

AIR OPERATED DIAPHRAGM PUMPS

2022 | 2



Contents



About Tapflo

Tapflo Diaphragm pumps

Working principle	3
Fast facts	4
Features & Benefits	4
How to install Tapflo pumps	5
Key components of the Tapflo pump	6
Applications	8



PE & PTFE series

General	10
Typical applications	10
The ingenious Tapflo design	11
Special versions	12
Performance curves	14
Dimensions	15
Technical data	16
Pump code	16



Metal series

General	17
Typical applications	17
The ingenious Tapflo design	17
Special versions	18
Performance curves	19
Capacity changes	21
Dimensions	21
Technical data	22
Pump code	23



Sanitary series

General	24
Typical applications	24
The sanitary design	24
Special versions	25
Performance curves	26
Capacity changes	27
Dimensions	27
Technical data	28
Pump code	28

3

4

4

4

4

5

6

8

10

10

10

11

12

14

15

16

16

17

17

17

17

18

19

21

21

22

23

23

23

23

24

24

24

25

26

27

27

28

28

28



Aseptic EHEDG series

General	29
Typical applications	29
Features & Benefits	29
Performance curves	30
Dimensions	30
Technical data	30



Intelligent pumps - TC series

General	31
Features & Benefits	31



Filter press pumps - TF series

General	32
Features & Benefits	32
The installation	32
Technical data	32



Powder pumps - TP series

General	33
Features & Benefits	33
Working principle	33
Technical data	33



Pharmaceutical pumps - TU series

General	34
Features & Benefits	34



Active pulsation dampeners

General	35
Working principle	35
Options & accessories	35
Dimensions	36
Dampener code	36



Systems & accessories

Guardian systems	37
Control systems	38
Mobile solutions	38
Filter regulator & needle valve kit	39
Pneumixer	39
Contact	40

» All about your flow

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, as well as the 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 owned 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 used in explosive and hazardous environments.

The aseptic series is EHEDG certified (European Hygienic Engineering & Design Group) and the pharmaceutical series has USP VI and EC 1935/2004 approval.

All of our products are clearly CE marked and followed by our comprehensive instruction manuals. Tapflo manufacturing process is certified according to ISO 9001:2015.



Our values

■ Long term engagement is our core

Our aim is to continuously provide premium products according to the 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.

■ Customising 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.

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 effect to the life of the diaphragms.

Suction

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

DISCHARGE

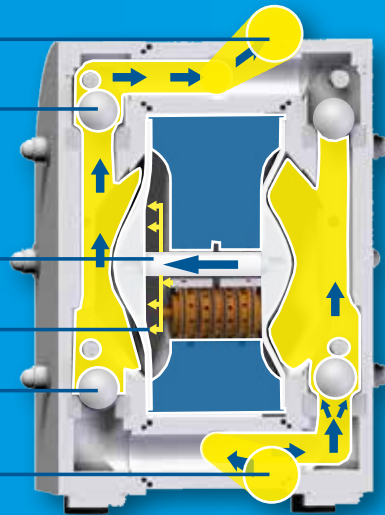
OPEN

DIAPHRAGM
STROKE

AIR

CLOSED

SUCTION



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	Pump materials	PE, PTFE, aluminium, cast iron, stainless steel AISI 316L, and PTFE coated aluminium
Pressure	0 - 8 bar (max 16 bar for TF series) 0 - 116 PSI (max 232 PSI for TF series)		
Connection sizes	1/4" up to 3" (DN8 - DN80)		

■ Features & Benefits

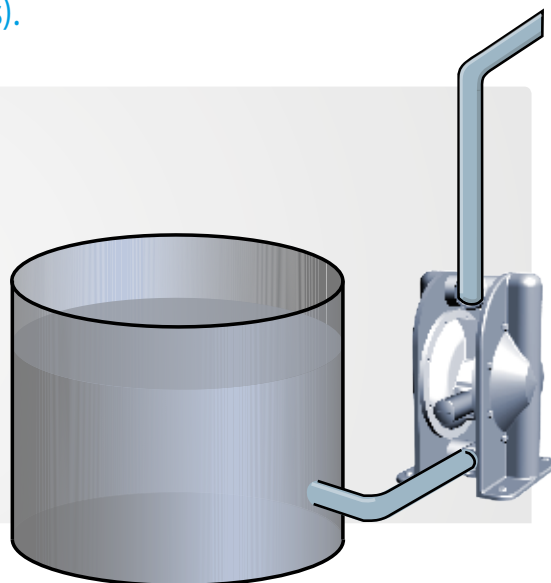
- ✓ **Run dry without damage**
Easy to use, no need of guarding device
- ✓ **Infinitely variable flow control**
Flexible and easy to adjust
- ✓ **Self-priming up to 5 m from dry suction pipe**
More options of installation
- ✓ **No electricity needed**
Explosion proof versions
Ex-zone 1 available
(ATEX 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 rotatable more than 180° to fit your piping system (PE & PTFE and metal series pumps).

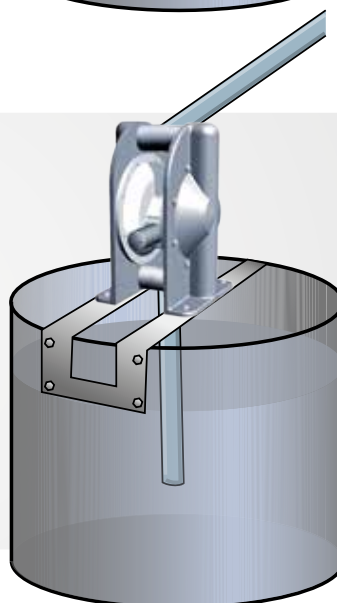
Flooded

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.



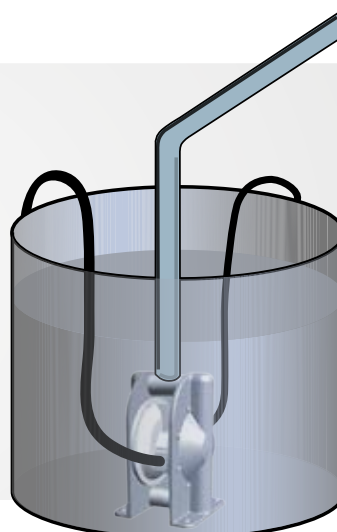
Self-priming

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

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.

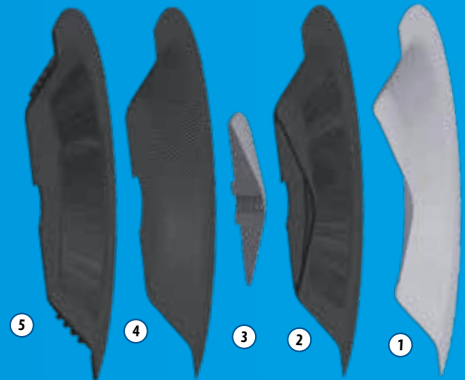
The diaphragms are available in various materials and colours to suit any requirements, they are made from **EPDM, NBR, FKM, PTFE, PTFE TFM 1705b, EPDM white, PTFE with white EPDM back, NBR white.**



■ Multilayer Design

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

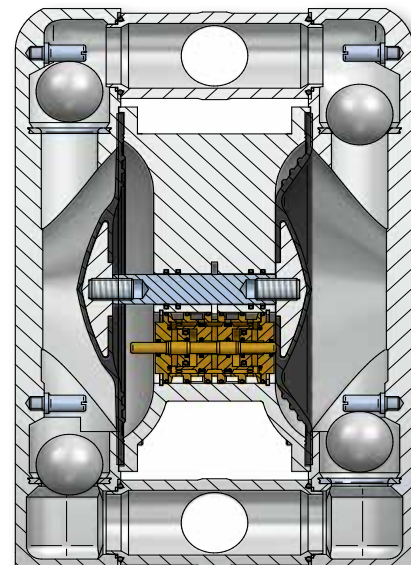


Energy saving drive

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.

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.**

The valve body is made from **brass** or optional **PET** or **stainless steel AISI 316**.



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, PTFE, PTFE TFM 1635, PE1000, FKM, PU, Ceramic, SiC, AISI 316L** to suit any kind of liquid.



Flap valves (Sanitary pumps)

Flap valves are used when pumping liquids containing big solids without damage. We are able to pump solids up to **18 mm** in **T80** and **T125**, **44 mm** in **T225** and **T425** and **100 mm** in **T825**. 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 pumps)

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.



Valve ball

Magnet lifter

Manifold



■ Working principle

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



Applications. 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.

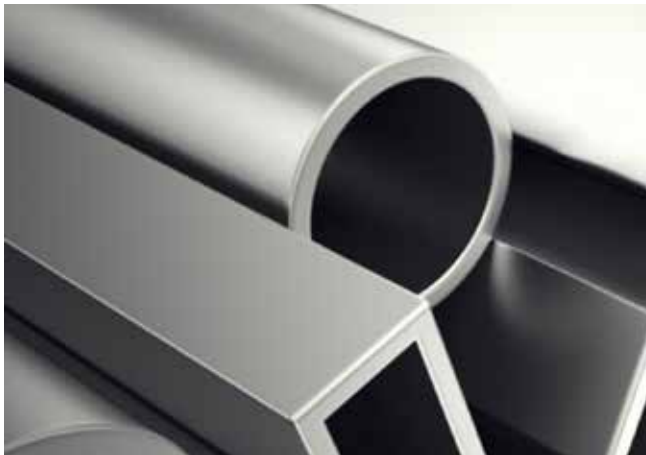
Various liquids - Tapflo pumps are compatible with a very wide range of chemicals:

- » Corrosive and chemical aggressive
- » High and low viscous
- » Abrasive
- » Solid content
- » 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

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 solvent based 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 stoppers, which are most vulnerable to wear - UHMW PE1000 is used 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.

