



# SEVERE-DUTY GRINDERS



*The right choice for efficient solids conditioning!*

# The right choice for tough wastewater and sludge handling applications....

Effective solids conditioning is critical to achieving efficient and reliable throughput in your wastewater and sludge handling systems. The SEWER CHEWER® grinder is a key part of these systems, helping them to operate more efficiently with consistent and reliable solids size reduction.

The SEWER CHEWER utilizes a proven counter-rotating dual shaft design with patented hardened cutters. This design provides an effective and reliable solution to the reduction of solids commonly found in today's wastewater flows. The SEWER CHEWER is a product of our extensive solids reduction and hydraulic experience. You now have a choice in wastewater grinders. The SEWER CHEWER is the best choice!

## UNIT CONSTRUCTION

With a simple, yet rugged, design featuring standard ASTM Class 30 Cast Iron that provides a rigid and long lasting superstructure, SEWER CHEWER grinders are available for channel & wet-well mounting (CHANNEL CHEWER™) as well as for in-line pipe mounting (SEWER CHEWER). Channel units are mounted using stainless steel or galvanized frame brackets.

In-line SEWER CHEWERS utilize ANSI Class 125 lb. flange mounted hoppers. Both the CHANNEL CHEWER and SEWER CHEWER are designed for simple retrofitting of other common sewage grinders.

## BEARINGS AND SEALS

The SEWER CHEWER features a simple and straightforward approach to bearing protection and seal design. The ball bearings are double-sealed Conrad type with permanent grease lubrication. The mechanical seals feature tungsten carbide construction for optimum performance on high grit applications. This unitized bearing/seal arrangement provides an effective, yet economical, solution to the common failures found in many other sewage grinders.

## CUTTER DESIGN

Our unique patented cutter features five (5) Shear Ovals on both sides of the cutter face. This additional cutting area adds a shearing cut not present in smooth surfaced cutters. The cutter's grinding, crushing, tearing and shearing actions combine to produce a finer more consistent grind.

Our cutters are also designed with an impeller like profile to enhance the grabbing power of the cutters to draw in larger solids. Standard cutters are manufactured of AISI 4140 alloy steel; precision ground and hardened to 43-48 Rockwell C for strength and reliability.

The spacers are of matching material and are hardened and precision ground to maintain a tight tolerance in the cutting stack.

## MOTOR

The standard drive system utilizes an integrated 3 HP (5 HP on larger units) TEFC motor and cycloidal speed reducer which eliminates secondary coupling pieces and minimizes power losses to the driven shafts.

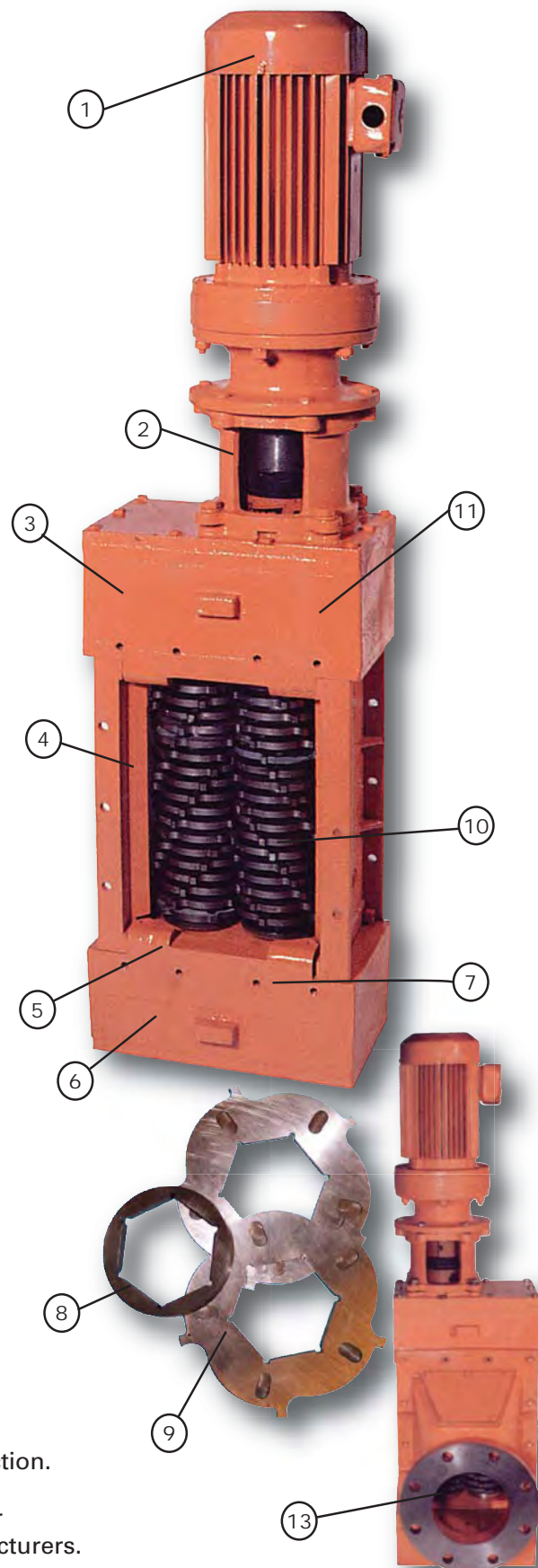
The drive arrangement on the standard unit features a single coupling, direct connected motor. However, a wide variety of optional drive arrangements are available, including extended flexible drive shafting for remote motor location, hydraulic power packs, and our own submersible drive package that allows for the ultimate flood-proof operation.

