



# SIDESTREAM FILTRATION

For the continuous filtering of water  
within Cooling Towers

# MASTERFLOW

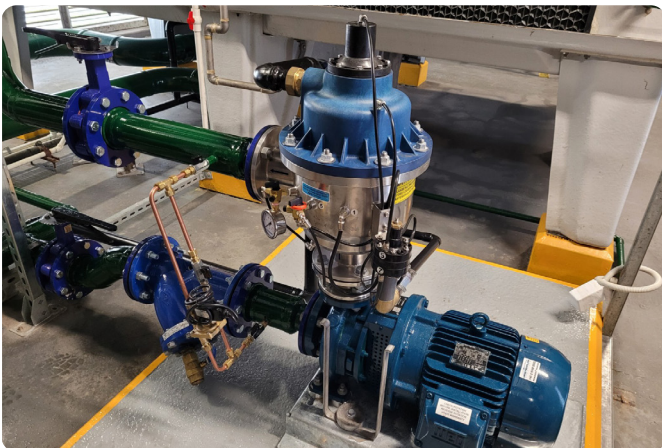
# OVERVIEW

Sidestream Filtration systems, as designed and manufactured by Masterflow, provide the most efficient means of maintaining clean water within a Cooling Tower. Due to the nature of cooling tower designs, foreign particles and dust are continuously settling on the basin of the tower. To prevent these particles causing damage to the overall system and forming into harmful substance, it is necessary to remove and filter these out. The Masterflow Sidestream Filtration Package achieves this through its premium screen filter coupled to a BakerBloc™ or BakerLine™ pumpset. By maintaining a clean cooling tower basin, the potential for legionella growth and ongoing tower maintenance is significantly reduced.

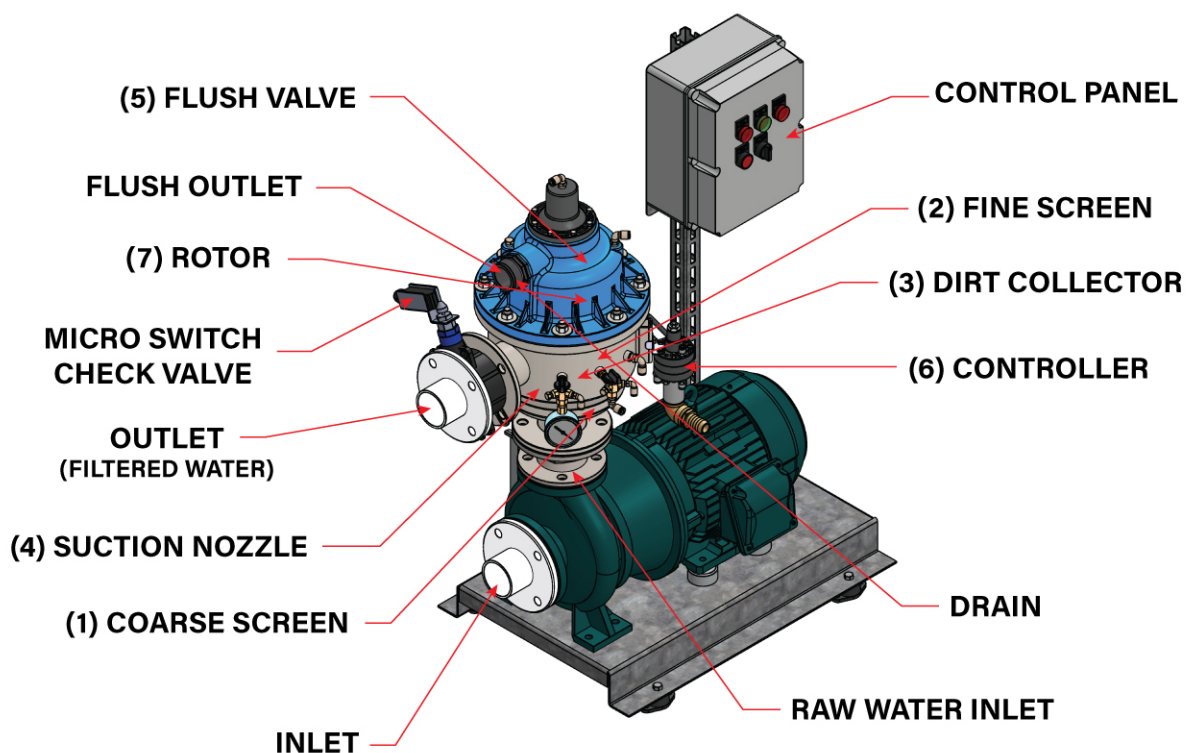
Sidestream filtration, as the name suggests, refers to the partial filtering of liquid in a system. As a general rule, Sidestream filtration units are sized on 5-10% of the total cooling tower flow rate. Where a balance line exists between multiple cooling towers, a single, sufficiently sized filtration system will serve them all. Masterflow has developed the most advanced package on the market, that is both compact in design, and provides an effective filtration that surpasses the traditional methods used in the past.

