



# 12GS

SUBMERSIBLE GRINDER PUMP



**Bell & Gossett**

a xylem brand

## Wastewater

### FEATURES

**Design:** Capable of grinding domestic sewage in individual residential applications.

**Cutter System:** Anti-roping design. Two blade rotary cutter is threaded to shaft. Stationary cutter ring is reversible for extended service.

**Impeller:** Silicon bronze, semi-open, non-overloading two-vane design with pump-out vanes for mechanical seal protection. Balanced for smooth operation.

**Casing:** Cast iron, volute type for high efficiency. Adaptable for guide rail system.

**Motor:** Fully submerged in oil-filled chamber. High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal, and protection against outside environment.

**Motor Shaft:** 300 series stainless steel, short overhang for minimum shaft deflection.

**Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.

### APPLICATIONS

Designed for high head residential sewage applications where a gravity system is not practical. Ideal for pressure sewage systems.

### SPECIFICATIONS

#### Pump:

- Capacities: to 41 GPM
- Total heads: to 95' TDH
- Discharge: 1 1/4" NPT
- Temperature: 104°F (40°C) maximum continuous, 140°F (60°C) maximum intermittent
- Single mechanical seal: silicon carbide rotary/silicon carbide stationary, 300 series stainless steel metal parts, BUNA-N elastomers
- Fasteners: 300 series stainless steel
- Rotating cutter and cutter ring: 440 C hardened stainless steel

**Bearings:** Upper and lower ball bearings for precision positioning of parts and to carry all radial and thrust loads.

**Mechanical Seal:** Hardfaced Silicon carbide for longer life, stainless steel metal parts, BUNA-N elastomers.

**Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking.

**O-Ring:** Assures positive sealing against contaminants and oil leakage.

**Paint:** Electro-coat paint process protects all casting surfaces.

May be used with optional guide rail. See Fittings or Pump Removal Systems.

### AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards  
By Canadian Standards Association  
File #LR38549



Underwriters Laboratories

#### Motor:

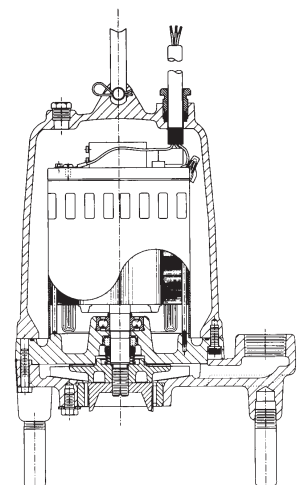
- Single phase: 2 HP, 60 Hz, 3450 RPM, 208/230 V, capacitor start with on winding thermal protector. **No external capacitor kits required.**
- Class F insulation
- Shaft: 300 series stainless steel threaded design
- Bearings: ball bearings upper and lower

