SOLUTIONS 4 MANUFACTURING

Fractionation Systems Item: PK-1200
40 MTPD and 78 MTPD Rated at 30 Bar

TWO complete systems including all tanks, pumps, heat exchangers, fitters, and controls. Includes all piping and everything in this room. In operation in Jacksonville, IL until 2007, relocated and installed in Guadalajara, Mexico plant in 2010 and never restarted. Photos are of Jacksonville installation.

Description 40 MTPD FRAC-1 (PK-1200): Fractionation system - supplied by DeSmet. System built 2000. Includes (6) vertical ss crystallizers and Filox membrane filter (made in Germany) with 36 plates polypropylene. Built 2000. Filter volume 1500 liters (396.3 gallons). Capacity 40 MTPD based on 1st fractionation Soybean Oil – OR - 5 MTPD OUTPUT based on 2nd Fractionation = 2.5 million pounds product + 1.5 million pounds by-product. Capacity will vary depending on type of operation and oil. Stainless steel trough and auger system. Includes all tanks, pumps, electrical, and control systems. J4744



Filox Membrane Press – Frac1

Description FRAC-2 (PK-1200): Fractionation system - supplied by DeSmet. System built in 1997. Includes (18) vertical crystallizers and Industrieterren membrane filter (made in Belgium) with 69 plates polypropylene. Built 1997. Filter volume 2,875 liters (759.5 gallons). Capacity 78 MTPD based on first fractionation Soybean Oil – OR - 18 MTPD OUTPUT based on 2nd Fractionation = 10.5 million pounds product + 3.5 million pounds by-product. Capacity will vary depending on type of operation and oil. J4747



Membrane Filter – Frac2

Removal & Loading: We can arrange and supervise dismantling and loading so you can pick up modules and sit them down at your plant – approximate footprint is 50 feet x 67 feet x 32 feet tall overall battery limits, with a 9 foot x 22 foot chiller room. Each system should fit into about 4 trucks or containers. Both fractionation systems are still installed – operations ceased 2007. Inspection can be at any time with appointment.

LIST OF FEATURED COMPONENTS:



Crystallizers

Stainless steel crystallizers utilizing chilled water for crystallization. Top entering slow sweep agitation. Each bank of three holds 7,200 gallons



There are (6) crystallizers for Frac1 and (18) for Frac2 – each set of three has its own recirculating pump

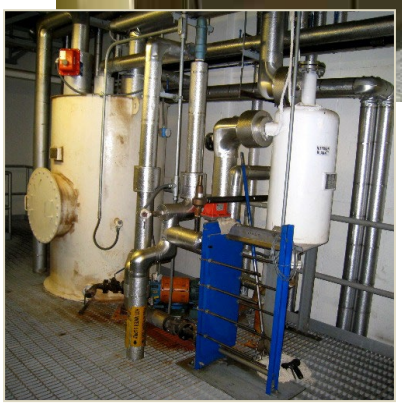
Controls

Each system is complete with Allen Bradley plc and control panels. Shown here is the panel for Frac1



Frac1 has a stainless steel discharge trough and screw conveyor for stearine (shown below). Frac2 stearine drops directly into a stainless steel tank for melting and pumping.







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Stearine tank for Frac2 shown on left











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FACT SHEET

Item PK-1200 DeSmet Fractionation System

Asking Price: **see quote sheet**

Dismantling and Loading: *

We can manage the equipment disassembly and removal for you. Each electrical, piping, and mechanical component will be match-marked where disconnected for easy re-assembly. All skids and manifolds will be left as intact as possible to minimize dis-assembly cost, and to ease the re-assembly. Any instruments or fragile components will be protected or crated. All piping can be disassembled and shipped if desired. Freon and ammonia will be emptied and recovered prior to shipping.

