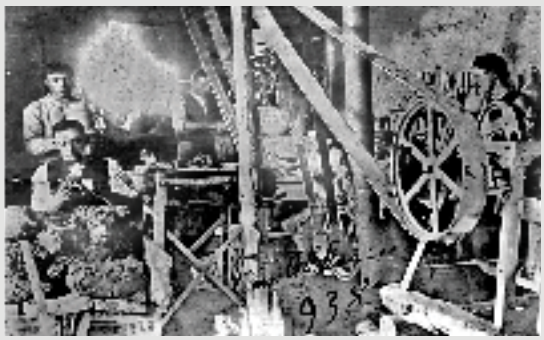
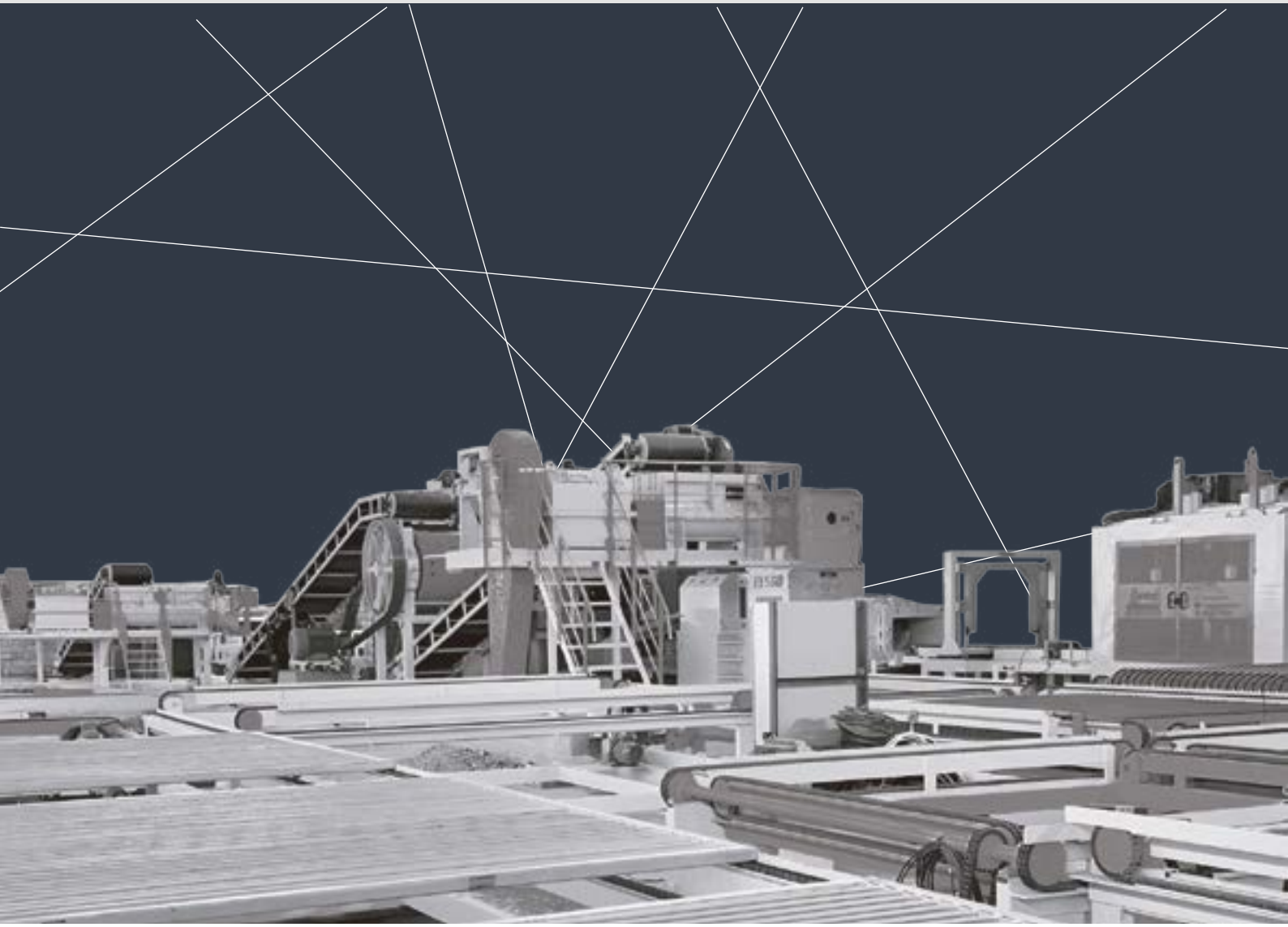
Karadayı
MAKİNA SANAYİ
MACHINE INDUSTRY AND TRADING CO.

