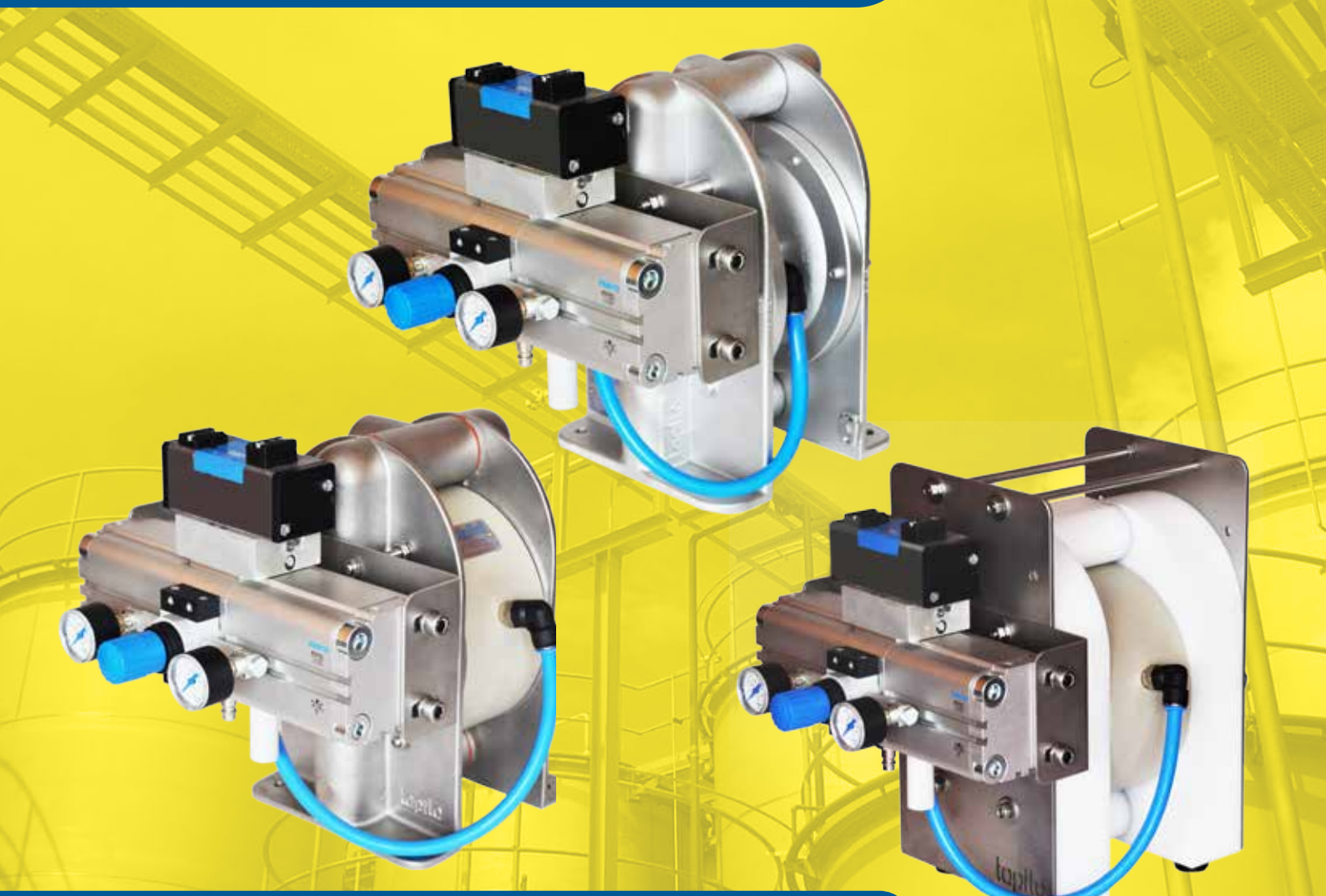
tapflo®

FILTER PRESS PUMPS

edition 2015 rev 1



All about your flow

www.tapflo.com

All about your flow. Everywhere.

