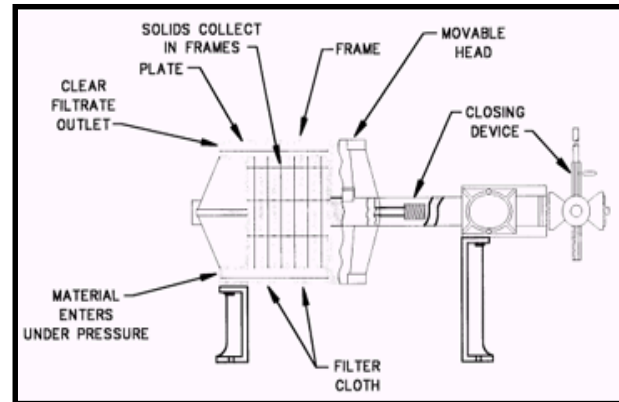


2.2.2 Filter Press Units

Filter presses are used to separate solids from fluids under pressure. The most basic type of filter press is the plate-and-frame press. As shown in the schematic to the right, the unit consists of alternating solid plates and hollow frames that are situated on parallel support bars. The filter medium is placed against each side of the solid plates, the surfaces of which are slotted or grooved. The entire collection of plates and frames is pressed together using a screw or hydraulic ram assembly, which should achieve essentially a fluid-tight closure. The filter medium between the plates and frames acts as a gasket. This schematic also shows the flow path within a plate-and-frame press. Although the figure shows filtrate exiting through a closed system, other designs discharge filtrate through cocks located at the base of each plate into open collection trays. A closed discharge system is essential to prevent toxic or volatile air emissions.



Schematic of Filter Press.

Filter presses often drip and leak. Emptying and cleaning of a filter press may include disassembly of the press and scraping of the filter cloth by hand. For such units, secondary containment (e.g., as required for tanks under 40 CFR §264.193) may be appropriate to minimize the potential for harm posed by releases that may occur during operation and maintenance of the units.