Karadayı family is an organisation that started to serve in the brick and roofing tile industry sector in 1938.

Clay Preparation Shaping Solutions





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Karadayı MAKİNA SANAYİ
MACHINE INDUSTRY AND TRADING CO.

KARADAYI has produced more than 100 of the world's most powerful extruders and experienced extruders in the world and it is also the extruder machines that takes the company to the top of the world rankings in extrusion technology

DELTA
Clay Brick and Tile Extruder
FX / F

Karadayı MAKİNA SANAYİ
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The KARADAYI DELTA Series

KARADAYI provides a comprehensive range of combined de-airing extrusion units designed to satisfy diverse application needs. Our modular units consist of extruders and de-airing mixers in various sizes. With the DELTA extruder, KARADAYI has systematically incorporated the latest advancements in mechanical and process engineering specific to extrusion technology. As a result, our products offer favorable price-performance ratios and are geared towards maximizing customer benefits.

The DELTA extruder is available in barrel diameters ranging from 120 to 700 mm, offering maximum extrusion pressures between 18 and 40 bar, volumetric throughputs ranging from 0.1 to 60 m3/h compact (0.2 to 96 t/h wet). The modular design allows for flexibility and customization, ensuring that our extrusion units are well-suited to a variety of industrial applications.

Defining characteristics

- Optimized filling of the de-airing chamber ensures maximum throughput and efficiency.
- Durability and minimal maintenance are maximized.
- Operational stress tolerance is achieved through robust gearing and minimized wear.
- Low energy consumption paired with optional permanent operating data acquisition.
- Improved vacuum conditions are achieved through the use of large de-airing chambers.
- The system ensures optimal vacuum tightness along with easy maintenance.
- A consistent column advance is achieved through optimized auger geometry.

The new generation of KARADAYI DELTA extruders with energy-efficient strong gear box system

Technical data

TYPE	Barrel Diameter mm	Extrusion Pressure * (max.) mm	Volumetric throughput m³/h compact	Volumetric capacity ** t/h wet	Power requirement kW
F 12F/12	120	40	0,1-1,1	0,2-1,75	7,5 - 11
F 20F/20	200	40	0,15-1,4	0,24-2,2	11 - 22
F 30F/30	300	40	1,5-6	3-10	15 - 45
FX 35FX/30	300	40	1,5-8	3-12	22 - 45
F 40F/40	400	40	3-17	5-30	37 - 75
F 45F/45	450	30	9-21	15-34	55 - 110
FX 50FX/45	450	35	12-25	19-40	75 - 160
F 50F/50	500	30	13-27	20-44	75 - 160
FX 55FX/50	500	35	14-30	22-48	90 - 200
FX 60FX/56	560	30	19-39	30-62	90 - 200
F 60F/60	600	25	20-42	32-68	110 - 250
FX 70FX/65	650	30	25-50	50-80	110 - 250
FX 70 FX/68	680	27	20-55	50-88	110 - 250
F 70F/70	700	25	22-60	50-96	110 - 315

SCAN ME

* Extrusion pressure = axial thrust

** Volumetric throughput and throughput capacity depending on extrusion compound, auger speed and cross-section of the column

Subject to technical modification due to ongoing development.

The initial design focus of the double shaft filter mixer was on stone elimination. However, it evolved into a highly successful multifunctional system capable of mixing, moistening, steam-heating, kneading, homogenizing, shredding and separating

