

INTELLIGENT AIR OPERATED DIAPHRAGM PUMPS

2020 | 1





Ultra low start pressure pump starts at 0.3 bar (4.4 PSI)



Lower operational costs reduced air consumption



>> All about your flow

www.tapflo.com

All about your flow

We began our journey 40 years ago in Kungälv, a small town on the Swedish west coast, as a family company with an ambition to one day become a global player on the pump market.

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.

Over the years, the company has developed into a global Tapflo Group with branches and distributors present in nearly every region of the world.

One thing did not change - we are still a family company.

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, 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.







EN 10204

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.

Intelligent air operated diaphragm pumps

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)



Noise Reduction

ability to utilise lower air pressure reduces the noise of the pump.



Retrofit

Leap can be fitted to any existing Tapflo Air Operated Diaphragm Pumps.



Improved Lifespan

the TC series uses an air valve that has a significantly longer life expectancy over rubber seal technology.



Batch Dispensing

allowing the pump to automatically stop after the required volume has been dispensed.



Improved Maintenance

main air valve can be changed in under two minutes without the removal of the pump from the process line.



Electrical feedback

signal allows for external monitoring of the pump process.



Control Simplification

no need for an external pneumatic solenoid valve, reducing costs and simplifying control.



Dry Running

by analysing the frequency of pulses, the pump can analyse when it is running dry.



Dead Heading

as with dry running, the frequency of pulses can be monitored, alerting if the pump has a blockage.



Sustainable energy managementAchieve up to **70% energy savings**

Energy Savings

Tests undertaken to measure the performance of a standard pump against the new **TC intelligent pump** have resulted in an **energy saving of up to 70%**.

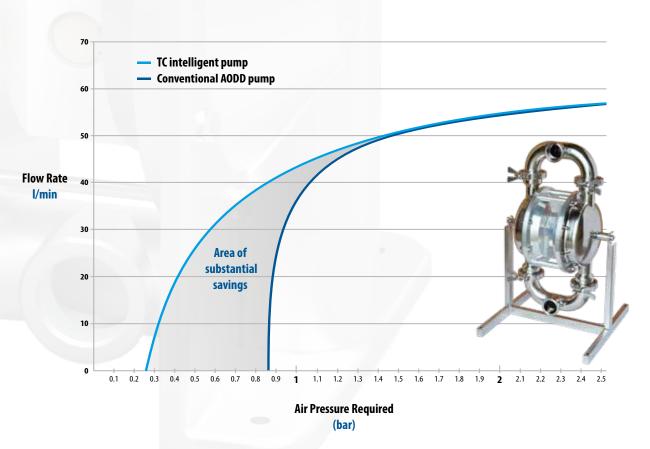
The extensive testing procedure has shown that the largest amount of energy required by a pump is used to overcome the resistance created by the pump itself. Another major issue is found in the mid-port scenario, wherein the attempt to save energy by turning down the air pressure to a much lower level causes the stall of the pump.



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.**

At 0.3 bar (4.4 Psi) a standard Tapflo T50 pump fitted with LEAP® Technology was already pumping at over 23 l/min, all other air pumps tested failed to even start.

Graph showing fluid flow against air pressure required



A new generation of diaphragm pump

The TC Intelligent pump can operate in two settings, Internal and External Pilot.

Internal Pilot

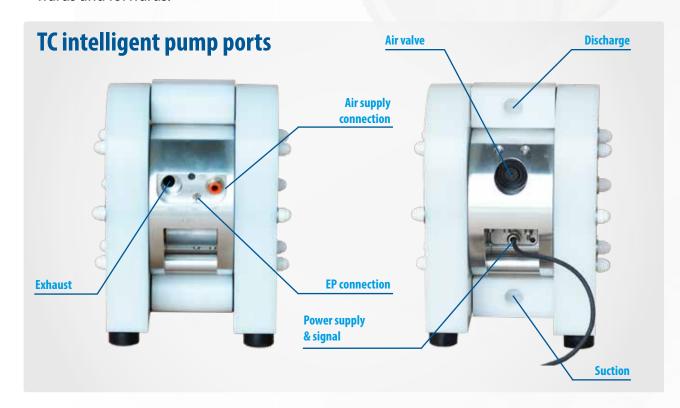
In standard conditions the pump runs with a single air supply from 0.3 bar, deriving air supply to the control module from the Internal Pilot - main air supply.

External Pilot

In some applications however, there may be a need to use the External Pilot - a separate (additional) air supply to the LEAP module.

