

- 100% EOU
- ISO 14001 & 9001 Certified
- CE Certified Products
- Registered Supplier of UN Agencies
- Exported to 66+ Countries
- Made in India Products



# GOYUM

• EXTRACTION • REFINING • RECYCLING

A GOVERNMENT OF INDIA RECOGNIZED STAR EXPORT HOUSE



AN ISO 9001 & 14001 CERTIFIED COMPANY

## Manufacturer & Exporter of :



Silo and Seed Cleaning Plant



Mechanical Oil Extraction Plant



Solvent Extraction Plant



Edible Oil Refinery Plant



Fat Modification & Oleochemical Plant



Soap & Detergent Plant



Poultry, Fish & Animal Feed Plant



Flour Mill Plant



Rice Milling Plant



Solar PV Solutions



Water & Waste Water Solutions



Industrial Steam Solutions



Used Engine Oil Re-Refining Plant



Pre Engineering Building



Used Tyre Pyrolysis Plant



Oil Mill Spare Parts





“Our clients are at the heart of everything We Do. Customer satisfaction is our ultimate goal. We measure our success by the success of our clients. Our commitment to quality is not just a promise, but a practice. We are not just building products; we are shaping the future of our clients. Our vision is to create solutions that stand the test of time.”

## CHAIRMAN'S MESSAGE



Vinod Jain

Goyum Jain

Our success as a leading manufacturing & export house, is a testament to our unwavering dedication, innovation, and hard work. The company has attained prominent global leadership in the field of Edible and non edible oil extraction, oil & fats and allied industries.

We are serving our valued customers to their complete satisfaction by ensuring fair, transparent, accountable and ethical management in order to protect the interest of all stakeholders including employees, customers, vendors, regulators and society. We prioritize competence, competitiveness, and timely delivery while maintaining the highest quality standards.

As a responsible corporate citizen, we follow the laws of land in Letter and Spirit.

We will continue to push boundaries, explore new markets, and set higher standards for ourselves.

Let's embrace the future with optimism, collaborate with passion, and strive for excellence. Together, we will not only achieve our goals but surpass them, making our company a benchmark in the industry.

With open arms, we welcome you to GOYUM.





**GOYUM** is a leading Project Engineering Company established in 1971 and now a prominent name in the Edible & Non-Edible Oil Processing Plants & Allied Industry on Turnkey Basis.

We at **GOYUM** with our manufacturing units in India are pioneer in Planning, Engineering, Manufacturing, Installation and Commissioning of Silo and seed cleaning plant, Mechanical oil extraction plant, Solvent extraction plant, Edible oil refinery plant, Fat modification plant, Soap & detergent plant, Oleochemical Plant, Poultry fish and animal feed plant, Flour Mill, Rice milling plant, Solar PV solutions, Water and waste water solutions, Industrial steam solutions, Used engine oil re-refining plant, Used tyre pyrolysis plant, Bio diesel, PEB, Filling line, Food processing and all kinds of spare parts.

We also undertake the expansion of the existing plants as per customer requirements.

We have supplied more than **750 Projects** on Turnkey Basis which are performing successfully in **66+ Countries** covering **6 continents**. We are registered with United Nation Agencies.

The projects offered by **GOYUM** are robust, flexible, versatile, safe, reliable and efficient. Our manufacturing processes are designed to minimise environmental impact while maximising efficiency with commercially proven cost-effective technologies.

**GOYUM** is backed by a strong leadership, dedicated workforce and we continually invest in cutting edge technologies to provide our clients with best solutions.

Our commitment to you doesn't end with your purchase; our exceptional after-sales support team is here to ensure your satisfaction at every step of the way.

## OUR CERTIFICATIONS







# GOYUM

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## MANUFACTURING FACILITIES

State-of-the-art-manufacturing units















# GOYUM

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FEW WORLDWIDE INSTALLATIONS





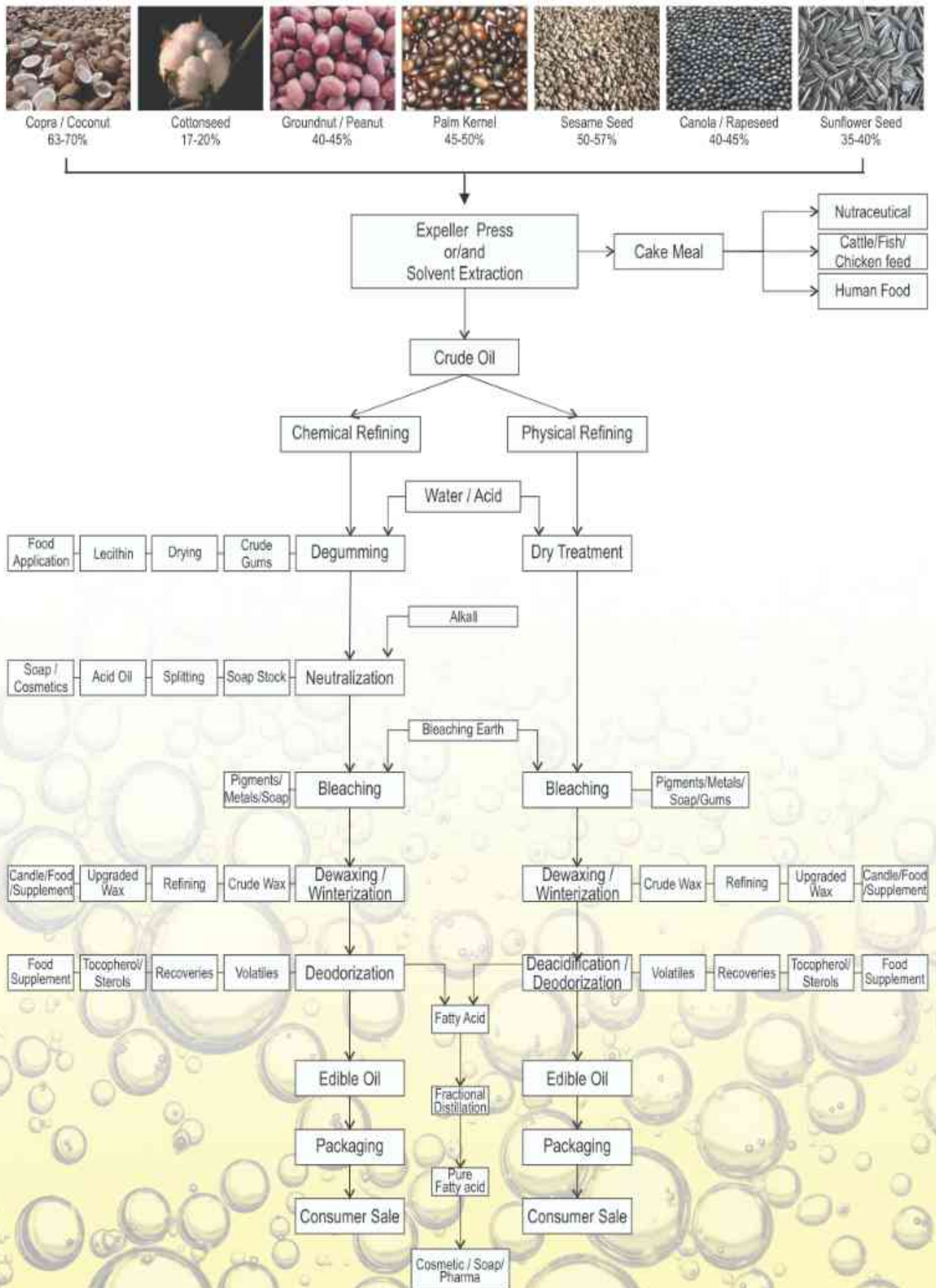


# GOYUM

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## PROCESS FLOW CHART

### PROCESS FLOW CHART OF OIL EXTRACTION & REFINING





**We Manufacture and Export Complete Edible and Non-edible Oil Extraction Plant on Turnkey Basis Worldwide for Various Oilseeds and Nuts such as :**



Soybean / Soyabean  
18-20%



Groundnut / Peanut  
40-45%



Sunflower Seed  
35-40%



Cottonseed  
17-20%



Palm Kernel  
45-50%



Copra / Coconut  
63-70%



Mustard / Canola / Rapeseed  
40-45%



CSNL / Cashew Nut Shell  
28-33%



Sheanut Kernel  
45-50%



Sesame Seed  
50-57%



Castor Seed  
40-45%



Baobab Seed  
25-33%



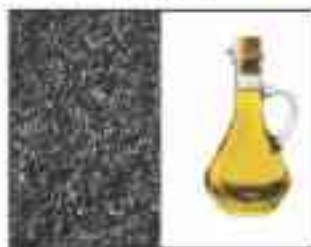
VCO / Virgin Coconut  
60-65%



Corn Germ  
35-40%



Jatropha Seed  
48-40%



Niger Seed  
32-50%



Flax Seed  
32-43%



Safflower Seed  
35-38%



Cocoa Nibs  
25-30%



Moringa Seed  
30-32%



Neem Seed 15-18%  
Neem Kernel 35-40%



Steam Boiler



Oil Expeller

Oil Tanks

Oil Tanks

Polish Filter

Oil Filter



Edible Oil

**Layout Plan for 1 TPD and 3 TPD Oil Extraction Plant  
 Land Requirement (Shed)  
 About 300 sq. ft.: 15' X 20' ( 5 Mtr. X 6 Mtr. )**





# GOYUM

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## OIL MILL PROCESS EQUIPMENT



**SEED CLEANER**  
Capacity : 1 TPH - 10 TPH



**DESTONER**  
Capacity : 1 TPH - 10 TPH



**GROUNDNUT DECORTICATOR**  
Capacity : 1 TPH - 5 TPH



**JATROPHA DECORTICATOR**  
Capacity : 1 TPH - 5 TPH



**DRYER**  
Capacity : 500 Kg./Hr. - 5 TPH



**NEUTRALIZER**  
Capacity : 1 Tonne - 10 Tonne per batch



**PALM NUT CRACKER**  
Capacity : 1 TPH - 5 TPH



**HAMMER MILL**  
Capacity : 500 Kg./Hr. - 6TPH



**COPRA CUTTER**  
Capacity : 500 Kg./Hr. - 5TPH



**SOYA CRACKER**  
Capacity : 1 TPH - 10 TPH



**MAGNETIC SEPARATOR**  
Capacity : 2 TPH to 8 TPH



**VIBRO SEPARATOR**  
Screen: 24", 30", 36", 48", 60", 72"

## MATERIAL HANDLING EQUIPMENTS



**SCREW CONVEYOR**



**BUCKET ELEVATOR**



**PIPE SCREW CONVEYOR**





# GOYUM

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## OIL MILL PROCESS EQUIPMENT



MEAL COOLER  
Capacity : 100 TPD



FOOTS SEPARATOR TANK



ELECTRICAL PANEL



REACTION VESSELS  
Capacity: 2.5 to 10 Ton

## INDUSTRIAL STEAM SOLUTIONS



HORIZONTAL TYPE BOILER  
Capacity : 1 TPH - 25 TPH



THERMIC FLUID HEATER  
Capacity : 1 Lac Kilo Calories to any Calories



VERTICAL BOILER  
Capacity : 50 Kg./Hr. - 950 Kg./Hr.

