

KUMAR OIL MILLS











SUPERIOR PERFORMANCE

LOWER POWER CONSUMPTION

Selection of motors is done keeping in mind the peak load that could arise due to inconsistent feeding resulting in lower power consumption.

EXTERNAL GEAR BOX

The high efficiency gear box ensures low maintenance, reduced noise levels and less power consumption.

LOWER OPERATION AND MAINTENANCE

Due to sturdy construction and stringent quality norms our machines work with higher efficiency and incur lower maintenance costs.

PREMIUM EXPELLED OIL QUALITY

Well designed worm assembly and chamber construction ensures superior quality of expelled oil which is sold in the market at premium rates.

SUPERIOR QUALITY OF CAKE

Since pressure exerted in the machine is even, the cake quality is excellent and cake produced from the machine is of natural color without charring or burning effect.

LOWER RETENTION OF OIL IN CAKE

Superior process parameters ensure lower retention of oil in the cake.

INTERNATIONAL CERTIFICATIONS

As per applicable international norms, equipments and machinery are manufactured in compliance with ASME & EU DIRECTIVES.





OIL EXPELLERS





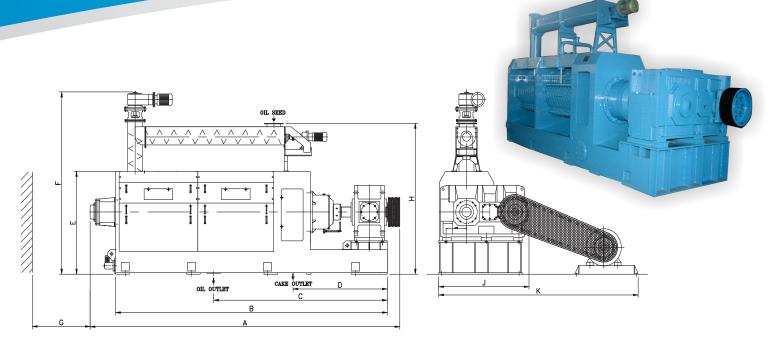


The Process

Oil seeds are properly cleaned & destoned before further processing. Properly cleaned and destoned oil seeds are subjected to size disintegration / flaking to achieve superior efficiency of the machine. These disintegration seeds are then cooked where the oil cells get properly tempered to expel the oil easily. These cooked seeds are subject to mechanical pressing in the expeller where the oil comes out with some amount of fines. This oil is then filtered via Vibro Separator and filter press to get clean & clear oil. The control, operation and supervision of the plant can be handled by minimum operating staff.

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'X'PRESS SERIES



The 'X'PRESS series is currently the largest in the range with rigorous high standards for design to deliver world class performance and reliability with minimum investment.

The series consist of Steel cast Double chamber expellers with Horizontal and Vertical Feeders, inbuilt Oil N Foots conveyor, with Hard-Faced wear parts and other value added options.

TECHNIC	TECHNICAL DATA		PRE-PI	RESS	FULL-F	PRESS
Туре			XP-200	XP-250	XP-200	XP-250
Capacity		MT/24h	100-180*	120-200*	75-130*	90-150*
Residual oil in c	ake	%	16-20	16-20	7-10	7-10
Rated Power fo	r Main Motor	HP	215-335	250-335	215-335	250-335
Rated Power fo	r Oil N Foots Conveyor	HP	1	1	1	1
Rated Power fo	r Horizontal Feeder	HP	3	3	3	3
Rated Power fo	r Vertical Feeder	HP	7.5	7.5	7.5	7.5
Chamber size	Feed	mm	Ø300 x 1300 L	Ø315 x 1300 L	Ø300 x 1300 L	Ø315 x 1300 L
Dia x Length	Disch	mm	Ø275 x 1350 L	Ø290 x 1350 L	Ø275 x 1350 L	Ø290 x 1350 L
Approx.Wt.		MT	17.5	18	17.5	18

VALUE ADDED OPTIONS:

- 1. Barring motor system for emptying of chamber during power failure.
- 2. Hydraulic Jack for Chamber Opening and Closing for easy, quick and hassle free maintanance.
- 3. Hydraulic Cone Adjusting System for Online Variation of cake thickness.