Double Shaft Filter Mixers

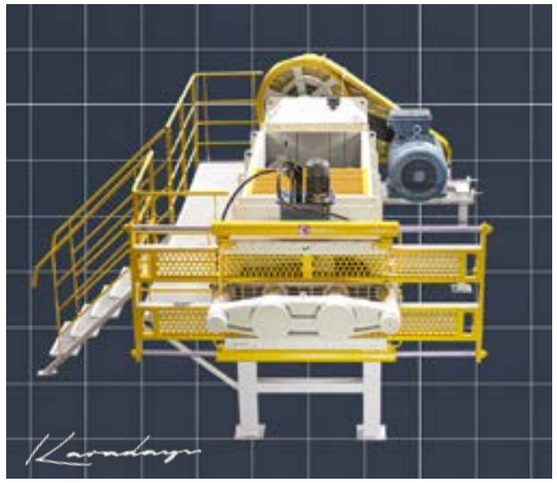
FXFK I FK

The KARADAYI Double Shaft Filter Mixer Series

The Karadayı double-shaft filter mixer series includes the FXFK type with hydraulic screen shifting for raw materials with impurities like stones, wood, roots, grass, reeds, plastic etc. There is also a more cost-effective series, the FK type, designed for raw materials with few or no impurities. The operating sequence is the same for both series: raw materials are mixed in the open mixing trough (mixing zone) with the addition of water, steam, and required additives. In the closed double cylinder with four interlocking screws (pressure zone) the mass is intensively kneaded and homogenized, while impurities are captured by the screen. The use of KARADAYI double-shaft filter mixers especially in backing brick production, has proven to significantly improve product quality.

Defining characteristics

- High throughput rates even with tine perforations.
- Very good mixing effect and high homogenization due to the generously dimensioned pressure zone.
- Quick screen change or retooling of the screen perforation to the respective product requirements.
- Low energy consumption.
- Long service life and low maintenance costs due to the use of highly wear-resistant materials.
- Addition of water and additives are possible.
- New energy-saving gearboxes system.
- Tougher shaft structure with front bearing system



The double-shaft filter mixer has been new generation with an innovative energy-saving gear box system

Technical data

TYPE	Mixing trough width mm	Mixing trough / double cyllnder length mm	Speed 1/min	Volumetric throughput1 m³/h compact	Throughput capacity t/h wet	Power requirement kW
FXFK 450	820	1920 + 520	15 -32	25 - 35	40 - 56	55 - 75
FK 500	895	1900 + 540	15 - 32	28 - 42	45 - 68	55 - 75
FK 550	965	1900 + 600	15 - 32	30 - 45	48 - 75	75 - 90
FXFK 600	1100	2020 + 660	15 - 32	32 - 56	52 - 90	90 - 110

SCAN ME

Subject to technical modification due to ongoing development.

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Optimum for high-quality mixing, KARADAYI newly redesigned double-shaft mixers gearboxes adhere to the same principles of durability and easy maintenance found in all KARADAYI machines

Double Shaft Blade Mixers

FXAK/AK

Karadayı MAKİNA SANAYİ
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The KARADAYI Double Shaft Blade Mixer Series

Double-shaft mixers are continuous-flow devices designed to mix, knead and moisten clay for optimal blending and disintegration. They play a crucial role in homogenizing raw materials, mixing different materials, incorporating additives, and adjusting moisture levels. These mixers can be used at various stages in the preparation process, such as before, during or after comminution, and in proximity to clay storage.

FXAK/AK are useful for adjusting the moisture of raw materials before storage and breaking down surface-dry material during retrieval. In the feed section, additives and water can be mixed to give the material its desired properties. The long mixing zone allows ample time for the material to pass through, allowing the mixing knives to enhance its homogeneity.

Defining characteristics

- The extra-long mixing trough ensures that the material spends sufficient time in the mixing zone for effective homogenization.
- The large volume watering mechanism is mounted on the machine.
- Additional fixed knives are incorporated to slow down the material and enhance the mixing effect.
- Long service lives and low maintenance costs thanks to hard-wearing, easily accessible wear part.
- Thanks to the intermediate piles, a more homogeneous mixture is obtained.
- Blade system at the front of the machine.

Whole body blades for shaft protection

Technical data

TYPE	Mixing trough width mm	Mixing trough length mm	Volumetric throughput m^3/h compact	Throughput capacity t/h wet	Power requirement kW
FXAK 450	820	2420	25 - 35	40 - 60	55 - 75
AK 500	895	2440	28 - 42	45 - 68	55 - 75
AK 550	965	2500	30 - 45	48 - 75	73 - 90
FXAK 600	1100	2700	32 - 56	52 - 90	90 - 110

Subject to technical modification due to ongoing development

SCAN ME

Optimum for high-quality mixing, KARADAYI newly redesigned double-shaft mixers gearboxes adhere to the same principles of durability and easy maintenance found in all KARADAYI machines