Our exclusive submersible drive package utilizes our own "Continuous In-Air" rated motor mated to a sealed cycloidal speed reducer. This TENV (IP68) motor also utilizes our "true non-wicking" cable entry system to provide the ultimate protection against moisture leakage from damage to the power cable.



# Key features and benefits....

1. **Motor/Reducer** - Standard high-efficiency TEFC integrated gearmotor; alternate motor enclosures and modifications available.
2. **Coupling** - Standard units feature a single coupling for effective power transmission.
3. **Cast Housings** - Heavy duty cast iron housings maintain accurate alignment and precision tolerances.
4. **Sidewalls** - Contoured to allow maximum flow while directing solids inward to the cutting zone; design provides superior head-loss characteristics.
5. **Bearings** - Double sealed oversized Conrad type ball bearings with permanent grease lubrication for extended life and reliable performance.
6. **Lock Nuts** - Easy access lock nuts provide for simple cutter stack adjustments.
7. **Abrasive Resistant Seals** - Tungsten carbide mechanical seals are our standard and provide optimum performance and protection on severe duty applications.
8. **Cutters & Spacers** - Patented cutter design provides maximum solids reduction. Unique tip profile enhances grabbing action to pull solids into the cutting zone. Cutters and spacers are AISI 4140 Alloy Steel and are ground and heat-treated to provide a hardness of 43 ~ 48 Rockwell C.
9. **Side Cutting Feature** - A cutting surface on the mating face of the cutters provides additional cutting and shearing action.
10. **Dual Hex Shafts** - 2" AISI 4140 Heat Treated Hexagonal shafts deter shaft deflection and eliminate the need for keys or set screws. Tensile strength of 149,000 PSI minimum .
11. **Gears** - Surface Hardened Steel gears provide differential shaft speed and durable power transfer.
12. **Hardware** - All hardware is stainless steel to insure maximum corrosion protection.
13. **Hopper Flanges** - 125 lb. ANSI Flanged In-Line Hoppers allow simple "bolt up" installation. Generous hand-hole covers accommodate easy inspection.
14. **Retrofit** - The SEWER CHEWER® has been designed for easy retrofit to most existing grinders of other manufacturers.



# Common Applications...

- Main Influent
- Primary Sludge
- Secondary Sludge
- Sewage Lift Stations
- Dewatering Systems
- Industrial Process Waste
- Food Processing Waste
- Airports and Marinas
- RV Waste Stations
- Highway Rest Areas and Campgrounds
- Correctional Facilities
- Hospitals
- Institutional Kitchens
- Fish and Poultry Processing Facilities
- Restaurants
- Animal Waste

