



**KUMAR
METAL
INDUSTRIES**



**OIL MILLS:
MECHANICAL EXTRACTION**



Our technical collaboration with industry leaders, Crown Iron Works–USA and Europa Crown–UK, since 2003, has enabled us to incorporate advanced Crown technology in the design, manufacture and supply of solvent extraction and oil refining plants in a wide range of capacities.



Under our manufacturing license from Anderson International Corp, USA, pioneers of Expeller® press technology we manufacture and sell Anderson Dox Extruders and Solvex Expanders in the Indian market. Each offering is tailored to the unique needs of the customer and is manufactured to the high standards and specifications laid down in Anderson International's design and quality policy.





WE ARE KUMAR

Kumar Metal Industries is a process engineering company manufacturing advanced oil mills, edible oil refineries, oils and fats processing plants, oleo-chemical plants, bio-diesel plants and feed mills for companies all over the world. We are an ISO 9001-2015 company certified by TUV. We deliver custom, value-driven solutions, technically sound equipment with superior engineering. Through our hard work, integrity and emphasis on responsive service, we've gained the trust of more than 500 customers spread over 65 countries worldwide.

What started as a small fabrication unit in 1939 has grown into an industry favourite. Our manufacturing and fabrication units span over 23,000 sq m and house over 400 skilled technicians, quality control personnel, trained workers and the latest in precision European machinery.

Our fabrication facilities are equipped to manufacture high-pressure vessels and worked on by certified x-ray qualified welders. For hard facing and critical wear and tear parts, our highly trained TIG/MIG welders take over.



23,000 sq m manufacturing
infrastructure



400+
staff



570+
projects



500+
customers



65+
countries

KUMAR SCREW PRESS

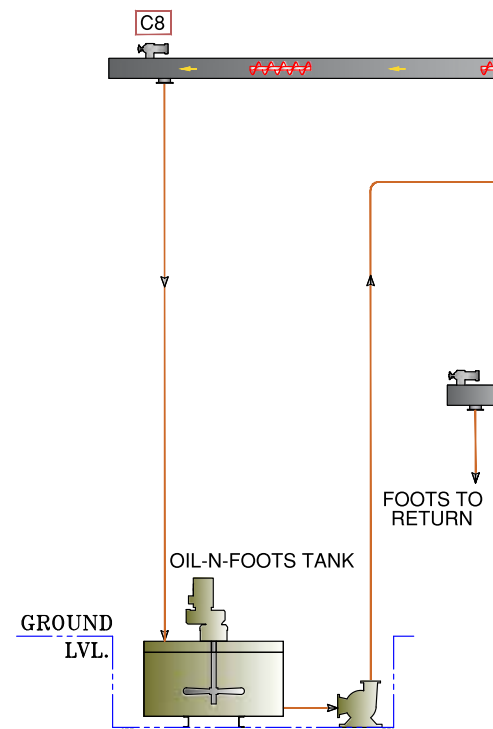
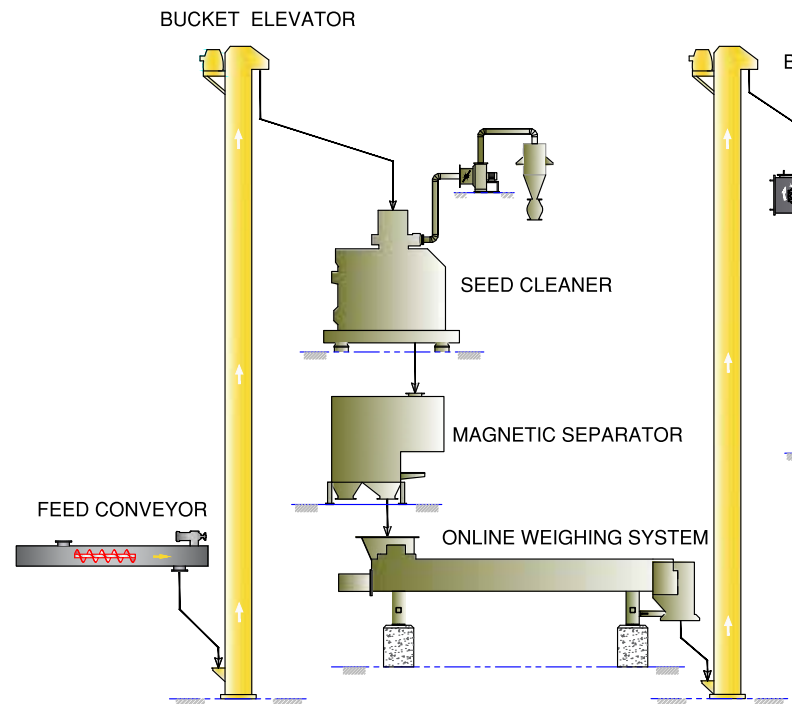
Suitable for all types of edible and non-edible oil seeds, Kumar's expellers are of sturdy construction, low investment and easy to install. They offer maximum oil yield at low operating costs.

