

**SPECIFICATIONS - DETAILED PROVISIONS**  
**Section 11343 - Screenings Compactor**

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**SECTION 11343**  
**SCREENINGS COMPACTOR**

**PART 1 - GENERAL**

1.01 THE REQUIREMENT

The CONTRACTOR shall furnish and install one screening compactor unit, complete and operable, and as specified herein and shown, all in accordance with the Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Equipment General Provisions. 11000
- B. Coating Systems. 09871

**PART 2 - PRODUCTS**

2.01 OPERATION

- A. The screenings compactor shall be capable of continuous and intermittent duty compacting and conveying raw wastewater coarse screenings. The unit shall have a capacity of 40 cubic ft/hr handling wet screenings with a dry weight of not less than 6 percent.
- B. The screenings compactor shall come equipped with a local unit control panel (U.C.P.) with protection and control circuitry and a selector switch (Hand/Off/Auto). When the selector switch is in the "hand" position, the compactor shall be controlled locally by the Operator. When the selector switch is in the "off" position, the compactor shall not operate. When the selector switch is in the "Auto" position, the compactor shall be controlled by an ultrasonic level sensor.
- C. For automatic operation, the compactor operation shall be by ultrasonic level sensor. The sensor shall detect when the screenings hopper is full and shall cause the compactor to run. The duration of the run cycle shall be controlled by a field adjustable timer adjustable from 0 to 10 minutes.

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- D. The screenings compactor and local unit control panel shall be furnished with protection circuitry and devices to stop the operation of the unit, and to generate alarm signals, for the following conditions: high hydraulic pressure, low hydraulic pressure, delayed ram return, and early ram return. Failure or jamming of the compactor shall cause the compactor to stop and an alarm signal shall be generated.
- E. A lockout/stop switch shall also be provided that shall cause the compactor to stop immediately.

2.02 MATERIALS AND CONSTRUCTION

- A. The screenings compactor shall consist of a feed hopper inlet chamber, pressing and dewatering cylinder, resilient cone section, discharge pipe friction cylinder, hydraulic pressing ram, and hydraulic power pack. A local control panel and equipment supports shall also be provided.
- B. The screenings compactor shall be designed to receive screenings conveyed from the bar screen and shall reduce the volume and water content by means of a pressing action. Solids to be pressed shall be gravity fed to an inlet hopper and pressing zone where a hydraulically powered ram presses the screening into the resilient cone and friction cylinder. Water drainage shall be piped back to the sump as shown.
- C. Cylinder: The pressing zone and hydraulic ram housing shall consist of a 10-inch I.D. heavy duty Type 316 stainless steel cylinder. The cylinder shall be horizontally mounted with an overall length of 71 inches to discharge flange. A rectangular solids inlet hopper shall be top mounted in the cylinder casing. The cylinder shall be supported by a fixed rear foot assembly and an adjustable front leg assembly allowing a 10-inch adjustment range for the purposes of press inclination.
- D. Hydraulic Section:
  - 1. A hydraulic cylinder shall be fitted within and affixed to the basic unit. The hydraulic cylinder shall be fitted via link bearings to a press plate which contacts the screenings to be pressed. The hydraulic cylinder shall be rated at 5 tons capacity at an oil pressure of 1450 psi. The piston rod shall be a hard chrome plated steel rod. The cylinder bore shall be 3 inches and the stroke shall be 27-1/2 inches.
  - 2. The hydraulic cylinder shall be driven by a remote mounted hydraulic power pack unit consisting of a hydraulic gear pump and 5 HP, heavy-duty, 1,800 RPM, 460 volt, 3 phase, 60 Hz motor. The hydraulic power pack shall be self-contained with a 10.1 gallon capacity oil tank, 0-3000 psi pressure

gauge pressure limiting valve, and reciprocating valve. Movement of the hydraulic cylinder shall be actuated by pressure regulation of the reciprocating valve. The recirculation system shall be equipped with a replaceable oil filter system. Two (2) hydraulic hoses shall connect the power pack to the cylinder.