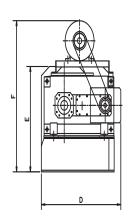
DIM	DIMENSIONS (APPROX.)												
Unit	А	В	C (Can vary as per layout)	D	Е	F	G (For shaft removal)	Н	J	К			
mm.	5670	4975	3180	1725	1775	3150	5500	2610	1655	3655			

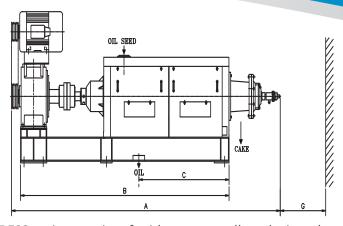
^{*}Capacities, residual oil contents in cake and required power rating vary with the type, composition, quality and preparation of seed to be processed.

NEW SUPER PRESS SERIES









The NEW SUPER PRESS series consist of mid range expellers designed to meet the needs of medium sized Mechanical Extraction Plants.

The series consist of Steel Cast Double / Triple chamber expellers with inbuilt Oil N Foots conveyor, Hard Faced / Carbon Steel Hardened and Tempered wear parts and other value added options.

TECHNIC	AL DATA	UNIT		PRE-PRESS				FULL-	PRESS	
Туре			NSP IIB	NSP IIC	NSP IIIC	NSP IIICLD	NSP IIB	NSP IIC	NSP IIIC	NSP IIICLD
Capacity		MT/24h	30-35*	40-45*	50-60*	60-70*	20-22*	35-40*	35-45*	45-50*
Residual oil in cake		%	16-20	16-20	16-20	16-20	7-10	7-10	7-10	7-10
Rated Power for Ma	nin Motor	HP	75	100/120	150	150/175	75	100/120	150	150/175
Rated Power for Oil	N Foots Conveyor	HP	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Feed		Ø279.4x939.8L	Ø279.4x939.8L	Ø330x939.8L	Ø330x939.8L	Ø279.4x939.8L	Ø279.4x939.8L	Ø330x939.8L	Ø330x939.8L
Chamber Size (Dia x Length)	Middle	mm	_	_	Ø254x863.6L	Ø279.4x584.2L	_	-	Ø254x863.6L	Ø279.4x584.2L
(Discharge		Ø209.5x863.6L	Ø254x863.6L	Ø225x863.6L	Ø254x863.6L	Ø209.5x863.6L	Ø254x863.6L	Ø225x863.6L	Ø254x863.6L
Approx.Wt.		MT	7.5	8.5	10.6	10	7.5	8.5	10.6	10

VALUE ADDED OPTIONS:

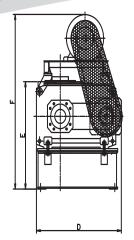
- 1. Barring motor system for emptying of chamber during power failure.
- 2. Hydraulic Jack for Chamber Opening and Closing for easy, quick and hassle free maintanance.

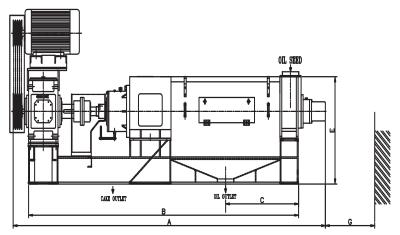
DIMENSIONS (APPROX.)	UNIT	NSB IIB	NSP IIC	NSP IIIC	NSP IIICLD
А	mm	4670	4670	5787	5500
В	mm	3619	3619	4500	4200
C (can vary as per layout)	mm	1550	1550	2150	2000
D	mm	1300	1360	1360	1360
E	mm	1200	1200	1200	1200
F	mm	2200	2200	2200	2200
G (for shaft removal)	mm	3000	3000	4500	4500

^{*}Capacities, residual oil contents in cake and required power rating vary with the type, composition, quality and preparation of seed to be processed.

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NEW OIL-N-OIL SERIES







The NEW OIL N OIL SERIES consist of small to mid range expellers designed to meet the needs of small and medium sized Mechanical Extraction Plants

The series consist of Fabricated or Steel single cast chamber expellers with Hard-Faced / Carbon Steel Hardened and Tempered wear parts and other value added options..

