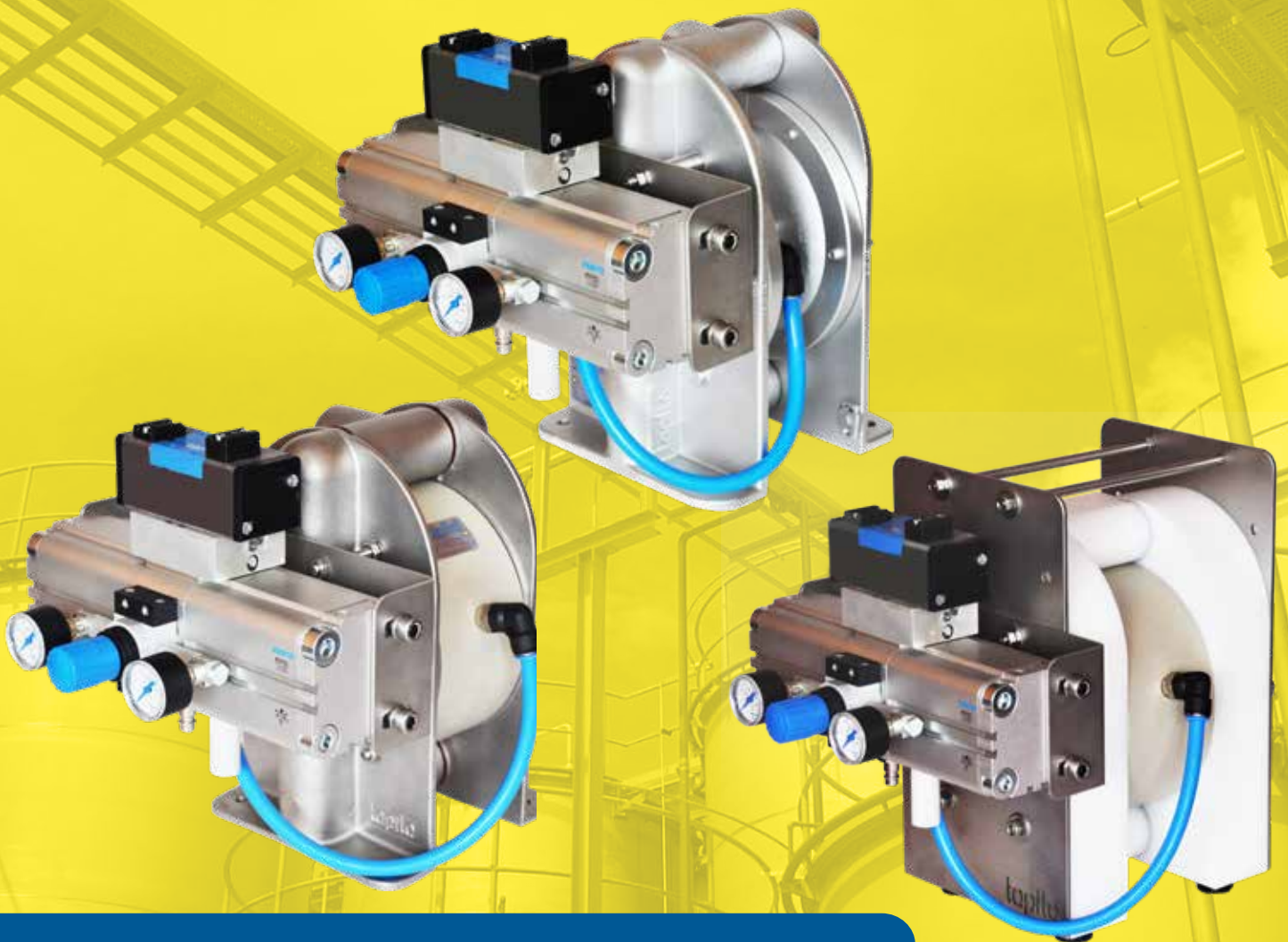


tapflo®

# FILTER PRESS PUMPS

2019 | 1



» All about your flow™

[www.tapflo.com](http://www.tapflo.com)

## All about your flow™

*Since 1980, we have taken pride in delivering a wealth of knowledge and passion for pumps to the industry, whilst supplying a wide range of premium products for various industrial applications. We deliver the best solutions and support for a range of Hygienic, Sanitary and Industrial applications, while going above and beyond to provide excellent service to our customers worldwide.*

Tapflo is a family-owned company, founded in Kungälv, Sweden. Over the years, the company has developed into a global Tapflo Group with branches and distributors present in nearly every region of the world.