Open Double Shaft Mixers

FXAK/AK

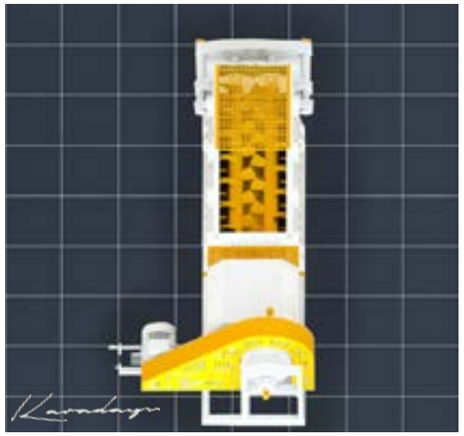
The KARADAYI Double Shaft Mixer Series

Double-shaft mixers are continuous-flow devices designed to mix, knead, and moisten clay for optimal blending and disintegration. They play a crucial role in homogenizing raw materials, mixing different materials, incorporating additives, and adjusting moisture levels. These mixers can be used at various stages in the preparation process, such as before, during, or after comminution, and in proximity to clay storage.

FXAK/AK are useful for adjusting the moisture of raw materials before storage and breaking down surface-dry material during retrieval. In the feed section, additives and water can be mixed to give the material its desired properties. The long mixing zone allows ample time for the material to pass through, allowing the mixing knives to enhance its homogeneity.

Defining characteristics

- The extra-long mixing trough ensures that the material spends sufficient time in the mixing zone for effective homogenization.
- The large volume watering mechanism is mounted on the machine.
- Additional fixed knives are incorporated to slow down the material and enhance the mixing effect.
- Long service lives and low maintenance costs thanks to hard-wearing, easily accessible wear part.
- Thanks to the intermediate piles, a more homogeneous mixture is obtained.
- Optionally, a blade system at the front of the machine.



Whole body blades for shaft protection

Technical data

TYPE	Mixing trough width mm	Mixing trough length mm	Volumetric throughput m³/h compact	Throughput capacity t/h wet	Power requirement kW
FXAK 450	820	2420	25 - 35	40 - 60	55 - 75
AK 500	895	2440	28 - 42	45 - 68	55 - 75
AK 550	965	2500	30 - 45	48 - 75	73 - 90
FXAK 600	1100	2700	32 - 56	52 - 90	90 - 110

Subject to technical modification due to ongoing development

SCAN ME

The FMV/FHV series of fine roller mills from KARADAYI offers customers a reliable and advanced system for fine comminution, achieving minimal roller gaps of 1 mm

Fine Roller Mills

FMV / FHV

The KARADAYI FMV / FHV Series

Primary and fine roller mills are crucial for preparing ceramic raw materials, especially in plastic preparation where roller mills are essential. Many brickmakers use materials that require a roller gap of about 1 mm or wider for effective comminution. The KARADAYI FMV/FHV roller mill concept was created as a cost-effective, modern alternative to the FXMV/FXHV

models. These fine roller mills offer value for money, providing efficient roller gaps down to 1 mm. Four sizes are available, with throughputs reaching approximately 63 m³/h (100 t/h wet) for a 1-mm gap setting and a peripheral velocity of 20 m/s. As the contribution of the new generation things like optimal cost-benefit ratio, gap consistency and convenience of operation.

Defining characteristics

- Adjustable hydraulic pressure on the hydraulic unit.
- Stably tight cylinder width clearance.
- Extended lifespan for all wear parts and reduced maintenance needs are achieved through modern scraper technology, featuring an optimized design of durable scrapers.
- Optimum cost-benefit ratio.
- Optimized design and attachment result in longer-lasting roller shells and increased reliability.
- Pulley and roller cover can be easily removed and assembly.

Hydraulic unit that provides control of roller gap

Technical data

TYPE	Roller diameter/ width mm	Barrel thick-ness inside/ outside mm	Roller pretension* t	Volumetric throughput** m³/h compact	Throughput capacity** t/h wet	Power requirement kW
FHV / FMV 60	1000 / 600	144 / 110	40	30 - 32	50 - 52	2 x 75
FHV / FMV 80	1000 / 800	144 / 110	50	40 - 42	66 - 68	2 x 90
FHV / FMV 100	1000 / 1000	144 / 110	50	50 - 54	84 - 86	2 x 110
FHV / FMV 120	1200 / 1000	144 / 110	70	61 - 63	98 - 100	2 x 132

SCAN ME

* Data specific to overload prevention with laminated disk spring assembly

** Volumetric throughput and throughput capacity relative to material from pan mill, 1 mm roller gap and 20 m/s circumferential speed.

Subject to technical modification due to ongoing development.