TECHNICAL DATA	UNIT	PRE PRESS		
Туре		NMK- VII	MK-VIII	
Capacity	MT/24h	30-40*	70-80*	
Resicual oil in cake	%	16-20	16-20	
Rated Power for Main Motor	НР	60/75	150/175	
Rated Power for Oil N Foods Conveyor	НР	0.5	1	
Chamber size (Dia x Length)	mm	Ø 255/230x1565L	Ø 279.5/254x2400L	
Approx.Wt.	MT	6	9	

TECHNICAL DATA	UNIT			FULL PRESS		
Туре		NMK- II	NMK- III	NMK- IVC	NMK- VII	MK VIII
Capacity	MT/24h	5-6*	8-9*	10-12*	25-30*	50-60*
Resicual oil in cake	%	7-9	7-9	7-9	7-9	7-9
Rated Power for Main Motor	НР	25	30	40	60/75	150/175
Rated Power for Oil N Foods Conveyor	HP	_	-	_	0.5	1
Chamber size (Dia x Length)	mm	152.4 x 840L	178 x 840L	178/222 x 1117.6L	Ø 255/230x1565L	Ø 279.5/254x2400L
Approx.Wt.	MT	3	3.2	3.5	6	9

DIMENSIONS (APPROX.)	UNIT	NMK II / NMK III	NMK IVC	NMK- VII	MK- VIII
А	mm	3180	3490	4473	5750
В	mm	2745	3030	3790	4950
C (can vary as per layout)	mm	680	821	980	1450
D	mm	875	875	1170	1300
E	mm	1080	1080	1190	1500
F	mm	1612	1678	1795	2200
G (for shaft removal)	mm	2200	2500	3000	4300

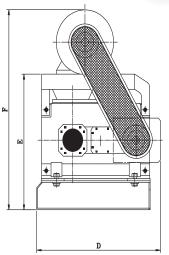
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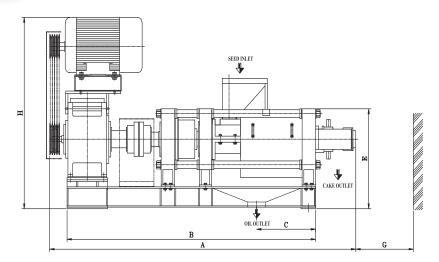
PALM KERNEL - OIL EXPELLER





- This series is specially designed and manufactured for extraction of palm kernel oil.
- This series consist of Fabricated single chamber expellers with Hard-Faced wear parts.





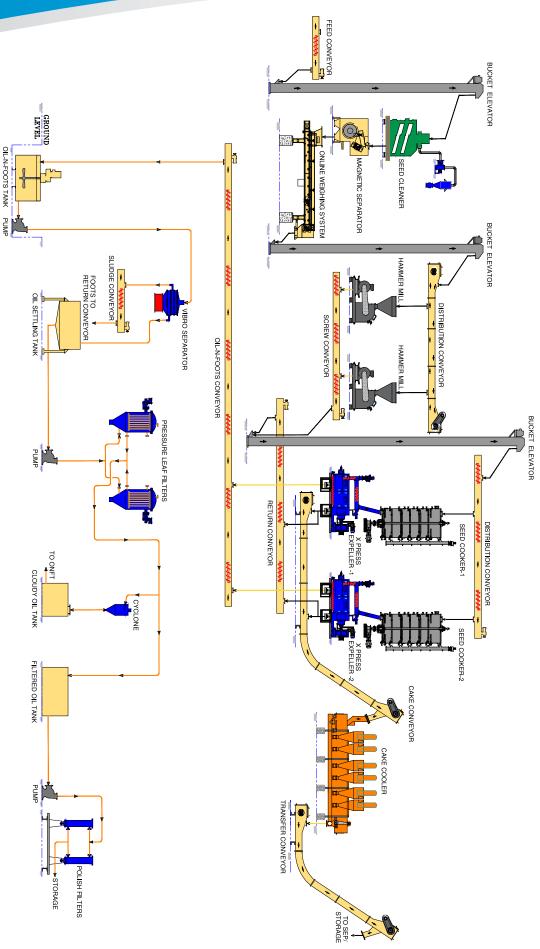
DIMENSIONS (APPROX.)	UNIT	PK - 15	PK - 25
А	mm	3400	3400
В	mm	2762	2762
C (can vary as per layout)	mm	655	655
D	mm	1375	1375
Е	mm	1000	1000
F	mm	1300	1300
G (for shaft removal)	mm	2000	2000