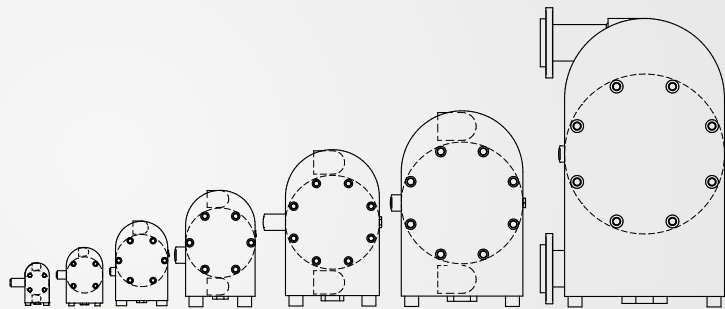


EN 10204



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, flavoring, 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, 1/2" suction, 3/8" discharge
- » TD50 - 60 l/min, 1" suction, 1/2" discharge
- » TD100 - 125 l/min, 1" suction and discharge

■ 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



AT 

Explosion proof pumps | TX series

The ATEX directive 2014/34/EC (also known as ATEX 114) 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. Transfer of alcohol and solvents are examples of applications for the Tapflo TX pumps.

Pumps certified according to 2014/34/EC (ATEX)

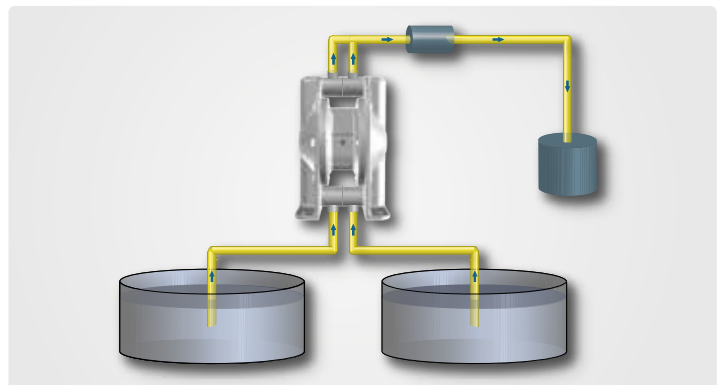
Group:	II
Category:	2G/2D
Apparatus group:	IIB
Temperature class:	T4



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

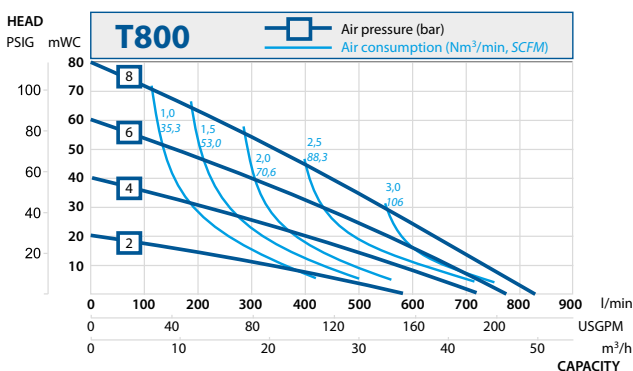
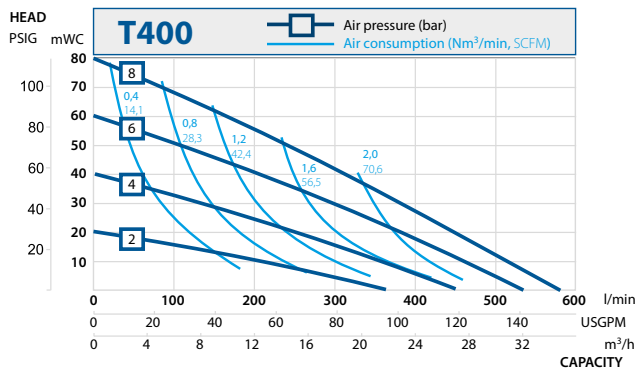
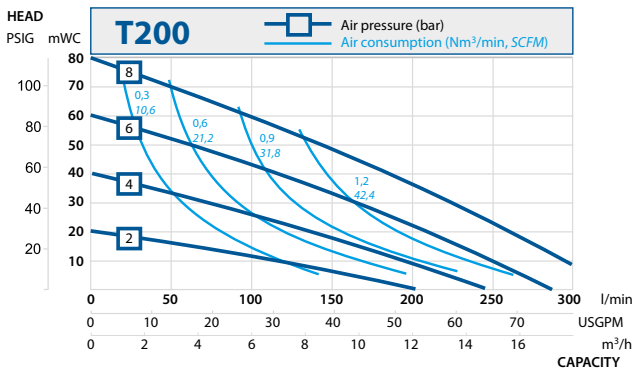
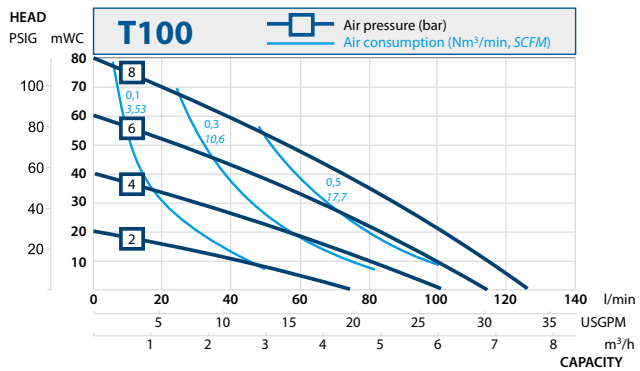
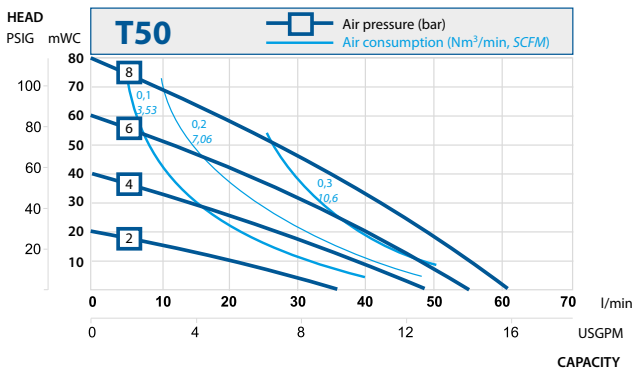
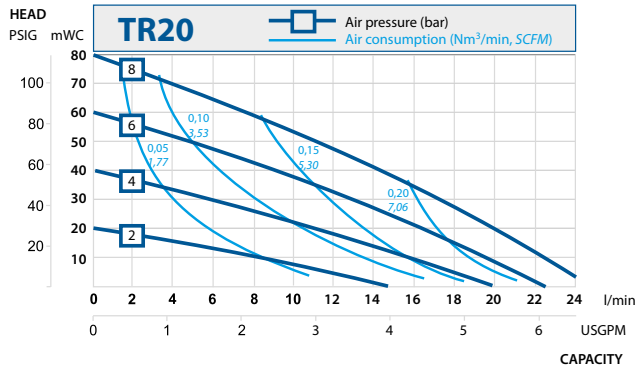
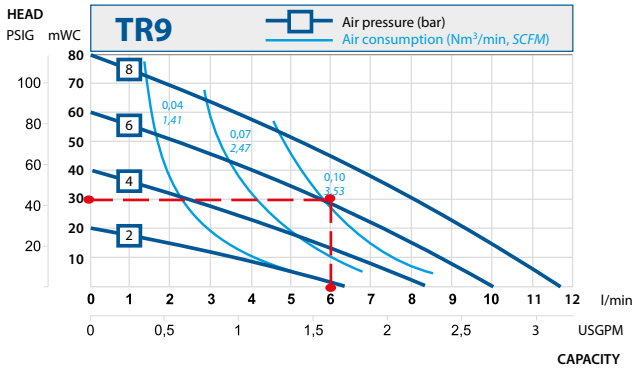
- » Mixing of two liquids with one pump (50/50 ratio) (installation example above)
- » Transfer and return of printing ink from storage to ink tray
- » Transfer and agitation of liquids with one pump

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 litre/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.



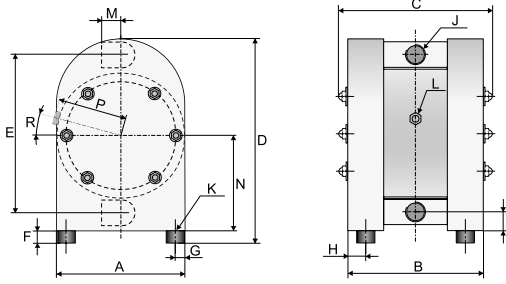
Capacity changes

For changes of capacity due to suction lift or viscosity, please see page 21

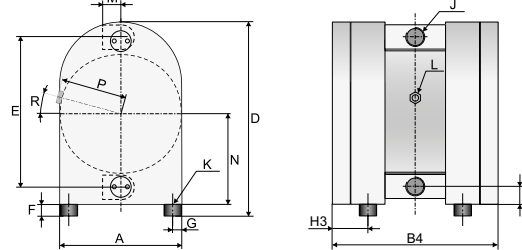
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Dimensions

