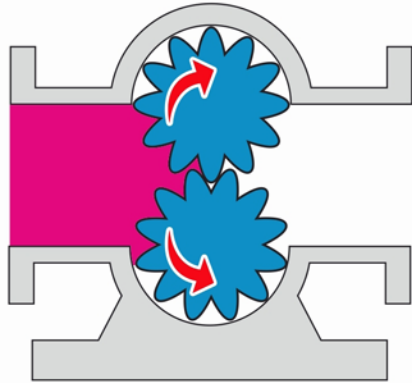
Diameters : 2 1/2", 3", 4", 6"





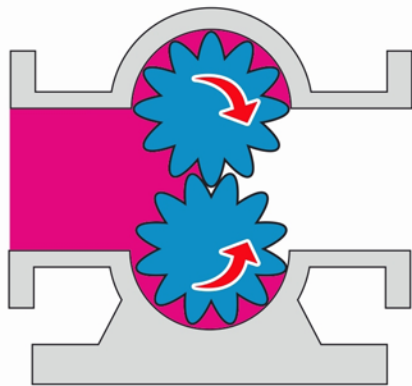
## HELICAL GEAR PUMPS

Maxwor Helical Gear pumps are positive displacement pumps and they are pumps working with the gear pump principle. They are used for the transfer of fluids with low and medium viscosity that can operate at higher speeds than internal gear pumps.

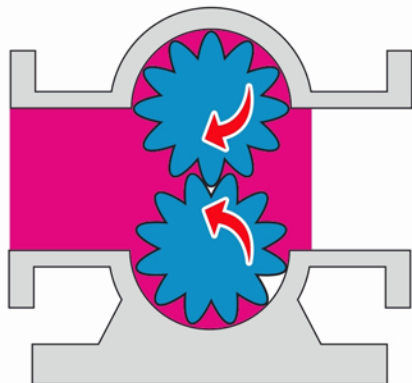


### Working Principle

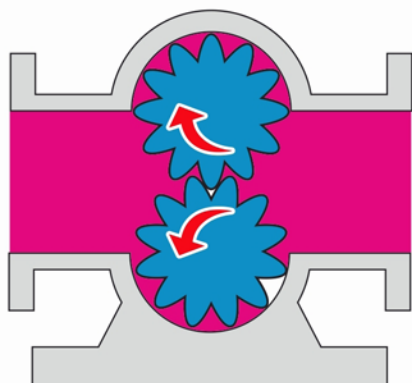
1- Pump shaft transmits the circular movement with gear on shaft to other gear on opposite direction. Then, the fluid fills the gap created by the separation of these gears.



2- The fluid filled into the gap is transported towards the discharge channel of the pump between the gears gaps.



3- As the gears are intertwined, the fluid is transferred out of the discharge channel.



4- The fluid transferred to the discharge channel moves through the installation and the transfer process takes place.



### USAGE AREAS

- ✓ In industrial applications
- ✓ Molasses
- ✓ Oil & Gas
- ✓ Fuel
- ✓ In high volume transfers

## ADVANTAGES

- ✓ They can work at high speeds.
- ✓ Suitable for low and medium viscosity fluids.
- ✓ Due to the fact that they have helical gear, they work quietly.
- ✓ It is easy to maintain and long lasting.
- ✓ They provide uninterrupted flow.

## MATERIAL OPTIONS

Pump Body, Covers: Cast (cast iron), cast steel, stainless  
AISI 304/316 casting, ductile iron

Bearings : Snbz 12 bronze, bearing, carbon  
graphite, ina bush

Sealing : Gland Packing, mechanical seal.

## PUMP RATINGS

Capacity (Q) : 0,1 m<sup>3</sup>/h - 350 m<sup>3</sup>/h  
Pressure (P) : 2 - 15 bar  
Temperature : 0 ~ 200°C  
Cycle (n) : 20 - 1500 rpm  
Viscosity : 100 ~ 25.000 cP  
Inlet & Outlet Diameters: 3/8", 1/2", 1", 1 1/2", 2",  
2 1/2", 3", 4", 6"