TECHNICAL DATA	UNIT	FIRST PRESS		SECONI	O PRESS
Туре		PK-15	PK-25	PK-15	PK-25
Chamber size (Dia x Length)	mm	Ø178 x 640 L	Ø209 x 640 L	Ø178 x 640 L	Ø209 x 640 L
Capacity	MT/24h	12/15*	22/25*	08/10*	14/16*
Residual oil in cake	%	18-20	18-20	8-10	8-10
Rated Power for Main Motor	НР	50	75	50	75
Approx.Wt.	МТ	4.5	4.8	4.5	4.8

^{*}Capacities, residual oil contents in cake and required power rating vary with the type, composition, quality and preparation of seed to be processed.



PROCESS FLOW DIAGRAM FOR OIL MILL



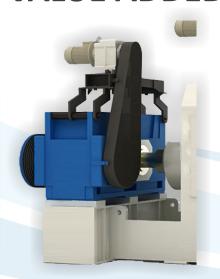
KUMAR EXPELLER



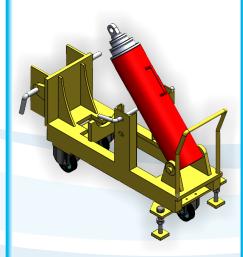
SALIENT FEATURES

- All expellers are supplied with a high efficiency External Gear Box.
- Pressure worms are hard faced with special welding electrodes to achieve desired hardness.
- Sturdy Construction, low Investment and easy installation.
- Maximum Oil yield at low operating costs.
- Can crush all type of edible and non-edible oil seeds.
- Easy and time saving main worm shaft removal without disturbing the gear box assembly.
- Vertical split hinged main cages provided with cage lifting for safe, quick and effortless maintenance.
- Special designed locking type clamping bars and bolts to enable easy tightening & removal of the cage.
- Fully enclosed cage with a built in screw conveyor at the base for conveying oil and foots which keeps the shop floor neat and clean.
- Steel cast hobbing cut helical gears. Induction hardened, completely assembled on a single piece hollow driving sleeve with heavy duty roller and taper roller bearing to acquire perfect alignment and friction free for energy saving.
- Multistage vertical stack cooker for proper conditioning of the seeds.
- All the bearings are lubricated with the help of a special motorized pump to increase bearing life.

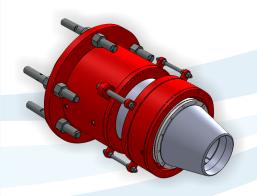
VALUE ADDED OPTIONS



Barring Motor System for emptying of chamber during power failure



Hydraulic Jack for Chamber opening and closing for easy, quick and hassle free maintenance.



Hydraulic Cone Adjusting System for Online variation of cake thickness

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PREPARATORY SECTION







SEED CLEANER

Seeds are properly cleaned into seed cleaner to remove unwanted material like dust, leafs, steins etc. Then the seeds are subjected to Destoner to remove various sizes of stones / sand. This removal of unwanted material reduces the down time & increases the life of machines.

Salient Features:

- Low maintenance.
- Variable speed and flexibility in slope of screen for smooth flow of seeds
- Suitable for various feeding seeds
- Spreading presents a uniform bed to the aspiration chamber

DESTONER

Vibratory type operating on vacuum principle. Steel box frame with sieve slope adjustment. Sieve box supported on rubber blocks with durable wooden sieve frames, covered with steel screens, aluminium baffles and cleaners. Complete with inspection windows and adjustable stone separation device. Includes cyclone, air lock and air fan

Salient Features:

- Helps in increasing the purity and quality of the seeds
- Complete with inspection windows
- Adjustable stone separation device.
- Compact in size and easy to use.
- Eliminates dust emission.

