tapflo®

AIR OPERATED DIAPHRAGM PUMPS

edition 2016 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 in 1980 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 all over the world on 6 continents.

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.

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

Being 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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» All about your flow

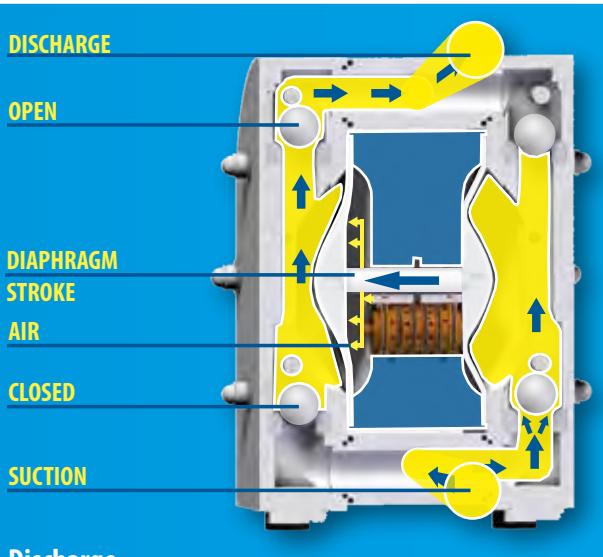
Diaphragm pumps

most versatile pumps on the market

Working principle

Tapflo diaphragm pump is driven by compressed air. Two diaphragms are working simultaneously to prime and push the liquid through the pump system. Valve balls work as check valves to let the liquid through in the right direction.

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.



Suction

One diaphragm creates a suction action when being pulled back from the housing.

Discharge

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

Fast facts

Capacity	**0-820 l/min** 0 - 216 US gal/min
Pressure	**0 - 8 bar (max 16 bar for TF series)** 0 - 116 PSI (max 200 PSI for TF series)
Connection sizes	**1/4" up to 3" (DN8 - DN80)**

Pump materials
PE, PTFE, aluminium, cast iron ,stainless steel AISI 316L, and PTFE coated aluminium

Features & Benefits

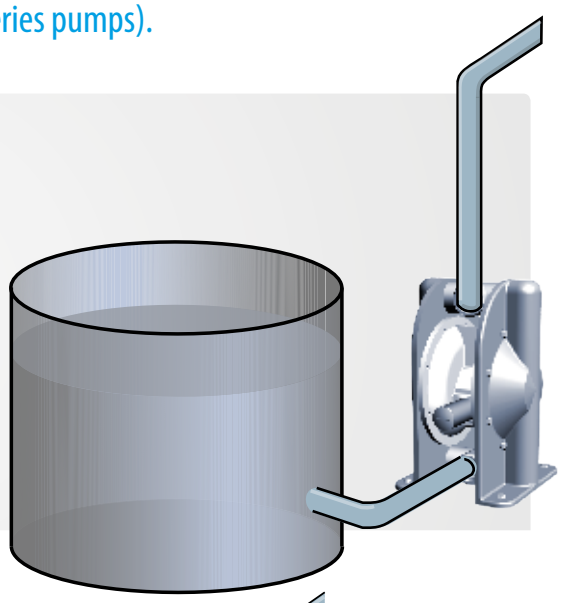
- **Run dry without damage**
  Easy to use, no need of guarding device
- **Infinitely variable flow control**
  Flexible and easy to adjust
- **Self priming up to 5 m from dry suction pipe**
  More options of installation
- **No electricity needed**
  Explosion proof versions
  Ex-zone 1 available
  (ATEX group II, cat 2)
- **Few components**
  Low down time and maintenance costs
- **Solid, strong and long life design**
  Low maintenance costs
- **Lubrication free air distribution system**
  Saves the environment from pollution
- **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° to fit your piping system (PE & PTFE and metal series pumps).

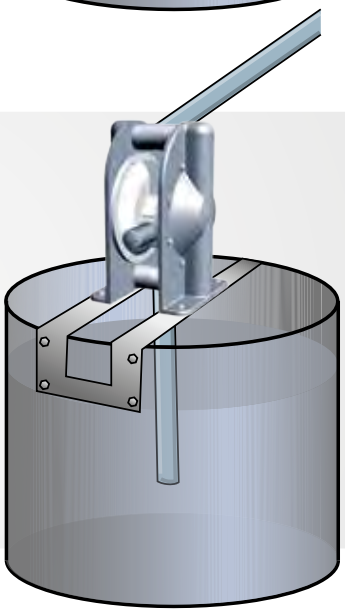
Flooded

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



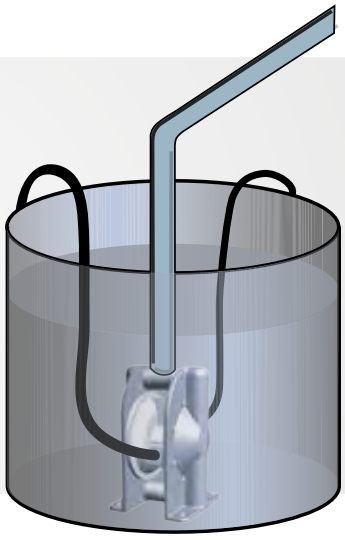
Selfpriming

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 16, 23, 28).



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 atmosphere 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 manufacturing since the early start, we are able to supply unique technology compression molded diaphragms of utmost quality.

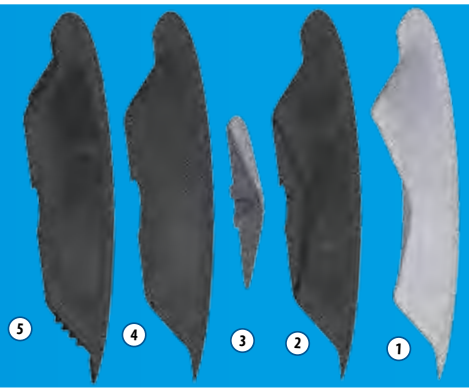
Tapflo diaphragms are of composite construction, superior for continuous heavy duty service, with a completely smooth surface in contact with the liquid. This results in no leak through and a diaphragm which is easy to keep clean.

The diaphragms are available in various materials and colours to suit any requirements, they are made from PTFE TFM, PTFE TFM modified for solvents, EPDM, NBR or FKM.

Composite construction

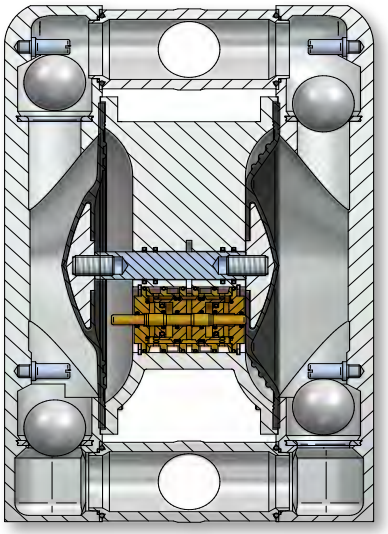
An advanced process of performing, curing, trimming and finishing result in a long life composite diaphragm that will last for many millions of stroke cycles. All compounds are specially developed and optimized for composite diaphragm technology and compression molding production. Components are chemically bonded by bonding agents and adhesives.

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



Energy saving drive

The air valve is the driving heart of the pump, distributing the compressed air to the chambers behind the diaphragms. 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.



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.

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 protect environment from pollution.

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 ball type valve is 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 ball valve materials are available in EPDM, NBR (nitrile), PTFE, AISI 316, polyurethane and ceramic to suit any kind of liquid.

Flap valves (Sanitary pump only)

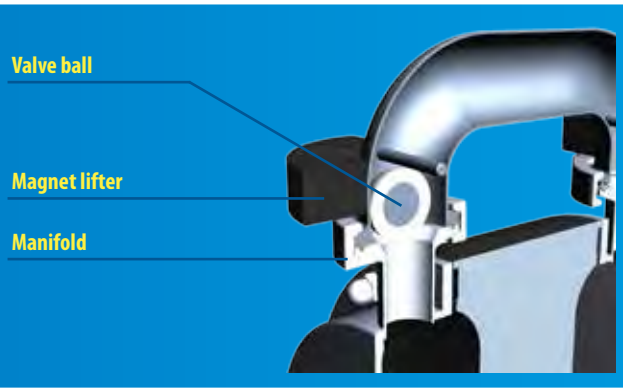
Flap valves are used when pumping liquids containing big solids without damage. We are able to pump solids up to 50 mm in both T225 and T425 pump sizes and an impressive 100 mm in the T825 4" pump. Pumps can reach dry suction lift of 4,5 meters.

Tapflo flap valves are durable, have only two spare parts and are hygienic thus easier to clean.

Magnetic ball lifters (Sanitary & EHEDG pump only)

Possibility to drain the content of the pump is crucial in most hygienic applications. Ball lifting system from Tapflo could not have been easier.

Magnetic ball lifters are implemented in Sanitary and Aseptic EHEDG series AODD pumps, to enable pump emptying without removing it from the installation when no other draining option is available. Rotating the pump is no longer needed.



Working principle

Valve ball, either made of AISI 420 or PTFE with steel core, is lifted by magnet lifter attached onto the manifolds.

