



## **SPECIFICATIONS - HYDROEXCAVATOR**

**VX312LHE/1100**

### **GENERAL**

The machine uses high pressure water and vacuum to excavate varying type of soil -- commonly used for daylighting, slot-trenching, potholing and fiber-optic lines, cables or utility pipe location as well as removing sand, grit, grease, sludge, stones and other material from catch basins, pumping stations and other facilities.

The machine has a high pressure water system and a self-contained water supply.

The machine has an air conveying system capable of excavating soil and/or removing debris from catch basins, sumps, digesters & wet wells and includes a sealed body for storage and removal of the collected debris.

The machine is capable of being operated by one man, with all operating controls located at the front of the machine for operator safety.

### **DEBRIS BODY**

Debris storage body has have a minimum usable liquid capacity of 12 cubic yards. The body is round for maximum strength and constructed of 3/16 inch Corten A steel for corrosion resistance.

The rear door shall be dished and flanged for maximum strength, full opening, hinged at the top with low profile and adjustable style hinges.

There shall be a 5" diameter liquid drain butterfly valve, and screen weldment inside for removing excess liquids. Drain will have 10 feet of 6 inch layflat hose.

The rear door shall be supplied with a debris deflector shield located inside the debris tank that encompasses 75 percent of the rear door. The debris deflector shield shall deflect material from rear door, and aid in draining off excess liquids.

The debris body has five externally mounted door locks that lock hydraulically. One manual T bolt is installed for operator safety. A hydraulic grabber shall be installed and controlled by one hydraulic cylinder externally mounted for ease of service. The hydraulic locks and grabber shall be operated by one (1) sequential control. In order to allow the operator to control the discharging of liquids from the debris tank by cracking open the door prior to the dumping procedure, the hydraulic grabber shall engage the door at the bottom of the door from 0" - 6". Beyond the 6" stroke, the grabber shall automatically disengage the door, allowing for the dumping of the debris tank.

A double acting power up/power down hydraulic scissors lift mechanism will be provided to raise body to a minimum 50 degree angle. The scissors lift mechanism shall be designed to support a minimum of 24 inches of the debris tank width to provide stability and when dumping on uneven ground. The lift capacity of hydraulic scissors lift cylinder is 56,000 lbs.

Dump controls are located on curbside mid-ship of the unit, well forward of the dumping area for operator safety. A manual override system is provided in case of system failure.

The debris body has a five year warranty.

An internal polyethylene float device with external indicator is supplied to show when body is loaded to capacity.

### **AUTOMATIC VACUUM BREAKER**

The automatic vacuum breaker assembly is located inside the body.

A full indication activates an automatic vacuum breaker shut down system that completely shuts down 100 percent of the airflow to the vacuum system to prevent overfilling and wastewater discharge into the atmosphere.

The vacuum breaker system is automatically activated (closed) when the parking brake system is released to eliminate carryover during transit.

The system is controlled/activated, at the front hose reel control station. This enables the operator to pick up large debris with boom and place debris on the road surface. This system can be used for safety in the event suction must be shut off in case of an emergency.

### **CENTRIFUGAL COMPRESSOR (FAN DESIGN)**

The centrifugal vacuum compressor shall be of 3-stage construction (i.e. 3-27" minimum diameter fans in tandem). The centrifugal compressor (fans) are constructed of Corten steel. The compressor's outer housing is spun from one piece of 3/16" steel for strength and provide proper airflow in operation. The housing has a coal tar epoxy coating to prevent corrosion. The centrifugal compressor fans is operated independent of the high-pressure water system.

The vacuum system operates independent of the high-pressure water system and is powered by the truck engine via hydrostatics. The vacuum drive is a closed loop hydrostatic system using a variable piston pump and motor.

This system includes a heat exchanger for extreme ambient conditions and to maintain the pump suction oil temp at 160 degrees F. max. The heat exchanger is protected by a 30-micron filter and cold weather bypass valve. Hydrostatic loop filtration is accomplished by a 10 Beta micron return filter and a 10 micron Absolute (no bypass) charge filter.

A cyclone separator system is also be provided.

**To maximize long term durability by reducing the load on one side of the compressor, the compressor shaft shall extend through the compressor and shall be additional stabilized by using two high speed bearings, one at each side of the shaft. No exceptions will be allowed to this requirement.**

A means of starting, stopping and varying the vacuum suction from operator station at the front of the machine is provided. A centrifugal separator located in the inlet chamber to the fans with cleanout box is provided. The separator removes particles from the air stream, thus enabling unit to vacuum wet or dry material. The separator is separate from the debris body. The centrifugal compressor (fan) system is capable of producing 90% vacuum with no airflow. This feature allows material to be vacuumed under the water surface, i.e. lift stations, plugged manholes, etc. The system is capable of vacuuming under water 16.6' (200") without special attachments.

The centrifugal compressor fans shall have a 5-year replacement non-prorated warranty.