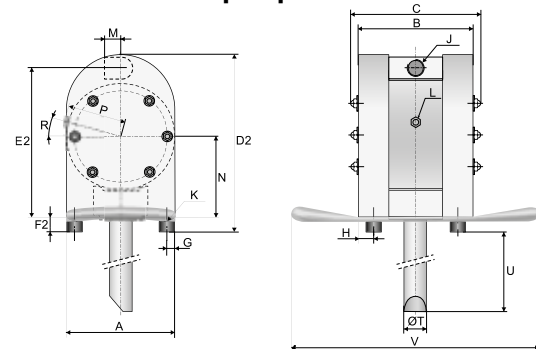
Standard PE pumps



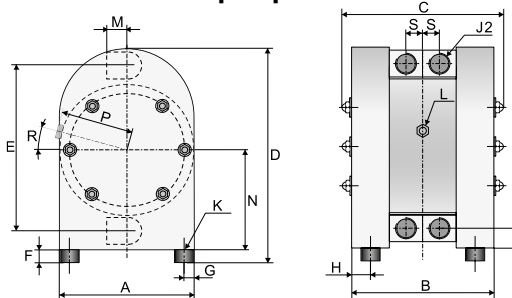
Standard PTFE pumps



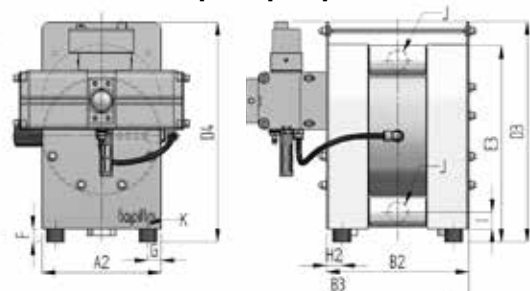
Drum pumps TD



Twin pumps TT



Filter press 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 2.76	105 4.13	150 5.91	200 7.87	270 10.63	350 13.78	460 18.11
A2	-	-	150 5.91	300 11.81	300 11.81	404 15.91	-
B	94 3.70	113 4.45	162 6.38	216 8.50	313 12.32	382 15.04	557 21.93
B2	-	-	168 6.61	224 8.82	324 12.76	392 15.43	-
B3	-	-	262 10.31	415 16.34	595 23.43	670 26.38	-
B4	134 5.28	152 5.98	202 7.95	256 10.08	352 13.86	422 16.61	-
C	116 4.57	134 5.28	185 7.28	252 9.92	350 13.78	426 16.77	601 23.66
D	123 4.84	168 6.61	243 9.57	320 12.60	450 17.72	563 22.17	830 32.68
D2	-	173 6.81	249 9.80	325 12.80	-	-	-
D3	-	-	352 13.86	351 13.82	501 19.72	583 22.95	-
D4	-	-	343 13.50	364 14.33	500 19.69	610 24.02	-
E	92 3.62	132 5.20	190 7.48	252 9.92	345 13.58	440 17.32	650 25.59
E2	-	147 5.79	210 8.27	280 11.02	-	-	-
E3	-	-	244 9.61	319 12.56	447 17.60	588 21.97	-
F	8 0.31	8 0.31	15 0.59	15 0.59	30 1.18	30 1.18	30 1.18
F2	-	13 0.51	20 0.79	20 0.79	-	-	-
G	9 0.35	15 0.59	17 0.67	30 1.18	30 1.18	30 1.18	20 0.79
H	10 0.39	15 0.59	16 0.63	30 1.18	30 1.18	30 1.18	30 1.18
H2	-	-	19 0.75	34 1.34	35 1.38	35 1.38	-
H3	30 1.18	35 1.38	36 1.42	50 1.97	50 1.97	50 1.97	-
I	12 0.47	15 0.59	20 0.79	28 1.10	38 1.50	48 1.89	80 3.15
J	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"	-
K	M4x16 M4	M4x16 M4	M8x25 M8	M8x25 M8	M8x25 M8	M8x25 M8	M8x25 M8
L	1/8"	1/8"	1/4"	1/4"	1/2"	1/2"	1/2"
M	15 0.59	17 0.67	25 0.98	38 1.50	54 2.13	70 2.76	105 4.13
N	58 2.28	81 3.19	115 4.53	154 6.06	211 8.31	268 10.55	411 16.18
P	35 1.38	52 2.05	80 3.15	105 4.13	143 5.63	183 7.20	237 9.33
R	0°	0°	15°	15°	0°	0°	0°
S	13 0.51	15 0.59	21 0.83	27 1.06	35 1.38	42 1.65	-
ØT	-	20 0.79	32 1.26	32 1.26	-	-	-
U	-	1170*	1170*	1170*	-	-	-
V	-	286 11.26	360 14.17	401 15.79	-	-	-

* = 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 / 5.25	2.4 / 7.87	4 / 13	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	-
Weight							
Standard pump T in PE (kg) / (lb)	0.75 / 1.65	1.6 / 3.53	4.3 / 9.48	10 / 22	25 / 55.12	47 / 103.62	147 / 342
Standard pump T in PTFE (kg) / (lb)	1.35 / 2.98	3.15 / 6.94	9 / 19.84	17 / 38	47 / 103.62	87 / 191.80	-
Drum pump TD in PE (kg) / (lb)	-	2.4 / 5.29	4.7 / 10.36	10.5 / 23.15	-	-	-
Drum pump TD in PTFE (kg) / (lb)	-	3.9 / 8.6	9.4 / 20.72	17.5 / 38.58	-	-	-
Filter press pump TF in PE (kg) / (lb)	-	-	8 / 17.64	21.6 / 47.62	30 / 66.14	70 / 154.32	-
Material of components							
Pump housing and all wetted thermoplastic details	PE or PTFE						PE
Centre block (not wetted)	PP, PP conductive						
Diaphragms	PTFE, FKM	PTFE, PTFE 1705B, EPDM or NBR					
Valve balls	-	PTFE, EPDM, NBR, AISI 316L***, PU, Ceramic***					
Rod valves (TR9 and TR20)	PE, PTFE	-	-	-	-	-	-
Air valve	Body: brass (std.), stainless steel AISI 316L or PET O-rings: NBR (std.), EPDM or FKM						
O-rings (wetted)	PTFE, EPDM, FKM, FEP/Silicone, FEP/FKM						
Housing pin screws	Stainless steel AISI 316L						
Diaphragm shaft	Stainless steel AISI 316L (TR9, TR20, T800) / 304L (T50 -T400)						
Drum handle (TD pumps)	-	Stainless steel AISI 316L		-	-	-	
Reinforcement plates (TF pumps)	-	-	Stainless steel AISI 316L			-	

* = Recommended flow is half of the max flow, i.e. recommended flow for a T100 is 62 l/min (16.3 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

Tapflo diaphragm pump

Max capacity (l/min)

Material of wetted thermoplastic parts:

P = PE (polyethylene)
T = PTFE
L = PP

Material of diaphragms:

B = PTFE TFM 1705B (solvents)
E = EPDM
N = NBR (nitrile rubber)
T = PTFE
V = FKM
W = White (food grade) EPDM
Z = PTFE with white back (food grade)

Basic options:

B = Backup diaphragm system
D = Drum pump
F = Filter press pump
K = Pump with built-on dampener (TR20-T100)
R = Rod valve pump
T = Twin inlet/outlet pump
V = AISI 316L valve seat / spacer
X = ATEX approved, group II, cat 2
Y = High suction lift version

Material of valve balls:

E = EPDM
N = NBR (nitrile rubber)
T = PTFE
S = AISI 316 stainless steel
U = PU (polyurethane)
K = Ceramic
V = FKM
B = PTFE TFM 1635

Material of rod valves (TR9 and TR20 only)

T = PTFE

Example pump code: **T DR 20 P T T**

Diagram showing the breakdown of the code: T (Tapflo diaphragm pump), DR (Drum pump), 20 (Max capacity), P (Material of wetted thermoplastic parts), T (Material of diaphragms), T (Material of valve balls).

* = 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, high solid content 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 block, which is not in contact with liquid, is made from corrosive resistant polypropylene (PP) as standard (other materials upon request).



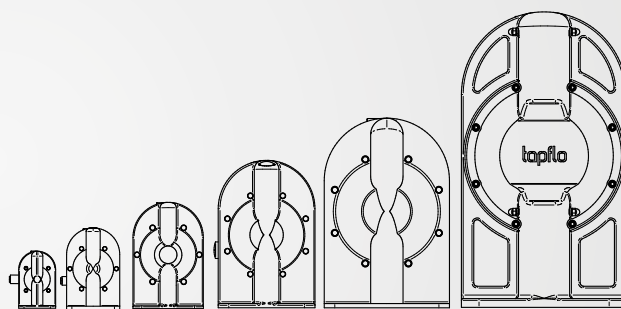
EN 10204



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.**



Optional Camlock connections

Metal series diaphragm pumps can be ordered with CAMLOCK connections. The coupling is connected by simply opening the coupler arms and inserting the adaptor into the coupler.

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 efficiency 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 SS. It is fit with an ergonomic designed handle in stainless steel AISI 316. 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, ½" suction and discharge
- » TXD70A - 70 l/min, M30 x 1,5 suction; ¾" discharge
- » TXD70 S - 70 l/min, ¾" suction and discharge
- » TXD120A - 120 l/min, M30 x 1,5 suction; 1" discharge
- » TXD120S - 120 l/min, 1" suction and discharge

■ 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



AT

Explosion proof pumps | TX series

The ATEX directive 2014/34/EC (also known as ATEX 114) 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.

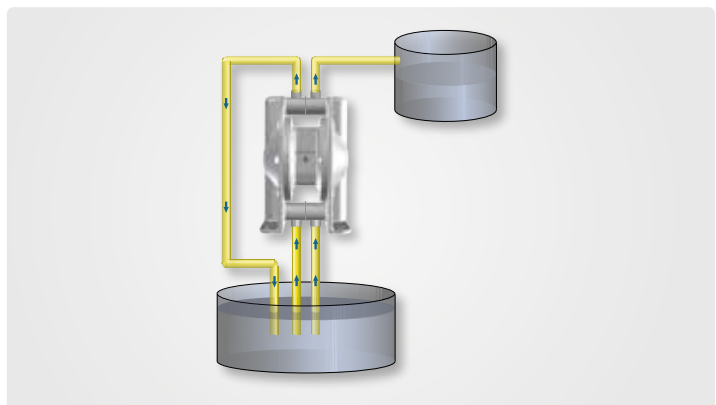
They can be used in Ex-zone 1. The conductive material ensures that no electrostatic loads will be accumulated in the pump.

