PE & PTFE series pumps

Tapflo pumps made from polyethylene (PE) or polytetrafluoroethylene (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.

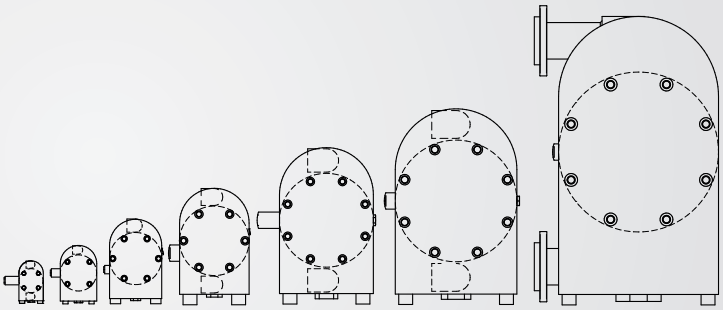
PTFE pumps

PTFE (virgin polytetrafluorethylene) is a thermoplastic polymer with superior chemical resistance. The PTFE pump can handle even the most aggressive acids. Maximum liquid temperature is 110°C.

FDA EN 10204 AT Ex REACH Compliant ROHS Compliant

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, alcohols, solvents, emulsions
Food	CIP liquids, flavours, pigments
Pulp & Paper	Glue, slurries, adhesives, dispersions, resins, sodium silicate, titanium oxide
Surface treatment	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

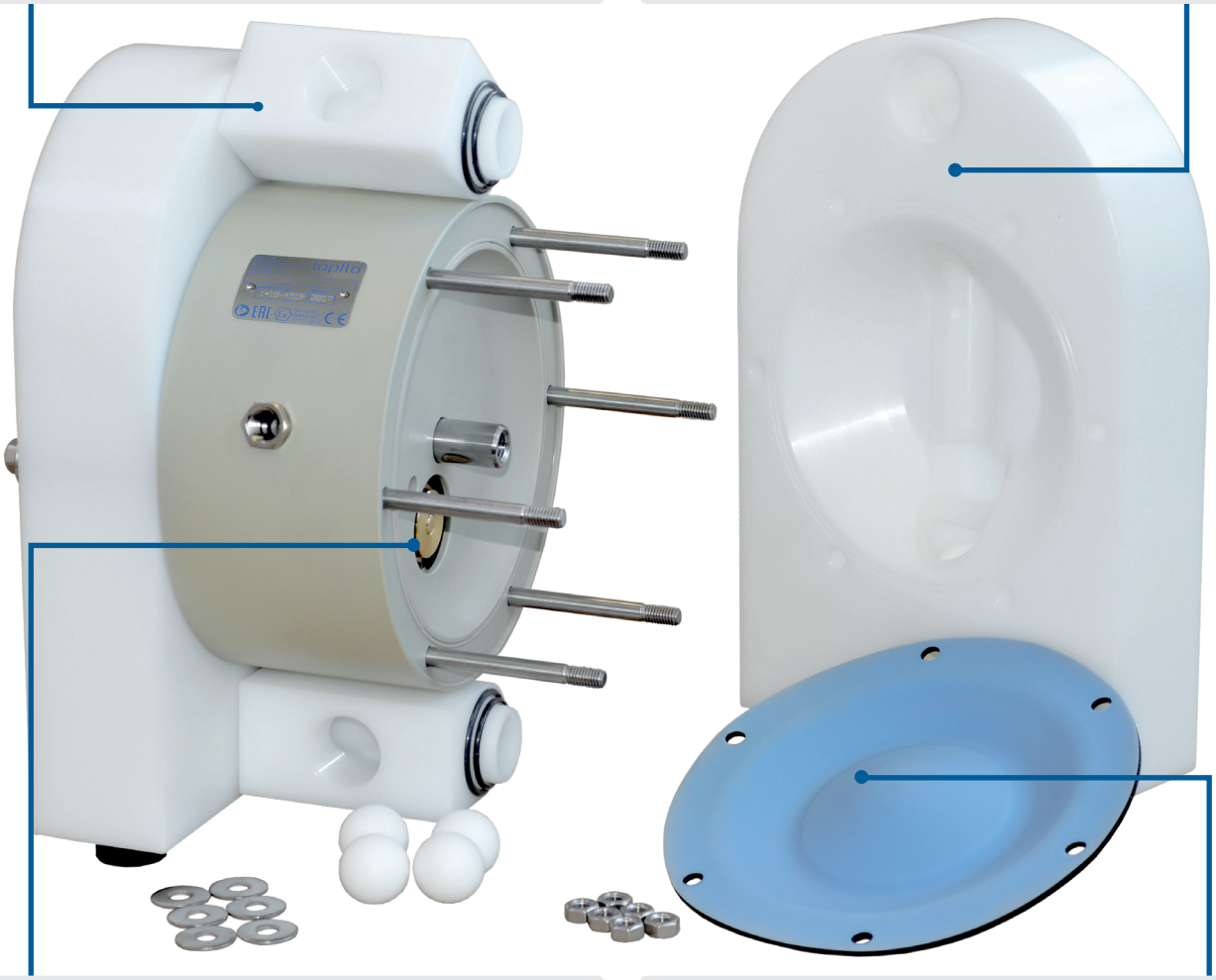
Few components and a simple design are common for all Tapflo pumps. The pumps are compact, easy and quick to maintain, keeping your service costs and process down time to a minimum.