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

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

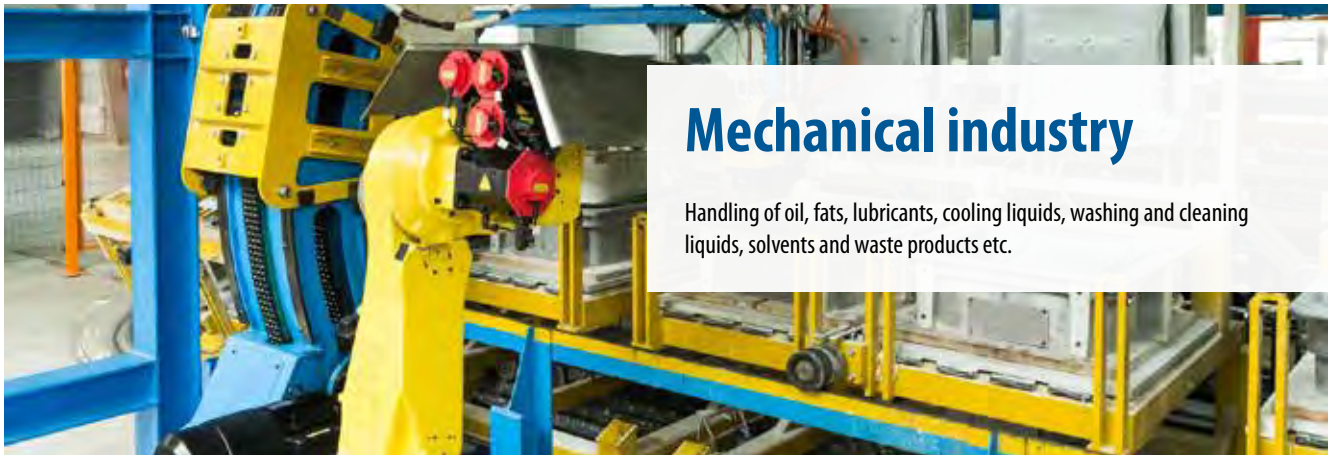
Pumping samples, dosing acids and alkalis for pH-control. Transfer of flocculent, suspensions, chemical reagents and sludges. The pumps are resistant to hydrochloric acid and ferric chlorite, plus many others.

Pulp and paper industry

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

Hygienic applications

Transport 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

Transport of water- and solventbased paints, ink, varnish, glue, adhesives and solvents. Transfer, recirculation and blending of ink in printing industries.

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. Tapflo uses different grades of PE depending on the part. For valve seats and ball stopers, which are most vulnerable to wear, we use UHMW PE1000 for best mechanical strength and abrasion resistance.

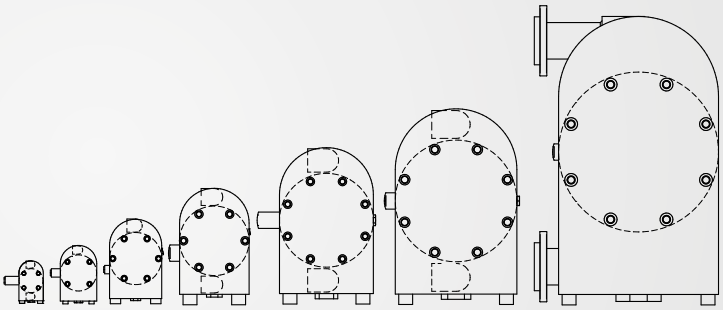
PTFE pumps

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.

FDA EN 10204 AT Ex REACH Compliant ROHS Compliant

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”



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

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.

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.

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.

Low air consumption

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

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.

- **PE pumps -** suitable for most chemicals and abrasive medias
- **PTFE pumps -** suitable for the most aggressive chemicals

Special versions

Drum pumps | TD series

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.

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

The PE & PTFE drum pumps range

- TRD20 - 24 l/min, 3/8"
- TD50 - 60 l/min, 1/2"
- TD100 - 125 l/min, 1" (available in PE only)

Features & Benefits

- ☑ 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

Integrated flanges| 3D/3A

Pumps with integrated flanges are a robust and solid design. When there is a risk of transferring of vibration from the installation to the pump, the solid manifolds provide better stability and sealing for the pump.

More material and robust construction is a perfect solution for most demanding applications such as in TF Filter press pumps where pump operates at higher pressures.

- **Available for sizes:** T50, T100, T200, T400
- **Available materials:** PE, PE cond., PTFE, PTFE cond.
- **Flange standard 3A** = ANSI flanges **3D** = DIN flanges

Special versions

Explosion proof pumps | TX series

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.

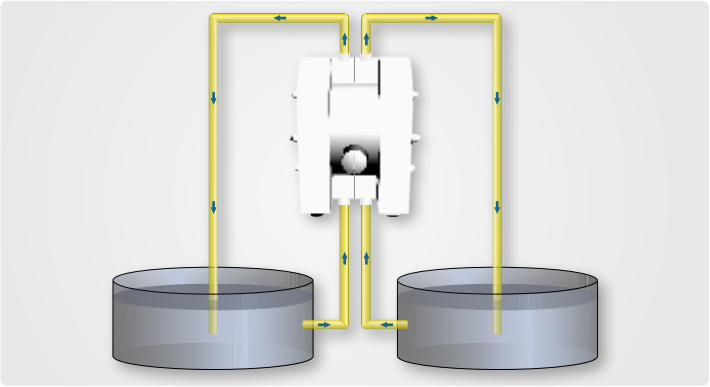
Pumps certified according to 94/9/EC (ATEX)

Group:	II
Category:	2G/2D
Apparatus group:	IIB
Temperature class:	T4 (other rating on request)

Twin pumps | TT series

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.

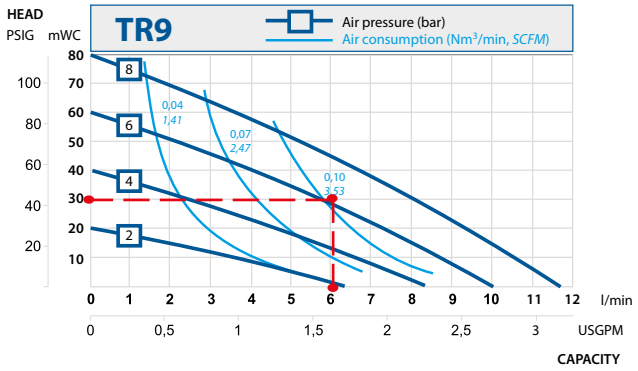


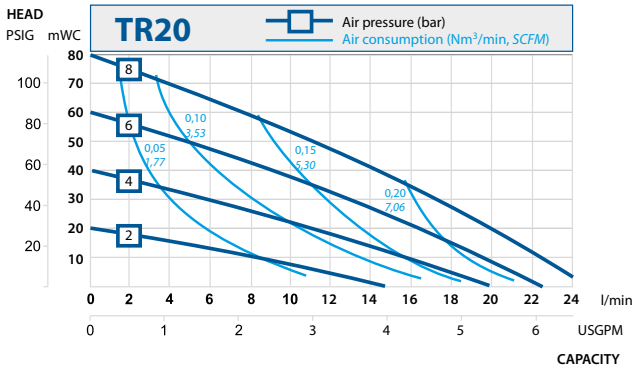
Example of applications

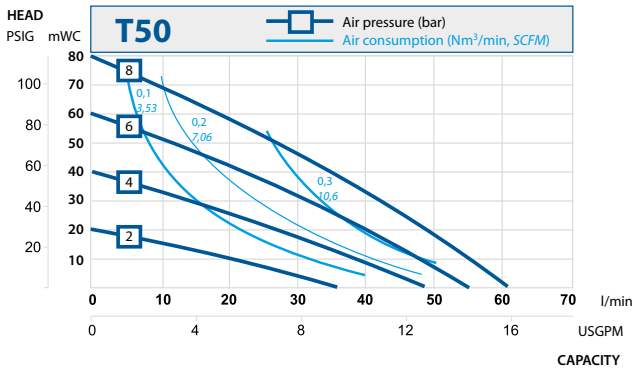
- Transfer of two different liquids, two pumps in one (installation example above)
- Mixing of two liquids with one pump (50/50 ratio)
- Transfer and return of printing ink from storage to ink tray
- Transfer and agitation of liquids with one pump

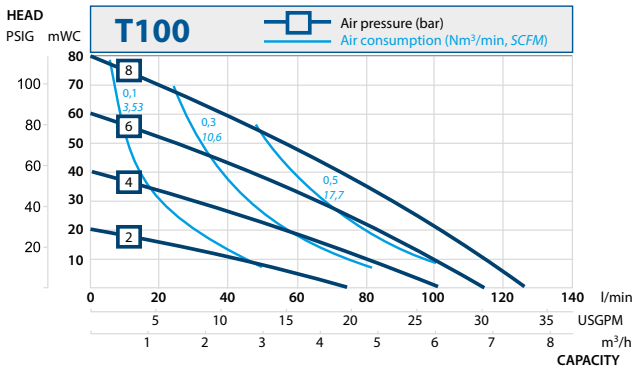
Performance curves

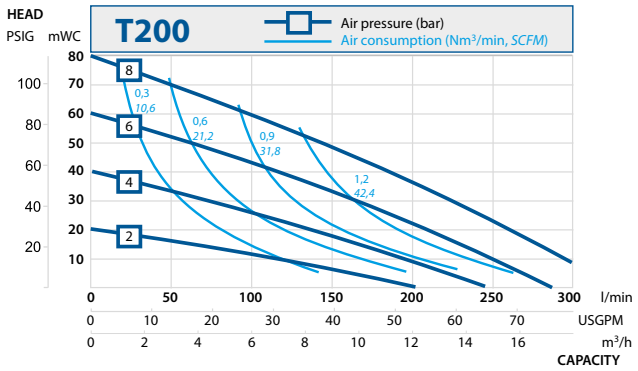
The performance curves are based on water at 20°C. Other circumstances might change the performance.
Example see the red line
A flow of 6 liter/minute is desired. The discharge head is calculated to 30 mWC. We choose a TR9. It requires an air pressure of 6 bar and will consume approximately 0.10 Nm^3 air per minute.

