tapflo®

AIR OPERATED DIAPHRAGM PUMPS

edition 2015 rev 1

All about your flow

www.tapflo.com

All about your flow

Tapflo is a leading pump manufacturer with the ambition to provide a wide range of premium products for various industrial applications. We focus on delivering the best fluid processing solutions and support on all stages of the process, worldwide.

About Tapflo

Tapflo is an independent, Swedish, family owned, manufacturer and global supplier of air operated diaphragm pumps, centrifugal pumps and other industrial process equipment. The company was founded in Kungälv, Sweden in1980 and has since then been working with design and manufacture of thermoplastic, metal and sanitary series diaphragm pumps and also with complete range of centrifugal pumps and industrial equipment. After years of dynamic development the company evolved into Tapflo Group with worldwide operations. Tapflo Group is represented by own companies and independent distributors in more than 60 countries spread over the world on 6 continents - products and spare parts are available worldwide.

Quality certified

At Tapflo we believe that quality is one of the highest values, both for our customers as well as our employees. As a result, we comply with various globally recognised certification and quality control institutions. Many of our products comply with EC ATEX directives for equipment intended for use in explosion hazardous environments.
The aseptic series is EHEDG certified (European Hygienic Engineering & Design Group), the pharmaceutical series has USP VI and EC 1935/2004 approval.
All our products are obviously CE marked and followed by our comprehensive instruction manuals. Tapflo manufacturing process is certified according to ISO 9001:2009.

CE ATEX ISO 9001:2009 EC 1095 FDA EHEDG PG REACH Compliant ROHS Compliant

Our values

Long term engagement is our core

Our aim is to continuously provide premium products according to evolving needs of our customers. That is why we see each customer relationship as a long term commitment.

Local means on your terms

Tapflo is your global partner providing local support. No matter where your plant is located you can expect us to support you locally.

Flexibility the foundation of good service

We are prepared to deal with reality, knowing that in practice this means answering questions, offering solutions and supplying spare parts with a minimal loss of time.

Customizing to bring the product to the needs

Our intention is always to help our clients find the most cost effective solutions to increase their company's efficiency.
If this means changing the design of the pump we see it as a challenge - not a problem.

To produce is to develop

When you are actively involved in the manufacturing of a product, it is almost impossible not to discover ways to improve it. This allows us to frequently offer solutions that are even more sustainable and efficient.

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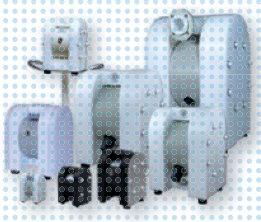


Where do you use Tapflo pumps?

Tapflo pumps are some of the most versatile pumps on the market today. They can be used in a variety of installations in numerous applications. Thanks to the simple operating principle, with a compact and reliable design, Tapflo diaphragm pumps meet the demands of heavy industrial duties.

Various liquids

Tapflo pumps are compatible with a very wide range of chemicals:

- Corrosive and chemical aggressive
- High and low viscous
- Abrasive
- Solid laden
- Shear sensitive
- Flammable

Below you will find some of the most common applications

Chemical industry

Transfer of all kind of acids, alkalis, alcohol, solvents and shear sensitive products such as latex and emulsions, as well as chemical waste products.

Surface conditioning

Transport of chemicals from storage tanks, containers and baths, for example in pickling, galvanization and degreasing. Handling of waste products.

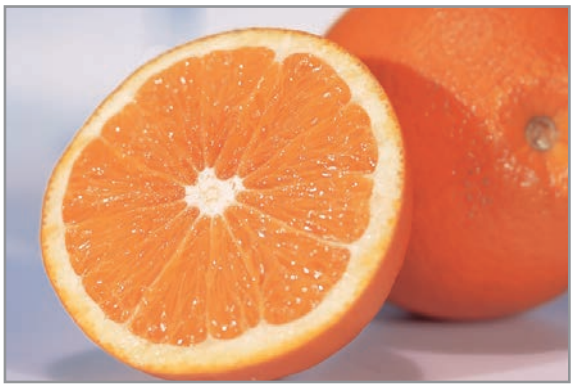
Water treatment

Pumping samples, dosing acids and alkalis for pH-control. Transfer of flocculent, suspensions, chemical reagents and sludges. The pumps are resistant to hydrochloric acid and ferric chlorite, plus many others.

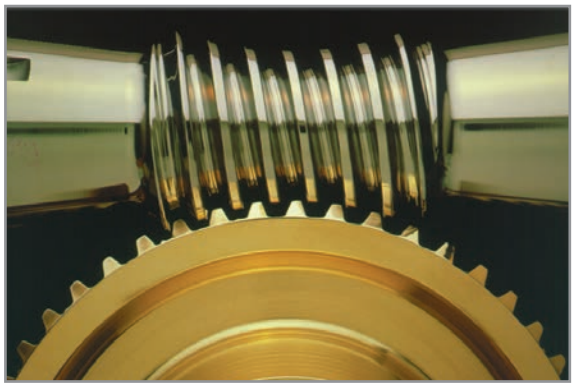
Various liquids...

Pulp and paper industry
Transport of glue, sodium silicate, colour and titanium oxide etc. Bleaching products, sampling and waste water handling.

Hygienic applications
Transfer of food products like soup, cream, syrup, milk, yoghurt, flavours, spirit, chocolate, dough, creams, paste, perfumes and toothpaste. Service applications as spraying of cleaning liquid in CIP systems.



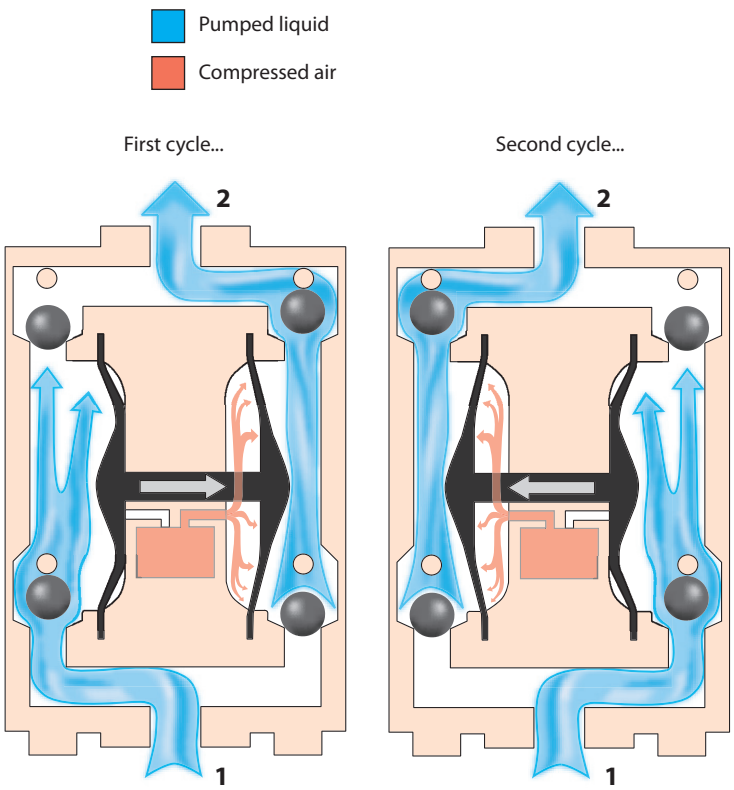
Mechanical industry
Handling of oil, fats, lubricants, cooling liquids, washing and cleaning liquids, solvents and waste products etc.



Paint, print and varnish industry
Transfer of water- and solventbased paints, ink, varnish, glue, adhesives and solvents. Transfer, recirculation and blendning of ink in printing industies.

How Tapflo pumps work

The Tapflo diaphragm pump is driven by compressed air. The two diaphragms, connected by a diaphragm shaft, are pushed back and forth by alternately pressurising the air chambers behind the diaphragms using an automatically cycling air valve system.



Suction (1)
One diaphragm creates a suction action when being pulled back from the housing.

Discharge (2)
The other diaphragm simultaneously transmits the air pressure to the liquid in the housing, pushing it towards the discharge port.

During each cycle the air pressure on the back of the discharging diaphragm is equal to the head pressure on the liquid side. Tapflo diaphragm pumps can therefore be operated against a closed discharge valve with no adverse affect to the life of the diaphragms.

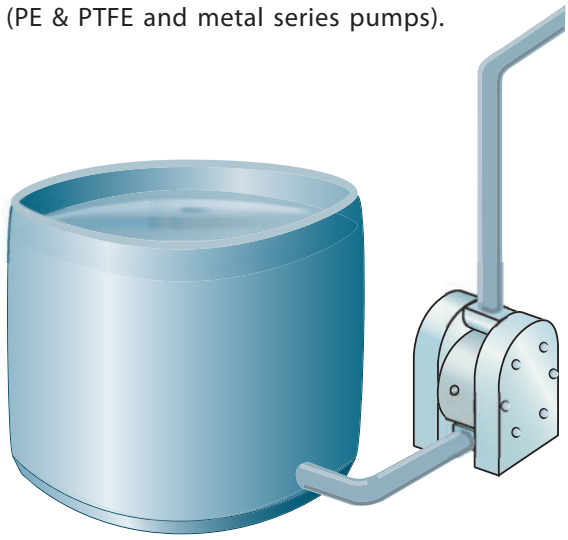
Some benefits with Tapflo pumps…

Thanks to the simple operating principle, with a compact and reliable construction, Tapflo diaphragm pumps meet the demands of heavy industrial duties. Below are some of the major benefits of Tapflo pumps.

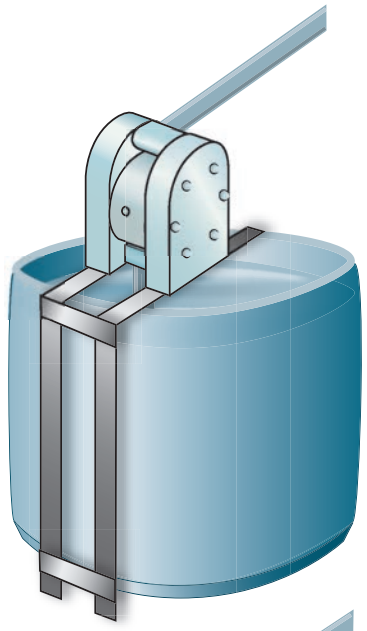
Feature	Benefit
▶ Run dry without damage	Easy to use, no need of guarding device
▶ Infinitely variable flow control	Flexible and easy to adjust
▶ Few components	Low down time and maintenance costs
▶ Self priming up to 5 m from dry suction pipe	More options of installation
▶ Solid, strong and long life design	Low maintenance costs
▶ Lubrication free air distribution system	Saves the environment from pollution
▶ No electricity needed	Explosion proof versions Ex-zone 1 available (ATEX group II, cat 2)
▶ Air operated	Can run against a closed pipe or closed valve without damage. Easy to install without special training (no electricity)

How to install Tapflo pumps

The Tapflo pumps are flexible in their ease of installation. The in- and outlet ports are infinitely turnable more than 180° in to fit your piping system (PE & PTFE and metal series pumps).



Flooded
The piping system is designed with a positive suction head. This is the best way of installtion where it is necessary to completely evacuate all liquid from the container, or where viscous (thick) products are transfered.



Selfpriming
The Tapflo pump is designed to pull a high vacuum. It is able to evacuate an empty suction pipe without any damage to the pump. The suction lift is up to 5 meter (16.4') from an empty suction pipe and up to 8 meter (26.2') from a wetted pipe. The suction capability depends on the pump size (see pages 17, 24, 29)

Submerged
All Tapflo pumps may be submerged into the liquid. It is important to make sure that all components which are in contact with the liquid are chemically compatible. The air exhaust must be led to the athmosphere by means of a hose.

Key components of the Tapflo pump

Three major components are especially vital for the function of the pump...

Long life diaphragms

With our experience of diaphragm manufacture since 1990, we are able to supply unique technology compression molded diaphragms of outermost quality.

Tapflo diaphragms are of composite construction, superior for continuous heavy duty service, with a completely smooth surface in contact with the liquid. This results in no leak through and a diaphragm which is easy to keep clean. The diaphragm is available in various materials and colours to suit any requirements, it is made from PTFE TFM, PTFE TFM modified for solvents, EPDM, NBR or FKM.

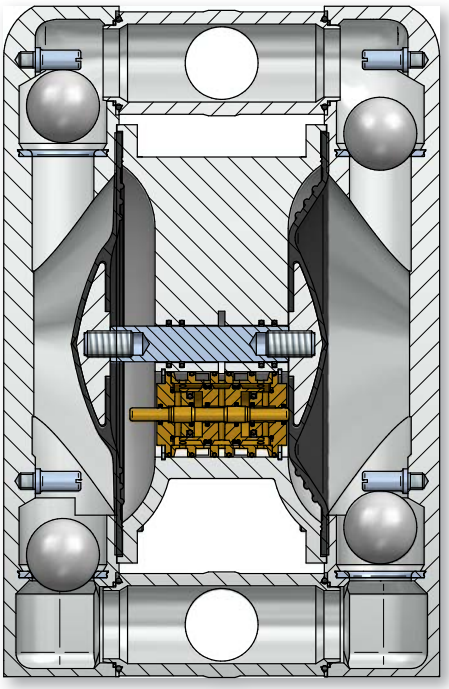
The PTFE film of the diaphragm forms a closed surface to the liquid. The integrated light metal supporting core and the fabric reinforcement fulfill high strength requirements.

Components of PTFE TFM diaphragm

An advanced process of preforming, curing, trimming and finishing result in a long life composite diaphragm that will last for many millions of stroke cycles.

All compounds are special developed and optimized for composite diaphragm technology and compression molding production. Components are chemically bonded by bonding agents and adhesives.

1) PTFE TFM layer
2) Elastomer upper half
3) Core (metal)
4) Fabric
5) Elastomer lower half



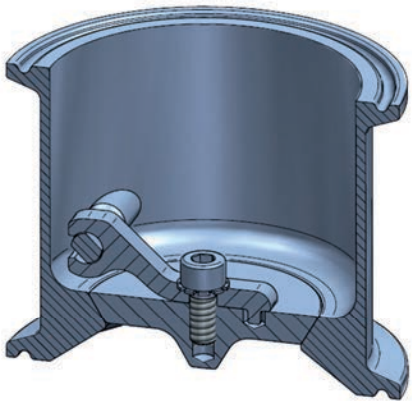
Key components of the Tapflo pump

The energy saving drive, with its central placed air valve is crucial to achieve short air ways and minimum dead volumes.

Pollution free air valve
The air valve is the driving heart of the pump, distributing the compressed air to the chambers behind the diaphragms. It is made for maintenance free duty with no lube air, thanks to the ingenious sealing system. It will not only save your money for lubrication, it will also save your environment from pollution. The Tapflo air valve has no deadlock position – the pump will always start automatically when air is supplied to the pump. The valve body is made from brass or optional PET or stainless steel AISI 316.

Energy saving drive
After decades of development and fine tuning of the air valve, seals, air distribution ways, the diaphragms and shaft, you have now an air operated diaphragm pump with a very high degree of efficiency. The air valve is placed in the middle of the pump between the diaphragms, to achieve short air ways and a minimum of so called dead volumes. This all together is the key to a reliable and energy saving drive.