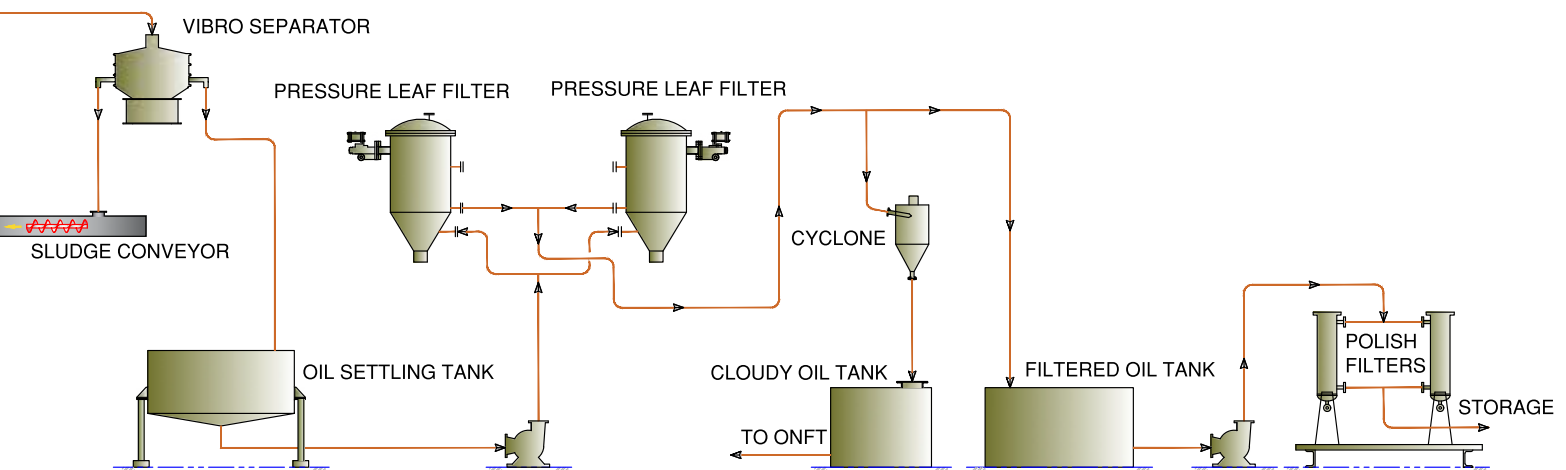
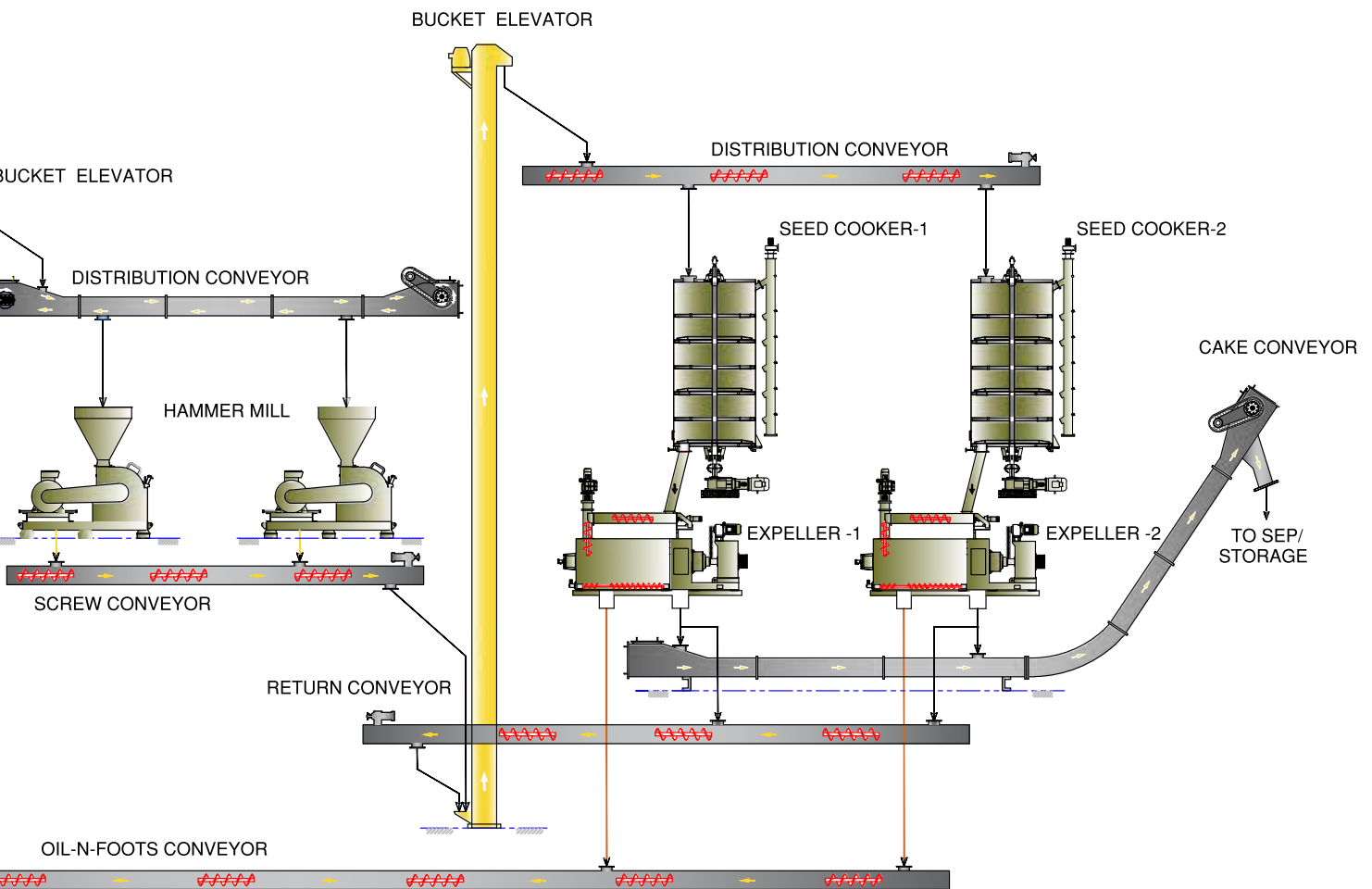
Oil seeds are properly cleaned and destoned before processing. They are then subjected to size disintegration/flaking to achieve superior efficiency of the machine. Once disintegrated the seeds are cooked, so the oil cells are properly tempered to easily expel the oil. Cooked seeds are mechanically pressed in the expeller and oil is extracted with some amount of fines. This oil is then filtered via the vibro separator and filter press for clear oil output. The entire operation, control and supervision of the plant can be handled with minimal operating staff.

APPLICATION: Our Expeller series can be used to press cashew shell, castor seed, cocoa beans, dry/wet dessicated copra, corn-maize germ, cottonseed, groundnut, jatropha, mustard, rapeseed, canola, niger seed, safflower, sesame, shea nut, soybean, sunflower, neem, almond chilli, pomegranate and olive.