The EP assists in moving the air valve in application of:

- **Extremely low pressure** it supports shifting of the air valve;
- **High pressure of 8 bar** to create an air cushion preventing the air valve from being fired backwards and forwards.

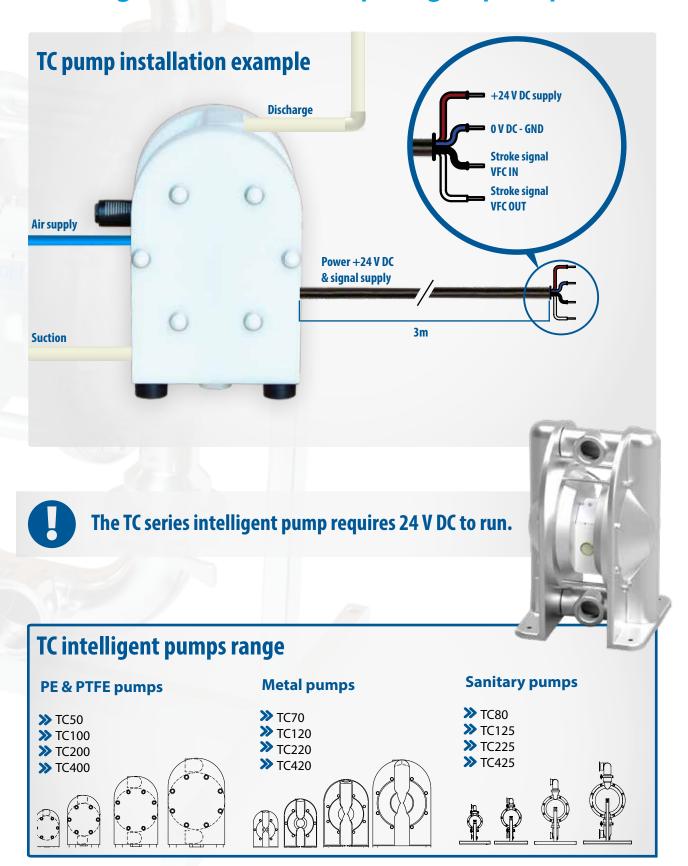


New air valve generation

The new generation TC lube free air valve is easily taken out for servicing without dismantling of the pump.



A new generation of diaphragm pump



Performance

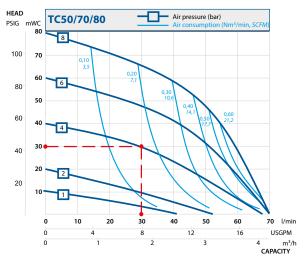
The performance curves are based on water at 20°C. Other circumstances might change the performance. See below how the capacity will change at different viscosities and suction lifts.

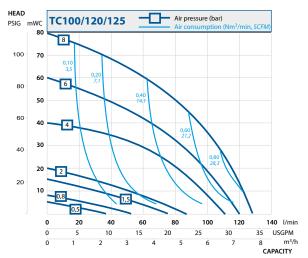
Performance curves

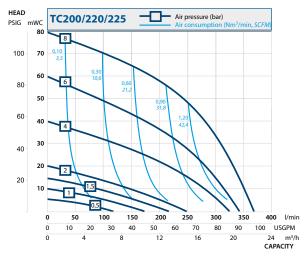
Example see the red line — — — —

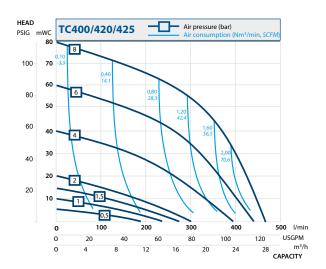
A flow of 30 litres/minute is desired. The discharge head is calculated to 30 mWC.

We choose a TC70. It requires an air pressure of 4 bar and will consume approximately 0.20 Nm³ air per minute.



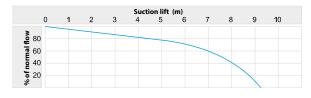




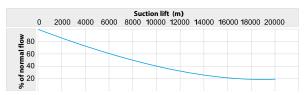


Capacity changes

Capacity changes at different suction lifts



Capacity changes at different viscosities



Performance curves are based on Metal series pumps. Should you need detailed performance curves for other executions please contact us.