Minimum Roller gap with reinforced body and bearing housing structure. Type FXMV / FXHV: The standard or hydraulic high-performance roller mills, for roller gaps 0,5 mm

Fine Roller Mills

FXMV / FXHV

The KARADAYI FXMV / FXHV Series

The recently produced FXMV/FXHV marks the latest evolution in the fine grinding of plastic and semi-plastic ceramic materials in roller mills. Designed for effective gap widths of 0.5 mm, it serves as a second or third roller mill in series with suitable primary and/or fine roller mills. Engineered for high throughputs, the machine allows for maintaining minimum roller gaps consistently during continuous operation. With roller widths of 1,000 mm and diameters of 1,000 and 1,200 mm, it offers milling capacities of up to 62 m³/h at a roller-gap setting of 1 mm.

Defining characteristics

- Optimized design and attachment result in longer-lasting roller shells and increased reliability.
- The rollers are precisely mounted to ensure accurate retention of roller-gap settings.
- Minimal deformation and stress increases in all components thanks to the newly developed technique.
- Extended durability of all wear parts with minimal maintenance is achieved through modern scraper technology and the optimized design of the highly wear-resistant scraper.
- The structure-optimized system allows only minimal changes in the grinding results.

Roller material is spheroidal casting, and hardness is 46 - 50 HRC

Technical data

TYPE	Roller diameter/ width mm	Barrel thickness mm	Max. roller turning speed 1/min	Volumetric throughput* max. approx. m³/h	Installed capacity kW
FXMV	1000 / 1000	120	225 / 240	52	2 x 110
FXMV	1200 / 1000	140	225 / 240	62	2 x 132
FXHV	1000 / 1000	120	225 / 240	52	2 x 110
FXHV	1200 / 1000	140	225 / 240	62	2 x 132

SCAN ME

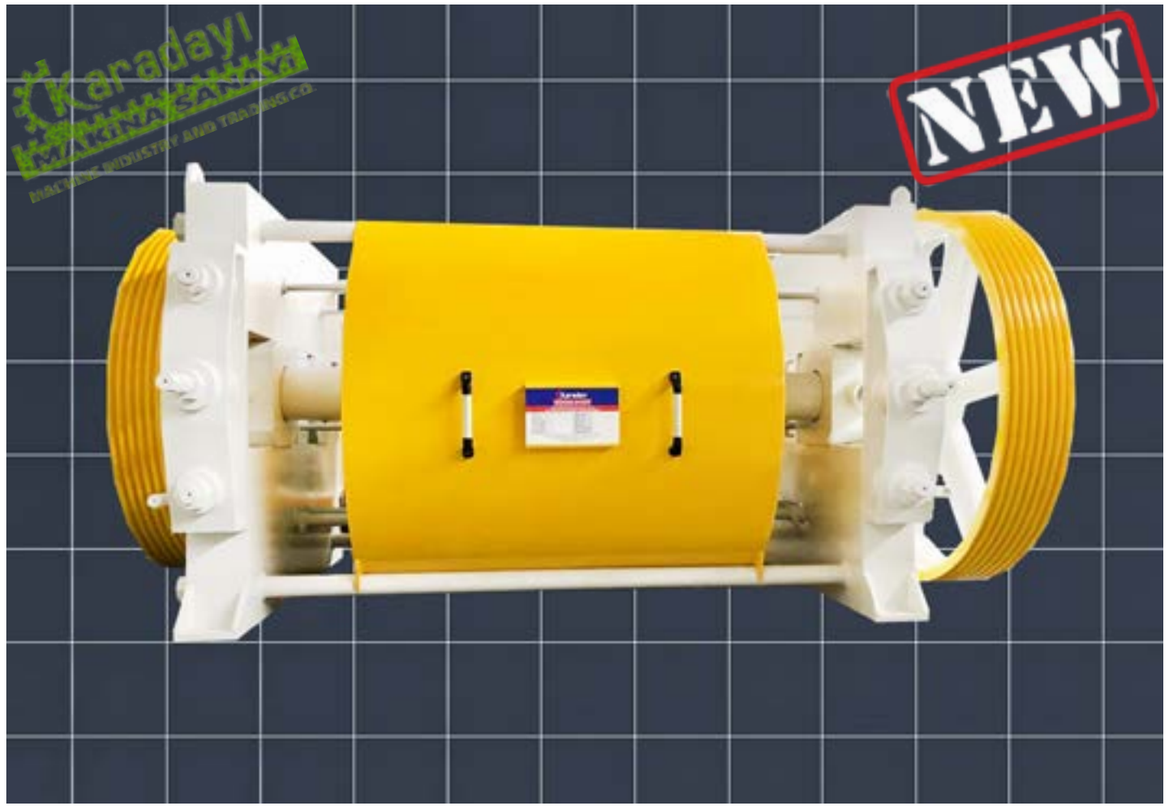
* Volumetric throughput for rough-milled material and a roller-gap setting of approx. 1 mm

Subject to technical modifications due to ongoing development.