Flexible installations

The connections may be rotated 180°. Simply turn the connections to fit your piping system. BSP and NPT threaded connections as standard, AISI 316L optional material or other connection types are available as an option. AISI 316 or other connections types are also available.

Solid and strong

The pump body is machined from solid PE or PTFE. The robust design will stand against mechanical forces as well as aggressive chemicals.



Low air consumption

The air distribution system is designed to ensure the shortest possible airflow path and eliminate dead volumes. This results 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 pumped liquid. Ideal for a safe chemical handling.

- **PE pumps -** suitable for most chemicals and abrasive liquids
- **PTFE pumps -** suitable for the most aggressive chemicals

Special versions

Drum pumps | TD series

Light and mobile solution for emptying drums and containers Tapflo TD pumps are irreplaceable in such applications.

The pumps are fitted with a drum tube in polypropylene (PP) or PTFE and a handle in AISI 316L stainless steel.

The PE & PTFE drum pumps range

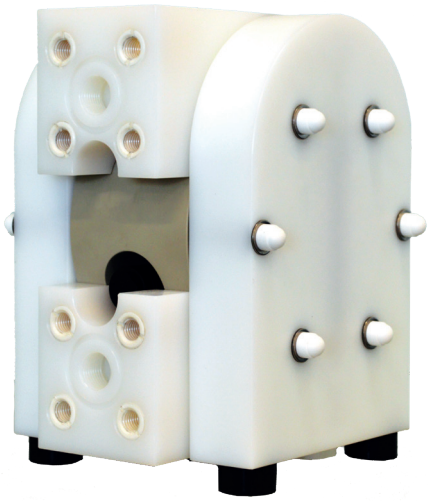
- TRD20 - 24 l/min, ½" suction, ⅜" discharge
- TD50 - 60 l/min, ¾" suction, ½" discharge
- TD100 - 125 l/min, 1 ¼" suction and 1" discharge

Features & Benefits

Customizable tube length
The drum tube is delivered in any length up to 2 m

Highly mobile and versatile
Pumps can be easy moved between different drums and containers

Handy and convenient
Compact pump equipped with comfortable handle



Integrated heavy duty flanges | 3D/3A

The robust design of integrated flanges proves itself useful when there is a risk of vibration from the installation. The solid manifolds provide better stability and sealing for the pump.

This design is a perfect solution for most demanding applications such as in TF Filter press pumps where pump operates at higher pressures.