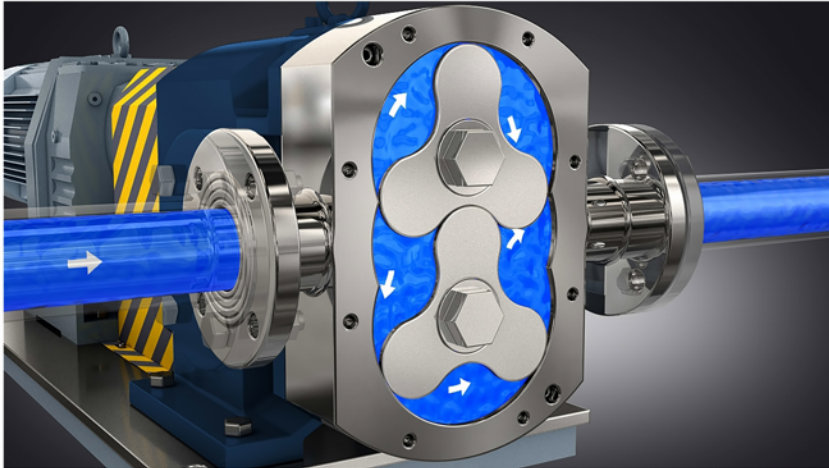


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## LOBE PUMPS

Lobe pumps are used in transfers of viscous products and fluids containing solid particles. Positive displacement gear pumps that do not disturb the structure of the products.

Lobe pumps consist of two lobe rotors rotating simultaneously in a casing without touching each other. As the rotors rotate, the space between the protrusions and the casing is filled with liquid, thus providing efficient pumping.



Lobe pumps are popular in a variety of areas with their hygiene, high efficiency, safety and on-site cleanability. It is widely used in food, chemistry, paper, beverage, pharmaceutical sector. In lobe pumps, the contact of the lobes is prevented by the timing drive gears. Since there is no contact between the lobes and they have a larger pumping reservoir than other pump types, they can transfer solid particles without damaging them. The pump is connected to the shaft of the lobe, the motor receives the motion of the timer with the drive gear and the other lobe is in the opposite direction. As the lobes move in opposite directions, the volume expands at the suction opening of the pump. Through the suction obtained, the liquid flows to the pump. The liquid that is transported between the lobes and the rotorcase moves toward the discharge mouth. The liquid does not pass through the lobes. The lobes penetrate inside the discharge port and push the liquid together with the pressure. In each turn of the pump shaft, liquid is transferred as much as the volume of the pump. Therefore, the pump's capacity is directly proportional to its size and cycle.



### ADVANTAGES

- ✓ They are positive displacement pumps (allows transfer to both right and left directions)
- ✓ Various connection possibilities
- ✓ They provide trouble-free transfer in stop-and-go with their seal and heating jacket options.
- ✓ Handles the transfer of high viscosity products without any problem.
- ✓ It works silently and without vibration
- ✓ Surface materials do not rub against each other during transfer.
- ✓ Provides the opportunity to work at high temperatures
- ✓ Provides the opportunity to transfer solid particles
- ✓ Easy to clean
- ✓ Transfers smoothly without disturbing the properties of the product to be transferred.
- ✓ Provides sterilization in place (CIP / SIP) feature

## WORKING PRINCIPLE OF LOBE PUMPS

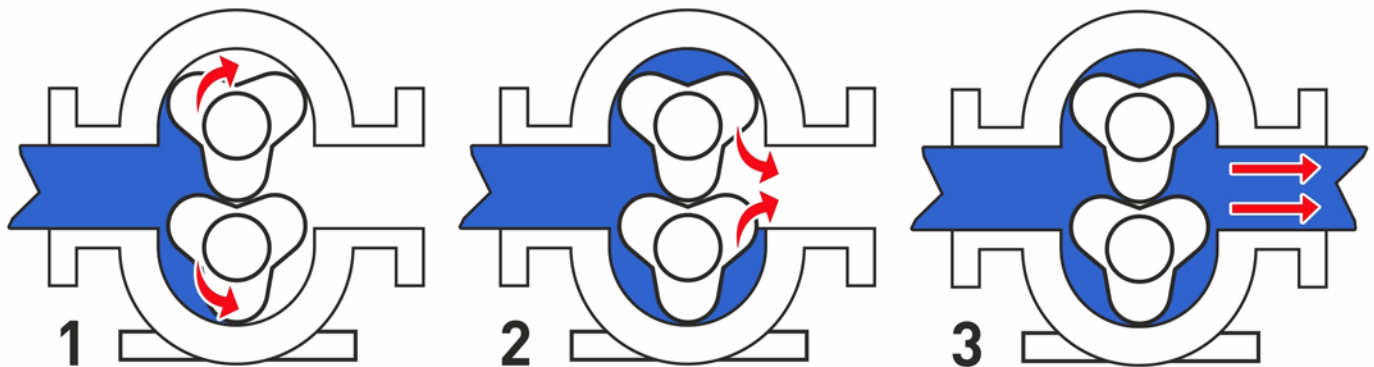
Maxwor Lobe pumps in 304L or 316L stainless steel are assembled on a cast iron gearbox which has a protective coating in epoxy paint finish. The chamber separating the rotor case and gearbox enables the fitting of balanced compact reversible mechanical seals, avoiding the contamination between the pumped fluid and the gearbox lubricant.

