C&R PLUMBING HEATING

6424 North Government Way
Coeur d'Alene, ID 83814
(208) 772-3263
FAX (208) 772-6857

G U A R A N T E E

We the undersigned, C&R Plumbing and Heating, Inc., the Contractor, for LPS Incorporated, the Owner, do hereby guarantee for a period of one year(s) from date of substantial completion of the project, that portion of the work performed by us and those pariticular materials furnished by us, more specifically outlined in our contract dated September 20, 1990, and in the plans and specifications for that certain project indentified as:

LEANING PINES WASTE WATER DISPOSAL SYSTEM
Half Round Bay, Lake Coeur d'Alene

We will remedy at our expense any defects appearing during that period due to poor materials and/or poor workmanship and will pay for correction of any damage to other work resulting from occurence of these defects or their correction.

This guarantee shall not be interpreted as holding this Subcontractor liable for any deterioration of the work due to normal use or the abuse of the work by the Owner or others.

COMPANY: C&R Plumbing and Heating, Inc.

BY: Danny T. Sims
Danny T. Sims

TITLE: _____

DATE: December 5, 1990

Maintenance Procedures

MAINTENANCE:

The alarm is triggered when the liquid in the tank reaches a level that is higher than it should be. To silence the alarm, push the red light on the alarm panel if it's marked "Push to Silence" or move the toggle switch to "OFF". As soon as possible, call your pump service person or, if you're in a sewer district, call the district's service number. With normal use, a standard septic tank has reserve storage capacity good for 24-48 hours. When the liquid level in the tank has been lowered, the red light on the alarm panel will go out. Then reset the toggle switch to "ON"; panels with "Push to Silence" lights reset automatically

The pumping system should be inspected annually. If the liquid level inside the screened vault is discernibly different from the level outside the vault, remove the screened vault and clean it following these steps.

a) **Important: Before doing any work on either the wiring to the level control floats and pump in the vault or on the control panel, switch the isolation fuse and the circuit breaker in the panel to their "OFF" positions, then switch off the power to the system at the main breaker. If the alarm is a simple one with no pump control functions, then switch off power at the main circuit breaker.**

b) Make sure the ball valve is completely closed.

c) Disconnect the PVC union located next to the ball valve.

d) Remove the pump, setting it aside on the fiberglass lid or on a piece of plastic film to protect it from mud or sand. The pump's electrical cord need not be disconnected.

e) Pull the screened vault out of the tank. There should be ample clearance between the ball valve and the splice box to allow unhindered removal of the vault.

f) Remove the float assembly from the vault and hose off the floats if needed.

g) Remove the screen from the vault and hose off vault and screen if needed.

h) Reassemble the screen, vault and float assembly and replace in tank. **To prevent the vault from floating and the screen from being fouled by solids floating in the tank, it's essential to run clear water (as from a hose) into the vault to sink it.**

Premature plugging of the screen may result from abuse of the system. Such abuse might take the form of a large scale home canning project with concurrent overuse of the garbage disposal. More likely though, it will be excessive inflow resulting from a plumbing leak under the house, a leaky septic tank, a homeowner taking in laundry, two or more families using a tank designed for one, etc. Plugging of the screen, however, should be considered a success, not a failure, as the screen serves to protect the integrity of the collection and treatment facilities. Cleaning a screen is quick and easy and infinitely preferable to the damage that solids carryover can cause downstream in the system.