Ball check valves
The Tapflo pump is fitted with four check valves, making sure that the liquid is transferred in the right direction through the pump. The valve is of ball valve type, the most simple and reliable valve design. It has a good sealing capability and is easy to keep clean and to replace if necessary. The valve ball is available in EPDM, NBR (nitrile), PTFE, AISI 316, polyurethane and ceramic to suit any kind of liquid.



Flap valves
Flap valves are available for the sanitary pumps, ideal in applications with bigger size and delicate solids. The gentle pumping principle will maintain solids without any destruction. Max particle size is 48 mm (with pump T425).

Tapflo PE & PTFE series with its famous smooth and solid design for heavy duty industrial applications

PE & PTFE series pumps

Tapflo pumps made from polyethylene (PE) or PTFE are suitable for handling almost any kind of liquid whether it is viscous, chemically aggressive or with solids.

Polyethylene pumps

Polyethylene (PE HD) has a superior wear resistance which is 6 – 7 times better than for polypropylene (PP). This fact makes the pump suitable for handling abrasive slurries etc. PE is resistant to most kind of aggressive chemicals such as concentrated acids and alkalis. Maximum liquid temperature is 70°C.

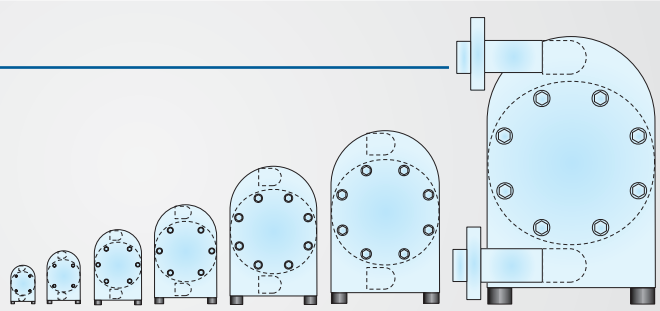
PTFE pumps

PTFE (virgin polytetrafluorethylene) is a thermoplastic polymer with superior chemical resistance. The PTFE pump will handle even the most aggressive acids, for instance concentrated nitric acid. Maximum liquid temperature is up to 100°C.

7 sizes, 0-820 l/min

The PE & PTFE pump range

- TR9 - 11 l/min, 1/4”
- TR20 - 24 l/min, 3/8”
- T50 - 60 l/min, 1/2”
- T100 - 125 l/min, 1”
- T200 - 330 l/min, 1 1/2”
- T400 - 570 l/min, 2”
- T800 - 820 l/min, 3”



The ingenious Tapflo design

Few components and a simple but ingenious design is peculiar for all Tapflo pumps. It is a compact pump, easy and quick to maintain, keeping your service costs and process down time to a minimum.

1. Flexible installations
The connections may be rotated 180°. Simply turn the connections to fit your piping system. Threaded BSP or NPT plastic connections is standard, AISI 316 or other connections types are also available.

2. Solid and strong
The pump body is machined from solid PE or PTFE. The solid design will stand against mechanical forces as well as aggressive chemicals.

3. Chemical design
The compound diaphragm has a completely smooth liquid side surface and with no metal in contact with the liquid. Ideal for a safe chemical handling.

4. Low air consumption
The air distribution system is designed with shortest possible air distribution ways. This eliminates "dead spaces", resulting in high effiencey and low air consumption.

Typical applications

Industry	Example of applications
▶ Chemistry	Acids, alkalis, alcohol, solvents, latex, emulsions
▶ Food	CIP fluid, flavouring, pigments
▶ Pulp & Paper	Glue, slurries, adhesives, dispersions, resins, sodium silicate, titanium oxide
▶ Surface conditioning	Electroplating baths, various acids, solvents, anodic sludge, varnish, enamels
▶ Water treatment	Sludge handling, filter press applications, neutralization and flocculants.
▶ Electronics	Carrier fluids, ultra pure liquids, electroplating solutions, mercury, solvents
▶ Print & paint	Glue, additives, varnish, ink, paint, latex, acid, resins, pigments

PE pumps for most chemicals and abrasive medias

PTFE pumps for the most aggressive chemicals

Special versions

Handle your liquids comfortable. You will easily move your Tapflo drum pump between drums and containers.

Drum pumps TD
The Tapflo drum pump is ideal for mobile use. It is fitted with a drum tube in polypropylene (PP) or PTFE and a handle in stainless steel AISI 316L. The drum tube is delivered in any length up to 2 m. Tapflo diaphragm drum pump has many advantages compared with conventional drum pumps.

The PE & PTFE drum pumps

- TDR20 - 24 lit/min, 3/8"
- TD50 - 60 lit/min, 1/2"
- TD100 - 125 lit/min, 1"

TD100 is available in PE only (no handle)

Feature	Benefit
▶ No rotating parts	Gentle liquid handling – ideal for shear sensitive liquids or abrasive products. Adjustable suction pipe length.
▶ High pressure	Able to handle even high viscous products
▶ Infinitely variable flow	Easy to adjust the flow for a safe fluid handling

Special versions

Explosion proof pumps TX

The ATEX directive 94/9/EC (also known as ATEX 100a) is applicable on products used in explosion hazardous zones.

Tapflo pumps made from conductive (carbon filled) plastics PE or PTFE are made for use in explosion hazardous environments. They can be used in Ex-zone 1. The conductive material ensures that no electrostatic loads will be accumulated in the pump. The conductive pigments in the material reduces the surface resistance to less than 105W. Transfer of alcohol and solvents are examples of applications for the Tapflo TX pumps.

Certified pumps according to 94/9/EC (ATEX)	
Group:	II
Category:	2G/2D
Apparatus group:	IIB
Temperature class:	T3-T6

Twin pumps TT

Tapflo PE & PTFE series pumps may be fitted with double in/outlet to achieve "two pumps in one" for blending, mixing or recirculation of liquids. The liquid in one pump chamber is separated from the other one.

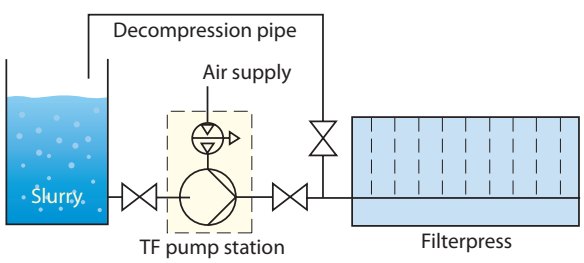
Application examples

- Transfer of glue resin and hardener separated from each other
- Transfer and recirculation of ink to printing machines (see sketch on page 21).

Special versions

TF filterpress pump stations
The Tapflo pump station for filterpress feeding is a very compact unit that can be mounted directly to the filterpress. The design and function allows the user a straightforward pressing of slurries. Pressure regulator is already mounted to the unit. The pump stations are based on the standard Tapflo pumps from machined polyethylene (PE). An external pressure booster doubles the delivery pressure. For example, with available air pressure of 7 bar, the delivery pressure will be maximum 14 bar.

The installation
As this station works self-regulating, an additional device for regulating the flow quantity is not necessary. Just mount it to the filterpress, connect it – ready. Even the pressure regulator for the air supply is included. For monitoring the filling-level of the filterpress, stroke sensors and stroke counters are available.



Some benefits...

- Can run dry
- Self priming
- High pressure transmission up to 1:2
- Few parts – easy to maintain
- Compact
- Reliable
- Long service life

The TF pump range

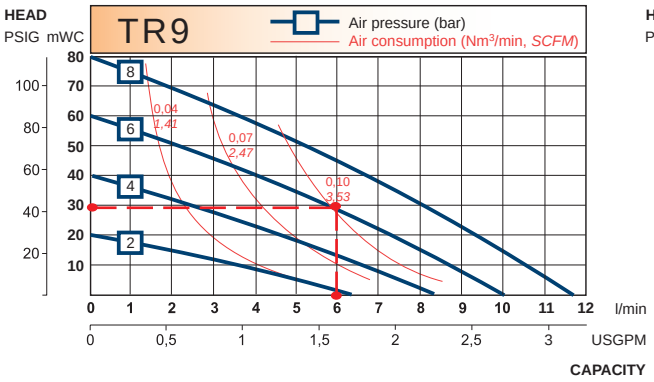
4 sizes, 0-400 l/min

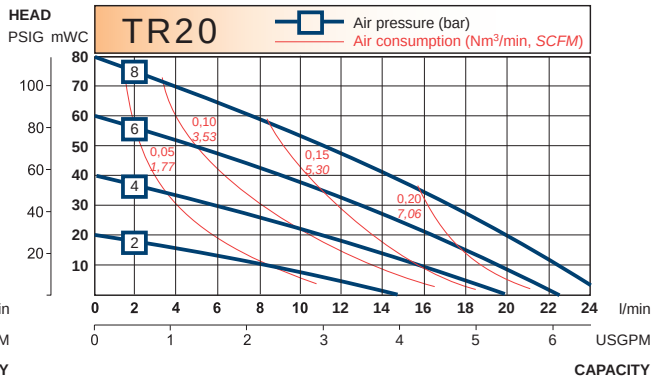
Pump size	Connection size (" BSP or NPT)	*Max capacity (l/min) / (US GPM)	Max pump pressure (bar) / (PSI)
TF 50	1/2"	*50 / 13	14 / 203
TF 100	1"	*100 / 26	14 / 203
TF 200	1 1/2"	*200 / 53	12 / 174
TF 400	2"	*400 / 106	12 / 174

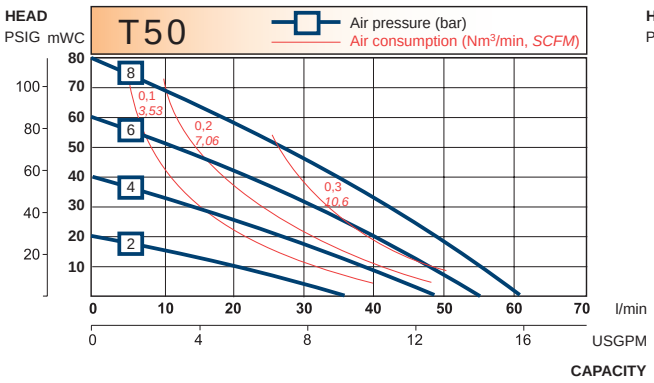
* = This max flow is obtained when using a bypass round the pressure booster at low pressure

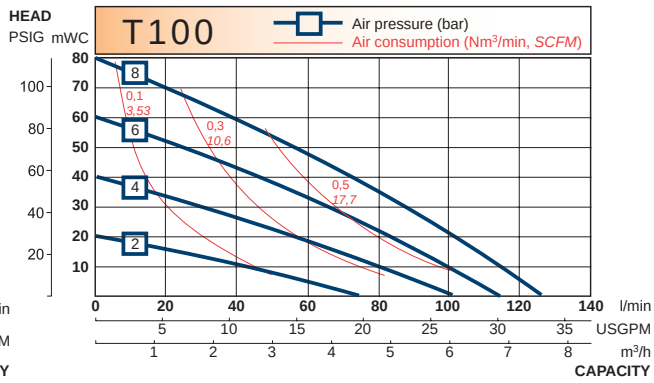
Performance curves

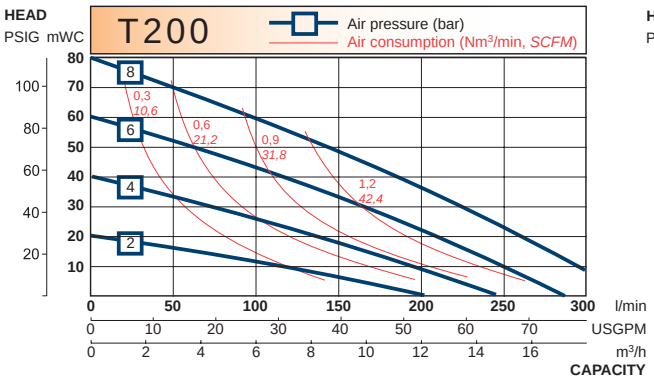
The performance curves are based on water at 20°C. Other circumstances might change the performance. See page 22 how the capacity will change at different viscosities and suction lifts. These curves are valid for all PE & PTFE series, except from the TF pumps.

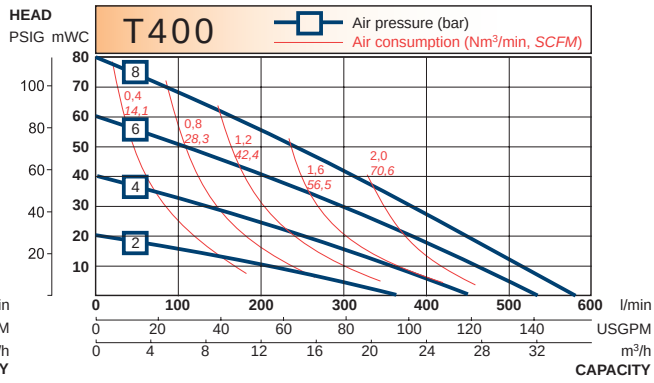


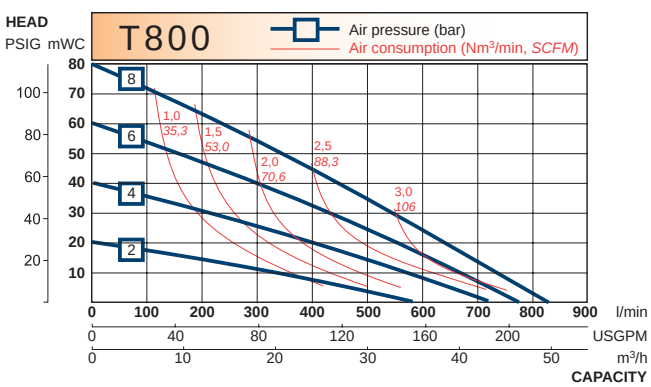












Example (see the red line at the TR9 curve):
A flow of 6 liter/minute is desired. The discharge head is calculated to 30 mWC. We choose a TR9. It requires an air pressure of 6 bar and will consume approximately 0.10 Nm³ air per minute.