Our solutions are designed and manufactured in Europe and distributed globally to offer the best service and flow solutions to our customers for a variety of applications.

Our values of Commitment, Quality and Simplicity are reflected both in our product and business approach.



**For fast and flexible service and high-quality products readily available worldwide, choose Tapflo.**

## Quality commitment

At Tapflo we are simply committed to quality. As a result, our production standards, as well as products quality, comply with various globally recognised certification and quality control standards. The Tapflo manufacturing process is certified according to ISO 9001:2015, confirming that our processes are appropriate, effective, customer-focused and continuously improved.



## Tapflo values

Our culture is concluded in Our values

### Commitment

We are different from our competitors because of our willingness to exceed the customers' expectations, move fast and be flexible. Our culture is based on the spirit of togetherness, enthusiasm and integrity. We come from all over the world but we share the same values and we respect each other. We are committed.

### Quality

We understand that the quality in our work is never better than the weakest link, that's why we focus on every small detail. We share a common passion for continuously finding more efficient and effective ways to provide value to our customers. As a manufacturer we have control of the complete process both in terms of our products and the way we operate internally. That is why we manufacture the highest quality pumps in our segment.

### Simplicity

We have a saying, "Simple is art" which means we try to find smooth and uncomplicated solutions in everything. By keeping it simple we can focus on the essential, like designing uncomplicated pumps with few components. For us it is a key to success; strive to simplify what is complex.

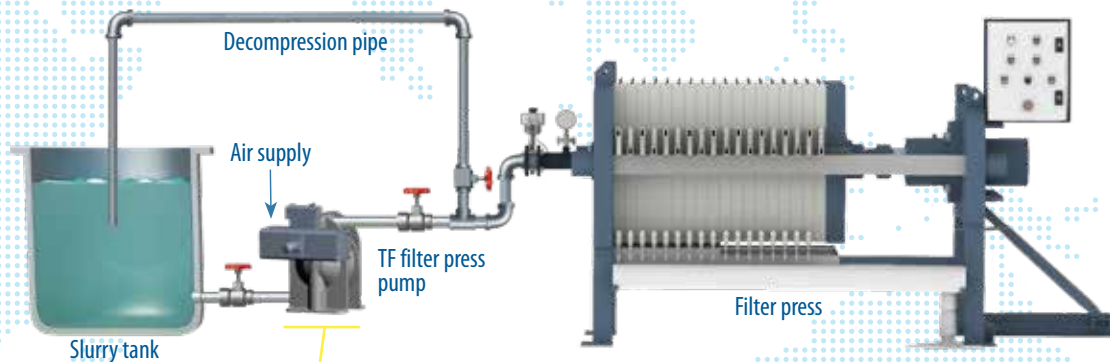
# Compact station for feeding filter presses

## Features & Benefits

- ✓ **Optimal pressure amplification**  
The output pressure can be regulated up to 2:1 of input pressure
- ✓ **Plug & Play**  
The pressure booster is mounted directly on the pump making it a small and compact unit that can be assembled on the filter press
- ✓ **Simple operation principle**  
Due to its working principle the TF pump does not require any automation nor complicated safety features for proper operation
- ✓ **Robust design**  
Best durability thanks to balanced diaphragms and high pressure pump concept
- ✓ **Special design**  
Using of reinforcement plates, pinscrews and a hybrid air valve ensures reliable and maintenance free operation under high pressure
- ✓ **Diversity**  
All Tapflo pumps can be supplied with a booster making the range appropriate for almost any application