- E. Water Drain: Drained water from bottom slots in the pressing zone of the compactor and in the resilient cone shall be collected in a Type 316 stainless steel collection pan having a 3-inch diameter outlet pipe. Drain slots shall be of sufficient size to prevent plugging and fouling.
- F. Friction Cylinder: The compactor shall be furnished with a flanged 10-inch I.D. Type 316 stainless steel friction cylinder which shall extend a distance of approximately 10 feet unless otherwise recommended by the manufacturer from the edge of the cylinder/resilient cone discharge flange. Supports for the friction cylinder shall be furnished. The friction cylinder shall be curvilinear.
- G. Screening Hopper: The screenings hopper mounted on top of the cylinder shall be 36 inches wide, 42 inches deep and 24 inches high, and fabricated of Type 316 stainless steel, GA. 14.
- H. All nuts, bolts, washers and fasteners shall be Type 316 stainless steel.

## 2.03 LOCAL CONTROL PANEL

- A. The screenings compactor shall be provided with a Local Unit Control Panel (U.C.P.) consisting of required circuitry and devices enclosed in a corrosion resistant (i.e. stainless steel, plastic, or fiberglass) NEMA 4X enclosure and located adjacent to the compactor unit as shown. The local control panel shall house the compactor controls, main circuit breaker, motor starter, control transformer and other devices as specified or required for a complete and operable system. Identified terminal strips shall be provided for the connection of external conductors. All control devices on individual equipment items shall be interconnected to an equipment base-mounted junction terminal box. All equipment shall be ready for service after connection of conductors to equipment, controls, and local control panel.
- B. The control panel shall, as a minimum include the following:
  - 1. On/off switch for "hand" compactor operation.
  - 2. Lockout/stop switch.
  - 3. Panel mounted run status light and individual alarm lights for high hydraulic pressure, low hydraulic pressure, early ram return and delayed ram return.

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4. Alarm reset button (common).
  5. Dry contacts for future common alarm output and connections for remote on/off input.
  6. Audible alarm horn rated for 85 dB at a distance of 10 feet minimum. Alarm shall sound for any of the aforementioned alarm conditions.
- C. The Unit Control Panel (U.C.P.) shall be either free standing or wall mounted at the location shown in the plans. The panel shall be anchored to withstand Seismic Zone IV shaking in accordance with the Uniform Building Code (latest edition). Minimum acceleration shall be 0.3 g's.

2.04 MANUFACTURER

The screenings compactor shall be a Hypress model HP-1020 as manufactured by Hycor, or equal.

**PART 3 - EXECUTION**

3.01 INSTALLATION

- A. Screenings compactor equipment shall be installed in accordance with the shop drawings, unless otherwise approved.
- B. The Screenings Compactor Unit shall be anchored to withstand Seismic Zone IV shaking in accordance with the Uniform Building Code (latest edition). Minimum acceleration shall be 0.3 g's.

3.02 PROTECTIVE COATINGS

The screenings compactor and appurtenances shall be shop primed as required and field-painted in accordance with Specification Section 09871.

3.03 WARNING SIGNS

Warning signs shall be provided in accordance with the contract drawings.

#### 3.04 FIELD TESTING

Upon completion of the installation, each piece of equipment and each system shall be tested for satisfactory operation without excessive noise, vibration, overheating, and proper operation of all moving parts without binding. All equipment must be adjusted and checked for misalignment, clearances, supports, and adherence to safety standards. The CONTRACTOR shall provide the services of a manufacturer's representative for one (1) day at the site for the purposes of inspecting the installation, startup, and instructing the OWNER's personnel on the operation and maintenance of the screenings compactor.

#### 3.05 SPARE PARTS

Spare parts shall be provided as recommended by the manufacturer and shall include one set hydraulic hoses, one packing set, and four oil filters. Spare parts shall be suitably packaged and clearly labeled and identified with the name and number of the equipment to which they belong.

**END OF SECTION 11343**

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