Changes reserved without notice

Dimensions

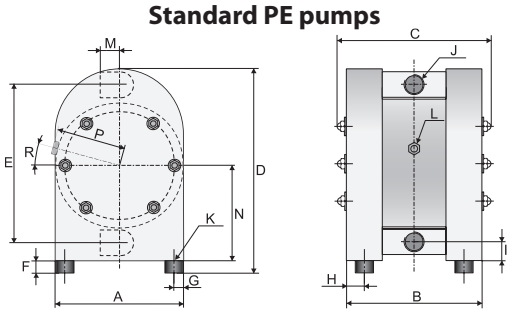
Dimensions for PE & PTFE series

Dimensions in mm (where other is not indicated)
Dimensions in inch (where other is not indicated)

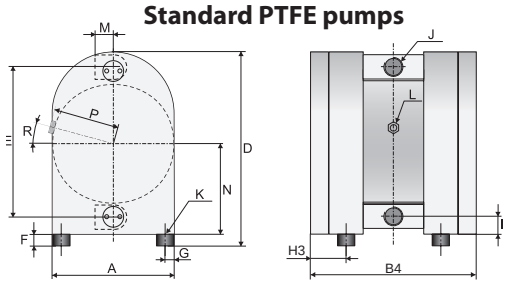
Dim	Pump size						
	9	20	50	100	200	400	800
A	70	105	150	200	270	350	460
	2.76	4.13	5.91	7.87	10.63	13.78	18.11
A2	-	-	150	300	300	404	-
	-	-	5.91	11.81	11.81	15.91	-
B	94	112	160	214	310	380	589
	3.70	4.41	6.30	8.43	12.20	14.96	23.19
B2	-	-	168	221	320	390	-
	-	-	6.61	8.70	12.60	15.35	-
B3	-	-	277	391	490	598	-
	-	-	10.91	15.39	19.29	23.54	-
B4	134	152	200	254	350	420	-
	5.28	5.98	7.87	10.00	13.78	16.54	-
C	115	135	190	250	345	425	637
	4.53	5.31	7.48	9.84	13.58	16.73	25.08
D	123	168	243	320	450	563	830
	4.84	6.61	9.57	12.60	17.72	22.17	32.68
D2	-	175	250	325	-	-	-
	-	6.89	9.84	12.80	-	-	-
D3	-	-	385	550	700	770	-
	-	-	15.16	21.65	27.56	30.31	-
D4	-	-	343	477	630	690	-
	-	-	13.50	18.78	24.80	27.17	-
E	92	132	190	252	345	440	650
	3.62	5.20	7.48	9.92	13.58	17.32	25.59
E2	-	147	210	280	-	-	-
	-	5.79	8.27	11.02	-	-	-
E3	-	-	250	333	467	588	-
	-	-	9.84	13.11	18.39	23.15	-
F	8	8	15	15	30	30	30
	0.31	0.31	0.59	0.59	1.18	1.18	1.18
F2	-	15	21	21	-	-	-
	-	0.59	0.83	0.83	-	-	-
G	9	15	17	30	30	30	30
	0.35	0.59	0.67	1.18	1.18	1.18	1.18
H	10	15	16	30	30	30	15
	0.39	0.59	0.63	1.18	1.18	1.18	0.59
H2	-	-	19	33	35	35	-
	-	-	0.75	1.30	1.38	1.38	-
I	12	15	20	28	38	48	80
	0.47	0.59	0.79	1.10	1.50	1.89	3.15
J	1/4"	3/8"	1/2"	1"	1 1/2"	2"	3"
	1/4	3/8	1/2	1	1 1/2	2	3"
J2	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"	-
	1/4	3/8	1/2	3/4	1	1 1/2	-
K	M4x20	M4x20	M8x25	M8x25	M8x25	M8x25	M8x25
	M4	M4	M8	M8	M8	M8	M8
L	1/8"	1/8"	1/4"	1/4"	1/2"	1/2"	1/2"
	1/8	1/8	1/4	1/4	1/2	1/2	1/2
M	15	17	25	38	54	70	95
	0.59	0.67	0.98	1.50	2.13	2.76	3.74
N	58	81	115	154	211	268	410
	2.28	3.19	4.53	6.06	8.31	10.55	16.14
P	35	52	80	105	143	183	238
	1.38	2.05	3.15	4.13	5.63	7.20	9.37
R	0°	0°	15°	15°	0°	0°	0°
	0°	0°	15°	15°	0°	0°	0°
S	13	15	21	27	35	42	-
	0.51	0.59	0.83	1.06	1.38	1.65	-
ØT	-	20	33	33	-	-	-
	-	0.79	1.30	1.30	-	-	-
U	-	1270*	1270*	1270*	-	-	-
	-	50.0*	50.0*	50.0*	-	-	-
V	-	285	360	400	-	-	-
	-	11.22	14.17	15.75	-	-	-

* = Any length up to 2000 mm upon request
* = Any length up to 79" upon request

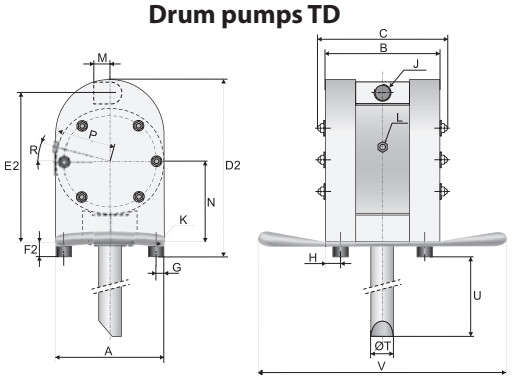
Standard PE pumps



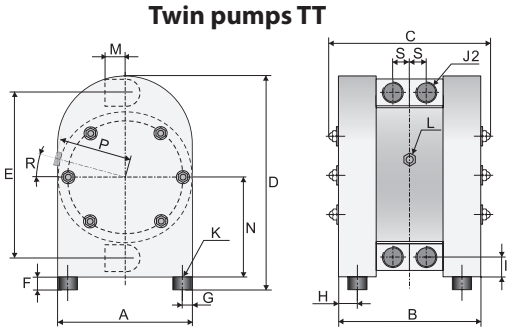
Standard PTFE pumps



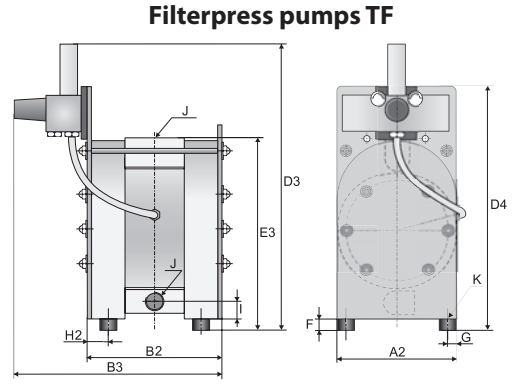
Drum pumps TD



Twin pumps TT



Filterpress pumps TF



General dimensions only, ask us for detailed drawings.
Changes reserved without notice

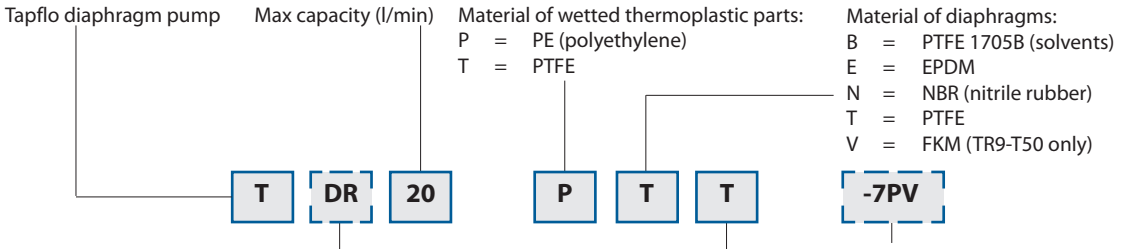
Technical data

Data	Pump size						
	9	20	50	100	200	400	800
General characteristics							
*Max capacity (l/min) / (US gpm)	11 / 2.9	24 / 6.3	60 / 15.8	125 / 33	330 / 87	570 / 150	820 / 216
**Volume per stroke (ml) / (cu in)	13 / 0.80	50 / 3.05	87.5 / 5.34	280 / 17.1	933 / 56.9	2300 / 140.3	5125 / 312.7
Max discharge pressure (bar) / (psi)	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116
Max air pressure (bar) / (psi)	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116
****Max suction lift dry (m) / (Ft)	1 / 3	1.5 / 5	2.5 / 8	3.5 / 11	4 / 13	4 / 13	5 / 16
Max suction lift wet (m) / (Ft)	8 / 26	8 / 26	8 / 26	8 / 26	8 / 26	8 / 26	8 / 26
Max size of solids (ø in mm) / (in)	2 / 0.08	3 / 0.12	4 / 0.16	6 / 0.24	10 / 0.39	15 / 0.59	15 / 0.59
Max temp, pump in PE (°C) / (°F)	70 / 158	70 / 158	70 / 158	70 / 158	70 / 158	70 / 158	70 / 158
Max temp, pump in PTFE (°C) / (°F)	100 / 212	100 / 212	100 / 212	100 / 212	100 / 212	100 / 212	-
Min temperature (°C) / (°F)	-20 / -4	-20 / -4	-20 / -4	-20 / -4	-20 / -4	-20 / -4	-20 / -4
Weight							
Standard pump T in PE (kg) / (lb)	1 / 2.2	1,5 / 3.3	5 / 11	10 / 22	24 / 53	44 / 97	140 / 309
Standard pump T in PTFE (kg) / (lb)	1.5 / 3.3	2.5 / 5.5	7 / 15	17 / 38	44 / 97	90 / 199	-
Drum pump TD in PE (kg) / (lb)	-	2 / 4.4	6 / 13	11 / 24	-	-	-
Drum pump TD in PTFE (kg) / (lb)	-	3.5 / 7	9 / 19	-	-	-	-
Filterpress pump TF in PE (kg) / (lb)	-	-	8 / 17	18 / 40	37 / 82	66 / 146	-
Material of components							
Pump housing and all wetted thermoplastic details	PE or PTFE						PE
Centre block (not wetted)	PP						
Diaphragms	PTFE, FKM	PTFE, PTFE 1705B, EPDM or NBR					
Valve balls	-	-	PTFE, EPDM, NBR, AISI 316L***, PU, Ceramic***				
Rod valves (TR9 and TR20)	PE or PTFE		-	-	-	-	-
Air valve	Brass (standard), stainless steel AISI 316L, PET with NBR (standard), EPDM or FKM o-rings						
O-rings (wetted)	FEP/FKM (standard on pumps with PTFE diaphragms), EPDM, NBR or FKM						
Housing pin screws	Stainless steel AISI 304						
Diaphragm shaft	Stainless steel AISI 304						
Drum handle (TD pumps)	-	Stainless steel AISI 316L			-	-	-
Reinforcement plates (TF pumps)	-	-	Stainless steel AISI 316L				-

* = Recommended flow is half of the the max flow, i.e. recommended flow for a T100 is 50 l/min (13.2 US gpm)
** = The value is based on pumps with EPDM diaphragms. Pumps with PTFE diaphragms have about 15% less volume
*** = Not available on T800
**** = This is max value with stainless steel valve balls, other valve ball materials may reduce the suction. Please consult us

Pump code

The model number on the pump tells the pump size and material of the pump components



Basic options:
B = Backup diaphragm system
D = Drum pump
F = Filterpress pump
L = Draining system
Q = Special sealed pump
R = Rod valves
T = Twin pump
V = AISI 316L valve seat / spacer
X = ATEX approved, group II, cat 2
Y = High suction lift version
Z = Semiconductor industry pump

Material of valve balls:
E = EPDM
N = NBR (nitrile rubber)
T = PTFE
S = AISI 316 stainless steel
P = PU (polyurethane)
K = Ceramic
V = FKM

Material of rod valves (TR9 and TR20 only)
T = PTFE

Special executions*:
1 = Optional material in/outlet
2 = Valve seat insert (PE, PTFE, PU or AISI 316L)
3 = Optional connection type
4 = Backup diaphragm system configuration
5 = Other special executions*
6 = Optional material of centerblock
7 = Optional material of air valve
8 = Optional material of pos 18 seals
9 = Optional material of housing pin screws
11 = Housing reinforcement plates
14 = Optional pump feet

* = Ask us for complete pump code with all available options and executions. Changes reserved without notice

Metal series

Aluminium and cast iron pumps. Few parts – easy to maintain is the major characteristic for these pumps.

Tapflo pump range from stainless steel AISI 316, combines superior mechanical strength with chemical resistance. The latest model in the family is the 3" T820 S (pump at top, right side).

Metal series pumps

The compact, smooth and simple design is common for this series. Materials available are aluminium, cast iron, stainless steel and PTFE coated aluminium.

AT Ex

Explosion proof models are available (TX). Certified according to directive 94/9/EC (ATEX), group II, cat 2 , for use in EX-zone 1. Contact us for information.

Aluminium and cast iron pumps

For transfer of pH-neutral fluids, both thin, thick, solid laden or abrasive. The aluminium and cast iron pumps are found in most fields; work shop and paint industries, purifying plants etc., to mention only a few.

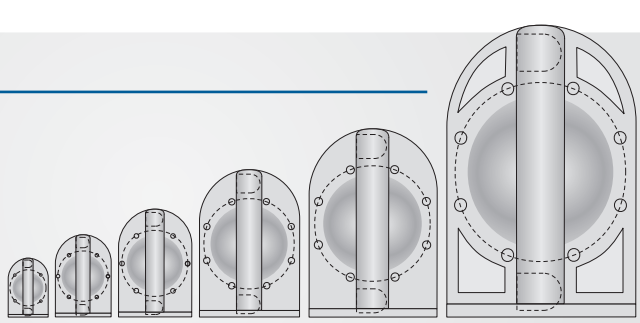
AISI 316 stainless steel pumps

Made in lost wax cast method, ensuring great accuracy and finish. The stainless steel pumps combine great mechanical strength with good chemical features. AISI 316 is resistant to aggressive liquids like nitric acid and sodium hydroxide. The centre unit, which is not in contact with liquid, is made from corrosive resistant polypropylene (PP) as standard (other materials upon request).

6 sizes, 0-820 lit/min

The metal pump range

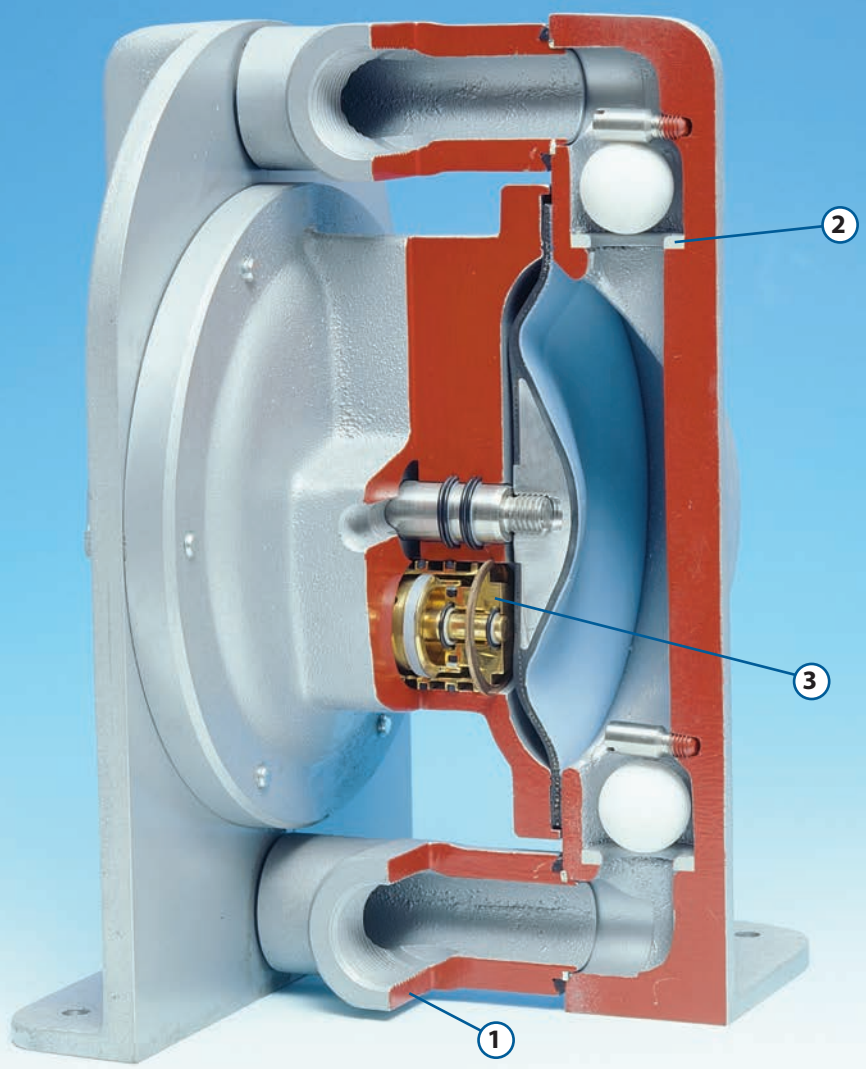
- T25* - 26 lit/min, 1/2"
- T70 - 78 lit/min, 3/4"
- T120 - 158 lit/min, 1"
- T220 - 330 lit/min, 1 1/2"
- T420 - 570 lit/min, 2"
- T820 - 820 lit/min, 3"



* = aluminium and cast iron only

70% fewer parts

You will discover the ingenious simplicity when you maintain the pump.
We use approximately 70% fewer parts compared with other brands.