## The Installation

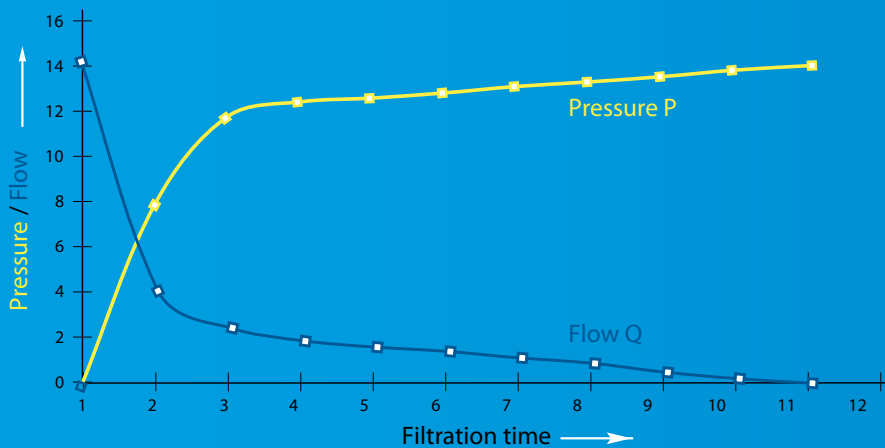
Adding a pump to an existing filter press was never such easy. The pump is already equipped with a pressure booster, manometers, regulation knob and all essential hoses and fittings.



## Working principle

The pump is driven by compressed air. The two diaphragms are connected by a diaphragm shaft and pushed back and forth by alternately pressurizing the air chambers behind the diaphragms using an automatically cycling air valve system. The only difference between TF and standard AODD pump is that the pump is not supplied with air directly but through pressure booster. The air supply is connected to port ① in booster. The regulation knob ② allows to adjust the amplification level up to 2:1 of input pressure. The manometers ③ show current settings. The pressure builds up inside the booster and when it reaches the desired output pressure it is released to the pump inlet ④.

## Typical filtration curve of a chamber filter press



At the beginning of slurry transfer to the filter press the pump operates with high flow but low pressure as the chamber of the filter press is empty.

Over time, when the filter press is filled, solids block the filter orifices therefore pressure builds up and simultaneously flow rate decreases gradually.

At the end, when the filter is filled, flow is reduced to zero (the pump stops) and pressure is retained thus compressing the filter cake.

## Components

### Air valve



The TF series is equipped with a special, hybrid air valve comprising of a brass body and PET cylinder. The cylinder is made of a light material therefore it does not damage the air valve housing and the pump center body at high pressures.

### Diaphragms



The composite design of Tapflo diaphragm makes it very durable even at higher operating pressures. Inside there is a reinforcement net and light metal core making it ideal for continuous heavy duty service. The face of the diaphragm is completely smooth so no metal parts come into contact with the pumped liquid and there is no leakage through it.

### Reinforcements



All plastic TF pumps are equipped with stainless steel reinforcement plates to provide better rigidity of the pump making it more robust. To enhance stability even further, the plates are higher than the pump to support the discharge side of the pump. Aluminium pumps are screwed together by means of pinscrews instead of standard screws.

