

# MANUAL



C.P.A. srl

## TANARO FILTER

**Filter for public and private pools**

with nozzle recovery system and mass separation plate



C.P.A. srl

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## Introduction

This manual provides the user with the information necessary for the use and maintenance of the Tanaro coiled filters.

Compliance with the instructions contained in this document will ensure optimal functionality and a longer life span of the filter.

The filters model C.P.A. have been designed for the filtration of water in public and private swimming pools with medium-large dimensions, in compliance with the technical specifications of the UNI 10637 standard.

In addition to the action of the filter itself, determined by the height of the filter bed, the type and size of the filter medium as well as its flow rate, the correct purification and filtration process is influenced by several aspects. These aspects are to be taken into consideration as well as the quality of the filter as they strongly condition a correct filtering action.

The efficiency of the process depends on the chemical treatment of the water, on the circulation group, on the pipes and in general on the hydraulic project.

## The filtration cycle

The water is sucked from the pool through the bottom well and / or from the compensation tank as well as from the surface through the skimmers (if present). The water reaches the filter through dedicated pipes, which can be sectioned off by means of valves, and once filtered, it returns to the tank through inlet vents. These are located on the walls, in the case of skimmers, and on the bottom for the infinity ones. The opposing positioning of vents and skimmers must allow an appropriate flow for the total re-circulation of the water present in the tank according to the times established by technical standards and regulations in force.

The filtering action of the filter is relegated to the filtering load (quartz or silica sand, hydro-anthracite, etc.) through which the water is circulated from top to bottom: during the passage the materials suspended in the water to be filtered are retained by the filter bed.

Therefore, after a certain period of operation it will be necessary to wash the filter to remove the dirt that has deposited from the filtering medium (see paragraph against washing), thus restoring the original pressure values and correct circulation through the filter.

With the counter-current washing operation, the circulation of water in the filter is reversed, expelling what is retained by the filter into the drain.

### Chemical water treatment

The pool water is usually treated with a quantity of disinfectant (chlorine, bromine, oxygen ...) sufficient to eliminate the bacteria and microorganisms that enter it depending on the intended use. The most usual method is the chlorination of water which can take place directly, adding a chemical agent to the water, or indirectly through salt electrolysis devices. The introduction of bacteria, microorganisms and organic material into the tank is attributable to atmospheric agents (rain, wind, etc.) and above all to swimmers: in order to eliminate all polluting components, usually a appropriate amount of free chlorine (hypochlorous acid) in compliance with current legislation.

The effectiveness of the bactericidal action of chlorine is associated with the pH value of the water which must be between 7.2 and 7.6. In addition to this, the control of compliance with the pH level of the water is essential in order to prevent:

the calcium dissolved in the water precipitates in a visible form, numbing the water, giving it a milky appearance, as well as rapidly obstructing the filter and creating deposits on the bottom of the tank. This phenomenon occurs when the pH is higher than 7.6;

with a pH below 7.2 the water is irritating to the eyes and nasal mucous membranes, as well as aggressive to any metal parts that may make up the pool and its devices.

From what has been said, it can be easily understood that the quality of the pool water depends on its pH level.

## Features

The tank is made of polyester resin and fiberglass, completely anti-corrosion.

Inside it contains manifolds and diffusers made of unalterable plastic material (PVC and ABS), corrosion-proof against salt water. These devices are designed to withstand a working pressure of 2.5 kg / cm<sup>2</sup> and a maximum pressure of 4 kg / cm<sup>2</sup>. The maximum permissible operating temperature is 45 ° C.

The flow rate can vary between 35 - 40 and 50 (m<sup>3</sup> / h) \* m<sup>-2</sup> depending on the type of application and the filter bed chosen.

## Installation

In order to obtain a correct installation it is advisable to observe the following steps:

- proceed with the installation directly in the final position inside the technical room;
- correctly install the backwash coil;
- connect the battery to the circulation circuit;
- check the internal parts of the filter (manifolds and umbrella diffusers);
- fill the filter with water to check for leaks;
- half empty the water filter and fill it with the filter medium, grit, sand and / or hydro-anthracite.

## Positioning of the filters

The filters must be positioned on a flat surface suitable for loading them. The environment must be sized so as to easily ensure periodic maintenance operations and other works if necessary.

If you install the filter in a room, it will be necessary to install a properly sized drain in order to evacuate the maximum entrance coming from the pool in order to avoid the risk of flooding inside the room or nearby rooms;

The room should be equipped with a drainage system so as to minimize the risk of electric shock generated by the electrical installations in the room (pumps, panels, etc.) in the event of accidental water leaks from the pipes. and the valves of the water circulation system, the pumps or the filter itself.