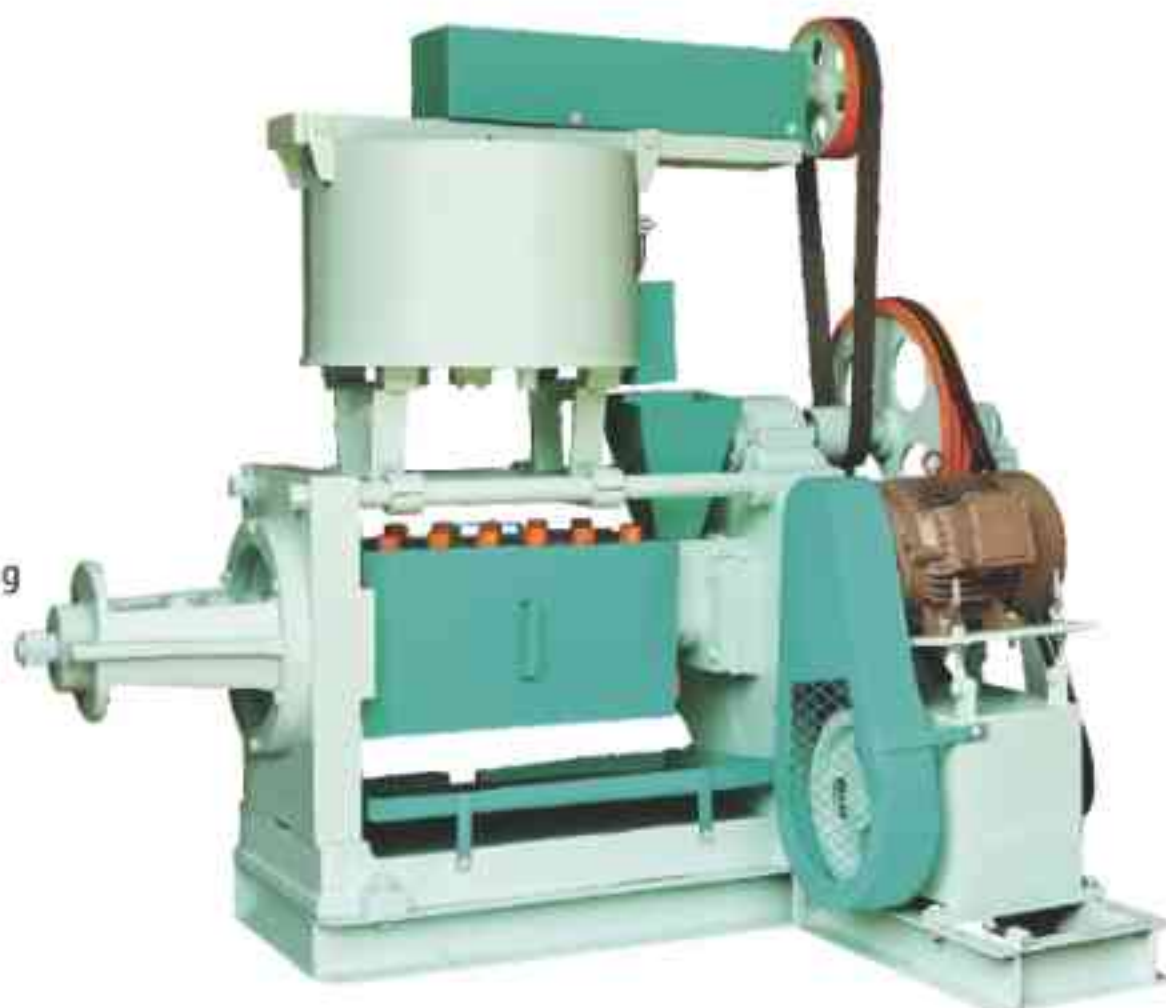




**MODEL : GOYUM 10 & 20**

**Features :**

- ◆ Cast Iron Bodies and Base.
- ◆ Single Reduction Gear Box of Cast Iron body with Mild Steel Spur Gears.
- ◆ Steel Fabricated Chamber with Three Sections.
- ◆ Chambers are Horizontally Fitted.
- ◆ Case Hardened Worm Assembly.
- ◆ Single Stage Feeding Drum With & Without Heating Arrangement (as required).
- ◆ Superior quality of Oil & Cakes.
- ◆ Low Maintenance.



**Specifications :**

MODEL	EXPELLER MOTOR	CAPACITY	CHAMBER SIZE	LENGTH	BREADTH	HEIGHT	WEIGHT
GOYUM 10	5 H.P., 1440 RPM	1 TON PER 24 HOURS	Ø3-1/2" X 20" Long	1300 MM (4'3")	475 MM (1'7")	1075 MM (3'6")	600 Kgs
GOYUM 20	7.5 H.P., 1440 RPM	2-3 TON PER 24 HOURS	Ø4" X 24" Long	2185 MM (7'2")	685 MM (2'3")	1422 MM (4'8")	950 Kgs

\* Capacity differs with material density and quantity of oil in it. \*\* Weight is approximate.

**MODEL : GOYUM 60**



**Features :**

- ◆ Cast Iron Bodies.
- ◆ Double Reduction Gear Box of Cast Iron body with Mild Steel Helical Gears.
- ◆ Steel Fabricated Chamber with Three Sections.
- ◆ Chambers are Horizontally Fitted.
- ◆ Case Hardened Worm Assembly.
- ◆ Single Stage Cooker With Heating Arrangement.
- ◆ Superior quality of Oil & Cakes.
- ◆ Low Maintenance.

**Specifications :**

EXPELLER MOTOR	CAPACITY	CHAMBER SIZE	LENGTH	BREADTH	HEIGHT	WEIGHT
20 H.P., 960 RPM	5 - 6 TON PER 24 HOURS	Ø5" X 30" Long	2740 MM (8'12")	914 MM (2'11")	2130 MM (6'12")	1850 Kgs Approx.

\* Capacity differs with material density and quantity of oil in it.



**MODEL : VCO PRESS**



This Oil Press is also suitable for cold pressing of oil seeds and nuts like Groundnut, Sesame, Mustard / Canola / Rape Seed, Sunflower, Cumin seed etc.

**Features :**

- ♦ The whole body is fabricated from stainless steel material.
- ♦ Chamber is of SS Casting.
- ♦ The Screw Press is directly coupled with Geared Motor.
- ♦ Cake thickness can be adjusted on the running machine.
- ♦ Best Quality of Oil and Cake.
- ♦ Low maintenance required.
- ♦ Less Space requirement.
- ♦ SS worm assembly.



**Specifications :**

EXPELLER MOTOR	CAPACITY	CHAMBER SIZE	LENGTH	BREADTH	HEIGHT	WEIGHT
7.5 H.P., 1440 RPM	60 - 70 Kg Per Hour	Ø4" X 26" Long	1580mm (5'2")	460mm (1'6")	1300mm (4'3")	730 Kgs Approx.

\* Capacity differs with material density and quantity of oil in it.





# GOYUM

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## OIL EXPELLERS / OIL PRESSES

### MODEL : GOYUM MK 3

#### Features :

- ♦ Cast Iron Body and Steel Fabricated Base.
- ♦ Double Reduction Gear Box of Cast Iron Body with Steel Spur Gears.
- ♦ Steel Fabricated Chamber with Three Sections.
- ♦ Chambers are Vertically Fitted.
- ♦ Chamber is Made from Mild Steel Plates.
- ♦ Case Hardened Worm Assembly and Cone Point.
- ♦ Main Worm Shaft can be Withdrawn Without Disturbing the Gear Box.
- ♦ Crammer Shaft Gives Extra Cramming of the Seed or Cake in the Feed Body.
- ♦ Kettle : 1 Stage with Steam Jackets of Ø48" for efficient Cooking of Seed. Pipe Fitting Contains all the Required accessories.
- ♦ The Machine needs to be stopped for adjusting the Cake Thickness.
- ♦ Superior quality of Oil & Cakes.
- ♦ Low Maintenance.



#### Specifications :

EXPELLER MOTOR	CAPACITY	CHAMBER SIZE	LENGTH	BREADTH	HEIGHT	WEIGHT
30 H.P., 1440 RPM	8 - 10 TPD*	Ø6" X 33" Long	2600 MM (8'6")	1250 MM (4'1")	2650 MM (8'8")	4000 Kgs Approx.

\* Capacity differs with material density and quantity of oil in it.

### MODEL : GOYUM MK 4

#### Features :

- ♦ Cast Iron Body and Steel Fabricated Base.
- ♦ Double Reduction Gear Box of Cast Iron Body with Mild Steel Fabricated Spur Gears.
- ♦ Steel Fabricated Chamber with Four Sections.
- ♦ Chambers are Vertically Fitted.
- ♦ Chamber is made from Mild Steel Plates.
- ♦ Case Hardened Worm Assembly and Cone Point.
- ♦ Main Worm Shaft can be Withdrawn Without Disturbing the Gear Box.
- ♦ Crammer Shaft Gives Extra Cramming of the Seed or Cake in the Feed Body.
- ♦ Kettle : 3 Stages with Steam Jackets for efficient cooking of Seed. Pipe Fitting contains all the Required Accessories.
- ♦ The Machine has to be stopped for adjusting the Cake Thickness.
- ♦ Superior quality of Oil & Cakes.
- ♦ Low Maintenance.

#### Specifications :

EXPELLER MOTOR	KETTLE MOTOR	CAPACITY	CHAMBER SIZE	LENGTH	BREADTH	HEIGHT	WEIGHT
40 H.P., 1440 RPM	5 H.P., 1440 RPM	10 - 12 TPD*	Ø6-1/2" X 36" Long	2350 MM (7'7")	1370 MM (4'6")	2745 MM (9')	4300 Kgs
50 H.P., 1440 RPM	5 H.P., 1440 RPM	13 - 15 TPD*	Ø6-1/2" X Ø7"-1/2" X 45" Long	2650 MM (8'8")	1370 MM (4'6")	2745 MM (9')	4500 Kgs

\*Capacity differs with material density & quality of oil seeds / nuts. \*\* Size of machine can be changed as per chamber size and Weight is approximate





**MODEL : GOYUM 150**

**ALL STEEL CONSTRUCTION**

**Features :**

- ◆ Steel Fabricated Body and Base.
- ◆ Double Reduction Gear Box of Mild Steel body with Cast Steel Helical Gears.
- ◆ Cast Steel Chamber with Four Sections.
- ◆ Chambers are Vertically Fitted.
- ◆ Chamber is made of Cast Steel.
- ◆ Hard Faced Worm Assembly, Discharge Ring and Compression Ring.
- ◆ Main Worm Shaft can be withdrawn without Disturbing the Gear Box.
- ◆ Crammer Shaft Gives Extra Cramming of the Seed or Cake in the Feed Body.
- ◆ Kettle : 3 or 4 stage kettle with Steam Jackets of Ø 48" for efficient cooking of Seed. Pipe Fitting Contains Safety Valve, Steam Spray Pipe, Pressure Gauge, Steam Valves & Steam Traps.
- ◆ Cake Thickness can be Adjusted on Running Machine.
- ◆ Superior Quality of Oil & Cake with less Residual Oil.
- ◆ Inbuilt ONF (Oil & Foot Screw Conveyor)
- ◆ Low Maintenance.

**Specifications :**

EXPELLER MOTOR	KETTLE MOTOR	CAPACITY	CHAMBER SIZE	LENGTH	BREADTH	HEIGHT	WEIGHT
40 / 50 H.P., 1440 RPM	7.5 H.P., 1440 RPM	15 - 17 TPD*	Ø7.5"XØ6.5"X45" Long	2600 MM (8'6")	1400 MM (4'7")	3371 MM (11'3")	4350 Kgs

\* Capacity differs with material density and quantity of oil in it. \*\* Weight 4350 Kgs with cooker and without cooker 3800 Kgs approximate



**MODEL : GOYUM MK 5C**



This Oil Expeller also comes with Vertical Round Kettle/Cooker.