### Ball check valves

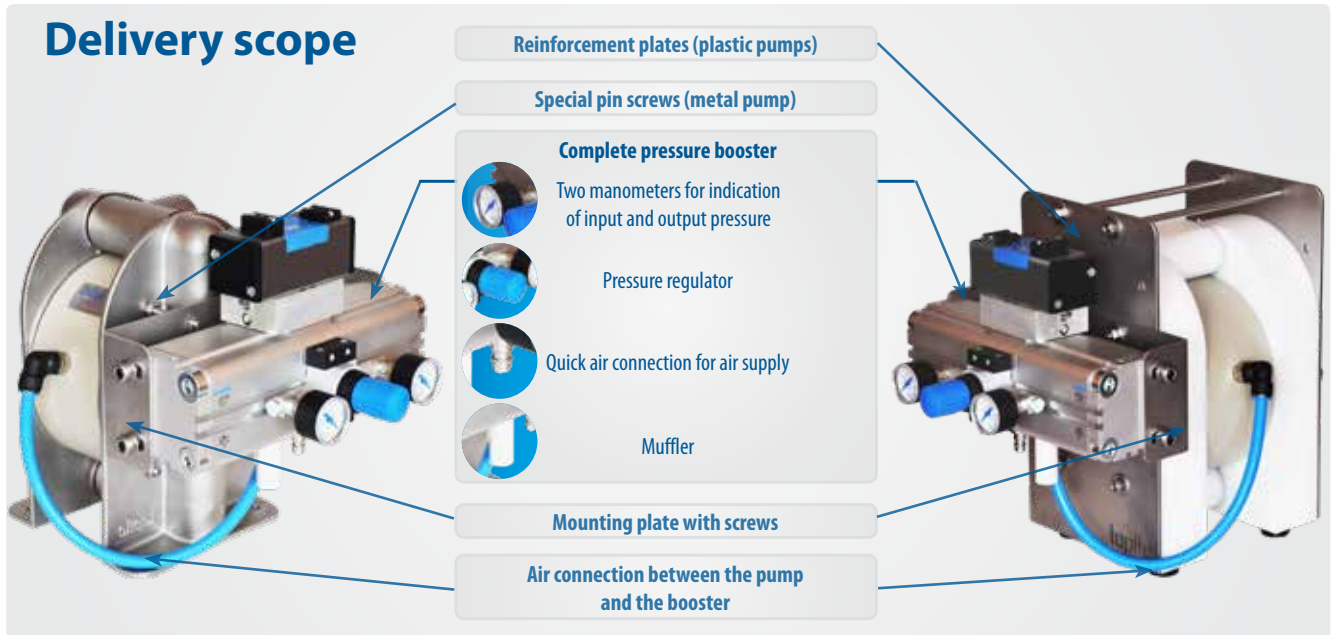


Tapflo TF pump is fitted with four check valves, making sure that the liquid is transferred in the right direction through the pump. The valve is of ball type, the simplest and reliable valve design. It has a good sealing capability and is easy to keep clean and to replace if necessary. For better durability, the valve balls and valve seats can be manufactured in polyurethane or AISI 316L stainless steel.



New standard for reinforcement plates and booster holders for TF pump series

## Delivery scope



## Complementary products

### DTF dampener



### Air treatment system

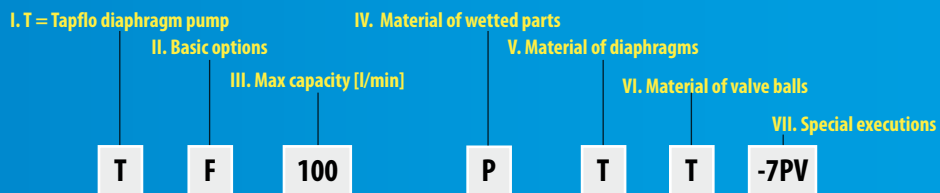


Our offer consists also of Tapflo active pulsation dampener prepared to work under higher pressure. The pulsation dampener is the most effective way to remove pressure variations on the discharge of the pump ensuring a stable and continuous flow into the pipeline. In the same way as with the pump, the plastic dampener is reinforced on both side by metal plates to ensure better rigidity of the whole assembly.

To ensure best air quality and therefore longest life of products, Tapflo offers a complete air treatment system. It can consist of the following devices:

- Filter regulator
- Needle valve
- Water separator

## TF Pump Code



**I. T = Tapflo diaphragm pump**

**II. Basic options:**

- B = Backup diaphragm pump
- D = Drum pump
- F = Filter-press pump
- T = Twin inlet/outlet pump
- X = ATEX approved, group II, cat. 2

**IV. Material of wetted metal parts:**

- P = PE
- T = PTFE
- S = Stainless steel AISI316L
- A = Aluminium
- C = Cast Iron

**V. Material of diaphragms:**

- E = EPDM
  - N = NBR (nitrile rubber)
  - T = PTFE
  - B = PTFE TFM 1705b
  - V = FKM (T50 and T70 only)
- VI. Material of valve balls:**
- E = EPDM
  - N = NBR (nitrile rubber)
  - T = PTFE
  - S = AISI 316 stainless steel
  - P = PU (polyurethane)
  - K = Ceramic
  - V = FKM
  - B = PTFE TFM 1635

**VII. Special executions:**

- 1 = Optional in/outlet material
- 2 = Valve seat insert
- 3 = Optional connection type
- 4 = Backup diaphragm system configuration
- 5 = Other special executions
- 6 = Optional material of centre body
- 7 = Optional material of air valve
- 8 = Optional material of pos. 18 seals
- 9 = Optional material of housing pin screws
- 11 = Housing reinforcement plates
- 13 = Twin in-/outlet options
- 14 = Optional pump feet
- 19 = Filter press pumps special options