1. Flexible installations
The connections may be rotated 180°. Simply turn the connections to fit your piping system. Threaded BSP or NPT connections is standard. Twin connections are also available.

2. Powerful valveseats
The valve seat is under constant stress from the movement of the valve ball. To obtain the best wear resistant, the integrated seat is made from AISI 316 stainless steel.

3. Low air consumption
The air distribution system is designed with shortest possible air distribution ways. This eliminates "dead spaces", resulting in high effiencey and low air consumption.

Typical applications

Industry	Example of applications
▶ Workshop	Oil, fat, solvents, water, cooling fluid, lubricants
▶ Print & paint	Glue, additives, varnish, ink, paint, latex, acid, resins, pigments
▶ Mining & construction	Adhesives, sump, dewatering, coal sludge, pastes
▶ Ceramic industry	Abrasives, glaze, water, enamels, clay
▶ Chemistry	Acids, alkalis, alcohol, solvents, latex, emulsions

Aluminium and cast iron for thick and thin pH neutral liquids

Stainless steel for chemicals

Special versions

Handle your liquids comfortable. You will easily move your Tapflo drum pump between drums and containers.

Drum pumps TD
The Tapflo drum pump is ideal for mobile use and is available in aluminium or stainless steel AISI 316. It is fit with an ergonomic designed handle in stainless steel AISI 316L. The drum tube is delivered in any length up to 2 m. The Tapflo diaphragm drum pump has many advantages compared with conventional drum pumps as stated below.

The metal drum pumps

- TXD25 - 25 lit/min, 1/2"
- TXD70 - 70 lit/min, 3/4"
- TXD120 - 120 lit/min, 1"

TXD25 is available in aluminium only

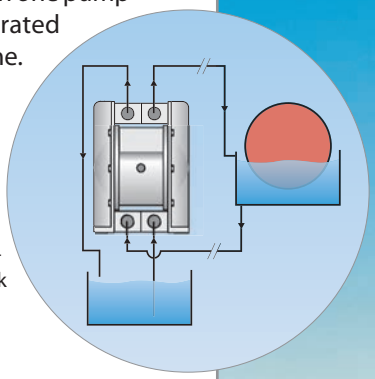
Feature	Benefit
▶ No rotating parts	Gentle liquid handling – ideal for shear sensitive liquids or abrasive products
▶ High pressure	Able to handle even high viscous products
▶ Infinitely variable flow	Easy to adjust the flow for a safe fluid handling

Special versions

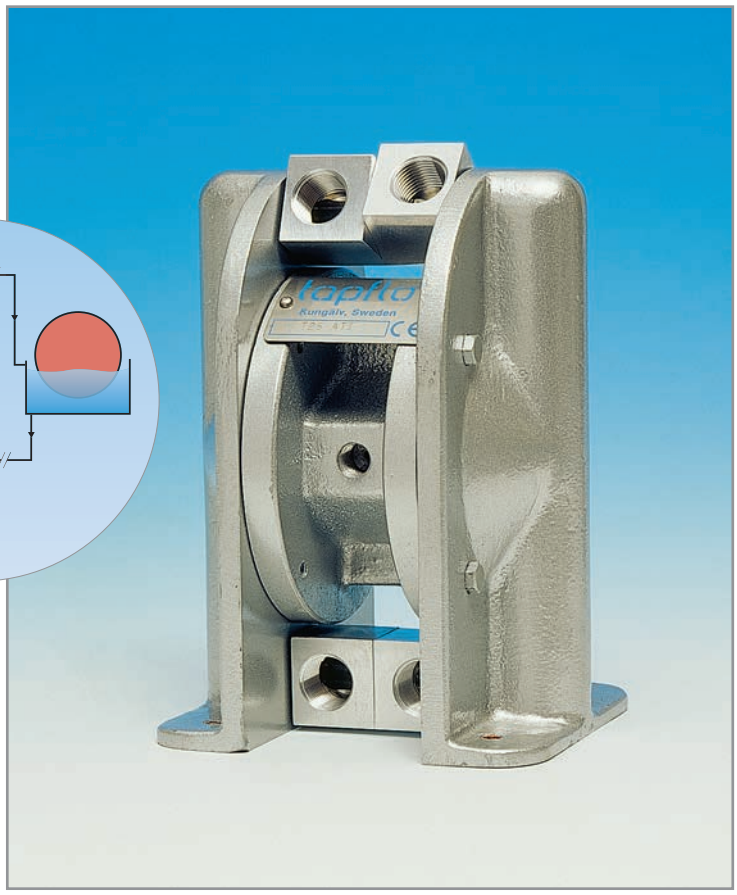
PTFE coated pumps
Aluminium pump include all wetted parts coated with PTFE, is equipped with stainless steel in/outlet ports. The model was developed for the printing industry where a low price alternative of the PE/PTFE pumps was required but aluminium not chemically resistant. It can be used for all sorts of applications where slightly acidous or alkaline liquids need to be transferred.

However, in applications with highly aggressive chemicals, we still recommend our full plastic PE & PTFE series pumps.

Twin pumps TT
Tapflo metal series pumps may be equipped with double in/outlet to achieve "two pumps in one" for blending, mixing or circulation of liquids. The liquid in one pump chamber is separated from the other one.



Printing
Transfer and circulation of printing ink



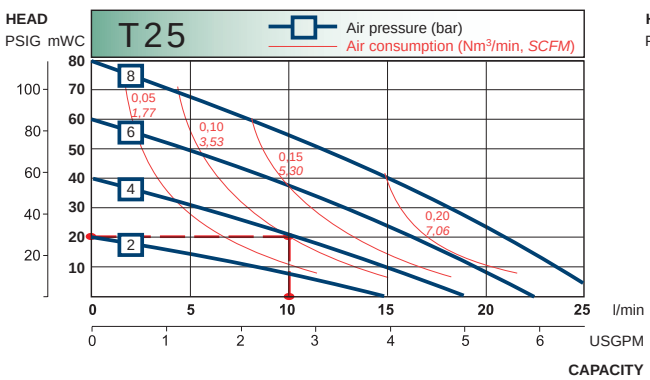
Application examples

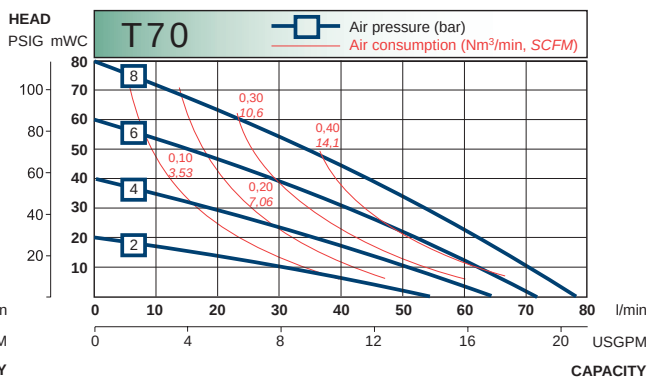
- Transfer of glue resin and hardener separated from each other
- Transfer and recirculation of ink to printing machines

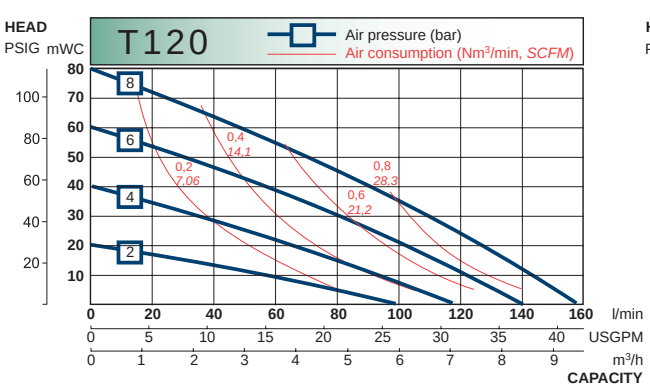
Performance curves

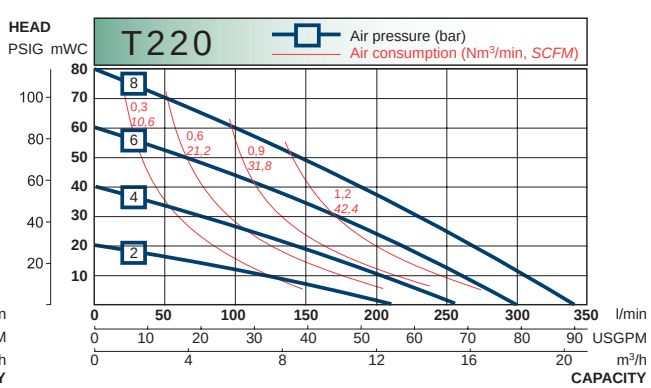
The performance curves are based on water at 20°C. Other circumstances might change the performance. See below how the capacity will change at different viscosities and suction lifts. These curves are valid for all metal pumps.

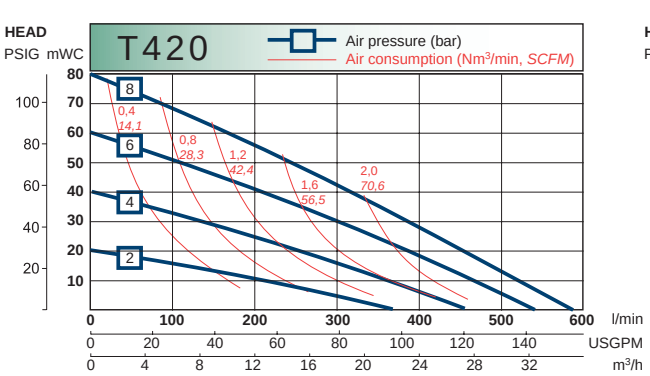
Example (see the red line):
A flow of 10 liter/minute is desired. The discharge head is calculated to 20 mWC. We choose a T25. It requires an air pressure of 4 bar and will consume approximately 0.10 Nm³ air per minute.

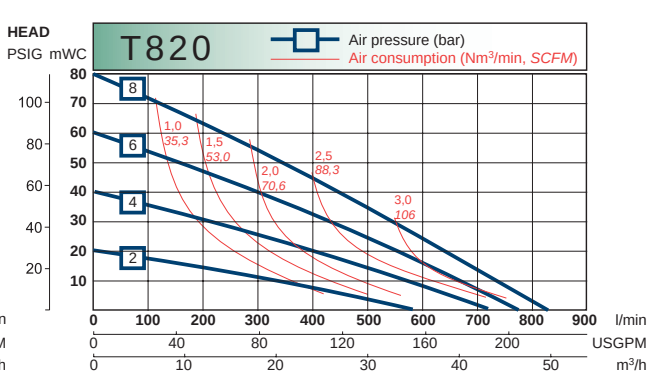






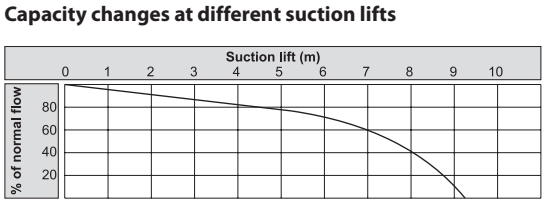




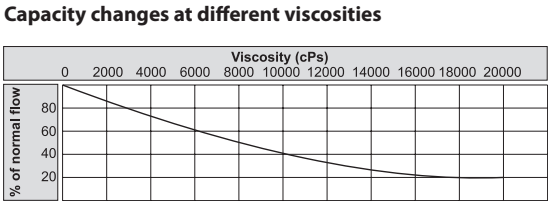


Capacity changes

Capacity changes at different suction lifts



Capacity changes at different viscosities



Changes reserved without notice

Dimensions

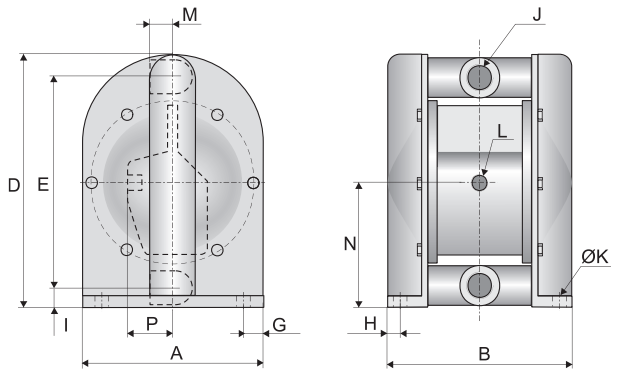
Dimensions for metal series

Dimensions in mm (where other is not indicated)
Dimensions in inch (where other is not indicated)