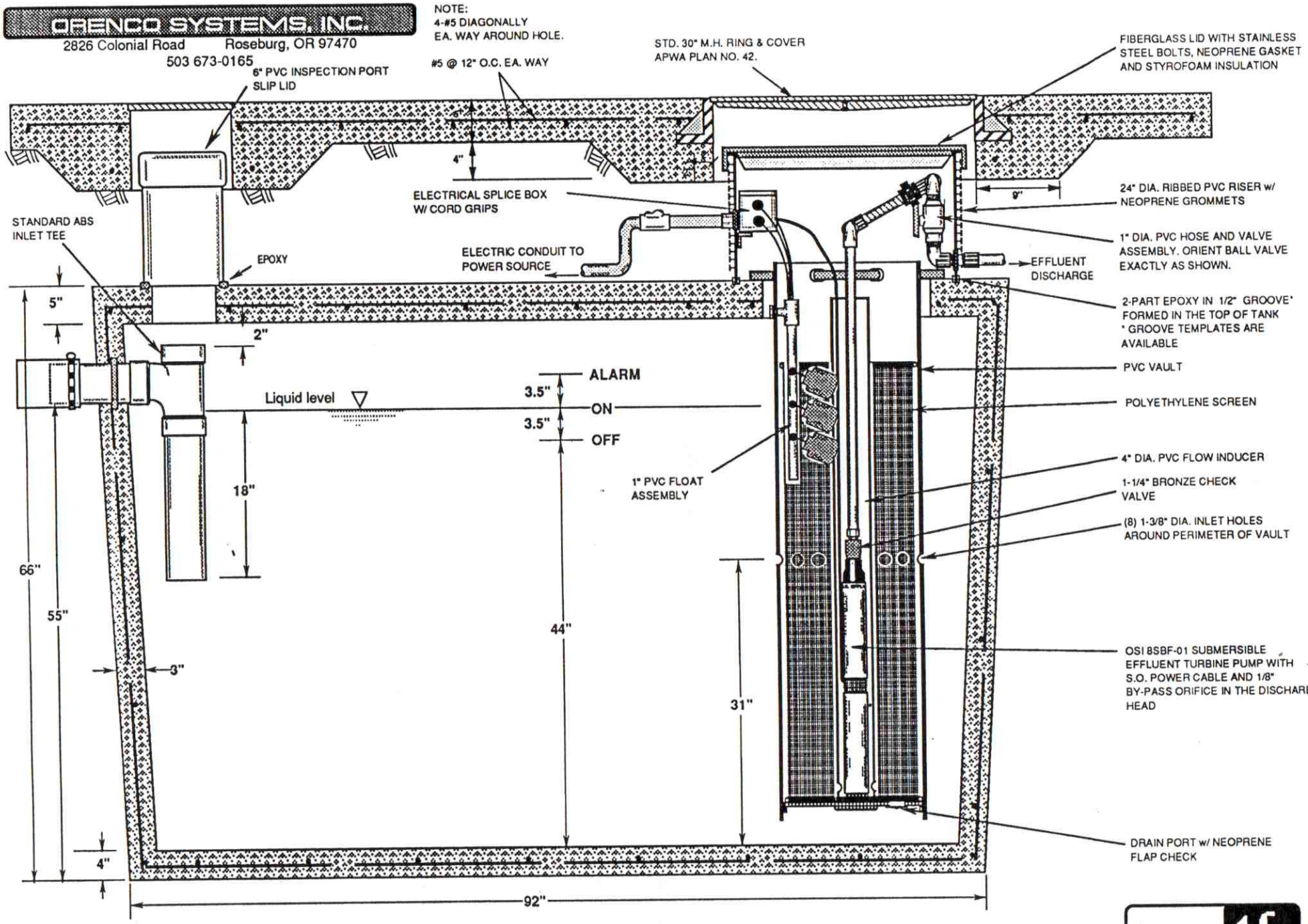
DO NOT USE ANY TYPE OF CHEMICAL SEPTIC TANK CLEANER OR ENHANCER!

CAUTION: Tank access lid must be properly secured to the riser at all times. If bolts are lost or damaged, contact Orenco Systems immediately for replacements.

AN UNLOCKED LID OR OPEN TANK IS A SAFETY HAZARD!