# Performance

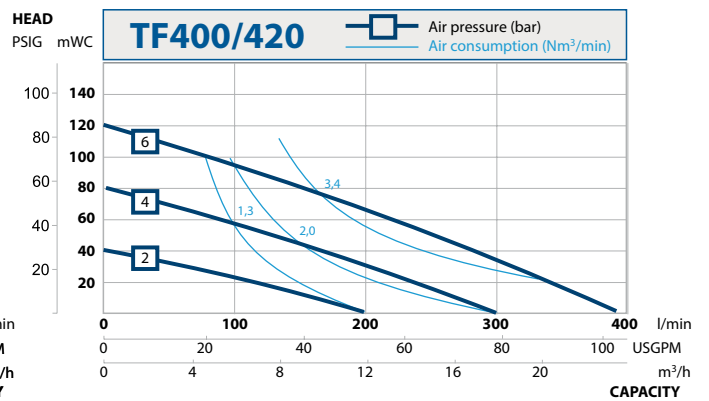
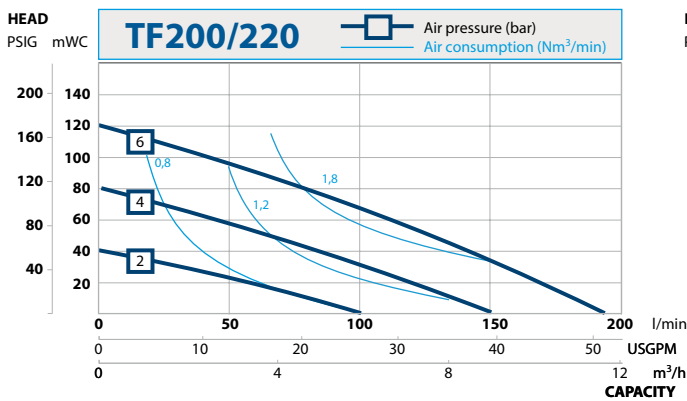
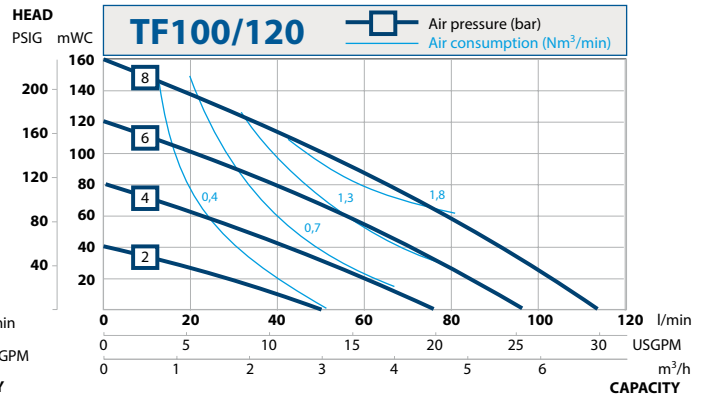
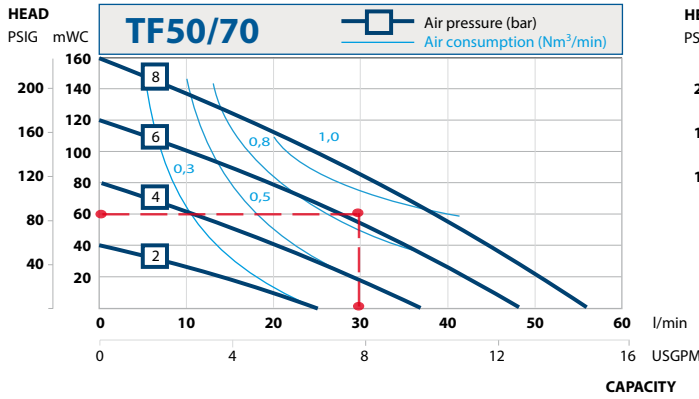
The performance curves are based on water at 20 °C. Other circumstances might change the performance.

## Example:

A flow of 30 liters/minute is desired. The discharge pressure is calculated to 60 mWC.

We choose a TF50 pump.

It requires air pressure of 6 bar and will consume approximately 0.80 Nm<sup>3</sup> of air per minute.



