

FLOW DIAGRAM OF USED LUBE OIL RE-REFINERY WFE TECH / SOLVENT & OIL POLISHING

مخطط تدفق عملية إعادة تكرير زيت التشحيم المستعمل



- ✓ تقنية التبخر بالغشاء الرقيق (WFE) Thin Film Evaporation Technology
- ✓ أعلى معدل استرجاع لزيت الأساسية High Recovery of Base Oils
- ✓ جودة ممتازة مطابقة لمواصفات ASTM Excellent Quality to ASTM Standards
- ✓ حلول متكاملة من الاستلام إلى المنتج النهائي Complete Solutions from A to Z

من زيت مستعمل إلى زيت أساسي عالي الجودة
From Used Oil to High Quality Base Oil



وحدة تلميع الزيت
Oil Polishing Unit



مميزات نظام إعادة التكرير BPSPS



إمسا، عائد استثماري High ROI



صديق للبيئة Eco Friendly



استهلاك منخفض Low Energy Consumption



تشغيل مستقر وموثوق Reliable & Stable Operation



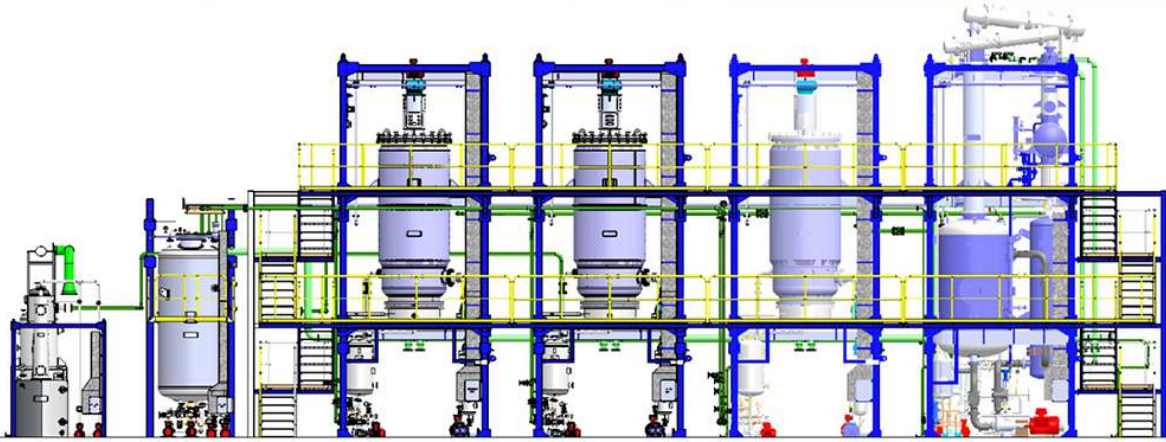
تشغيل وصيانة سهلة Easy Operation & Maintenance





**NEW
TECHNOLOGY**

**تكنولوجيا جديدة
مُبَخَّرَةُ الفِيلمِ الرِّقِيقِ
لِلا حمض**



IN		OUT	
Wet Used Oil زيت المستعملة	100.0	Base Oil	75.0
		Fuel	6.0
		Residue	8-15
-	-	Waste water	2-7
Total	100.0	Off-gas /soild	0.2-0.5

Consumables for processing

**1m³ (1000 liters)
of used / waste oil**

	Unit	Quantity
Electricity	kwh	90
Heat	kcal	180000
Water	litre	700
	kg	

BPSPS- WFE						
Specifications	Unit	200	400	1200	2000	3000
capacity	T/d برصة/ال	5	10	25	50	70
Price	Distillation Unit	250,000	350,000	480,000	700,000	1,100,000
Price				Decolor	270,000	420,000
Base oil Recovery	%	70-85%				
Temperature Range	?	=350				
Machine Dimension	M	15*6*6	21*6*6	25*8*6	30*10*6	35*16*6
Total power	kw	50	140	165	227	285
Power Supply	V	Agreement				
Equipment weight	T	24	50	70	100	120
Cooling water	M3	45	60	70	100	120
Operating area	M2	180	360	500	800	1000
Container		1*40+1*20	3*40+1*20	3*40+1*20	4*40+1*20	5*40+1*20
Lead time	day	50	75	90	90	120