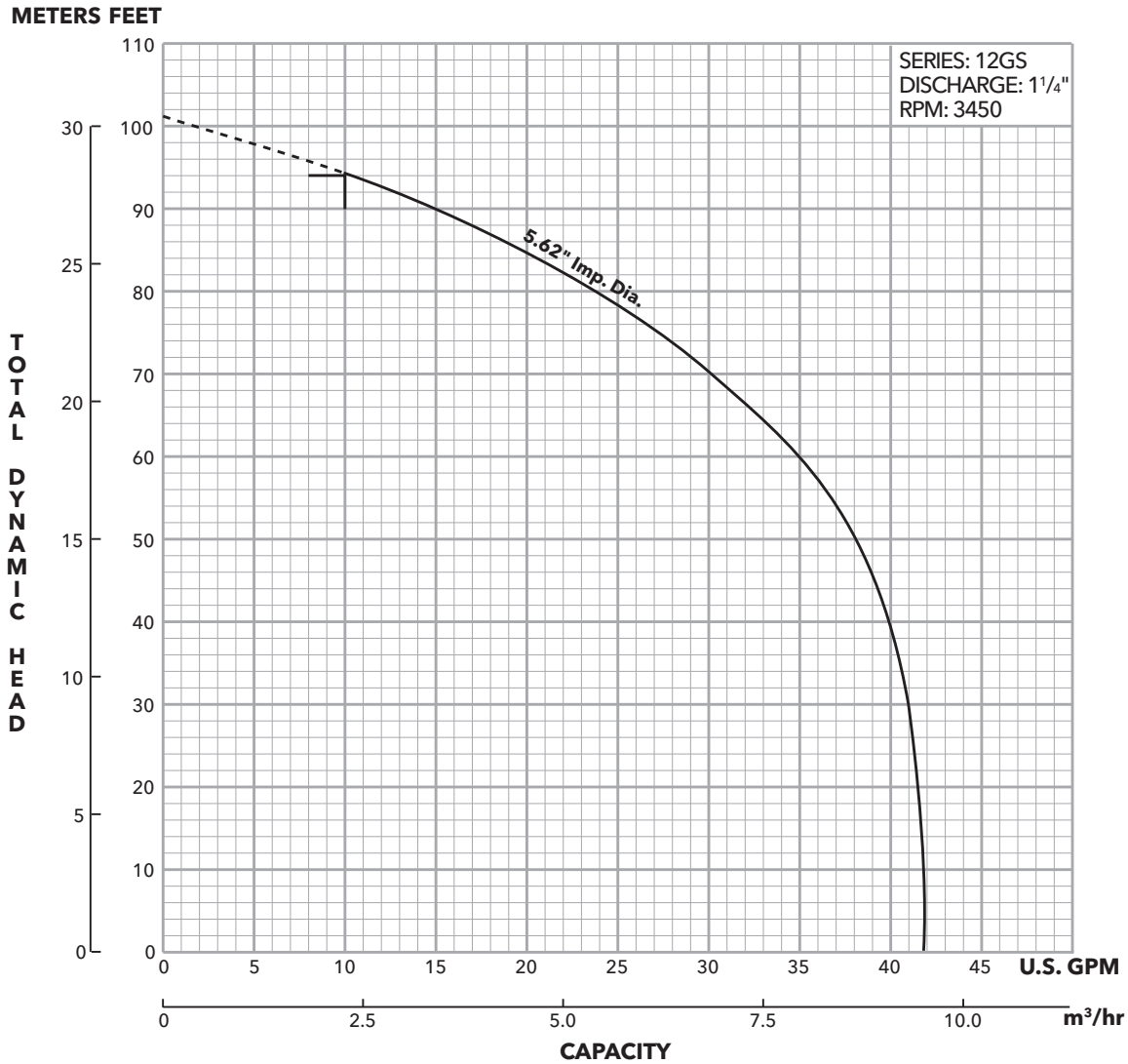
#### Power Cord with bare lead ends:

- Use for connections in a control panel or junction box
- Standard length 20', 14/3 STOW
- Optional lengths of 30', 50' and 100'

Power Cord with 230 V NEMA three prong grounding plug:

- P suffix equals a 20' long cord with plug
- PS suffix equals a 30' long cord with plug
- Allows direct connection to piggyback type float switch





⌊ = A 1 1/4" minimum discharge pipe requires a minimum flow of 10 gpm to maintain a 2 ft./sec. scouring velocity. Flows less than 10 gpm will allow solids to settle in the pipe.

### MODEL INFORMATION

Order Number	HP	Volts	Phase	RPM	Operation	Discharge Size	Impeller Diameter (inches)	Maximum Amps	LRA	Power Cord	Weight (lbs.)
12GS2012	2	208/230	1	3450	Manual	1 1/4"	5.69"	15	59	20' with Bare Leads	75
12GS2012P					20' with 230 V Plug						
12GS2012PA					Automatic					20' with 230 V Plug and Float	76
12GS2012PS					Manual					30' with 230 V Plug	

A non-stock pump may be special ordered with optional legs by adding an "L" suffix to the Order Number. Example: 12GS2012L, 12GS2012SL, 12GS2012PSL, etc. See "L" List Adder in price book.