- **Available for sizes:** TR20, T50, T100, T200, T400
- **Available materials:** PE, PE cond., PTFE, PTFE cond.
- **Flange standard 3A** = ANSI flanges **3D** = DIN flanges

Special versions

Pump with built-on dampener | TK series

The built-on dampener is an ideal solution to eliminate pressure variations on the pumps discharge where space in the installation is limited.

» **Available for sizes:** TRK20, TK50, TK100, TK200

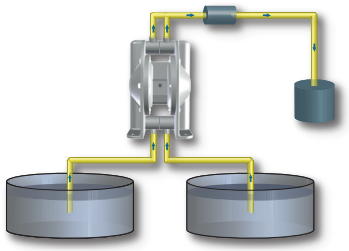
Twin pumps | TT series

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.

Examples of applications

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



Tapflo TX ATEX classification:
Ex II 2G Ex h IIC T6…T4 Gb
Ex II 2D Ex h IIIC T60°C…T125°C Db

Tapflo TZ ATEX classification:
Ex II 1G Ex h IIC T6…T4 Ga

Explosion proof pumps | TX series

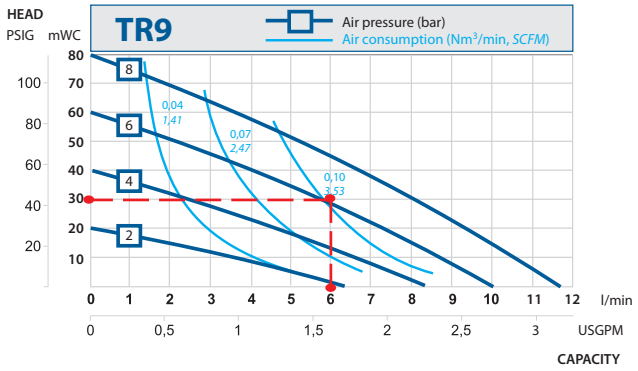
The ATEX directive 2014/34/EU (also known as ATEX 114) is applicable on products used in explosion hazardous zones.

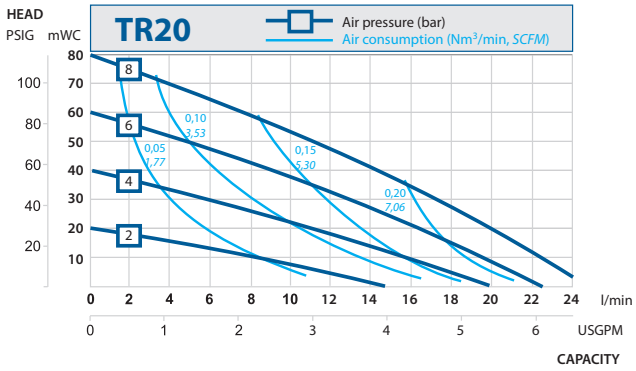
Tapflo pumps made from conductive (carbon filled) plastics PE or PTFE are made for use in explosion hazardous environments. They can be used in Ex-zone 1 and Ex-zone 0. The conductive material ensures that no electrostatic loads will be accumulated in the pump.

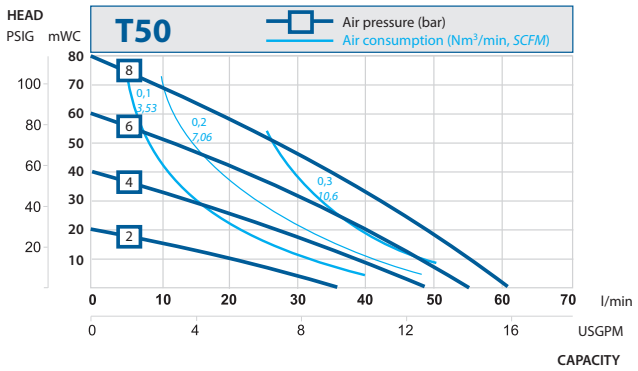
The conductive pigment in the material reduces the surface resistance. Transfer of alcohol and solvents are examples of applications for the Tapflo TX and TZ pumps.