Pumps certified according to 2014/34/EC (ATEX)

Group:	II
Category:	2G/2D
Apparatus group:	IIB
Temperature class:	T4

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

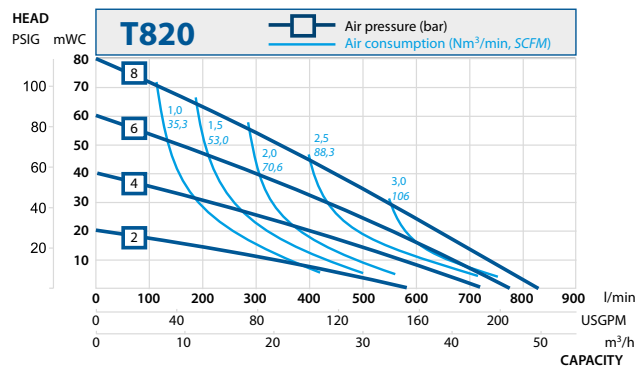
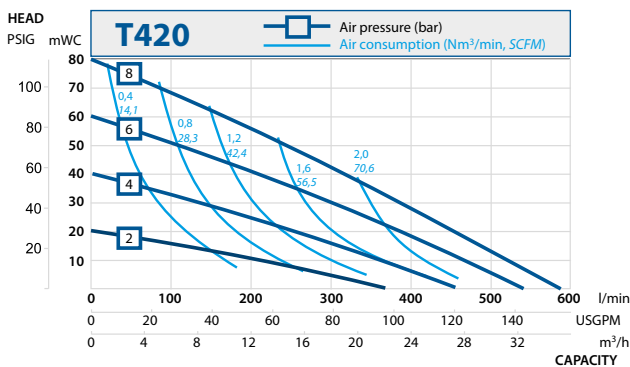
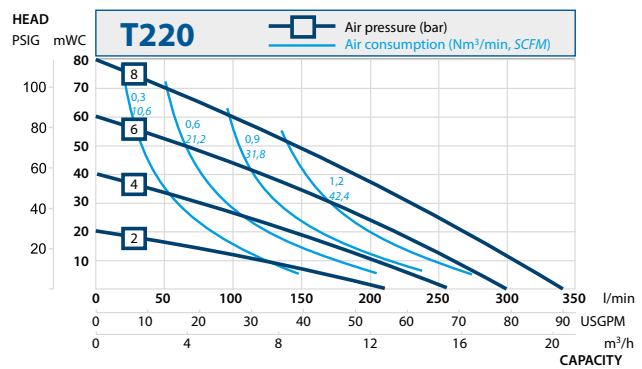
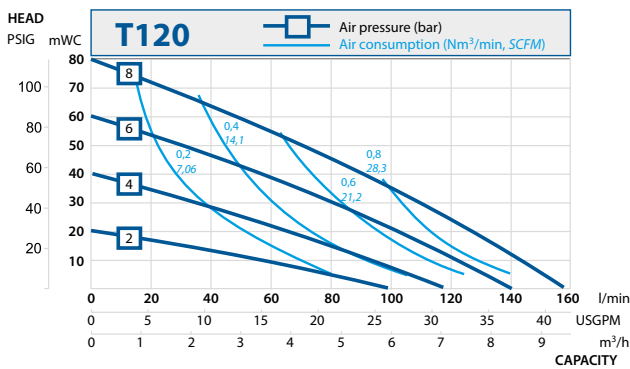
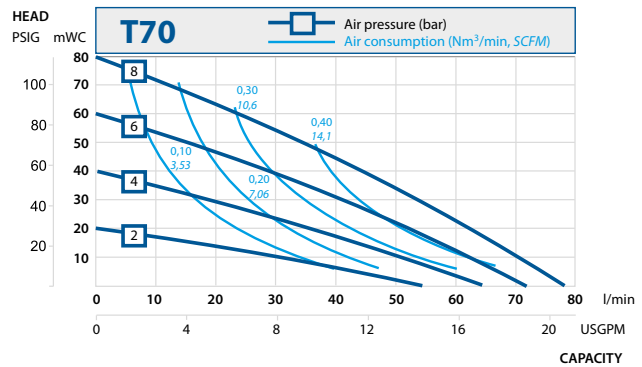
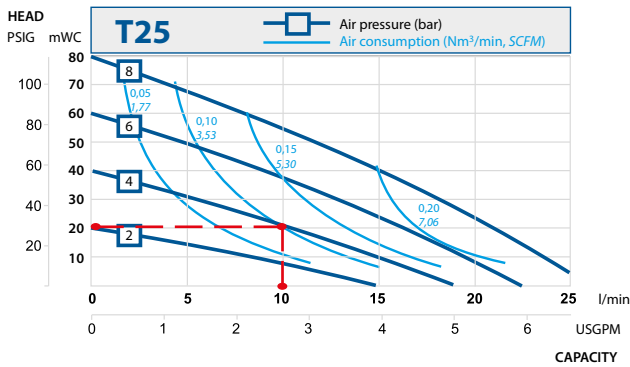
- » Transfer of two different liquids, two pumps in one
- » Mixing of two liquids with one pump (50/50 ratio)
- » Transfer and return of printing ink from storage to ink tray
- » Transfer and agitation of liquids with one pump (installation example above)

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.

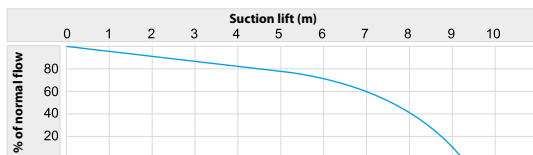
Example see the red line — — — — —

A flow of 10 litre/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.

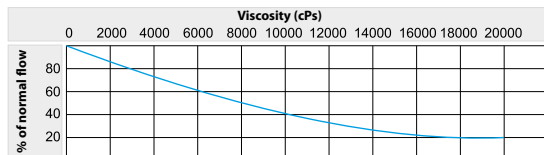


Capacity changes

Capacity changes at different suction lifts



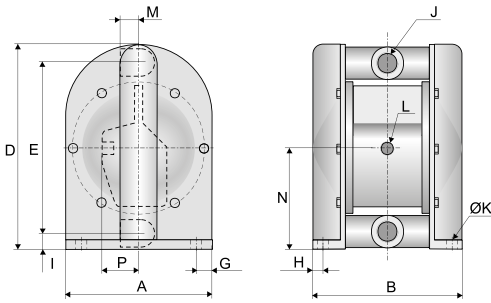
Capacity changes at different viscosities



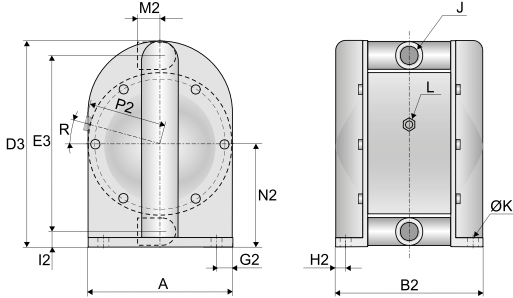
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Dimensions

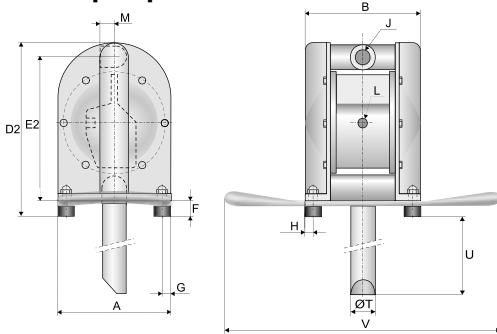
Aluminium and cast iron pumps T



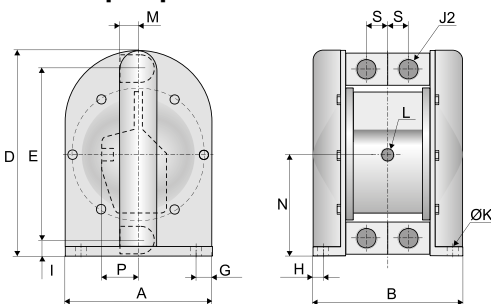
Stainless steel pumps T



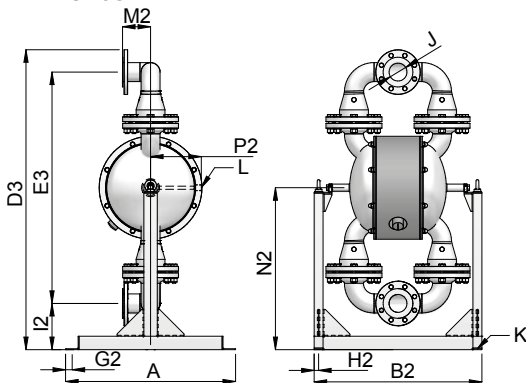
Drum pumps TD



Twin pumps TT



T820S



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	820A**	820S***
A	105 4.13	150 5.91	200 7.87	275 10.83	356 14.02	470 18.50	760 29.92
B	117 4.61	167 6.57	198 7.80	267 10.51	342 13.46	488 19.21	-
B2	-	157 6.18	200 7.87	282 11.10	347 13.66	488 19.21	750 29.53
D	162 6.38	233 9.17	302 11.89	419 16.50	539 21.22	840 33.07	-
D2	173 6.81	249 9.80	322 12.68	-	-	-	-
D3	-	229 9.02	310 12.20	422 16.61	529 20.83	840 33.07	1341 52.80
E	132 5.20	190 7.48	252 9.92	346 13.62	448 17.64	688 27.09	-
E2	147 5.79	216 8.50	279 10.98	-	-	-	-
E3	-	192 7.56	257 10.12	348 13.70	443 17.44	-	1035 40.75
F	13 0.51	20 0.79	20 0.79	-	-	-	-
G	11 0.43	18 0.671	20 0.79	26 1.02	38 1.50	50 1.97	-
G2	-	17 0.67	20 0.79	31 1.22	36 1.42	-	25 0.98
H	12 0.47	19 0.75	20 0.79	29 1.14	30 1.18	53 2.09	-
H2	-	13.5 0.53	23.5 0.93	34 1.34	32 1.26	-	13 0.51
I	16 0.63	22 0.87	27 1.06	34 1.34	47 1.85	82 3.23	-
I2	-	19 0.75	27 1.06	38 1.50	44 1.73	-	206 8.11
J	1/2" 1/2	3/4" 3/4	1" 1	1 1/2" 1 1/2	2" 2	DN80(3") DN80(3")	-
J2	3/8" 3/8	1/2" 1/2	3/4" 3/4	1" 1	2" 2	-	-
ØK	6.5 0.26	10 0.39	10 0.39	10 0.39	10 0.39	12.5 0.49	25x13 1x0.5
L	1/8" 1/8	1/4" 1/4	1/4" 1/4	1/2" 1/2	1/2" 1/2	3/4" 3/4	3/4" 3/4
M	19 0.75	29 1.14	33 1.30	45 1.77	57 2.24	84.5 3.33	-
M2	-	40 1.57	52 2.05	70 2.76	90 3.54	-	126 4.96
N	82 3.23	117 4.61	153 6.02	207 8.15	274 10.79	356 14.02	-
N2	-	115 4.53	155 6.10	212 8.35	266 10.47	-	724 28.50
P	30 1.18	47 1.85	39 1.54	59 2.32	59 2.32	72.5 2.85	-
P2	-	82 3.23	105 4.13	143 5.63	183 7.20	-	238 9.37
R	-	15° 15°	15° 15°	0° 0°	0° 0°	-	0° 0°
S	12.5 0.49	21 0.83	26 1.02	35 1.38	420 1.57	-	-
ØT	20 0.79	30 1.18	30 1.18	-	-	-	-
U	1170* 46.06*	1170* 46.06*	1170* 46.06*	-	-	-	-
V	286 11.26	374 14.72	400 15.75	-	-	-	-

