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# SPECIFICATIONS SHEET MODEL 840 GRINDER PUMP SYSTEM



## 1) Grinder Pump (Zoeller Model 840).....

Each unit shall be capable of delivering, equally forward or reverse, a minimum of 15 GPM at 81' TDH and have a shut-off head of 104 ft. The Grinder Pump shall be UL Listed.

The pump shall have a submersible type motor with an attached grinder unit. The pump is designed to operate in such a fashion that solids shall be fed in a downward, horizontal, and upward direction into the grinder mechanism as the high head pumping unit develops suction at the inlet. The grinder cutting blades shall have the ability to be directional reversed automatically or manually for longer cutter life.

The grinder shall be capable of cutting materials normally found in sewage such as sanitary napkins, disposable diapers, pantyhose, wash rags, and food particles into a fine slurry which will pass freely through the pump and force main.

### 1A) Design Conditions.....

Simplex system (1 Pump)

Duplex system (2 Pumps)

\_\_\_\_\_ GPM required

\_\_\_\_\_ Total Dynamic Head

\_\_\_\_\_ Shut-off Head

### Voltage.....

200-208V/1 Phase

230V/1 phase

200-208V/3 phase

230V/3 phase

460V/3 phase

575V/3 phase

### 1B) The motor shall have the following features:

- 2 HP, 60 Hz, 3450 rpm motor.
- Durable, heavy duty, oil-filled, finned cast iron housing for heat dissipation and seal/bearing lubrication.
- Class F motor insulation...155°C./311°F.
- Operate over the complete performance curve without overloading or excessive vibration.
- Single upper and lower ball bearing.
- Single phase thermal overload protection with automatic reset.
- Three phase internal thermal sensor protection.
- 20' lengths of UL Listed power and sensor cable.
- Integral wired-in rotor/shaft directional reversing action.
- ANSI 416 Stainless steel rotor shaft.



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**1C) The pump and castings shall have the following features:**

- Hermetically sealed enclosure.
- 1¼" NPT vertical discharge.
- 304 SS fasteners and lifting bail.
- Carbon/ceramic mechanical seals located in tandem.
- Seal leak moisture sensing probes.
- Balanced ductile iron vortex impeller, keyed and bolted to a stainless steel shaft, with top pump out vanes.
- The cutting assembly and impeller shall be replaceable without complete disassembly of the pump.
- Corrosion resistant powder coated epoxy finish.
- ASTM A-48 Class 30 grey cast iron housing with integral fins for maximum heat dissipation.
- UL Listed.

**1D) The cutter & shredder mechanism shall have the following features:**

- The rotary cutter, #440 SS hardened to a 55-60 Rockwell C, is keyed and bolted to a stainless steel shaft.
- The cutter is capable of forward and reverse rotation by means of an automatic or manual controller without removal from the pit.
- The SS shredding disc will be mounted onto the lower casting with SS cap screws.
- The cutter and shredding disc can be removed without disassembling the pump for easy surface reconditioning.

**1E) Grinder pump options.....**

Extra Cord Lengths:

- 25'
- 30'
- 50'

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**The following is a list of components which make up a grinder pump lift station, whether it be a simplex or duplex installation. You should check off the components required in this application and any additional options which are listed in the following sections.**

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**2) Control panel.....**

The control panel shall be housed in a NEMA 4X enclosure and be of a  simplex design which controls a single pump from a 3-float system or a  duplex design which controls two pumps in an alternating lead/lag cycle sequence from a  3 or  4-float system. The panel shall contain the required starting, control, & alarm circuits. Rated motor starters and circuit breakers are required for each pump. The 115 volt control circuit shall have short circuit protection. The panel shall have pump run pilot light(s) and pump & alarm selector switches. The panel shall be equipped with circuit(s) which automatically reverses the direction of the cutter blades. A seal leak indicator light is required as well as a thermal cut-out connection for 3 phase systems. A padlock hasp shall be provided. High water conditions shall be indicated by a visible light with polycarbonate cover. Numbered terminal strips are required. A wiring schematic and trouble shooting guide shall be included with each panel. The panel shall be UL listed and be labeled as such.

**2A) Control panel options.....**

- Audible high water alarm.
- Flasher for high water light.
- Moisture detection circuit(s) with relay and external indicating light(s).
- Intrinsically safe relays.
- Elapsed time meter(s).
- Dry auxiliary alarm contact for high liquid level.

- 3) Variable level float switches.....  
Variable level with 20' cords.  
Adjustable weights and Mounting bracket

- 3A) Float switch options.....  
Extra cord length \_\_\_\_\_ ft.

- 4) Indoor basin and cover only .....  
Simplex, 24" Dia. X 36" Deep  
Duplex, 30" Dia. X 36" Deep  
Fiberglass construction, 4" cast iron inlet hub (field mounted), 1/4" gasketed steel cover, seal(s) for 1 1/4" Discharge & 3" vent connections, pump cover(s), inspection plate, and cord seal(s).