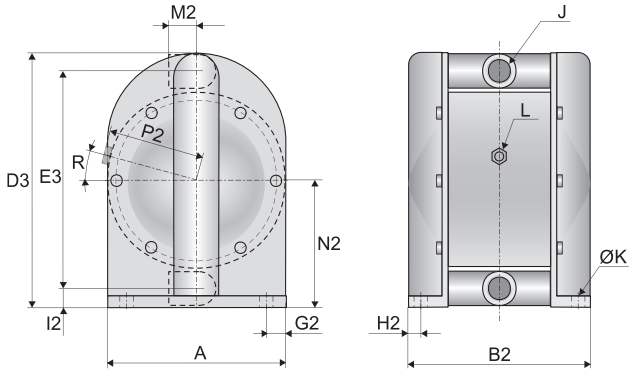
Dim	Pump size					
	25	70	120	220	420	820**
A	105	150	200	270	350	470
	4.13	5.91	7.87	10.63	13.78	18.50
B	116	168	195	265	342	488
	4.57	6.61	7.68	10.43	13.46	19.21
B2	-	156	204	280	344	750
	-	6.14	8.03	11.02	13.54	29.53
D	160	229	302	412	537	840
	6.30	9.02	11.89	16.22	21.14	33.07
D2	173	249	322	-	-	-
	6.81	9.80	12.68	-	-	-
D3	-	229	310	422	529	1341
	-	9.02	12.20	16.61	20.83	52.80
E	132	190	252	346	449	688
	5.20	7.48	9.92	13.62	17.68	27.09
E2	147	210	279	380	497	-
	5.79	8.27	10.98	15.96	19.57	-
E3	-	192	257	348	442	-
	-	7.56	10.12	13.70	17.40	-
F	13	20	20	-	-	-
	0.51	0.79	0.79	-	-	-
G	10	17	20	25	35	50
	0.39	0.67	0.79	0.98	1.38	1.97
G2	-	17	20	31	35	-
	-	0.67	0.79	1.22	1.38	-
H	12	19	20	28	33	53
	0.47	0.75	0.79	1.10	1.30	2.09
H2	-	13	23	34	32	-
	-	0.51	0.91	1.34	1.26	-
I	15	20	27	34	48	82
	0.59	0.79	1.06	1.34	1.89	3.22
I2	-	19	27	36	45	-
	-	0.75	1.06	1.42	1.77	-
J	1/2"	3/4"	1"	1 1/2"	2"	DN80(3")
	1/2	3/4	1	1 1/2	2	DN80(3")
J2	3/8"	1/2"	3/4"	1"	1 1/2"	-
	3/8	1/2	3/4	1	1 1/2	-
ØK	6.5	8.5	8.5	8.5	8.5	12.5
	0.26	0.33	0.33	0.33	0.33	
L	1/8"	1/4"	1/4"	1/2"	1/2"	3/4"
	1/8	1/4	1/4	1/2	1/2	3/4
M	19	29	33	44	57	84.5
	0.75	1.14	1.30	1.73	2.24	3.33
M2	-	40	52	70	90	-
	-	1.57	2.05	2.76	3.54	-
N	81	115	153	207	274	356
	3.19	4.53	6.02	8.15	10.79	14.02
N2	-	115	155	212	266	-
	-	4.53	6.10	8.35	10.47	-
P	30	47	36	57	60	72.5
	1.18	1.85	1.42	2.24	2.36	-
P2	-	80	105	143	183	-
	-	3.15	4.13	5.63	7.20	-
R	-	15°	15°	0	0	-
	-	15°	15°	0	0	-
S	14.5	21.2	27	35	42	-
	0.57	0.83	1.06	1.38	1.65	-
ØT	20	30	30	-	-	-
	0.79	1.18	1.18	-	-	-
U	1270*	1270*	1270*	-	-	-
	50.0*	50.0*	50.0*	-	-	-
V	285	360	400	-	-	-
	11.22	14.17	15.75	-	-	-

* = Any length up to 2000 mm on request
* = Any length up to 79" on request

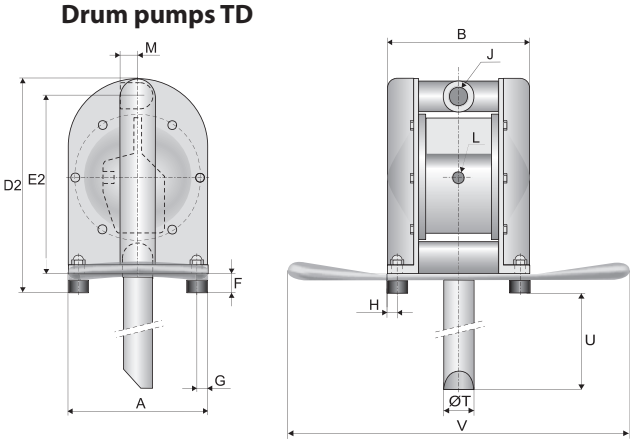
Aluminium and cast iron pumps T



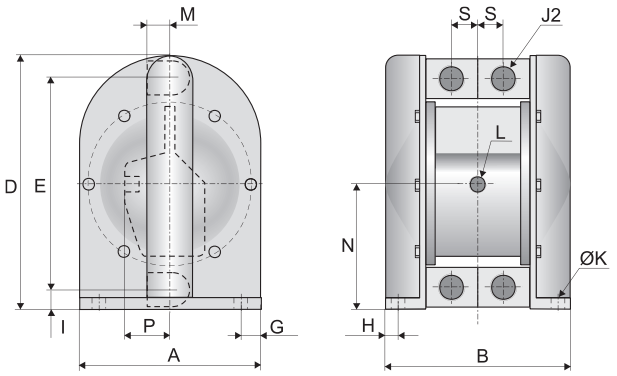
Stainless steel pumps T



Drum pumps TD



Twin pumps TT



** = T820 stainless steel has other design than shown above, contact us for drawing.
General dimensions only, ask us for detailed drawings. Changes reserved without notice

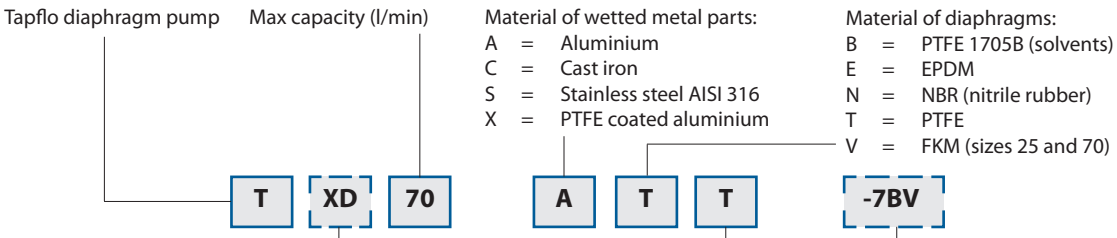
Technical data

Data	Pump size					
	25	70	120	220	420	820
General characteristics						
*Max capacity (l/min) / (US gpm)	26 / 6.8	78 / 20	158 / 41	330 / 87	570 / 150	820 / 216
**Volume per stroke (ml) / (cu in)	70 / 4.27	87.5 / 5.34	420 / 25.6	933 / 56.9	2300/140.3	5125/312.7
Max discharge pressure (bar) / (psi)	8 / 116					
Max air pressure (bar) / (psi)	8 / 116					
*** Max suction lift dry (m) / (Ft)	1.5 / 4.9	3 / 9.8	4 / 13	4 / 13	4 / 13	5 / 16
Max suction lift wet (m) / (Ft)	8 / 26					
Max size of solids (ø in mm) / (in)	3 / 0.12	4 / 0.16	6 / 0.23	10 / 0.40	15 / 0.59	15 / 0.59
Max temp with EPDM/NBR (°C) / (°F)	80 / 176					
Max temp with PTFE (°C) / (°F)	110 / 230					
Min temperature (°C) / (°F)	-20 / -4					
Weight						
Standard pump in alu (kg) / (lb)	2 / 4.4	5 / 11	8 / 18	19 / 42	34 / 75	97 / 213
Standard pump cast iron (kg) / (lb)	7 / 15	10 / 22	17 / 37	44 / 97	80 / 176	-
Standard pump in AISI 316 (kg) / (lb)	-	7 / 15	16 / 35	38 / 84	68 / 150	145 / 319
Drum pump TD in alu (kg) / (lb)	3 / 6.6	7 / 15	10 / 22	-	-	-
Drum pump TD in AISI 316 (kg) / (lb)	-	9 / 20		-	-	-
Material of components						
Pump housing and all wetted metal details	aluminium, cast iron or AISI 316L					aluminium or AISI 316L
Centre block, alu and cast iron pumps	aluminium (standard) or cast iron					aluminium
Centre block, AISI 316 pumps	-	PP (standard) or conductive PP				-
Diaphragms	NBR, PTFE, PTFE 1705B or EPDM					
Valve balls	NBR, PTFE, AISI 316L****, EPDM, polyurethane or ceramic****					
Air valve	Brass / NBR (standard) or AISI 316L / FKM or PET / NBR (standard on TX820)					
O-rings	EPDM, NBR or FKM					
Gaskets						
Housing screws	Steel on aluminium and cast iron pumps, AISI 304 on stainless steel pumps					
Diaphragm shaft	Stainless steel AISI 304					
Drum handle (TD pumps)	Stainless steel AISI 316L			-		

* = Recommended flow is half of the the max flow, i.e. recommended flow for a T120 is 60 l/min (15.9 US gpm).
** = The value is based on pumps with EPDM diaphragms. Pumps with PTFE diaphragms have about 15% less volume.
*** = This is max value with stainless steel valve balls, other valve ball materials may reduce the suction. Please consult us.
**** = Not available on TX820.

Pump code

The pump code details the specification, maximum capacity and materials of the major components.



Basic options:
B = Backup diaphragm system
D = Drumpump
F = Filterpress pump
L = Valve lift system (drain system)
P = Powder pump
T = Twin pump (double in/outlet)
X = ATEX approved, group II, cat 2

Material of valve balls:
E = EPDM
N = NBR (nitrile rubber)
T = PTFE
S = AISI 316 stainless steel
P = PU (polyurethane)
K = Ceramic
V = FKM

Special executions*:
1 = Optional material in/outlet
3 = Optional connections
4 = Backup diaphragm system configuration
5 = Other special executions*
6 = Optional material of centerblock
7 = Optional material of air valve
8 = Optional material of pos 18 seals
9 = Optional material of housing screws
12 = Powder pump options
14 = Optional pump feet

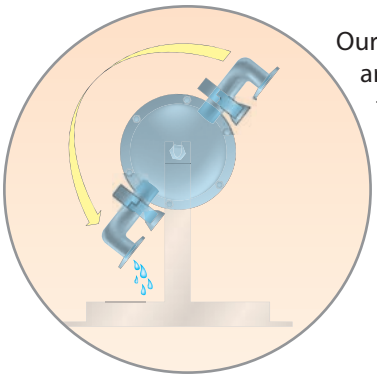
* = Ask us for complete pump code with all available options and executions. Changes reserved without notice

Hygienic design, made from electropolished stainless steel AISI 316L to meet the requirements in hygienic installations.

Explosion proof models are available. Certified according to directive 94/9/EC (ATEX), group II, cat 2 , for use in EX-zone 1. Contact us for information.

Sanitary series

The Tapflo sanitary series is particularly designed to meet the requirements of the food, beverage, pharmaceutical and cosmetic industries. Lubrication free air distribution system, maintenance free ball check valve system and total visual inspection of the wetted parts are some of the major features for this pump series. The materials used on certain models comply with the FDA guidelines. Models with extra fine surface finish Ra 0.8 and Ra 0.5 are available upon request.



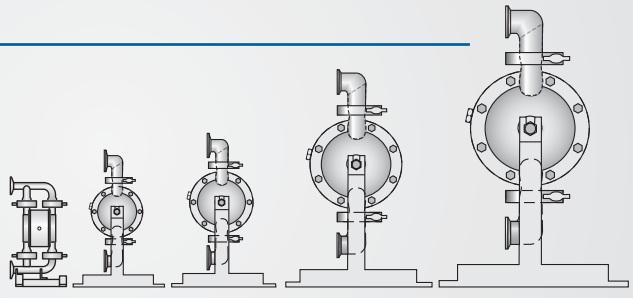
Made to be clean

Our design allows for total visual inspection of the wetted parts. There are no hidden areas where bacteria can grow. The manifold clamps and the housing screws are simply removed for complete disassembly and cleaning. The pump is also designed for cleaning and sterilization in place – C.I.P. and S.I.P. After such operations, the pump is easily turned on its support for drainage.

Drain the pump by turning the pump on its support (T80-T425)

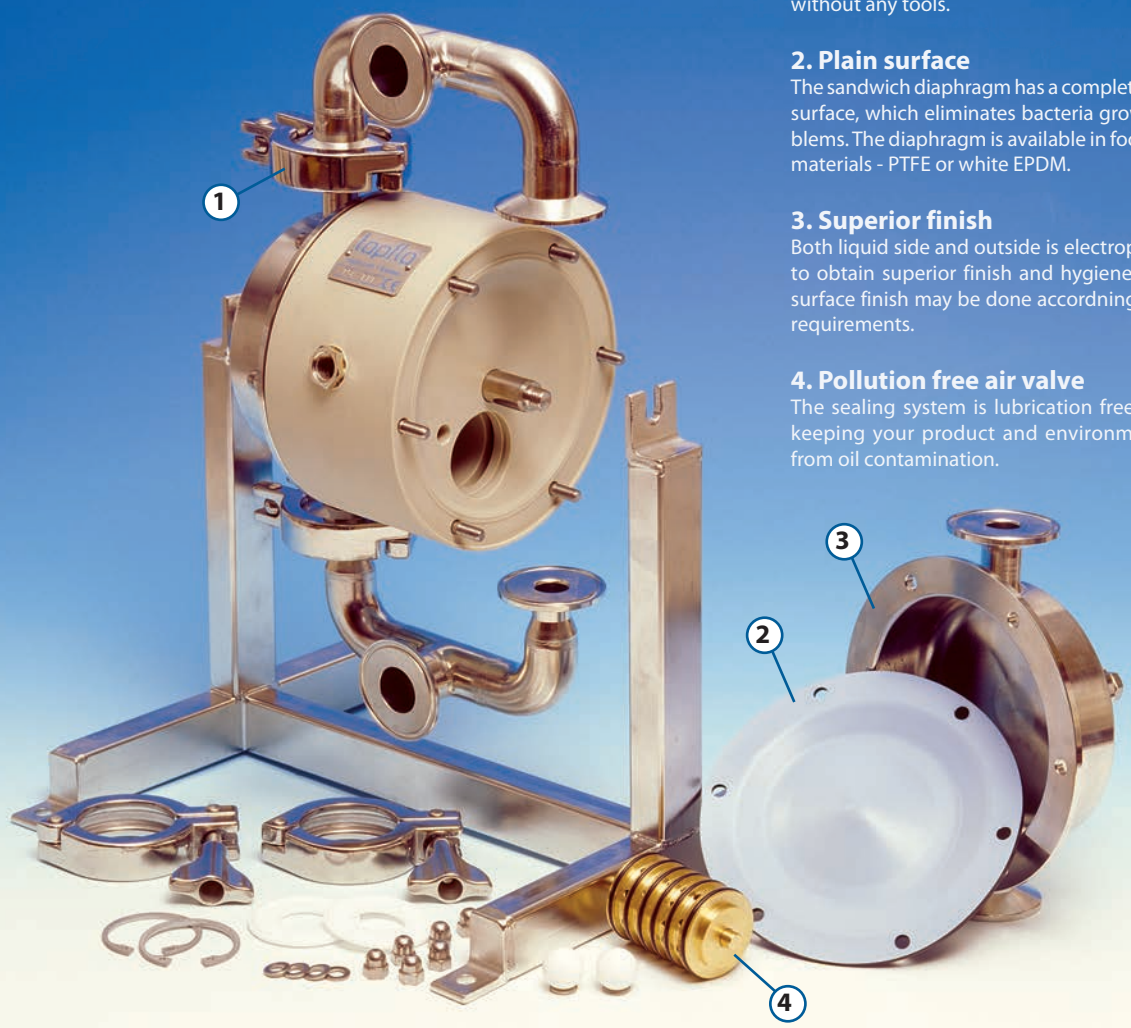
The sanitary pump range

- T30 - 30 l/min, 1"
- T80 - 80 l/min, 1"
- T125 - 125 l/min, 1 1/2"
- T225 - 225 l/min, 2"
- T425 - 425 l/min, 2 1/2"
- T825 - 825 l/min, 3"



6 sizes,
0-825 l/min

The sanitary design...



1. Quick dismantling
The clamp system ensures rapid dismantling without any tools.

2. Plain surface
The sandwich diaphragm has a completely plain surface, which eliminates bacteria growth problems. The diaphragm is available in food grade materials - PTFE or white EPDM.

3. Superior finish
Both liquid side and outside is electropolished, to obtain superior finish and hygiene. Special surface finish may be done accordning to your requirements.

