

# Vacuum Drainage and Conveyance System for Grease Waste

A Vacuum Drainage System consists of three basic components, 1) Vacuum Generating Station 2) a piping network that allows for transportation of grease waste where it is generated to the Vacuum Generating Station, and 3) vacuum interface and collection components.

## Vacuum Generating Station

Referred to as the "Vac Center", the vacuum generating station includes vacuum pumps to create a useful vacuum source and storage tanks that collect and discharge the waste into the facilities' sewer main through a code compliant Grease Interceptor.

Operation of the pumps, collection tanks, historical data recording, and alarm reporting is fully automated by controls provided with the Vac Center. The vacuum pumps run only on demand, and full redundancy is always provided.

## Piping Network

The piping network for a vacuum drainage system is maintained under continuous vacuum and is generally fabricated out of PVC, Copper, or other smooth bore, non-porous material. The network consists of risers which transport the collected waste vertically from the grease waste source to horizontal mains and branches located in the overhead which lead to the Vac Center. The mains and branches are sloped at a rate of 1/8" per foot toward the Vac Center and waste travels by gravity to the Vac Center, just as is does in traditional underground drainage piping.

## Vacuum Interface Components

At the heart of a vacuum drainage system are the vacuum interface components that allow grease waste to be efficiently collected and transported to the Vac Center for discharge to a grease interceptor. These components include a *Grease Accumulator*, purpose made for grease laden waste water, which is located to accept gravity drainage of grease waste effluent from floor drains and fixtures.

A *Vacuum Interface Valve* which separates the vacuum in the piping network from atmospheric pressure at the accumulator.

A *Float Switch* which determines when the vacuum interface valve should be opened to remove the grease waste from the Grease Accumulator.

Importantly, the Vacuum Interface Valve is a "normally closed" device which eliminates any possibility of cross contamination between the fixture or floor drain and the drainage piping network, Vac Center, grease trap or sanitary sewer main.

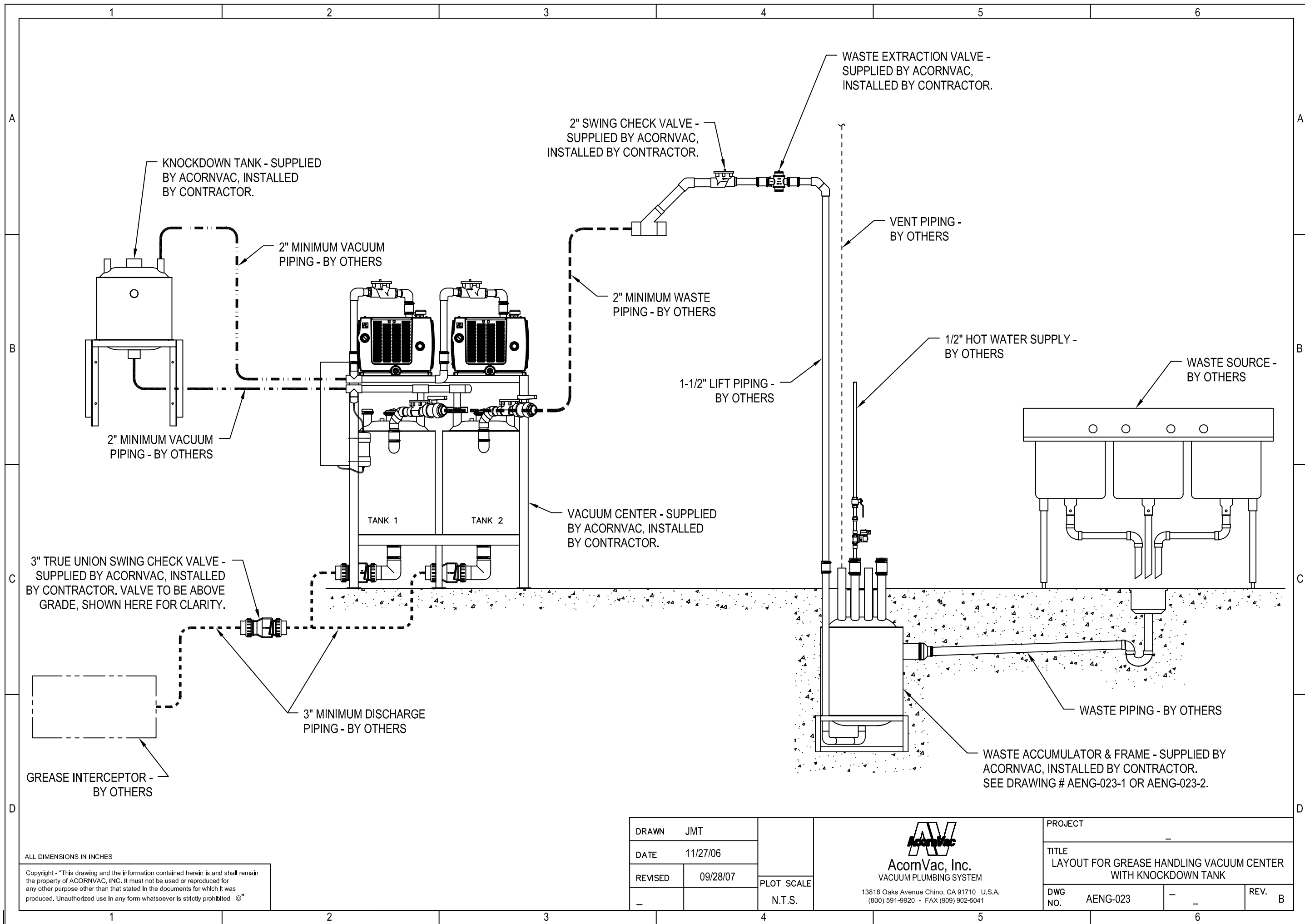
When the Float Switch determines that waste water is present in the accumulator, it opens the Extraction Valve, exposing the Grease Accumulator and its contents to the vacuum pressure. The difference between the vacuum pressure in the piping network and surrounding atmospheric pressure causes air to enter the Grease Accumulator, and then through the accumulator and its contents, thereby emulsifying the collected waste into droplets that are carried along in the air stream, through the open extraction valve and into the overhead piping network and onto the Vac Center. Waste is discharged from the Vac Center into a code approved grease interceptor before eventual discharge to sanitary sewer mains.

