



Stop  
Grit and  
Save  
Space

# Grit Monster™

Monster Separation Systems®



## Overview

The Grit Monster vortex removal system is both compact and reliable, removing sand, gravel, shells and coffee grounds as wastewater passes through the headworks. The system operates over a wide range of flows, especially during peak conditions when a majority of grit enters the treatment plant.

Removing grit at the headworks benefits downstream systems and increases the service life of pumps and process equipment.

The Grit Monster combines circular and conical shapes with natural vortex and gravity forces to reduce turbulence in the chamber and remove even more material. To achieve a maximum efficiency over a wide range of daily flow rates, the flow velocity is maintained quasi-constant by adjustable rotating impellers in the lower chamber.

Grit is removed from the bottom chamber and pumped to a washer and classifier which separates and dewater the grit before depositing material in a dumpster.



*Grit Monster fits into a compact footprint.*

## Features & Benefits

### Efficient Grit Removal

- Removes grit with a specific gravity of 2.65
- Transfers solids up to 3-1/2 in. (90 mm) in diameter
- Removal efficiency based on mesh size:
  - 95% of grit > 50 mesh
  - 85% of grit > 70 mesh
  - 65% of grit > 100 mesh

### Large Flow Rates

- One system can handle up to 76 MGD (3,300 l/s)
- Capture efficiency is not affected by flow variations
- Grit is transferred by air lift or grit pump

### Ease of Maintenance

- Few moving parts
- Low energy consumption
- Central drive housing is easy to install and inspect

### Monster Separation System: A Complete Headworks

- Grit Monster integrates with JWC's award-winning fine screens and washer-compactors
- Increases operating life of downstream pumps and systems
- One source for design, manufacturing, start-up and service



**JWC**  
Environmental®

Trust Monster Quality™

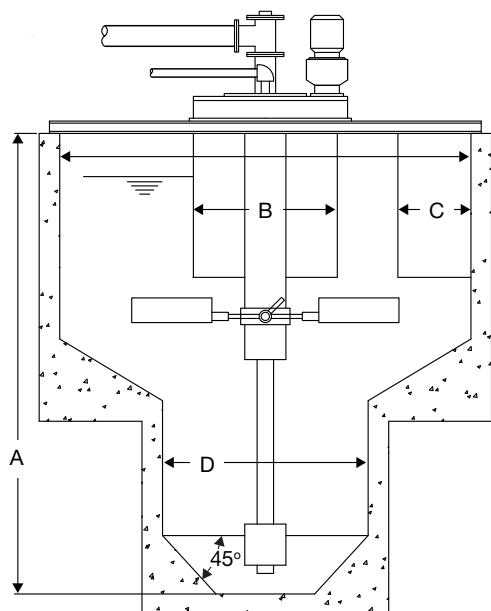
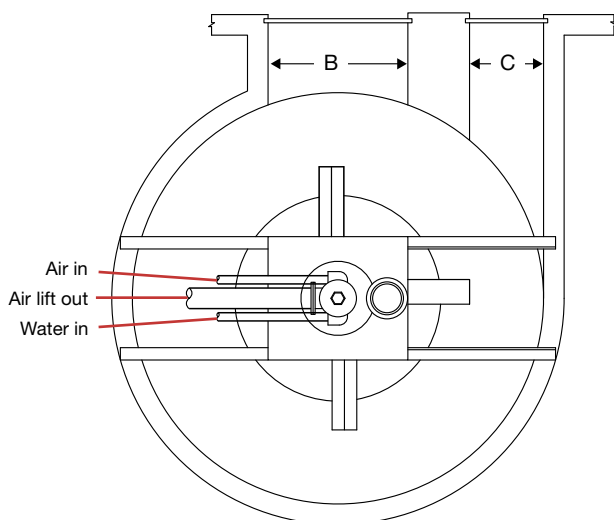
[www.jwce.com](http://www.jwce.com)

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## Operation

- 1) Wastewater enters the upper chamber via the inlet channel.
- 2) The flow rate slows as wastewater travels a 270° path to the outlet channel. Flow is kept quasi-constant by rotating paddles.
- 3) Grit is allowed to settle to the bottom chamber, while wastewater and organics return to the plant.
- 4) The grit is removed from the lower chamber by an airlift or grit pump and transferred via pipeline to the grit classifier.
- 5) Grit is washed and classified then conveyed to a collection bin.



## Materials of Construction

**Drive support:** Carbon steel or stainless steel

**Vortex chamber:** Concrete or an above ground steel version for flows up to 10 MGD (438 l/s)

**Grit washer & classifier:** carbon steel or stainless steel

**Conveyor screw:** A-36 steel with hard facing on leading edge.

## Grit Washer & Classifier

- Water and organics are decanted and returned to the plant flow.
- The screw slowly turns and conveys the grit to the dumpster.



*The grit washer and classifier, the last stage in the Grit Monster system.*

### In-Ground Models (stainless steel version also available)

Model	Max Flow* MGD (l/s)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)
GMC06	1 (44)	114 (2896)	24 (610)	12 (305)	36 (914)
GMC07	2.5 (110)	116 (2946)	30 (762)	15 (381)	42 (1067)
GMC08	4 (176)	126 (3200)	36 (914)	18 (457)	42 (1067)
GMC10	7 (307)	136 (3454)	48 (1219)	24 (610)	54 (1372)
GMC13	12 (526)	160 (4064)	60 (1524)	30 (762)	60 (1524)
GMC16.5	19 (832)	197 (5003)	72 (1829)	36 (914)	60 (1524)
GMC19	30 (1314)	218 (5537)	84 (2134)	42 (1067)	60 (1524)
GMC20	50 (2191)	238 (6045)	84 (2134)	42 (1067)	60 (1524)
GMC24	76 (3330)	283 (7188)	108 (2743)	54 (1372)	60 (1524)

\*Suggested peak flow, in some cases actual peak flow might be higher.

### Classifier Models

Model	Screw diameter in. (mm)	Grit capacity ft <sup>3</sup> /h (m <sup>3</sup> /h)
GCM09	9 (230)	60 (1.7)
GCM14	14 (350)	120 (3.4)

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