| Technical data                       | Pump size   |            |             |              |
|--------------------------------------|-------------|------------|-------------|--------------|
|                                      | TF50        | TF100      | TF200       | TF400        |
| Max capacity* [l/min] / [US GPM]     | 60 / 15.8   | 125 / 33   | 330 / 87    | 570 / 150    |
| Volume per stroke** [ml] / [cu in]   | 87.5 / 5.34 | 280 / 17.1 | 933 / 56.9  | 2300 / 140.3 |
| Max discharge pressure [bar] / [psi] | 16 / 232    | 16 / 232   | 12 / 174    | 12 / 174     |
| Max air pressure [bar] / [psi]       | 8 / 116     | 8 / 116    | 6 / 87      | 6 / 87       |
| Max suction lift dry*** [m] / [Ft]   | 2.5 / 8     | 3.5 / 11   | 4 / 13      | 4 / 13       |
| Max suction lift wet [m] / [Ft]      | 8 / 26      | 8 / 26     | 8 / 26      | 8 / 26       |
| Max size of solids ø in [mm] / [in]  | 4 / 0.16    | 6 / 0.24   | 10 / 0.39   | 15 / 0.59    |
| Max temp. pump in PE [°C] / [°F]     | 70 / 158    | 70 / 158   | 70 / 158    | 70 / 158     |
| Max temp. pump in PTFE [°C] / [°F]   | 100 / 212   | 100 / 212  | 100 / 212   | 100 / 212    |
| Weight of pump in PE [kg] / [lb]     | 6 / 16.08   | 12 / 32.15 | 27 / 72.34  | 49 / 131.28  |
| Weight of pump in PTFE [kg] / [lb]   | 9 / 19.84   | 19 / 50.91 | 47 / 103.62 | 95 / 254.53  |

| Technical data                            | Pump size   |            |            |              |
|---|-------------|------------|------------|--------------|
|   | TF70        | TF120      | TF220      | TF420        |
| Max capacity* [l/min] / [US GPM]          | 78 / 20     | 158 / 41   | 330 / 87   | 570 / 150    |
| Volume per stroke** [ml] / [cu in]        | 87.5 / 5.34 | 280 / 17.1 | 933 / 56.9 | 2300 / 140.3 |
| Max discharge pressure [bar] / [psi]      | 16 / 232    | 16 / 232   | 14 / 203   | 14 / 203     |
| Max air pressure [bar] / [psi]            | 8 / 116     | 8 / 116    | 6 / 87     | 6 / 87       |
| Max suction lift dry*** [m] / [Ft]        | 3 / 9.8     | 4 / 13     | 4 / 13     | 4 / 13       |
| Max suction lift wet [m] / [Ft]           | 8 / 26      | 8 / 26     | 8 / 26     | 8 / 26       |
| Max size of solids ø in [mm] / [in]       | 4 / 0.16    | 6 / 0.24   | 10 / 0.39  | 15 / 0.59    |
| Max temperature with EPDM/NBR [°C] / [°F] | 80 / 176    | 80 / 176   | 80 / 176   | 80 / 176     |
| Max temperature with PTFE [°C] / [°F]     | 110 / 230   | 110 / 230  | 110 / 230  | 110 / 230    |
| Weight in aluminium [kg] / [lb]           | 6 / 16      | 9 / 24     | 20 / 54    | 35 / 94      |
| Weight in cast iron [kg] / [lb]           | 11 / 30     | 18 / 48    | 45 / 121   | 81 / 217     |
| Weight in AISI 316 [kg] / [lb]            | 8 / 21      | 17 / 46    | 39 / 105   | 69 / 185     |

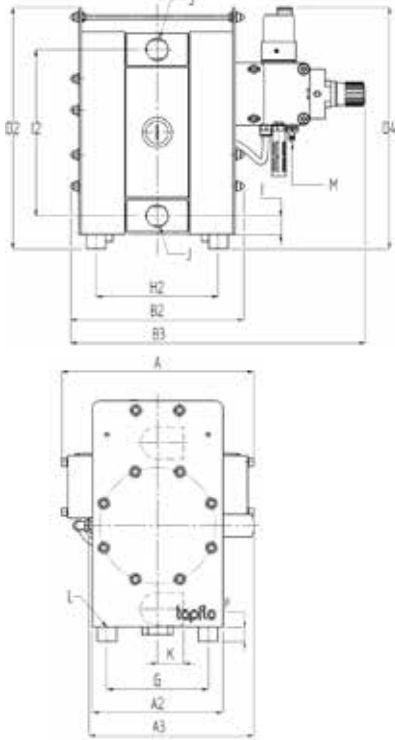
\* = Recommended flow is half of the max flow, i.e. recommended flow for a T50 is 30 l/min (7.9 US GPM)

\*\* = Based on pumps with EPDM diaphragms. Pumps with PTFE diaphragms have about 15% less volume.