KARADAYI Stone Eliminating Roller Mill is designed for crushing and separating rough and tough materials. KARADAYI Stone Screening Rollers have a hardness range of HRC 46-50

Stone Eliminating Roller Mill

TAV

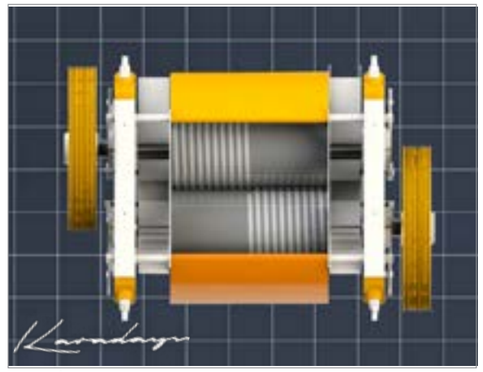


KARADAYI Stone Eliminating Roller Mill

KARADAYI provides various effective approaches for the primary size reduction of ceramic raw materials. KARADAYI's Stone Screening Roller Mill hardness 46-50 HRC is used to crushing hard materials with hardness up to 20-25 HRC. It efficiently eliminates small rocks and pebbles present in the clay. The disintegrator employs impact, shear and compressive forces to create a highly favorable conditioning and comminuting effect. Available in three different sizes with roller widths of 700, 800, 1000 and 1200 mm, it can handle throughputs ranging from 35 to 60 m³/h compact (56 to 96 t/h wet).

Defining characteristics

- Solid frame designed to serve simultaneously as supporting structure.
- Overload protection by laminated springs incorporated into the end bearings of the rocker arms.
- Feed roller fitted with rocker arms for gap adjustment between 5 and 25 mm.
- Elimination of hard foreign bodies.
- Using two-way screws on the stone rolling and screening process will ensure casting from both sides.



Technical data

TYPE	Impact roller diameter / width mm	Feed roller diameter / width mm	Roller gap mm	Average final grain size * up to approx. mm	Volumetric throughput ** m³/h compact	Throughput capacity ** t/h wet	Power requirement*** kW
TAV 700	500 / 700	500 / 700	5 - 25	50 x 30 x 15	35	56	22 / 22
TAV 800	800 / 800	800 / 800	5 - 25	50 x 30 x 15	45	72	30 / 30
TAV 1000	600 / 1000	600 / 1000	5 - 25	50 x 30 x 15	50	80	37 / 37
TAV 1200	600 / 1200	600 / 1200	5 - 25	50 x 30 x 15	60	96	45 / 45

SCAN ME

Feedstock hardness: 20 - 25 HRC

* Average final grain size as function of feedstock and roller gap
** Volumetric throughput and throughput capacity as functions of feed size, roller gap, type of feed, at normal speeds
*** Power supply required as function of feedstock, feed size, roller gap, volumetric throughput and manner of feed

Subject to technical modification due to ongoing development.

Reducing soft and hard, moist and dry clay clumps with or without rocks to optimum sizes, thanks to hammers exhibiting 48 - 50 HRC hardness levels

Double Rotor Hammer Crusher

KK

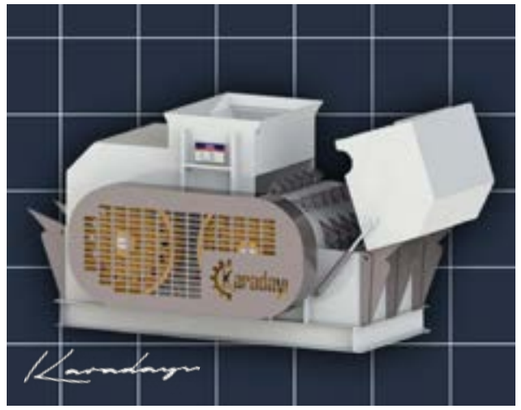
The KARADAYI Double Rotor Hammer Crusher Series

This is a machine of raw material preparation section and used for crushing the material of the size 15-40 cm into fine particles. The machine is used on the material with a humidity of less than 12%. It has double rotors and equipped with moving hammers on the rotors. Exchangeable wear grids are set under the machine in order to control the grain size of the outgoing material.