4. Pollution free air valve
The sealing system is lubrication free, always keeping your product and environment free from oil contamination.

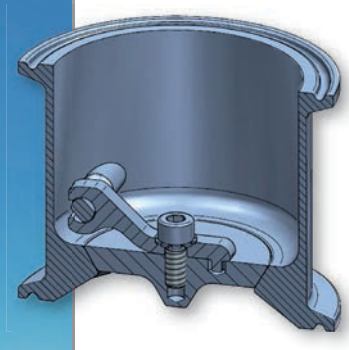
Typical applications

Sector	Example of applications
▶ Dairy products	Milk, cream, yogurt, cream cheese, melted cheese
▶ Grossery	Ketchup, mayonnaise, tomato products, mustard
▶ Beverages	Flavours, colouring, fruit juice
▶ Bakery	Dough, ingredients
▶ Brewery	Beer, flavours, colouring, wort
▶ Hygiene	Soap, toothpaste, schampoo
▶ Cosmetics	Cream, alcohol, perfume

Special versions

Heating jacket
The heating jacket is used when the pumped product has to maintain a specific temperature, high or low, throughout the process. A heating or cooling medium is continuously circulated in the heating jacket. The jacket is covering all the wetted parts of the pump. Available on all sanitary series pumps.

Variety of connection types
The pump is supplied as standard with ISO TC clamp connections. However, the pump may be equipped with almost any type of connection used in the hygienic field – DIN clamps, SMS milk, RJT, DIN aseptic to mention a few.

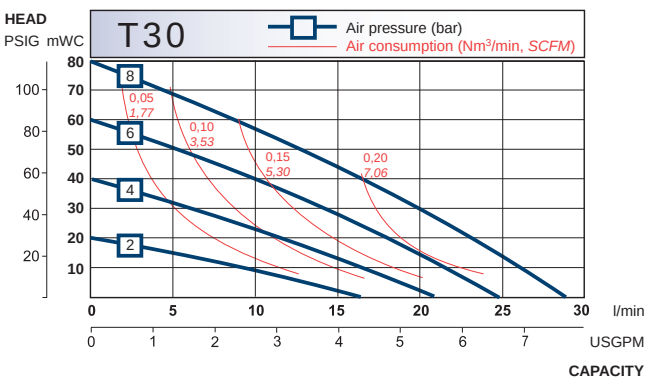


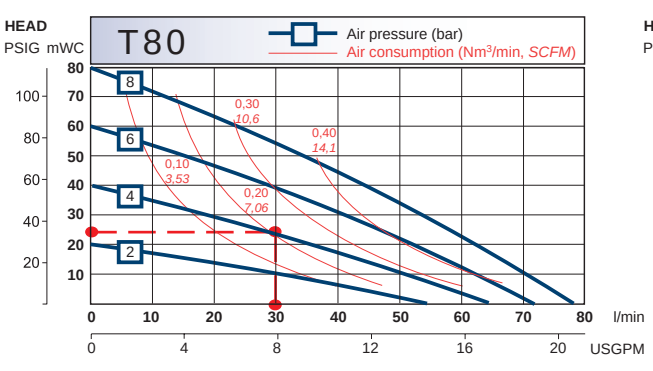
Flap valves for big solids
Flap valves are available for the sanitary pumps, ideal in applications with bigger size and delicate solids. The gentle pumping principle will maintain solids without any destruction. Available models with flap valves are T225 (38 mm solids max) and T425 (48 mm solids max).

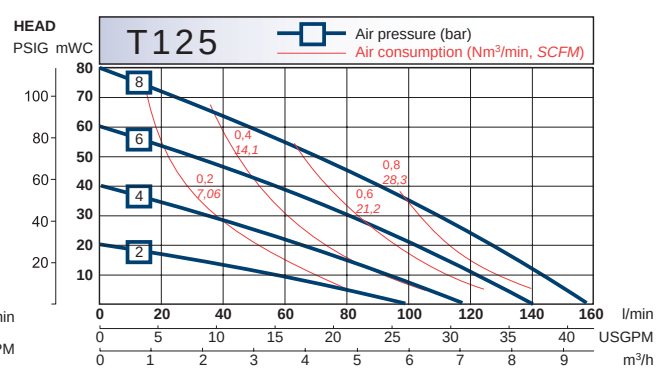
Performance curves

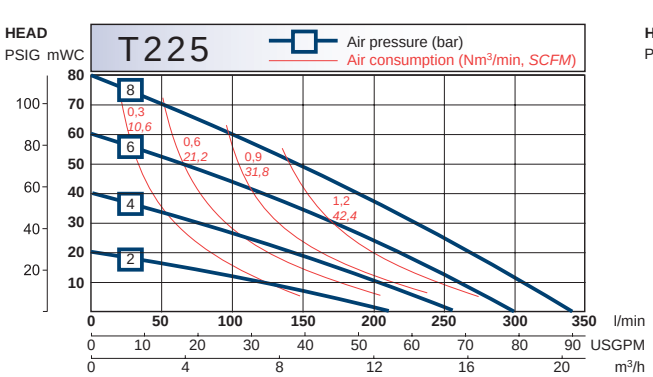
The performance curves are based on water at 20°C. Other circumstances might change the performance. See below how the capacity will change at different viscosities and suction lifts. These curves are valid for all sanitary pumps.

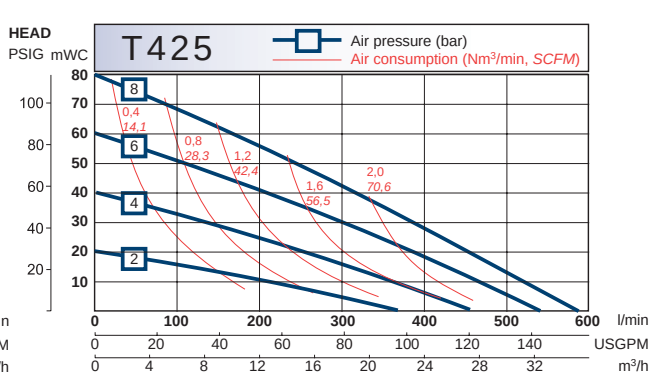
Example (see the red line on the T80 curve):
A flow of 30 liter/minute is desired. The discharge head is calculated to 25 mWC. We choose a T80. It requires an air pressure of 4 bar and will consume approximately 0.20 Nm³ air per minute.







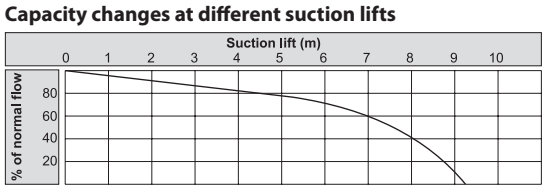




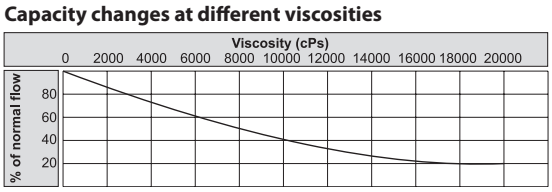
Recommended flow is half of the the max flow, i.e. recommended flow for a T80 is 40 l/min (10.6 US gpm).

Capacity changes

Capacity changes at different suction lifts



Capacity changes at different viscosities



Changes reserved without notice

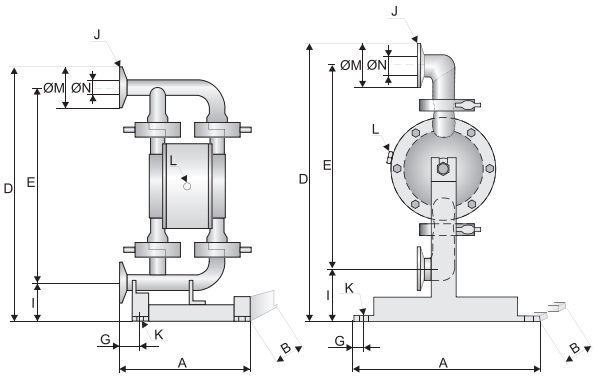
Data

Dim	Pump size				
	30	80	125	225	425
A	160 6.30	290 11.4	290 11.4	360 14.2	440 17.3
B	230 9.06	295 11.6	320 12.6	420 16.5	485 19.1
D	302 11.9	396 15.6	445 17.5	639 25.2	840 33.1
E	241 9.49	297 11.7	349 13.7	514 20.2	698 27.5
G	25 0.98	14 0.6	14 0.6	14 0.6	14 0.6
I	48 1.89	73 2.9	71 2.8	86 3.4	97 3.8
J TC[1]	1″	1″	1 1/2″	2″	2 1/2″
DIN[2]	DN25	DN25	DN40	DN50	DN65
SMS[3]	-	25	38	51	63.5
RJT	3/4″	1″	1 1/2″	2 1/2″	3″
K	9 0.4	9 0.4	9 0.4	9 0.4	9 0.4
L	1/8″ 1/8	1/4″ 1/4	1/4″ 1/4	1/2″ 1/2	1/2″ 1/2
ØM*	50.5 2.0	50.5 2.0	50.5 2.0	64 2.5	91 3.6
ØN*	22.6 0.9	22.6 0.9	35.6 1.4	48.6 1.9	66.8 2.6

Dimensions for sanitary series

Dimensions in mm (where other is not indicated)
Dimensions in inch (where other is not indicated)

T30 **T80-T425**



* = Dimensions for standard clamp connections only
1 = Clamp connections/pipes according to ISO 2852/2037
2 = Threaded connections according to DIN 11851
3 = Threaded connections according to SMS 1145

General dimensions only, ask us for detailed drawings. Flap valve pumps are not shown here, ask us for drawings.

Technical data	Pump size				
	30	80	125	225	425
Max capacity (l/min) / (US gpm)	28 / 7.4	78 / 20.6	155 / 41	330 / 87	570 / 150
*Volume per stroke (ml) / (cu in)	70 / 4.3	87.5 / 5.34	300 / 18.3	933 / 56.9	2300/140.3
Max discharge pressure (bar) / (psi)	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116
Max air pressure (bar) / (psi)	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116
**Max suction lift dry (m) / (Ft)	1.5 / 4.9	3 / 9.8	4 / 13	4 / 13	4 / 13
Max suction lift wet (m) / (Ft)	8 / 26	8 / 26	8 / 26	8 / 26	8 / 26
Max size of solids (ø in mm) / (in)	3 / 0.12	4 / 0.16	6 / 0.24	10 / 0.39	15 / 0.59
Max temperature (°C) / (°F)	110 / 230	110 / 230	110 / 230	110 / 230	110 / 230
Weight (kg) / (lb)	4 / 9	8 / 18	11 / 24	21 / 46	35 / 77
Material of components					
Wetted metal details	Stainless steel AISI 316L				
Centre block (not wetted)	PP				
Diaphragms	PTFE, PTFE 1705B, PTFE with white back, EPDM, white EPDM, NBR				
Valve balls	PTFE, EPDM, NBR, AISI 316, PU, Ceramic				
Air valve	Brass / NBR or optional AISI 316L / FKM				
Sealings (wetted)	PTFE or EPDM				
Housing pin screws	Stainless steel AISI 304				
Diaphragm shaft	Stainless steel AISI 304				

* = The value is based on pumps with EPDM diaphragms. Pumps with PTFE diaphragms have about 15% less volume.
** = This is max value with stainless steel valve balls, other valve ball materials may reduce the suction. Please consult us.

Pump code

The pump code details the specification, maximum capacity and materials of the major components

Tapflo diaphragm pump | Max capacity (l/min) | Material of wetted metal parts: S = stainless steel AISI 316L

T	J	80	S	T	T	-7SV

Basic options:
B = Backup diaphragm system
D = Drum pump
J = Pump with heating jacket
X = ATEX approved, group II, cat 2

Material of diaphragms:
B = PTFE 1705B (solvents)
E = EPDM
W = White food grade EPDM
N = NBR (nitrile rubber)
T = PTFE
Z = PTFE with white back

Material of valve balls:
E = EPDM
N = NBR (nitrile)
T = PTFE
S = AISI 316L
P = PU (polyurethane)
K = Ceramic

Special executions*:
3 = Optional connections
4 = Backup diaphragm system configuration
5 = Other special executions*
6 = Optional material centerblock
7 = Optional material air valve
8 = Optional material pos 18 seals
9 = Optional material housing screws
14 = Optional pump feet

* = Ask us for complete pump code with all available options and executions. Changes reserved without notice

Aseptic EHEDG series

Keeping your process clean

Tapflo Aseptic series pumps are designed for service in pharmaceutic-, biotech- and food industries where a clean process is the key. Tapflo Aseptic series is EHEDG certified, has FDA and USP VI approved materials and conform to the ATEX directive 94/9/EG.

Typical applications

Food & dairy: Soup, cream, syrup, dairy products, flavoring, alcohol, chocolate, paste

Pharmaceutics & cosmetics: Cream, paste, alcohol and filtration gel

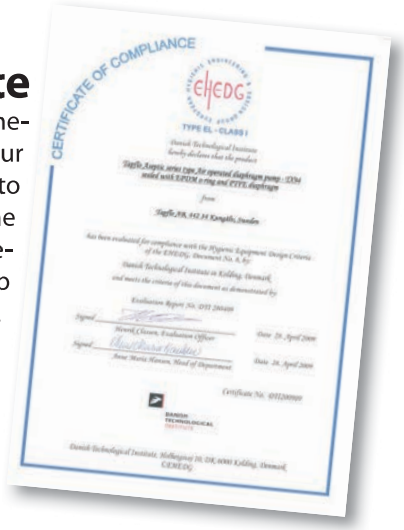
Features & benefits

- No bacteria growth – no horizontal areas
- Easy cleaning and draining - designed for CIP and SIP cleaning
- Gentle pumping - no damage of sensitive products
- Hygienic surfaces - housings made from electro polished stainless steel AISI 316L, Ra 0.8 (standard) or Ra 0.5 on request
- Hygienic design diaphragms without any nuts or plates in the pumped product
- Wide range of connection types available: TriClamp, sanitary threads (DIN, SMS) etc
- No leakage - no rotating shaft seals
- Flexible installation - self priming
- Safe in explosion hazardous areas – conform with the ATEX directive
- Reliable in service – can run dry and against closed valve without damage
- Environmental friendly lube free air valve

Smooth surfaces and clean ability are important keys for the EHEDG certification

The EHEDG certificate

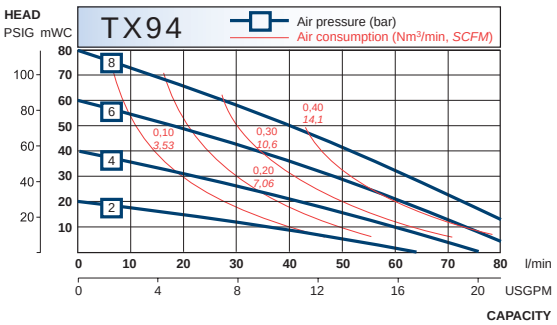
The EHEDG (European Hygienic Engineering & Design Group) certificate is your guarantee that the design is according to the hygienic guidelines. Furthermore the pump is clean ability tested, which means bacteria does not grow in the pump after cleaning and draining procedure.