## APPLICATIONS

- Cooling Towers
- Irrigation
- Mining
- Health
- Commercial
- Data Centres
- Industrial



# AN EFFICIENTLY DESIGNED FILTER THAT USES MINIMAL WATER IN BACKWASH



## OPERATION

During normal filtering mode the raw water enters the Inlet of the filter, passes through the Coarse Screen (1), (this removes large debris that may obstruct the lower mechanism). Water then travels to the inside and through the Fine Screen (2) to the Outlet.

The solids in the water are trapped on the Fine Screen (2), eventually causing a pressure drop (DP) across the filter. At a pressure drop of 40 – 50 kPa the Controller (6) activates the cleaning cycle by opening the Flush Valve (5) to drain (atmosphere).

The interconnection of the Suction Nozzles (4) via the Dirt Collector (3) to the Drain causes a back flushing or

‘vacuum clean’ effect on the Fine Screen (2) with a high velocity suction jet of water from the clean outlet side of the screen, removing the dirt on the screen as it passes through.

The water escaping via the Rotor (7) causes the Dirt Collector and Suction Nozzle assembly (3 & 4) to rotate. The Flushing Valve (5) allows this assembly down the length of the Fine Screen (2) in a spiralling motion, cleaning the entire screen surface area in approximately 5 seconds. The Flushing Valve (5) closes, and returns the mechanism back to its original position, ready for the next cycle. Cleaning also occurs on the return stroke.

## DESIGN FEATURES

- Fully hydraulic and self-cleaning
- Dry-run protection
- Uses minimal water during backwash, backwashing on pressure differential
- The suction scanner innovatively uses filtered water to produce a reverse flow regime for highly effective debris removal from screen.
- Materials of construction are thermo-plastic, stainless steel and PVC rendering as corrosion free as possible
- Volt free contacts for BMS
- Compact design
- Already mounted on its own free standing skid
- Minimal amount of water used for backflushing compared to sand or cyclone filters
- Eductor system essential for basin cleanliness
- No media (sand) and therefore no haven for the buildup or breeding of bacteria