ROTARY MAGNET

Rotary magnetic drum seperator is used for cleaning the ferrous material from the feed seed and assure the removal of impurities.

- No power supply needed.
- No electrical contact problems.
- Cling to vertical surfaces.
- No damage to processing material.

PREPARATORY SECTION



HAMMER MILL

Hammer Mill is mainly used to disintegrate the product to desired size to have the proper Expelling. The Hammers (Beaters) are rectangular for efficient grinding & are made from hardened alloy steel. Hammer Mill is mainly used in case of Copra.

Salient Features:

- Capable of grinding many different types of materials.
- Easy to maintain and clean.
- Occupies small space.
- Provides efficient grinding at the shortest time, which saves human labour as well as time.

MODEL	CAPACITY / Hr.	MOTOR HP
HM - A1	500 kgs	5/7.5
HM - 1	1000 kgs	20
HM - 2	2000 kgs	30/40
HM - 3	3000 kgs	40/50
HM - 5	5000 kgs	50/75
HM - 8	8000 kgs	75/100

DECORTICATOR

Decorticator is mainly used in separation of hulls from kernel in case of Groundnut. Use of Decorticator increases the capacity of Expeller and reduces the down time of the machine.

Salient Features:

- Increases the capacity of screw press and reduces the down time of the machine.
- Easily separate the nuts into husk and kernels
- Gives better Cutting output.
- Easy Installation and Easy to operate

HULLERS & SHAKERS

Huller & Shaker is a machine where kernel is separated from the seeds & the hulls are separated from the kernel. In this process, one can increase the capacity of the machine by doing de-hulling of seeds which in turn reduce down-time of the machine.

This process is mainly used in case of Cotton Seed / Sunflower.

- Minimum oil absorption
- Simplicity of adjustment
- Low maintenance costs
- Clean cutting action of the huller and the efficient separation of meats and hulls by the shaker.





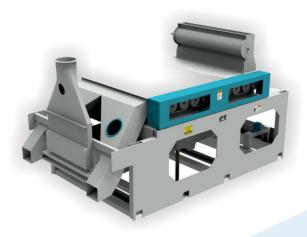
PREPARATORY SECTION



DENSITY SEPRATOR

This equipment is suitable for separating uncut seed, meat and hulls. The large hulls get first beaten to separated meat, further uncut seeds & hulls get separated in zig-zag chamber by density difference.

This process is mainly used in case of Cotton Seed /Sunflower.



HULLERS PURIFIER

This equipment is suitable for recovering sticky meat from separated hulls in order to minimize the oil loss in dehulling process.

The equipment is complete with Feeder, spiked rotating Beaters, perforated U-tube Basket, speed reduction gear, shaker tray complete with suitable perforated sheet, heavy-duty steel frame complete with drive stand.



CRACKER

Four roll Cracker to break the seed into quarter and eight sized pieces comprising of Carbon steel frame, cast alloy rolls Double strand.

Rolls Two V-belts, drive motor & Diverter gate. Hinge-Mounted Permanent magnet.

This cracker can be used for 100, 150, 200, 300 tons per day capacity plant.

- Reduction in wear & tear.
- Good quality, suitable for different seed material.
- Long service life.
- Excellent performance and reliability means top value for money.

PREPARATORY SECTION



FLAKER

Most seeds have tough oil bearing cellular structure which has to be ruptured or weakened prior to cooking and extraction. Flakers are normally used to increase the capacity of Screw press as well it reduces the wear & tear of the Press. This flaker can be used for 100, 200, 350 tonns per day capacity plant.

Salient Features:

- Space and energy reducing design.
- Quiet, clean and safe operation.
- Low energy consumption (kWh/t).
- Flake thickness adjustable during operation
- High throughputs with excellent flaking quality



COOKER CONDITIONER

To correctly cook and condition the material prior to Flaker. Vertical, multi-stage unit with fabricated shell and trays where heating is carried out by indirect steam.

The gates operated by mechanical level system automatically control the flow of material and the level in each stage.

A central shaft driven by a gearbox carried agitator blades to ensure a good mix, a homogenous treatment of the material and prevents burning on the stage bottoms.