Pump System Drawing

ORENCO SYSTEMS, INC.
2826 Colonial Road Roseburg, OR 97470
503 673-0165



1000 GALLON SEPTIC TANK WITH EFFLUENT PUMP SYSTEM

SIDE VIEW TYPICALTANK w/ STEP PUMPING ASSEMBLY

drawing 1b

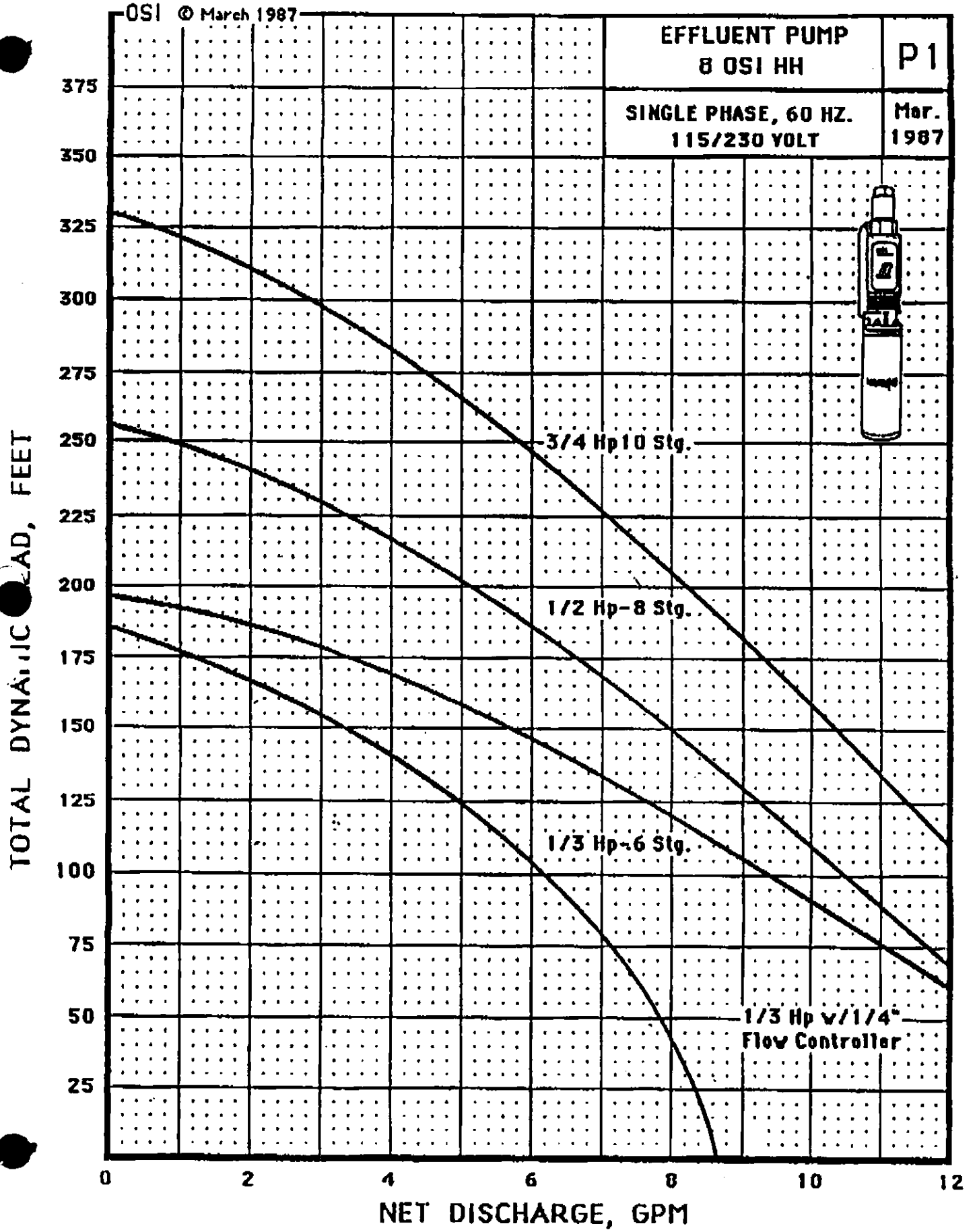
Pump

PUMPS/Submersible High-Head Effluent (Turbine Type)

Constructed of stainless steel and high-quality thermoplastics, these pumps are made especially for OSI by leading manufacturers who warranty their use in wastewater applications when the pump is installed in an OSI Screened Vault with Flow Inducer (1 yr. is standard; 5 yr. warranty is $15.00 extra). Factory-equipped with an 8-foot 16/3 SO cable, these pumps are currently the only 4-inch submersible turbine pumps listed by U.L. for effluent pumping applications.

ITEM	MODEL	Hp	Voltage	Weight
C1	8 OSI 03HH	1/3	115	26 lbs.
C2	8 OSI 05HH	1/2	115	27 lbs.
C3	8 OSI 07HH	3/4	230	32 lbs.
C4	8 OSI 10HH	1	230	36 lbs.
C5	20 OSI 05HH	1/2	115	27 lbs.
C6	20 OSI 07HH	3/4	230	32 lbs.
C7	20 OSI 10HH	1	230	34 lbs.
C8	20 OSI 15HH	1-1/2	230	44 lbs.

If OSI pump listed as 115 V. is ordered with 230 V. motor, add $20.00.



ORENCO SYSTEMS, INC.
2826 Colonial Road Roseburg, OR 97470 503/673-0165

Control Panel

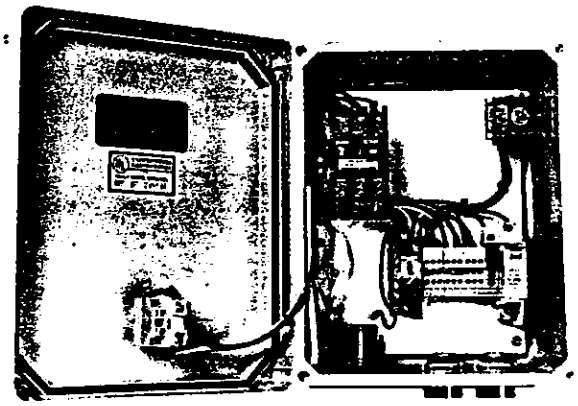
ORENCO SYSTEMS™ SIMPLEX CONTROL PANEL

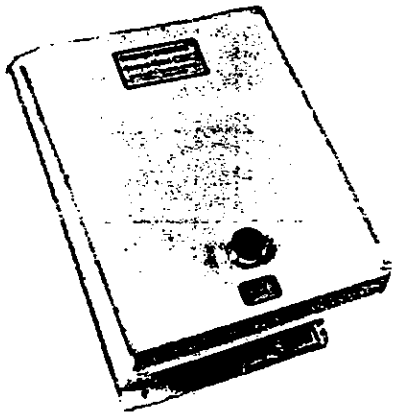
ORENCO SYSTEMS™ Simplex Control Panels offer fine quality components for reliable automatic pump operation. Standard functions include Circuit Breaker, Manual, Off and Automatic motor control operation plus an audio/visual high-water alarm circuit with audio silence and automatic reset upon correction of the high-water condition.