- 4A) Prepackaged/Job Ready Indoor Basin .... \*\*  
Fiberglass construction, 1/4" gasketed steel cover with inspection plate, pump cover(s), and pump support hardware. Also provided is a 4" cast iron inlet hub for field mounting, 1 1/4" discharge connection(s), 3" vent seal, cord seal(s), 1 1/4" ball valve(s), and 1 1/4" check valve(s).  
Simplex construction, 24" dia. x 36" Deep  
Duplex construction, 30" dia. x 36" Deep

- 4B) Indoor Basin & Cover Options....  
1 1/2" Discharge connection  
1 1/2" PVC shut-Off Valve  
1 1/2" Check Valve  
2" Vent connection  
Additional 4" cast iron inlet hub

- 5) Outdoor basin and cover only .....  
Fiberglass construction with solid cover and anti-flotation device. Diameter: 24" simplex / 36" duplex. 4" cast iron inlet hub and, 1 1/4" Discharge seal(s) for field mounting.  
Depth dimensions:                    48 inches  
    60 inches  
    72 inches  
    84 inches  
    96 inches  
    \_\_\_\_\_ other

- 5A) Prepackaged/Job Ready Outdoor Basin ..... \*\*\*  
Fiberglass construction with solid cover and anti-flotation device. Diameter: 24" Simplex / 36" Duplex. 4" cast iron inlet hub for field mounting and 1 1/4" PVC discharge pipe with 1 1/4" ball valve(s) and 1 1/4" check valve(s) installed. Square guide rail system with stainless rail pipe provided. Stainless steel lifting cable and rod included.  
Basin Depth:                                Over Head Clearance Required:  
48 inches                                    3 feet  
60 inches                                    4 feet  
72 inches                                    5 feet  
84 inches                                    6 feet  
96 inches                                    7 feet  
\_\_\_\_\_ other

SIMPLEX SYSTEMS	DUPLEX SYSTEMS
<input type="checkbox"/> 3 Req.	<input type="checkbox"/> 3-Float <input type="checkbox"/> 4-Float
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\*\* NOTE: IN A PREPACKAGED INDOOR SYSTEM SELECT COMPONENTS IN SECTIONS 1A, 1E, 2, 2A, 3, 4A AND 4B.

\*\*\* NOTE: IN A PREPACKAGED OUTDOOR SYSTEM SELECT COMPONENTS IN SECTIONS 1A, 1E, 2, 2A, 3, 5A, 5B AND 9.

**5B) Outdoor basin & cover options .....**  
 2" Discharge connection  
 Additional 4" cast iron inlet hub  
 Epoxy coated solid steel cover  
 2" PVC discharge pipe and valves (Prepackaged System only)

**5C) Stainless steel lifting cables:**

8 feet  
 12 feet  
 16 feet  
 20 feet  
 24 feet

**5D) Pull Rods:**

1 feet  
 2½ feet  
 3½ feet  
 4½ feet  
 5½ feet

**6) Z-Rail® Disconnect System - Field Installed.....**  
 2" Discharge Pipe  
 Rail system includes ductile iron disconnect fitting guide plate  
 and upper rail support. 3/4" Rail pipes by others.  
 Depth dimensions: \_\_\_\_\_ inches

**6A) Intermediate Stabilizer Bracket.....**  
 Required for field assembled system basins over 12" deep

**6B) Stainless steel cable.....**  
 Depth dimensions: \_\_\_\_\_ feet

**7) Check valves.....**  
 Full flow cast iron construction, rated 50 PSIG (115 ft.) @ 130°F., N.P.T  
 threaded ends, neoprene reinforced flapper, stainless steel fasteners.  
 Sizes available: 2 inches

**8) Ball valve.....**  
 PVC construction  
 Sizes available: 2 inches

**9) Junction box.....**  
 Nema type 4X construction, watertight seals for SO cordage.  
 5-hole for simplex systems - 3 switch system  
 7-hole for duplex systems - 3 switch system  
 8-hole for duplex systems - 4 switch system

	SIMPLEX SYSTEMS	DUPLEX SYSTEMS
5B) Outdoor basin & cover options .....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5C) Stainless steel lifting cables:	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5D) Pull Rods:	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6) Z-Rail® Disconnect System - Field Installed.....	<input type="checkbox"/> One Req.	<input type="checkbox"/> Two Req.
6A) Intermediate Stabilizer Bracket.....	<input type="checkbox"/> One Req.	<input type="checkbox"/> Two Req.
6B) Stainless steel cable.....	<input type="checkbox"/> One Req.	<input type="checkbox"/> Two Req.
7) Check valves.....	<input type="checkbox"/> One Req.	<input type="checkbox"/> Two Req.
8) Ball valve.....	<input type="checkbox"/> One Req.	<input type="checkbox"/> Two Req.
9) Junction box.....	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

\*\* NOTE: IN A PREPACKAGED INDOOR SYSTEM SELECT COMPONENTS IN SECTIONS 1A, 1E, 2, 2A, 3, 4A AND 4B.

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