**Features :**

- ◆ Cast Iron Body and Steel Fabricated Base.
- ◆ Double Reduction Gear Box of Cast Iron Body with Mild Steel Fabricated Gears.
- ◆ Steel Fabricated Chamber with Four Sections.
- ◆ Chambers are Horizontally Fitted.
- ◆ Chamber is made from Mild Steel Plates.
- ◆ Case Hardened Worm Assembly and Cone Point.
- ◆ Main Worm Shaft can be withdrawn without Disturbing the Gear Box.
- ◆ Kettle : 3 or 4 Stages with Steam Jackets of Ø48" for efficient cooking of Seed. Pipe Fitting contains all the required accessories.
- ◆ The Machine has to be stopped for adjusting the Cake Thickness.
- ◆ Superior quality of Oil & Cakes.
- ◆ Low Maintenance.

**Specifications :**

EXPELLER MOTOR	KETTLE MOTOR	CAPACITY	CHAMBER SIZE	LENGTH	BREADTH	HEIGHT	WEIGHT
50 H.P., 960 RPM	5 H.P., 1440 RPM	18 - 20 TPD*	Ø7"X44" Long	3550 MM (11'8")	1300 MM (4'3")	3600 MM (11'10")	4400 Kgs
60 H.P., 960 RPM	5 H.P., 1440 RPM	35 - 40 TPD*	Ø8"X48" Long	3650 MM (11'8")	1300 MM (4'3")	3600 MM (11'10")	5000 Kgs

\* Capacity differs with material density and quantity of oil in it. \*\* Size of Machine can be changed as per chamber size and Weight is approximate





# GOYUM

• EXTRACTION • REFINING • RECYCLING

OIL EXPELLERS / OIL PRESSES

MODEL : GOYUM 240



This Oil Expeller also comes with Vertical Round Kettle/Cooker.

### Features :

- ♦ This model has been designed in a simple and symmetrical shape.
- ♦ Mild Steel Fabricated Base with Steel Fabrication.
- ♦ Double Reduction Gear Box with Cast Steel Helical Gears and Special Steel Pinion Shafts.
- ♦ Chambers are Vertically Fitted.
- ♦ This Expeller has Two Chambers made of Cast Steel.
- ♦ Hard faced Worm Assembly.
- ♦ Main Worm Shaft can be withdrawn without disturbing the Gear Box.
- ♦ Long Kettle provided with Safety Valve and Pressure Gauge. Round Kettle along with all required accessories, can also be provided as per requirement.
- ♦ Cake Thickness can be Adjusted after stopping the Machine.
- ♦ Gear Box is aligned with the bodies on a single fabricated base.
- ♦ Superior quality of Oil & Cake.
- ♦ Low Maintenance.

### Specifications :

EXPELLER MOTOR	KETTLE MOTOR	CAPACITY	CHAMBER SIZE	LENGTH	BREADTH	HEIGHT	WEIGHT
60 H.P., 960 RPM	5 H.P., 1440 RPM	15 - 20 TPD*	Ø9" X 24" Long Ø7" X 36" Long	3090 MM (10'2")	1250 MM (4'1")	2320 MM (7'7")	6500 Kgs Approx.

\* Capacity differs with material density and quantity of oil in it.



MODEL : GOYUM 600

ALL STEEL CONSTRUCTION



Features:

- ♦ This model has been designed in a simple and symmetrical shape.
- ♦ Mild Steel Fabricated Bodies and Base.
- ♦ Triple Reduction Gear Box with Cast Steel Helical Gears and Special Steel Pinion Shafts.
- ♦ Chambers are Vertically Fitted.
- ♦ This Expeller has Two Chambers made of Cast Steel.  
Feed Size : Ø9"x36" Long, Discharge Size : Ø8"x36" Long.
- ♦ Hard Faced Worm Assembly, Discharge Ring and Sliding Ring.
- ♦ Main Worm Shaft can be withdrawn without disturbing the Gear Box. The Shaft is Water Cooled.
- ♦ Crammer Shaft for Extra Cramming of the Seed or Cake is fitted on the Feed Body and is driven by 2 H.P. Geared Motor.
- ♦ Cake Thickness can be Adjusted on Running Machine.
- ♦ Gear Box is aligned with the body on a single fabricated base.
- ♦ Inbuilt ONF (Oil & Foot Screw Conveyor)
- ♦ Superior quality of Oil & Cake.
- ♦ Low Maintenance.

Specifications :

ITEM	EXPELLER MOTOR	KETTLE MOTOR	CAPACITY	LENGTH	BREADTH	HEIGHT	WEIGHT
EXPELLER	100 H.P., 1440 RPM	20 H.P., 1440 RPM	40-45 TPD* in Pre-Pressing 30-35 TPD* in Single & Final Crushing	4210 MM (13'10")	1600 MM (5'3")	1829 mm (6')	8200 Kgs approx.
KETTLE	SPECIAL FEATURE				1680 mm (5'6")	2621 mm (8'6")	3300 Kgs approx.
	Kettle is installed on the Machine. Exhaust Fan is also provided to extract excess steam or moisture from cooking chambers						

\* Capacity differs with material density and quantity of oil in it.

COOKER 600

Features :

- ♦ Kettle : 4 Stages with Steam Jackets of Ø60" for efficient cooking of Seed. Pipe fitting contains Safety Valve, Steam Spray Pipe, Pressure Gauge Steam Valves & Steam Traps.
- ♦ Exhaust Fan is also provided to extract excess steam or moisture from cooking chambers.
- ♦ Kettle is supported separately on a fabricated structure.
- ♦ Proper & Evenly Cooking of the Seed for maximum extraction of the Oil.
- ♦ Low Power Consumption.





**MODEL : GOYUM 1500**  
**ALL STEEL CONSTRUCTION**



### Features :

- ◆ This model has been designed in a simple and symmetrical shape.
- ◆ Base and Body is Fabricated from Tested Mild Steel.
- ◆ Triple Reduction Gear Box of Cast Steel Helical Gears and Special Steel Pinion Shafts.
- ◆ Chambers are Vertically Hinged.
- ◆ This Expeller has Three Chambers made of Cast Steel. Feed Size : Ø12"x36" Long, Middle Size : Ø11"x36" Long, Discharge Size : Ø10"x36" Long.
- ◆ Hard Faced Worm Assembly, Discharge Ring and Sliding Ring.
- ◆ Main Worm Shaft can be withdrawn without disturbing the Gear Box. The Shaft is Water Cooled.
- ◆ Crammer Shaft for Extra Cramming of the Seed or Cake is fitted on the Feed Body and is driven by 3 H.P. Geared Motor.
- ◆ Chamber Lifting system is manual.
- ◆ Cake Thickness can be Adjusted on Running Machine.
- ◆ Gear Box is aligned with the body on a single fabricated base.
- ◆ Inbuilt ONF (Oil & Foot Screw Conveyor)
- ◆ Superior quality of Oil & Cake.
- ◆ Low Maintenance.

### Specifications :

EXPELLER MOTOR	KETTLE MOTOR	CAPACITY	LENGTH	BREADTH	HEIGHT	WEIGHT
170 H.P., 1440 RPM	25 H.P., 1440 RPM	110-125 TPD* in Pre-Pressing 45-55 TPD in Single & Final Crushing	5500 MM (18')	1360 MM (4'6")	2660 MM (8'9")	15 Tons approx.

\* Capacity differs with material density and quantity of oil in it.



MODEL : COOKER 1500



Features :

- ◆ Kettle : 5 Stages with Steam Jackets of Ø66" for efficient cooking of Seed. Pipe fitting contains Safety Valve, Steam Spray Pipe, Pressure Gauge Steam Valves & Steam Traps.
- ◆ Doors of Openings are provided in each Section for Cleaning and Fitting of Agitators.
- ◆ Indicators are Fitted to Indicate the Level of the Seed or Meal in all the Sections.
- ◆ Worm & Worm Wheel Reduction Gearbox of Vertical Type is fitted on the Kettle.
- ◆ Kettle is supported separately on a fabricated structure.
- ◆ Bottom drive cooker for Shea Nuts - 2mtr. dia (approx)
- ◆ Proper & Evenly Cooking of the Seed for maximum Extraction of the Oil.
- ◆ Low Power Consumption.



Specifications : Kettle

SPECIAL FEATURE	BREADTH	HEIGHT	WEIGHT
Kettle is supported separately on a fabricated structure Exhaust Fan is also provided the extract excess steam or moisture from cooking chambers	1780 MM (5'10")	3840 MM (12'7")	6 Tons Approx.

Specifications : Pedestal

SPECIAL FEATURE	LENGTH	BREADTH	HEIGHT	WEIGHT
The Structure includes all the material required to install the kettle	3330 MM (10'11")	3330 MM (10'11")	2100 MM (6'11")	1.5 Tons Approx.



MODEL : GOYUM 2400

ALL STEEL CONSTRUCTION



### Features :

- ◆ This model has been designed in a simple and symmetrical shape.
- ◆ Base and Body is Fabricated from Tested Mild Steel.
- ◆ Triple Reduction Gear Box with Cast Steel Helical Gears and Pinion Shafts of Special Steel.
- ◆ Chambers are Vertically Hinged.
- ◆ This Expeller has Two Chambers made of Cast Steel. Feed Side : Ø16"x50" Long, Discharge Side : Ø16"x50" Long.
- ◆ Hard Faced Worm Assembly, Discharge Ring.
- ◆ Main Worm Shaft can be withdrawn without disturbing the Gear Box.
- ◆ Chamber Lifting system is motorised.
- ◆ Cake Thickness Adjustment is done manually after stopping Machine.
- ◆ Gear Box is aligned with the body on a single fabricated base.
- ◆ Inbuilt ONF (Oil & Foot Screw Conveyor)
- ◆ Superior quality of Oil & Cake.
- ◆ Low Maintenance.

### Specifications :

EXPELLER MOTOR	KETTLE MOTOR	CAPACITY	LENGTH	BREADTH	HEIGHT	WEIGHT
335 H.P., 1440 RPM	50 H.P., 1440 RPM	250 TPD* in Pre-Pressing	5280 MM (17'4")	2000 MM (6'7")	2260 mm (7'5")	27 Ton Approx.

\* Capacity differs with material density and quantity of oil in it.



MODEL : COOKER 2400



Features :

- ◆ Kettle : 8 Stages with Steam Jackets of Ø78" for efficient cooking of Seed. Pipe fitting contains Safety Valve, Steam Spray Pipe, Pressure Gauge Steam Valves & Steam Traps.
- ◆ Doors of Openings are provided in each Section for Cleaning and Fitting of Agitators.
- ◆ Indicators are Fitted to Indicate the Level of the Seed or Meal in all the Sections.
- ◆ Kettle is supported separately on a fabricated structure.
- ◆ Kettle Pedestal is fitted with Kettle Driving Gearbox and Motor.
- ◆ Proper & Even Cooking of the Seed for maximum Extraction of the Oil.



Specifications : Kettle

SPECIAL FEATURE	LENGTH	BREADTH	HEIGHT	WEIGHT
Kettle is supported separately on a fabricated structure. Exhaust Fan is also provided to extract excess steam or moisture from cooking chambers.	2200 MM (7'3")	2200 MM (7'3")	1750 mm (5'7")	2.5 Ton Approx.

Specifications : Kettle Pedestal

SPECIAL FEATURE	LENGTH	BREADTH	HEIGHT	WEIGHT
The Kettle Pedestal is fitted with Kettle driving Gearbox and Motor	2200 MM (7'3")	2200 MM (7'3")	1750 mm (5'7")	2.5 Ton Approx.



MODEL : GOYUM 15, 27 & 33  
PALM KERNEL OIL EXPELLER



Features :

- ♦ Worm Assembly is made of Forged Steel. Stainless Steel Worm Assembly is optional.
- ♦ Main Shaft is EN24 Grade.
- ♦ Feed Hopper is made from Cast Steel.
- ♦ Body Cage is fabricated from MS Plate.
- ♦ World Class FAG & SKF Bearing is used.
- ♦ Fenner / Equivalent V Belt is used.
- ♦ Gear Box consist of Premium / SEW make Triple Reduction Helical Gearbox.
- ♦ Gear Couplings.