A selection of optional features offers flexibility for a variety of pumping applications.

ORENCO SYSTEMS™ control panels are specifically engineered for pressure sewer (STEP) systems, for controlling pumping into conventional gravity collection systems and for on-site systems such as intermittent sand filters, recirculating sand filters, low pressure drainfields, as well as for simple uphill pumping to standard drainfields.

ORENCO SYSTEMS™ control panels are especially designed for use with mercury float switches but are compatible with any standard dry-contact switching method.





MODEL S-1 UL®

STANDARD FEATURES:

Listing: Underwriters Laboratories
Rating: 1 Hp/115 VAC, 2 Hp/230 VAC, Single Phase, 60 Hz.
Motor-Start Contactor: Rated for 25 FLA, Single Phase, 60 Hz.
Audible Alarm: Panel mount with a minimum of 80 db sound pressure at 24 inches, continuous sound.
Visual Alarm: NEMA 4-rated, 7/8-inch diameter, red lens, oiltight with push-to-silence feature.
Audio-Alarm Reset Relay: 115 VAC, automatic, with DIN rail mount socket base.
Toggle Switch: 15 amp motor rated, single-pole, double-throw with three positions: manual (MAN), (OFF) and automatic (AUTO).
Fuse Disconnect: 2 amp, SLO-BLO fuse with DIN rail mount.
Enclosure: NEMA 4X-rated, fiberglass with hinged cover. Noncorroding. Dimensions: 10" High x 8" Wide x 5-1/8" Deep. External mounting ears.
Alarm Circuit: Wired separately from the pump circuit, so that if the pump's internal overload switch or current-limiting circuit breaker is tripped the alarm system remains functional.
Current Limiting Circuit Breaker: 20 amps, OFF/ON switch, DIN rail mounting (Single Pole/115 V — Double Pole/220 V) with thermal magnetic tripping characteristics.
Padlockable Latch: Constructed of noncorroding stainless steel or reinforced plastic.

OPTIONAL FEATURES:

Elapsed Time Meter: 115 VAC, 7-digit, nonresettable, with DIN rail mount socket base.
Counter: 115 VAC, 6-digit, nonresettable, horizontal base mount.
Programmable Timer: 10 amp, 110 VAC, SPDT relay output, repeatable cycle from 15 sec. to 10 hours with two time ranges. Separate variable controls for ON and OFF time.
Intrinsically Safe Control Relay: 115 VAC, 0 to 10,000 ohm sensitivity range. Secondary circuit; 11 VAC, 2.3 mA.

Other custom features can be provided.

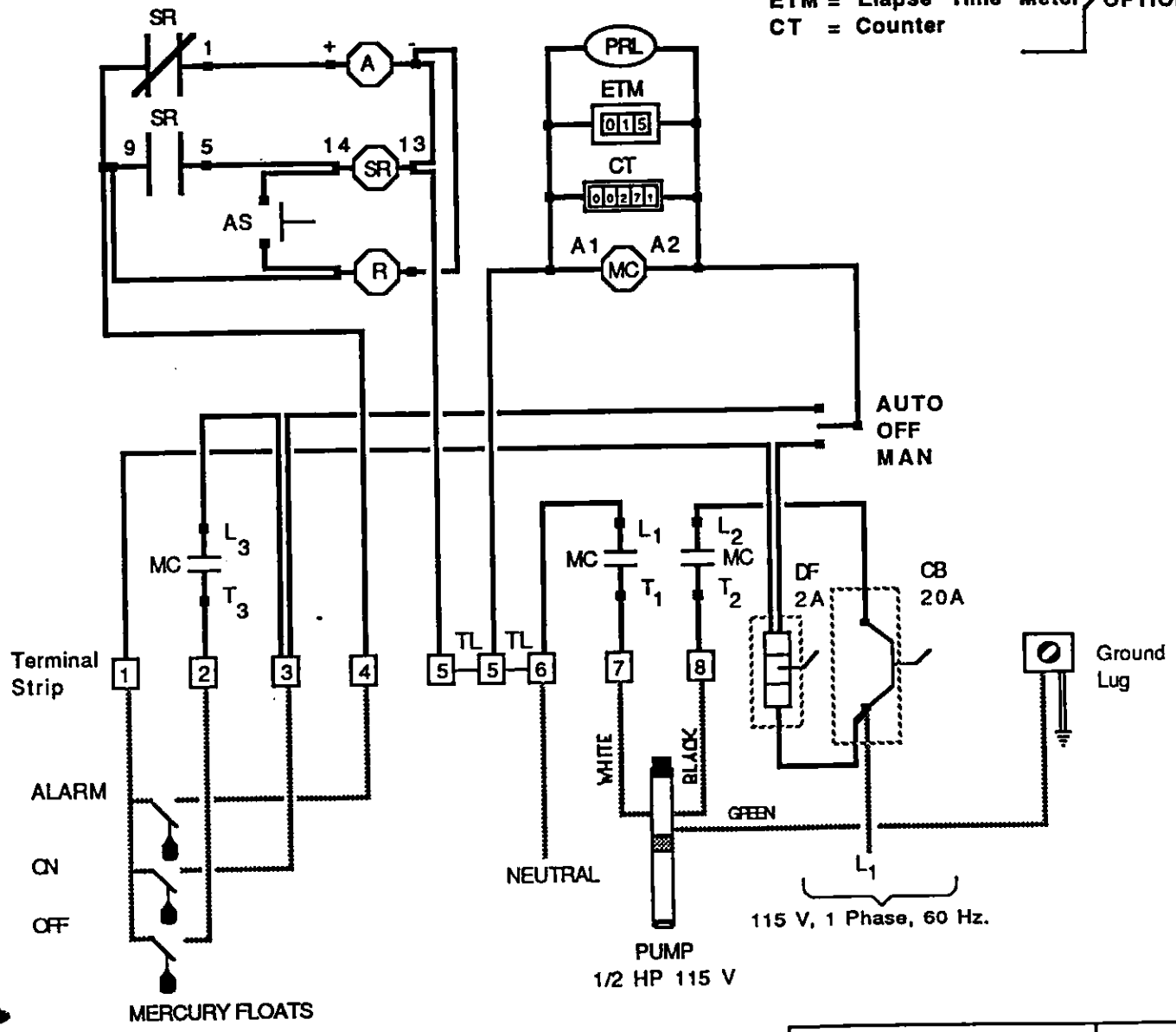
ORENCO SYSTEMS, INC.