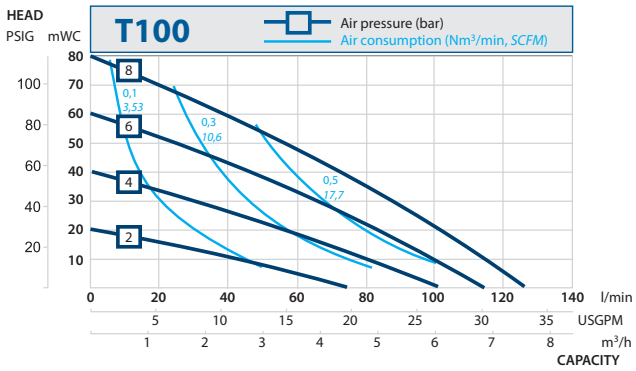
Performance curves

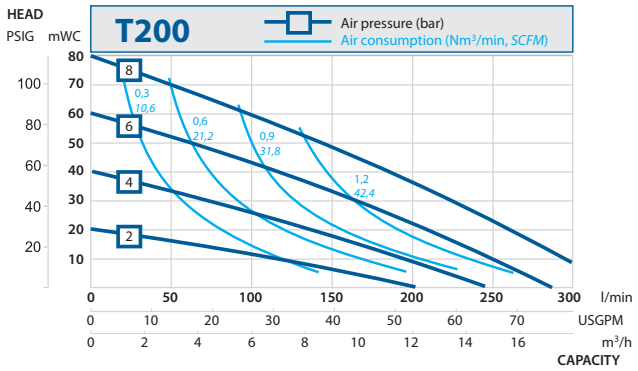
The performance curves are based on water at 20°C. Other circumstances might change the performance.
Example see the red line
A flow of 6 litre/minute is desired. The discharge head is calculated to 30 mWC. We choose a TR9. It requires an air pressure of 6 bar and will consume approximately 0.10 Nm³/minute.

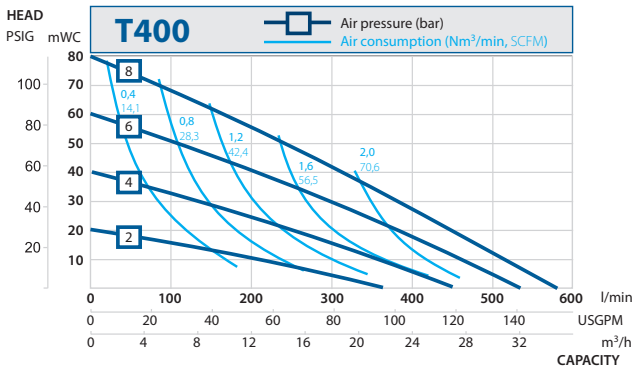


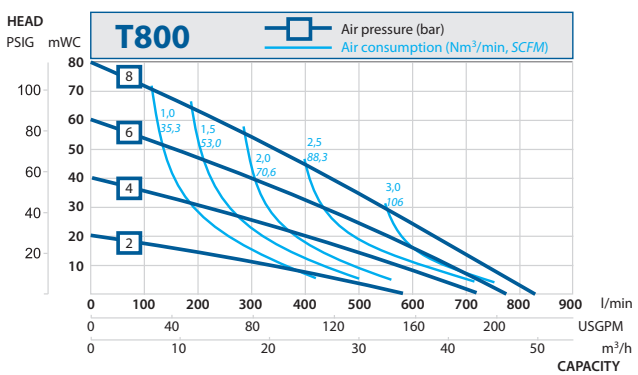












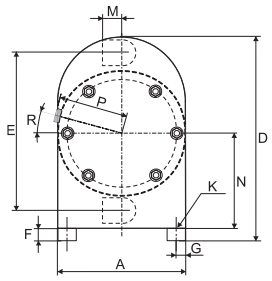
Capacity changes

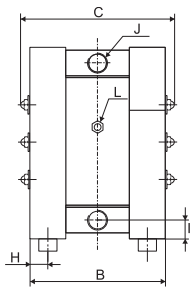
For changes of capacity due to suction lift or viscosity, please see page 21