* = Any length up to 2000 mm on request

* = Any length up to 79" on request

** = Available in aluminium only

*** = Available in Stainless Steel only

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 / 5	3 / 9.8	4 / 13	4 / 13	4 / 13	5 / 16
Max suction lift wet (m) / (Ft)	8 / 26	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	13 / 0.51
Max temp with EPDM/NBR (°C) / (°F)	80 / 176					
Max temp with PTFE (°C) / (°F)	110 / 230					
Weight						
Standard pump in alu (kg) / (lb)	2 / 4.4	5 / 11	8.65 / 19.1	18.1 / 39.9	36.8 / 81.1	101.5 / 223.8
Standard pump cast iron (kg) / (lb)	4.1 / 9	9.9 / 21.8	17.6 / 38.8	33.4 / 73.6	71.4 / 157.4	-
Standard pump in AISI 316 (kg) / (lb)	-	6.8 / 15	15.5 / 34.2	35.9 / 79.2	66.1 / 145.7	137 / 302
Drum pump TD in alu (kg) / (lb)	3 / 6.6	7 / 15	10 / 22	-	-	-
Drum pump TD in AISI 316 (kg) / (lb)	-	7.5 / 16.53	16 / 35.27	-	-	-
Material of components						
Pump housing and all wetted metal details	aluminium and cast iron	aluminium, cast iron or stainless steel AISI 316				aluminium or AISI 316L
Centre block, alu and cast iron pumps		aluminium (standard) or cast iron				aluminium
Centre block, AISI 316 pumps	-	PP (standard), conductive PP or aluminium				PP or aluminium
Diaphragms	NBR, FKM, 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 max flow, i.e. recommended flow for a T120 is 79 l/min (20.8 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.

Tapflo diaphragm pump

Max capacity (l/min)

Material of wetted metal parts:

A = Aluminium
C = Cast iron
S = Stainless steel AISI 316
X = PTFE coated aluminium

Material of diaphragms:

B = PTFE TFM 1705B (solvents)
E = EPDM
N = NBR (nitrile rubber)
T = PTFE
V = FKM
W = White (food grade) EPDM
Z = PTFE with white back (food grade)

Material of valve balls:

B = PTFE TFM 1635
E = EPDM
N = NBR (nitrile rubber)
T = PTFE
S = AISI 316 stainless steel
P = PU (polyurethane)
K = Ceramic
V = FKM

Basic options:

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

Example Pump Code: T XD 70 A T T

T: Tapflo diaphragm pump
XD: Max capacity 70 l/min
70: Max capacity 70 l/min
A: Material of wetted metal parts: Aluminium
T: Material of diaphragms: PTFE
T: Material of valve balls: PTFE

* = 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.

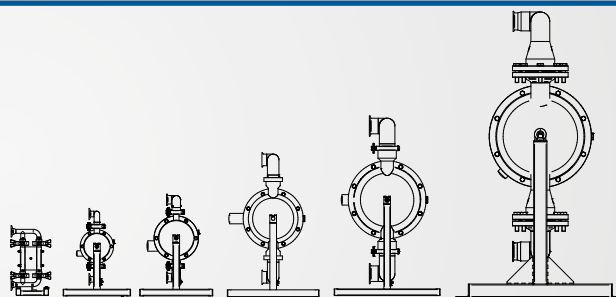


EN 10204



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
» Grocery	Ketchup, mayonnaise, tomato products, mustard
» Beverages	Flavors, coloring, fruit juice
» Bakery	Dough, ingredients
» Brewery	Beer, flavors, coloring, wort
» Hygiene	Soap, 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

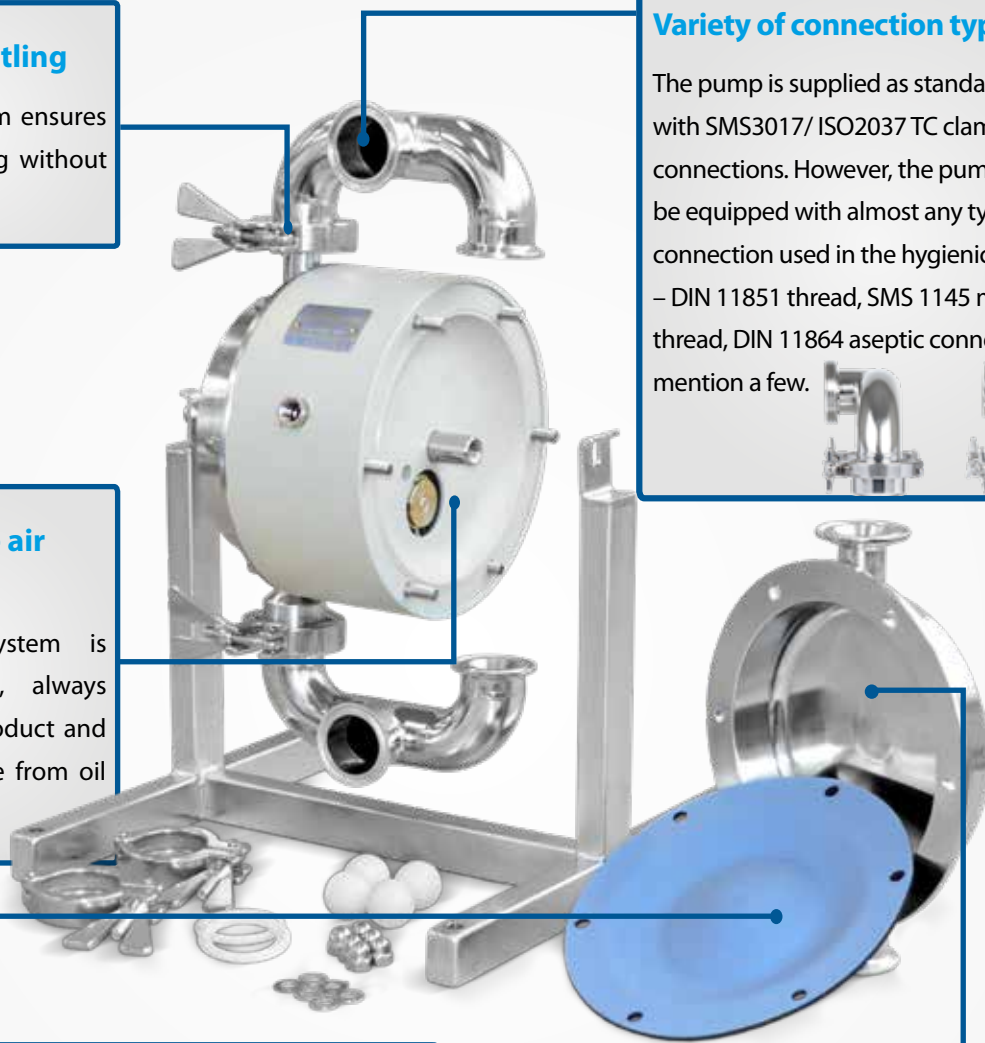
The sandwich diaphragm has a completely plain surface, which eliminates bacteria growth problems. The diaphragm is available in food grade materials - PTFE or white EPDM.

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.

Variety of connection types

The pump is supplied as standard with SMS3017/ ISO2037 TC clamp connections. However, the pump may be equipped with almost any type of connection used in the hygienic field – DIN 11851 thread, SMS 1145 milk thread, DIN 11864 aseptic connections to mention a few.



*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



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:

- » T80 (18 mm solids max)
- » T125 (18 mm solids max)
- » T225 (44 mm solids max)
- » T425 (44 mm solids max)
- » T825 (100 mm solids max)

Magnetic ball lifters

Magnetic ball lifters are implemented in Sanitary 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.



Counter-connections

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.