Specifications :

MODEL	EXPELLER MOTOR	CAPACITY 1st PRESSING	CAPACITY 2nd PRESSING	LENGTH	BREADTH	HEIGHT	WEIGHT
GOYUM 15	60 / 75 H.P. 960 RPM	15 - 17 TPD	11 - 12 TPD	3200mm (10'5")	1432mm (4'7")	1432mm (4'7")	5600 Kgs Approx.
GOYUM 27	75 H.P. 960 RPM	20 - 22 TPD	15 - 16 TPD	3261mm (10'7")	1432mm (4'7")	1432mm (4'7")	5850 Kgs Approx.
GOYUM 33	100 H.P. 960 / 1440 RPM	30 - 33 TPD	22 - 25 TPD	3353mm (11')	1432mm (4'7")	1432mm (4'7")	9700 Kgs Approx.

Oil % in Cake: ♦ 12-14% Oil present in Cake after 1<sup>st</sup> Pressing. ♦ Less than 7% Oil present in Cake after 2<sup>nd</sup> Pressing.  
 Note: Moisture Content in Palm Kernel must be less than 7%, impurities level not more than 6%.



**MODEL : GOYUM 150**  
**SOYABEAN OIL EXPELLER**  
**ALL STEEL CONSTRUCTION**



**Features :**

- ◆ Steel Fabricated Base and Bodies.
- ◆ Double Reduction Gearbox with Helical Gears of Cast Steel.
- ◆ Cast Steel Chamber.
- ◆ Hard Faced Worm Assembly, Discharge Ring and Compression Ring.
- ◆ Cake Thickness can be Adjusted on Running Machine.
- ◆ Main Worm Shaft can be withdrawn without Disturbing the Gearbox.
- ◆ Crammer Shaft gives extra cramming of the seed or cake in the feed body.
- ◆ Superior Quality of Oil & Cake with less Residual Oil.
- ◆ Inbuilt ONF ( Oil & Foot Screw Conveyor, Optional)
- ◆ Low Maintenance.

**Specifications :**

EXPELLER MOTOR	CAPACITY	CHAMBER SIZE	LENGTH	BREADTH	HEIGHT	WEIGHT
40 H.P., 1440 RPM	15- 20 TPD*	Ø7.5"XØ6.5"X45" Long	2682mm (8'8")	1433mm (4' 7")	1524mm (5')	4200 Kgs Approx.

\*Capacity differs with material density & quality of oil seeds / nuts

**SOYABEAN EXTRUDER**

**Features :**

- ◆ Alloy Steel Screw.
- ◆ Steel Fabricated Base & Bodies.
- ◆ Fitted with FAG German Bearings.
- ◆ Rigid Compact Design.
- ◆ Low Maintenance.

**Advantages :**

- ◆ Releases of intra-cellular oil and natural tocopherols.
- ◆ Increases by-pass protein level.
- ◆ Saves over 30% of energy during soybeans processing prior to oil extraction.

**Specifications :**



MODEL	POWER-MAIN DRIVE MOTOR	CAPACITY	POWER-FEEDER DRIVE MOTOR	DRIVE
GOYUM - 24	120 HP	750-1000 KG / HOUR	1 HP MOTOR WITH GEAR BOX (QTY. 01 Nos.)	VFD (1HP)
GOYUM - 45	200 HP	2000 - 2500 KG / HOUR	5 HP MOTOR WITH GEAR BOX (QTY. 02 Nos.) & 2 HP MOTOR WITH GEAR BOX (QTY. 01 Nos.)	VFD (5HP) 2 Nos. & VFD (2HP) 1 Nos.
GOYUM - 96	400 HP	3500 - 4500 KG / HOUR	3 HP MOTOR WITH GEAR BOX (QTY. 01 Nos.)	VFD (3HP) 1 Nos.

Note: The above given figures will vary based on raw material and processing parameters.





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## OIL FILTRATION EQUIPMENT

### FILTER PRESS PLATE TYPE



Single Piston Pump



Gear Pump

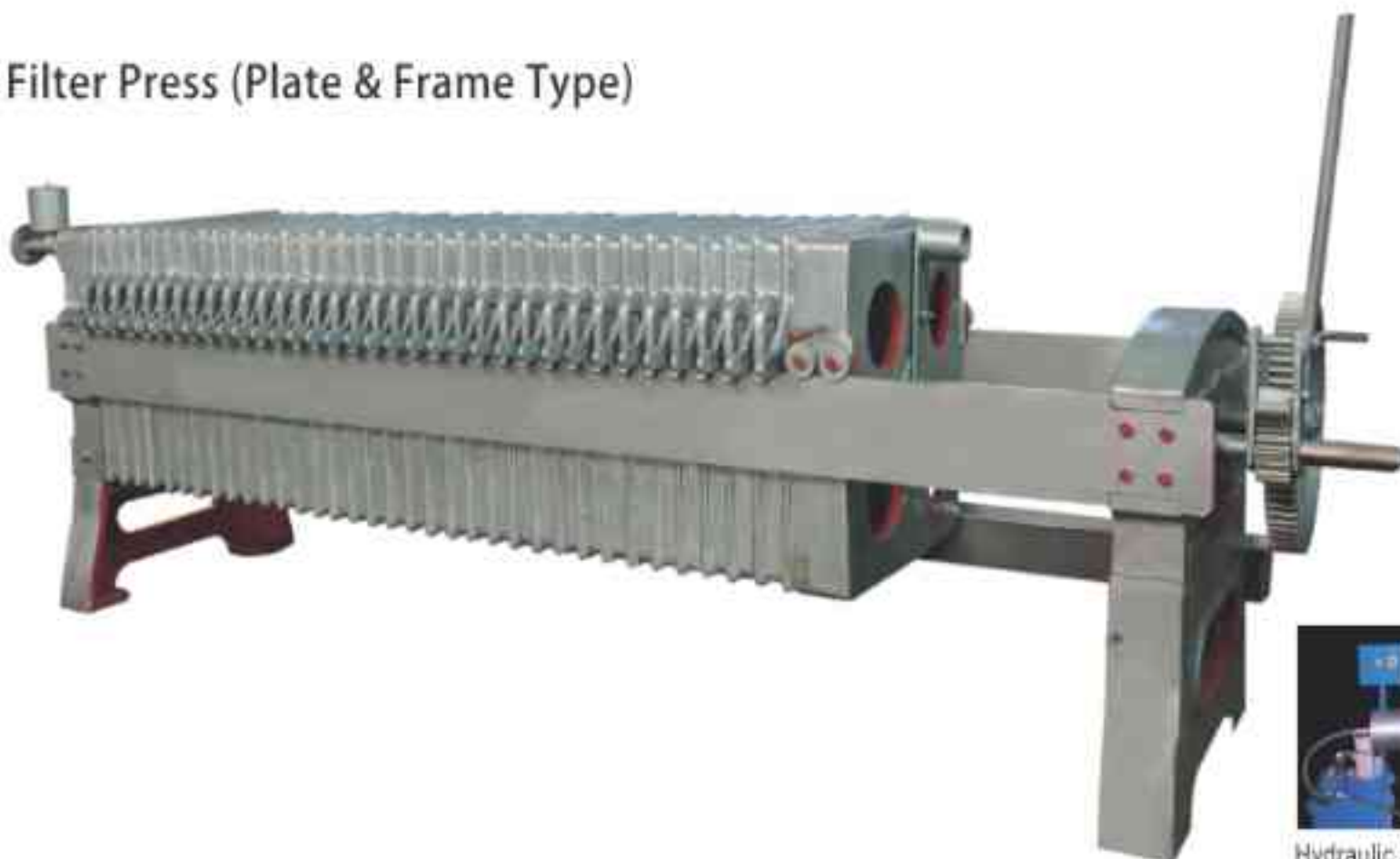


Duplex Pump

#### Features :

- ♦ Plates of the filter press are tested for casting defects before machining.
- ♦ Grinding process is done on the faces of filter plates to avoid leakages at high pressure.
- ♦ Flat bars provided at the sides are designed to stand extra pressure.
- ♦ Accessories provided with filter press are petcocks, oil through, one rod and a spanner (for filter cloth nuts).
- ♦ Plunger pump is supplied along with safety valve, air vessel, pressure gauge, pulley, belts & motor (optional).

#### Filter Press (Plate & Frame Type)



Hydraulic Attachment



Polish Filter



### Specifications :

PLATE TYPE FILTER PRESSES						
Size	Weight of Filter Press (Kgs.)	Filtration Area (Sq. Mtrs.)	Capacity (Liters / Day)	H.P.	No. of Pistons	Size of Plunger Pump
36" X 36" X 36 Plates	8000	30	40,000	7.5	Double	60 mm
30" X 30" X 30 Plates	5500	18	25,000	7.5	Single	80 mm
24" X 24" X 30 Plates	3000	11	12,500	5	Single	60 mm
24" X 24" X 24 Plates	2500	9	10,000	3	Single	60 mm
18" X 18" X 18 Plates	1100	4	5000	2	Single	40 mm
14" X 14" X 14 Plates	650	2	3500	1	Single	30 mm
12" X 12" X 12 Plates	380	1.5	2500	1	Single	30 mm
FRAME TYPE FILTER PRESSES						
36" X 36" X 36 Plates X 35 Frames	9600	30	48,000	10	-	PCH Pump
30" X 30" X 30 Plates X 29 Frames	5400	18	30,000	7.5	-	PCH Pump
24" X 24" X 24 Plates X 23 Frames	2950	10	12,500	5	-	PCH Pump

### PP FILTER PRESS

#### Features :

- ◆ Filter plates are made of reinforced polypropylene with high strength light weight, corrosion resistance and non toxic.
- ◆ Heavy duty hydraulic cylinder for opening and closing of press
- ◆ Ability to quickly change the filter cloths
- ◆ High cake formation



### VERTICAL PRESSURE LEAF FILTER PRESS

Available from 20m<sup>2</sup> to 150 m<sup>2</sup>





We can also manufacture as per customer's requirements / specifications / drawings



101 : Cast Steel Chamber 102 : Steel Fabricated Chamber 103 : Main Gear 104 : Intermediate Gear 105 : Main V-Belt Pulley 106 : Lining Bar  
107 : Cage Bar Holder 108 : Main Shaft Pinion 109 : Driving Pinion Shaft 110 : Hopper 111 : Spacer Box 112 : (a) Gear Box Pinion,  
(b) Gear Box Bevel 113 : (a) Kettle Bevel Pinion (b) Kettle Bevel Gear 114 : Main V- Belt Pulley 115 : Cage Bar 116 : Side Bar 117 : Centre Bar  
118 : Worms 119 : Spacing Collars 120,121 : Cone Point 122 :Gudgeon 123 : Sleeve with Nut 124 : (a) Sleeve Nut (b) Sleeve 125 : Knife Bar  
126 : Cone Point 127 : Chamber Tie Rod 128 : Discharge Ring 129 : Cone Collar 130 : Main Worm Shaft 131 : Driving Side Shaft  
132 : Shaft Pinion 133 : Sliding Ring 134 : Collar Pulley 135 : (a) Pinion 19 Teeth (b) : Pinion 15 Teeth

Note: The codes mentioned above are only for reference. We request you to kindly refer to the machine manual for placing spares order.



We can also manufacture as per customer's requirements / specifications / drawings



**SPARE PARTS FOR SOYABEAN EXTRUDER**



Code 101 : Main Shaft    Code 102 : Feed Barrel  
Code 103 : Barrels    Code 104 : Die Plate  
Code 105 : Nozzle    Code 106 : Front Bolt  
Code 107 : Front Bolt Cap    Code 108 : Feed Worm  
Code 109 : Pressing Worm    Code 110 : Steam Lock  
Code 111 : Ring    Code 112 : Barrel Lock  
Code 113 : Worm Keys

Note: The codes mentioned above are only for reference. We request you to kindly refer to the machine manual for placing spares order.



