



FIXED VALVE SYSTEM (FVS) OIL STRIPPER

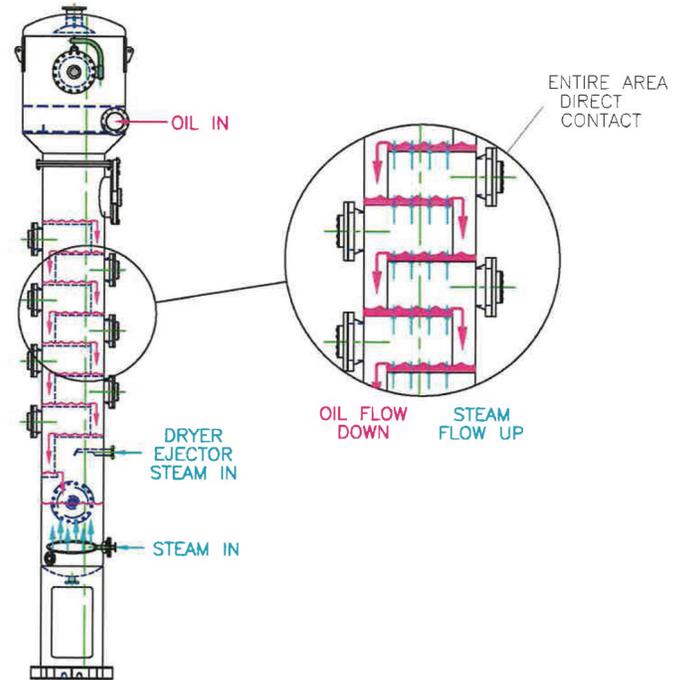
FIXED VALVE SYSTEM (FVS) OIL STRIPPER

INTRODUCING THE CROWN FVS (FIXED VALVE SYSTEM) OIL STRIPPER

The Crown FVS Oil Stripper is the latest development in Oil Stripping technology for the vegetable oil industry. The FVS utilizes 100% direct contact of steam to oil for hexane flashing and 0% surface area flashing and represents a natural progression in Crown's oil stripper technology which began with the introduction of the Super Stripper in 1995.

FVS STRIPPER DESIGN

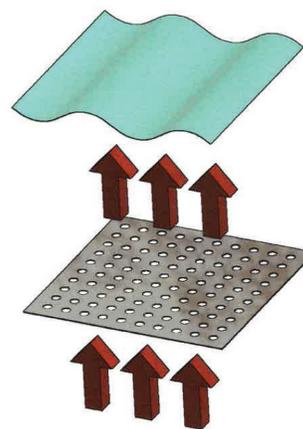
- Eight (8) shallow bed trays with weir over-flows and down-comers in a typical oil stripper
- Large diameter expansion dome with demister device to minimize oil entrainment
- 100% of hexane flashing is accomplished using direct contact of steam with the oil
- Multiple steam injection points for fresh steam and oil dryer ejector motive steam
- Steam forced to rise through the trays by specially designed downcomers with hydraulic seals on every tray



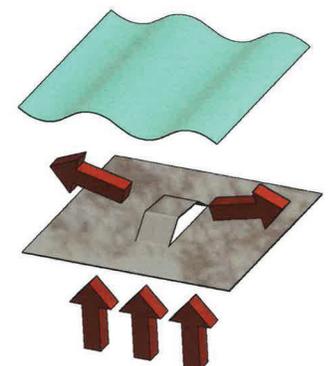
FVS TRAY DESIGN FEATURES

- Horizontal steam discharge means less oil entrainment
- Larger valve openings results in less potential for fouling
- Superior mechanical strength due to stiffening effects of valves
- Stainless steel tray construction to eliminate corrosion
- Specially designed tray valves chosen for maximum turn-up/turn-down capability
- Valves designed to help move the oil across the trays

CONVENTIONAL SIEVE TRAYS



CROWN FVS TRAY DESIGN



FVS STRIPPER PERFORMANCE

- FVS Stripper relies on 100% direct contact of steam with oil to flash off hexane
- Steam consumption in the range of 0.75-1.0 lb steam per lb of Hexane
- Residual Hexane in the stripped oil in the range of 25-50 ppm

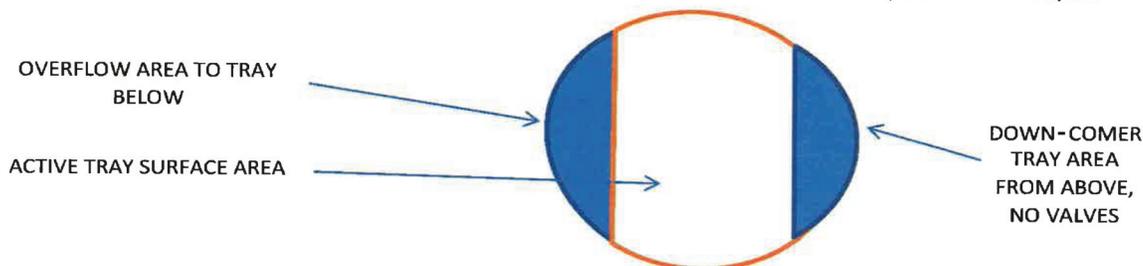


FVS STRIPPER ADVANTAGES

- Significantly reduced steam consumption and residual hexane over previous designs
- Trays are bolted together inside vessel so can be replaced if operating conditions change
- Reduced stripper diameter over Super Stripper design
- Lower sparge rate reduces load on stripper condenser and improves vacuum
- Significantly reduced overall height
- Full range of Crown FVS strippers for all plant capacities

FVS TRAY DESIGN SPECIFICATIONS

VESSEL NOM. DIA (IN)	VESSEL INSIDE DIA (IN)	ACTIVE TRAY AREA (ft ²)	MINIMUM SPARGE STM lb/hr	NOMINAL SPARGE STM lb/hr	MAXIMUM SPARGE STM lb/hr	CALC SOY MTPD	NOMINAL SOY CAP. IN MTPD
22"	21.25	2.110	214	317	536	764	750
26"	25.25	2.604	286	423	715	1,019	1,000
30"	29.25	3.080	364	539	911	1,299	1,300
32"	31.25	3.314	447	663	1120	1,597	1,600
36"	35.25	4.206	568	841	1422	2,027	2,000
40"	39.25	5.205	703	1041	1759	2,508	2,500
44"	43.25	6.310	852	1262	2133	3,041	3,000
48"	47.25	8.350	1127	1670	2822	4,024	4,000
54"	53.25	10.475	1414	2095	3541	5,048	5,000
60"	59.25	12.495	1687	2499	4223	6,022	6,000
66"	65.25	14.677	1981	2935	4961	7,073	7,000
72"	71.25	17.023	2298	3405	5754	8,204	8,000
72"	71.25	17.868	2563	3797	6417	9,149	9,000
72"	71.25	18.696	2839	4207	7109	10,136	10,000



WHO SHOULD BUY AN FVS STRIPPER?

- Processors operating with expanders tend to have more problems with strippers fouling due to pre-degumming in the stripper and can see significant reduction in fouling
- Plants with under-sized stripper condensers should see an improvement in vacuum
- Processors who want to minimize hexane loss to meet emission restrictions
- Processors who want to reduce steam consumption by roughly 3 kg/ton



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