WIRING DIAGRAM
MODEL S-1

— = Factory Wire
..... = Field Wire
A = Audio 115 VAC
AS = Audio Silence
CB = Circuit Breaker
DF = Disconnect Fuse
G = Ground
MC = Motor Contactor
R = Red Light 115 VAC
SR = Silence Relay
TL = Terminal Link

PRL = Pump Run Light
ETM = Elapse Time Meter } OPTIONAL
CT = Counter

NOTES:
1) Residential Pump Panel 115 VAC
2) Motor must have internal overload protection

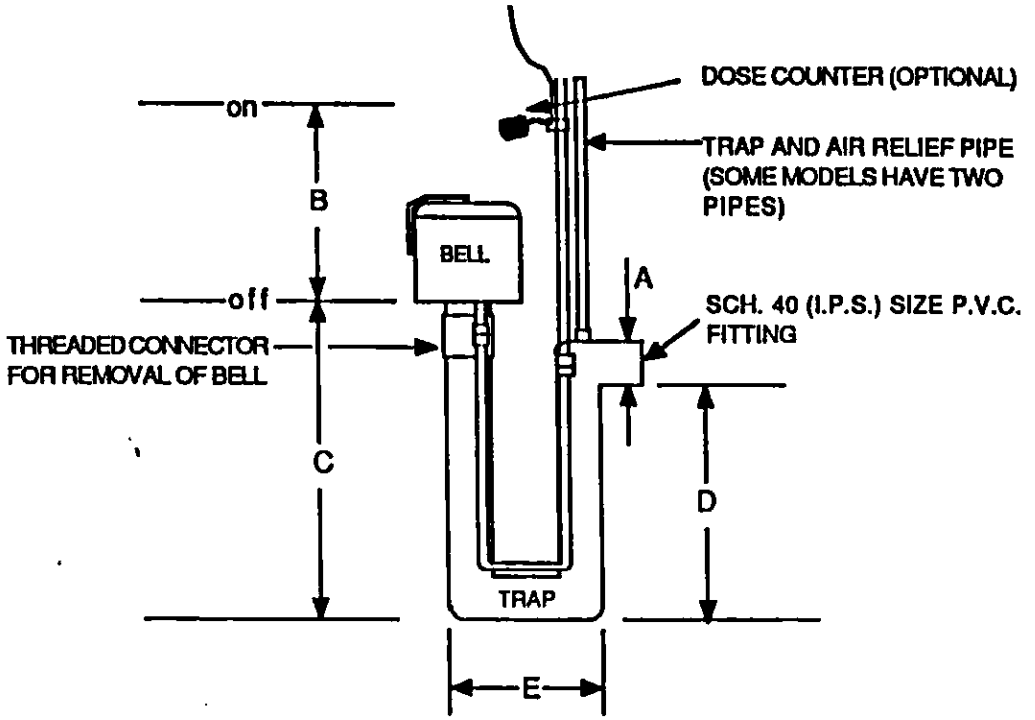


ORENCO SYSTEMS™ CONTROL PANEL	1/01/88
	TB
ORENCO SYSTEMS, INC. 2826 Colonial Road Roseburg, OR 97470	Drawing NO. 1