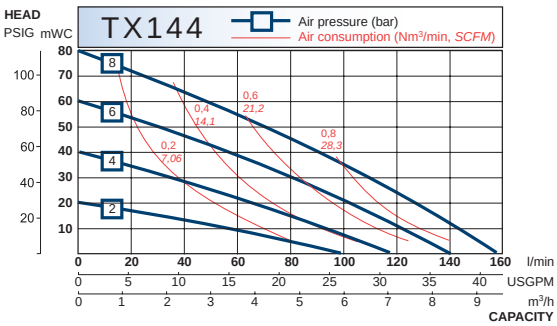


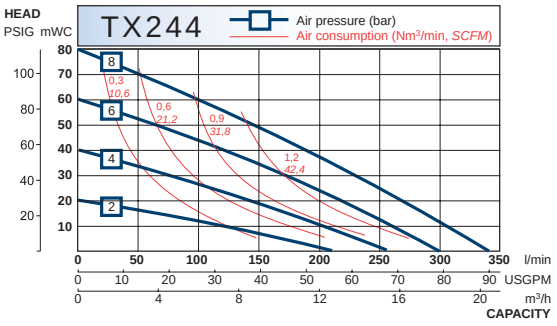
Technical data & dimensions

Data			
Model	**TX94**	**TX144**	**TX244**
Max flow	94 l/min	144 l/min	330 l/min
Max pressure	8 bar	8 bar	8 bar
Max air pressure	8 bar	8 bar	8 bar
Dry suction lift	2 m	3 m	4.4 m
Max solid size	6 mm, bigger if soft	6 mm, bigger if soft	10 mm, bigger if soft
Temperature	-20˚ .... +110˚C (temporary higher)		
Weight	15 kg	22 kg	46 kg
Connections	Triclamp (standard), SMS, DIN and RJT threads, DIN 11864 clamp		
ATEX details	Group II, cat 2, T4		
Materials and options			
Housing, manifolds	AISI 316L, Ra 0.8 Ra 0.5 on request		
Diaphragms	PTFE (FDA & USP VI) PTFE 1705B (solvents, FDA & USP VI) EPDM (FDA on reguest) White EPDM (FDA) PTFE with white back (FDA & USP VI)		
Valves (ball type)	PTFE (FDA) PTFE (USP VI & FDA) EPDM (FDA on request) AISI 316L		
O-rings	EPDM (FDA) EPDM (USP VI & FDA) FEP/FKM (FDA)		
Options	Backup diaphragm system		

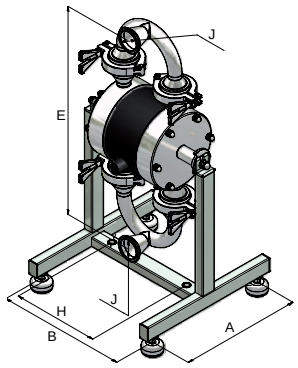
Performance curves







Dimensions (mm)			
A	260	280	360
B	275	278	340
E	447	488	700
H	185	188	270
J	DN 40	DN 50	DN 65



Changes reserved without notice

DT series Active pulsation dampeners

The active pulsation dampener is the most efficient way to remove pressure variations on the discharge of the pump.

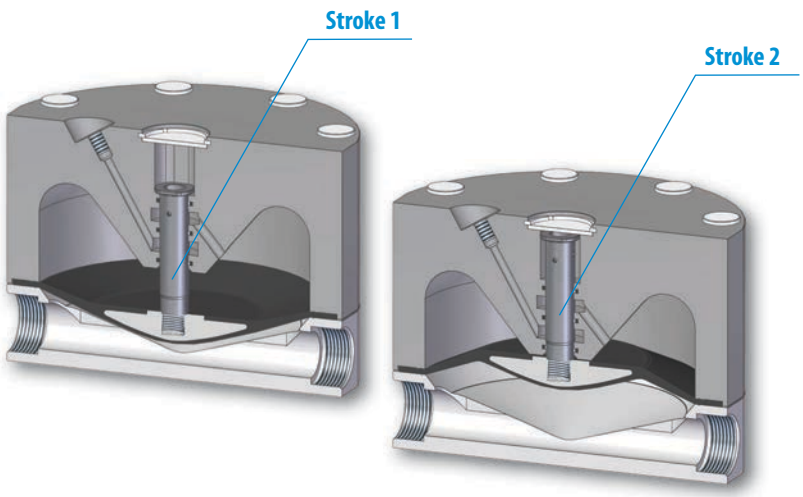
The Tapflo pulsation dampener works actively with compressed air and a diaphragm, automatically setting the correct pressure to minimise the pulsations.

AT Ex

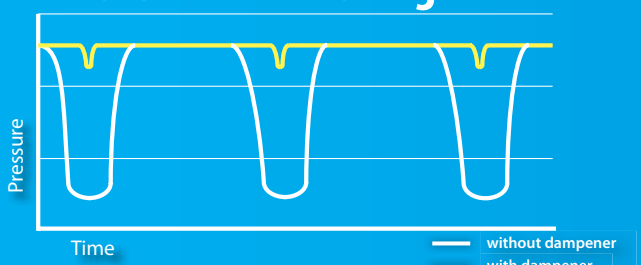
Explosion proof models are available
Certified according to directive 94/9/EC (ATEX), group II, cat 2 , for use in EX-zone 1.
Contact us for information.

How it works

When the liquid pressure falls in the piping system, the pulsation dampener supplies extra pressure to the discharge between the pump strokes by displacing liquid by means of diaphragm movement. This pumping action created by the dampener, decreases the pressure variations and pulsations.



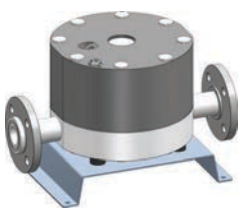
Features when using the DT series pulsation dampener



The dampening effect
The pressure variation in a discharge line with and without a pulsation dampener.

- Minimized vibrations and water hammer effects
- Protection of all kinds of instruments in your pipe system
- Optimized pump performance and reduced maintenance costs

Options & accessories


■ Pulsation dampener with stand

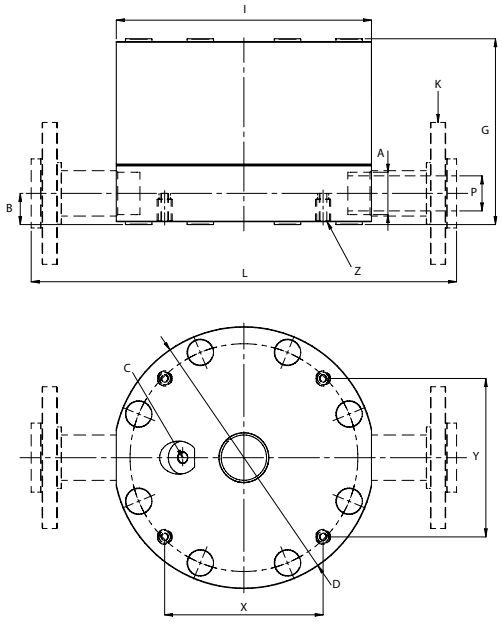

■ Pulsation dampener with pump


■ Pulsation dampener with guardian

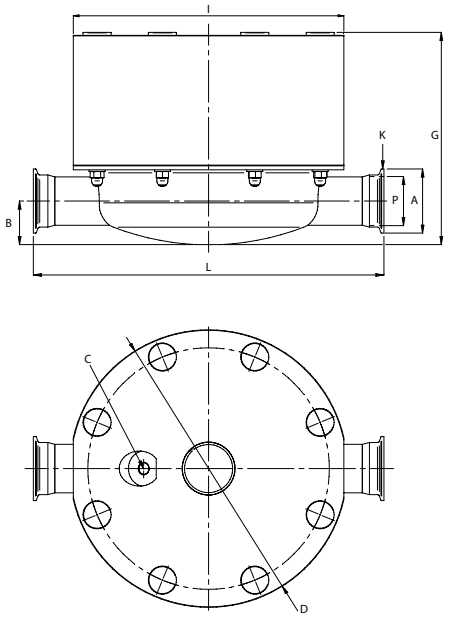

■ TK built-on dampener

DT series Active pulsation dampeners

PE , PTFE & aluminium dampeners



Stainless steel and sanitary dampener



Dimensions in mm (where other is not indicated) | Dimensions in inch (where other is not indicated)

DIMENSION		DAMPENER SIZE															
		9/20	25	30	50	70	80	100	120	125	200	220	225	400	420	425	800	820	825
A (BSP)		G 3/8"			G 1/2"	G 3/4"		G 1"			G 1 1/2"			G 2"			-	G 3 1/2"	-
B		15/33[1]	13	10,6	17/35[1]	15,5	16,5	25,5/42,5[1]	22,5	16,5	33/50[1]	30	43,5	40,5/58[1]	38	46	92	90	19,3
		0,59/1,3[1]	0,51	0,42	0,67/1,38[1]	0,61	0,65	1/1,67[1]	0,89	0,65	1,3/1,97[1]	1,18	1,71	1,59/2,28[1]	1,50	1,81	3,62	3,54	0,76
C		G 1/8"			G 1/4"			G 1/4"			G 1/4"			G 1/4"			G 1/4"		
D		110			158			208			277			360			470		
		4,33			6,22			8,19			10,91			14,17			18,50		
G		85/103[1]	81	78,5	109,5/129,5[1]	105,5	117,5	144,5/161,5[1]	141,5	135	200,5/217,5[1]	197,5	216	244/261[1]	241	256,5	394	392	330
		3,35/4,06[1]	3,19	3,09	4,31/5,1[1]	4,15	4,63	5,69/6,36[1]	5,57	5,31	7,89/8,56[1]	7,78	8,50	9,61/10,28[1]	9,49	10,10	15,51	15,43	12,99
I		107			155			203			270			352			470		
		4,21			6,10			7,99			10,63			13,86			18,50		
K (BSP)		G 3/8"			G 1/2"	G 3/4"		G 1"			G 1 1/2"			G 2"			-	G 3 1/2"	-
L	DIN & ANSI Flange	235		-	285		-	375		-	450		-	550		-	700		-
		9,25		-	11,22		-	14,76		-	17,72		-	21,65		-	27,56		-
	BSP	107		-	155		-	203		-	270		-	352		-	470		-
		4,21		-	6,10		-	7,99		-	10,63		-	13,86		-	18,50		-
	Other Connections[3]	-		180	-		210	-		300	-		350	-		450	-		600
		-		7,09	-		8,27	-		11,81	-		13,78	-		17,72	-		23,62
P (BSP)		G 3/8"			G 1/2"	G 3/4"		G 1"			G 1 1/2"			G 2"			-	G 3 1/2"	-
X		36		-	90,3		-	113,8		-	167,6		-	226,3		-	297		-
		1,42		-	3,56		-	4,48		-	6,60		-	8,91		-	11,69		-
Y		86,8		-	100,3		-	135,6		-	167,6		-	226,3		-	297		-
		3,42		-	3,95		-	5,34		-	6,60		-	8,99		-	11,69		-
Z		M4x20	M4x17	-	M4x20	M4x17	-	M8x30/22[1]	M8x25	-	M8x30/22[1]	M8x25	-	M8x30/22[1]	M8x25	-	M8x22 PTFE	M8x25	-

1 PE / PTFE
2 ALU / SS
3 ISO 2852, DIN 11851, SMS1145, BS 4825 (RJT)
* Dimensions for other connections in IOM Manual p. 17

Dampener code

The details, specification, size and materials of the major components.

For Tapflo pump size (l/min)

PD - Tapflo active pulastion dampener

Material of diaphragm:
E = EPDM
B = PTFE 1705B (solvents)
W = White (food grade) EPDM
N = NBR (nitrile rubber)
T = PTFE
Z = PTFE with white back

DT	X	50	P	T	-	3APL

Basic options:
X = ATEX approved, group II, cat 2

Material of wetted dampener housing:
A = aluminium
P = polyethylene
S = stainless steel AISI 316L
T = PTFE

Special executions*:
3 = Optional connections
5 = Other special executions*
6 = Optional material damper block
9 = Optional material housing screws
11 = Housing reinforcement plate

* = Ask us for complete pump code with all available options and executions. Changes reserved without notice

Guardian systems

The Guardian is an energy conservation device designed to protect an air operated double diaphragm (AODD) pump from operating in an inefficient manner that uses unnecessary energy and reduces the life of its parts. It also offers the added benefit of providing greater safety to applications of high risk.

Functions and applications

The Guardian monitors fluid pressure, changing its output if the monitored pressure rises above or falls below the set point of the Guardian (dependant on configuration), controlling the associate pump accordingly for the following applications:

- Dry Run & Stop
- Dead Head & Stop
- Dead Head & Restart
- Barrier Pump Monitoring and Control

Barrier Protection

Barrier pumps (TB) have an additional set of diaphragms used to backup the primary diaphragms. In case of a breach the liquid remains inside the pump, instead of leaking out through the air exhaust. The Guardian monitors the pressure between the primary and secondary diaphragms, stopping the pump if the pressure increases above the set point.

Dry run & stop

The Guardian monitors the fluid discharge pressure of the pump, stopping it if the pressure falls below the set point, caused by a lack of media on the suction causing air to be ingested into the pump.

Dead head and stop

The Guardian monitors the fluid discharge pressure of the pump, stopping it if the pressure rises to the set point, caused by a closed valve or over pressure in the discharge line.

Dead head and restart

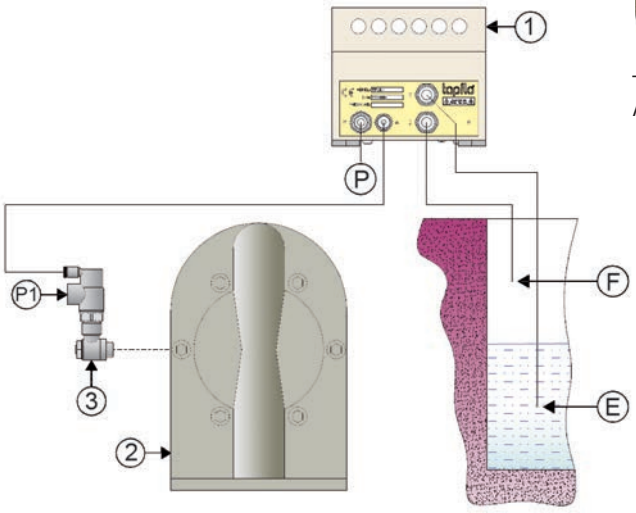
The Guardian monitors the fluid discharge pressure of the pump, stopping it if the pressure rises to the set point, caused by a closed valve or over pressure in the discharge line. When the pressure falls below the set pressure, the pump automatically restarts.

For further details, please check the separate brochure systems & accessories for pumps

Pneumatic level control

The level control is small, effective & extremely simple to install and use. This ingenious system is operated with pneumatic components only. The level control may be installed in sumps, tanks or tubs to start (automatic with TPUK-LA or manual with TPUK-LM) and automatic stop the pump at certain liquid levels.