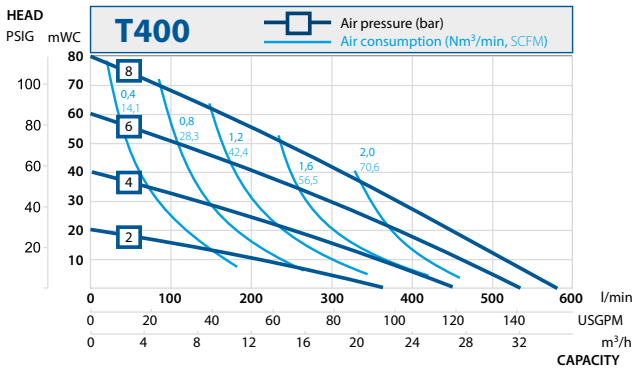


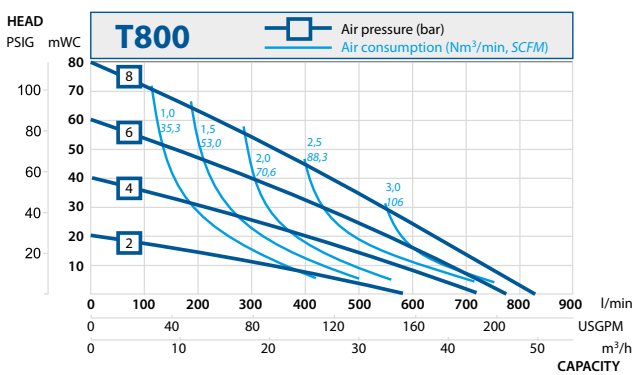








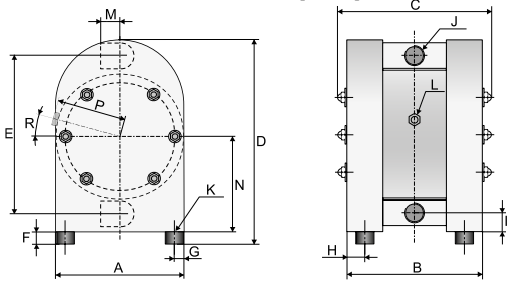




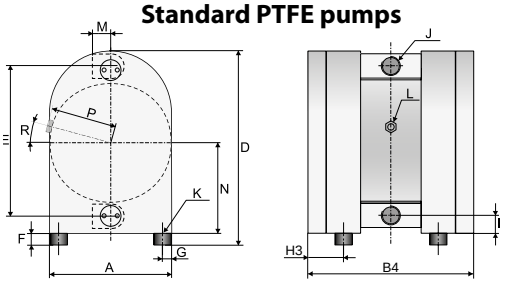
Changes reserved without notice

Dimensions

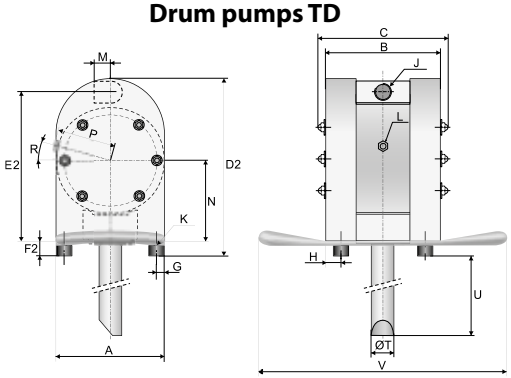
Standard PE pumps



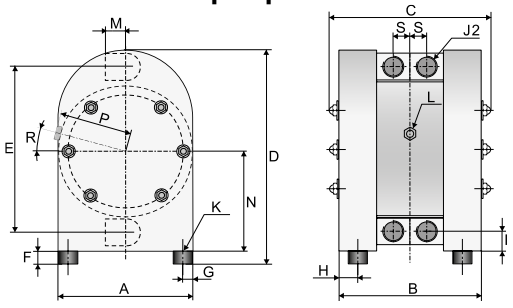
Standard PTFE pumps



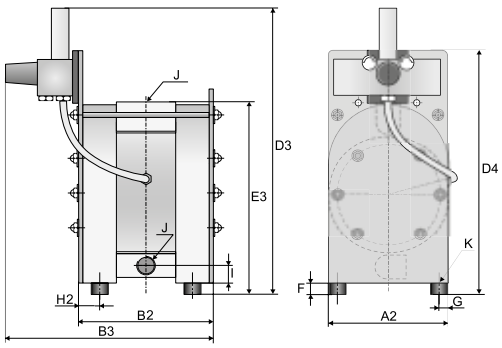
Drum pumps TD



Twin pumps TT



Filterpress pumps TF



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

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

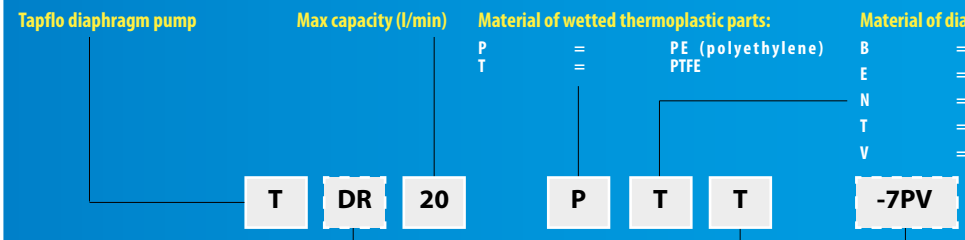
Technical data

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)	1.6 / 5	2.5 / 8	2.5 / 8	3.5 / 11	4 / 13	4 / 13	5 / 16
Max suction lift wet (m) / (Ft)	8 / 26	8 / 26	9/ 29.5	9/ 29.5	9/ 29.5	9/ 29.5	9/ 29.5
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)	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 316L						
Diaphragm shaft	Stainless steel AISI 316L						
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 pumps

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

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; workshop and paint industries, purifying plants etc., to mention only a few.

AISI 316 stainless steel pumps

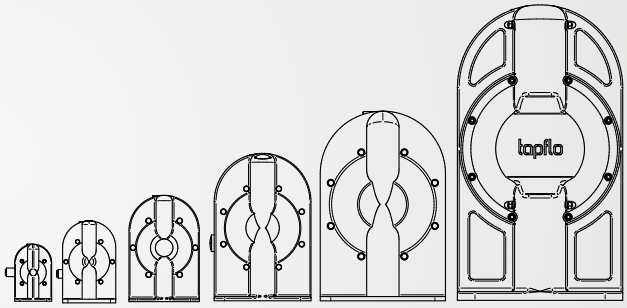
Made in lost wax cast method, ensuring great accuracy and finish. The stainless steel pumps combine great mechanical strength with good chemical features. AISI 316 is resistant to aggressive liquids like nitric acid and sodium hydroxide. The centre unit, which is not in contact with liquid, is made from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

FDA EN 10204 AT Ex REACH Compliant ROHS Compliant

The metal pump range

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

* = aluminium and cast iron only



Typical applications

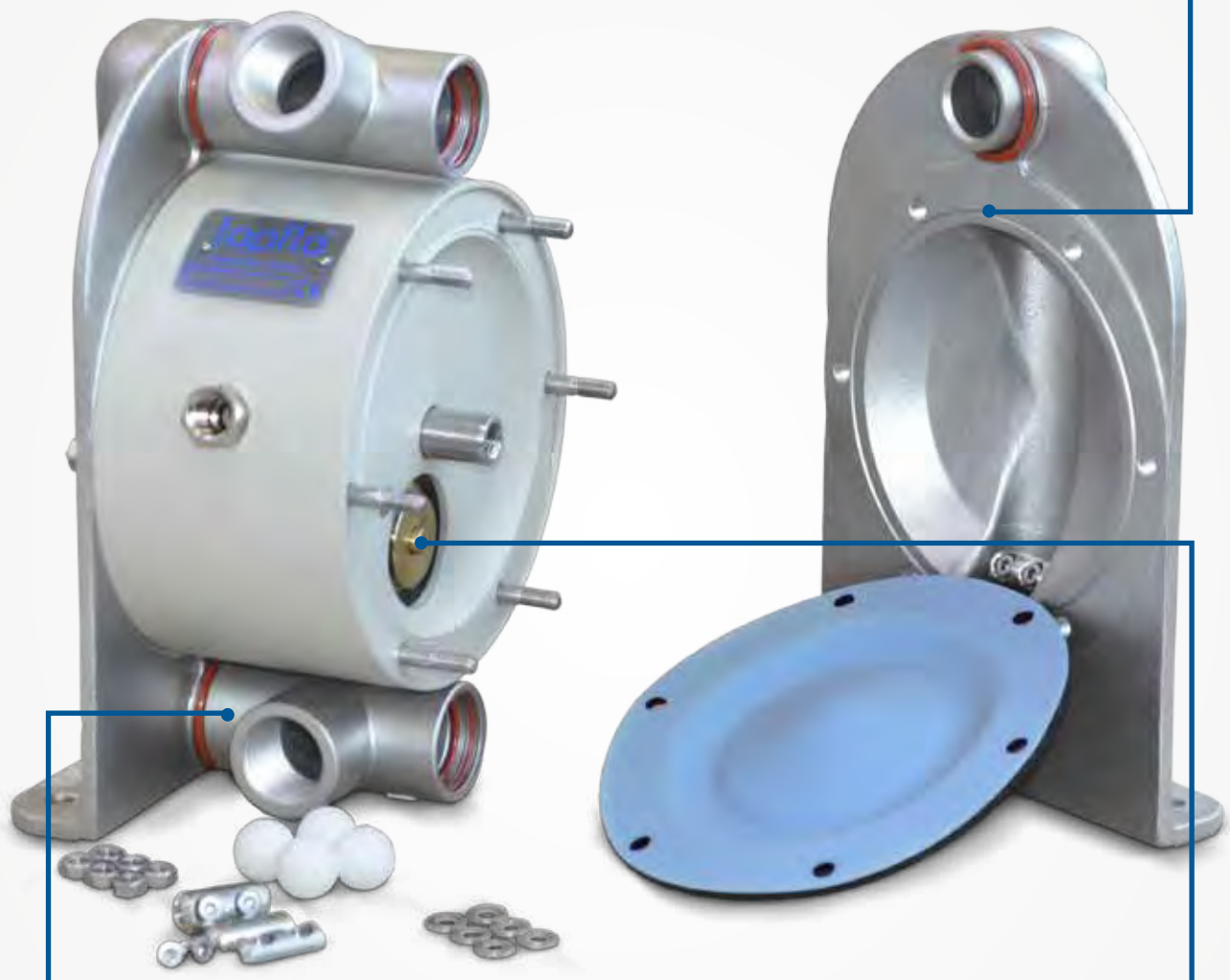
Industry	Example of applications
Workshop	Oil, fat, solvents, water, cooling fluid, lubricants
Print & paint	Glue, additives, varnish, ink, paint, latex, acid, resins, pigments
Mining & construction	Adhesives, sump, dewatering, coal sludge, pastes
Ceramic industry	Abrasives, glaze, water, enamels, clay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

The ingenious Tapflo design

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

Durable valve seats

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



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.