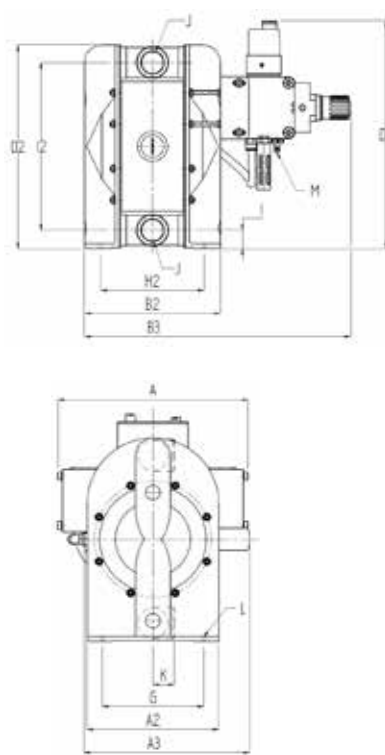
\*\*\* = With stainless steel valve balls, other materials may reduce suction. Please consult us in this matter.

# Technical data

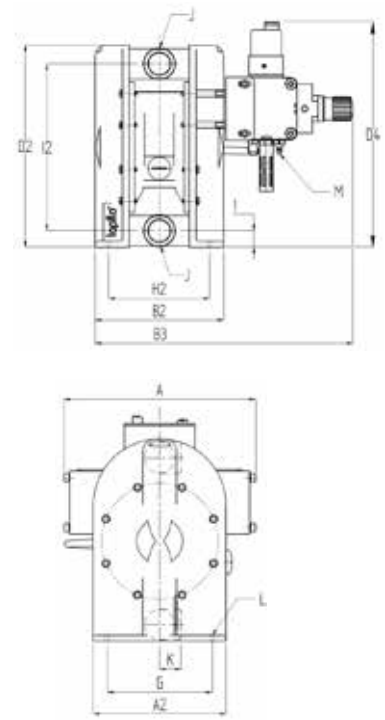
## Plastic pumps



## Stainless steel pumps



## Aluminium/cast iron pumps



| DIM | PLASTIC PUMP SIZE |              |              |              |
|-----|-------------------|--------------|--------------|--------------|
|     | 50                | 100          | 200          | 400          |
| A   | 172               | 319          | 398          | 398          |
|     | 6.77              | 12.56        | 15.67        | 15.67        |
| A2  | 150               | 200          | 270          | 350          |
|     | 5.91              | 7.87         | 10.63        | 13.78        |
| A3  | 167               | 274          | 341          | 405          |
|     | 6.57              | 10.79        | 13.43        | 15.94        |
| B2  | 196               | 260          | 360          | 436          |
|     | 7.72              | 10.24        | 14.17        | 17.17        |
| B3  | 276               | 444          | 620          | 691          |
|     | 10.87             | 17.48        | 24.41        | 27.20        |
| D2  | 263               | 364          | 500          | 610          |
|     | 10.35             | 14.33        | 19.69        | 24.02        |
| D3  | 343               | 485          | 630          | 765          |
|     | 13.50             | 19.09        | 24.80        | 30.12        |
| D4  | 352               | 351          | 501          | 583          |
|     | 13.86             | 13.82        | 19.72        | 22.95        |
| F   | 15                | 15           | 30           | 30           |
|     | 0.59              | 0.59         | 1.18         | 1.18         |
| G   | 116               | 140          | 210          | 290          |
|     | 4.57              | 5.51         | 8.27         | 11.42        |
| H2  | 130               | 156          | 254          | 322          |
|     | 5.12              | 6.14         | 10.00        | 12.68        |
| I   | 20                | 28           | 38           | 48           |
|     | 0.79              | 1.10         | 1.50         | 1.89         |
| I2  | 190               | 252          | 345          | 440          |
|     | 7.48              | 9.92         | 13.58        | 17.32        |
| J   | 1/2"              | 1"           | 1 1/2"       | 2"           |
|     | 1/2               | 1            | 1 1/2        | 2            |
| K   | 25                | 38           | 54           | 70           |
|     | 7.48              | 9.92         | 13.58        | 17.32        |
| L   | M8x20             | M8x20        | M8x20        | M8x20        |
|     | M8x20             | M8x20        | M8x20        | M8x20        |
| M   | G1/8" / DN10      | G1/4" / DN10 | G1/2" / DN10 | G1/2" / DN10 |
|     | G1/8 / DN10       | G1/4 / DN10  | G1/2 / DN10  | G1/2 / DN10  |