### WARNING

In case of non-compliance with this measure, the filter manufacturer assumes no responsibility for any damage to third parties for any accident concerning the filter itself..

## Put in use

Before filling the filter with the filter medium (quartz sand, hydro-anthracite, etc.), it is recommended to check that the entire collectors have not suffered any damage during transport or installation.

Once the previous visual check has been carried out, it is suggested to proceed with filling the system with water and to proceed with the hydraulic tests, this for a further leak check and correct preparation of the entire hydraulic circuit set up.

Turn off the pumps, open the filter lid (remember that the filters must be emptied with the lid open) and empty half of the water content. Then proceed with filling with the filter load1: when required, remember to first use a layer of grit to protect the nozzles (about 10 cm). The filling operation must be carried out carefully in order not to cause damage to the internal circulation components of the filter.

When the filter begins to fill with sand, it is suggested to distribute any accumulation evenly over the entire surface.

Once the filling operation has been completed, it is recommended to clean the mouth and the lid of the same so as to preserve the efficiency of the sealing joints, before proceeding with closing.

To close the filter, insert the lid into the upper opening and center it with respect to it.

The lid must be gripped by the handle to prevent a possible fall from damaging the internal parts of the filter. Position the bridge bracket and manually rotate the tightening handwheel. To obtain a correct seal, do not force the closure, therefore do not tighten the handwheel completely, as this could damage the cover. The same pressure inside the filter will improve the seal.

When the filter is under pressure it is normal that the fixing butterfly and the bridge bracket are not in contact. It is not necessary to tighten the handwheel further otherwise, when circulation is stopped, there is a risk of damaging the cover or that it remains blocked.

Once the water filter is completely filled, start checking the installation, manually venting any excess air that may be present inside the filter.

Once the previous operation has been completed, the filter is ready for the filtration process.

### WARNING

C.P.A. srl is not responsible for any damage caused to the filter during its installation and filling operations with the filter medium.

## Lavaggio in contro corrente

Il filtro è dotato di un pannello manometri per la verifica istantanea delle pressioni in ingresso ed uscita dal corpo filtro.

Per uso in impianti natatori, a filtro pulito, si riscontrano i seguenti valori nominali di pressione:

- pressione in ingresso: 0.8 – 1 kg/cm<sup>2</sup>
- pressione in uscita: 0.4 – 0.6 kg/cm<sup>2</sup>

Quando il delta di pressione fra l'ingresso e l'uscita è pari o superiore a 0.8-1 kg/cm<sup>2</sup> è opportuno procedere alla pulizia del letto filtrante mediante l'operazione di lavaggio contro corrente.

L'operazione di lavaggio contro corrente è finalizzata alla messa in sospensione degli elementi trattenuti dal letto filtrante ed all'eliminazione di questi mediante l'espulsione in scarico.

Tale operazione va eseguita agendo sulle valvole in dotazione alla batteria di contro lavaggio in modo da invertire il senso di circolazione dell'acqua all'interno del filtro.

Al termine dell'operazione di contro lavaggio si raccomanda di eseguire un breve periodo di risciacquo – mandando in scarico l'acqua filtrata, così da ripristinare la perfetta operatività del mezzo filtrante.

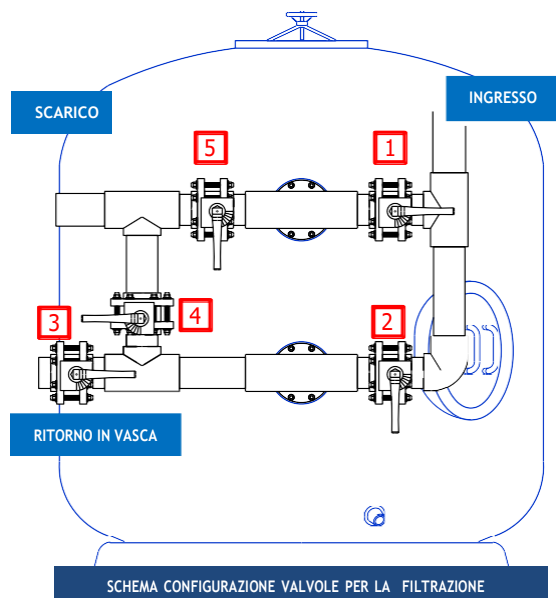
L'operazione di contro lavaggio non deve eccedere i 10 minuti di durata: si raccomanda un arco temporale da 3 a 7 minuti, tale tempo è normalmente idoneo alla messa in sospensione delle impurità trattenute dal mezzo filtrante.