Tapflo is a leading pump manufacturer with the ambition to provide a wide range of premium products for various industrial applications. Tapflo is represented by own companies and independent distributors in more than 60 countries spread over the world on 6 continents – products and spare parts are available worldwide. The headquarters are situated in Sweden.

tapflo 35 years 1980-2015

About Tapflo

Tapflo Group is an independent, Swedish, family owned, manufacturer and global supplier of Air operated diaphragm pumps, centrifugal pumps and other industrial process equipment.
The company was founded in Kungälv, Sweden in1980 and has since then been working with design and manufacture of thermoplastic, metal and sanitary series diaphragm pumps and also with complete range of centrifugal pumps and industrial equipment. After years of dynamic development the company evolved into Tapflo Group with worldwide operations.

Quality certified

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

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

Our values

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

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

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

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

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

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

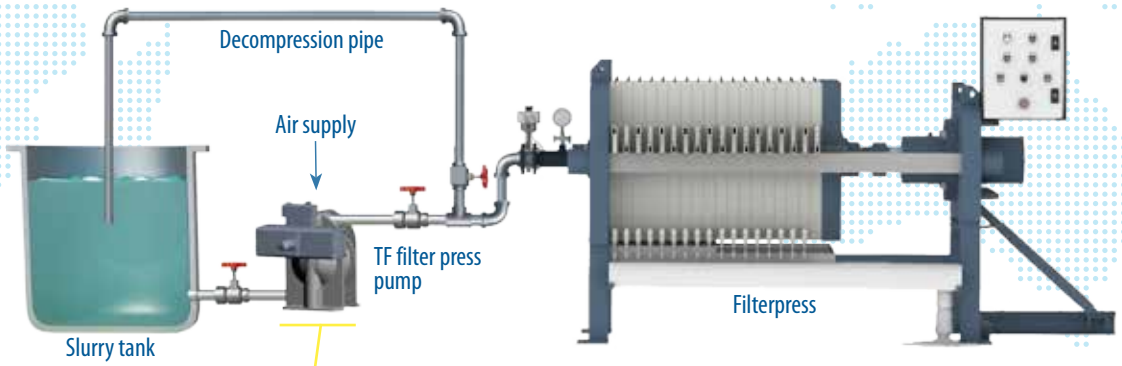
Robust design
Best durability thanks to balanced diaphragms and high pressure pump concept

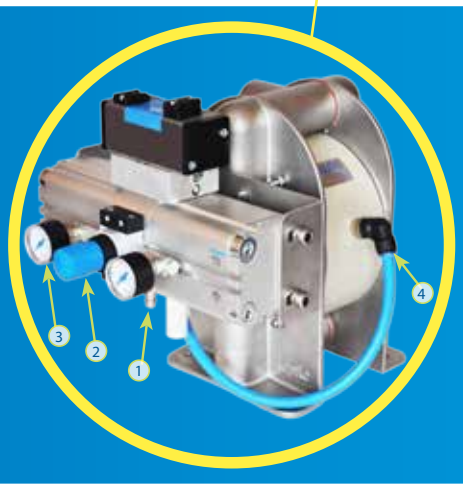
Special design
Using of reinforcement plates, pinscrews and a hybrid air valve ensures reliable and maintenance free operation under high pressure

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. **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.

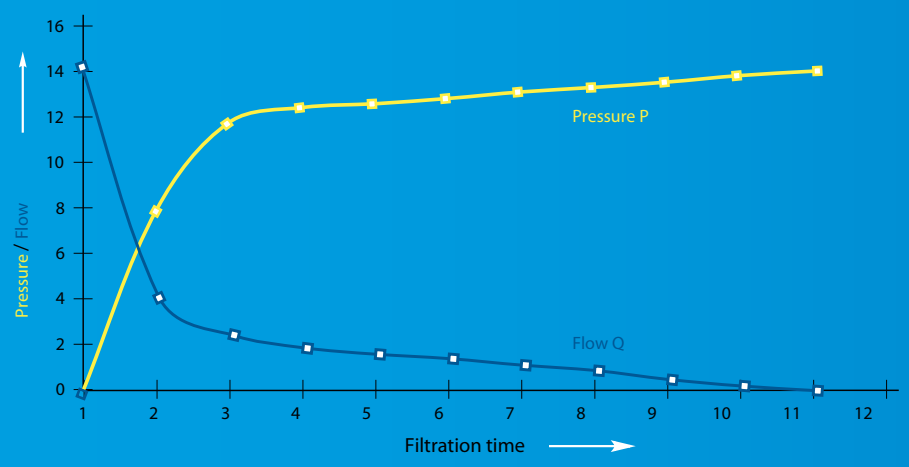




Working principle

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 in booster 1. 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 press 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