The process in brief constitutes treating the raw material with solvent hexane resulting in a solution of solvent and oil. This solution known as miscella, is further subjected to distillation and stripping to separate the oil and the solvent. The extracted meal containing solvent is made free from its solvent contents by a process called desolventisation and the solvent in vapor form from distillation, oil stripping and meal desolventisation is condensed in condensers, collected and reused for further extraction. The following stages are involved in the process of solvent extraction:



**GOYUM** provides Turn Key Solution for Batch & Continuous Type Solvent Extraction Plant from 50 to 1000 Tonnes Per Day Capacity.

- ◆ Successfully installed more than 30 projects worldwide.
- ◆ Batch Type Solvent Plant for Extracting Oil from Spent Earth or any specific material / special purpose feedstock
- ◆ Continuous Solvent Plant for oil Extration from Oil Seeds / Cake

### Oil Seed Preparation

- ◆ Cleaning / Weighing
- ◆ De-stoning
- ◆ Cracking (Roller Mill)
- ◆ De-hulling
- ◆ Pre- conditioning
- ◆ Flaking
- ◆ Expander
- ◆ Palletizing

### Extraction

- ◆ Solvent extraction
- ◆ Desolventiser Toaster
- ◆ Miscella Distillation
- ◆ Stripping for removal of Solvent
- ◆ Solvent ( Hexane) Recovery
- ◆ Recuperation
- ◆ DOC Meal





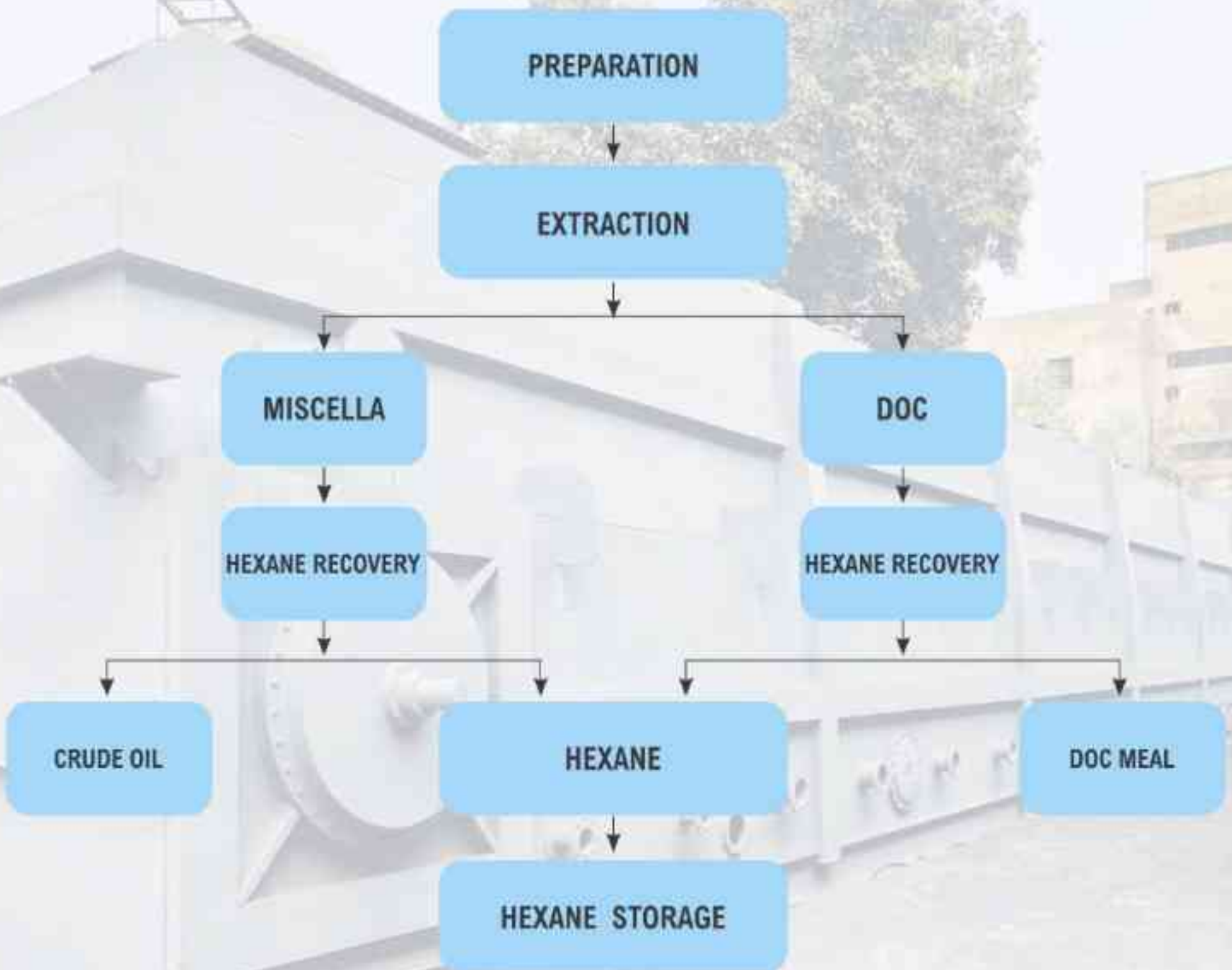


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## SOLVENT EXTRACTION PLANT

### SOLVENT EXTRACTION PROCESS





### Competitive Advantages

- ◆ Process Flexibility
- ◆ Border less Potential
- ◆ Less Utility Consumption
- ◆ Max. Hexane Recovery
- ◆ Specially Designed DT in order to get best DOC
- ◆ Easy Maintenance cost
- ◆ Maximum heat transfer area



### Few Glimpses of Goyum Solvent Extraction Plants





As per the today's market research it is being concluded that the market demands the refined edible oil with characteristics such as blend flavor and odor, clear appearance, light color, long shelf life, suitable for frying since the crude oil obtain does contain many harmful factors like free fatty acid, sediments, gums, odoriferous compound and other impurities.

GOYUM with an experience of more than 4 decades in the Edible oil industry have worked unremittingly in more than 50 countries of the world and have developed overall solutions for the Edible oil refinery needs of the customers.

GOYUM provides complete solution for Batch & Continuous Type Edible Oil Refinery Plant, capacity to design, build and supply plants from 5-30 TPD Batch Type & 50-500 TPD Continuous Type Refinery.

## BATCH / CONTINUOUS TYPE OIL REFINERY PLANT





### Degumming / Neutralization

- ✦ Efficient Removal of hydratable and non hydratable phosphalides
- ✦ Improve physical stability
- ✦ Require low utility consumption
- ✦ Efficient design
- ✦ Less maintenance cost
- ✦ Better process

### Bleaching

- ✦ Remove coloring pigments, traces of gums and metallic impurities
- ✦ Improve physical appearance
- ✦ Lower Bleaching earth consumption
- ✦ Uniform mixing of oil and earth
- ✦ Maintenance free Bleacher
- ✦ No dead area in Bleacher
- ✦ No carryover to Vacuum System
- ✦ Lower percentage of oil in Spent Cakes

### Dewaxing / Winterization

- ✦ Remove small quantity of solid from oil
- ✦ Efficient removal of waxes and saturated glycerides.
- ✦ Maximum heat transfer area of Crystallizer
- ✦ Perfect cooling profile
- ✦ Step cooling for complete granulation

### Deodorization

- ✦ Efficient removal of more volatile component like free fatty acids, minor amount of coloring pigments
- ✦ Remove odoriferous compound
- ✦ Remove minor amount of coloring pigments
- ✦ Maximum heat transfer area
- ✦ Lower utility consumption
- ✦ Maximum Heat Recovery
- ✦ Zero contamination
- ✦ Elaborated and efficient design for the removal of fatty acid in Physical type DEO
- ✦ Longer shelf life of oil
- ✦ Very Low Maintenance





### Palm Oil Fractionation

- ✦ Larger heat transfer area with regard to the oil charge in the crystallizers.
- ✦ Optimal position of the heat exchange surfaces with regard to the impellers and therefore to the oil circulation in the vessel.
- ✦ All parts of the processed oil are really driven too close to the heat exchange surfaces.
- ✦ The cooling program is accurately followed.
- ✦ Granulation by step cooling.



### Hydrogenation Plant

- ✦ Improved gas dispersion
- ✦ Low specific Energy consumption
- ✦ Steam production
- ✦ Fully automated plant and reliable controls
- ✦ No venting required as hydrogen is entirely consumed at the end of the reaction
- ✦ Candle Filter with Auto Backwash System is used
- ✦ Temp. control is achieved with Automation
- ✦ Low Catalyst Consumption



### Interesterification Plant

- ✦ For the alteration of melting properties of fat
- ✦ Optimized amount of catalyst required
- ✦ Improve the functional property of product
- ✦ This process makes product more hygienic
- ✦ Controlled Process
- ✦ Proven Design

### Margarine and Shortening Plant

- ✦ Improvement in hygiene standard.
- ✦ Low utility consumption.
- ✦ Less generation of Trans fatty acids reduce melting point of finished products.
- ✦ Follow complete recipe.
- ✦ Oil & Fat combination selected based on the availability of oil in existing plant.





### Acid Oil

- ✦ Higher yield and quality of acid oil
- ✦ Maximum recovery of oil from Soap stock
- ✦ Low Power consumption
- ✦ Right selection of material against acidic medium
- ✦ Generated acidic fumes are scrubbed by fumes scrubber to prevent corrosion in plant
- ✦ At the end of process acidic water is discharged to effluent treatment Plant



### Lecithin

- ✦ Production of High yield, pharmaceutical grade and export quality lecithin
- ✦ Material of construction of all the oil wetted parts in our plant are made in stainless steel
- ✦ Easily clean and requires low maintenance
- ✦ Amount of residual oil is very low in extracted meal
- ✦ Unique design of Heat Exchangers to provide sufficient heating surface area
- ✦ Low utility consumption
- ✦ All the operating parameters of plant are controlled and monitored to get superior product



### Esterification

The Process is done to make the triglycerides from the fatty acid.