Economics

تكلفة الكهرباء- والوقوى والمياه \$ 15-30

The cost for electricity, fuel, water, wastewater disposal (US\$ 0.06-0.13 per US gallon) of used oil processed. and chemicals will be \$15-30 per m³

Land In sq. mtrs.	2000-20000	Electric power, KW	400	Cost M ³ Feed	15-30 \$
Coved area in sq. mtrs.	100-500	Water, Cu.mtrs./day	70	Direct labor will be persons	5-10

bpsps.com





2026

Re-Refining of Waste Oil by Thin Film Evaporation Technique - **BPSPS** Table A

Type	Description	Time	Capacity		Fuel	Product	WFE machine	Vacuum bottom	Price USD
3000	Distillation Unit WFE method	24 hr	3000 Lit/Hr	55 Ton/Day	Diesel	SN 150-300-500	3	8%	870000
<ul style="list-style-type: none"> Using 2 WFE+1 TFE machine made of 304 stainless steel Fuel and dewatering unit of film falling evaporator special design BPSPS Competitive price High quality standard equipment and process Low distillation residue and high efficiency of base oil production Process special design BPSPS 									
Type	Description	Time	Capacity		Fuel	Product	WFE machine	Vacuum bottom	Price USD
2000	Distillation Unit WFE method	24 hr	2000 lit/hr	48 ton/day	Diesel	SN 150-350-650	2	8%	610000
<ul style="list-style-type: none"> Using 2 WFE & 1 TFE machine made of 304 stainless steel Fuel and dewatering unit of film falling evaporator special design BPSPS Competitive price High quality standard equipment and process Low distillation residue and high efficiency of base oil production Process special design BPSPS 									
Type	Description	Time	Capacity		Fuel	Product	WFE machine	Vacuum bottom	Price USD
1200	Distillation Unit WFE method	24 hr	1200 lit/hr	24 ton/day	Diesel	SN 150-500	1	8-10%	450000
<ul style="list-style-type: none"> Using one WFE+one TFE machine made of 304 stainless steel Using One thin film evaporator Using One falling film evaporators special design BPSPS Fuel and dewatering unit of falling film evaporator special design BPSPS Competitive price High quality standard equipment and process Low distillation residue and high efficiency of base oil production Process special design BPSPS 									
<ul style="list-style-type: none"> Quality assurance and product analysis + Select the Final treatment unit in Table C The production line includes all supplies and equipment from the input of used oil to the output of distilled base oil. Operational control and command Process control automatically and monitoring \$ 100,000 added. Ex-work prices Installation costs 5% of the contract 									



Type	Description	Time	Capacity		Fuel	Product	WFE machine	Vacuum bottom	Price USD
400	Distillation Unit WFE method	24 hr	400 Lit/Hr	10 Ton/Day	Diesel	SN 150/300	3	8%	325000
<ul style="list-style-type: none"> Using WFE machine Fuel and dewatering unit of film falling evaporator special design BPSPS Competitive price High quality standard equipment and process Low distillation residue and high efficiency of base oil production Process special design BPSPS 									
Type	Description	Time	Capacity		Fuel	Product	WFE machine	Vacuum bottom	Price USD
200	Distillation Unit WFE method	24 hr	200 lit/hr	5 ton/day	Diesel	SN 150/300	2	8%	225000
<ul style="list-style-type: none"> Using WFE machine Fuel and dewatering unit of film falling evaporator special design BPSPS Competitive price High quality standard equipment and process Low distillation residue and high efficiency of base oil production Process special design BPSPS 									
Type	Description	Time	Capacity		Fuel	Product	WFE machine	Vacuum bottom	Price USD
100	Distillation Unit WFE	24 hr	130 lit/hr	3 ton/day	Diesel	SN 150/300	1	8-13%	145000
<ul style="list-style-type: none"> Using one WFE machine Using One thin film evaporator Using One falling film evaporators special design BPSPS Fuel and dewatering unit of falling film evaporator special design BPSPS Competitive price High quality standard equipment and process Low distillation residue and high efficiency of base oil production Process special design BPSPS 									