Dosing Siphon

OSI
Orenco Systems Inc.
2826 Colonial Road, Roseburg, Oregon 97470
503/673-0165

APRIL 1987



DIMENSIONS FOR DESIGN

MODEL NUMBER		312	316	318	324	330	336	342	348
SIPHON DIAMETER	A	3"	3"	3"	3"	3"	3"	3"	3"
DRAWDOWN	B	12"	16"	18"	24"	30"	36"	42"	48"
BOTTOM OF TRAP TO BELL	C	17"	21"	21"	27"	34"	39"	45"	51"
BOTTOM OF TRAP TO DISCHARGE	D	12"	16"	16"	20"	27"	32"	38"	44"
WIDTH OF TRAP	E	14"	14"	14"	14"	14"	14"	14"	14"
DISCHARGE RATE G.P.M. FOR DESIGN	Q	75	90	100	110	120	125	130	140

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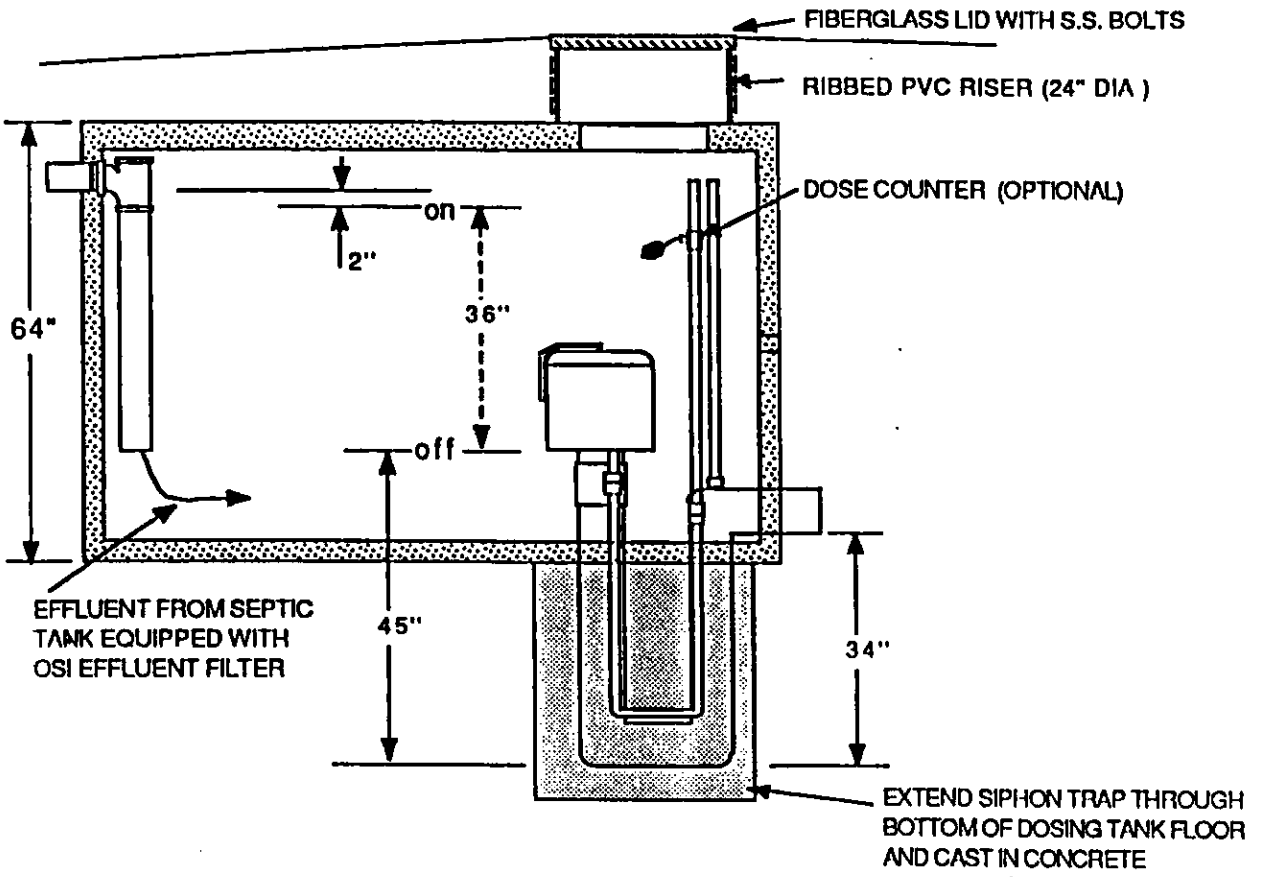