- ✦ Fatty acid is used as feed stock in the plant
- ✦ The process is done for the industrial use
- ✦ These oils are used as feed stock for industrial use to make the biodiesel







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## OLEO CHEMICAL PLANT

### Fat - Splitting

- ✦ Degree of Splitting (DOS) well above 99%
- ✦ High pressure fat splitting with Pre-concentrator
- ✦ Direct heating steam injection under automatic temperature control system
- ✦ At central section Splitting occurs
- ✦ Top section of tower is consisting of Heat Exchanger to exchange heat between incoming water and outgoing Crude Splitted fatty acid
- ✦ Bottom section of tower is consisting of Heat Exchanger to exchange heat between incoming oil and outgoing Glycerol water
- ✦ This arrangement minimizes the utility consumption

### Pretreatment & Sweat Water Evaporation and Glycerin Distillation Plant

- ✦ In pretreatment efficient removal of fatty acids, mono, di, and tri glycerides by treating with Electrolyte, acidic and basic chemicals
- ✦ In Sweat Water Evaporation efficient removal of moisture to get 88 % crude glycerin as a result with lower utility consumption
- ✦ In Glycerin distillation crude glycerin is distilled under high vacuum and temperature in order to get purest form of Glycerine
- ✦ In distillation process a high amount of coloring pigments are also removed
- ✦ Distilled glycerine is further bleached in the fixed bed of activated carbon of Bleacher and filtered
- ✦ The purity of glycerine is above 99%
- ✦ Our Distillation tower design gives larger surface area which minimize the utility consumption.
- ✦ Our Bleacher adsorb a high amount of coloring pigments and produce glycerine of Pharmaceutical grade





### Fatty Acid Distillation & Fractional Distillation

- ✦ Fatty acid distillation column is consisting of very compact design where condensation and scrubbing are incorporate in the column itself
- ✦ Operating temperature are kept to minimum due to very low pressure drop in tower
- ✦ Distiller is structured packing tower
- ✦ As per Raw material and requirement process may contemplate a precut column
- ✦ Maximum heat recovery is achieved by generating low pressure steam
- ✦ Fatty acids of different length are fractioned at the requested purity in several columns

### Saponification Plant / Soap Noodle Plant

- ✦ Soaps are Sodium or potassium salt of long chain fatty acids
- ✦ We offer our specially designed Crutcher in stainless steel construction for producing neat soap
- ✦ Our design gives automatic dosing system for Distilled Fatty acid, Caustic soda solution and other chemicals
- ✦ Dosing of Chemicals are fully controlled by PLC panel
- ✦ Our design does not require extra heating system for Chemicals, minimize steam consumption



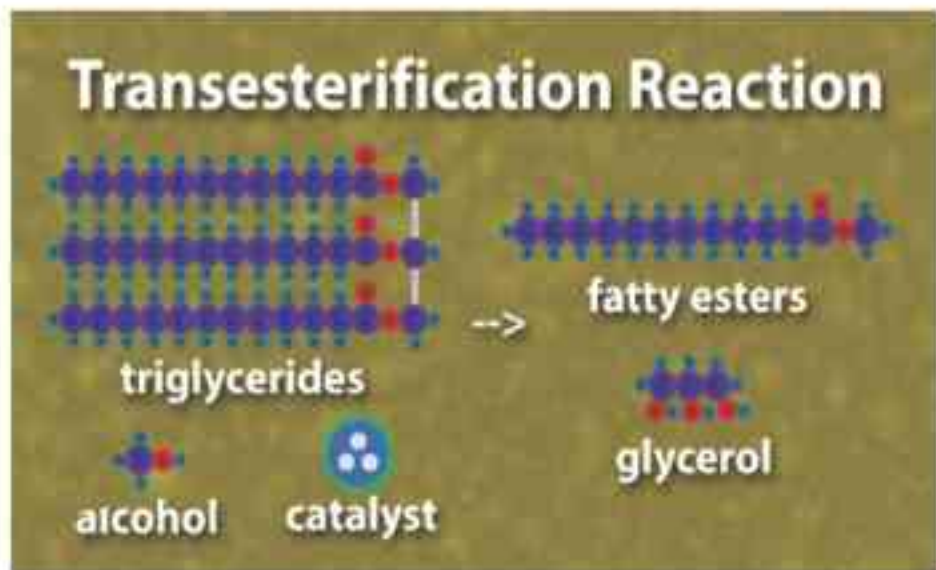


## TRANSESTERIFICATION

As per the organic chemistry, Transesterification is the process in which the organicR’ of an ester is the exchanged with the organicR’ of an alcohol.The reaction is often catalyzed by the addition of acid or base catalyst. In transesterification process a glyceride reacts with an alcohol (methanol) in presence of a catalyst forming fatty acid alkyl esters and an alcohol.

## FEED STOCKS

- ♦ Vegetable oils
- ♦ Used Cooking oil
- ♦ Palm stearin
- ♦ Acid Oil
- ♦ Fatty Acid
- ♦ Tallow ( Animal Fat )



## Advantages

- ♦ Wide range of feed stocks can be used as per the availability and viability
- ♦ Conversion rate is high
- ♦ Low waste water
- ♦ Fully automated PLC operated Plant
- ♦ Reduced catalyst consumption
- ♦ Less utility consumption
- ♦ High quality product as per international norms
- ♦ Vast experience of distillation

## Bio-Diesel ProducSpecification

S.NO.	PARTICULARS	SPECIFICATION
1.	DENSITY@15°C	860 – 900 Kg./cubic m.
2.	VISCOSITY@40°C	3.5 – 5.0 mm sq./s.
3.	FLASH POINT	120°c Minimum.
4.	POUR POINT	Country specific.
5.	ALCOHOL CONTENT	0.2% Maximum.
6.	WATER	500 PPM Maximum.
7.	SULPHUR	10 PPM Maximum
8.	ESTER CONTENT	96.5% Minimum.
9.	ACID VALUE	0.5 Maximum.
10.	TOTAL GLYCEROL	0.25% Maximum.
11.	PHOSPHORUS	10 PPM Maximum.
12.	CETANE NUMBER	51 Minimum.
13.	CONTAMINANTS	24 PPM Maximum.

Note : The final output specification does depends upon the various process parameters, climatic conditions & the quality of the feedstock.





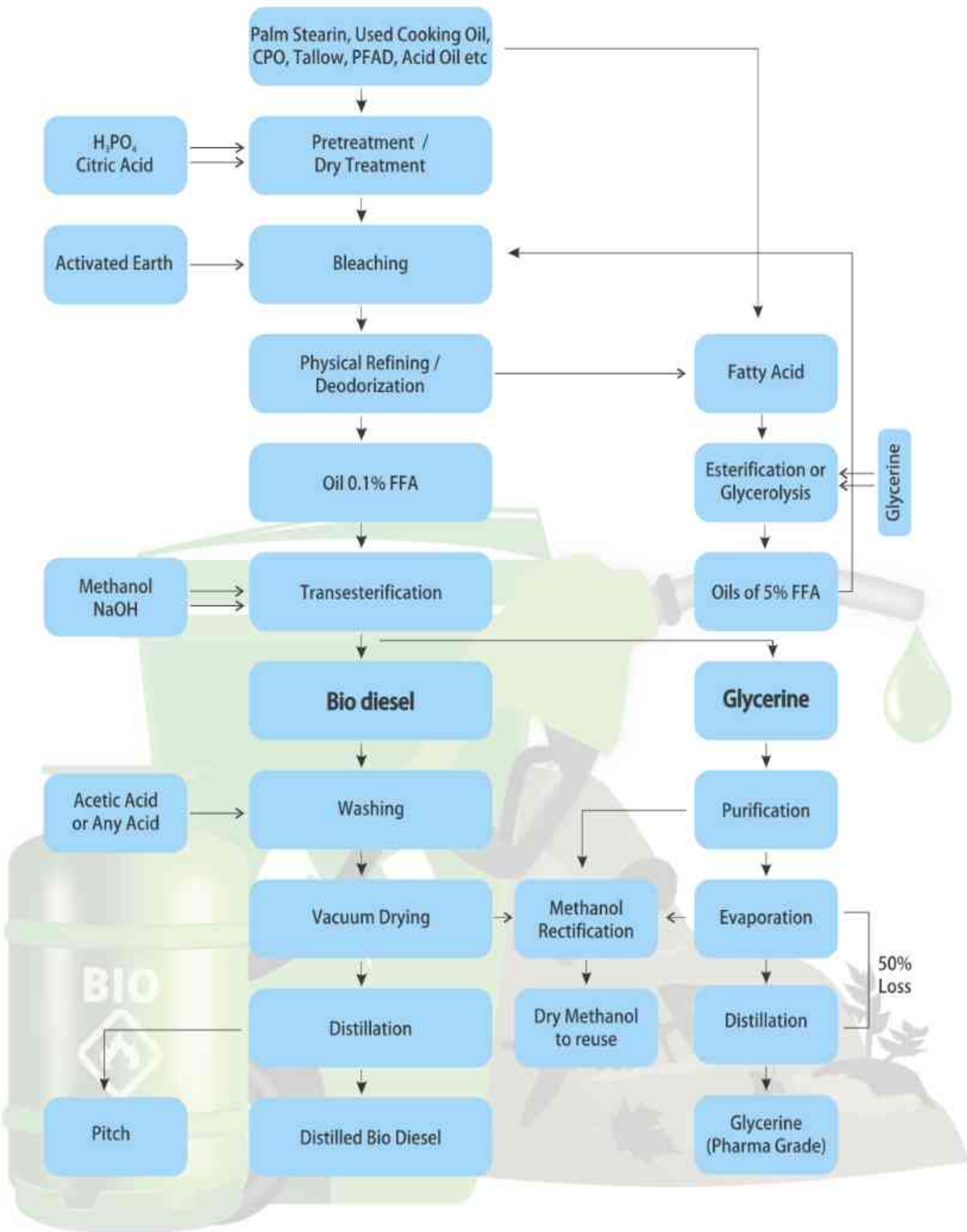


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## BIO DIESEL PLANT

Process Block Diagram







USED LUBE OIL RECYCLING / REFINING PLANT

CAPACITY : 5 TPD TO 100 TPD ( 5000 KLPD - 100000 KLPD)

Among the available today processes, **Goyum** Re-refining offers a low energy high yield Operation, high quality products and absence of noxious wastes or byproducts.

- ✦ The main advantage of the Used Engine Oil Re-Refining is the Environment Protection since there is no use of acid & clays
- ✦ Low Energy & Utility Consumption
- ✦ High Quality Product
- ✦ Payback Period is very less
- ✦ Plan can be run fully automatic / Semi-Automatic / Manually
- ✦ High on stream efficiency without corrosion, fouling, coking
- ✦ Capital Investment and operating cost highly competitive
- ✦ Very Easy Operation & Very Low Maintenance of the Plant
- ✦ Maximized Efficiency of the Plant

#### AVAILABLE TECHNOLOGIES

- ✦ CONTINUOUS TYPE DISTILLATION
- ✦ BATCH TYPE DISTILLATION
- ✦ NMP SOLVENT FOR BASE OIL
- ✦ ACTIVATED CARBON TREATMENT FOR BASE OIL
- ✦ CLAY TREATMENT FOR USED ENGINE OIL & BASE OIL



Various Sample of Base Oil

- S1 - After Distillation
- S2 - After NMIP Solvent
- S3 - After Partial Hydrofreatment
- S4 - After Polishing by B.e. / Carbon / Catalyst





### Success of re-refining depends largely on the collection system

• The collection of used Engine oil is the starting & very important point for a successful Re-refining. Re-refining depends on collection effectiveness and used lube oil availability.

### Used Engine Oil collection strategy

- ✦ Searching the area for the used lube oil providers
- ✦ Proper Division of the territory in Areas and Sectors
- ✦ Storage arrangements & storage capacity of collection centers
- ✦ The networking of transport & the formation of the drivers
- ✦ Pre-selection tests
- ✦ Identification & Segregation of contaminants

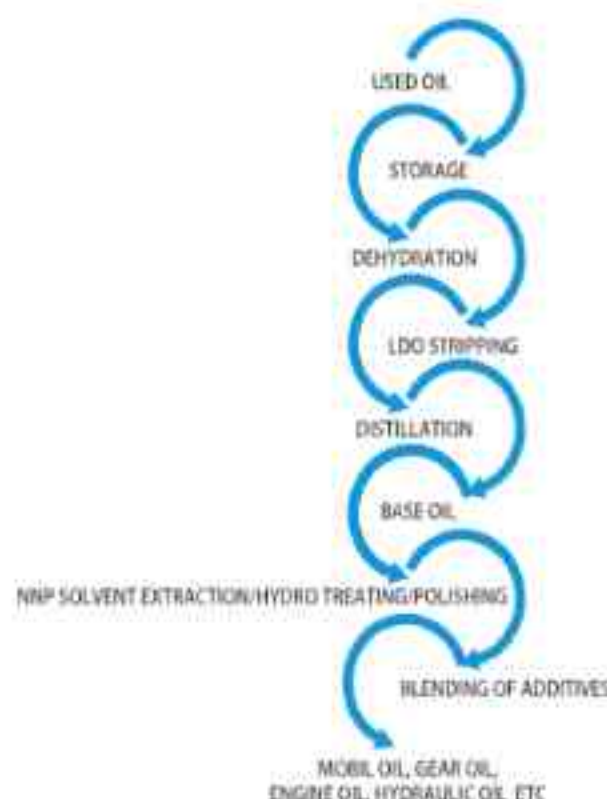
### Used Engine Oil preselection tests

- ✦ PCB / PCT < 50 ppm
- ✦ CI ≤ 2000 ppm
- ✦ S, wt % 1.5 max
- ✦ Saponification N', mgKOH/g 20 max
- ✦ Heavy fuel oil (drop test) pass
- ✦ Water + Sediments ≤ 1% by weight
- ✦ Flash Point ≥ 120° C
- ✦ Specific Gravity - 800-1000 ASTM D-1298