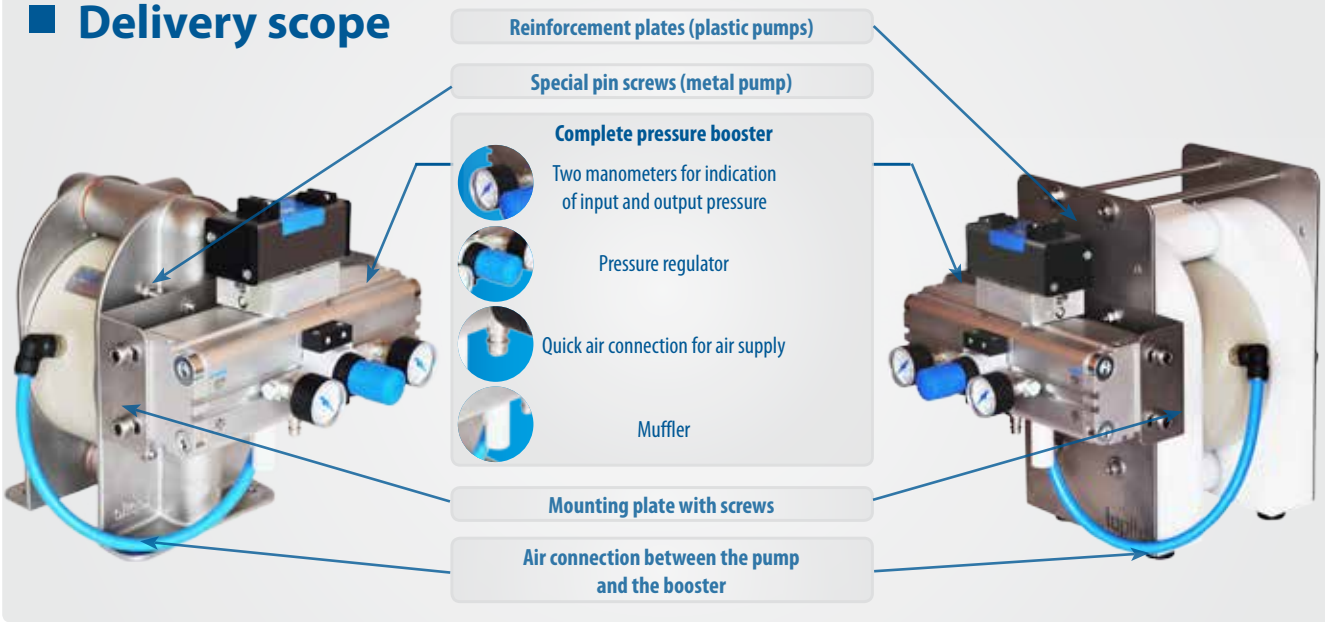
All plastic TF pumps are equipped with stainless steel reinforcement plates to provide better rigidness of the pump making it more robust. To enhance stability even further, the plates are higher than the pump to support the discharge side of the pump. Aluminum pumps are screwed together by means of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

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 continous 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 bester rigidness of the whole assembly.

Air treatment system

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
III. Max capacity [l/min]
IV. Material of wetted metal parts
V. Material of diaphragms
VI. Material of valve balls
VII. Special executions

T	F	100	P	T	T	-7PV

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

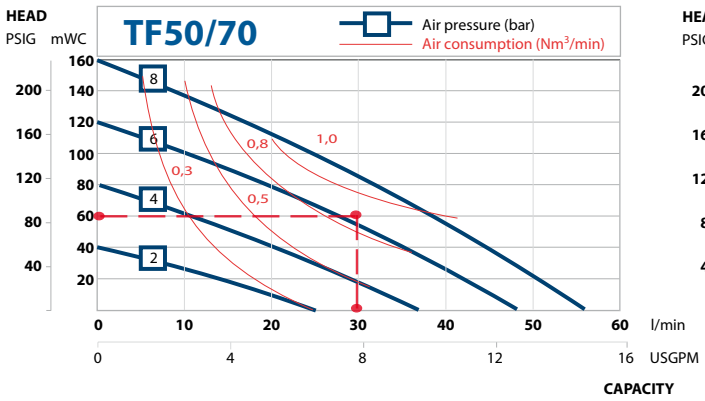
The performance curves are based on water at 20° C. Other circumstances might change the performance.