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.

- **Aluminium and cast iron -** suitable for thick and thin pH neutral liquids
- **Stainless steel -** suitable for chemicals

Special versions

Drum pumps | TD series

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.

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

The Metal drum pumps range

- TXD25 - 25 l/min, 1/2" (available in aluminium only)
- TXD70 - 70 l/min, 3/4"
- TXD120 - 120 l/min, 1"

Features & Benefits

- **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

Ball lifters TL

This option is a great way to empty the pump of liquid if there is no possibility of pump disconnection from the installation.

With this easy solution you can simply raise the ball from the valve seat and allow the liquid to flow out of the pump.

Available for sizes: T70 | T120 | T220 | T420

Special versions

Explosion proof pumps | TX series

The ATEX directive 94/9/EC (also known as ATEX 100a) is applicable on products used in explosion hazardous zones. All aluminum and cast iron pumps are by standard ATEX approved, having model names TX… The standard stainless steel pumps are not allowed to operate in environments. special conductive TX pumps are available for such applications. All plastic parts utilized in such pumps are made from conductive (carbon filled) materials thus made for use in explosion hazardous environments. What is more ATEX pump are equipped with a grounding connection.

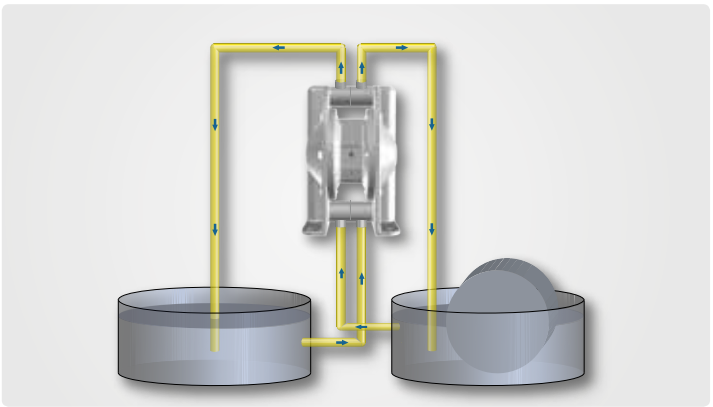
They can be used in Ex-zone 1. The conductive material ensures that no electrostatic loads will be accumulated in the pump.

Pumps certified according to 94/9/EC (ATEX)

Group:	II
Category:	2G/2D
Apparatus group:	IIB
Temperature class:	T3-T6

Twin pumps | TT series

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.



Example of applications

Transfer of two different liquids, two pumps in one

Mixing of two liquids with one pump (50/50 ratio)

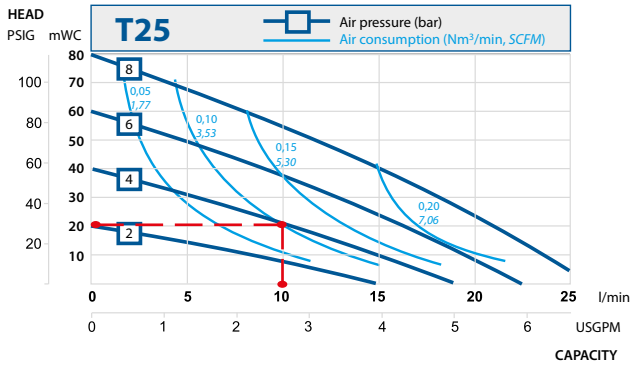
Transfer and return of printing ink from storage to ink tray (installation example above)

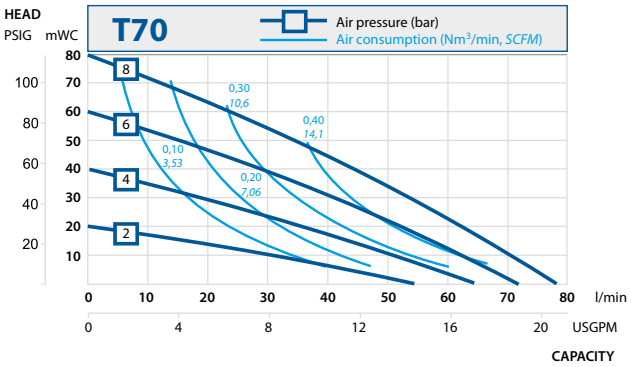
Transfer and agitation of liquids with one pump

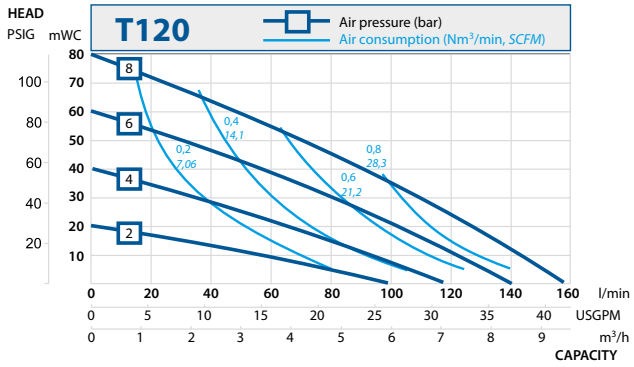
Performance curves

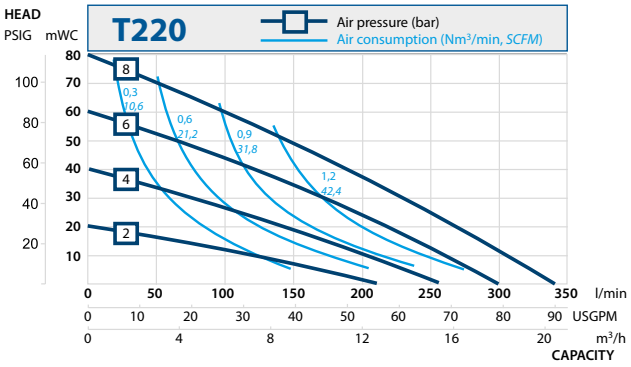
The performance curves are based on water at 20°C. Other circumstances might change the performance. See below how the capacity will change at different viscosities and suction lifts. These curves are valid for all metal pumps.

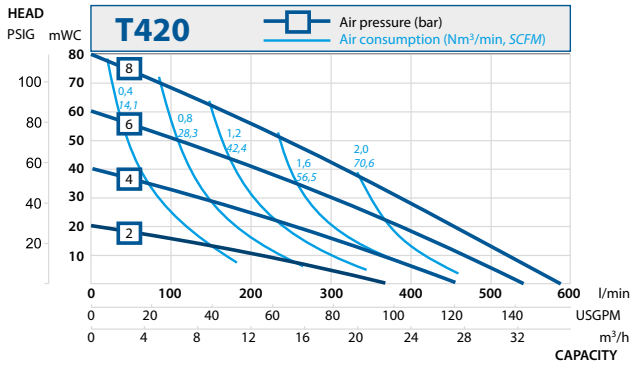
Example see the red line
A flow of 10 liter/minute is desired. The discharge head is calculated to 20 mWC. We choose a T25. It requires an air pressure of 4 bar and will consume approximately 0.10 Nm³ air per minute.

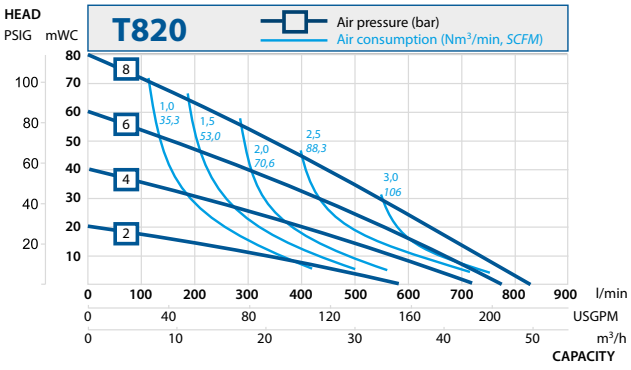






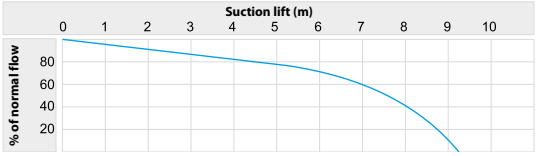




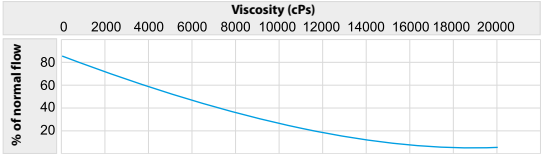


Capacity changes

Capacity changes at different suction lifts



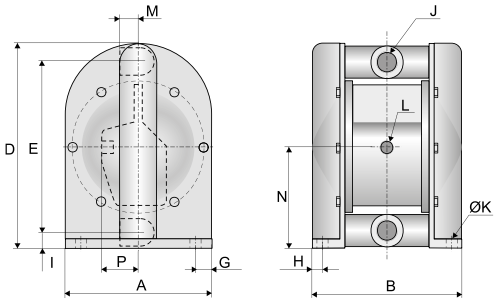
Capacity changes at different viscosities