### Base Oil Output Products & Specifications

BASE OIL	70 %
LIGHT GAS OIL	8 %
ASPHALTIC RESIDUE	15%
MOISTURE & LIGHTER ENDS	7%
COLOR (ASTM D1500)	2 - 2.5 UNIT (API)
FLASH POINT	> 200 °C
VISCOSITY INDEX	MIN. 95

Note : The above mentioned percentages are indicative & depends upon raw material feed, climate conditions etc. and subject to change or may vary . Also colour mentioned above is after polishing of distilled base oil

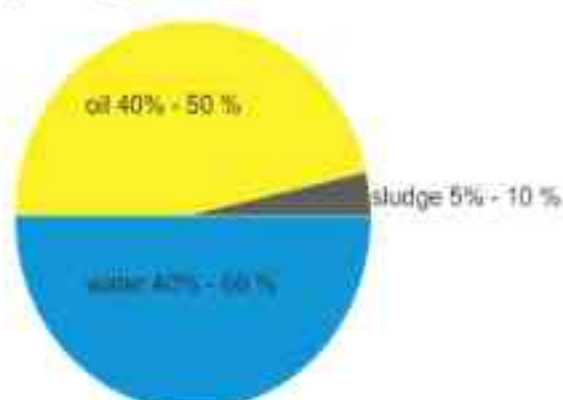


### MARPOL OIL RECYCLING (Marine Oil Pollution)

Ships slops, bilge water tank cleanings produced by vessels during normal shipboard operations regardless whether they include waste hydro carbon / mineral products - Marpol ( Maritime Pollution )

### MARPOL OIL - RECYCLING

- The Marine Oil collected through ships are mixture of hydro carbon with water about 40 % - 60%, 5%-10% Sediments and rest hydro carbons
- The treatment requires a plant designed to separate water and sediments from the oil
- ✦ Oil / Fuels recycled for reuse
- ✦ Water treated in WWTP
- ✦ Sediments/Oily sludge used as fuel in Cement Plant



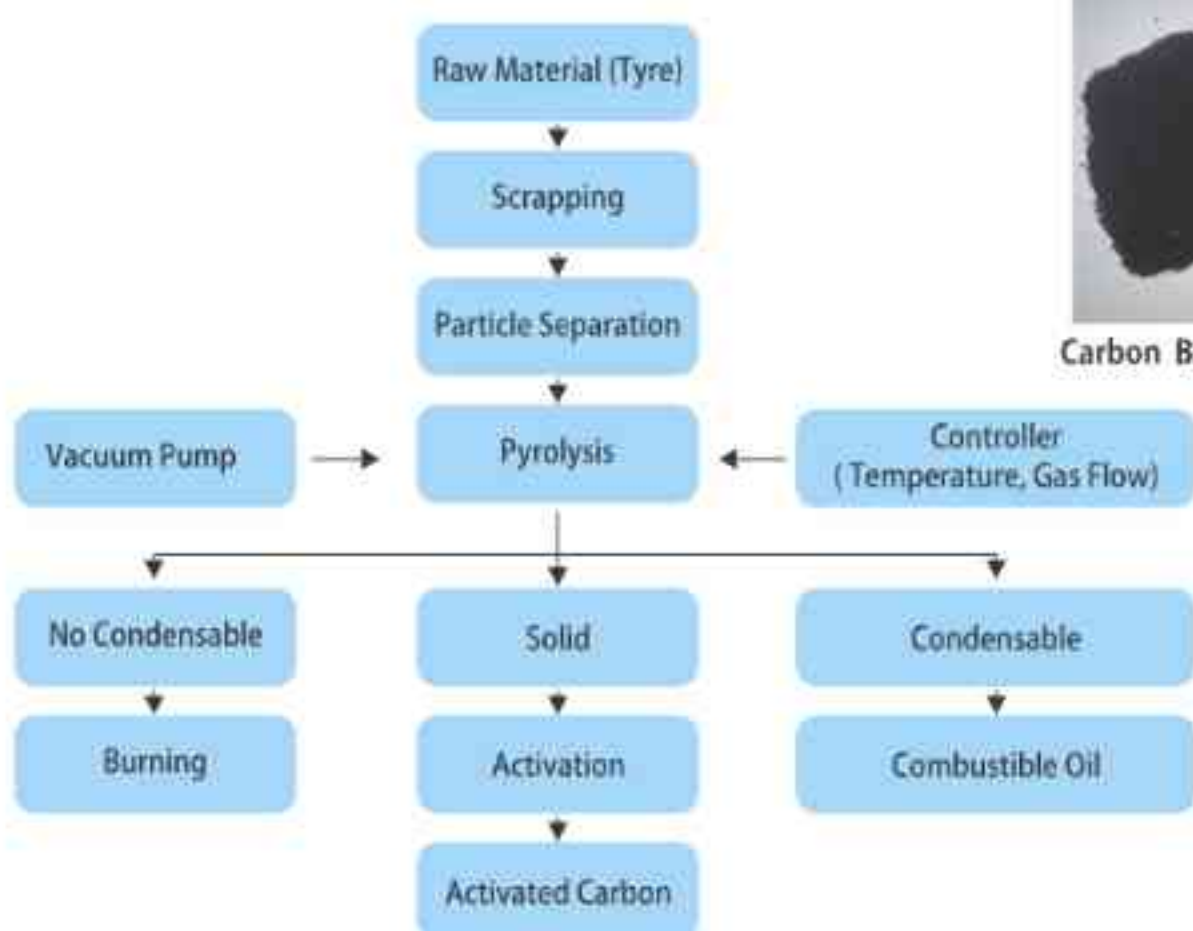


## WASTE TYRE RECYCLING PLANT

Capacity: 5TPD & 10TPD



### Process Flow of Waste Tyre Recycling Plant



Carbon Black 30-35%



Steel Wire 10-15%



Fuel Oil 40-45%

### Features

- ✦ 100 % waste tyre recycling is achieved ( no waste left after the process )
  - ✦ No chemical ingredients are used in process ( environment friendly )
  - ✦ During and after the process, No soil, water or air pollution is observed
  - ✦ Creates economically valuable products out of waste ( all of the products are industrial raw materials that have a market value )
  - ✦ The most cost - effective waste tire recycling technology in the world
  - ✦ Raw material ( waste tyre ) is cheap and easy to provide. These are the by-products of tire production
  - ✦ Each recycled ton of tyre preserves 10 tons of Co<sub>2</sub> that is a major green house gas
  - ✦ The process can be applied to all rubber based materials
  - ✦ The system creates an alternative source of energy to replace petroleum products and natural gas
  - ✦ System gives the opportunity to governments and local administrations to deal with the waste tire problem to a great extent
  - ✦ System prevents the spread of diseases caused by the waste tires
  - ✦ We deliver plants with capacities of 10 ton per day and its multiples
  - ✦ The process of pyrolysis has duration of 4 to 12 hours, depending on the amounts and the type of tire ( car tires, truck tires etc)
- During the process different vacuum values are applied in pre determined temperatures and in different phases, different gases are obtained and the condensed gas is stored as fuel - oil in tanks.





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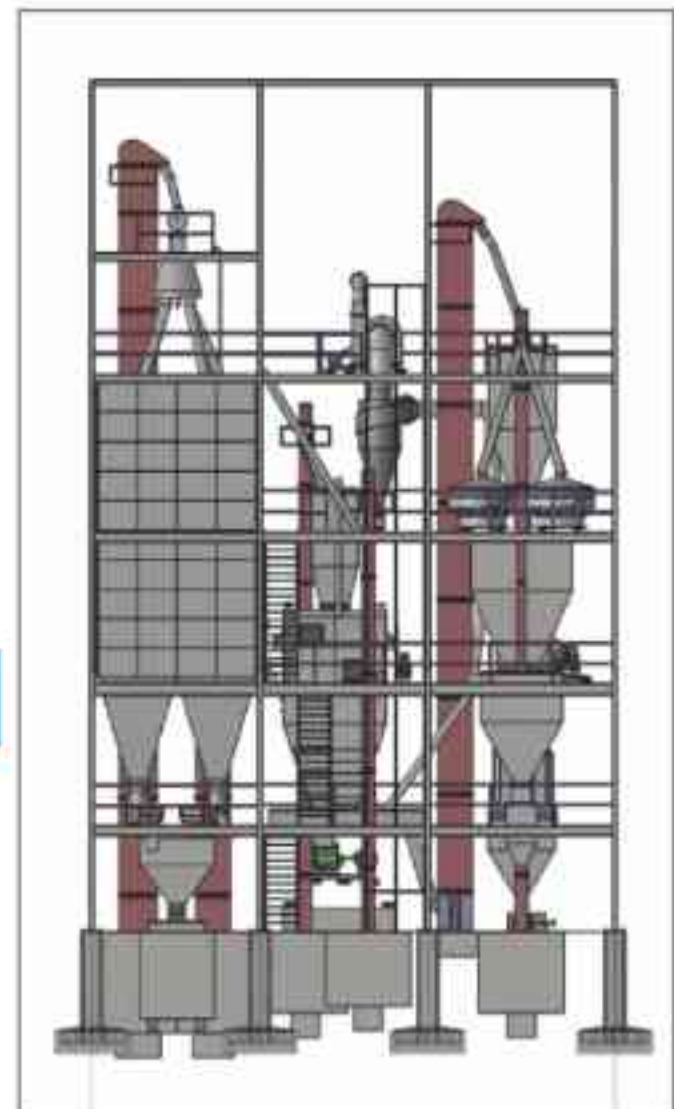
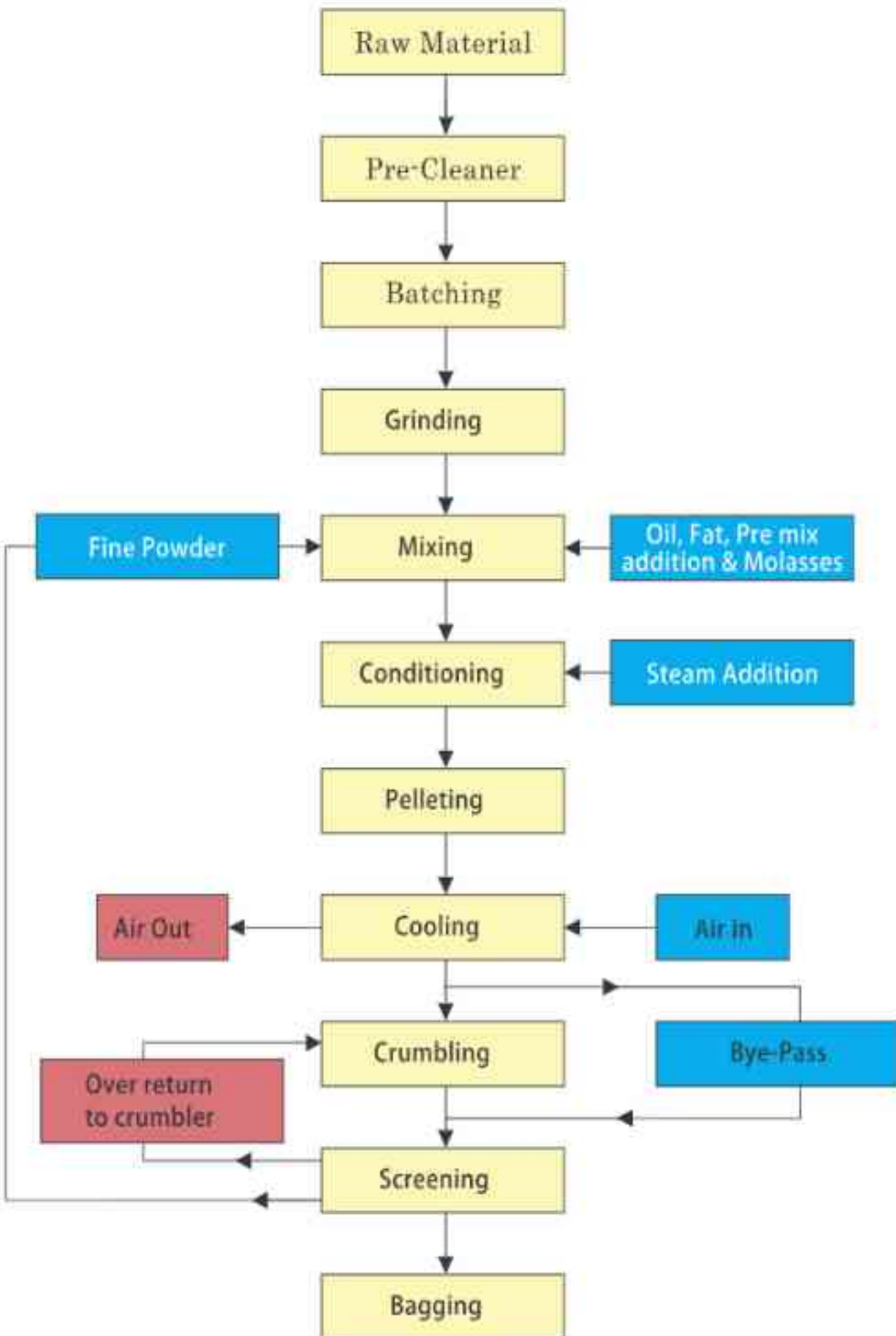
FISH, POULTRY & ANIMAL FEED PLANT



