

GlassMax



ROCK ENGINEERED MACHINERY CO. INC.



GlassMax Grinders

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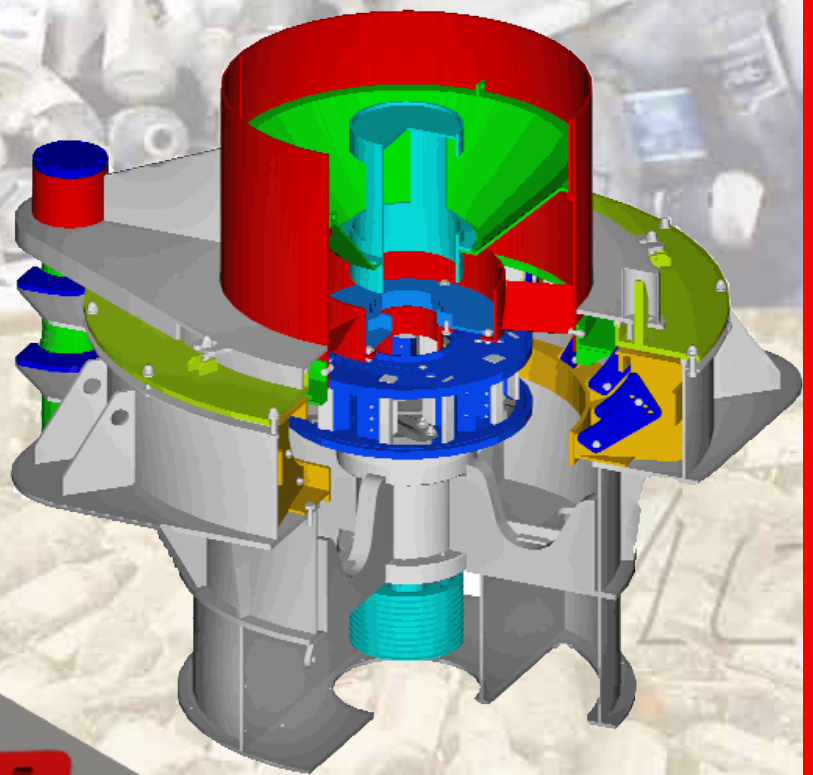
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Why a *GlassMax*?

A growing part of the green-recycling industry is the crushing and pulverizing of waste glass, glass containers and other types of glass in order to eliminate their disposal in landfills. Also, it has been established that pulverized cullet can be re-introduced to the furnace to produce new glass containers. The *GlassMax*, a special vertical shaft machine developed by *REMco* in 1991, at the request of a major glass container manufacturer, is the machine that sets the standard for pulverizing glass in a recycling plant. Since that initial installation in California, *REMco GlassMax* Vertical Shaft Grinders (VSG) have been installed around the world to do this work. The *REMco GlassMax* is vastly superior to all other fine type crushers for this work. It is specifically designed to resist the wear that high velocity abrasive glass particles and dust imparts on the grinder.

The *REMco GlassMax* incorporates unique design features such as non-metallic liners to minimize metal contamination in the product, higher speed bearings and rotors, as well as internal dust control. The *REMco GlassMax* – for recycling and pulverizing all types of glass.