FEATURES

- All expellers are supplied with high efficiency external gear box
- Pressure worms are hard faced with special welding electrodes to achieve desired hardness
- Easy and time saving main worm shaft removal without disturbing 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 and removal of the cage
- Fully enclosed cage with built-in screw conveyor at base for conveying oil and foots that keeps the shop floor neat and clean
- Steel cast hobbing cut helical gears, induction hardening 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 motorised pump to enhance bearing life



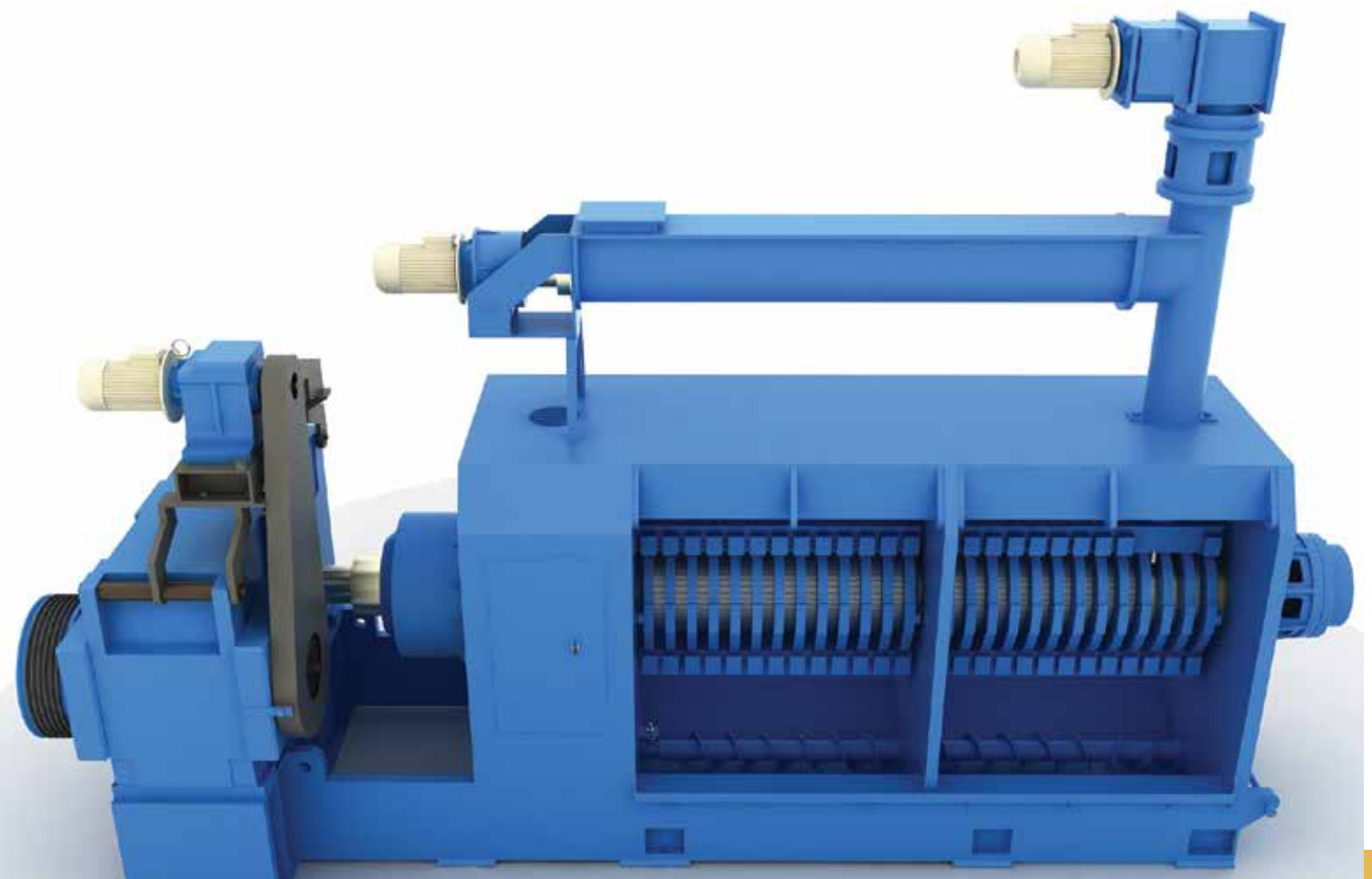
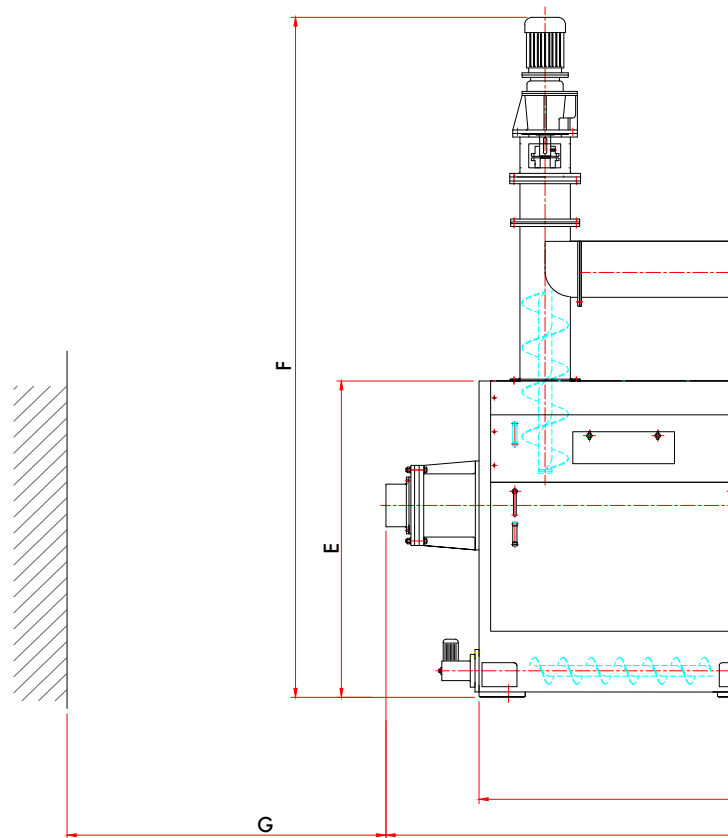