| DIM | STAINLESS STEEL PUMP SIZE |              |              |              |
|-----|---------------------------|--------------|--------------|--------------|
|     | 70                        | 120          | 220          | 420          |
| A   | 172                       | 319          | 398          | 398          |
|     | 6.77                      | 12.56        | 15.67        | 15.67        |
| A2  | 150                       | 200          | 272          | 352          |
|     | 5.91                      | 7.87         | 10.71        | 13.86        |
| A3  | 160                       | 239          | 342          | 389          |
|     | 6.30                      | 9.41         | 13.46        | 15.31        |
| B2  | 156                       | 205          | 282          | 347          |
|     | 6.14                      | 8.07         | 11.10        | 13.66        |
| B3  | 253                       | 407          | 560          | 624          |
|     | 9.96                      | 16.02        | 22.05        | 24.57        |
| D2  | 229                       | 309          | 422          | 529          |
|     | 9.02                      | 12.17        | 16.61        | 20.83        |
| D4  | 165                       | 332          | 464          | 551          |
|     | 6.50                      | 13.07        | 18.27        | 21.69        |
| G   | 116                       | 160          | 210          | 280          |
|     | 4.57                      | 6.30         | 8.27         | 11.02        |
| H2  | 129                       | 158          | 214          | 284          |
|     | 5.08                      | 6.22         | 8.43         | 11.18        |
| I   | 19                        | 27           | 38           | 44           |
|     | 0.75                      | 1.06         | 1.50         | 1.73         |
| I2  | 192                       | 257          | 348          | 443          |
|     | 7.56                      | 10.12        | 13.70        | 17.44        |
| J   | 1/2"                      | 1"           | 1 1/2"       | 2"           |
|     | 1/2                       | 1            | 1 1/2        | 2            |
| K   | 40                        | 52           | 70           | 80           |
|     | 1.57                      | 2.05         | 2.76         | 3.15         |
| L   | 8.5                       | 8.5          | 8.5          | 10           |
|     | 0.33                      | 0.33         | 0.33         | 0.39         |
| M   | G1/8" / DN10              | G1/4" / DN10 | G1/2" / DN10 | G1/2" / DN10 |
|     | G1/8 / DN10               | G1/4 / DN10  | G1/2 / DN10  | G1/2 / DN10  |

| DIM | ALUMINIUM / CAST IRON PUMP SIZE |              |              |              |
|-----|---------------------------------|--------------|--------------|--------------|
|     | 70                              | 120          | 220          | 420          |
| A   | 172                             | 319          | 398          | 398          |
|     | 6.77                            | 12.56        | 15.67        | 15.67        |
| A2  | 151                             | 200          | 275          | 356          |
|     | 5.94                            | 7.87         | 10.83        | 14.02        |
| B2  | 167                             | 198          | 267          | 342          |
|     | 6.57                            | 7.80         | 10.51        | 13.46        |
| B3  | 265                             | 405          | 542          | 637          |
|     | 10.43                           | 15.94        | 21.34        | 25.08        |
| D2  | 222                             | 302          | 418          | 539          |
|     | 8.74                            | 11.89        | 16.46        | 21.22        |
| D4  | 167                             | 331          | 467          | 559          |
|     | 6.57                            | 13.03        | 18.39        | 22.01        |
| G   | 116                             | 160          | 220          | 280          |
|     | 4.57                            | 6.30         | 8.66         | 11.02        |
| H2  | 129                             | 158          | 210          | 280          |
|     | 5.08                            | 6.22         | 8.27         | 11.02        |
| I   | 22                              | 27           | 34           | 47           |
|     | 0.87                            | 1.06         | 1.34         | 1.85         |
| I2  | 190                             | 252          | 346          | 448          |
|     | 7.48                            | 9.92         | 13.62        | 17.64        |
| J   | 1/2"                            | 1"           | 1 1/2"       | 2"           |
|     | 1/2                             | 1            | 1 1/2        | 2            |
| K   | 29                              | 33           | 45           | 80           |
|     | 1.14                            | 1.30         | 1.77         | 3.15         |
| L   | 10                              | 10           | 10           | 10           |
|     | 0.39                            | 0.39         | 0.39         | 0.39         |
| M   | G1/8" / DN10                    | G1/4" / DN10 | G1/2" / DN10 | G1/2" / DN10 |
|     | G1/8 / DN10                     | G1/4 / DN10  | G1/2 / DN10  | G1/2 / DN10  |

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## Tapflo products and services are available in 75 countries on 6 continents.

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

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