APV 4 Effect Rising Falling Film Plate Evaporator 6 Stage with TVR	
Mfg:	**Model:**
Stock No. 2500.CI01.500	**Serial No.**

APV 4 Effect Rising Falling Film Plate Evaporator 6 Stage with TVR. It is a Hybrid unit`, utilizing an APV Falling Film plate pack for the 1st effect and APV Rising, Falling Film plate packs for the 2nd, 3rd and 4th effects. The 4th effect is comprised of 2 Rising Falling film plate packs. The TVR increases steam to evaporation efficiency up to almost 5 to 1. All product contact surfaces are 316 stainless steel including heat exchanger plates, vapor separators, pumps, vapor and product tubing.
Evaporation rate 30,000 pounds per hour.
This system was set up to run citrus juices and will be able to run most other types of juice or similar products.

This evaporator is still installed and was running until the seller replaced it with a 40,000 pound per hour TASTE evaporator. This was originally set up for lemon juice but ran the past 20 years mostly on orange juice. 13 brix in, 67 brix out at 60 gpm feed. It used around 6,500 pounds per hour of steam at 160 psi. It ran 13 brix into the evaporator and 67 brix out of the evaporator of orange juice concentrate with 8-10% USDA bottom pulp (floating pulp) The evaporator does not require a platform; it sits on floor under a canopy. Only the first effect sits on a 5 foot stand, all other effects are bolted to the floor.

1st effect APV large plate Falling Film split into two stages with one vertical separator has 106 plates (product/steam) with 2 or 3 spares. 2nd and 3rd are RFF with 2 horizontal separators 2nd Stage- 249 plates (62 sets of 4+1), 3rd Stage-169 plates (42 sets of 4+1), 4th Stage- 133 plates (22 sets of 6+1), 5th Stage- 85 plates (14 sets of 6+1) and there are 10-12 spare plates. The 4th effect has two plate packs on one frame and two separators. Controls were updated in the last two years at a cost of about $7,000. They control feed, steam and preheater temperature. Triclover pumps were upgraded in the last 5 years

with final stage having a Fristam pump. Once a year, the plates and gaskets were checked and replaced as needed. Plates and gaskets are in good serviceable shape, maybe need 6 plate/gasket change out in first effect now.

Flow of product through the evaporator: From the balance tank the product is pumped through a preheater From the preheater the product is pumped to the 1st stage falling film plate pac From the 1st stage falling film plate pack the product flows to the 1st stage vertical separator From the 1st stage Vertical separator the product is pumped to the 2nd stage falling film plate pack of the same dual falling film plate pack From the Second stage falling film plate pack the Vapors from the second side of the first effect are directed to the vertical separator of the first effect, only the product does not make it into the separator, it drops into a catch basin and is directed into a pump sending it to the second effect plate pack. From the second effect plate pack the product flows to the second effect separator (second and third effect plate packs have a four plate arrangement where the product goes up one set of plates and down one set of plates) From the second effect separator the product is pumped to the third effect plate pack From the third effect plate pack the product flows to the third effect separator From the third effect separator the product is pumped to the forth effect plate pack a From the forth effect plate pack a the product flows to the forth effect separator (forth effect a and b have a 6 plate arrangement, two sets of plates send product up, and one set goes down.) From the forth effect separator the product is pumped to the forth effect b plate pack. From the forth effect b plate pack the product flows to the forth effect b's second separator Out of forth effect b separator the product is pumped to a finished concentrate tank