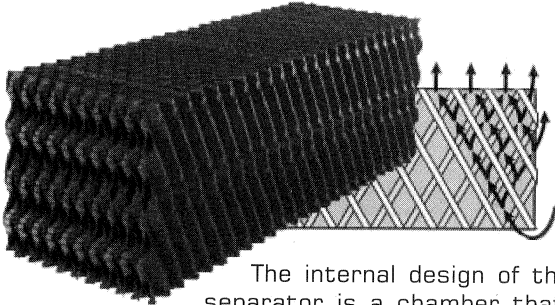


Phelps Street, Binghamton, NY 13901  
607-722-0334 Fax 607-722-0496

### How does the CVPS function?



The internal design of the CVPS oil separator is a chamber that is tightly packaged with vertical perforated polypropylene plates. The probability is rather remote that a 20-micron or larger oil globule will pass through the matrix of vertical plates without making contact with the plastic material. The globules combine and either wick-up, or if sufficiently large, they break free and rise through the plates to the surface.

Vertical polypropylene plates catch oil globules and allow them to pass to the surface, while letting water pass through. Settleable solids fall to the bottom into a collection area.

The CVPS removes hydrocarbons and settleable solids from stormwater, industrial wastewater and coolant.

In operation, this separator accepts industrial and stormwater liquid waste in the inlet chamber. Here, settleable solids fall to the bottom as sludge for periodic removal.

Then the waste stream enters the coalescing separation chamber. A matrix of vertically-positioned polypropylene plates gives laminar flow characteristics to the liquid. The result is a liquid more responsive to gravity separation.

The plates also provide a coalescing medium. Oleophilic in nature, they attract small oil globules which coalesce then break away to rise through the plates to the top.

Performance that can be expected of the CVPS separator is:

- (1) removal of oil globules down to 20-micron size
- (2) reduction of oil content to 10 mg/ltr.

The CVPS removes even nonpermanent mechanically emulsified oil. It leaves no visible sheen and traps solids too. In metalworking and similar applications, it removes more than 99 percent of tramp oils from coolants.

The CVPS incorporates concrete construction. The internally reinforced structure withstands severe soil and hydraulic loadings, with H-25 loading and greater.

### Advantage of Vertical Plate Separators Over Horizontal Plate Separators

One of the primary advantages the vertical plate type separator has over a horizontal plate type is that the plate matrix intercepts all strata of wastewater and provides easy passage to the surface of oil globules. This is tremendously important when the wastewater contains dispersed or mechanically emulsified oil.

The separating characteristics of free oil and settleable solids determine the surface area required in a gravity separator. However, dispersed and mechanically emulsified oils have slow rates of rise, and in this relatively suspended state a significant percentage of globules may pass between the plates and into the outlet chamber. The overflow rate (flow rate divided by surface area) is an important criterion used in sizing API type separators. Although the CVPS does not depend on the surface area factor for separation, it provides at least 2.5 times more surface area than commonly used in tilted and horizontal corrugated plate separators. Another key point is the method of oil transfer to the surface. Oil that coalesces on the vertical plate packs is free to wick-up and to float to the surface through the plates and from plate to plate in the wastewater flow. After reaching the surface, it continues to move with the flow, making it easy to skim and discharge. Most horizontal plate type separators require that coalesced oil move in a direction opposite to the flow of the influent or find a weep hole in the plastic plate in order to rise for removal.

### The Concrete Vertical Plate Separator (CVPS) Advantage:

1. Designed for driveover and deep burial
2. Minimized installation costs
3. Elimination of ballast slab and hold down equipment
4. Large manways allow proper, safe maintenance
5. Noncorrosive precast concrete eliminates cathodic protection
6. Availability of precast grit interceptors to capture solids upstream