## Type SC Inline Mount



## Type CC Channel Mount

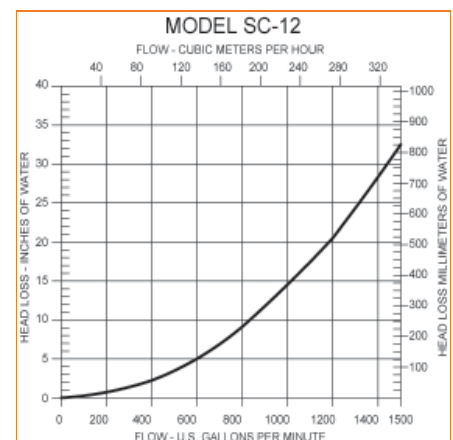
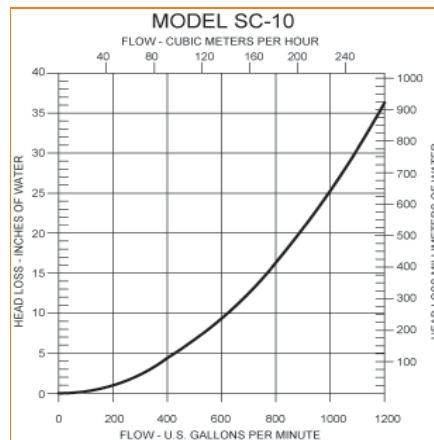
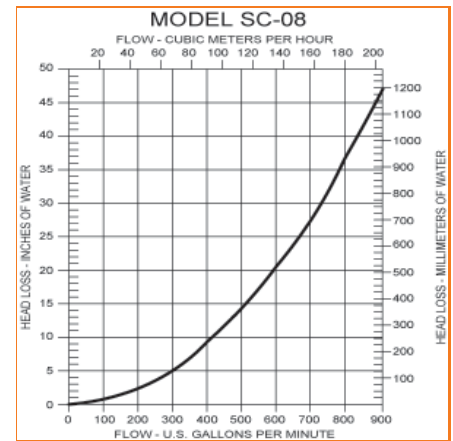
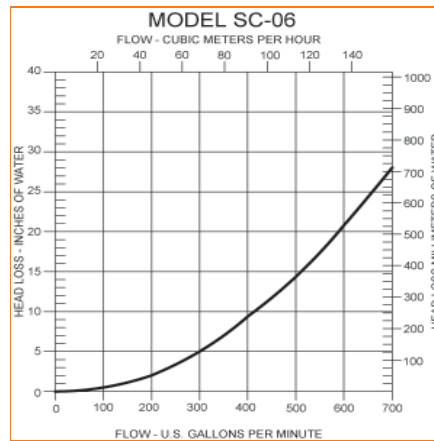
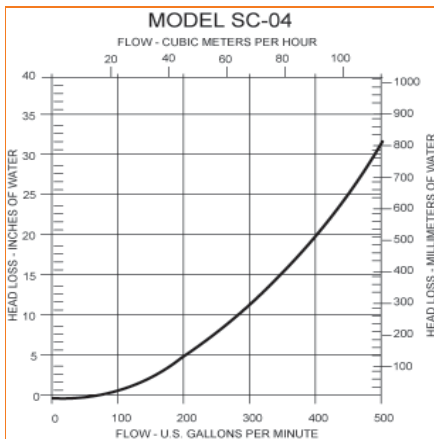


Model		SC-04	SC-06	SC-08	SC-10	SC-12
Nominal Capacity Range:	USGPM	80 ~ 500	180 ~ 700	300 ~ 900	500 ~ 1200	700 ~ 1500
	m3/h	18 ~ 114	41 ~ 159	68 ~ 204	114 ~ 273	159 ~ 341
Std. Motor HP		3	3	3	3	3
Overall Height, in. (mm)		39.75 (1010)	43.75 (1111)	43.75 (1111)	49.75 (1264)	55.75 (1416)
Width, in. (mm)		12.25 (311)	12.25 (311)	12.25 (311)	12.25 (311)	12.25 (311)
Flange to Flange, in. (mm)		19.125 (486)	21.125 (537)	23.125 (587)	27.125 (689)	31.125 (791)
Flange Size, in.		4	6	8	10	12
Approx. Weight, lb (kg)		425 (191)	450 (203)	475 (214)	575 (259)	650 (293)