The internal frame of this machine is covered with wear resistant plates. The material conforms to international safety standards. They are special machines that provide the desired result in the final product with their adjustable sieve structure suitable for working under harsh conditions. Easy assembly can be made with piston covers.

Defining characteristics

- Made-to-measure, wear-optimized knife disks and knife configurations.
- Low maintenance requirement and little wear thanks to for example large-dimensioned shafts running in high-performance self-aligning roller bearings.
- Maximum adaptability. Minimum dust emissions.
- Several options for optimally customer-specific solutions.
- Ergonomic design.
- Quick and easy maintenance.
- Excellent accessibility.
- High production capacity.



It is the most frequently used crushing machine in gold mines, brick and tile industry and coal mines

Technical data

TYPE	Roller diameter/ length mm	Inclusion hardness up to approx HRC	Feed size mm	Final size mm	Volumetric throughput* m³/h compact	Working Humidity % max	Throughput capacity* t/h wet	Power requirement kW
KK	660 / 1000	48 - 50	400 x 400 x 400	0,5 - 3	30 - 35	10 - 12	50 - 60	2 x 110
KK	750 / 1000	48 - 50	400 x 450 x 400	0,5 - 3	35 - 45	10 - 12	60 - 75	2 x 132
KK	1000 / 1000	48 - 50	450 x 450 x 450	0,5 - 3	45 - 55	10 - 12	80 - 90	2 x 160
KK	1000 / 1500	48 - 50	500 x 500 x 500	0,5 - 3	60 - 80	10 - 12	100 - 125	2 x 200

SCAN ME

Subject to technical modification due to ongoing development.

Hardness of hammer material: 48 -50 HRC

* Final size depending sieves holes diameter

* Volumetric throughput and throughput capacity depending on feedstock, approx. sieves holes diameter, type of loading and proportion of impurities

KARADAYI Primary Crusher is the initial crushing machine of the processing system with its reinforced structure

Primary Clay Crusher

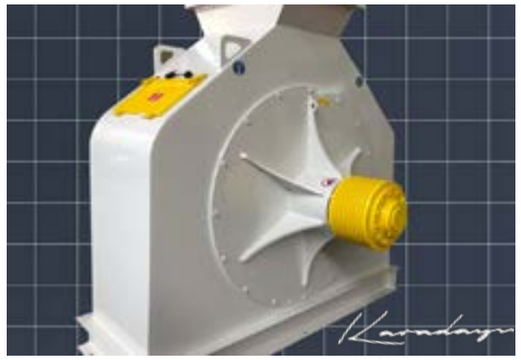
PK

The KARADAYI Primary Clay Crusher Series

This machine is employed to reduce large dry or damp raw materials, typically sized significantly, into smaller dimensions, around 40-50 cm through crushing. The goal is to make the raw material sufficiently small for further crushing in the subsequent crusher. The entire machine is constructed with steel and it operates through a motor, reducer and pulley with overload protection. The materials used adhere to international safety standards. The machine is used on the material with a humidity of less than 12%. It has single rotors and equipped with moving hammers on the rotors. Exchangeable wear grids are set under the machine in order to control the grain size of the outgoing material.

Defining characteristics

- Made-to-measure, wear-optimized knife disks and knife configurations.
- Low maintenance requirement and little wear thanks to for example large-dimensioned shafts running in high-performance self-aligning roller bearings.
- Maximum adaptability. Minimum dust emissions.
- Several options for optimally customer-specific solutions.
- Ergonomic design.
- Quick and easy maintenance.
- Excellent accessibility.
- High production capacity.



Primary Crusher is the first crusher and makes the incoming raw materials smaller for the next crusher.

Technical data

TYPE	Roller diameter/ length mm	Inclusion hardness up to approx HRC	Feed size mm	Final size mm	Volumetric throughput* m³/h compact	Working Humidity % max	Throughput capacity* t/h wet	Power requirement kW
PK	1200/ 740	48 - 50	400 x 400 x 400	0,5 - 30	20 - 25	10 - 12	30 - 40	75 - 90
PK	1200 / 1000	48 - 50	500 x 500 x 500	0,5 - 30	25 - 30	10 - 12	40 - 50	110 - 132

SCAN ME

Subject to technical modification due to ongoing development.