Si raccomanda un velocità di lavaggio contro corrente pari a 40 - 50 m<sup>3</sup>/h/m<sup>2</sup>, suggeriamo di non superare tale velocità al fine di evitare l'espulsione di materiale filtrante.

### ATTENZIONE

Durante il processo di lavaggio contro corrente la pressione deve essere inferiore a 1 kg/cm<sup>2</sup>

Al termine dell'operazione di contro lavaggio verificare il raggiungimento delle condizioni normali di operatività mediante la verifica del delta di pressione segnalato del pannello manometri.



CONFIGURAZIONE AZIONAMENTO VALVOLE BATTERIA CONTRO LAVAGGIO

Valvola	1	2	3	4	5
Azione					
Filtrazione	aperta	chiusa	aperta	chiusa	chiusa
Contro lavaggio	chiusa	aperta	chiusa	chiusa	aperta
Risciacquo	aperta	chiusa	chiusa	aperta	chiusa
Scarico	aperta	chiusa	chiusa	chiusa	aperta
Ricircolo	chiusa	aperta	aperta	chiusa	chiusa

## Sostituzione del letto filtrante

Per sostituire il letto filtrante procedere come segue:  
rimuovere il coperchio superiore;

svuotare l'acqua ed il mezzo filtrante attraverso il foro di scarico inferiore e l'apertura passa uomo.

Al termine dell'operazione verificare che le aperture di scarico siano pulite e ben sigillate così da evitare perdite durante la rimessa in servizio del filtro. Per la messa in funzione seguire le istruzioni riportate al paragrafo di riferimento.

Attention: during the operation of replacing the filter bed, small spills of water are possible on the floor, it is suggested to pay the utmost attention in order to avoid possible falls.

## Suggestions

If the filter is not used for a long time, it is advisable to empty the water from the filter.

If the filter is exposed to atmospheric agents, it is recommended to repaint the filter body at least every two years with suitable paint.

Water treatment with ozone is not compatible with C.P.A. filters srl, therefore we do not recommend the use of this type of treatment in combination with the filters referred to in this document.

Please contact our technical department if you have any doubts regarding the use of the filter.

## Warning

It is necessary and mandatory to switch off the circulation devices (pumps, etc.) when acting on the position of the backwash coil valves.

In order to prevent damage and for a correct operation of the system, it is recommended to regularly clean the roughing baskets of the skimmers and the pre-filters of the circulation pumps.

Do not operate the system without water.

When you need to act on the filter or valves, switch off the power. Do not sit on the filter and on the water supply and withdrawal pipes.

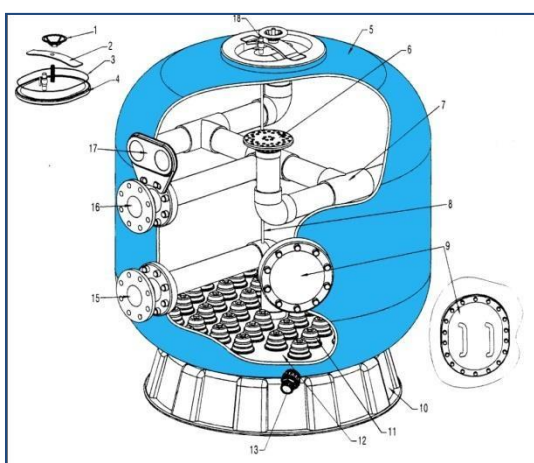
Do not connect the filter directly to the water network, since the pressure of the same can be very high and exceed the maximum working pressure of the filter.

Do not use the filtering circuit for filling and regulating the pool water level.

Do not use solvents or corroded products to clean the filter and its components.

Since all joints are equipped with gaskets, it is not necessary to overtighten the fixing bolts to increase their tightness: this avoids any breakage of the plastic components.

## Components and spare parts diagram



Rif.	Description
1	Quick lid closing handwheel
2	Quick lid closing blade
3	Quick cover gasket
4	Quick lid and handwheel
5	Filter body
6	Diffuser
7	T assembled
8	Vent pipe
9	Man pass inspection door
9a	Inspection door seal
9b	Inspection door flange
10	Basement
11	Nozzles
12	Filtering mass support plate
13	Water drainage
15	Flanged mouth for water outlet
16	Flanged mouth for water inlet
17	Manometer panel
18	Air vent valve

# Summary

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## Note

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