#### **VACUUM PICK UP HOSE**

Is front loading, attached at the front of the machine in order to provide ease of positioning the machine over the manhole, as well as afford maximum safety for the operator.

The 8 inch diameter hose is mounted on a boom that provides a minimum of 18 feet of vertical lift and 270 degree of boom rotation. The boom is powered hydraulically for non-interrupted smooth movement. Boom to have a lift capacity of 500 lbs. at the front bumper.

The boom will be powered by an electric over hydraulic system: up/down by dual lift cylinders. The in/out, up/down are hydraulically powered.

The boom telescopes a minimum of 10 feet forward from the front of the operator's station. The height of the pick up hose does not change while the boom is being telescoped.

Control of the boom shall be by means of a joystick control at the operator's station, requiring no cables at operator's feet for boom operation. A 6-way remote pendant station will also be supplied. A manual override system shall be provided for right/left, and up/down functions in case of system failure.

A boom coverage chart shall be provided.

8" diameter pipe extensions with clamps will be provided and carried on the truck as follows:

- 1 6-1/2' Catch Basin Nozzle
- 1 6' Aluminum Pipe Extension
- 1 5' Aluminum Pipe Extension
- 1 3' Aluminum Pipe Extension

#### **WATER SUPPLY**

The water tank has a minimum usable capacity of 1100 U.S. gallons.

The water tanks are constructed of non-corrosive, non-metallic, durable, cross-linked polyethylene to eliminate rust, corrosion, and stress cracking.

The water tanks are mounted at and below the truck frame level to provide a low center of gravity for truck stability.

A 2-1/2 inch diameter x 25 feet long hydrant hose with hydrant wrench is supplied on the unit.

An anti-syphon fill device is installed on the unit.

Inspection ports shall be provided to fill or to add chemicals to the water system.

A sight gauge to indicate water level is located within sight of the operator station.

The water tanks are protected by a minimum of 11 gauge steel plating mounted below the water tanks for protection against road hazards when unit travels over the road, off the road or to land fills.

The water tanks carry a ten year replacement warranty.

#### **HIGH-PRESSURE WATER PUMP FOR HYDROEXCAVATING SYSTEM**

The high pressure water pump is rated to deliver smooth continuous pressure and flow through the entire flow range of the pump.

A continuous duty flow of 20 g.p.m. and 4000 p.s.i. is provided.

High-pressure relief valves are provided for both the high-pressure system and hand gun system.

The water pump operates independently of the vacuum system and is powered hydraulically.

The water pump is capable of running dry.

Controls for starting and stopping the water pump and to vary the flow and pressure are at the front hose reel operator's station.

The water pump is equipped with a cold weather drain valve. The valve allows operator to completely drain the high-pressure pump.

#### **MANHOLE CLEANING WATER SYSTEM (HAND GUN)**

The high-pressure pump and independent water tank assembly supplied shall be used for manhole cleaning.

A smooth continuous flow of 10 g.p.m. and pressure of 600 p.s.i. shall be provided for ease of operation.

A hand gun pressure relief valve set at 600 p.s.i. shall be provided.

One full functioning hand gun with on/off hand control, replaceable nozzle tip, 12 inch extension, adjustable spray and 25' x 1/2" hose will be provided.

The hand gun will attach to the system via a quick couple connection.

#### **HYDRAULIC SYSTEM AND LUBRICATION**

The hydraulic system has a 45-gallon capacity.

The hydraulic system incorporates a main shut off valve in case of hydraulic failure.

The hydraulic system incorporates hydraulic pressure relief valves and pressure gauges for ease of trouble shooting and maintenance.

The unit is equipped on the passenger side, mid-section of the module, a permanent weatherproof white vinyl lubrication chart that points out lubrication points on the module and specifies what type of lubrication and hydraulic fluids are required. The chart also specifies the frequency of each lubrication point.

Remote plumbed grease fittings are provided for the vacuum compressor, boom rotation.

#### **ACCESSORIES**

A minimum twelve (12) month manufacturer's guarantee on the unit will be provided.

**1 ) 51" x 24" x 24" Driver side storage cabinet, aluminum diamond plate**

#### **LIGHTING**

The entire module electrical system is vapor sealed to eliminate moisture damage.

All wiring is color-coded, labeled and run in sealed terminal enclosures.

All module circuits are protected by circuit breakers.

Clearance lights and reflectors are furnished in accordance with D.O.T. requirements.

#### **PAINT**

Unit paint surface is shot blasted, primed and sanded prior to paint. Unit to be painted.

with DuPont Imron 5000 polyurethane paint.

Unit shall have reflective White or Blue

Chassis shall be painted manufacturers standard white.

**TRAINING AND MANUALS**

Operator training will be conducted by a factory-trained representative for a minimum of one day at the time of delivery. 2 copy(ies) of the operating and maintenance manual for the sewer cleaner module shall be provided upon unit delivery. An operational video will be provided with the unit.

**MOUNTING AND DELIVERY**

The unit described will be mounted on a truck chassis acceptable to the body manufacturer at the factory of the body manufacturer.