REMco
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REMco GLASSMAX



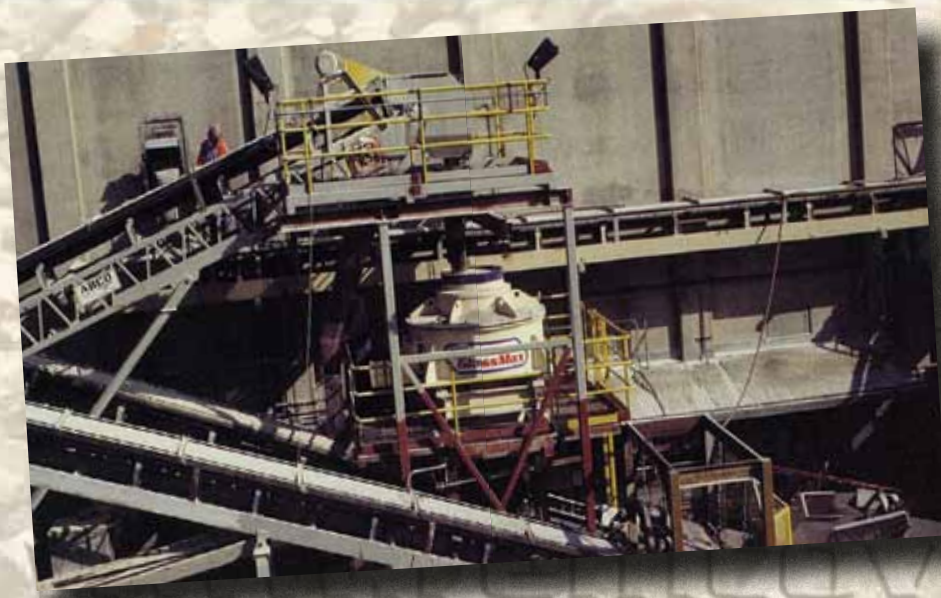
STANDARD FEATURES

- * Hydraulically lifted hopper for top service
- * Wedge type chamber locking
- * All steel extra heavy duty fabrication
- * Vibration and temperature monitoring
- * Circulating oil lubrication
- * Easy balance, multi-port rotors
- * Material lined rotor & grinding chamber
- * Fine, medium or coarse chambers
- * Deep pocket design with gusset protectors
- * Rubber vibration isolator mounts
- * Replaceable AR liners throughout
- * Ratchet jack tensioning of v-belt drive
- * Universal mounting support frame

OPTIONAL ACCESSORIES

- * Service crane for maintenance
- * Electric hoist for ease of service
- * Skid mounting for easy relocation
- * Structural steel support legs
- * Safety service platform
- * **SmartBox** remote monitoring
- * Soft Start or VFD drives available
- * Factory installed TEFC motors & drive
- * Custom discharge hoppers
- * Extended warranties
- * Performance guarantees
- * Dust collection system
- * Tungsten, long-life rotor wear parts

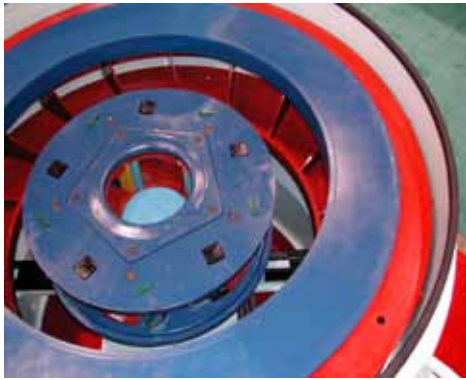
Pictured Above: a vertical **GlassMax** System custom engineered and fully supplied by REMco to a California waste glass recycler in 1994. For many years, this system has produced pulverized glass products for local users.



Pictured on Left: a horizontal **GlassMax** system custom engineered and fully supplied by REMco in 1991 to the largest western U.S. glass plant. This GlassMax Model 8000 steadily produced 32 tons per hour of minus 12 mesh (1.7 mm) cullet powder for re-introduction to the furnace.

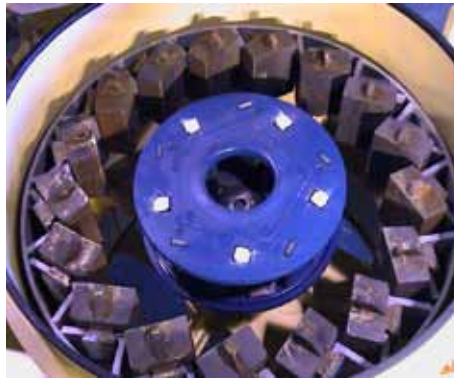
REMco Offers 3 Basic GlassMax Types

REMco GlassMax crushers/grinders are designed for reducing bottles, plate glass or any type of waste glass into powder or coarser sizes. **REMco GlassMax** crushers/grinders with their unique high performance chambers and rotor options have expanded the application range and crushing technology for high velocity reduction. Due to their various sizes and configurations, **REMco GlassMax** crusher/grinders achieve an application versatility and production performance that has never been possible until now.



Fully Autogenous

This arrangement uses a material lined chamber as well as a material lined closed rotor. This is the lowest cost operating arrangement, for producing very fine pulverized cullet.



Semi-Autogenous

This type combines a material lined closed rotor with an anvil type chamber. It is a medium cost configuration suitable for larger feeds and a greater amount of crushing in a single pass.