Hardness of hammer material: 48 -50 HRC

* Final size depending sieves holes diameter

* Volumetric throughput and throughput capacity depending on feedstock, approx. sieves holes diameter, type of loading and proportion of impurities

KARADAYI introduced the box feeder in 1970 and has continually optimized it since. Globally utilized across various industries, KARADAYI-built box feeders play a crucial role in feeding, proportioning, buffering and storing unprocessed raw materials, prepared bodies, additives and waste materials

Box Feeders

FXBS/BS

The KARADAYI Box Feeder Series

A box feeder works better when it's well-matched to the stuff it's dealing with - things like how big the bits are, how wet they are and how tightly packed. It also needs to play nice with the equipment that comes next. KARADAYI thought about all this and came up with three types of box feeders. The Standard-type BS box feeders handle regular raw materials and prepared stuff. If your materials are chunky and tough, go for the heavy-duty FXBS box feeders.

For everyday and heavy-duty use, especially with smooth-flowing materials, there are rubber-belt box feeders.
Using a KARADAYI box feeder means you're benefiting from their experience in setting up lots of systems for all kinds of needs. They've fine-tuned and proven special machine parts that are now ready to fit into new systems.

Defining characteristics

- Specially designed metal-slat belts contribute to achieving maximum material density and high discharge rates.
- Wide-front boxes ensure a reliable discharge, even for poorly flowing raw materials and bodies.
- Paddle blades and infinitely adjustable belt drives ensure a uniform material flow.
- Different types of paddle blades are available to cater to materials with diverse requirements.
- The system includes a reliable box seal and a pretensioned, hinged belt scraper.
- The inclusion of an automatic lubrication unit ensures smooth and service-reduced operation.

Paddle shaft with cranked and serrated blades for crumbly or preprocessed materials, made from HARDOX 600.

Technical data

TYPE	Axle centers m	Overall length mm	Internal discharge width/height mm	Capacity without hopper m³	Volumetric throughput m³/h bulk	Power requirement belt drive kW
BS	2270 / 2770 / 3270 3770 / 4770 / 5470	3500 / 4000 / 4500 5000 / 6000 / 6700	1000 / 650	0.9 - 4.1	10 - 50	2.2 - 4
FXBS	5470 / 6470	6700 / 7700	1250 / 650 1500 / 650	1.2 - 5.4 2.7 - 8.5	15 - 60 20 - 80	2.2 - 7.5 2.2 - 11

SCAN ME

Subject to technical modification due to ongoing development

KARADAYI's circular screen feeders play a crucial role in efficiently combining preparation machines and feeders for ceramic processing. It would be challenging to imagine ceramic processing without them

Circular Screen Feeders

DK

The KARADAYI Circular Screen Feeder Series

KARADAYI offers circular screen feeders, also known as clay shredders, designed for various throughput rates and applications. Among these, models for low throughputs are particularly suitable for precise feed proportioning in the production of wall, floor and roof tiles, whiteware, and technical ceramics. For medium throughput capacities, circular screen feeders are utilized for homogenizing, buffering and proportioning in the brick & tile, stoneware (vitrified clayware), and refractory industries. Additionally, there are circular screen feeders designed for mixing, proportioning, homogenizing and buffering functions across the ceramic industry, especially in the robust brick and tile sector.

Both basic models showcase the superior design features of KARADAYI's circular screen feeders. Notable characteristics include a screen casing equipped with screen plates bolted onto appropriate supports around the entire trough. Twin scrapers continuously scrape the clay at rates dependent on their rotation speed.

Defining characteristics

- High throughput capacities are achieved with low energy consumption, thanks to the optimized angle of incidence between screens and scraper.
- New energy-efficient drive technologoy for high demands.
- The collecting pan is powered by a separate back-geared motor, ensuring smooth operation, clean stripping, long service life, and low maintenance costs.
- Longer life thanks to strong body structure.
- Sieve holes can be adjusted according to the material to be processed.

The updated wear concept stands out with smart design details, application-specific variations, and simplified assembly.

Technical data

TYPE	Collecting pan diameter mm	Trough capacity incl. hopper[1] approx. m^3	Volumetric throughput m^3/h compact	Throughput capacity t/h wet	Power requirement main drive kW
DK 1600	1.600	2,0	25 - 30	40 - 50	55
DK 1900	1.900	3,0	32 - 50	50 -80	75

Subject to technical modification due to ongoing development.

SCAN ME

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