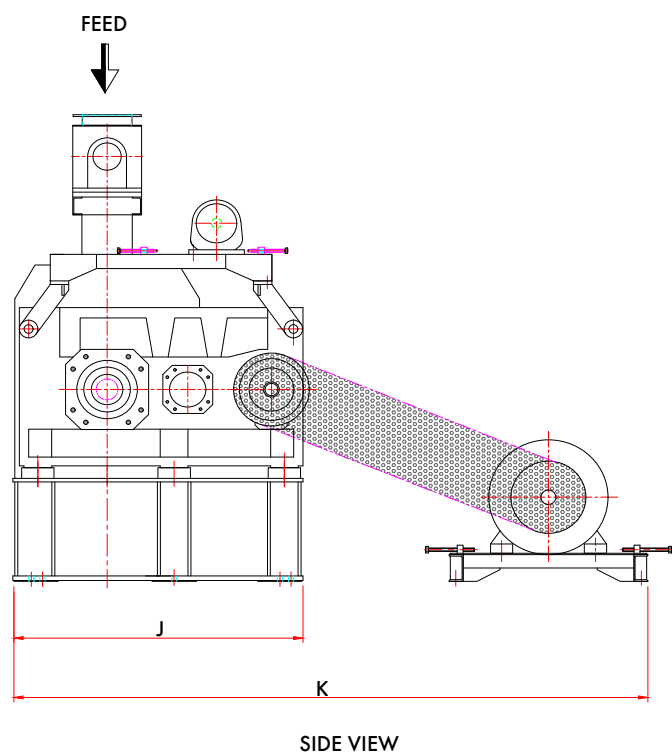
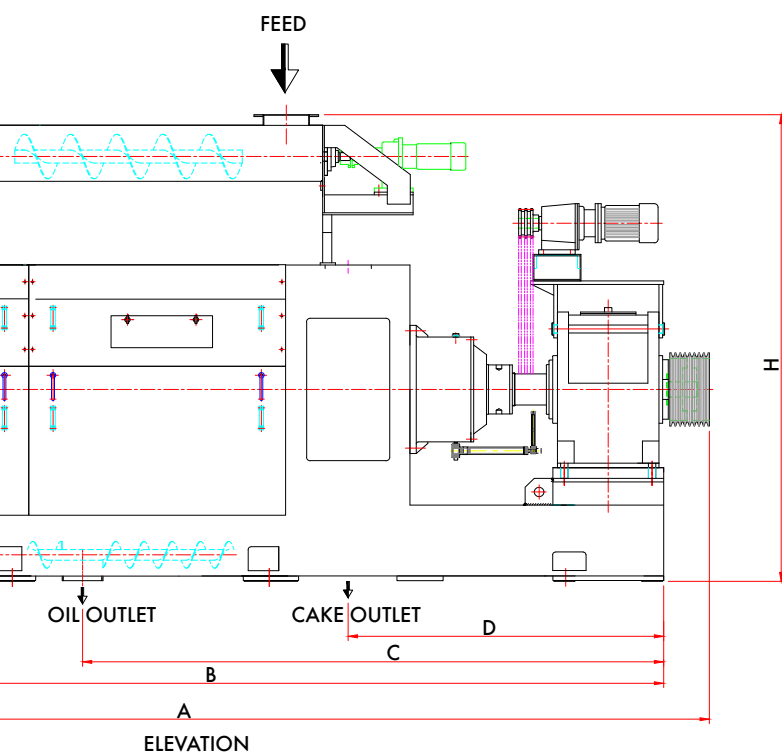
KUMAR X'PRESS SERIES OIL EXPELLER MAX 200

Kumar's X'Press Series Oil Expeller Max 200 is currently the largest in the range with rigorous and high design standards to deliver world class performance and reliability with minimum investment. The series consists of steel cast double chamber expellers with horizontal and vertical feeders, inbuilt oil-n-feets conveyor with hard-faced parts and other value added options.

FEATURES

- Independent gearbox system reduces noise level, consume less power and ensure zero contamination of mineral oil with edible oil.
- Hard-faced wear parts and spare parts consist of a unique welding process, multi-layer hard facing, pure alloy on the final surface, high abrasion and corrosion resistant.
- Automatic cone adjustment system for online variation of cake thickness.
- Independent, inbuilt oil-N-feets adjustable conveyor for simpler cleaning and less labour intensive hygiene operations.
- The telescopic hydraulic unit comes with a power pack and trolley for easy chamber opening and closing.
- Barring motor system to empty the chamber in the event of a power failure.





APPROXIMATE DIMENSIONS

Units	A	B	C ¹	D ¹	E	F ¹	G ¹	H	J	K
mm	5670	4975	3180	1725	1775	4150	3795	2660	1770	3655

¹varies per layout

TECHNICAL SPECIFICATIONS

SPECS	UNIT		PRE-PRESS			FULL-PRESS		
Type			XP-100	XP-200	XP-250	XP-100	XP-200	XP-250
Capacity	MT/24h		65-70	100-180	120/200	55-60*	75/130*	90/150*
Residual oil in cake	%		16-20	16-20	16-20	7-10	7-10	7-10
Power rating	HP		150	215/270	270/335	150	215/270	270/335
Chamber size	Feed	mm	∅229.4x928.6L	∅300 x 1300L	∅315 x 1300L	∅229.4x928.6L	∅300 x 1300L	∅315 x 1300L
	Disch		∅254x1451L	∅275 x 1350L	∅290 x 1350L	∅254x1451L	∅275 x 1350L	∅290 x 1350L
Approx weight	MT		10.0	17.5	18.0	10.0	17.5	18.0