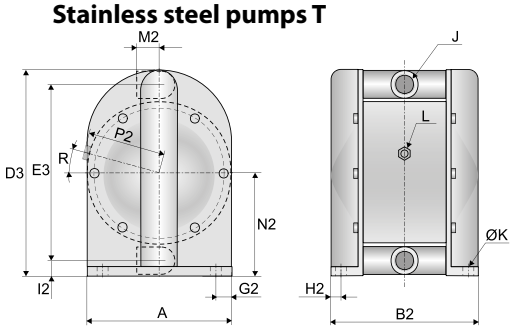
Changes reserved without notice

Dimensions

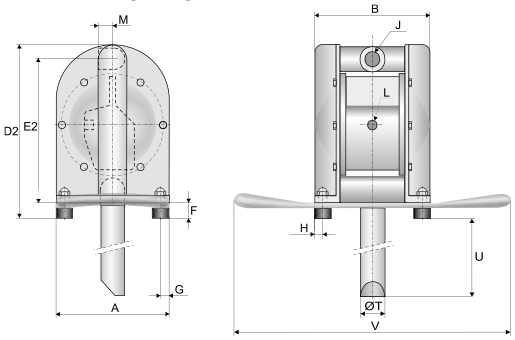
Aluminium and cast iron pumps T



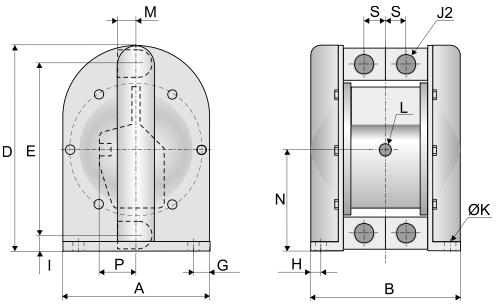
Stainless steel pumps T



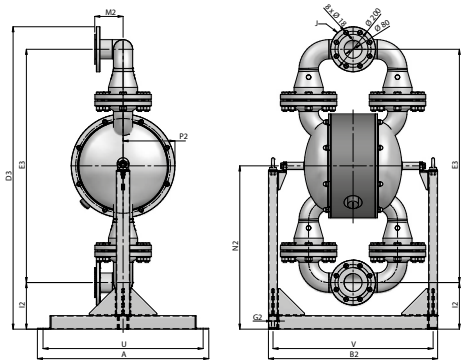
Drum pumps TD



Twin pumps TT



T820



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**	820S
A	105	150	200	270	350	470	760
	4.13	5.91	7.87	10.63	13.78	18.50	29.92
B	117	168	195	265	342	488	-
	4.561	6.61	7.68	10.43	13.46	19.21	-
B2	-	156	204	280	344	750	750
	-	6.14	8.03	11.02	13.54	29.53	29.53
D	162	229	302	412	537	840	-
	6.38	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	1341
	-	9.02	12.20	16.61	20.83	52.80	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	-	1035
	-	7.56	10.12	13.70	17.40	-	40.75
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	-	25
	-	0.67	0.79	1.22	1.38	-	0.98
H	12	19	20	28	33	53	-
	0.47	0.75	0.79	1.10	1.30	2.09	-
H2	-	13	23	34	32	-	13
	-	0.51	0.91	1.34	1.26	-	0.51
I	156	20	27	34	48	82	-
	0.63	0.79	1.06	1.34	1.89	3.22	-
I2	-	19	27	36	45	-	206
	-	0.75	1.06	1.42	1.77	-	8.11
J	1/2"	3/4"	1"	1 1/2"	2"	DN80(3")	DN80
	1/2	3/4	1	1 1/2	2	DN80(3")	DN80
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	25x13
	0.26	0.33	0.33	0.33	0.33		1x0.5
L	1/8"	1/4"	1/4"	1/2"	1/2"	3/4"	1/2"
	1/8	1/4	1/4	1/2	1/2	3/4	1/2"
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	-	126
	-	1.57	2.05	2.76	3.54	-	4.96
N	82	115	153	207	274	356	-
	3.23	4.53	6.02	8.15	10.79	14.02	-
N2	-	115	155	212	266	-	724
	-	4.53	6.10	8.35	10.47	-	28.50
P	30	47	36	57	60	72.5	-
	1.18	1.85	1.42	2.24	2.36	2.85	-
P2	-	80	105	143	183	-	238
	-	3.15	4.13	5.63	7.20	-	9.37
R	-	15°	15°	0°	0°	-	0°
	-	15°	15°	0°	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

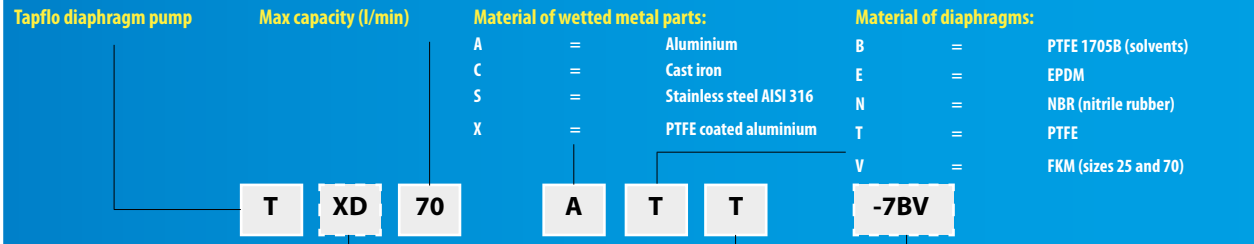
Technical data

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	8 / 26	9 / 29.5	9 / 29.5	9 / 29.5	9 / 29.5
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	Klingerseal/NBR (standard), Klingerseal/EPDM, Klingerseal/FKM					
Housing screws	Steel on aluminium and cast iron pumps, AISI 316 on stainless steel pumps					
Diaphragm shaft	Stainless steel AISI 316					
Drum handle (TD pumps)	Stainless steel AISI 316			-		

* = 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

Sanitary series pumps

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

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.

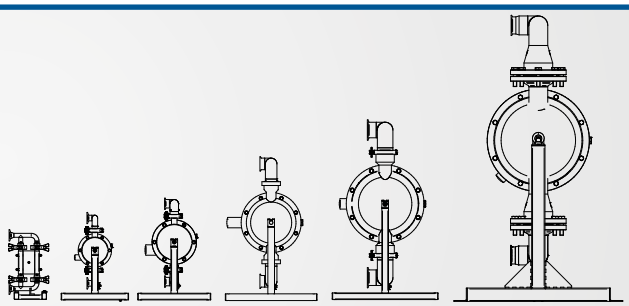
The materials used on certain models comply with the FDA guidelines.

Models with extra fine surface finish Ra 0.8 and Ra 0.5 are available upon request.

FDA EN 10204 AT Ex REACH Compliant ROHS Compliant

The sanitary pump range

- T30 - 28 l/min, 1"
- T80 - 78 l/min, 1"
- T125 - 155 l/min, 1 1/2"
- T225 - 330 l/min, 2"
- T425 - 570 l/min, 2 1/2"
- T825 - 820 l/min, 3"



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, shampoo
Cosmetics	Cream, alcohol, perfume

The sanitary design

Made to be clean

Quick dismantling

The clamp system ensures rapid dismantling without any tools.

Pollution free air valve

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

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.

Superior finish

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

* T825 is glass blasted

Easy draining

Drain the pump by turning the pump in its support (T80-T825)

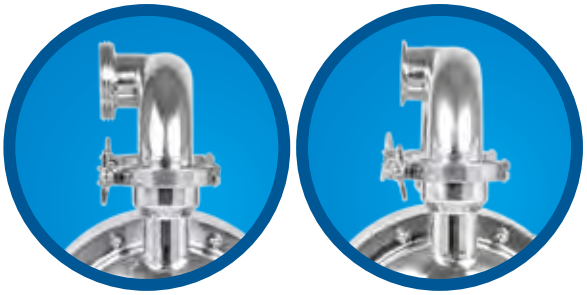
Our design allows for total visual inspection of the wetted parts. There are no hidden areas where bacteria can grow. The manifold clamps and the housing screws are simply removed for complete disassembly and cleaning. The pump is also designed for cleaning and sterilization in place – C.I.P. and S.I.P.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

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.

Models available with flap valves:
» T225 (50 mm solids max)
» T425 (50 mm solids max)
» T825 (100 mm solids max)

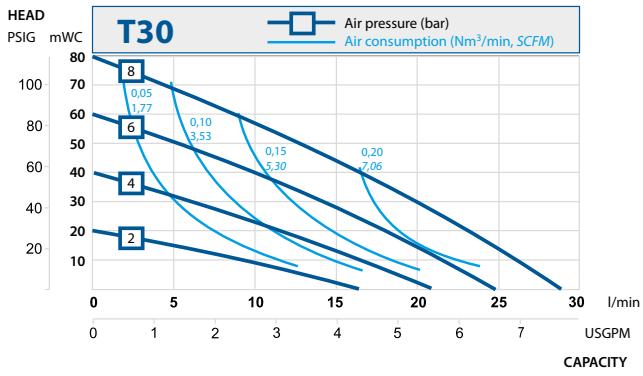
Performance curves

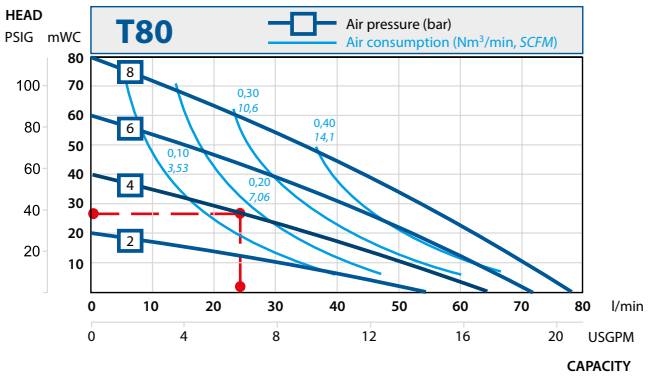
The performance curves are based on water at 20°C. Other circumstances might change the performance. See below how the capacity will change at different viscosities and suction lifts. These curves are valid for all sanitary pumps.