Model		CC-08	CC-12	CC-18	CC-24	CC-32	CC-40
Nominal Capacity Range:	USGPM	50 ~ 320	200 ~ 500	350 ~ 775	550 ~ 1100	960 ~ 1600	1580 ~ 2300
	m3/h	11 ~ 73	45 ~ 114	79 ~ 176	125 ~ 250	218 ~ 363	359 ~ 522
Std. Motor HP		3	3	3	3	5	5
Overall Height, in. (mm)		39.75 (1010)	43.75 (1111)	49.75 (1264)	55.75 (1416)	67.25 (1708)	75.25 (1911)
Width, in. (mm)		12.25 (311)	12.25 (311)	12.25 (311)	12.25 (311)	12.25 (311)	12.25 (311)
Approx. Weight, lb (kg)		35 (158)	375 (169)	425 (191)	500 (225)	550 (248)	625 (281)

# Head Loss Curves....

## Type SC Inline Mount



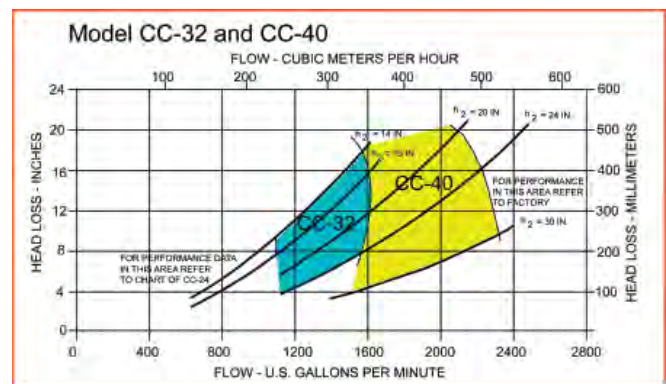
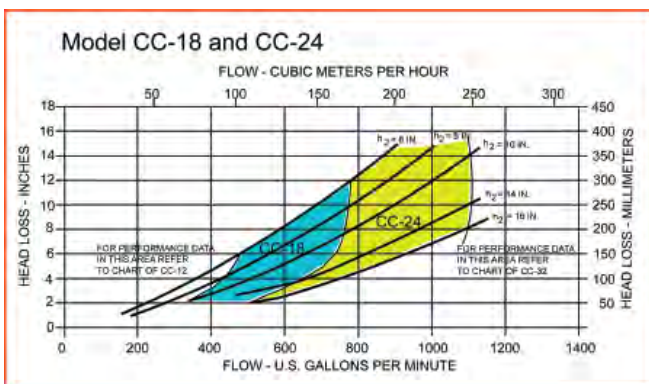
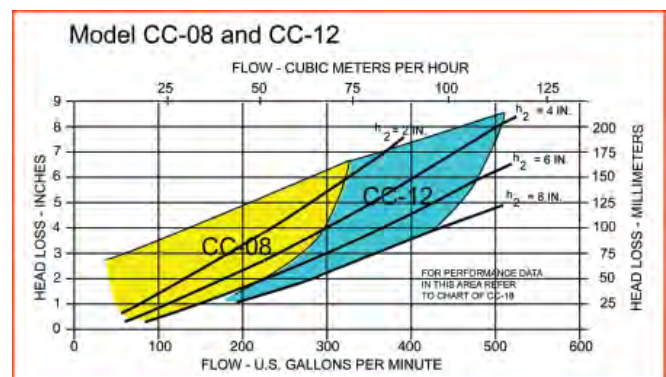
## Type CC Channel Mount

Sample Selection:

1. Establish the anticipated flow rate and the water depth ( $h_2$ ) prior to the installation of the CHANNEL CHEWER™
2. The intersection will determine the size of CHANNEL CHEWER and the resultant head-loss.
3. The downstream water depth ( $h_2$ ) plus head-loss will establish the inflow water depth.

Example: Flow Rate = 400 USGPM  
Water Depth ( $h_2$ ) = 4 in.

Use Model CC-12; Head-Loss = 6 in.  
Inflow Water Level:  $4 + 6 = 10$  in.



All head-loss data is based on clear water tests.

# Optional Mounting and Drive Arrangements...



The optional extended shaft with support pipe prevents motor damage caused by flooding. It also provides safe and easy access in confined space areas.

Vertical open-shaft ("cardan shaft") arrangements are also available for motor mounting at an upper floor elevation.