Changes reserved without notice

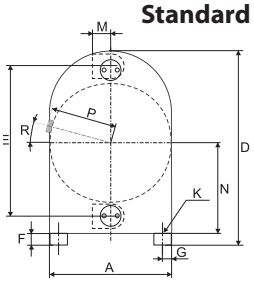
Dimensions

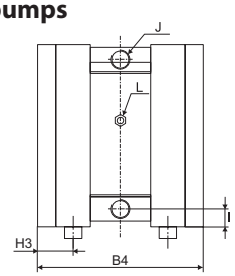
Standard PE pumps



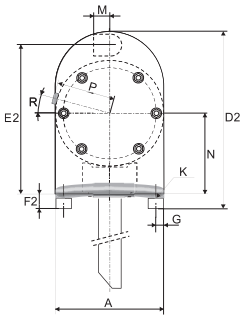


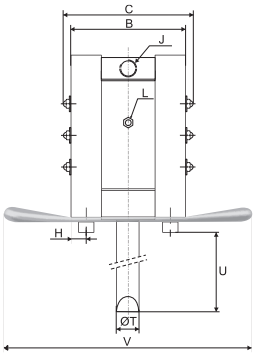
Standard PTFE pumps



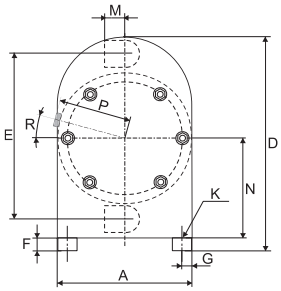


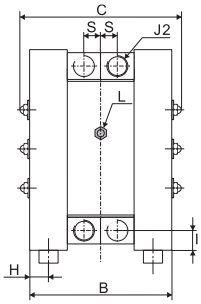
Drum pumps TD



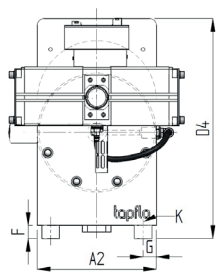


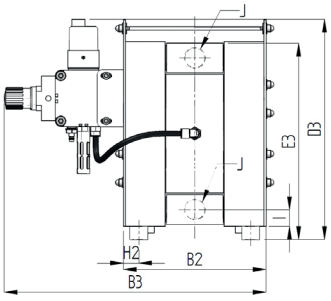
Twin pumps TT





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	105	150	200	270	350	460
	2.76	4.13	5.91	7.87	10.63	13.78	18.11
A2	-	-	150	300	300	404	-
	-	-	5.91	11.81	11.81	15.91	-
B	94	113	162	216	313	382	557
	3.70	4.45	6.38	8.50	12.32	15.04	21.93
B2	-	-	168	224	324	392	-
	-	-	6.61	8.82	12.76	15.43	-
B3	-	-	262	415	595	670	-
	-	-	10.31	16.34	23.43	26.38	-
B4	134	152	202	256	352	422	-
	5.28	5.98	7.95	10.08	13.86	16.61	-
C	116	134	185	252	350	426	601
	4.57	5.28	7.28	9.92	13.78	16.77	23.66
D	123	168	243	320	450	563	830
	4.84	6.61	9.57	12.60	17.72	22.17	32.68
D2	-	173	249	325	-	-	-
		6.81	9.80	12.80	-	-	-
D3	-	-	352	351	501	583	-
	-	-	13.86	13.82	19.72	22.95	-
D4	-	-	343	364	500	610	-
	-	-	13.50	14.33	19.69	24.02	-
E	92	132	190	252	345	440	650
	3.62	5.20	7.48	9.92	13.58	17.32	25.59
E2	-	147	210	280	-	-	-
	-	5.79	8.27	11.02	-	-	-
E3	-	-	244	319	447	588	-
	-	-	9.61	12.56	17.60	21.97	-
F	8	8	15	15	30	30	30
	0.31	0.31	0.59	0.59	1.18	1.18	1.18
F2	-	13	20	20	-	-	-
	-	0.51	0.79	0.79	-	-	-
G	9	15	17	30	30	30	20
	0.35	0.59	0.67	1.18	1.18	1.18	0.79
H	10	15	16	30	30	30	30
	0.39	0.59	0.63	1.18	1.18	1.18	1.18
H2	-	-	19	34	35	35	-
	-	-	0.75	1.34	1.38	1.38	-
H3	30	35	36	50	50	50	-
	1.18	1.38	1.42	1.97	1.97	1.97	-
I	12	15	20	28	38	48	80
	0.47	0.59	0.79	1.10	1.50	1.89	3.15
J	1/4"	3/8"	1/2"	1"	1 1/2"	2"	3"
	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"	-
	1/4	3/8	1/2	3/4	1	1 1/2	-
K	M4x16	M4x16	M8x25	M8x25	M8x25	M8x25	M8x25
	M4	M4	M8	M8	M8	M8	M8
L	1/8"	1/8"	1/4"	1/4"	1/2"	1/2"	1/2"
	1/8	1/8	1/4	1/4	1/2	1/2	1/2
M	15	17	25	38	54	70	105