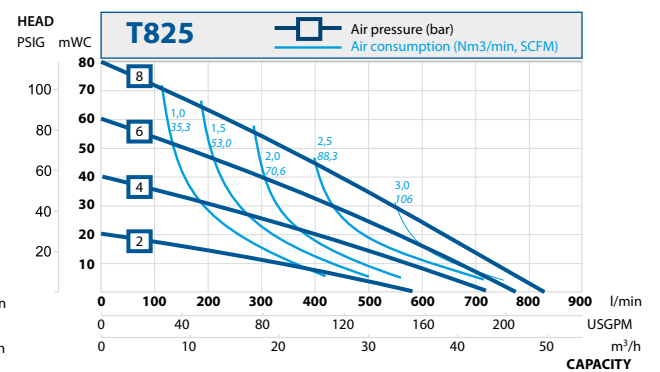
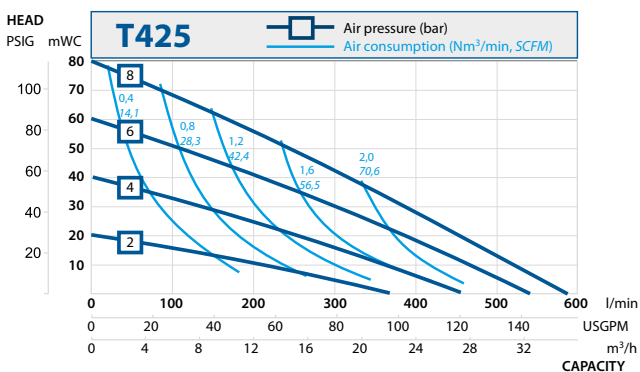
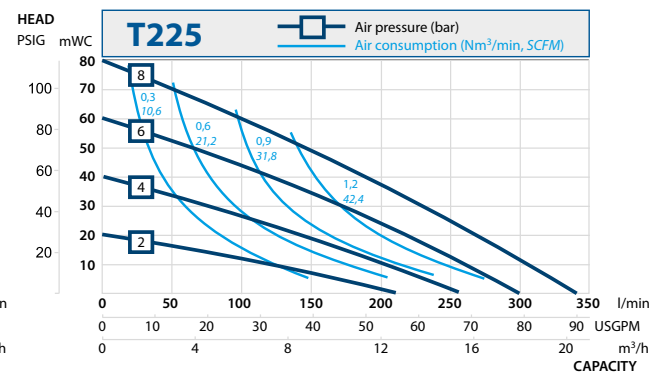
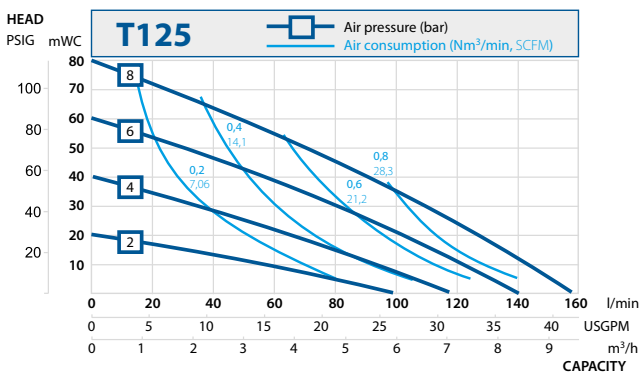
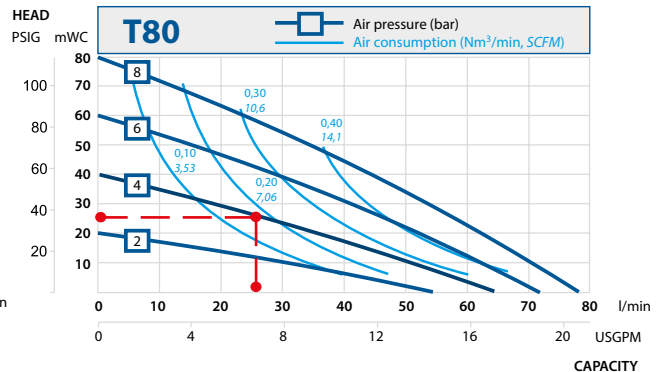
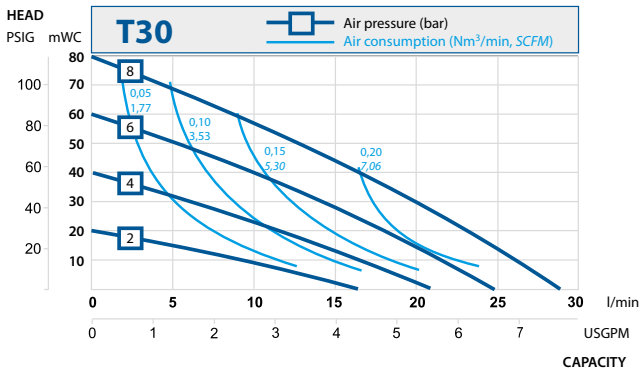
Performance curves

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 25 litre/minute is desired.

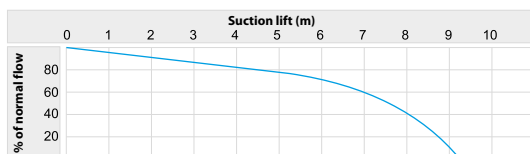
The discharge head is calculated to 25 mWC. We choose a T80. It requires an air pressure of 4 bar and will consume approximately 0.20 Nm³ air per minute.



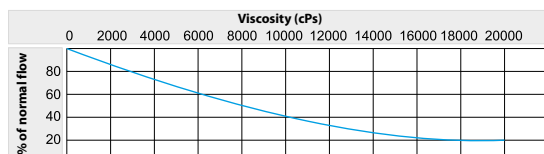
Recommended flow is half of the max flow, i.e. recommended flow for a T80 is 40 l/min (10.6 US gpm).

Capacity changes

Capacity changes at different suction lifts



Capacity changes at different viscosities



Changes reserved without notice

Dimensions

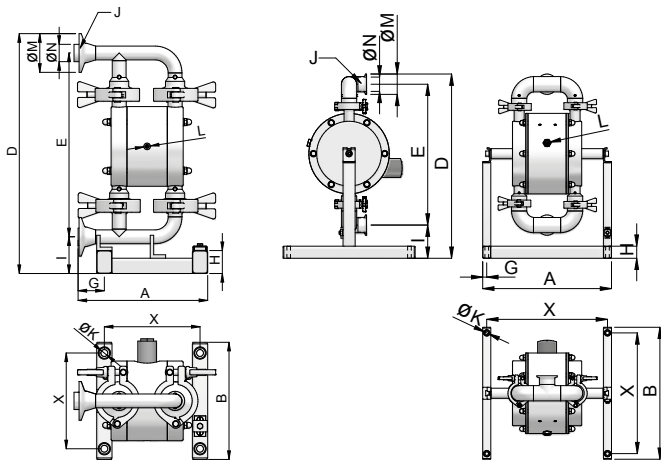
Dimensions for sanitary series

Dimensions in mm (where other is not indicated)

Dimensions in inch (where other is not indicated)

T30

T80-T825



* = 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

Dim	Pump size						
	30	80	125	225	425	825	
A	169	295	320	404	468	750	
	6.7	11.6	12.6	15.9	18.4	29.5	
B	153	303	328	412	476	760	
	6.0	11.9	12.9	16.2	18.7	29.9	
D	313	393	458	647	808	1288	
	12.3	15.5	18.0	25.5	31.8	50.7	
E	240	294	350	528	664	1034.5	
	9.4	11.6	13.8	20.8	26.1	40.7	
G	34	10	10	10	10	20	
	1.3	0.4	0.4	0.4	0.4	0.8	
H	30	30	30	30	30	60	
	1.2	1.2	1.2	1.2	1.2	2.4	
I	48	74.5	82.5	86.5	98.5	206.5	
	1.9	2.9	3.2	3.4	3.9	8.1	
J	TC ¹	1"	1"	1 1/2"	2"	2 1/2"	3"
	DIN ²	DN25	DN25	DN40	DN50	DN65	DN80
	SMS ³	25	25	38	51	63.5	76.1
	RJT	3/4"	1"	1 1/2"	2"	3"	3 1/2"
ØK	9	9	9	9	9	25x13	
	0.4	0.4	0.4	0.4	0.4	1x0.5	
L	1/8"	1/4"	1/4"	1/2"	1/2"	1/2"	
ØM*	50.5	50.5	50.5	64	91	98	
	2.0	2.0	2.0	2.5	3.6	3.9	
ØN*	22.6	22.6	35.6	48.6	66.8	72.9	
	0.9	0.9	1.4	1.9	2.6	2.9	
X	125	275	300	384	448	710	
	4.92	10.83	11.81	15.12	17.64	27.95	

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)	30 / 7.9	80 / 21	125 / 33	225 / 59	425 / 112	825 / 218
*Volume per stroke (ml) / (cu in)	120 / 7.3	320 / 19.5	515 / 31.4	1415 / 86.4	2600 / 158	4500 / 275
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)	2 / 6.6	3 / 9.8	4 / 13	5 / 16	5 / 16	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	20 / 0.59
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 / 293

Wetted metal details	Stainless steel AISI 316L electro polished (T825 glass blasted)
Centre block (not wetted)	PP, PP conductive
Diaphragms	PTFE, PTFE with white back, EPDM, white EPDM, NBR
Valve balls	PTFE, EPDM, NBR, AISI 316, PU, Ceramic
Air valve	Brass (std.), stainless steel AISI 316L or PET with NBR (std.), EPDM or FKM O-rings
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.

*** = Flap valve version

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



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 (food grade)

Material of valve balls:

- E = EPDM
- N = NBR (nitrile rubber)
- T = PTFE
- S = AISI 316L
- P = PU (polyurethane)
- K = Ceramic
- B = PTFE TFM 1635
- blank = flap valve version

* = 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 pharmaceutical-, 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 2014/34/EC.

Typical applications

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



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■ 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

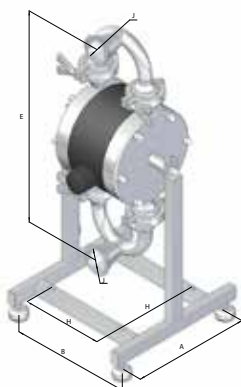
The EHEDG (European Hygienic Engineering & Design Group) certificate is your guarantee that the design is according to the hygienic guidelines. Furthermore the pump is clean ability tested, which means bacteria does not grow in the pump after cleaning and draining procedure.



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

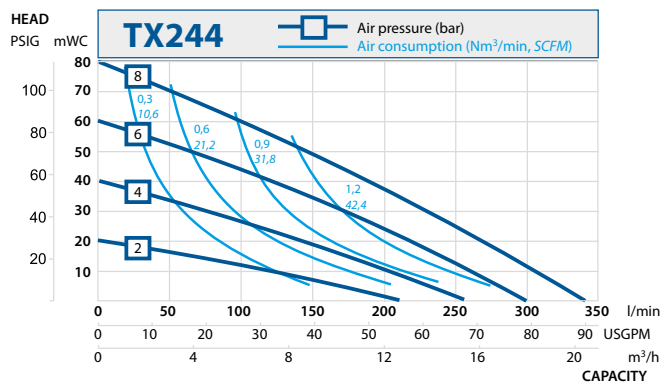
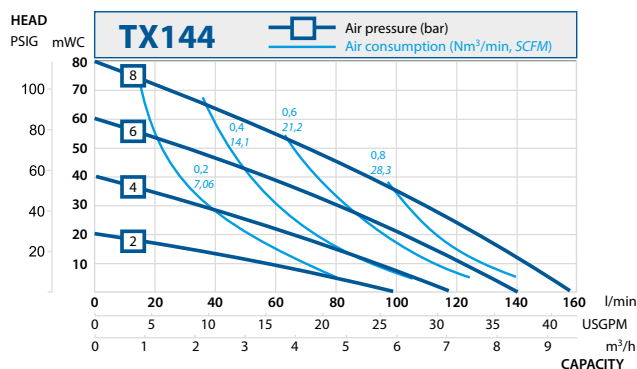
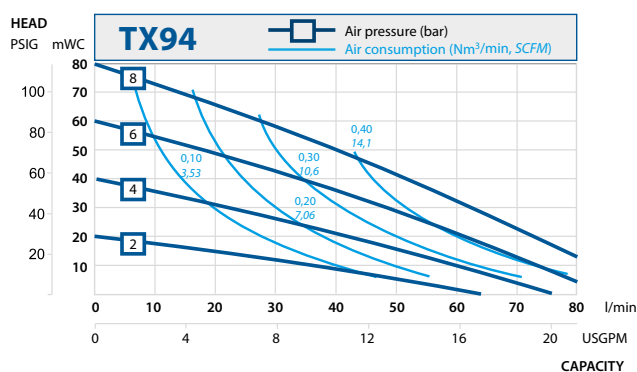
Technical data

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



Dim	Pump size		
	TX94	TX144	TX244
A	260	280	360
B	275	278	340
E	447	488	700
H	185	188	270
J	DN 40	DN 50	DN 65

Dimensions in mm (where other is not indicated)

Intelligent pumps - TC series



TC Intelligent pumps are fitted with ingenious LEAP® technology developed by Tapflo.