Location: Guadalajara, Mexico

Approximate Size:

Main Room (2 floors) – both systems	**overall 67 ft x 50 feet x 28 ft high**
Chiller Room – both chillers	**overall 22 ft x 9 feet**

Number of Containers or Pieces: **9 - 10 Pieces**

The number of pieces and containers has been estimated. See below for details

FRAC1 (4744)		
Module 1: Membrane Filter	21' x 10ft	35,000 pounds
Module 2: Discharge Trough	21' x 10 ft	15,000 pounds
Truck 1	Tanks	
Truck 2	Tanks & Pumps	
Truck 3	Misc & instruments	
FRAC2 (4747)		
Module 1: Membrane Filter	38' x 10ft	50,000 pounds
Module 2: Stearine Tank	19' x 7 ft	8,000 pounds
Truck 1	Tanks	
Truck 2	Tanks & Pumps	
Truck 3	Misc & instruments	

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Item 4744: 40 TPD Fractionation System
General List of Major Components

Click on any link for photo

Item F1016T .Filter Trough
Trough and screw conveyor under Frac1 filter. All stainless steel.

Item 4861 .Control Panel
Control Panel for Frac1

Item 1F1082OV .Overflow Tank
Vertical carbon steel tank

Item 1PF1078/16-2 .Press Water Pump
Grundfos vertical pump

Item 4749 .Crystallizers
Six (6) vertical stainless steel 304 crystallizers with top entering slow sweep agitators.

Item 1F1046/82 .Oil Separator
Carbon steel vent pot with steam to evaporate moisture. Atmospheric vent.

Item 1PF1082OV .Overflow Pump
Goulds centrifugal pump, Model 3196 STX size 1x1.5-6. Designed for 88 gpm at 115 ft head. 3500 rpm

Item 1PF1082B .Olein Pump
Goulds centrifugal pump Model LF3196 size 1x1.5-8 STX. Designed for 181 gpm at 148 ft head. 3500 rpm.

Item 1PF1078C .Chilled Water Pump
Goulds centrifugal pump, Model 3196 STX, size 1.5 x 3-6 Designed for 132 gpm at 82 ft head. 3500 rpm

Item 1PF1082ST .Stearine Pump
Goulds centrifugal pump, Model 3196 STX size 1x1.5-6. Designed for 25 gpm at 120 ft head. 3500 rpm. Foreground in picture.

Item 1PF1078B .Chilled Water Recirc Pump
Goulds centrifugal pump, Model 3196 STX, size 1.5 x 3-6 Designed for 132 gpm at 82 ft head. 3500 rpm

Item 1PF1002A .Filter Feed Pump
Blackmer positive displacement pump, gear pump Model SNP-2.5 designed for 90 gpm at 470 rpm

Item 1PF1078A .Cool Water Pump
Goulds centrifugal pump, Model 3196 size 1.5x3-6 STX. Designed for132 gpm at 82 ft head. 3500 rpm. Background in photo.

Item 1PF1050TR .Tempered Water Pump
Goulds centrifugal pump Model 3196 Sized for 88 gpm at 50 ft head. 1180 rpm. Pump weight 718 pounds

Item 1F1081/16 .Press Water Cooler
ITT shell & tube heat exchanger, carbon steel shell, stainless 316 tubes. Size 8 inches dia x 72 inches long, 68.7 sf.

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Item 1F1082C .Filter Cleaning Tank
Vertical stainless steel 304L tank, on legs, cone bottom, flat top. Size 6 ft dia x 5ft-6in tall, capacity1228 gallons. Physical weight 2470 pounds.

Item 1F1082ST .Stearine Tank
Vertical stainless steel 304L tank, on legs. Cone bottom, flat top. Size 6'-6" dia x 7'-6" tall, capacity 1940 gallons. Physical weight 3760 pounds.

Item 1F1078D .Hot Water Tank
Vertical carbon steel tank, flat top, flat bottom. Size 4 ft dia x 6 ft-6 in tall, capacity 611 gallons. Physical weight 1370 pounds.

Item 1PF1078D .Hot Water Tank Pump
Goulds centrifugal pump, Model 3196 STX, size 1x1.5-6. Designed for 44 gpm at 82 ft head. Hot water pump to crystallizers.