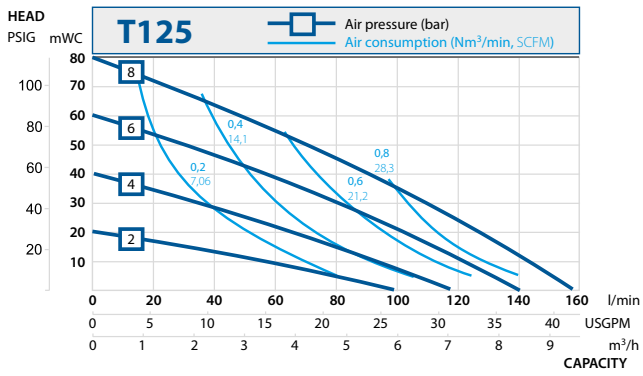
Example see the red line

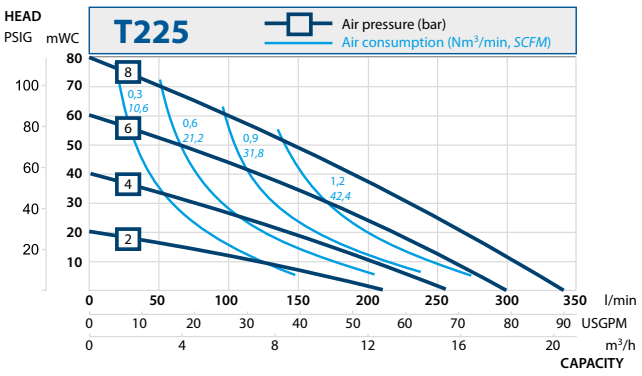
A flow of 30 liter/minute is desired.

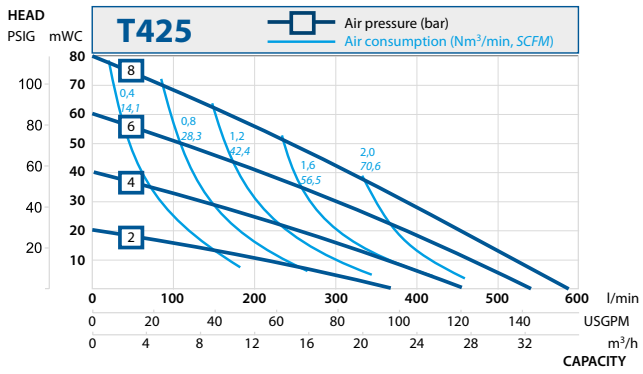
The discharge head is calculated to 25 mWC. We choose a T80. It requires an air pressure of 4 bar and will consume approximately 0.20 Nm^3 air per minute.

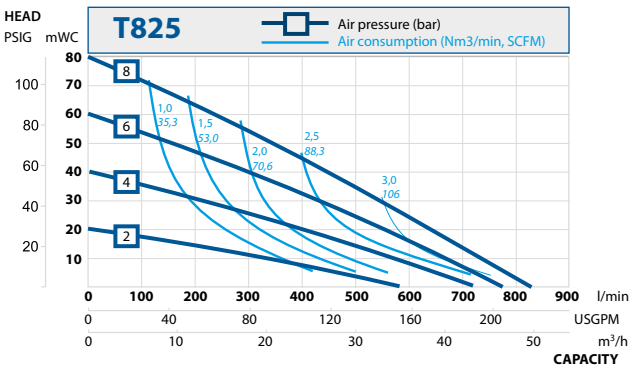








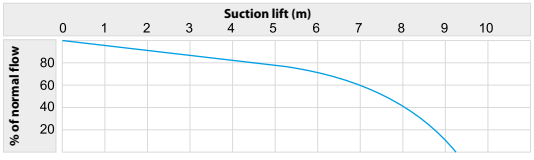




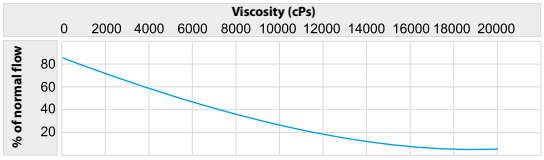
Recommended flow is half of the the max flow, i.e. recommended flow for a T80 is 40 l/min (10.6 US gpm).

Capacity changes

Capacity changes at different suction lifts



Capacity changes at different viscosities

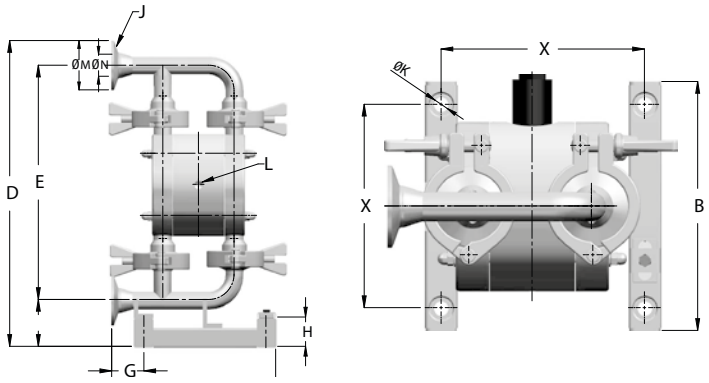


Changes reserved without notice

Dimensions

Dimensions for sanitary series

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



Dim		Pump size					
		30	80	125	225	425	825
A		160	290	290	360	440	760
		6.30	11.4	11.4	14.2	17.3	29.92
B		230	295	320	420	485	750
		9.06	11.6	12.6	16.5	19.1	29.53
D		302	396	445	639	840	1306
		11.9	15.6	17.5	25.2	33.1	51.42
E		241	297	349	514	698	1034.5
		9.49	11.7	13.7	20.2	27.5	40.73
G		25	14	14	14	14	25
		0.98	0.6	0.6	0.6	0.6	0.98
I		48	73	71	86	97	206.5
		1.89	2.9	2.8	3.4	3.8	8.13
J	TC[1]	1″	1″	1 1/2″	2″	2 1/2″	3″
	DIN[2]	DN25	DN25	DN40	DN50	DN65	DN80
	SMS[3]	-	25	38	51	63.5	80
	RJT	3/4″	1″	1 1/2″	2 1/2″	3″	3 1/2″
K		9	9	9	9	9	25
		0.4	0.4	0.4	0.4	0.4	0.98
L		1/8″	1/4″	1/4″	1/2″	1/2″	1/2″
		1/8	1/4	1/4	1/2	1/2	1/2
ØM*		50.5	50.5	50.5	64	91	91
		2.0	2.0	2.0	2.5	3.6	3.58
ØN*		22.6	22.6	35.6	48.6	66.8	72.9
		0.9	0.9	1.4	1.9	2.6	2.87

* = Dimensions for standard clamp connections only
1 = Clamp connections/pipes according to SMS3017/ ISO2037 (T425)
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

Technical data	Pump size					
	30	80	125	225	425	825
Max capacity (l/min) / (US gpm)	28 / 7.4	78 / 20.6	155 / 41	330 / 87	570 / 150	820 / 216
*Volume per stroke (ml) / (cu in)	70 / 4.3	87.5 / 5.34	300 / 18.3	933 / 56.9	2300/140.3	5000
Max discharge pressure (bar) / (psi)	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
**Max suction lift dry (m) / (Ft)	1.5 / 4.9	3 / 9.8	4 / 13	4 / 13	4 / 13	4 / 13
Max suction lift wet (m) / (Ft)	8 / 26	8 / 26	9 / 29.5	9 / 29.5	9 / 29.5	9 / 29.5
Max size of solids (ø in mm) / (in)	3 / 0.12	4 / 0.16	6 / 0.24	10 / 0.39	15 / 0.59	27mm / 1,06
Max temperature (°C) / (°F)	110 / 230	110 / 230	110 / 230	110 / 230	110 / 230	110 / 230
Weight (kg) / (lb)	4 / 9	8 / 18	11 / 24	21 / 46	35 / 77	133

Wetted metal details	Stainless steel AISI 316L	
Centre block (not wetted)	PP	
Diaphragms	PTFE, PTFE 1705B, PTFE with white back, EPDM, white EPDM, NBR	PTFE (FDA) EPDM (FDA)
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 316	
Diaphragm shaft	Stainless steel AISI 316	

* = 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

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

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

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

Aseptic EHEDG series pumps

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/EC.

Typical applications

Industry	Example of applications
» Food & dairy	Soup, cream, syrup, dairy products, flavoring, alcohol, chocolate, paste
» Pharmaceutics & cosmetics	Cream, paste, alcohol and filtration gel

EN 10204

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
- **Wide range of connection types**
  TriClamp, sanitary threads (DIN, SMS) etc.
- **Hygienic surfaces**
  housings made from electro polished stainless steel AISI 316L, Ra 0.8 (standard) or Ra 0.5 (on request)
- **No leakage**
  no rotating shaft seals
- **Flexible installation**
  self priming
- **Reliable in service**
  can run dry and against closed valve without damage
- **Environmental friendly**
  lube free air valve
- **Hygienic diaphragms**
  designed without any nuts or plates on the pumped side

The EHEDG certificate

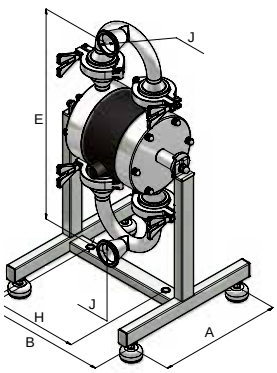
The EHEDG (European Hygienic Engineering & Design Group) certificate is your guarantee that the design is according to the hygienic guidelines. Furthermore the pump is clean ability tested, which means bacteria does not grow in the pump after cleaning and draining procedure.