Hard Parts Type

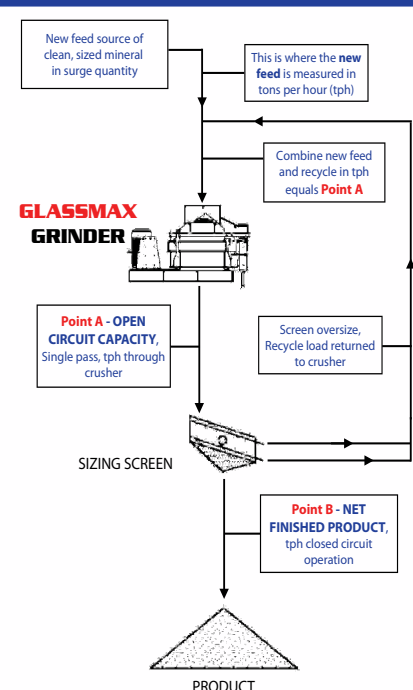
This basic type of crushing arrangement is ideally suited for crushing TV and flat screen glass. It is suitable for the coarsest feeds and maximum reduction in single pass operation.

Selecting REMco GlassMax Grinder Capacities

To select the correct GlassMax for your application, please refer to the Basic VSG Circuit diagram. **REMco GlassMax** units have two distinct capacities. These are measured at different points of the circuit. Understanding this circuit flow is key to proper model and drive power selection. This information and the capacities listed in this catalog are provided as an application aid to the buyer to assist with the design and arrangement of his glass processing system. **REMco** recommends that parties unfamiliar with processing systems retain professional assistance. Contact **REMco** for guidance.

Reduction Ratio

For **REMco** crushers and grinders, the reduction ratio is calculated as the relationship of the maximum feed size to the desired product size. For example, with a feed of -2" and a product requirement of -1/4", the reduction is $2.0 \div .250 = 8$. Maximum recommended reduction ratios for **REMco GlassMax** are 16 : 1. Exceeding the recommended reduction ratio will interfere with circuit balance and may reduce production.



Basic VSG Circuit

REMco GlassMax GRINDERS

CAPACITY TABLE IN TONS PER HOUR AS MEASURED AT **POINT A** OPEN CIRCUIT, SINGLE PASS, TOTAL TONS THROUGH THE GRINDER, 100% THROUGH ROTOR FEED

	MODEL SIZE RANGE				
	SERIES 320	SERIES 320	SERIES 320	SERIES 1530	SERIES 1530
DRIVE POWER	50 ST - 1 Motor	100 ST - 1 Motor	200 ST - 1 Motor	250 ST - 1 Motor	300 ST - 1 Motor
30 hp	15 - 20				
40 hp	30 - 35				
50 hp	35 - 40				
60 hp	40 - 45				
75 hp		40 - 45			
100 hp		60 - 70			
125 hp		80 - 90			
150 hp		110 - 120			
200 hp			110 - 120	130 - 140	
250 hp			130 - 140	160 - 180	
300 hp			160 - 180	220 - 240	
				260 - 280	

Note 1: The capacities shown above are for feed which passes 100% through the rotor. REMco GlassMax grinders **do not** use any form of rotor by-pass system such as Cascade or Bi-Flow. These systems provide no grinding benefit and solely create a coarser product while increasing the circuit recycle load.

Note 2: The capacities shown in this table are for grinding sand, competent glass or minerals having a broken bulk density of 100 lbs. per cubic foot. Larger, angular feeds will reduce capacity; finer, cubical feeds will increase capacity.

CAPACITY TABLE IN TONS PER HOUR—CLOSED CIRCUIT OPERATION. TONS OF NET SCREEN UNDERSIZE AS MEASURED AT **POINT B**.

FEED TOP SIZE FOR COARSE AND FINE FEEDS ARE FOR ALL PARTICLES HAVING A MAX. ONE-WAY FEED DIMENSION AS SHOWN BELOW								
FEED SIZE	COARSE 1" - 2" / 25—50 MM				FINE 3/8" - 1" / 10—25 MM			
PRODUCT SIZE	.250" / 6.7 mm 3 mesh	.187" / 4.7 mm 4 mesh	.131" / 3.3 mm 6 mesh	.093" / 2.3 mm 8 mesh	.187" / 4.7 mm 4 mesh	.093" / 2.36 mm 8 mesh	.049" / 1.18 mm 16 mesh	.0382" / .85 mm 20 mesh
30 hp	9 - 11	7 - 9	5 - 7	4 - 6	12 - 14	8 - 12	5 - 7	4 - 6
40 hp	12 - 14	9 - 11	7 - 9	5 - 7	15 - 17	11 - 15	7 - 9	5 - 7
50 hp	15 - 17	11 - 13	9 - 11	7 - 9	20 - 22	14 - 18	9 - 11	7 - 9
60 hp	19 - 21	14 - 16	11 - 13	9 - 11	24 - 26	17 - 22	11 - 14	8 - 11
75 hp	24 - 26	18 - 20	14 - 16	11 - 13	30 - 33	22 - 28	14 - 17	11 - 13
100 hp	32 - 34	24 - 26	19 - 21	15 - 17	40 - 43	29 - 37	18 - 23	14 - 18
125 hp	41 - 43	30 - 32	24 - 26	20 - 22	50 - 54	36 - 46	23 - 28	18 - 22
150 hp	49 - 51	36 - 38	29 - 31	24 - 26	60 - 65	44 - 55	28 - 34	22 - 26
200 hp	64 - 68	48 - 52	38 - 42	31 - 36	80 - 87	58 - 74	37 - 45	29 - 35
250 hp	81 - 85	60 - 64	48 - 52	39 - 43	100 - 108	73 - 92	47 - 57	36 - 44
300 hp	98 - 102	73 - 77	58 - 62	48 - 50	120 - 130	88 - 111	56 - 68	44 - 52