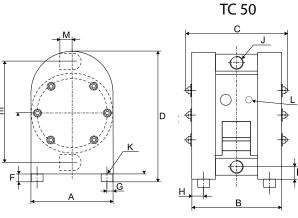
Changes reserved without notice

Dimensions & technical data

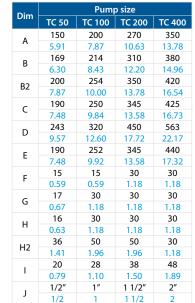
TC PE & PTFE pumps

Dimensions

PE pumps

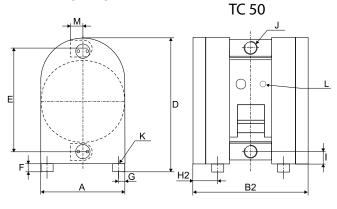


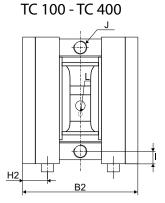
TC 100 - TC 400



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

PTFE pumps





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

M8x25

M8

1/4"

1/4

38

1.50

M8x25

M8

1/2"

54

2.13

M8x25

M8

1/2

1/2 70

2.76

M8x25

M8 1/4'

1/4

25

Technical data

Date	Pump size				
Data	TC 50	TC 100	TC 200	TC 400	
General characteristics					
*Max capacity (I/min) / (US gpm)	70 / 18.49	130 / 34.35	380 / 100.4	470 / 124.17	
**Volume per stroke (ml) / (cu in)	87.5 / 5.34	280 / 17.1	933 / 56.9	2300 / 140.3	
Max discharge pressure (bar) / (psi)	8/116	8/116	8/116	8/116	
Max air pressure (bar) / (psi)	8/116	8/116	8/116	8/116	
***Max suction lift dry (m) / (Ft)	2.5 / 8	3.5 / 11	4/13	4/13	
Max suction lift wet (m) / (Ft)	9/ 29.5	9/ 29.5	9/ 29.5	9/ 29.5	
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	
Min temperature (°C) / (°F)	-20 / -4	-20 / -4	-20 / -4	-20 / -4	
Weight					
TC pump in PE (kg) / (lb)	5,5 / 12	11/24	25/ 55	46/ 101	
TC pump in PTFE (kg) / (lb)	10/ 22	18 / 40	45/ 99	92 / 203	



^{* =} Recommended flow is half of the max flow, i.e. recommended flow for a TC100 is 50 l/min (13.2 US gpm)

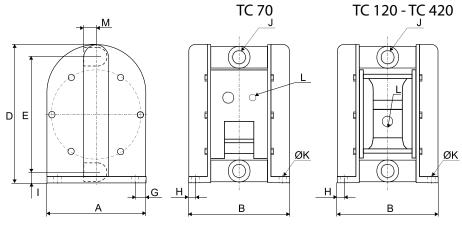
^{** =} The value is based on pumps with EPDM diaphragms. Pumps with PTFE diaphragms have about 15% less volume

^{*** =} This is max value with stainless steel valve balls, other valve ball materials may reduce the suction. Please consult us.

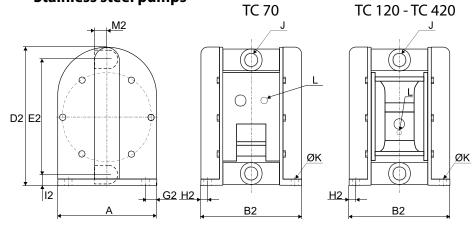
TC Metal pumps

Dimensions

Aluminium and cast iron pumps



Stainless steel pumps



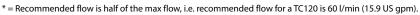
Dimensions in mm (where other is not indicated)
Dimensions in inch (where other is not indicated)

D'	Pump size				
Dim	TC 70	TC 120	TC 220	TC 420	
^	150	200	270	350	
Α	5.91	7.87	10.63	13.78	
_	168	195	265	342	
В	6.61	7.68	10.43	13.46	
D.O.	156	204	280	344	
B2	6.14	8.03	11.02	13.54	
_	229	302	412	537	
D	9.02	11.89	16.22	21.14	
D2	229	310	422	529	
D2	9.02	12.20	16.61	20.83	
Е	190	252	346	449	
E	7.48	9.92	13.62	17.68	
E2	192	257	348	442	
EZ	7.56	10.12	13.70	17.40	
G	17	20	25	35	
G	0.67	0.79	0.98	1.38	
G2	17	20	31	35	
	0.67	0.79	1.22	1.38	
Н	19	20	28	33	
п	0.75	0.79	1.10	1.30	
H2	13	23	34	32	
112	0.51	0.91	1.34	1.26	
- 1	20	27	34	48	
'	0.79	1.06	1.34	1.89	
12	19	27	36	45	
12	0.75	1.06	1.42	1.77	
J	3/4"	1″	1 1/2"	2"	
,	3/4	1	1 1/2	2	
ØK	8.5	8.5	8.5	8.5	
ν	0.33	0.33	0.33	0.33	
L	1/4"	1/4"	1/2"	1/2"	
L	1/4	1/4	1/2	1/2	
М	29	33	44	57	
141	1.14	1.30	1.73	2.24	
M2	40	52	70	90	
IVIZ	1.57	2.05	2.76	3.54	