This system is manufactured by

**AcornVac, Inc.**  
**13818 Oaks Ave**  
**Chino, CA 91710**

Local Manufacturer's Rep is

**Dan Varrone**  
**Power & Process, Inc.**  
33 Great Hill Road  
Naugatuck, CT 06770  
Phone 203-723-6645  
Fax 203-723-1356  
**Email [dvarrone@powerprocessinc.com](mailto:dvarrone@powerprocessinc.com)**



KNOCKDOWN TANK - SUPPLIED BY ACORNVAC, INSTALLED BY CONTRACTOR.

2" MINIMUM VACUUM PIPING - BY OTHERS

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2" SWING CHECK VALVE - SUPPLIED BY ACORNVAC, INSTALLED BY CONTRACTOR.

2" MINIMUM WASTE PIPING - BY OTHERS

1-1/2" LIFT PIPING - BY OTHERS

WASTE EXTRACTION VALVE - SUPPLIED BY ACORNVAC, INSTALLED BY CONTRACTOR.

VENT PIPING - BY OTHERS

1/2" HOT WATER SUPPLY - BY OTHERS

WASTE SOURCE - BY OTHERS

TANK 1

TANK 2

VACUUM CENTER - SUPPLIED BY ACORNVAC, INSTALLED BY CONTRACTOR.

3" TRUE UNION SWING CHECK VALVE - SUPPLIED BY ACORNVAC, INSTALLED BY CONTRACTOR. VALVE TO BE ABOVE GRADE, SHOWN HERE FOR CLARITY.

3" MINIMUM DISCHARGE PIPING - BY OTHERS

GREASE INTERCEPTOR - BY OTHERS

WASTE PIPING - BY OTHERS

WASTE ACCUMULATOR & FRAME - SUPPLIED BY ACORNVAC, INSTALLED BY CONTRACTOR. SEE DRAWING # AENG-023-1 OR AENG-023-2.

ALL DIMENSIONS IN INCHES  
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DRAWN	JMT
DATE	11/27/06
REVISED	09/28/07

PLOT SCALE  
N.T.S.