*values may vary depending on the product type and condition

KUMAR NEW SUPER PRESS SERIES OIL EXPELLER

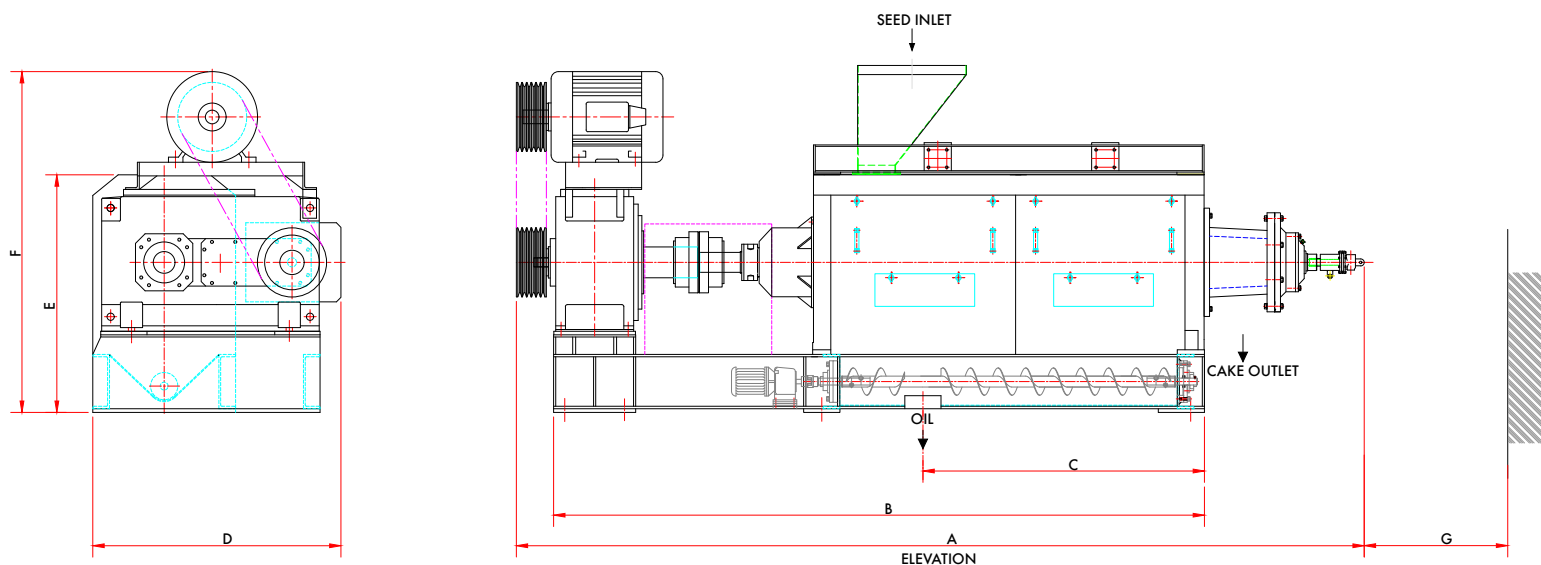


Kumar's New Super Press Series Oil Expellers are designed to meet the needs of small and mid-sized mechanical extraction plants. This series includes steel cast double or triple chamber expellers with inbuilt Oil N Feet conveyor, hard-faced or carbon steel hardened and tempered wear parts as well as other value-added options.

FEATURES

- Low maintenance system with an independent gearbox that reduces noise, consumes less power and ensures zero contamination of mineral oil with edible oil.
- Hard-faced wear parts and spare parts consist of a unique welding process, multi-layer hard facing, pure alloy on the final surface, high abrasion and corrosion resistant.
- SS Seal rings are fitted between worm assembly parts to prevent seized parts and shaft damage.
- Independent, inbuilt Oil-N-Foots adjustable conveyor for simpler cleaning and less labour intensive hygiene operations.
- The telescopic hydraulic unit comes with a power pack and trolley for easy chamber opening and closing.
- The frequency drive controls the speed adjustment of feeding screws. They are designed to obtain maximum feeding according to the raw material features.
- Barring motor system to empty the chamber in the event of a power failure. A reducer motor drives the feeding screw, controlled with frequency adjustment, ensuring the press's maximum operating capacity.

SPECS	UNIT		
Type		NSP IIA	NSP
Capacity	MT/24h	15-18*	30-
Residual oil	%	16-20	16-
Power rating ¹	HP	50	
Power rating ²	HP	0.5	
Chamber size DxL in mm	Feed	∅228.6x584.2L	∅279x
	Middle		
	Disch	∅190.5x863.6L	∅209.5
Weight	MT	6.5	



APPROXIMATE DIMENSIONS

	A	B	C ¹	D	E	F	G ²
NSB IIB	4405	3620	1550	1300	1380	2000	3300
NSP IIC	4630	3620	1550	1415	1380	2200	3300
NSP IIIC	5475	4540	2150	1415	1380	2200	4500
NSP IIICLD	5500	4220	2000	1415	1380	2200	4300

¹varies per layout; ²for shaft removal

TECHNICAL SPECIFICATIONS

PRE-PRESS				FULL-PRESS				
IIB	NSP IIC	NSP IIIC	NSP IIICLD	NSPIIA	NSPIIB	NSP IIC	NSP IIIC	NSP IIICLD
35*	40-50*	50-60*	60-70*	12-15*	20-25*	35-40*	35-45*	40-50*
20	16-20	16-20	16-20	7-10	7-10	7-10	7-10	7-10
75	120	150	175	50	75	120	150	175
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
939.8L	Ø330x939.8L	Ø330x939.8L		Ø228.6x584.2L	Ø279x939.8L	Ø330x939.8L	Ø330x939.8L	
-	-	Ø254x863.6L	Ø279.4x584.2L	-	-	-	Ø254x863.6L	Ø279.4x584.2L
x863.6L	Ø254x863.6L	Ø228x863.6L	Ø254x863.6L	Ø190.5x863.6L	Ø209.5x863.6L	Ø254x863.6L	Ø228x863.6L	Ø254x863.6L
7.5	8	10.6	10	6.5	7.5	8	10.6	10