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

Technical data

	Pump size			
Data	TC 70	TC 120	TC 220	TC 420
General characteristics				
*Max capacity (I/min) / (US gpm)	70 / 18.49	130 / 34.35	380 / 100.4	470 / 124.17
**Volume per stroke (ml) / (cu in)	87.5 / 5.34	420 / 25.6	933 / 56.9	2300/140.3
Max discharge pressure (bar) / (psi)		8/	116	
Max air pressure (bar) / (psi)		8/	116	
*** Max suction lift dry (m) / (Ft)	3/9.8	4/13	4/13	4/13
Max suction lift wet (m) / (Ft)	8/26	9 / 29.5	9 / 29.5	9 / 29.5
Max size of solids (ø in mm) / (in)	4 / 0.16	6 / 0.23	10 / 0.40	15 / 0.59
Max temp with EPDM/NBR (°C) / (°F)	80 / 176			
Max temp with PTFE (°C) / (°F)		110	/ 230	
Min temperature (°C) / (°F)	-20 / -4			
Weight				
TC pump in alu (kg) / (lb)	6/13	9/20	21 / 46	37 / 82
TC pump cast iron (kg) / (lb)	12 / 26	18 / 40	46 / 101	83 / 183
TC pump in AISI 316 (kg) / (lb)	7,5 / 17	17 / 37	39 / 86	70 / 154



^{** =} The value is based on pumps with EPDM diaphragms. Pumps with PTFE diaphragms have about 15% less volume.

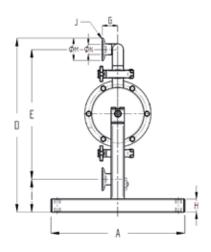
^{*** =} This is max value with stainless steel valve balls, other valve ball materials may reduce the suction. Please consult us.

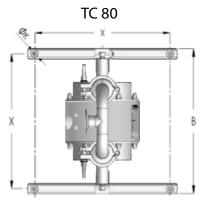


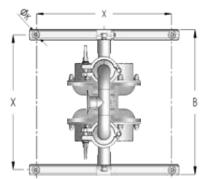
Dimensions & technical data

TC Sanitary pumps

Dimensions







TC 125 - TC 425

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

Dim		Pump size			
		TC 80	TC 125	TC 225	TC 425
	Α	303	328	412	476
	А	11.9	12.9	16.2	18.7
	В	295	320	404	468
	В	11.6	12.6	15.9	18.4
	D	393	458	646 / 792**	808 / 950**
	D	15.5	18	25.4 / 31.1	31.8 / 37.4
	E	294	350	528 / 690**	664 / 775**
	E	11.6	13.8	20.6 / 27.2	26.1 / 30.5
	G	36	44	50	80
	G	1.4	1.7	2.0	3.1
	Н	30	30	30	30
	п	1.2	1.2	1.2	30 1.2 97 3.8
		73	71		
I		2.9	2.8	3.4	3.8
	TC1	1"	1 1/2"	2″	2 1/2"
	DIN ²	DN25	DN40	DN50	DN65
J	SMS ³	25	38	51	63.5
	RJT	1"	1 1/2"	2"	3″
	K	9	9	9	9
	ĸ	0.4	0.4	0.4	0.4
Air inlet size		1/4"	1/4"	1/2"	1/2"
Air in	iet size	1/4	1/4	1/2	1/2
0	i A A ¥	50.5	50.5	64	91
ØM*		2.0	2.0	2.5	3.6
~		22.6	35.6	49	66
(Z	N*	0.9	1.4	1.9	2.6
	X	275	300	384	448
	٨	10.8	11.8	15.1	17.6

- * = Dimensions for standard clamp connections only
- 1 = Clamp connections/pipes according to SMS3017/ ISO2037 (T425)
- 2 = Threaded connections according to DIN 11851 3 = Threaded connections according to SMS 1145