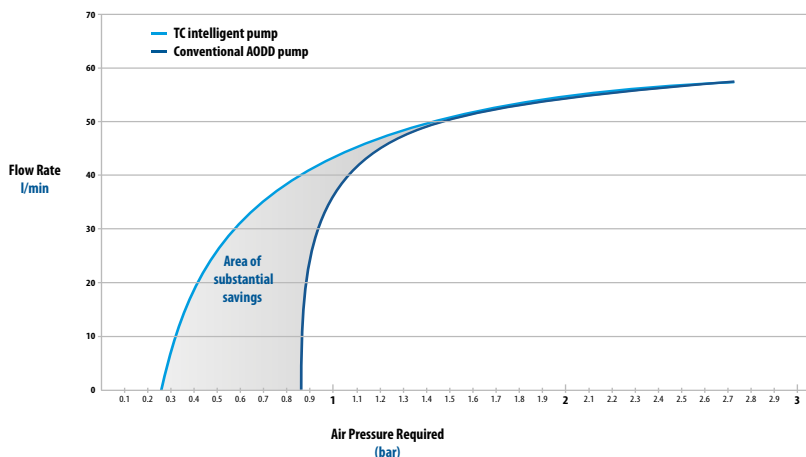
LEAP® or 'Low Energy Air Pump' is a patented technology used in AODD pumps to reduce the minimum operating air pressure by reducing internal losses and friction found in conventional AODD pumps.

LEAP uses a unique indirect system to detect the position of the diaphragm shaft controlling the diaphragm movement automatically.

■ Features & Benefits

- ✓ **Available in Plastic, Metal and Sanitary series AODD pumps**
 TC50 - TC425 (T50 - T425 equivalent)
- ✓ **Retrofit**
 Leap can be fitted to any existing Tapflo Air Operated Diaphragm Pumps
- ✓ **Batch Dispensing**
 allowing the pump to automatically stop after the required volume has been dispensed.
- ✓ **Improved Lifespan**
 the TC series uses an air valve that has a significantly longer life expectancy over rubber seal technology.
- ✓ **Dry Running**
 by analysing the frequency of pulses, the pump can analyse when it is running dry.
- ✓ **Noise Reduction**
 ability to utilise lower air pressure reduces the noise of the pump
- ✓ **Electrical feedback**
 signal allows for external monitoring of the pump process.
- ✓ **Improved Maintenance**
 main air valve can be changed in under two minutes without the removal of the pump from the process line.
- ✓ **Control Simplification**
 no need for an external pneumatic solenoid valve, reducing costs and simplifying control.
- ✓ **Dead Heading**
 as with dry running, the frequency of pulses can be monitored, alerting if the pump has a blockage.

Graph showing fluid flow against air pressure required



The pump fitted with LEAP® Technology is able to **start pumping at 0.3 bar without stalling**, in test the pump was already achieving flow rates of **70% of its maximum open end flow before other pumps had even started.**

Filter press pumps - TF series

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



TF series

The design and function allows the user a straightforward 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

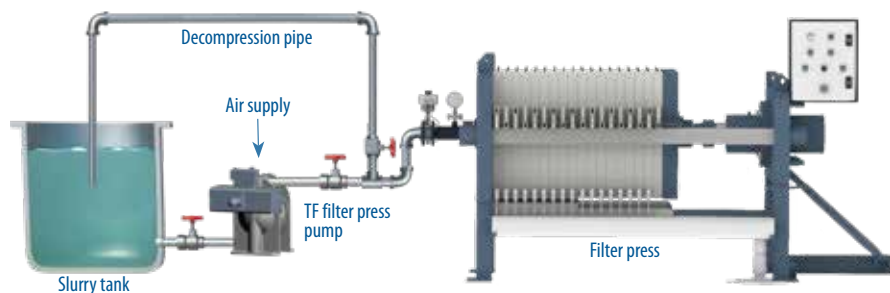
Metal pumps: TF 70 | TF 120 | TF 220 | TF 420

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"	*60 / 15.8	16 / 232
TF 100 TF 120	1"	*125 / 33	16 / 232
TF 200 TF 220	1 1/2"	*330 / 87	12 / 174
TF 400 TF 420	2"	*570 / 150	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?

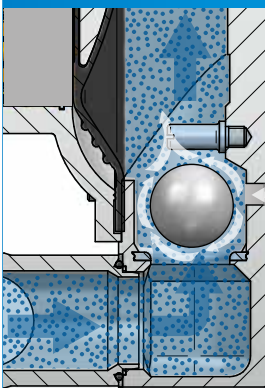
The powder transfer pump will handle different types of process powders, with specific weight from 80 up to 720 kg/m³ dry weight. Generally, if the powder does not clump together when squeezed in hand, the Tapflo powder transfer pump can be used successfully. A few examples of common powders are *sintering 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.



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	TXP120	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 was 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.

Our unique USP approved (United States Pharmacopoeia) hygienic PE pump, features all wetted parts in USP class VI certified materials.

Simplicity

Pump housing with only three parts makes it extremely easy to maintain.

Superior finish

High finish and hygienic approved materials.



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The Pharmaceutical series pumps

- | | |
|-------------------|-----------------|
| » TU53 PTT-5UVI | 60 l/min; ¾" |
| » TU103 PTT-5UVI | 125 l/min; 1" |
| » THU203 PTT-5UVI | 330 l/min; 1 ½" |
| » THU403 PTT-5UVI | 570 l/min; 2" |

■ Features & Benefits

✓ Sanitary design
smooth internal surfaces

✓ USP class VI
approved materials

✓ Inert materials
no contamination of the
pumped product

✓ Extremely easy to maintain
pump housing 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 2014/34/EC (ATEX), group II, cat 2, for use in EX-zone 1. **Contact us for information.**

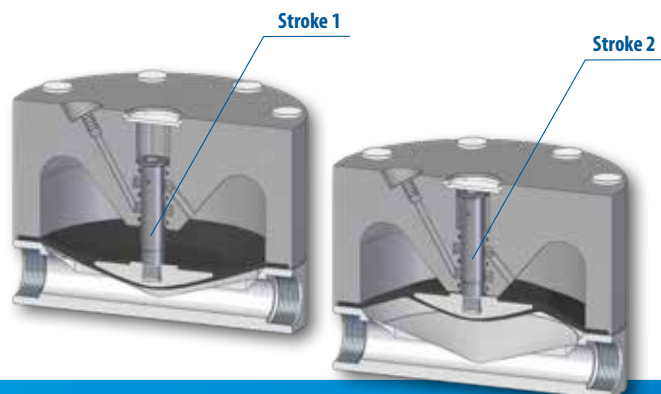


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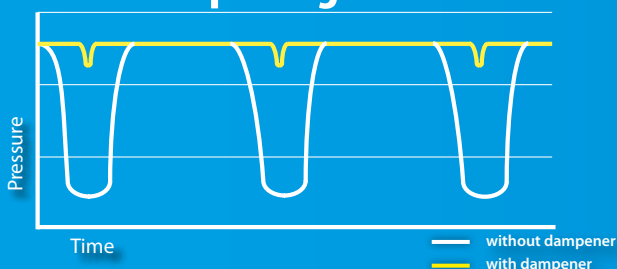


Working principle

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 piping system
- Optimized pump performance and reduced maintenance costs