*values may vary depending on the product type and condition

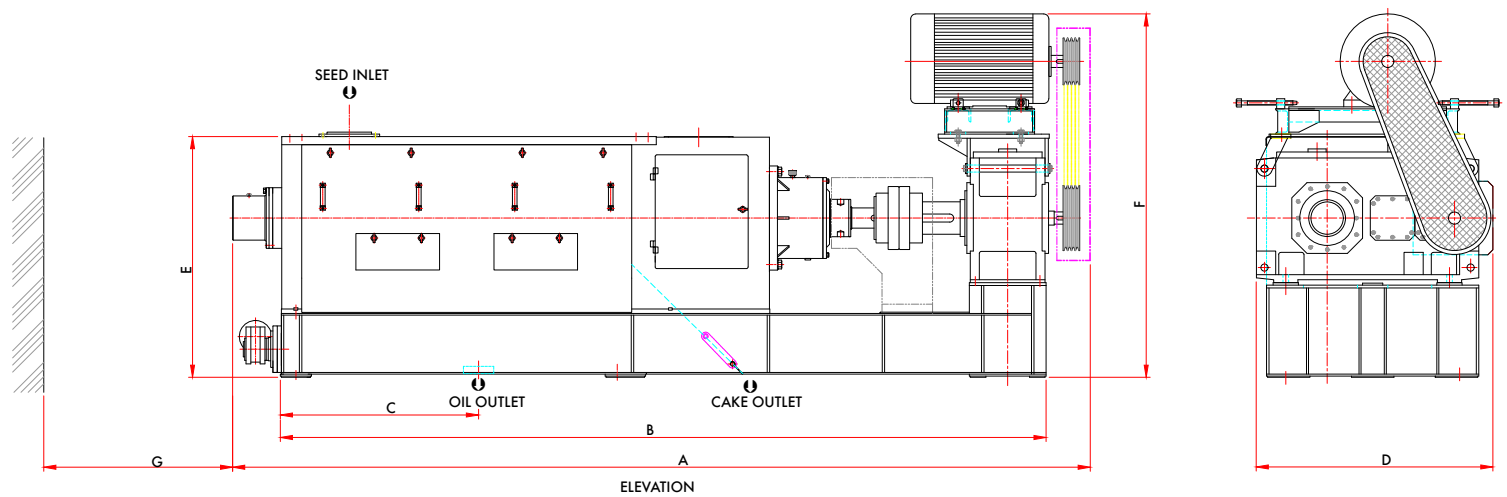
KUMAR NEW OIL-N-OIL SERIES OIL EXPELLER



Kumar's New Oil-N-Oil Series Oil Expellers are designed to meet the need of small and mid-sized mechanical extraction plants. This series includes fabricated or steel single cast chamber expellers with hard-faced or carbon steel hardened and tempered wear parts as well as other value-added options.

FEATURES

- Low maintenance, sturdy construction and easy to install.
- Independent gearbox system reduces noise level, consume less power and ensure zero contamination of mineral oil with edible oil.
- The SS Seal ring is fitted between worm assembly parts to prevent seized parts and shaft damage.
- Independent, in-built Oil-N-Foots adjustable conveyor for simpler cleaning and less labour intensive hygiene operations.
- The frequency drive controls the speed adjustment of feeding screws. They are designed to obtain maximum feeding according to the raw material features.
- A reducer motor drives the feeding screw. Feeding screw revolutions are controlled with frequency adjustment, ensuring maximum operational capacity of the press.



APPROXIMATE DIMENSIONS

	A	B	C ¹	D	E	F	G ²
NMK I	2574	2185	518	755	720	1100	1900
NMK II/III	3180	2745	680	875	1080	1612	2200
NMK IVC	3490	3030	821	875	1080	1678	2500
NMK VII	4473	3790	980	1170	1190	1795	3000
MK VIII	5750	4950	1450	1300	1500	2200	4300

¹varies per layout; ²for shaft removal

TECHNICAL SPECIFICATIONS

SPECS	UNIT	PRE-PRESS		FULL-PRESS					
Type		NMK-VII	MK-VIII	NMK-I	NMK-II	NMK-III	NMK-IVC	NMK-VII	MK-VIII
Capacity	MT/24h	30-40*	70-80*	3*	5-6*	8-9*	10-12*	25-30*	50-60*
Residual oil	%	16-20	16-20	7-9	7-9	7-9	7-9	7-9	7-9
Power rating ¹	HP	75	150	15	25	30	40	75	150
Power rating ²	HP	0.5	1	-	-	-	-	0.5	1
Chamber size DxL	mm	Ø255/ 230 x 1565 L	Ø279.5/ 254x2400L	Ø127x705L	Ø152.4 x 840L	Ø178 x 840L	Ø178/ 222 x 1117.6L	Ø255/ 230 x 1565L	Ø279.5/ 254x2400L
Approx weight	MT	6	9	2.2	3	3.2	3.5	6	9

*values may vary depending on the product type and condition; ¹motor; ²conveyor

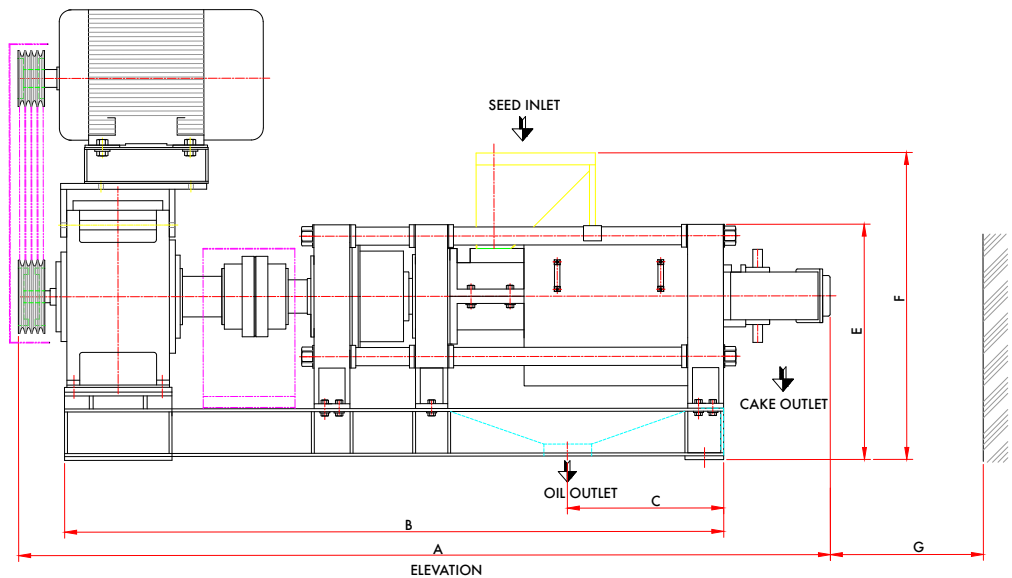
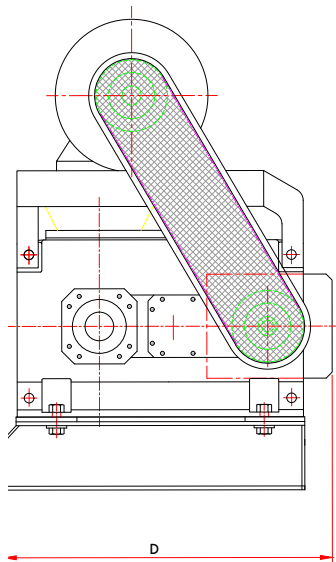
KUMAR PALM KERNEL EXPELLER



Kumar's PK Series expellers are designed and manufactured for the efficient extraction of palm kernel oil. The robust construction features a fabricated single chamber expeller constructed with hard-faced wear parts.