Item 1PF1082C .Hot Washing Oil Pump
Goulds centrifugal pump Model 3196 size 1.5x3-6 STX. 3500 rpm. Designed for 101 gpm at 82 ft head. Hot washing oil pump - olein

Item 1F1082B .Filtered Olein Tank
Vertical stainless steel 304L tank, on legs with cone bottom, flat top. Size 6 ft dia x 5 ft-6 in tall, capacity 1228 gallons. Physical weight 2240 pounds

Item 1F1011A .Chiller
NOTE: Chiller is gone. Listed here for specifications ONLY. Trane hermetically sealed water chiller. Capacity 25 tons, R22. Model CGWD02S, Serial U00J04126. Water out 39.2F if cooling tower is less than 86F. Physical weight 1602.

Item 1F1078A .Cool Water Tank
Vertical carbon steel tank, flat bottom, flat top. Size 6 ft dia x 10 ft tall, capacity 2115 gallons. Physical weight is 2700 pounds.

Item 1PF1050/2A .Crystallizer Recirc Pump (2)
Goulds centrifugal pump - Quantity (2). Model 3196, size 4x6-10. Designed for 352 gpm at 23 ft head. Crystallizer recirculation pumps - one pump for each bank of 3 crystallizers.

Item 1PF1078/16-1 .Press Water Pump
Grundfos vertical pump Type CRN8-140/13 SFF-P-G-AUUE, Model B42280074P10043. Designed for 12 cubic meters/hr at 138.8 meters head. 3500 rpm. MAWP 45 bar at 90C. Made in Germany

Item 1F1078/16 .Press Water Tank
Vertical stainless Steel 304L tank, flat bottom, flat top, side manhead. Size 4 ft dia x 6'-6" tall for 611 gallons. Physical weight 1370 pounds.

Item 1F1021D .Hot Water Heat Exchanger
APV plate heat exchanger Model SR2MG212, water - steam. 7.4sf. Water flow 10,000 kg/hr. Temp in/out = 50C/54.5C. MAWP 150 psig at 338F. Serial number 20003003000936

Item 1F1021B .Olein heat exchanger
APV heat exchanger, Model SR2MGS12, 7 plates. Frame cs, plates ss. Oil/steam. Flow 3.666 kg/hr, Temp in/out = 15C/50C. Pressure drop 0.7 bar. Outgoing olein heater.

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Item 1F1078B/C .Chilled water Double tank
Vertical carbon steel tank, flat top, flat bottom. Double Tank. Size 6 ft dia x 10 ft tall, capacity 2115 gallons. Physical weight 3450 pounds.

Item 1F1081A .Feedstock heat exchanger
APV plate heat exchanger. Sized for 132 gpm water flow. ASME, MAWP 150 psi at 225F. Process water temp in/out = 34.1C/33C. Cooling water temp in/out = 30C/31.4C. Physical weight of exchanger is 400 pounds.

Item 1F1016A .Membrane Filter
Filox membrane filter for fractionation. Made by Filox - Filtertechnik Gmbh, Germany. Type MKF150-36-250H, serial 2117. Rated at 30 bar. Made in 2000. Has 36 polypropylene plates, 1500mm section - cake volume 1500 liters, cake thickness 25mm, 40.5 sq m filter surface area. Automatic with plc operator interface, on-board hydraulic system with dual acting cylinder. Hydraulic unit 15HP. Size 6535mm long x 2820mm wide x 2610mm tall, weight empty 34,785 kg

Item 4747: 78 TPD Fractionation System General List of Major Components

Click on any link for photo

Item 2F1021ST .Stearine Heater
APV plate exchanger Model SR2MGS12

Item 2F1081/16 .Press Water Cooler
ITT Shell & Tube heat exchanger

Item 4746 .Crystallizers
Eighteen (18) vertical crystallizers with top slow sweep agitators

Item 2PF1078A .Cool Water Pump
Peerless centrifugal pump

Item 2F1078A .Cool water Tank
Vertical carbon steel tank,

Item 2PF1078B .Chilled Water Recirc Pump
Peerless centrifugal pump

Item 2PF1082ST .Stearine Pump
Goulds centrifugal pump, Model 3196 at 3500 rpm.