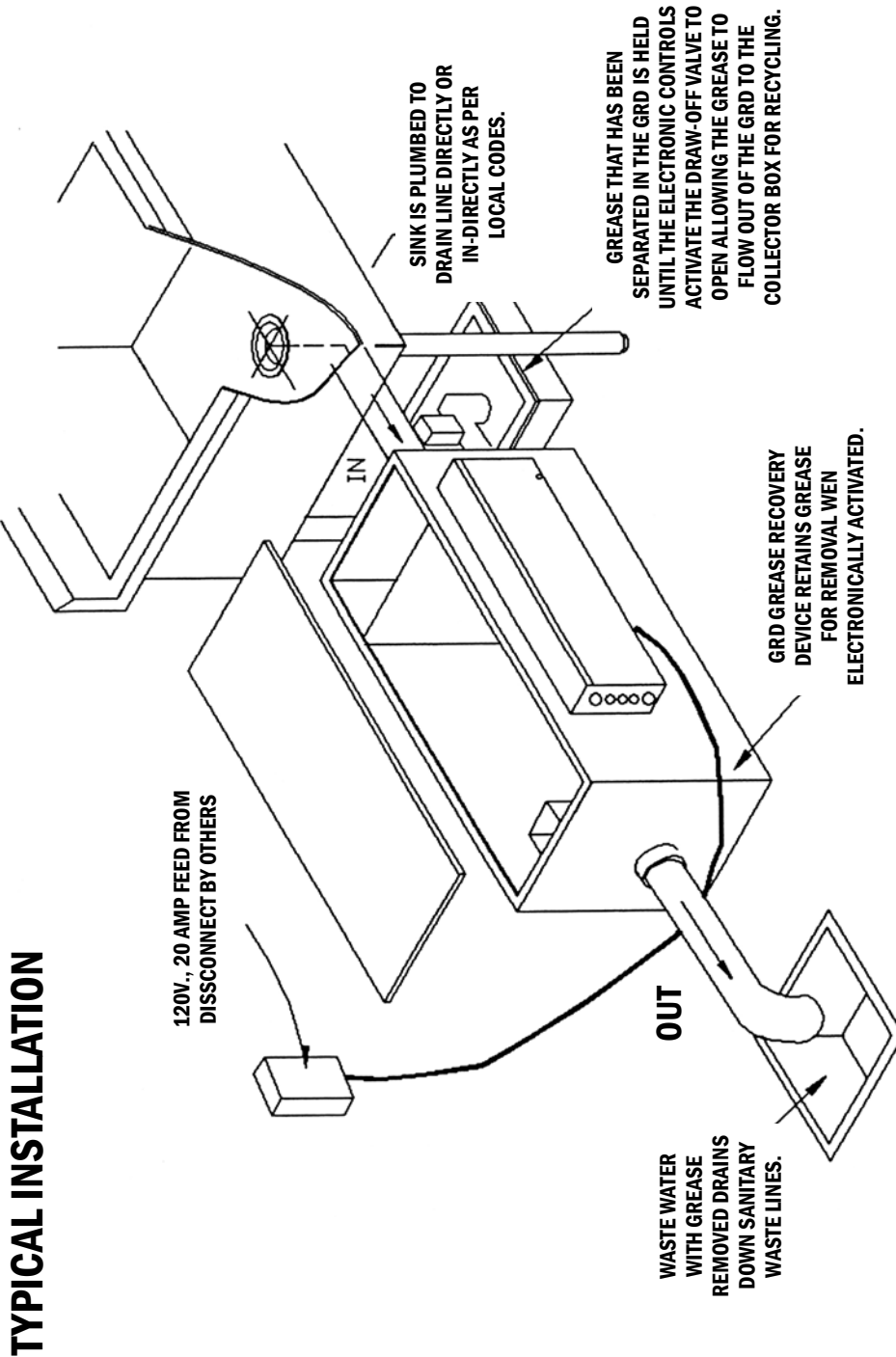
**AcornVac**  
**AcornVac, Inc.**  
 VACUUM PLUMBING SYSTEM  
 13818 Oaks Avenue Chino, CA 91710 U.S.A.  
 (800) 591-9920 - FAX (909) 902-5041

PROJECT			
-			
TITLE			
LAYOUT FOR GREASE HANDLING VACUUM CENTER WITH KNOCKDOWN TANK			
DWG NO.	AENG-023		REV. B

# International

G ♦ R ♦ D INC.

## ◆ Grease Recovery Device ◆



# International

G ♦ R ♦ D INC.

◆ Grease Recovery Device ◆



MODEL	Flow	L	W	H	Inlet & Outlet	OAL	OAW	CAPACITY	
2000IB	20 GPM	24"	14"	17"	10" C/L 3" NO-HUB	32"	18"	80 GPH	71lbs recovery capacity

### INTERNATIONAL GRD INC. Grease Recovery Device—General Specifications:

To furnish a Grease Recovery Device Model 2000IB constructed of 16 Ga. stainless steel (S/S) heli-arc welded to be water tight and polished to a #4 finish with no visible seams. The GRD shall have a 16 Ga. type 304 S/S gasketed cover, welded and polished to a #4 finish, fastened down with S/S latches and catches welded in place. Unit is built to NSF Standard #2 with seal affixed.

Interior components will be of type 304 S/S. Grease removal shall be performed by 7 day timer controlling an electric draw-off valve.

The GRD shall remove the grease automatically, as needed, to a collector box for removal to the recycling container.

The GRD shall be thermostatically controlled, maintaining the liquid within the device at an average 110 degrees to prevent the grease/oil from congealing into a blanket. The heating element, thermostat, and electrical connections shall be enclosed in a type 304 S/S housing box, equipped with a gasketed removable S/S cover.

Model 2000IB comes with a 16 Ga. perforated S/S internal strainer basket assembly. Tested to PDI, IAPMO, & ASME 14-4. The International GRD is UL Listed. Electric requirements—120v., 20 Amps.