Keeping your process clean

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

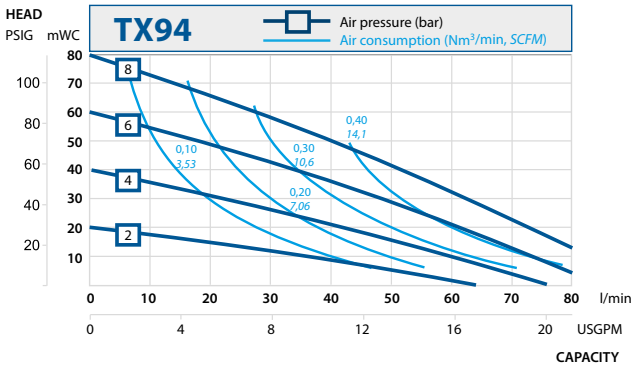
Technical data

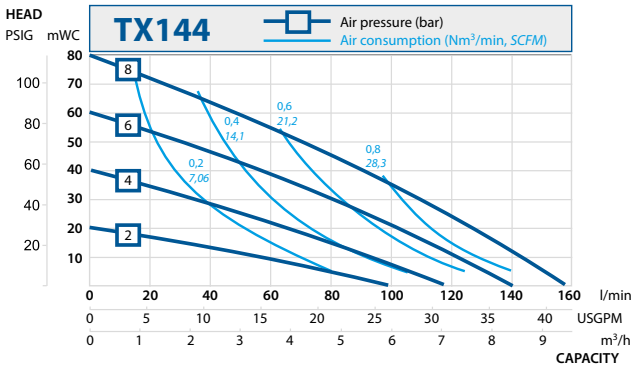
Data			
Model	**TX94**	**TX144**	**TX244**
Max flow	94 l/min	144 l/min	330 l/min
Max pressure	8 bar	8 bar	8 bar
Max air pressure	8 bar	8 bar	8 bar
Dry suction lift	2 m	3 m	4.4 m
Max solid size	6 mm, bigger if soft	6 mm, bigger if soft	10 mm, bigger if soft
Temperature	-20˚ .... +110˚C (temporary higher)		
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 request) 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		

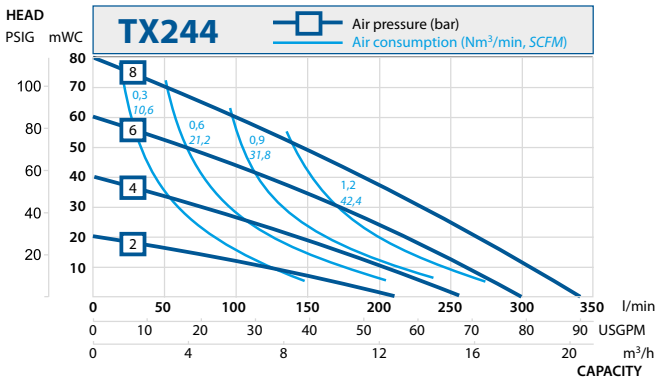


Changes reserved without notice

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

Filterpress pumps - TF series

The Tapflo pump station for filterpress feeding is a very compact unit that can be mounted directly to the filterpress.

TF series

The design and function allows the user a straight-forward pressing of slurries. Pressure regulator is already mounted to the unit.

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 pump stations are based on the standard Tapflo pumps:

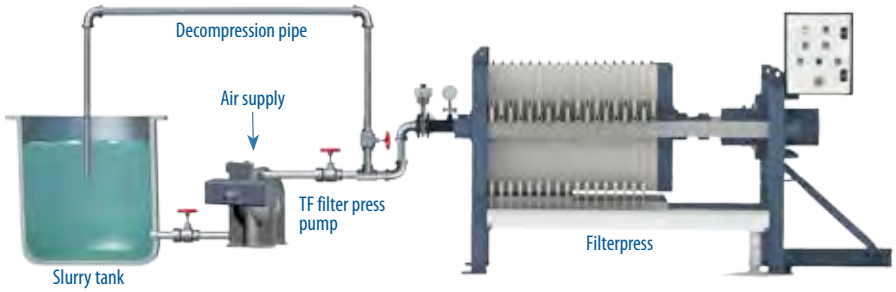
PE & FTFE: TF 50 | TF 100 | TF 200 | TF 400
Metal pumps: TF 70 | TF 120 | TF 220 | TF 420

Features & Benefits

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

The Installation

Adding a pump to an existing filter press was never such easy. **Just mount it on the filter press and connect it.** The pump is already equipped with a pressure booster, manometers, regulation knob and all essential hoses and fittings.



Technical data

Pump size	Connection size (" BSP or NPT)	*Max capacity (l/min) / (US GPM)	Max pump pressure (bar) / (PSI)
TF 50 | TF 70	1/2" | 3/4"	*55 / 14,5	16/ 232
TF 100 | TF 120	1"	*110 / 29	16 / 232
TF 200 | TF 220	1 1/2"	*200 / 53	12 / 174
TF 400 | TF420	2"	*400 / 106	12/ 174

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

Powder pumps - TP series

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?

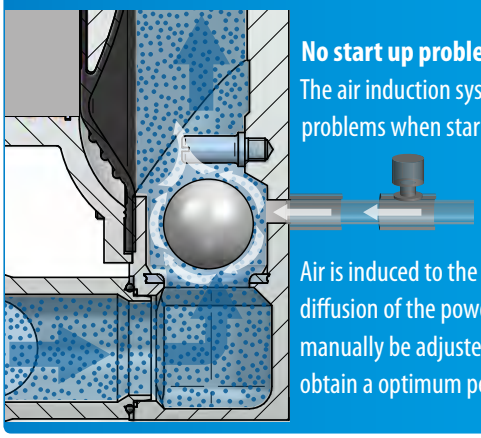
The powder transfer pump will handle different types of process powders, with specific weight from 80 up to 720 kg/m^3 dry weight. Generally, if the powder does not clump together when squeezed in hand, the Tapflo powder transfer pump can be used successfully. A few examples of common powders are sintering 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.

FDA EN 10204 AT Ex REACH Compliant ROHS Compliant

Working principle



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.

Features & Benefits

Economical
compared with other complex powder systems

Convenient
and safer than manual powder handling

Technical data

Model	TX120	TXP220	TXP420
In/outlet connections	1" BSP threads (NPT upon request)	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		

Pharmaceutical pumps - TU series

USP VI approved pharmaceutical series pumps air driven pump for pharmaceutical and biotech industries

This pump series wasdeveloped in co-operation with one of the world leading supplier to the biotech market. It serves the biotech- and pharmaceutical industries in numerous applications.

Our unique USP approved (United States Pharmacopoeia) hygienic PE pump, now upgraded to USP VI.

Simplicity

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

Superior finish

High finish and hygienic approved materials.

USP FDA EN 10204 AT Ex REACH Compliant ROHS Compliant

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

Features & Benefits

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

Active pulsation dampeners

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

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

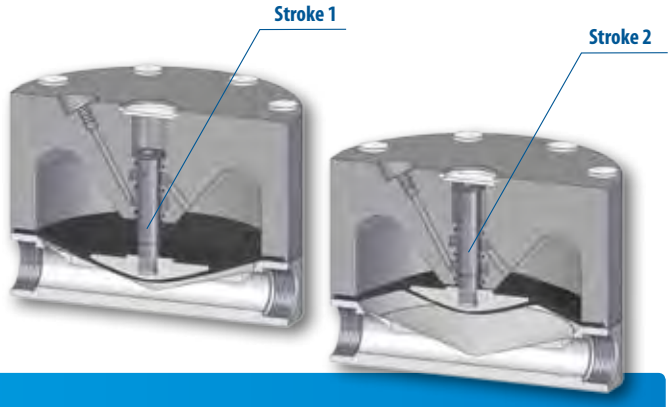
The Tapflo pulsation dampener works actively with compressed air and a diaphragm, automatically setting the correct pressure to minimise the pulsations.

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.**

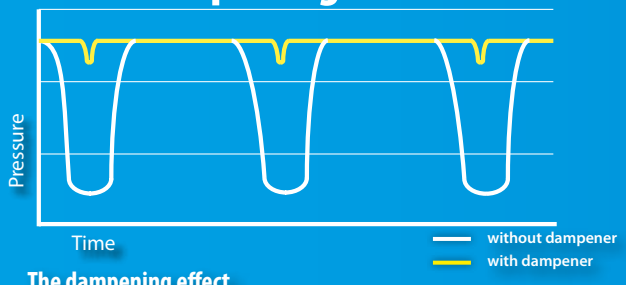
FDA EN 10204 AT Ex REACH Compliant ROHS Compliant

Working principle

When the pressure in the piping system decreases, due to the pulsating nature of the pump operation, the pulsation dampener supplies extra pressure to the discharge between the pump strokes, therefore supplying a steady flow of pumped medium. This pumping action created by the dampener, decreases the pressure variations and pulsations.