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

Technical data

Data	Pump size			
	TC 80	TC 125	TC 225	TC 425
General characteristics				
*Max capacity (I/min) / (US gpm)	78 / 20.6	155 / 41	330 / 87	570 / 150
**Volume per stroke (ml) / (cu in)	87.5 / 5.34	300 / 18.3	933 / 56.9	2300/140.3
Max discharge pressure (bar) / (psi)	8 / 116	8/116	8/116	8/116
Max air pressure (bar) / (psi)	8/116	8/116	8/116	8/116
***Max suction lift dry (m) / (Ft)	3 / 9.8	4 / 13	4/13	4/13
Max suction lift wet (m) / (Ft)	8 / 26	9 / 29.5	9 / 29.5	9 / 29.5
Max size of solids (ø in mm) / (in)	4 / 0.16	6/0.24	10 / 0.39	15 / 0.59
Max temperature (°C) / (°F)	110 / 230	110 / 230	110 / 230	110/230
Weight				
Weight (kg) / (lb)	8,5 / 19	12/26	22 / 49	37 / 82



^{** =} 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.



Tapflo intelligent solutions

Guardian systems

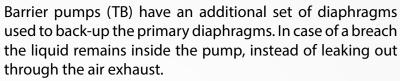


The Guardian is an energy conservation device designed to protect an air operated double diaphragm (AODD) pump from operating in an inefficient manner that uses unnecessary energy and reduces the life of its parts. It also offers the added benefit of providing greater safety to applications of high risk.

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.



Barrier Protection



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.





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 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.

AUSTRALIA | AUSTRIA | AZERBAIJAN | BAHRAIN | BELARUS | BELGIUM | BOSNIA | BRAZIL | BULGARIA | CANADA | CHILE | CHINA | COLOMBIA | CROATIA | CZECH REPUBLIC | DENMARK | ECUADOR | EGYPT | ESTONIA | FINLAND | FRANCE | GREECE | GEORGIA | GERMANY | HONG-KONG | HUNGARY | iceland | India | Indonesia | Iran | Ireland | Israel | Italy | Japan | Jordan | Kazakhstan | Kuwait | Latvia | Libya | Lithuania | Macedonia | MALAYSIA | MEXICO | MONTENEGRO | MOROCCO | NETHERLANDS | NEW ZEALAND | NORWAY | POLAND | PORTUGAL | PHILIPPINES | QATAR | ROMANIA | RUSSIA | SAUDI ARABIA | SERBIA | SINGAPORE | SLOVAKIA | SLOVENIA | SOUTH AFRICA | SOUTH KOREA | SPAIN | SUDAN | SWEDEN | Switzerland | Syria | Taiwan | Thailand | Turkey | Ukraine | United Arab Emirates | United Kingdom | USA | Uzbekistan | Vietnam

Tapflo Group Companies

Australia

Tapflo Oceania (Pty) Ltd Tel: +61 1800 303 633 sales@tapflo.com.au

Austria

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

Baltic States

Tapflo Latvia Tel: +371 67472205 sales@tapflo.lv

Relarus

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

Belgium

Tapflo Benelux B.V. Tel: +31 (0)85 00 743 00 info@tapflo.nl

Bulgaria

Tapflo EOOD Tel: +359 (0)2 974 18 54 office@tapflo.bg

Canada

Tanflo Canada Tel: +1 514 813 5754 canada@tapflo.com

Croatia

Tanflo d o o Tel: +385 91 4884 666 sales@tapflo.hr

Czech Republic

Tanflo s.r.o. Tel: +420 513 033 924 tapflo@tapflo.cz

China

Tapflo (Wuxi) Tel: +86 510 8241 7072 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

Hungary

Tapflo kft. Tel: +36 30 148 8551 office@tapflo.hu

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

Ireland

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

Italy

Tapflo Italia Tel: +39 0362 306528 info@tapfloitalia.com

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

Kazakhstan

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

Netherlands

Tapflo Benelux B.V. Tel: +31 (0)85 00 743 00 info@tapflo.nl

Poland

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

Romania

S.C. Tanflo 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

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

Slovakia

Tapflo s.r.o. Tel: +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

TOR Tanflo Tel: +380 44 222 68 44 sales@tapflo.ua

Uzbekistan

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

United Kinadom

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





If your country is not listed please visit www.tanflo.com/en/contact

www.tapflo.com