A vertical duct extracts exhaust vapors from each stage.

Provision is made to adjust final moisture levels of the material by injecting water or direct steam.

- Reducing the viscosity and adjust the moisture content.
- Seed levels and overall residence time are easily adjustable.
- Simple operation provides flexibility for multiple seed varieties.
- Superior tray and shell design provide for years of trouble-free service



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FILTRATION SECTION

Oil from the expeller comes to the Vibro Separator, where the core particles are separated by vibration. The oil is then sent to the tank where it is pumped for final Filtration via plate type filters.

FILTER PRESS

Salient Features:

- Raised rim around the edges to form a chamber between 2 plates
- High rate of filtration
- Powerful pump & accurate assembly
- Leak proof joints to withstand operating pressure
- High grade CI casting & short blasted for smooth finish

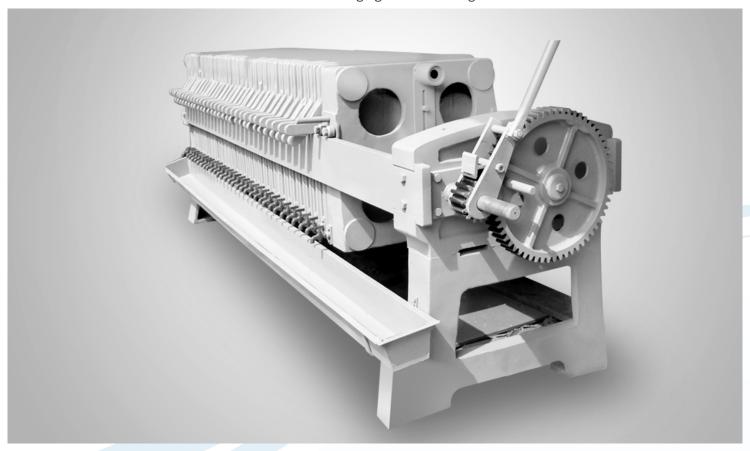


PLATE TYPE

SIZE INCHES	CAKE HOLDING CAPACITY CU. FT.	FILTERING AREA (Sq. Ft.)	PUMP MOTOR (HP)
30" X 30" X 40 Plates	19	215	7.5
30" X 30" X 30 Plates	14.2	160	5
25" X 25" X 36 Plates	6.5	132	3
25" X 25" X 30 Plates	5.8	110	3
25" X 25" X 25 Plates	4.5	95	3
18" X 18" X 18 Plates	1.75	35	2
15" X 15" X 15 Plates	1	26	2
12" X 12" X 12 Plates	0.4	10	1

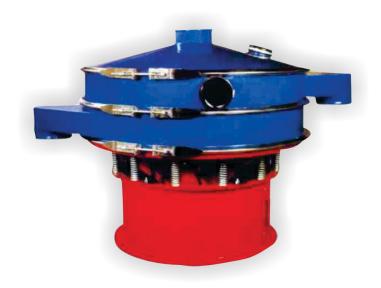
PLATE AND FRAME TYPE

SIZE INCHES	CAKE HOLDING CAPACITY CU. FT.	FILTERING AREA (Sq. Ft.)	PUMP MOTOR (HP)
30" X 30" X 36F/35P	37	195	7.5
30" X 30" X 30F/29P	30	160	5
25" X 25" X 30F/29P	13	110	3
25" X 25" X 25F/24P	11	95	3
18" X 18" X 18F/17P	5.3	35	2 15
8" X 8" X 13F/12P	0.6	5	2

FILTRATION SECTION



VIBRO SEPARATOR



The Vibro Separator is a separating machine which includes a vertical type special motor to facilitate three dimensional composed circular and elliptic motions in horizontal, vertical & inclinational faces. The vibro separator achieves superior performance as the feed (Crude Oil) is dispersed from the centre equally; hence all parts of screen cloth are fully utilized.