SKD 3-5-10 TON





Re-Refining of Waste Oil by Vacuum Distillation Technique - BPSPS Table B

Type	Description	Time batch	Capacity		Fuel	Product	No. reactor	Vacuum bottom	Price USD
VD20	Distillation Unit VD method	16 hr	0 Lit/h	20 Ton/Day	Diesel	SN 150-300-500	2	8-12%	260000

- Using 2 reactor double jacket +double mechanical seal
- Separator and degassing special design **BPSPS**
- Competitive price
- High quality standard equipment and process
- Low distillation residue and high efficiency of base oil production
- Process special design **BPSPS**



Type	Description	Time batch	Capacity		Fuel	Product	No. reactor	Vacuum bottom	Price USD
VD10	Distillation Unit VD method	16 hr	0 lit/h	10 ton/day	Diesel	SN 150-300-500	1	8%	215000

- Using 1 reactor double jacket +double mechanical seal
- Separator and degassing special design **BPSPS**
- Competitive price
- High quality standard equipment and process
- Low distillation residue and high efficiency of base oil production
- Process special design **BPSPS**

Type	Description	Time	Capacity		Fuel	Product	No. reactor	Vacuum bottom	Price USD
VD10D	Distillation Unit VDD method	16 hr	0 lit/hr	10 ton/day	Diesel	SN 100-300-500	1	8-10%	155000

- Using 1 Direct heating reactor made st35.8 +double mechanical seal
- Separator and degassing special design **BPSPS**
- Competitive price
- High quality standard equipment and process
- Low distillation residue and high efficiency of base oil production
- Process special design **BPSPS**

- Quality assurance and product analysis
- + Select the Final treatment unit in Table C
- The production line includes all supplies and equipment from the input of used oil to the output of distilled base oil.
- Operational control and command Process control automatically and monitoring \$ 50,000 added.
- Ex-work prices
- Installation costs 10% of the contract



Type	Description	Time	Capacity		Fuel	Solvent loss rate	TFE machine	Color ASTM	Price USD
STFE	Solvent Unit TFE recycle method	24 hr	2000 Lit/h	40 Ton/Day	Diesel	0.5-1	2	1-2.5	380000

- Using two thin film evaporator machines made of 304 stainless steel
- Using two mix reactors special design **BPSPS**
- Competitive price
- High quality standard equipment and process
- Low distillation residue and high efficiency of base oil production
- Process special design **BPSPS**
- Less manpower is required to handle the process
- Improves color - Removes odour
- Reduces sulphur to some extent - Reduces organic acidity
- Improves oxidation stability

Solvent Extraction & Recovery Unit





Type	Description	Time batch	Capacity	Fuel	Recovery rate	Package machine	Color ASTM	Price USD
CR	Clay reactive Unit	24 hr	10 ton/day	electric	200	2	1-2	185000

- Adsorbent Catalyst is Multiple re-generable, can be re-generated up to 200 cycles or more.
- Negligible to Non-disposable liability i.e. once in a year or more.
- Used Catalyst is almost volatile hydrocarbon free, easy to dispose off.
- Less manpower is required to handle the process
- Improves color - Removes odour
- Reduces sulphur to some extent - Reduces organic acidity
- Improves oxidation stability
- Has the advantage of higher yields of the finished product when compared with contemporary systems
- Is the only environmental-friendly option to consumable clay and hazardous solvent extraction systems
- Is an economical alternative to potentially hazardous hydrogen treatment plants involving very high pressures and temperatures; and hydrogen plants which are governed by explosive regulations.
- Can be used for parallel or series type of operation.
- Is a modular system.
- Is available for global voltages and frequencies





Type	Description	Time	Used Clay	Capacity	Fuel	loss rate	No. reactor	Color ASTM	Price USD
AC	Active Clay Unit	6 hr	3-10%	10 ton/day	Diesel	1-3%	1	1-2	40000

- Using 1 reactor double jackets + mechanical seal
- High quality standard equipment and process
- Used one filter press



- Ex-work prices
- Installation costs 10% of the contract