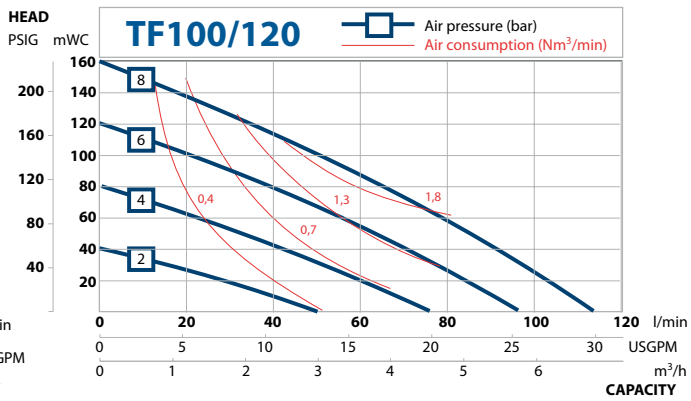
Example:

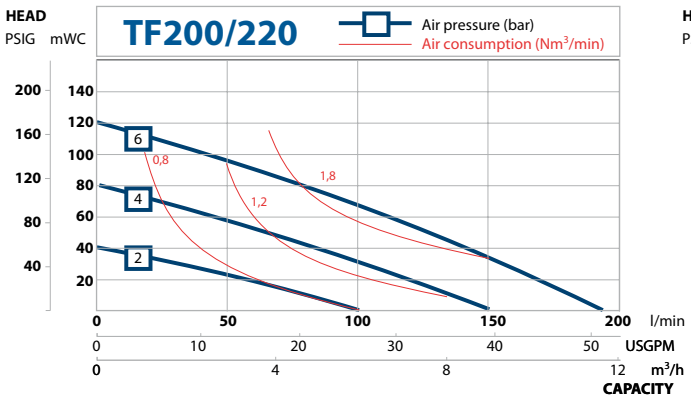
A flow of 30 liters/minute is desired. The discharge pressure is calculated to 60 mWC.

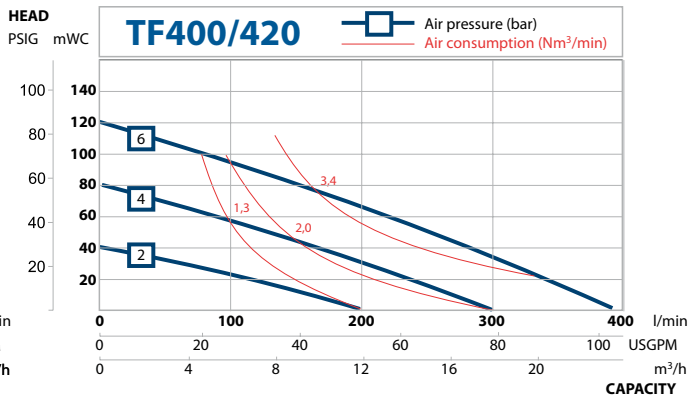
We choose a TF50 pump.

It requires an air pressure of 6 bar and will consume approximately 0.80 Nm³ of air per minute.









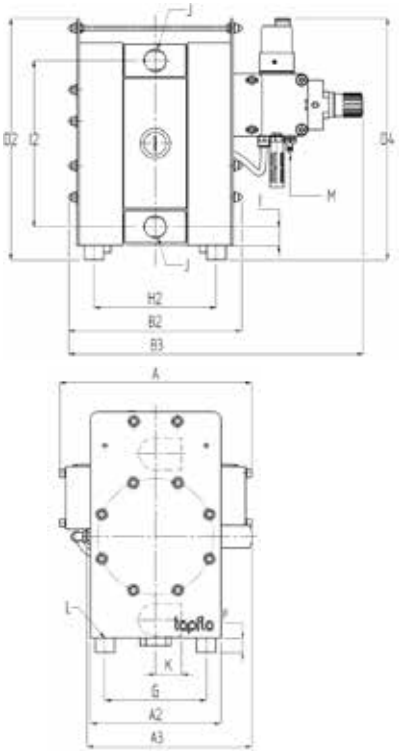
Technical data	Pump size			
	TF50	TF100	TF200	TF400
Max capacity* [l/min] / [US GPM]	60 / 15.8	125 / 33	330 / 87	570 / 150
Volume per stroke** [ml] / [cu in]	87.5 / 5.34	280 / 17.1	933 / 56.9	2300 / 140.3
Max discharge pressure [bar] / [psi]	16 / 232	16 / 232	12 / 174	12 / 174
Max air pressure [bar] / [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	12 / 174	12 / 174
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