SCREEN (INCH)	POWER (HP)
24"	0.5HP
30"	0.5HP
36"	0.5HP
48"	1.5HP
60′′	1.5HP
72"	3HP

PRESSURE LEAF FILTERPOLISH FILTER



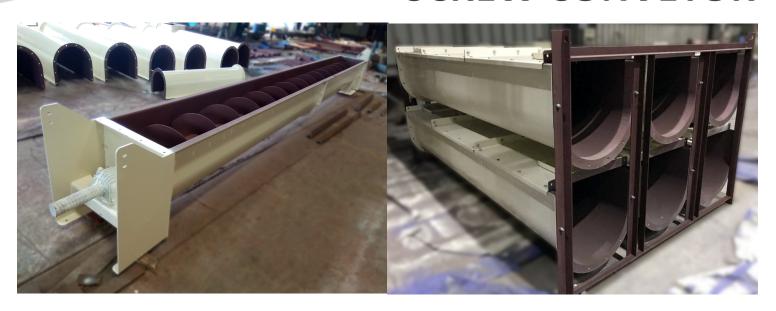
Pressure Leaf Filters are available in horizontal & vertical cylindrical vessels with leafs made of Stainless Steel. It is provided with a Vibrator & a butterfly valve. These filters are also used in Oil Mills.

SIZE (m²)	
10	
20	
30	
50	
70	



MATERIAL HANDLING SECTION

SCREW CONVEYOR



Salient Features:

- Available in different size and MOC
- Easy erection and assembly at site
- Hanger bearing designed for minimum obstruction of material flow
- Semi Teflon Bush in Hanger Bearing to avoid lubrication Problems.

SCREW DIA (in mm)	CAPACITY (cu.Mtr./hr) @ 40% Filling
150	3.8
200	9
230	13.6
250	17.6
300	30.5
350	48.5

CHAIN CONVEYOR

- Available in different size and MOC.
- Easy erection and assembly at site.
- Bottom of Conveyor lined with abrasionresistant material.
- Fabricated chain manufactured in special with hardened links.

REDLER SIZE (in mm)	CAPACITY (cu.Mtr./hr)
200	16.8
250	21
300	32.9
350	38.3
400	43.8
500	54.8



MATERIAL HANDLING SECTION



BUCKET ELEVATOR





- Available in different size and MOC
- Easy erection and tensioning of chain
- Locking arrangement provided to prevent reverse rotation
- Fabricated chain manufactured in special steel with hardened links
- Seamless buckets for high strength and wear resistance
- Also available with belt instead of chain

BUCKET SIZE	CAPACITY (cu.Mtr./hr) @ 60% Filling
6"x 4"x 3.25"	6.4
8"x 5.25"x 4.5"	15.1
10"x 6"x 5"	27.6
12"x 6"x 5"	34.5
14"x 7"x 6"	64.6

A COMPLETE PACKAGE



Kumar is a global company. Not only do we serve customers around the world, we also use the best technology and supply resources to ensure that only the best is delivered to our customers. We have installed and commissioned several oil mills, solvent extraction plants and refineries around the world. Our vast experience and expertise to design, engineer and install complete process plants on turnkey basis has given us the competitive edge. We have our presence in over 45 countries and served more than 500 clients.

Process Control: The control, operation and supervision of the plant can be handled by minimal staff. All main process parameters for example flow rates, temperatures, liquid levels etc. are automatically maintained from a control panel or, as an option, with the help of PID/PC based controls.

Our services also include:

- Installation design in compliance with international standards
- Complete process automation
- Skilled manpower for supervision of installation and commissioning
- Technical and manpower assistance to bring your new installation on line in minimum possible time
- We provide skilled operational staff and also train the local staff

Your Partner In The Oil Industry Seed Extraction Engineering Pressing Refining Preparation **Degumming Process Pre Pressing** Cleaning **Solvent Extraction Neutralizing Technology Desolventising** Pre treatment **Project Final Pressing Breaking** Toasting **Bleaching** Management Deacidification **Process Conditioning Full Pressing Drying Cooling Deodorisation Automation Installation & Crystallization Flaking Cold Pressing** Solvent Recovery **Commissioning** Fractionation **Edible Oil** Crude Oil Crude Oil **After Sales Processed Seed** Edible fats **Press Cake** Meals Service **Fatty Acids**



Kumar Metal Industries Pvt. Ltd.



CORPORATE HEAD QUARTERS:

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MANUFACTURING UNIT I:

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