CAST-IN METHOD OF INSTALLATION

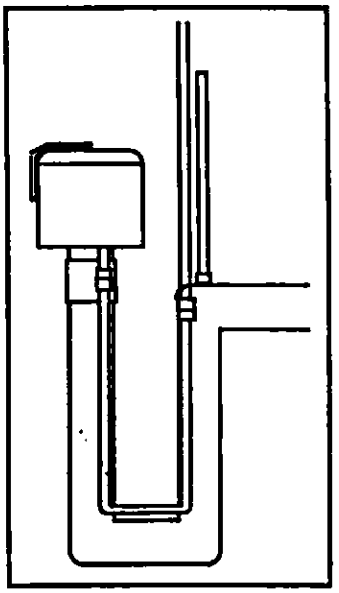
IN CONCRETE DOSING TANK

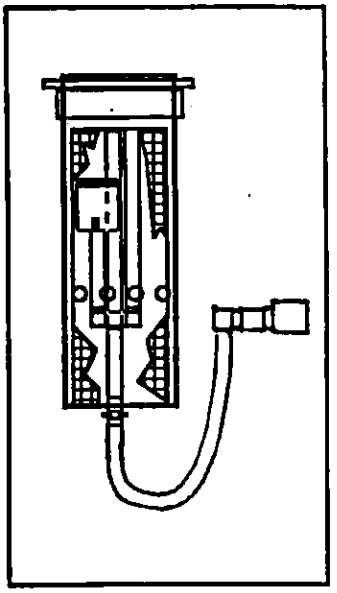
(MODEL 636 SHOWN)

- WHEN THE DIMENSION OF THE SIPHON PLUS THE DRAWDOWN (81" IN THE EXAMPLE SHOWN ABOVE) BECOMES TOO LARGE TO FIT WITHIN THE VERTICAL SPACE OF THE DOSING TANK, THE SIPHON TRAP CAN BE ENCASED IN CONCRETE BELOW THE DOSING TANK FLOOR.

There are SIPHONS . . .
and then there are SIPHONS!

OSI makes 3-,4-,6-, & 8-inch model siphons in a range of drawdowns. See Pages 8-13.





Exclusively from OSI . . . 2-inch siphons in our patented screened vault! See Pages 6 and 7.

Just how does a siphon work anyway?

Following installation, every dosing siphon must have its main trap and any auxiliary traps filled with water. Then when the fluid level in the dosing tank rises above the open end of the snifter tube, it seals air in the bell and long leg of the siphon.

As the fluid in the tank rises further, the pressure on the confined air increases until it forces the water out of the long leg of the trap. As the air follows the water around the bend of the trap, its upward rush forces water out of the short leg into the discharge pipe activating the siphon. The siphoning action draws down the fluid in the tank until its level is below the bottom of the bell. Air under the bell "breaks siphon" and the process begins again.

OSI • 2826 Colonial Road • Roseburg, Oregon 97470 • 503/673-0165

Combination Air/Vacuum Valves

AIR AND VACUUM VALVES

Only APCO Gives Guaranteed Protection

1. Gives absolute protection to pipe lines
2. Eliminates risk of collapsing line due to vacuum
3. Exhausts air when line is filled
4. Allows air to re-enter immediately when line drains

Plus these exclusive features at no extra cost!

5. Stainless steel floats—Guaranteed individually tested
6. ASTM quality materials guaranteed throughout
7. Every valve hydrostatically, factory tested

Why and Where To Use Air and Vacuum Valves

An Air and Vacuum Valve has a large venting orifice and is used to exhaust large quantities of air from a pipeline when being filled or a deep well pump column when the pump is started, etc. Once the line is filled the Air and Vacuum Valve closes and remains closed until the liquid is drained and pressure returns to atmospheric. The Air and Vacuum Valve will then immediately open to allow air to re-enter the line and prevent a vacuum from developing.

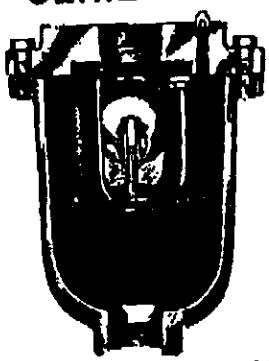
Air and Vacuum Valves do NOT open to exhaust the small pockets of air which collect in the line while it is operating under pressure. We highly recommend for maximum pipeline flow and pump efficiency Automatic Air Release Valves be used in conjunction with these Air and Vacuum Valves. The Automatic Air Release Valve will eliminate constricting air pockets from forming at the high points of the pipeline.

The minimal cost for the Automatic Air Release Valve will quickly pay for itself in minimizing head loss thru the pipeline realizing energy savings.

AVAILABLE FOR SERVICE UP TO 1000 P.S.I.

SPECIFY OPERATING PRESSURE IF BELOW 150 P.S.I.

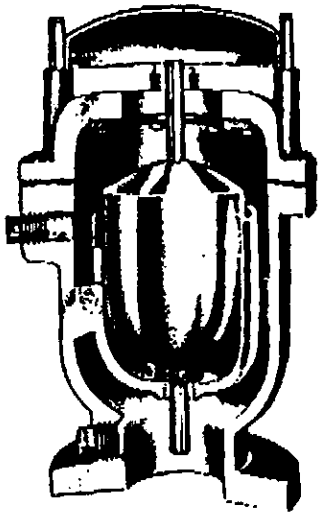
SERIES 140



½ INCH THRU 3 INCH

OUTLETS ARE NPT THREADED. IT IS GOOD PRACTICE TO INSTALL A STREET ELBOW INTO THE THREADED OUTLET FOR DISCHARGE PROTECTION.