Item 2PF1002A .Filter Feed Pump
Blackmer positive displacement gear pump.

Item 2PF1050TR .Tempered Water Pump
Goulds centrifugal pump, Model 3196 at 3500 rpm

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Item 2PF1082OV .Overflow Pump
Goulds centrifugal pump Model 3196. Right side of picture

Item 2PF1078C .Chilled Water Pump
Goulds centrifugal pump Model 3196. Left side of picture

Item 2F1011A .Chiller
Note: Chiller is gone – listed here for specs Only. Trane hermetically sealed water chiller. Model 12TWA-80. Capacity 80 tons, R22, Series R

Item 2PF1082C .Hot Washing Oil Pump
Goulds centrifugal pump, Model 3196 STX at 3500 rpm. Pump shown in background.

Item 2PF1082B .Olein Pump
Goulds centrifugal pump, Model LF3196 STX. At 3500 rpm. Pump shown in foreground

Item 2F1021B .Olein heater (outgoing)
APV plate exchanger Model SR2MGS12. Frame cs, plates ss. Oil-steam Designed for temp in/out = 15C/50C. Olein to storage.

Item 4860 .Control Panel
Control panel for Frac 2

Item 2PF1078/16-1 .Press Water Pump
Grundfos vertical pump. Type CRN5-24 SF-P-GI-V-HQQV, Model A96521804P10431. Designed for 6.9 cu m/hr at 197 meters head. MAWP 50 bar at 90C. Motor 7.5 KW. Made in Denmark.

Item 2PF1078/16-2 .Press Water Pump
Grundfos vertical pump. Type CRN5-15 U-P-G-E-HQQE, Model A95081849P20506U9000. Designed for 30.4 gpm at 294 ft head. Motor is 5 HP, 3450 rpm. MAWP 360 psi at 250F. Made in USA.

Item 2PF1050/2A .Crystallizer Recirc Pump (6)
Peerless centrifugal pump - Quantity (6). Designed for 352 gpm at 23 ft head. Crystallizer recirculation pumps - one pump for each bank of 3 crystallizers.

Item 2F1082B .Filtered Olein Tank
Vertical stainless steel 304L tank, on legs, insulated. Size 84 inches dia x 63 inches straight side - 84 inches OAH. Capacity 1510 gallons

Item 2F1082ST .Stearine Tank
Rectangular steel tank for stearine - with coils - stainless steel 304. Size 3980mm x 2050mm

Item 2F1082OV .Overflow Tank
Vertical carbon steel tank. Flat bottom, flat top. Size approx 3 ft x 5 ft tall, capacity approx 25 gallons

Item 2F1078/16 .Tempered water tank
Vertical tank 304 Stainless Steel, insulated. Flat top/flat bottom. Size approx 5 ft dia x 118 inches tall for capacity of 1436 gallons. Physical weight 1370 pounds.

Item 2F1082C .Filter Cleaning Tank
Vertical stainless steel 304L tank on legs, insulated with 2 inch coils. Size 84 inches dia x 63 inches straight side - 84 inches OAH. Capacity 1510 gallons

Item 2F1016A .Membrane Filter
Membrane filter for fractionation, made by Industrieterrein Wijngaardveld AALST, Belgium. Built 1997.

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Serial 150 10. Type OGFP1500, rated at 30 bar. Has 69 plates, 1500mm x 1500mm. Filter cake volume = 2,875 liters (759.5 gallons). Filter area 255 sq m, with 25mm cake per cavity. Automatic with plc operator interface, on-board hydraulic system with dual acting cylinder.

Item 2F1078B/C .Chilled Water Double Tank

Vertical insulated tank, carbon steel. Double tank - F1078B on top, F1078C on bottom. Size 76 inches dia x 156 inches tall, capacity 3029 gallons

Item 2F1081A .Feedstock heat exchanger

APV plate heat exchanger. Sized for 132 gpm water flow. ASME, MAWP 150 psi at 225F. Process water temp in/out = 34.1C/33C. Cooling water temp in/out = 30C/31.4C. Physical weight of exchanger is 400 pounds.

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