## RANGE

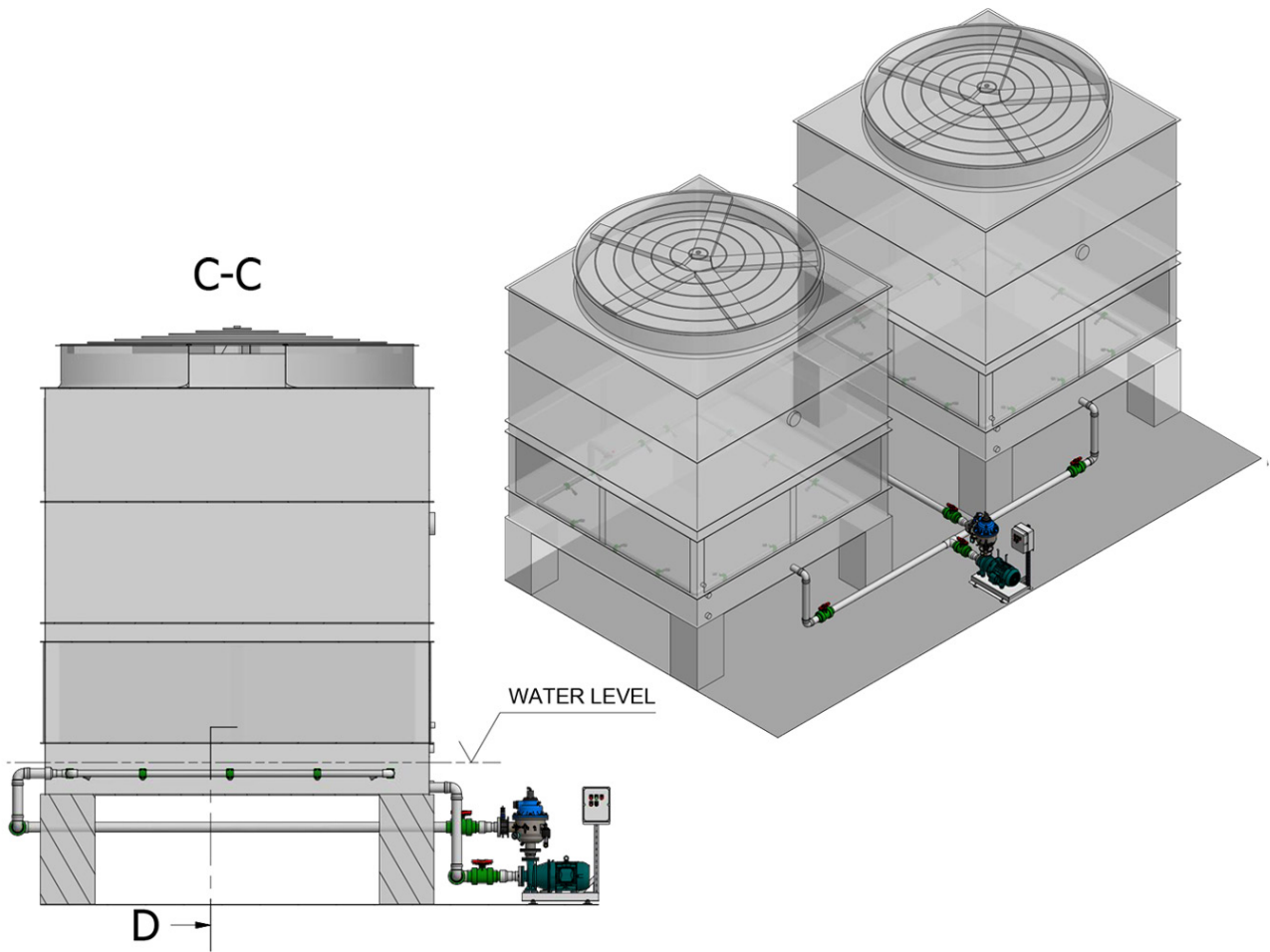
FLOW RANGE	MODEL	MOTOR SIZE
1-6 L/S	GSF06-2	4kW
7-11 L/S	GSF11-3	5.5kW
8-13 L/S	GSF13-3	5.5kW
18-20 L/S	GSF20-4	11kW
21-26 L/S	GSF26-4	15kW
33-50 L/S	GSF50-6	18.5kW

## FILTRATION APERTURES AVAILABLE

MICRON $\mu\text{m}$	MM	MESH
50	0.05	250
80	0.08	200
100	0.10	150
120	0.12	120
150*	0.15	100
200	0.20	80
400	0.40	40
800	0.80	20

\* Most common sizes used.

# INSTALLATION DIAGRAM



## NOTES

When ordering Tower request the ring pipe to be installed around basin-saves time on site.

Consult the Installation Operation Manual for a comprehensive guide on how to correctly install and maintain the Masterflow Sidestream Filtration package.

## AGITATION EDUCTOR NOZZLES

The agitation or eductor nozzles need to be submersed as deep as possible on the bottom of the basin. These are to be installed parallel and along the longest walls of the basin, pointing to the middle or centre line of the tower. The pipe size will depend on the size of the tower. The nozzles have 3/8 BSP-M connections.





**MASTERFLOW**

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FOR PUMPS, TANKS, CHILLERS,  
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All content is subject to change without notice.