SERIES 150



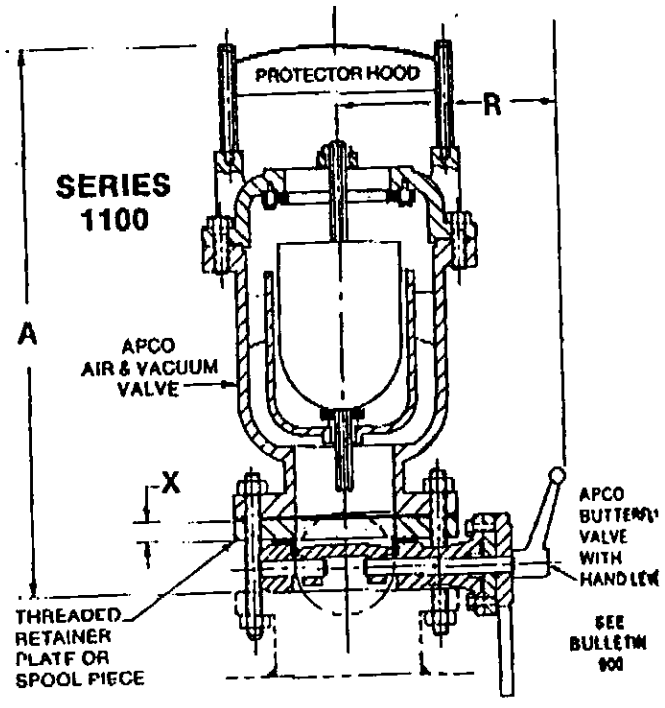
4 INCH THRU 30 INCH

OUTLETS ARE PLAIN WITH A STEEL PROTECTOR HOOD.

Replace Shut-Off Valves with APCO Butterfly Valves

Costs to excavate pipeline trenches can be greatly reduced by using APCO Butterfly Valves for isolation instead of gate valves.

APCO Butterfly Valves are economical, reliable and much shorter, permitting a reduction in depth of trench. See Below.



PHYSICAL DIMENSIONS

MODEL	SIZE	HEIGHT	MAXIMUM DIAMETER	INLET	OUTLET	WEIGHT LBS.
141	½"	7 1/16	5 1/16	½" NPT	½" NPT	10
142	1"	9	7	1" NPT	1" NPT	22
144	2"	12	9½	2" NPT	2" NPT	55
146	3"	13 1/16	9 7/16	3" NPT OR FLANGED	3" NPT	60
152	4"	18 1/16	12	4" NPT OR FLANGED	4" PLAIN	100
153	6"	21 1/16	16	6" FLANGED	6" PLAIN	150
154	8"	25	18	8" FLANGED	8" PLAIN	200
155	10"	27 1/16	20	10" FLANGED	10" PLAIN	350
156	12"	30 1/16	25	12" FLANGED	12" PLAIN	500
157	14"	30 1/16	29	14" FLANGED	14" PLAIN	625
158	16"	31 1/16	32	16" FLANGED	16" PLAIN	830
159	18"	43½	34	18" FLANGED	18" PLAIN	1100
160	20"	48	40	20" FLANGED	20" PLAIN	1650
162	24"	58	48	24" FLANGED	24" PLAIN	2600

ON SIZES 4" AND LARGER THE PLAIN OUTLET COMES WITH PROTECTOR HOOD, AS ILLUSTRATED. HOWEVER THREADED OR FLANGED OUTLETS ARE AVAILABLE AND RECOMMENDED.

VALVE SIZE	MODEL NO.	COMBINATION	A	R	X	NO. REQUIRED & SIZE STUDS	NUTS
4"	1104	152 / 904	21¼	9½	15/16	(8) 5/8-11x6-1/2 LG.	(16) 5/8-11
6"	1106	153 / 906	25¼	10¾	1	(8) 3/4-10x8 LG.	(16) 3/4-10
8"	1108	154 / 908	29	14¼	1¼	(8) 3/4-10x9 LG.	(16) 3/4-10
10"	1110	155 / 910*	32	14¼	2	(12) 7/8-9x10 LG.*	(24) 7/8-9
"12"	1112	156 / 912	39¼	15	5	(12) 7/8-9x8-1/2 LG.	(24) 7/8-9
"14"	1114	157 / 914	40	18¼	5	(12) 1-8x9 LG.	(24) 1-8
16"	1116	158L / 916	42¼	17¼	1-7/16	(16) 1-8x11 LG.	(32) 1-8

*USES SPOOL PIECE

—ADDITIONAL AIR VALVE INFORMATION— BULLETIN