Note 1: The capacities shown in this table are in short tons, 2,000 pounds and are neither maximum nor minimum. For metric capacities, multiply by a factor of 0.9.

Note 2: Tonnages shown are based on processing clean, sound materials at ambient temperature in a well-designed processing circuit with proper feed controls and adequate screening.

Note 3: Many factors effect capacity, such as individual fracture characteristics, type and size of rotor, drive motor power, feed moisture content, etc.

Note 4: Producing multiple sizes simultaneously will reduce total net tons of individual finished products. All capacities are based on 100% screening efficiency with the grinder operating in closed circuit.

Note 5: All GlassMax units can be used to produce coarser and finer sizes than those shown in this capacity table. REMco GlassMax units have been successfully used for the production of products from minus 1/2" to minus #80 Mesh. Consult REMco for further details.

Controlling the top size of the feed is important in order to achieve optimum performance from **REMco GlassMax** Grinders. Generally, the bigger the grinder, the larger its feed size capability. When choosing a grinder model, its capacity can be influenced by the largest particle in the intended feed. For accurate selection of the rotor configuration as well as the chamber arrangement, and to achieve the lowest grinding cost, do not exceed the maximum feed sizes shown here. When whole glass containers, such as beer and wine bottles or other oversize glass items, are to be crushed/ground, **REMco** offers special designs to meet these feed requirements such as a Model 400 or larger **GlassMax**. Contact **REMco**.

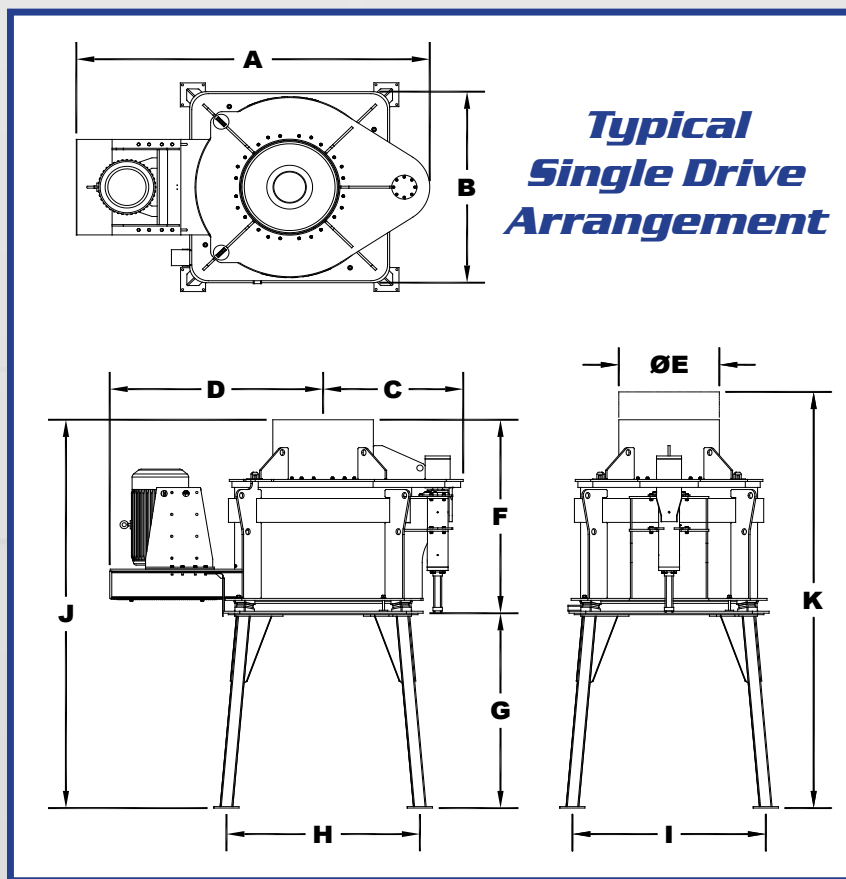
GlassMax FEED SIZE CHART	
MODEL NUMBER	MAX FEED SIZE
50	1-1/4" - 30 mm
100	2" - 50 mm
300	3" - 75 mm
400	4" - 100 mm