FEATURES

- Specially designed and manufactured for maximum oil extraction from palm kernel.
- Minimal residual oil content in the second press cake.
- Independent gearbox system reduces noise level, consume less power and ensure zero contamination of mineral oil with edible oil.
- Alloy steel with ultrasonically tested screw shaft with heavy-duty branded bearings.
- The SS Seal ring is fitted between worm assembly parts to prevent seized parts and shaft damage.
- Independent, inbuilt oil-N-feets adjustable conveyor for simpler cleaning and less labour intensive hygiene operations.



APPROXIMATE DIMENSIONS

Units	A	B	C ¹	D ¹	E	F	G ²
mm	3400	2800	655	1375	1015	1300	2000

¹varies per layout; ²for shaft removal

TECHNICAL SPECIFICATIONS

SPECS	UNIT	FIRST PRESS		SECOND PRESS	
Type		PK-15	PK-25	PK-15	PK-25
Capacity	MT/24h	12/15*	22/25*	8/10*	14/16*
Residual oil in cake	%	18-20	18-20	8-10	8-10
Power rating <small>main motor</small>	Kw/HP	55/50	55/75	50	75
Chamber size DxL	mm	∅178 x 640L	∅209 x 640L	∅178 x 640L	∅209 x 640L
Approx weight	MT	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 seeds to be processed.

KUMAR FILTER PRESS



Oil from expeller comes to the Vibro Separator, where 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.

FEATURES

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

PLATE TYPE

SIZE	CAKE HOLDING CAP	FILTERING AREA	PUMP MOTOR
30" x 30" x 40"	19 cu ft	215 sq ft	7.5 HP
30" x 30" x 40"	14.2 cu ft	160 sq ft	5 HP
25" x 25" x 30"	6.5 cu ft	132 sq ft	3 HP
25" x 25" x 30"	5.8 cu ft	110 sq ft	3 HP
25" x 25" x 25"	4.5 cu ft	95 sq ft	3 HP
18" x 18" x 18"	1.75 cu ft	35 sq ft	2 HP
15" x 15" x 15"	1 cu ft	26 sq ft	2 HP
12" x 12" x 12"	0.4 cu ft	10 sq ft	1 HP

PLATE & FRAME TYPE

SIZE	CAKE HOLDING CAP	FILTERING AREA	PUMP MOTOR
30" x 30" x 36F/35P	37 cu ft	195 sq ft	7.5 HP
30" x 30" x 30F/29P	30 cu ft	160 sq ft	5 HP
25" x 25" x 30F/29P	13 cu ft	110 sq ft	3 HP
25" x 25" x 25F/24P	11 cu ft	95 sq ft	3 HP
25" x 25" x 18F/17P	5.3 cu ft	35 sq ft	2 HP
18" x 18" x 13F/12P	0.6 cu ft	5 sq ft	2 HP

Kumar's Vibro Separator is a separating machine which includes a vertical type special motor to facilitate three dimensional motions; composed, circular and elliptic in horizontal, vertical and inclinational faces. This Vibro separator achieves superb performance as the feed (crude oil) is dispersed from the centre equally; hence all parts of screen cloth are fully utilised up to 75%.

SCREEN	POWER
24"	0.5 HP
30"	0.5 HP
36"	0.5 HP
48"	1.5 HP
60"	1.5 HP
72"	3 HP

KUMAR VIBRO SEPARATOR



KUMAR PRESSURE LEAF FILTER



Kumar's pressure leaf filters are used in oil mills. They are available in horizontal and vertical cylindrical vessels with leaves made of stainless steel. They are provided with a vibrator and a butterfly valve.

SIZE
10 m ²
20 m ²
30 m ²
50 m ²
70 m ²

SCREW CONVEYOR



Kumar's screw conveyor is available in different sizes and material of construction and can be easily erected and assembled onsite. It's hanger bearings are designed for minimum obstruction of material flow with a semi-teflon bush in to avoid lubrication problems.

SCREW DIAMETER	CAPACITY (40% filling)
150"	3.8 m ³ /hr
200"	9 m ³ /hr
230"	13.6 m ³ /hr
250"	17.6 m ³ /hr
300"	30.5 m ³ /hr
350"	48.5 m ³ /hr

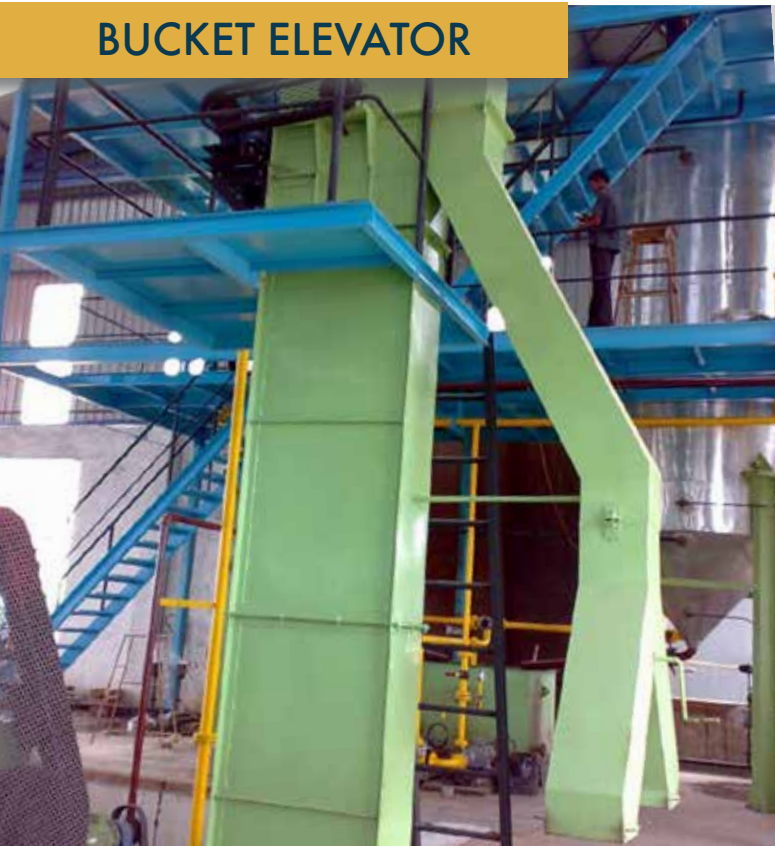
CHAIN CONVEYOR



Kumar's chain conveyor is available in different sizes and material of construction and can be easily erected and assembled onsite. The fabricated chain is manufactured in special steel with hardened links and the bottom of the conveyor is lined with abrasion-resistant material.

