

TECHNICAL BULLETIN			
Topic:	Municipal Wastewater Duty Cutters	Date:	5/04/17
To:	All U.S. Representatives	Code:	JWCE-TB-20170504-01
From:	R&D Engineering Group	PUBLIC – OKAY TO RELEASE TO CUSTOMERS	
Product: All Muffin Monster and Channel Monster Wastewater Grinders			


CUTTER BASICS

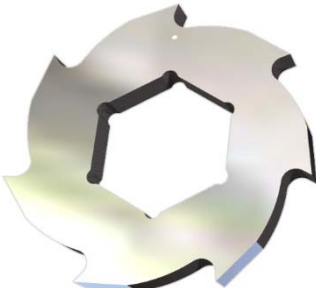
The cutters on JWC Environmental (JWCE) grinders reduce solids by fracturing, tearing, and shearing material as it passes through the cutting chamber in the waste stream. The resulting discharged particle size is influenced by the cutter thickness, number of teeth, and tooth profile in conjunction with the root diameter overlap of the cutters, which ensure the shearing of the material. The cutter thickness influences one dimension of the discharged particle; the second dimension is influenced by the number of teeth; while the third dimension is influenced by the tooth profile (tooth height and shape). For example, a .310" (8 mm) thick cutter will produce a narrower particle than a .438" (11 mm) thick cutter. Additional features, such as serrations influence the particle size distribution (i.e., how consistent the discharge particle size is).


AVAILABLE CUTTERS

17-TOOTH SERRATED – WIPES READY®		
Design	Utilizes patent pending geometry that is excellent at shredding troublesome wipes and fibrous material. Designed specifically to create a "confetti" cut of disposable wipes, thus preventing re-weaving and fouling of pumps.	
Typical Applications	Pump stations. Protection of sludge pumps.	
Materials	Alloy steel hardened to 45-52 HRc	

13-TOOTH		
Design	The number of teeth combined with a thin profile produce a small particle that is advantageous where downstream equipment is sensitive to particle size and the solids do not contain large or metallic objects.	
Typical Applications	Protection of centrifuges and heat exchangers. Protection of sludge pumps.	
Materials	Alloy steel hardened to 45-52 HRc (standard) Stainless steel hardened to 34-42 HRc (limited availability)	

11-Tooth		
Design	Designed to deal with typical municipal waste streams to produce a good particle size that is not disruptive to pump performance. The preferred cutter where wipes are not an issue in non-combined waste water streams.	
Typical Applications	Pump stations. Pipe line screening. Sludge processing.	
Materials	Alloy steel hardened to 45-52 HRc (standard) Stainless steel hardened to 34-42 HRc (limited availability)	

7-Tooth		
Design	Efficient at processing solids very quickly. Designed for use where high solids concentration is expected and a coarse particle size is acceptable. Works well as the solids pre-conditioner upstream of an Auger Monster screw screen or on the SWM washer compactor.	
Typical Applications	Pump stations with larger pumps or combined sewer systems. Prisons or jails. Headworks when used in conjunction with an auger to remove and separate solids.	
Materials	Alloy steel hardened to 45-52 HRc (standard) Stainless steel hardened to 34-42 HRc (limited availability)	

3-Tooth		
Design	Developed specifically for JWCE's Fish Cleaning Station, this cutter is designed to grab large objects (fish parts) that would ordinarily be difficult to process by other cutters with additional teeth. Produces a very coarse particle that would not be desirable in most wastewater streams	
Typical Applications	Waste streams with large objects devoid of fibrous materials and metal.	
Materials	Alloy steel hardened to 45-52 HRc (standard) Stainless steel hardened to 34-42 HRc (limited availability)	

THICKNESS AND CUTTER TOOTH AVAILABILITY BY HEX SIZE

Thickness		7-Tooth	11-Tooth	13-Tooth	17-Tooth	3-Tooth
2.0" Hex	0.438" (11.1 mm)	●	●		●	
	0.310" (7.8 mm)	●	●			●
	0.215" (5.3 mm)		●	●		

Thickness		7-Tooth	11-Tooth
2.5" Hex	0.875" (22.2 mm)	●	
	0.438" (11.1 mm)		●

Thickness		7-Tooth
3.0" Hex	0.875" (22.2 mm)	●