



John Meunier Mectan[®] Induced Vortex Grit Chamber

WATER TECHNOLOGIES

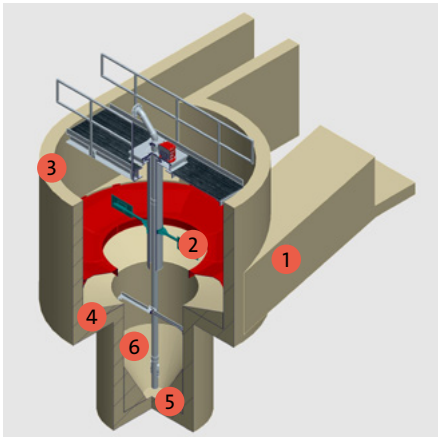
MECTAN®

Grit is a source of problems in wastewater treatment facilities, which causes wear and tear on mechanical equipment, decreases the effective treatment volume in basins, causes pipe blockages and generally increases operating costs.

Historically, rectangular aerated grit removal systems were very large, resulting in high land, civil and equipment costs.

Since the early 80's, Veolia Water Technologies Canada has offered the John Meunier MECTAN® induced vortex grit removal system as the solution. The MECTAN® grit unit is a

circular chamber that takes full advantage of the tangential inflow velocity along the peripheral wall of the chamber to assist in the grit removal process. The circular design will handle large flow rates in a fraction of the footprint of conventional aerated units. In addition, the MECTAN® grit removal system operates efficiently over a wide range of daily flow rates. With over 850 installations worldwide, the MECTAN® grit chamber is a proven, reliable component of John Meunier pretreatment products.



General principle of operation

1. Influent fed tangentially into the grit chamber.
2. Paddles maintain rotational velocity allowing grit to settle while holding organics in suspension.
3. Circular and conical shapes with natural vortex and gravity forces reduce turbulence maximizing grit settling.
4. Sloped transition between upper chamber section(s) and grit well promotes grit settling to well.
5. Grit transferred from grit well to classifier via pump or airlift device.
6. Optional air and/or water scour fluidize bed prior to grit removal.

MECTAN V® general description

The MECTAN V® induced vortex grit removal unit is an innovative re-engineering of the Classic MECTAN® (270) technology. The MECTAN V® capitalizes on the classic tank shape, enhancing the effective conical transition between chamber sections to obtain a dynamic, highly performing revolutionary configuration.

The major innovative differences are :

- **Inlet port:** The inlet port of the MECTAN V® is positioned in the lower portion of the separation tank section.
- **Inner tank flow path:** The inlet flow path of the MECTAN V® is isolated from the outlet flow path by means of a separator disc set inside the tank.
- **Connecting channels configuration:** The MECTAN V® grit chamber outlet channel is basically set in-line with the inlet channel direction, to obtain the 360 configuration
- **Effluent channel:** The separator disc of the MECTAN V® («V» for variangle) provides the possibility to position the outlet channel in any desired direction relative to the inlet channel.
- **Paddle mixer:** Research efforts on the vortex induction paddle mixer provide optimization of the flow pattern in the grit chamber.

Model	JMD / 0-12	JMD / 1-20	JMD / 2-25	JMD / 3-30	JMD / 4-35	JMD / 5-42	JMD / 6-50	JMD / 7-60	JMD / 8-73
Max Flow mgd	0.8	2.5	4.3	7.2	10.7	18.7	30.0	50.0	78.0
m ³ / d	3 030	9 500	16 300	27 250	40 500	70 800	113 600	189 250	295 250
Diameter* ft	4	6,6	8,6	10	11,6	14	16,6	20	24
mm	1 200	2 000	2 500	3 000	3 500	4 200	5 000	6 000	7 300

* For intermediate size, please contact factory.

Features and benefits of the MECTAN V® and Classic MECTAN®

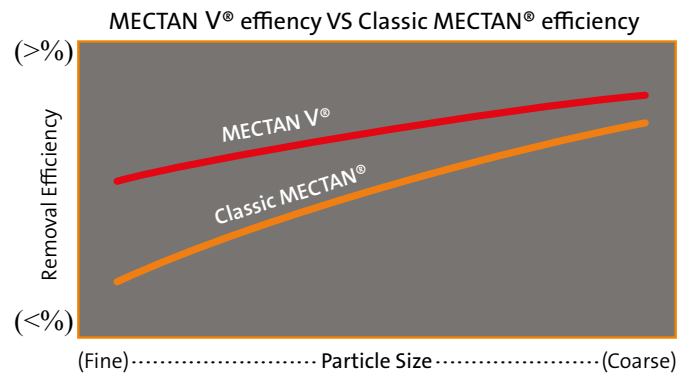
- Efficient operation on a wide range of flow rates.
- Constant velocity assisted by paddles.
- Low head loss.
- Compact size results in low excavation and civil works costs.
- Retrofittable into existing plants.
- Simple mechanics
- Reliable robust design. No moving parts subject to wear or blockage located under water.
- Low maintenance cost.
- Sloped transition and rotating motion eliminates accumulation of grit in the separation chamber under all conditions.
- Induced vortex paddle mixer design provides optimum grit removal conditions, while limiting organics accumulation in the grit well.
- Full accessibility to grit collecting well.
- Veolia's superior application engineering support and service.



Additional features and benefits of the MECTAN V®

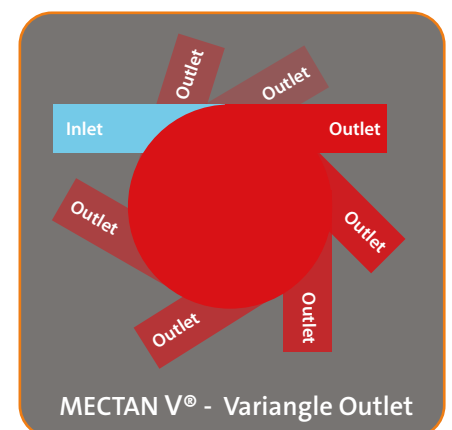
- Separation disc increases grit removal process stability and reliability.
- Separation disc provides complete control over the grit removal process at any flow rate.
- MECTAN V® provides plant design flexibility allowing multi-directional outlet channel positioning.
- Hydraulically safe tank design maintains grit removal performances even during power failure condition.
- Separation disc provides improved circular flow path to ensure no shortcircuiting.

GRIT REMOVAL PERFORMANCE



Mectan® Grit Removal Efficiency (2.65 S.G.)			
MECTAN V®	Classic MECTAN®	Microns	Mesh
96%	95%	≥ 300	≥ 50
87%	85%	$\geq 210 \ \& \ < \ 300$	$\geq 70 \ \& \ < \ 50$
75%	65%	$\geq 150 \ \& \ < \ 210$	$\geq 100 \ \& \ < \ 70$
68%	38%	$\geq 100 \ \& \ < \ 150$	$\geq 140 \ \& \ < \ 100$

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Resourcing the world

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