The base of the gearbox is designed to make installation easier for connecting into horizontal and vertical pipelines. Maxwor Lobe Pump is modular in design allowing the main parts such as the rotor and seals to be changed quickly and easily.



Quality and high precision working is obtained through having compact and rigid mechanical parts including double conical roller bearings shafts and oversized gears running in an oil bath within the gearbox. This is to obtain smaller tolerances as the rotors do not have any compact points. This ensures a good pump performance and reliability is obtained. In the lobe pumps the rotors rotate in an opposite direction without contact with each

other. Thanks to this characteristic the metal parts do not wear and contaminate the product and there is also no damage to the product. The lobe pumps are also suitable for handling abrasive products. The transmission movement from the motor drive shaft to the driven shaft is made by double high precision gears. The timing device is simple and accessible – one gear is fixed and the other gear mounted on the bush is adjustable.



## MATERIALS OF CONSTRUCTION

All shafts are made of stainless steel AISI 304L or AISI 316L. Lobes are manufactured from high quality AISI 304L or AISI 316L extruded shaped bar or special stainless steel non-shrink alloy. The pump body is also made of AISI 304L or AISI 316L stainless steel.



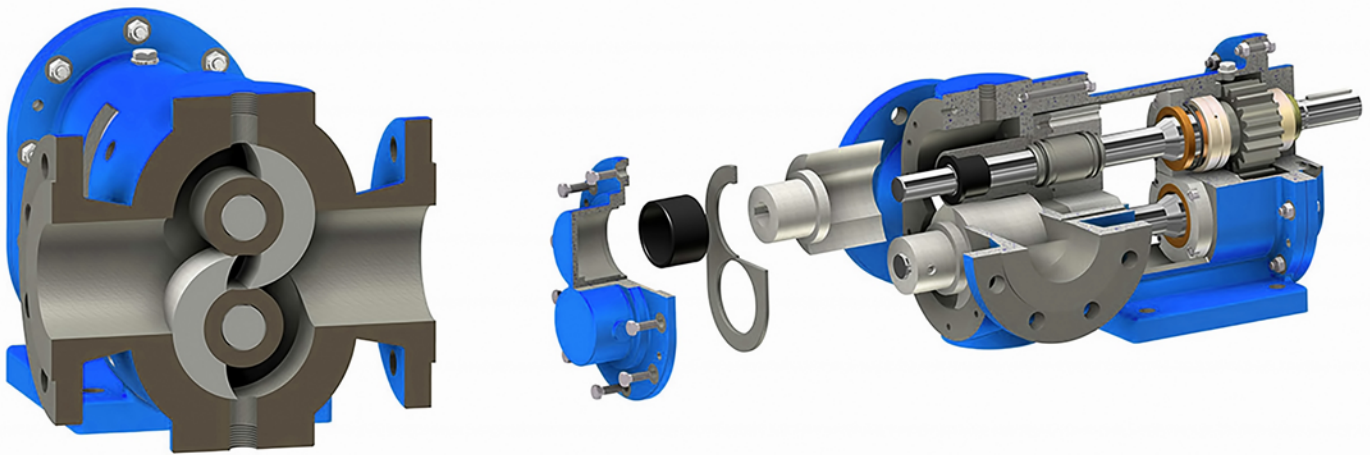
## ADVANTAGES of LOBE PUMPS

One of the most beneficial things that a rotary lobe pump has to offer is the fact that they can handle medium sized solid particles in the pumping fluid. This is due to the fact that the lobes do not come in contact with each other and because the pumping chambers inside the pump are large enough to handle solid particles. This is an advantage for the food industry.

For example, when processing something like cherries, this type of pump is great. The cherries and fluid can move into and through the pump without being damaged or broken

down. They are then sent to their desired destination. Just like the cherries, there are many different scenarios where it is crucial that the product is not negatively impacted. This could be a slurry of solid particles that need transferred from one part of the plant to another, for example.

You may also need to transfer a viscous fluid that would be broken down if it traveled through a different style of pump. The correct type of rotary lobe pump will handle the material with care.



## LOBE PUMP SELECTION

While choosing the lobe pump, the features of the product to be transferred, the features of the line to be transferred, are the required technical details.

These desired values are shown in the table in detail below.

REQUIRED DETAILS	EXAMPLE INFORMATION
Type of Fluid	Chocolate, honey, ayran etc.
Flow of Fluids	m <sup>3</sup> /H, L/H, TON/H etc.
Fluid Pressure	Bar, mSS etc.
Fluids Viscosity	cP, cSt etc.
Fluid Temperature	0°C
Density of Fluid	g/cm <sup>3</sup>

MAXIMUM - MINIMUM OPERATING VALUES		
Cycle Gap (rpm)	100	420
Flow (m <sup>3</sup> /h)	1	40
Pressure (bar)	2	20
Power (kW)	0,75	15
Viscosity (cp)	100	120000
Temperature (°C)	0	150

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## **DOSING PUMPS**

Dosing pumps are used for the automatic dosing of some chemicals in desired ratios in many different areas. Dosing pumps are products that are required for dosing with the precision required by the processes.