Options & accessories



■ Pulsation dampener with stand



■ Pulsation dampener with pump



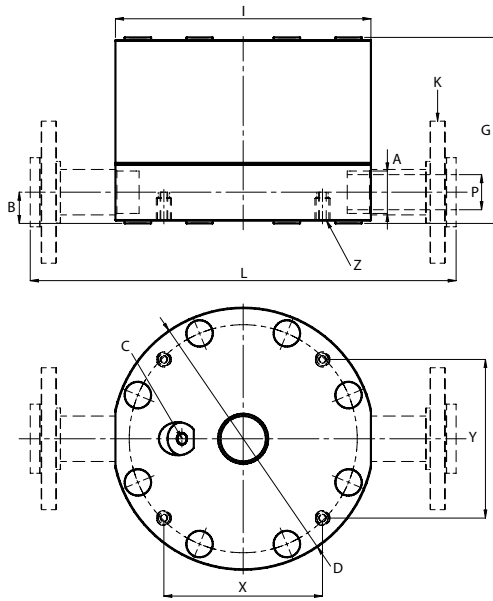
■ Pulsation dampener with guardian



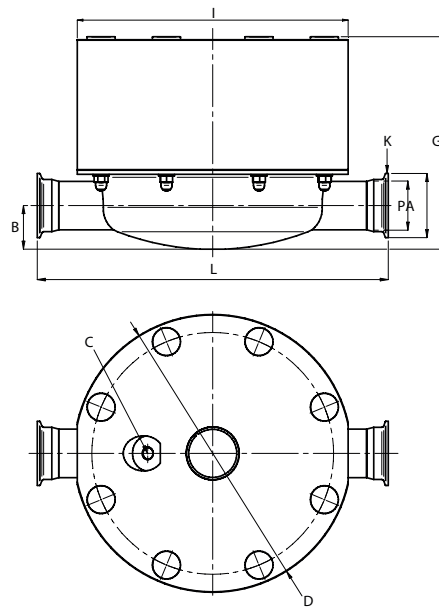
■ TK built-on dampener

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 A	820 S	825	
A	BSP	G 3/8"	G 1/2"	G 3/8"	G 1/2"	G 3/4"	G 1"			G 1 1/2"			G 2"			G 3"			-	-
	DIN Flange	95	-	95	95	105	-	115	-	150	-	165	-	165	-	202	-	202	-	-
	ANSI Flange	-	-	50,5	-	50,5	-	-	-	50,5	-	64	-	-	-	91	-	-	-	-
	SMS3017/ISO2037 DIN 118513	-	-	Rd44x1/6"	-	-	Rd 52x 1/6"	-	-	Rd 65 x 1/6"	-	-	Rd 78 x 1/6"	-	-	Rd 95 x 1/6"	-	-	-	Rd 110 x 1/4"
B		15/33 ¹ 0,59/1,3 ¹	15 0,59	10,6 0,42	17/32,4 ¹ 0,67/ 1,27 ¹	16,5 0,65	16,5 0,65	25,5/45 ¹ 1/ 1,77 ¹	25 0,98	16,5 0,65	33/50 ¹ 1,29/1,97 ¹	41 1,61	41 1,61	41/61 1,61/2,40 ¹	41 1,61	46 1,81	92 3,62	92 3,62	19,3 0,76	19,3 0,76
	C	G 1/4"			G 1/4"			G 1/4"			G 1/4"			G 1/4"			G 1/4"			
D		110 4,33			158 6,22			208 8,19			277 10,91			360 14,17					470 18,50	
	G	85 / 103 ¹ 3,35 / 4,06 ¹	85 3,35	79 3,11	109/132 ¹ 4,29/5,20 ¹	117/109 ² 4,61/4,29 ²	116,5 4,59	148/161,5 ¹ 5,83/6,36 ¹	135/144,5 ² 5,31/5,69 ²	135 5,31	200/217,5 ¹ 7,87/8,56 ¹	213/200,5 ² 8,39/7,89 ²	209 8,23	244/261 ¹ 9,61/10,28 ¹	256/243,5 ² 10,08/9,59 ²	255 10,04	394 15,51	392 15,43	330 12,99	330 12,99
I		107 4,21			155 6,10			203 7,99			270 10,63			352 13,86			470 18,50	450 17,72	470 18,50	
	BSP	G 3/8"	G 1/2"	-	G 1/2"	G 3/4"	-	G 1"	G 1"	-	G 1 1/2"	G 1 1/2"	-	G 2"	G 2"	-	-	-	G 3"	-
	DIN Flange ⁴	DN15	-	DN 15	DN15	DN 20	-	DN25	DN 25	-	DN40	DN 40	-	DN50	DN 50	-	DN80	-	DN80	-
	ANSI Flange ⁴	1/2"	-	1/2"	1/2"	1/2"	-	1"	1"	-	1 1/2"	1 1/2"	-	2"	2"	-	3"	-	3"	-
K	SMS3017/ISO2037 ³	-	-	DN 25	-	-	DN 25	-	-	DN 38	-	-	DN 50	-	-	DN 70	-	-	-	-
	DIN 118513 ³	-	-	DN25	-	-	DN 25	-	-	DN 40	-	-	DN 50	-	-	DN 65	-	-	-	DN 80
	DIN & ANSI Flange	235 9,25	-	-	285 11,22	-	-	375 14,76	-	-	450 17,72	-	-	550 21,65	-	-	700 27,56	-	700 27,56	-
	BSP	107 4,21	-	-	155 6,10	-	-	203 7,99	-	-	270 10,63	-	-	352 13,86	-	-	450 17,72	-	450 17,72	-
L	Other Connections ³	-	180 7,09	-	-	210 8,27	-	-	300 11,81	-	-	350 13,78	-	-	450 17,72	-	-	-	600 23,62	
	DIN Flange ⁴	14 0,55	-	17,3 0,68	14 0,55	22,9 0,90	-	26 1,02	29,7 1,17	-	45,4 1,79	44,3 1,74	-	51,4 2,02	56,3 2,22	-	80 3,15	-	80 3,15	-
	ANSI Flange ⁴	14 0,55	-	17,3 0,68	14 0,55	22,7 0,89	-	26 1,02	30,1 1,19	-	45,4 1,79	42,8 1,69	-	51,4 2,02	54,8 2,16	-	80 3,15	-	80 3,15	-
	SMS3017/ISO2037 ³	-	-	22,6 0,89	-	-	22,6 0,89	-	-	35,6 1,40	-	-	49 1,93	-	-	66,8 2,63	-	-	-	-
P	DIN 118513 ³	-	-	20 0,79	-	-	26 1,02	-	-	38 1,50	-	-	50 1,97	-	-	66 2,60	-	-	-	81 3,19
	X	36 1,42	-	-	90,3 3,56	-	-	113,8 4,48	-	-	167,6 6,60	-	-	226,3 8,91	-	-	297 11,69	-	-	
	Y	86,8 3,42	-	-	100,3 3,95	-	-	135,6 5,34	-	-	167,6 6,60	-	-	226,3 8,91	-	-	297 11,69	-	-	
	Z	M4x20	-	-	M4x20	-	-	M8x22 M8x30 PE	M8x25	-	M8x22 PTFE M8x22 PE	M8x25	-	M8x22 PTFE M8x30 PE	M8x25	-	M8x22 PTFE	M8x25	-	

1 = PE / PTFE 3 = SMS3017/ISO2037, DIN 11851, SMS1 145, BS 4825 (RTJ) 5 = Only sanitary pumps
 2 = SS / ALU 4 = Only plastic and metal pumps * = Dimensions for other connections in IOM Manual

Dampener code

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

DT - Tapflo active pulsation dampener

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

For Tapflo pump size (l/min)

Material of wetted dampener housing:
A = aluminium **S** = stainless steel AISI316L
P = polyethylene **T** = PTFE

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

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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 directly monitors the discharge fluid pressure against its set point stopping the pump if the media pressure increases above the set point (closed valve) or falls below the set point (dry-run) dependant on configuration.

Applications of Guardian systems

Barrier Protection

Barrier pumps (TB) have an additional set of diaphragms used to back-up 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

Control systems

Pneumatic level control



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

Pneumatic batch control



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).

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.

Life counter TPUK-LC

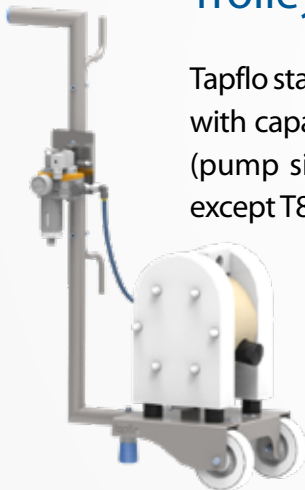


Tapflo's life counter simply connects to the AODD pump air exhaust, representing the strokes on the LCD display. Compact, easy to use and cost effective this simple system will allow you to control servicing and implement a preventative maintenance routine.

Mobile solutions for pump units and systems

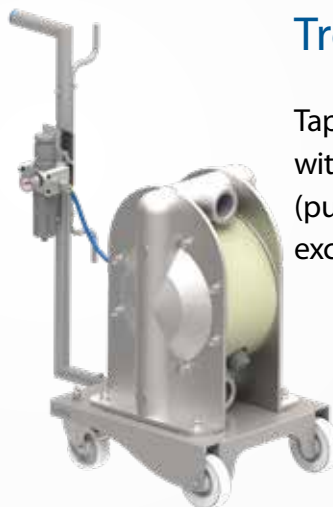
Mobile pump units are found as the best solution for the users of spread technological processes. The portability of the Units allows easy movement to various locations. This means almost limitless application.

Trolley S | 2-wheel



Tapflo standard AODD pumps with capacity up to 125 l/min (pump sizes: up to 100/120, except T80),

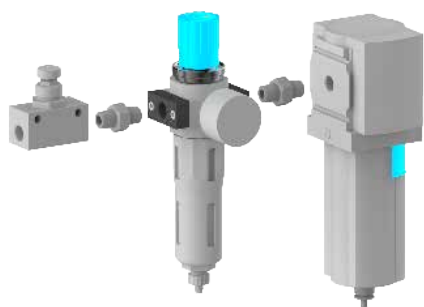
Trolley M | 4-wheel



Tapflo standard AODD pumps with capacity up to 570 l/min (pump sizes: up to 400/420, except T425),

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

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 in sizes 1/8" up to 3/4".

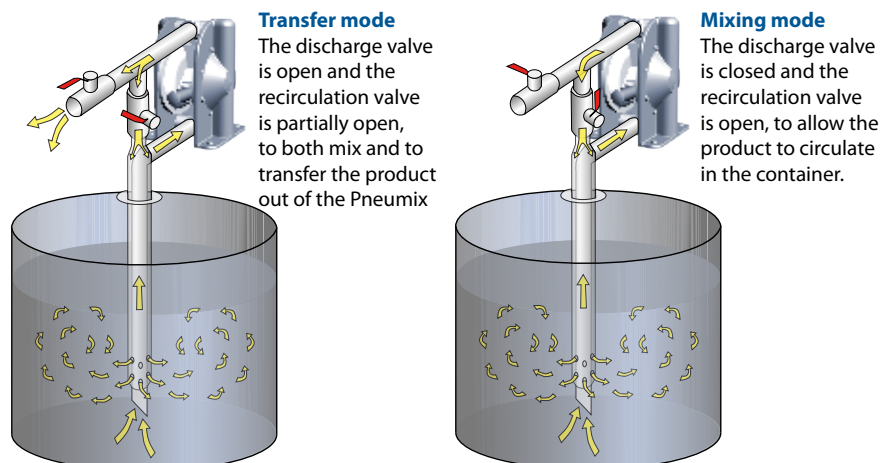
Pneumixer



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



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