

# 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



EN 10204



AT



### ■ 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

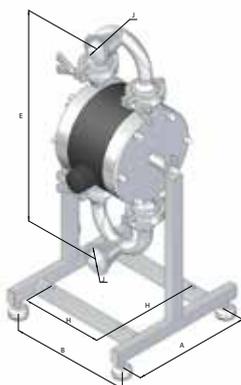
The EHEDG (European Hygienic Engineering & Design Group) certificate is your guarantee that the design is according to the hygienic guidelines. Furthermore the pump is clean ability tested, which means bacteria does not grow in the pump after cleaning and draining procedure.



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

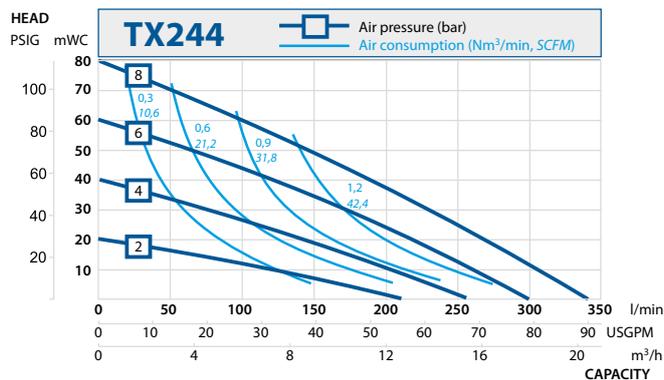
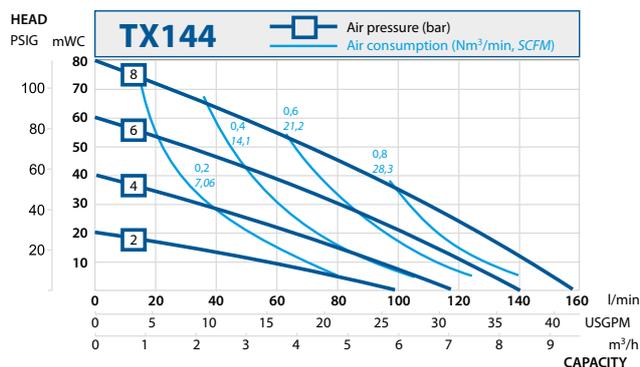
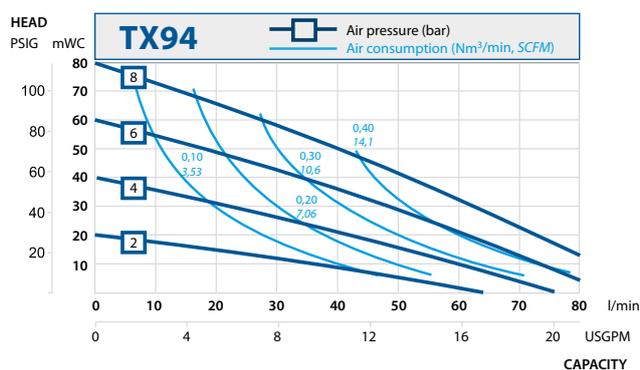
## Technical data

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

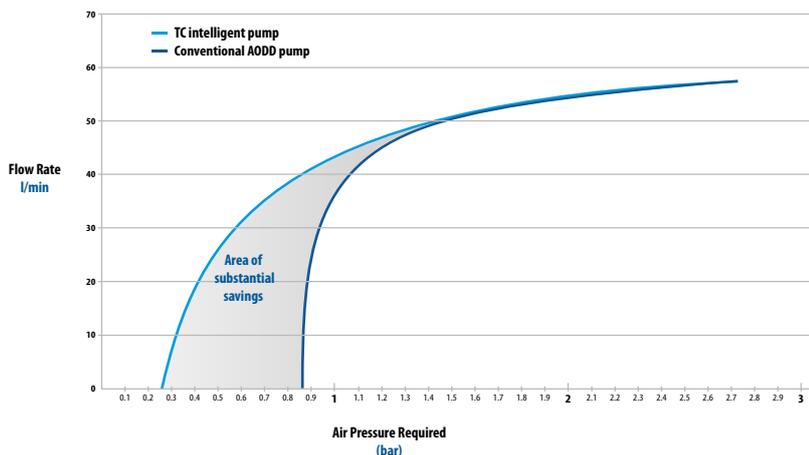
**✓ Electrical feedback**  
signal allows for external monitoring of the pump process.

**✓ 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

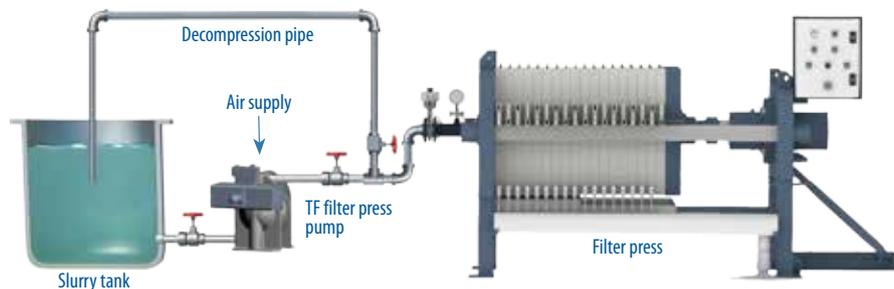
Metal pumps: TF 70 | TF 120 | TF 220 | TF 420

## ■ 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?

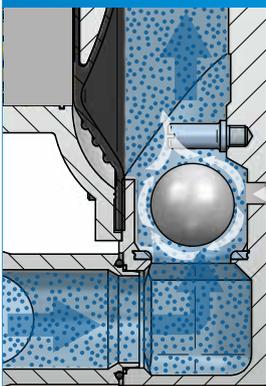
The powder transfer pump will handle different types of process powders, with specific weight from 80 up to 720 kg/m<sup>3</sup> dry weight. Generally, if the powder does not clump together when squeezed in hand, the Tapflo powder transfer pump can be used successfully. A few examples of common powders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



EN 10204



AT



### 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.**

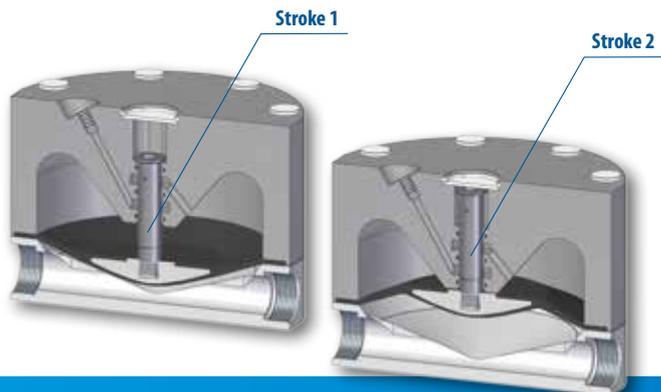


EN 10204

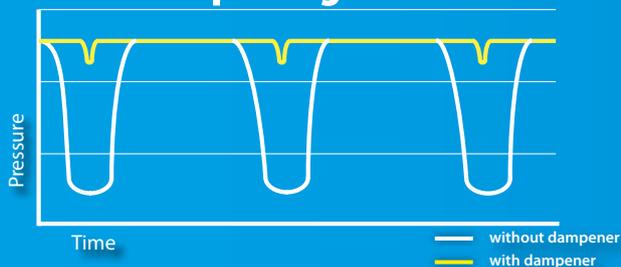


## Working principle

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

# 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),

## 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