### MOTOR DATA

HP	Volts	Phase	RPM	Maximum Amps	LRA	Full Load Motor Efficiency	Resistance		Power Cable	Fuse/Circuit Breaker
							Start	Line-Line		
2	208/230	1	3450	15	59	70	2.47	1.1	14/3	30

## APPLICATION DATA

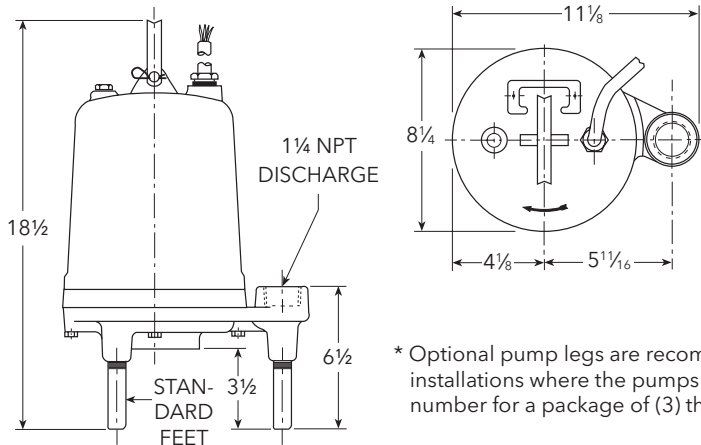
Minimum Casing Thickness	5/16"
Casing Corrosion Allowance	1/8"
Maximum Working Pressure	50 PSI
Maximum Submergence	50 feet
Minimum Submergence	Fully submerged for continuous operation
	6" below top of motor for intermittent operation
Maximum Environmental Temperature	40°C (104°F) continuous operation
	60°C (140°F) intermittent operation
Maximum Number of Evenly Distributed Starts per hour	10
Bearings	B-10 life of 30,000 hours min.
Minimum Basin Size	Simplex - 24" x 36" Fiberglass
	Duplex - 36" x 36" Fiberglass
1 1/4" Minimum Discharge Pipe Diameter	Requires a minimum flow of 10 gpm to maintain a 2 ft./sec. scouring velocity
2" Maximum Discharge Pipe Diameter	Requires a minimum flow of 21 gpm to maintain a 2 ft./sec. scouring velocity

## STANDARD PARTS

Ball Bearing - upper	Single row ball - SKF 6203-2Z
Ball Bearing - lower	Single row ball - SKF 6204-2Z
Mechanical Seal	Silicon carbide/silicon carbide; Type 16
O-Ring - motor cover	BUNA-N, AS 568A-166

## DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



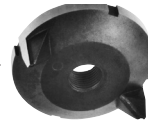
\* Optional pump legs are recommended for poly or fiberglass basin installations where the pumps contact the basin floor. The order number for a package of (3) three optional pump legs is 4K639.

## CONSTRUCTION DETAILS

Power Cable - type	14/3 STOW, single phase with bare leads
	14/3 STOW, with 230 V NEMA three prong grounding plug
Motor Cover	Gray cast iron - ASTM A48, Class 30
Bearing Housing	Gray cast iron - ASTM A48, Class 30
Seal Housing	Gray cast iron - ASTM A48, Class 30
Casing	Gray cast iron - ASTM A48, Class 30
Impeller	Cast silicon bronze - ASTM B584 C87600
Motor Shaft	AISI 300 series stainless steel
Motor Design	NEMA 48 frame, oil filled with Class F insulation
Motor Overload Protection	On winding thermal protector - auto reset
External Hardware	300 series stainless steel
Impeller Type	Semi-opened with pump out vanes on back shroud
Cutter	Two blades; type 440C hardened stainless steel
Oil Capacity - motor chamber	.88 gallons

## CUTTER ASSEMBLY

2-Blade Rotating Cutter



Reversible Cutter Ring



**xylem**  
Let's Solve Water

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