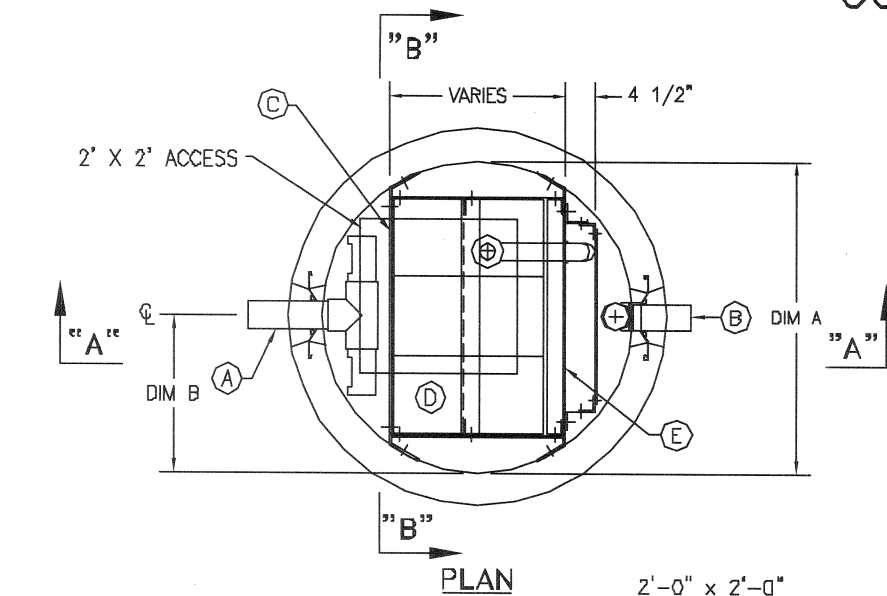
### Features

- Cross-corrugated surface design for more efficient separation
- High surface area per cubic foot
- Corrosion resistant throughout
- Pre-engineered, prepackaged, ready to install
- Self-contained, no power source required
- Built-in oil storage or separate storage chambers

### Typical CVPS Applications

Automotive facilities • Oil Processing Facilities • Airports  
Bulk Storage Areas • Bus, Truck Terminals • Marinas  
Wash Racks • Gas Stations • Parking Lots • Warehouse  
Loading Docks

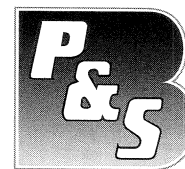
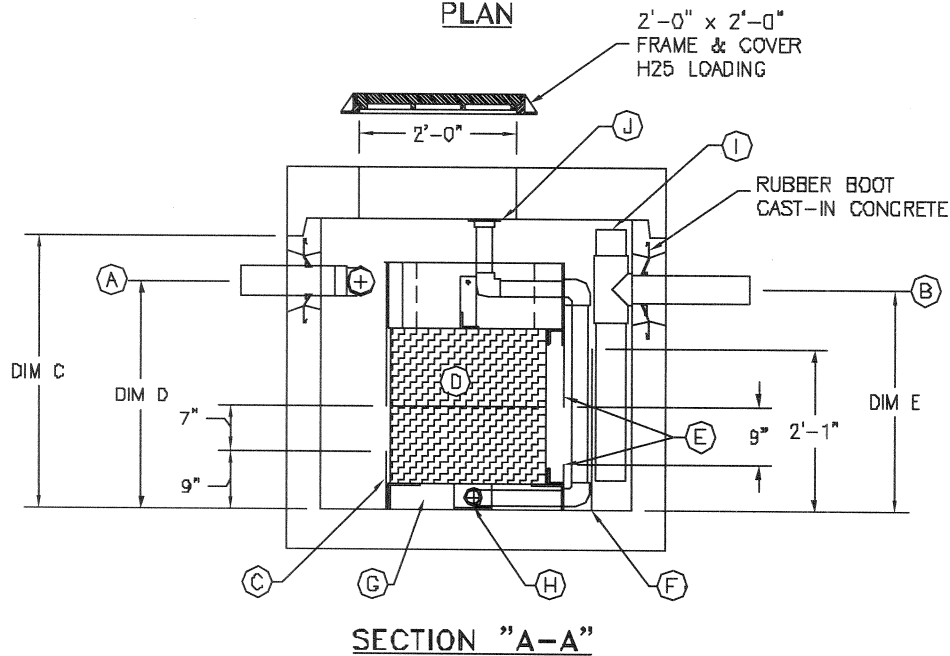
# Concrete Vertical Plate Separator (CVPS)



Key	Qty	Description
(A)	1	4"φ INLET, PIPE STUB (PVC)
(B)	1	4"φ OUTLET, PIPE STUB (PVC)
(C)	1	INLET BAFFLE (FRP)
(D)	1	COALESCING MEDIA
(E)	1	OIL RETENTION BAFFLE (FRP)
(F)	1	WEIR WALL
(G)	1	SOLIDS COLLECTION ZONE
(H)	1	2"φ SLUDGE DRAW OFF
(I)	1	4"φ T-PIPE DRAW OFF
(J)	1	150 LBS. 2"φ FLAT FACE FLANGE

TYPE	DIM A	DIM B	DIM C	DIM D	DIM E
20 G.P.M.	48"φ	2'-0"	3'-6"	2'-11"	2'-10"
50 G.P.M.	60"φ	2'-6"	4'-5"	3'-9"	3'-6"
100 G.P.M.	72"φ	3'-0"	5'-5"	4'-9"	4'-6"
*200 G.P.M.	72"φ	3'-0"	5'-5"	4'-9"	4'-6"

\*200 G.P.M. UNIT REQUIRES 12" x 12" x 48" COALESCING MEDIA,  
(ALL OTHER TYPES REQUIRES 12" x 12" x 24")



**Binghamton  
Precast & Supply**