	0.59	0.67	0.98	1.50	2.13	2.76	4.13
N	58	81	115	154	211	268	411
	2.28	3.19	4.53	6.06	8.31	10.55	16.18
P	35	52	80	105	143	183	237
	1.38	2.05	3.15	4.13	5.63	7.20	9.33
R	0°	0°	15°	15°	0°	0°	0°
	0°	0°	15°	15°	0°	0°	0°
S	13	15	21	27	35	42	-
	0.51	0.59	0.83	1.06	1.38	1.65	-
ØT	-	20	32	32	-	-	-
	-	0.79	1.26	1.26	-	-	-
U	-	1170*	1170*	1170*	-	-	-
	-	46.06*	46.06*	46.06*	-	-	-
V	-	286	360	401	-	-	-
	-	11.26	14.17	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)	15 / 0.9	26 / 1.6	116 /7.1	305 / 18.6	854 / 52.1	2326 / 141.9	5240 / 319.8
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, PE conductive, PTFE, PTFE conductive						PE, PE conductive
Centre block (not wetted)	PP, PE conductive, aluminium						
Diaphragms	PTFE, FKM	PTFE, PTFE 1705B, EPDM, NBR, FKM					
Valve balls	-	PTFE, EPDM, NBR, AISI 316L***, PU, Ceramic***, FKM					
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/FKM						
Housing pin screws	Stainless steel						
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 304				-

* = 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 PTFE diaphragms (other materials - please contact Tapflo). It should be remembered that the volume per stroke may vary depending on the pump's operating parameters.

*** = 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

I.	II.	III.	IV.	V.	VI.
T	DR	20	P	T	T

I. T = Tapflo diaphragm pump

II. Basic options:
B = Backup diaphragm system
D = Drum pump
F = Filter press pump
K = Pump with built-on dampener (TR20-T200)
R = Rod valve pump
T = Twin inlet/outlet pump
V = AISI 316L valve seat / spacer
X = ATEX approved, group II, cat 2 (zone 1)
Y = High suction lift version
Z = ATEX approved, group II, cat 1 (zone 0)

III. Pump size

IV. Material of wetted thermoplastic parts:
P = PE (polyethylene)
T = PTFE

V. 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)

VI. 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

* = Ask us for complete pump code with all available options and executions. Changes reserved without notice