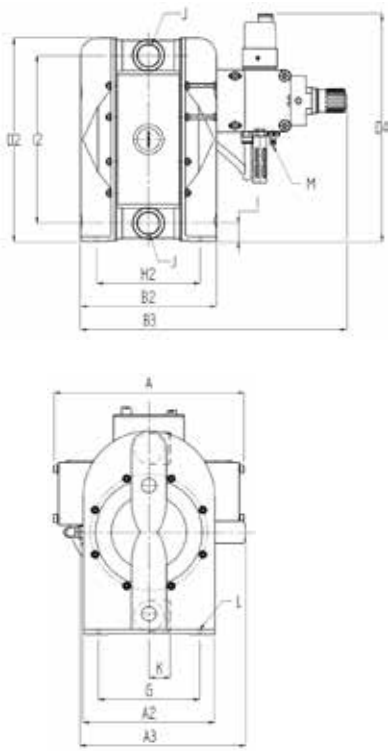
* = Recommended flow is half of the max flow, i.e. recommended flow for a T50 is 30 l/min (7.9 US GPM)
** = Based on pumps with EPDM diaphragms. Pumps with PTFE diaphragms have about 15% less vo¬lume.
*** = With stainless steel valve balls, other materials may reduce suction. Please consult us in this matter.

Technical data

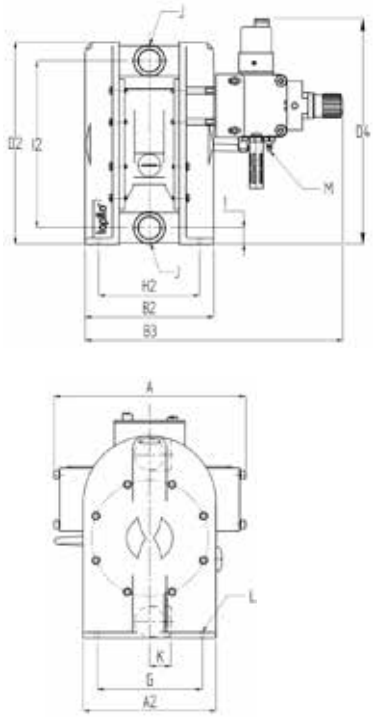
Plastic pumps



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 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

TAPFLO AB

Sweden

Filaregatan 4 | S-442 34 Kungälv

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

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

Tapflo products and services are available in 64 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.

AUSTRALIA | AUSTRIA | AZERBAIJAN | BELARUS | BELGIUM | BOSNIA | BRAZIL | BULGARIA | CHILE | CHINA | COLOMBIA | CROATIA | CZECH REPUBLIC | DENMARK | ECUADOR | ESTONIA | FINLAND | FRANCE | GREECE | GEORGIA | GERMANY | HONG-KONG | HUNGARY | INDIA | INDONESIA | IRAN | IRELAND | ISRAEL | ITALY | JAPAN | KAZAKHSTAN | LATVIA | LITHUANIA | MACEDONIA | MALAYSIA | MEXICO | MONTENEGRO | THE NETHERLANDS | NEW ZEALAND | NORWAY | POLAND | PORTUGAL | PHILIPPINES | ROMANIA | RUSSIA | SERBIA | SINGAPORE | SLOVAKIA | SLOVENIA | SOUTH AFRICA | SOUTH KOREA | SPAIN | SWEDEN | SWITZERLAND | SYRIA | TAIWAN | THAILAND | TURKEY | UKRAINE | UNITED ARAB EMIRATES | UNITED KINGDOM | USA | UZBEKISTAN | VIETNAM

Tapflo Group Companies

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

www.tapflo.com