The dampening effect



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

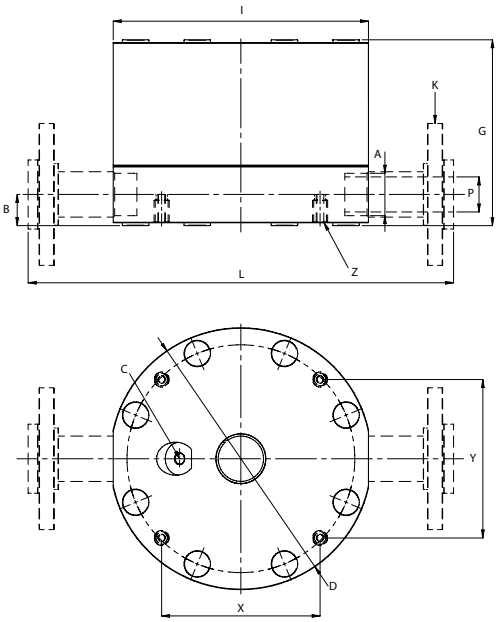

■ Pulsation dampener with pump


■ Pulsation dampener with guardian

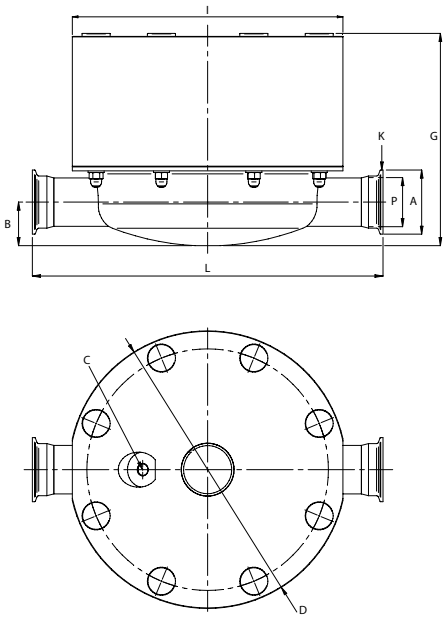

■ TK built-on dampener

Dimensions

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		15/331	13	10,6	17/351	15,5	16,5	25,5/42,51	22,5	16,5	33/501	30	43,5	40,5/581	38	46	92	90	19,3
		0,59/1,31	0,51	0,42	0,67/1,381	0,61	0,65	1/1,671	0,89	0,65	1,3/1,971	1,18	1,71	1,59/2,281	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		85/1031	81	78,5	109,5/129,51	105,5	117,5	144,5/161,51	141,5	135	200,5/217,51	197,5	216	244/2611	241	256,5	394	392	330
		3,35/4,061	3,19	3,09	4,31/5,11	4,15	4,63	5,69/6,361	5,57	5,31	7,89/8,561	7,78	8,50	9,61/10,281	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	-	M8x30/221	M8x25	-	M8x30/221	M8x25	-	M8x30/221	M8x25	-	M8x22 PTFE	M8x25	-

1 PE / PTFE
2 ALU / SS
3 SMS3017 / ISO2037 (DT425), 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)

DT - 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

Systems & accessories

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.

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:**

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 & 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 & 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

TPUK-LM

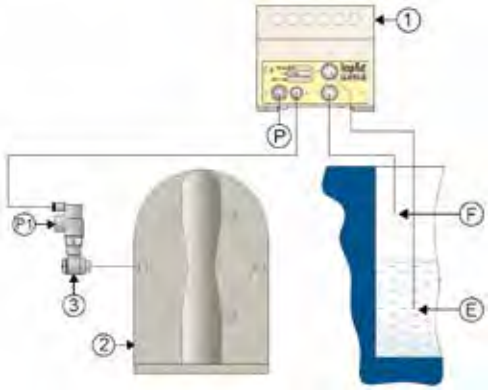
TPUK-LA-SS
(Stainless Steel)

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.

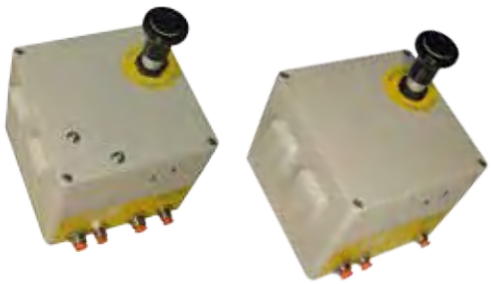
Installation TPUK-LA

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

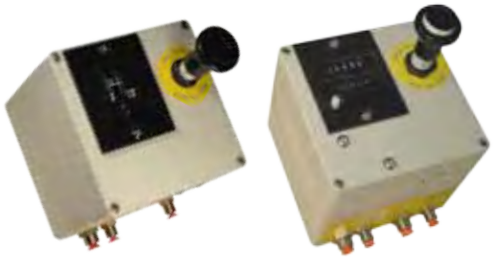


Pneumatic batch control



TPUK-BPI

TPUK-BTI-300S



TPUK-BT

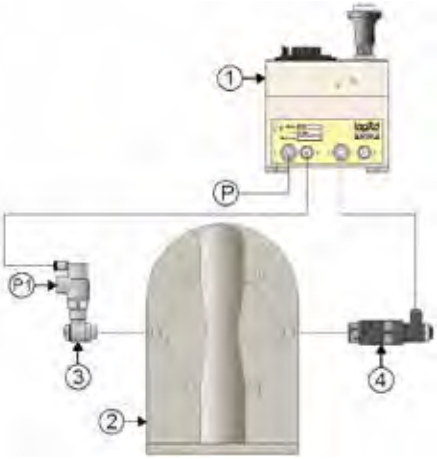
TPUK-BP

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



CAMLOCK connections for Metal series AODD pumps

Metal series diaphragm pumps can be ordered them with CAMLOCK connections. Their simple structure and easy operation make them very popular.
The coupling is connected by simply opening the coupler arms and inserting the adaptor into the coupler. The camlock arms are then closed under normal hand pressure to complete the joint.

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

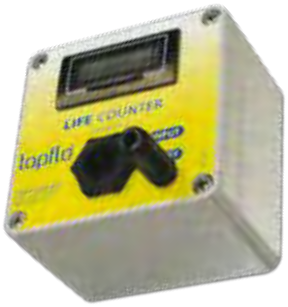
Counter-connections to Sanitary pump

In order to ease the pump connection with installation Tapflo has added a full range of counter-connections to sanitary pumps. They fit pumps with standard tri-clamp connection as well as optional DIN11851 and SMS connections.

Stroke counter - low pressure VFC

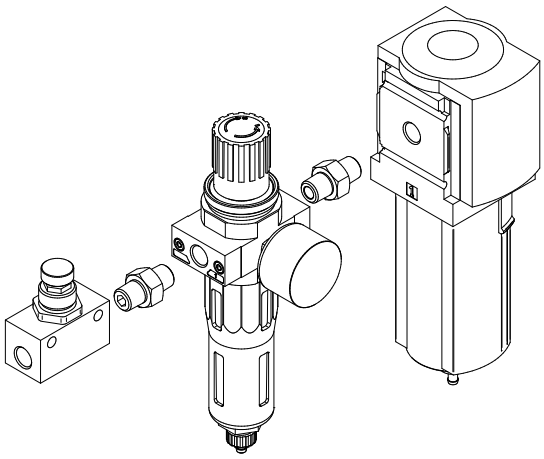
A stroke to volt free contact (VFC) is available for integration with PLC systems. Simply connect to any AODD pump via the air exhaust muffler to monitor the pump strokes. TPUK-PS1 must be combined with a modified muffler type TPUK-MU.

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, and/ or water separator. The filter is 5 micron and regulator is 0-12 bar.

Available models:

6-050-001F	FR/NV1/8"	1/8" (for pumps TR9-T80)
6-200-001F	FR/NV1/4"	1/4"(for pumps T100-T225)
6-400-001F	FR/NV3/8"	3/8"(for pumps T400-T425)
6-800-001F	FR/NV1/2"	1/2" (for pumps T800-T825)
6-050-002F	FR/NV/WS1/8"	1/8" (for pumps TR9-T80)
6-200-002F	FR/NV/WS1/4"	1/4"(for pumps T100-T225)
6-400-002F	FR/NV/WS3/8"	3/8"(for pumps T400-T425)
6-800-002F	FR/NV/WS1/2"	1/2"(for pumps T800-T825)

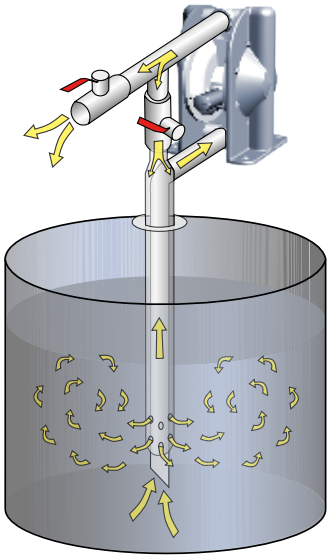
For further details, please check the separate brochure systems & accessories for pumps

Pneumixer

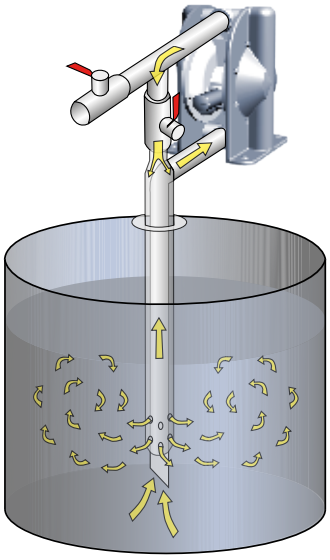
The Pneumixer was predominantly developed for the paint and ink industry where most raw materials in drums or containers settle out over time and need to be mixed or blended prior to use. This usually means rolling, shaking or pumping to a mixing vessel; that adds time, waste, mess and expense.

Features & Benefits

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



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



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

Pneumixer code

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

Tapflo Pneumixer

Material of pneumixer:
P = Polypropylene (PP)
S = AISI 316 stainless steel

Length of mixer:
(from drum adaptor to bottom)840 or 1250 mm standard.
Other lengths upon request

NM	C	100	S	A	-	840

Options:
K = Camlok connections

For Tapflo pump size

Material of camlok connections:
A = Aluminium
P = Polypropylene (PP)
S = AISI 316 stainless steel

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