REDLER SIZE	CAPACITY
200 mm	16.8 m ³ /hr
250 mm	21 m ³ /hr
300 mm	32.9 m ³ /hr
350 mm	38.3 m ³ /hr
400 mm	43.8 m ³ /hr
500 mm	54 m ³ /hr

BUCKET ELEVATOR



Kumar's bucket elevator is available in different sizes and material of construction and can be easily erected and assembled onsite. A locking arrangement is provided to prevent reverse rotation. The fabricated chain is manufactured in special steel hardened with links with seamless buckets for high strength and wear resistance. Also available with a belt instead of chain.

BUCKET SIZE	CAPACITY (60% filling)
6" x 4" x 3.25"	6.4 m ³ /hr
8" x 5.25" x 4.5"	15.1 m ³ /hr
10" x 6" x 5"	27.6 m ³ /hr
12" x 6" x 4"	34.5 m ³ /hr
14" x 7" x 6"	6 m ³ /hr



360° SOLUTION

Kumar Oil mill for coconut in Lithuania

Kumar Metal Industries serves customers around the globe with innovative engineering, superior indigenous manufacturing and technological partnerships with global industry leaders. Over the last 80 years we have installed and commissioned thousands of oil mills, solvent extraction plants and refineries around the world. Our 360° approach to process engineering makes us a formidable partner for end to end to end solutions for the entire oilseed industry life cycle from seed preparation to after sales support.

<i>SEED PREPARATION</i>	<i>PRESSING</i>	<i>EXTRACTION</i>	<i>REFINING</i>	<i>ENGINEERING</i>
Cleaning	Pre-pressing	Solvent extraction	Degumming Neutralizing	Process Technology
Breaking	Final pressing	Desolventizing Toasting	Pretreatment Bleaching	Project management
Conditioning	Full pressing	Drying and cooling	Deacidification Deodorization	Process automation
Flaking	Cold pressing	Solvent recovery	Crystallization Fractionation	Installation and Commissioning
Processed seed	Crude oil press cake	Crude oil meals	Edible oil Edible fats Fatty acids	After sales service

KUMAR PERFORMANCE GUARANTEE

The Kumar name is synonymous with integrity, value-driven solutions, sound engineering, performance, integrity and a service-oriented mindset. Every piece of equipment you buy is built to perform and deliver your objectives.

LOWER ELECTRICITY CONSUMPTION

Precisely designed process piping manifolds, high-efficiency process pumps and energy-efficient electrical motors leading to lower consumption of electricity.

LOWER STEAM CONSUMPTION

Maximum heat is recovered by regeneration of heat in steam economizers during the extraction process. Heat from the hot vapour is utilized to heat the miscella to its evaporation temperature. Heating vessels are appropriately insulated to reduce radiation losses drastically.

LOWER HEXANE LOSSES

Kumar's condensers are designed with sufficient heat exchange area, and our plants are designed with zero vent system to reduce hexane losses.

MAXIMUM YIELD & RESIDUAL OIL CAKE

Kumar's screw presses always maintain maximum yield and lower residual oil in cake resulting in the utmost performance level of expeller machines.

MINIMAL BREAKDOWNS

Before shipment, we assemble our machinery and material handling equipment in the factory and conduct running trials to ensure perfect alignment resulting in negligible breakdowns during the commissioning period.

OPERATOR FRIENDLY & EASY TO MAINTAIN

We use superior quality hardware in our process plants, and equipment construction is simplified for operation and maintenance. Operating per procedures outlined in our user manual ensures low operation and maintenance costs.

SMALLER WORKFORCE REQUIREMENT

We supply premium quality and precise instruments for reliable, consistent and better process control, so you need fewer operators to run our machines.

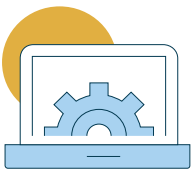
SAFETY STANDARDS

Kumar carries out systematic HAZOP studies of extraction plants and can provide hazard analysis and essential safety requirement documentation. Our plant layouts are designed in keeping with international safety standards.

INTERNATIONAL CERTIFICATION

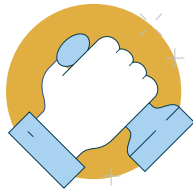
In keeping with international norms and guidelines, our equipment and machinery are manufactured in compliance with ASME and EU directives.





DESIGN & ENGINEERING

Kumar assist in identifying the most appropriate technology and equipments customized for your needs. 3D modelling, Isometrics, layouts for piping, equipments, foundations, site plan, etc are led by our team of dedicated engineers that devise a customized solution for client requirements



QA & QC

We design, install and operate under a Quality Assurance Program that ensures our entire process, from equipment design, material selection and procurement to manufacturing, testing and certification, is per internationally accepted codes and practices.



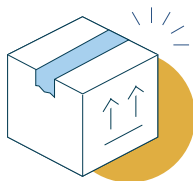
INSTALLATION

We have an independent team to manage project installations efficiently. They are trained in all aspects of the installation process, including equipment shifting, foundation layouts, piping, instrumentation, cabling and insulation. They erect major pieces of equipment onto their prepared foundations and install associated machinery and interconnecting equipment and piping efficiently and smoothly.



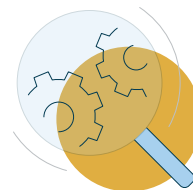
AFTER SALES SERVICE

Our team of sales engineers make regular client visits to troubleshoot and offer suitable suggestions for stocking recommended spares. We also provide operational training to clients' staff to ensure smooth operations. We believe in 24/7 after-sales support. Please contact if a visit from our service team is necessary.



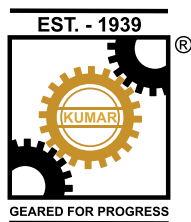
SPARE PARTS

In addition to the occasional troubleshooting visits, which can be arranged to monitor progress or advise on possible expansion plans, we can also arrange spare parts as required.



TECHNICAL AUDITS

We can arrange technical audits of your existing plants and generate detailed performance reports to assist with process changes related to output, energy consumption, spares, inventory and plant upgrades. Technical audits reduce downtime as they ensure regular preventive maintenance of plants and machines.



KUMAR METAL INDUSTRIES PRIVATE LIMITED

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