Our FM listed explosion-proof submersible motor option (TENV; IP68 protection) is rated for continuous-in-air operation and is suitable for both dry-pit and wet-pit applications. The optional guide rail system provides for quick installation and removal. This option can greatly reduce civil construction costs by allowing for direct installation of the SEWER CHEWER® in the pump wet-well. It is the ideal choice for both new construction and existing wet-wells.

The submersible motor option is available for both channel-mount and inline-mount units.



The optional Hydraulic Drive Package incorporates a 5HP standard (7.5HP optional) motor and 20 gallon (76 liter) reservoir tank and is complete with all control and safety devices.

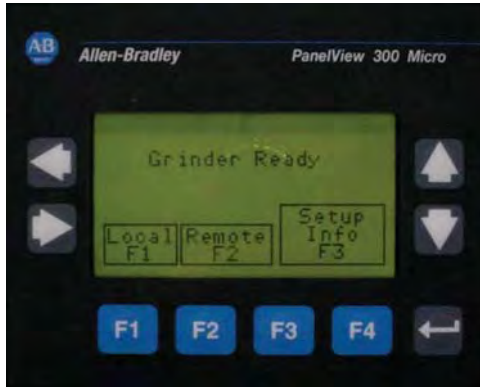
Optional rain resistant and cold weather features are also offered with this package.

Please refer to factory for other mounting or drive arrangements

# Solid-state PLC Based Auto-reversing Controls....

The standard digital controller packaged with the SEWER CHEWER® unit provides an easy interface for the user to control the grinder whether locally at the panel or remotely with external start/stop signals. The grinder motor is continuously monitored by the Programmable Logic Controller (PLC) and other associated devices. It reacts to extraneous conditions which could harm the grinder or motor. Motor

overload and grinder jam alarms are displayed on the Operator Interface Device (OID) along with instructions the user can follow to reset the grinder if needed.



To assist in keeping up a regular maintenance schedule, the controller will display messages periodically to remind the user when preventative and overhaul maintenance on the SEWER CHEWER are recommended.

To assist in the tracking of SEWER CHEWER activity over time, the digital controller monitors total power on time, motor running time, total grinder overloads, and total motor overloads. These memories are resettable to provide the operator a means of tracking activity between inspections or time periods.

Once started, whether locally or remotely, the digital controller is designed to run the grinder continuously and unmanned even after power outages and the occasional grinder jam (exceptions being motor overloads and grinder overloads which need to be manually reset by a machine operator). If a jam occurs, the grinder will automatically attempt to clear the obstruction by stopping, then reversing briefly to eject the object. The grinder will then resume forward operation. For stubborn objects, which get entangled in the grinder, the REVERSE GRINDER pushbutton can be used to reverse the grinder to aid in removal of the obstruction. In the event power should be lost to the SEWER CHEWER and subsequently restored, the digital controller will issue a power up warning sequence and resume grinder automatic operation.

The standard SEWER CHEWER controller is furnished with a rugged NEMA 4X FRP enclosure. Alternate types of enclosures and materials are available.

Analog type control systems and other custom systems are also available to meet project specifications and individual customer requirements.



## UL-508

SEWER CHEWER controllers are listed by Underwriters Laboratories, Inc. under the UL-508 standards for industrial control equipment and they meet or exceed the National Electrical Code requirements. The standard digital controller packaged with the SEWER CHEWER unit provides an easy interface for the user to control the grinder whether locally at the panel or remotely with external start/stop signals. The grinder motor is continuously monitored by the Programmable Logic Controller (PLC) and other associated devices. It reacts to extraneous conditions which could harm the grinder or motor. Motor overload and grinder jam alarms are displayed on the Operator Interface Device (OID) along with instructions the user can follow to reset the grinder if needed.

**Need a replacement grinder NOW?  
Let us Re.S.C.U.E.™ you!**

## **RE.S.C.U.E. AND SERVICE PROGRAM**

# **Replacement Sewer Chewer Unit Exchange**



***We'll rush you a replacement unit so that your system is up and running in a flash!***

Please contact us or your local Sewer Chewer® distributor for details.



**ISO 9001:2000 Certified**

For further information please contact your local distributor:

Yeomans Chicago Corp.  
3905 Enterprise Court  
P.O. Box 6620  
Aurora, IL 60598-0620  
PH: 630-236-5500  
FX: 630-236-5511  
[www.yccpump.com](http://www.yccpump.com)