TPUK-LA:
Automatic start and stop



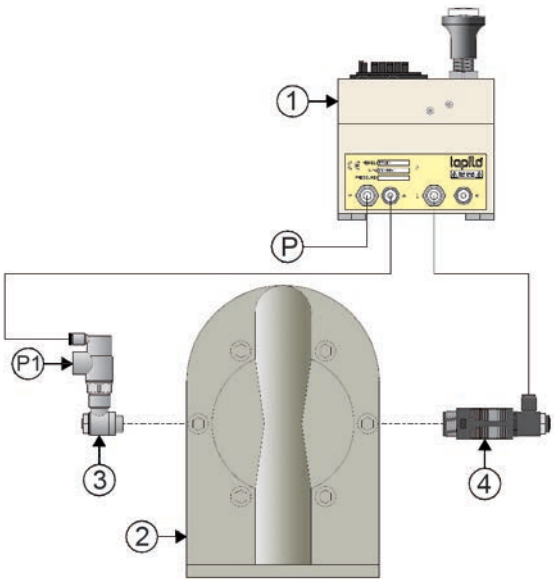
Installation TPUK-LA

1. TPUK-LA level control
2. AODD pump
3. Blocking/needle valve
P. Air supply to level control
P1. Air supply to pump
E. 'Empty' level tube
F. 'Full' level tube

TPUK-BP:
Predetermining counter batch control

Pneumatic batch control

Tapflo's totally pneumatic batcher can control any Tapflo AODD pump to produce accurate and repeatable dispensed volumes. Fully programmable allowing you to set the batch amount (TPUK-BP) or batch time (TPUK-BT). Available also with internal mounted control to prevent unauthorised adjustments (TPUK-BPI and TPUK-BTI).



Installation TPUK-BP

1. TPUK-BP batch control
2. AODD pump
3. Blocking/needle valve
4. Muffler with connection/adjuster
P. Air supply to batch control
P1. Air supply to pump

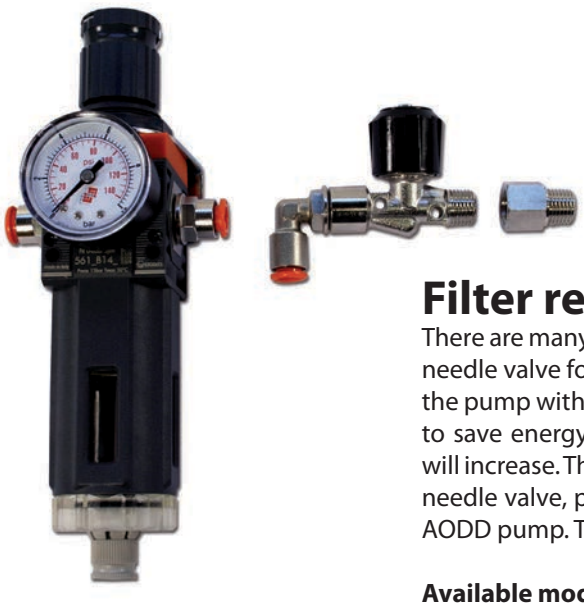
For further details, please check the separate brochure systems & accessories for pumps

Stroke counter - low pressure VFC

A stroke to volt free contact (VFC) is available for integration with PLC systems. Simply connect to any AODD pump via the air exhaust muffler to monitor the pump strokes. TPUK-PS1 must be combined with a modified muffler type TPUK-MU.

Life counter TPUK-LC

Tapflo's life counter simply connects to the AODD pump air exhaust, representing the strokes on the LCD display. Compact, easy to use and cost effective this simple system will allow you to control servicing and implement a preventative maintenance routine. TPUK-LC must be combined with a modified muffler type TPUK-MU.



Filter regulator & needle valve kit

There are many benefits of using an individual filter regulator and needle valve for your AODD pump. You will always be able to run the pump with right air quality and optimum pressure and speed to save energy. Furthermore the lifetime of pump components will increase. The kit includes a filter regulator, gauge, wall bracket, needle valve, push fit connections and screw adaptor to suit the AODD pump. The filter is 5 micron and regulator is 0-8 bar.

Available models:

FR/NV1/8"	1/8" (for pumps TR9-T30)
FR/NV1/4"	1/4" (for pumps T50-T125)
FR/NV1/2"	1/2" (for pumps T200-T425)

For further details, please check the separate brochure systems & accessories for pumps

Tapflo Pneumix Technology

The Pneumix was predominantly developed for the paint and ink industry where most raw materials in drums or containers settle out over time and need to be mixed or blended prior to use. This usually means rolling, shaking or pumping to a mixing vessel; that adds time, waste, mess and expense.

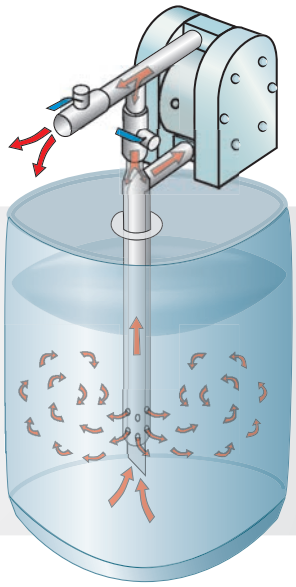
Some benefits with the Pneumix...

- Eliminates problems with conventional mixing
- No need for pumping to mixing vessel
- No paddles or rotating blades
- Fully controllable pneumatic operation and control
- No moving parts utilises pump power to mix & dispense
- Variable agitation
- No shear
- No air entrainment
- Closed vessel mixing system
- Reduced environmental exposure
- Suits all containers up to 1000 litre IBC

How it functions...

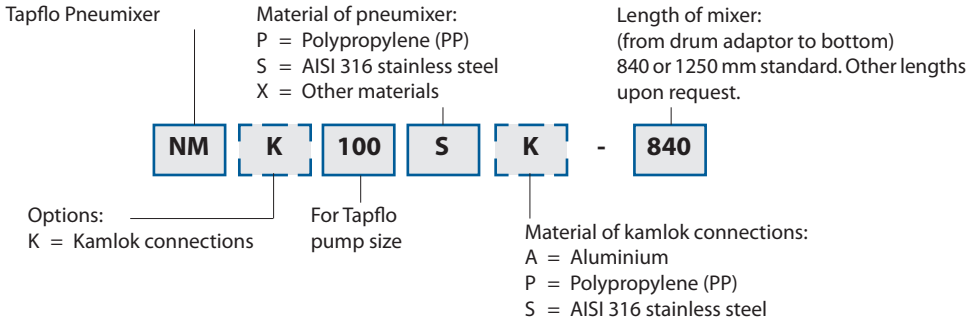
Mixing mode
The discharge valve is closed and the recirculation valve is open, to allow the product to circulate in the container

Transfer mode
The discharge valve is open and the recirculation valve is partially open, to both mix and to transfer the product out of the Pneumix



Pneumix code

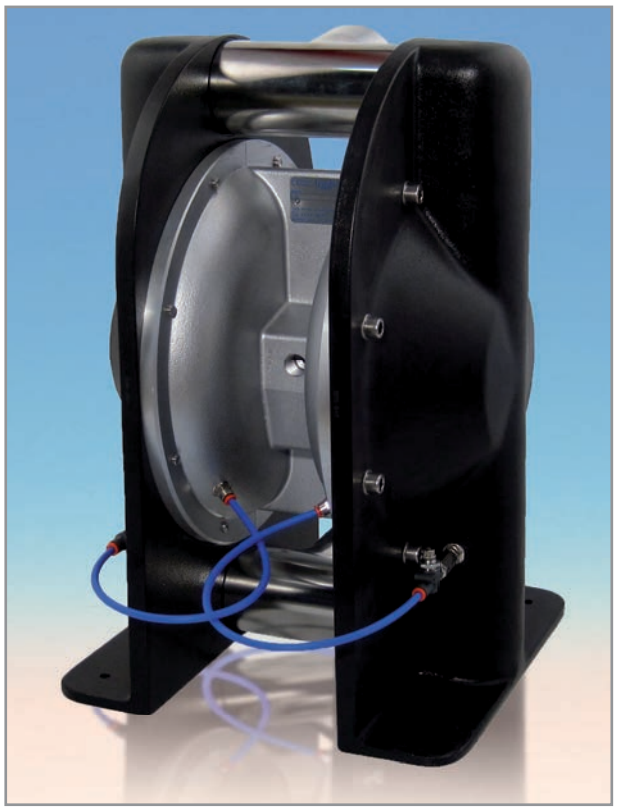
The code details the specification, size and materials of the major components



Trouble free, safe and clean transfer of powders ATEx

Economical compared with other complex powder systems

Convenient and safer than manual powder handling

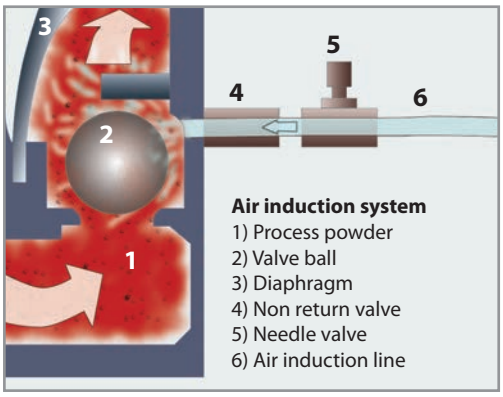


Reduced contamination
The powder is transferred in a hermetic system from the powder container to your process.

Economical and compact solution
The Tapflo powder transfer pump can do the same job as many complex and large powder systems. The compact design also makes the unit portable.

What kind of powders?
The powder transfer pump will handle different types of process powders, with specific weight from 80 up to 720 kg/m^3 dry weight. Generally, if the powder does not clump together when you squeeze it in your hand, the Tapflo powder transfer pump can be used successfully. A few examples of common powders are sintering powder, carbon black, resins and silicones.

Capacity
The capacity of the powder transfer is extremely different from one powder to another, depending on the consistency and weight etc. Fore more specific information about the capacity in your application, please contact your local Tapflo distributor, or fill out the inquiry form on our website www.tapflo.com.



No start up problems
The air induction system eliminates powder pack up problems when starting the pump. Air is induced to the powder side of the pump for diffusion of the powder. The induction flow can manually be adjusted by means of a needle valve to obtain a optimum performance.

Available models - data

Model	TXP220	TXP420
In/outlet connections	1 1/2" BSP threads (NPT upon request)	2" BSP threads (NPT upon request)
Features	Complete air induction system included	
Explosion protection	ATEX marked according to group IIG (gas) / IID (dust), category 2	
Housing material	PTFE coated aluminium	
Diaphragm material	EPDM (NBR or PTFE upon request)	
Valve material	EPDM (NBR, PTFE, AISI 316 or PU upon request)	
In/outlet material	Stainless steel AISI 316L	

USP VI approved pharmaceutical series pumps

air driven pump for pharmaceutical and biotech industries

The Pharmaceutical series pumps

TU53 PTT-5UVI	50 l/min
TU103 PTT-5UVI	100 l/min
THU203 PTT-5UVI	200 l/min
THU403 PTT-5UVI	400 l/min

We introduce our unique USP approved (United States Pharmacopoeia) hygienic PE pump, now upgraded to USP VI. This pump series is developed in co-operation with one of the world leading supplier to the biotech market. It serves the biotech- and pharmaceutical industries in numerous applications.

Features & benefits

- Sanitary design with smooth internal surfaces
- Inert materials – no contamination of the pumped product
- USP VI approved materials
- Extremely easy to maintain – pumphousing with very few components

Pumphousing with only three parts makes it extremely easy to maintain.

High finish and hygienic approved materials.

Other products manufactured by Tapflo

CTM magnetic drive pumps
Close coupled, compact and hermetic pumps ideal for service in little spaces. Available in PP and PVDF.

CTV
vertical pumps
A vertical centrifugal pump that is simple but very reliable in duty. CTV is specialized for transfer and circulation of various liquids from containers, sumps and tanks. Available in PP, PVDF and stainless steel AISI 316L.

CTI & CTH centrifugal pumps
Compact pumps manufactured from stainless steel AISI 316L. CTH (hygienic) has electro polished surfaces, while CTI (industrial) has glass blast surfaces.

FT filters
Cartridge filters with 1, 3 or 7 cartridges and oil absorb filters. Standalone filter units to be combined with CTV vertical pumps or complete compact units with CTM pumps.

TAPFLO AB

Sweden

Filaregatan 4 | S-442 34 Kungälv

Tel: **+46 303 63390**
Fax: **+46 303 19916**

E-mail addresses:
Commercial questions: **sales@tapflo.com**
Orders: **order@tapflo.com**
Tech support: **support@tapflo.com**

Tapflo products and services are available in 67 countries on 6 continents.

Tapflo is represented worldwide by own Tapflo Group Companies and carefully selected distributors assuring highest Tapflo service quality for our customers' convenience.

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Tapflo Group Companies

Austria
Tapflo Austria
Tel: +43 732 27292910
sales@tapflo.at

Azerbaijan
Tapflo Azerbaijan LLC
Tel: +994 502660799
sales@tapflo.az

Baltic States
Tapflo Latvia
Tel: +371 67472205
sales@tapflo.lv

Belarus
Tapflo Belarus
Tel: +375 17 3934609
sales@tapflo.by

Bulgaria
Tapflo EOOD
Tel: +359 (0)2 974 18 54
office@tapflo.bg

Canada
Tapflo Canada
Tel: +1 514 813 5754
canada@tapflo.com

Croatia
Tapflo GmbH
Tel: +385 91 4884 666
sales@tapflo.hr

Czech Republic
Tapflo s.r.o.
Tel: +420 513 033 924
tapflo@tapflo.cz

China
Tapflo (Wuxi)
Tel: +86 510 8241 7602
sales@tapflo.cn

Denmark
Tapflo Danmark
Tel: +45 36 454600
info@tapflo.dk

France
Tapflo France
Tel: +33 1 34 78 82 40
info@tapflo.fr

Georgia
Tapflo Georgia
Tel: +995 577 463010
sales@tapflo.ge

India
Tapflo Fluid Handling India Pvt Ltd
Tel: +91 20 65000215
ad@tapflo.in

Ireland
Tapflo Ireland Ltd
Tel: +353 1 2011911
info@tapflo.ie

Italy
Tapflo Italia
Tel: +39 0362307698
info@tapfloitalia.com

Japan
Tapflo Japan K.K.
Tel: +81-3-6240-3510
tapflojp@tapflo.co.jp

Kazakhstan
Tapflo Kazakstan
Tel: +7 727 3278347
sales@tapflo.kz

Poland
Tapflo Sp. z o.o.
Tel: +48 58 530 42 12
info@tapflo.pl

Romania
S.C. Tapflo Rom. S.r.l.
Tel: +40 21 3451255
sales@tapflo.ro

Russia
Tapflo Company
Tel: +7 495 232 18 28
sales@tapflo.com.ru

Serbia
Tapflo d.o.o.
Tel: +381 21 44 58 08
sales@tapflo.rs

Slovakia
Tapflo s.r.o.
+421 911 137 883
tapflo@tapflo.sk

Slovenia
Tapflo GmbH
Tel: +386 68 613 474
sales@tapflo.hr

Spain
Tapflo Iberica
Tel: +34 91 8093182
avives@tapfloiberica.es

South Africa
Tapflo (Pty) Ltd
Tel: +27 31 701 5255
sales@tapflo.co.za

Turkey
Tapflo Makina Ltd
Tel: +90 216 467 33 11
sales@tapflo.com.tr

Ukraine
TOB Tapflo
Tel: +380 44 222 68 44
sales@tapflo.com.ua

Uzbekistan
Tapflo Uzbekistan
Tel: +998 712370940
sales@tapflo.uz

United Kingdom
Tapflo (UK) Ltd
Tel: +44 2380 252325
sales@tapflopumps.co.uk

www.tapflo.com