General Clearance and Installation Dimensions

REMco SINGLE DRIVE Model ST GlassMax

CRUSHER MODEL		A	B	C	D	E	F	G	H	I	J	K
50	INCHES	95	48	37	58	24	48	96	51	45	143	155
	METRIC	2413	1219	940	1473	610	1219	2438	1295	1143	3632	3937
100	INCHES	119	62	43	76	30	66	83	92	53	152	166
	METRIC	3023	1574	1092	1930	762	1676	2108	2337	1346	3861	4216
200	INCHES	131	62	54	78	37	80	77	92	53	162	176
	METRIC	3327	1574	1372	1981	940	2032	1956	2337	1346	4115	4470
250	INCHES	131	62	54	78	37	80	77	92	53	162	176
	METRIC	3327	1574	1372	1981	940	2032	1956	2337	1346	4115	4470
300	INCHES	182	89	63	120	47	94	84	137	82	178	192
	METRIC	4623	2261	1600	3048	1194	2388	2134	3480	2083	4521	4877

The dimensions shown are approximate and subject to change. Do not use for construction. Request a certified installation drawing prior to designing the crusher support. **REMco** reserves the right to change these dimensions without prior notice.



GlassMax Operating Benefits for the Modern Producer

- Unique differential grinding method purges contaminants
- Wide power range for individual production requirements
- Will produce fine cullet to all specifications
- Produces pulverized cullet for minimal cost per ton
- Low service and maintenance requirements
- Convertible crushing chamber inserts options
- Glass-on-Glass grinding does not add metal to the fine cullet
- Readily grinds flint, green, amber, mixed cullet or plate glass
- Smooth vibration-free operation
- Low noise emission when running at full capacity
- Compact design for easy installation
- Minimal dust emissions

The **REMco GlassMax** VSG is designed exclusively for grinding all types of glass. It is not a converted rock crusher. The grinding chamber, rotor and operating specifications for the machine are unique to glass crushing/grinding only. **GlassMax** is a registered trademark of **REMco**.

REMco GLASSMAX

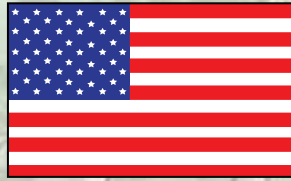
IMPORTANT APPLICATION INFORMATION AND GUIDELINES

- The capacities shown in this catalog are for fully autogenous grinders only and are neither maximum nor minimum. Tonnages shown are based on processing material in a well designed processing circuit with automated feed controls and adequate screening. Many factors effect capacity, such as material hardness, type of rotor used, number of rotor ports, rotor speed, size of drive motor(s) feed moisture content, etc. For metric capacities, multiply by a factor of 0.9.
 - REMco recommends conducting a grinding test prior to applying **GlassMax** grinders or designing a grinding circuit. A chemical analysis test of the material to determine abrasive content is also recommended. Contact **REMco** for details and/or to schedule such a test.
 - Water in feed in excess of 1-3% will reduce grinder performance and may cause chamber packing, screen blinding, raise power demand and increase parts wear raising the operating cost. Drying of the material is recommended to maximize circuit performance.
 - Maximum recommended feed size will vary dependent on type, hardness and shape of material to be crushed. Larger, angular feeds will reduce capacity; finer, cubical feeds will increase capacity. All feed size designations shown are for a maximum one-way dimension of the feed pieces.
 - **GlassMax** grinders can be operated in open or closed circuit. Closed circuit operation will produce the best results. Closed circuit operation will also yield the greatest net product and the best final product grading.
 - The information contained in this catalog is provided as an application aid to assist the user in maximizing the potential of **GlassMax** grinders. No performance guarantees are expressed or implied. To determine the effect of individual conditions, contact **REMco**.
- The above applies to all **GlassMax** models shown in this catalog. **REMco** reserves the right to change the capacities and specifications contained herein without prior notice.

**Any Glass,
Any Tonnage,
Anywhere...**



MANUFACTURED IN:



REMco ALSO OFFERS SPECIAL CRUSHER DESIGNS
FOR MINING, CONSTRUCTION MATERIALS AND THE
INDUSTRIAL MINERALS INDUSTRIES.
CONTACT **REMco** FOR DETAILS.



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