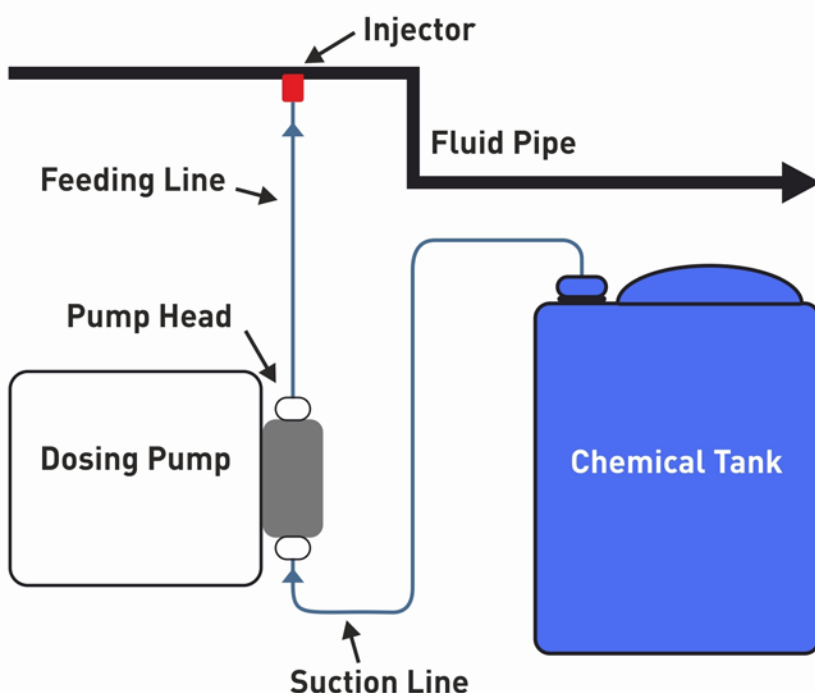
Dosage systems prevent chemical wastage. Moreover, it ensures that clean water is used in the right amount and is not wasted.

### **Properties of Dosing Pumps**

Dosing pumps used in many areas in the industry have different diversity in themselves.

#### **General Properties**

- ✓ Dosing process depending on the determined time and duration
- ✓ It can be activated by manual control
- ✓ Chemical dosing can be easily done proportionally according to process characteristics.
- ✓ Easy setup
- ✓ It can dose with all kinds of corrosive and abrasive chemicals
- ✓ Pump body providing high resistance to corrosive chemicals
- ✓ Long life diaphragm
- ✓ Stroke speed adjustable design



### **USAGE AREAS**

- ✓ Chemical Laboratory & Chemical Industry
- ✓ Food and Beverage Industry
- ✓ Water Treatment System
- ✓ Energy Industry
- ✓ Swimming pools
- ✓ Cooling tower





## DOSING PUMP TYPES

We can divide the dosing pumps into 3 types as motorized (mechanical diaphragm), electromagnetic (solenoid) and non-electric models.

### Motorized Dosing Pumps

The working principle of motor driven dosing pumps derives its power from the electric motor. It is a type of pump that is generally produced with mechanical diaphragms. It has different capacities between 5,5lt / h and 500lt / h. It can work between 5 bar and 400 bar. There are models working with 220V, 380V.



### Electromagnetic Dosing Pumps

The working principle of electromagnetic dosing pumps gives the motion power a magnet that creates a magnetic field with electrical energy. It is also called solenoid dosage pump. Chemical dosing can be made up to 100 lt / h capacity. It can work between 0,1 bar and 20 bar. It works with 220V. This type of pump is used in simpler applications due to its production technology.

### Water Powered (Non-Electric) Dosing Pumps

Dosing pumps are generally preferred for low capacity needs. It can make dosing depending on the water flow rate and amount. These pumps, with flow rates between 1 lt/h and 25 lt/h, can dose between 0.1% and 10% depending on the model.



The background of the entire page is a photograph of an industrial facility, likely a refinery or chemical plant. Several tall, vertical distillation columns are visible, each equipped with multiple levels of red metal ladders and platforms. The columns are interconnected by a network of yellow and blue pipes. The sky is overcast with grey clouds. In the foreground, a large, horizontal, silver-colored metal pipe runs across the bottom of the frame, supported by a white bracket.

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