CAPACITY : 500 Kg./Hr. TO 20 TON/Hr.



Process Flow Chart of Cattle Feed & Poultry Feed Plant







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## RICE MILL PROCESSING PLANT

### Paddy Drier and Parboiling Section



#### DRIER & PARBOILING

- ✦ Made from SS 304 / MS (Carbon Steel)
- ✦ Less Manpower & Electricity Consumption
- ✦ Capacity 24/32 Ton Per Batch

### Automatic Paddy (Rice) Milling Plant



#### MILLING PLANT

- ✦ Suitable for all kind of Paddy
- ✦ Low Power Consumption
- ✦ Machinery Parts made on CNC Machine
- ✦ Capacity 500 Kgs /Hour- 10 Ton/Hour





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## FLOUR MILL PLANT

### AUTOMATIC FLOUR PLANT

- ✦ Suitable for all kind of Wheat
- ✦ Low Power Consumption
- ✦ Machinery Parts made on CNC Machine
- ✦ Capacity 40 Ton - 500 Ton in 24 Hour







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## SERVICE & AFTER SALES SUPPORT

The company is in position to provide any kind of services from technical / economical feasibility studies up to plant start-up. The following services can be provided:

- ♦ Research & Laboratory analysis, process development
- ♦ Process & product testing on pilot plants
- ♦ Custom tailored products formulation
- ♦ Project feasibility studies
- ♦ Process and detail engineering 3D design
- ♦ Equipment fabrication and procurement
- ♦ Supervision to plant installation and start up after sales service
- ♦ Operator's training
- ♦ Troubleshooting
- ♦ Plant performance (product quality, energy consumption, plant operation reliability) evaluation and optimization
- ♦ Evaluation of plant equipment operating conditions for planned maintenance ( mechanical, electrical, instrumentation & control )
- ♦ Customer's personnel training
- ♦ Advisory Services on new technologies, new equipment available on the market improvements of plan operation safety
- ♦ Study and proposal for plant revamping and capacity increase



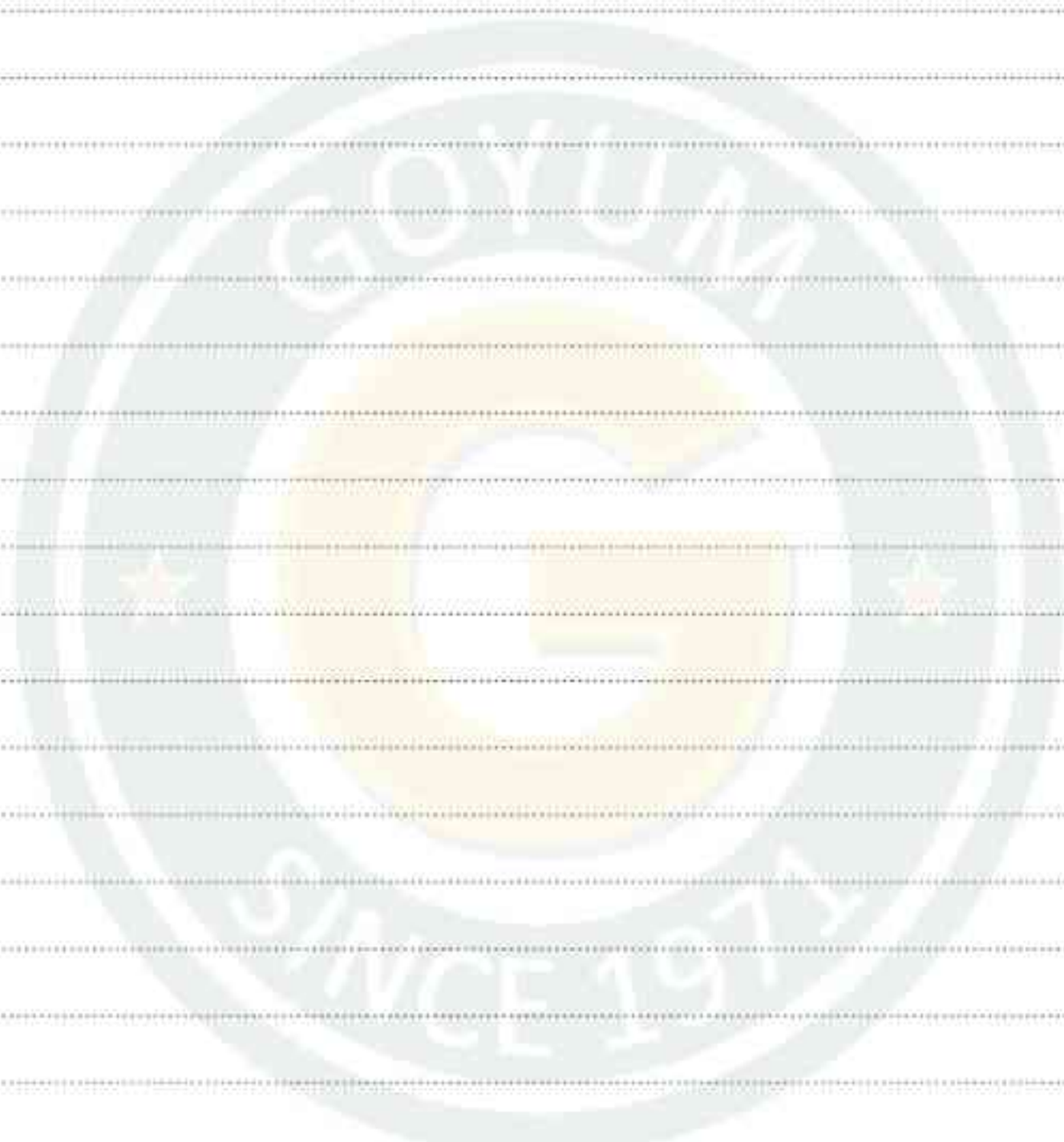




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## NOTES





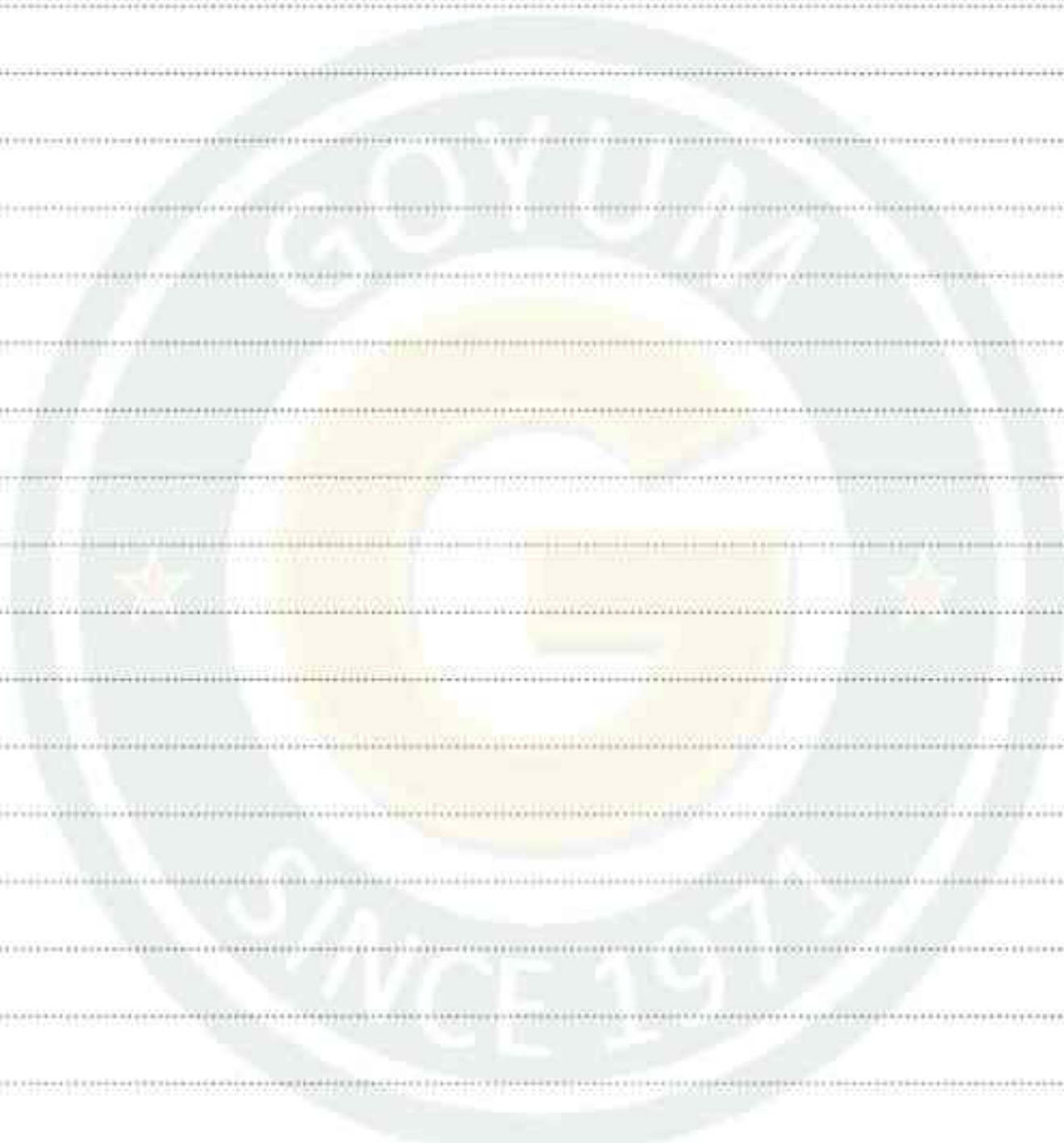


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NOTES

NOTES



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