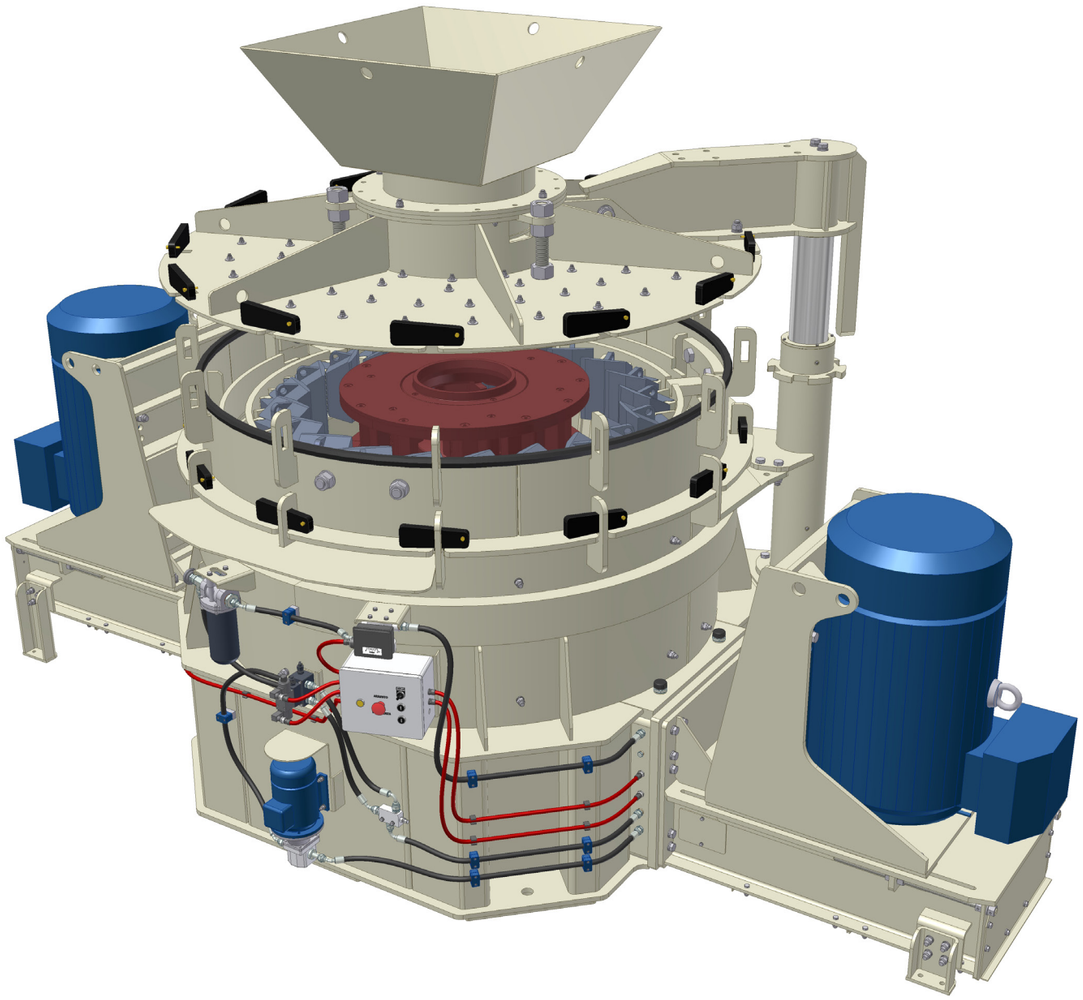
T-MAV 21

VERTICAL SHAFT IMPACT CRUSHER

SOLUZIONI PER LA CAVA

THE SUPERIOR PERFORMANCE AND INCREASED EFFICIENCY INCREASE YOUR PROFITS

The vertical shaft impact crusher ICM T-MAV 21 is proverbial in the world industry for aggregates preparations for its performance and effieciency.
It allows to have all the benefits of impact crushing (cubic products, high production, low investment cost and wear) with a wide range of materials, from limestone to granite.
The T-MAV 21 is normally used in the production cycle as a tertiary, quaternary and is some cases as a secondary impact crusher: with the closed rotor it allowes the crushing of pieces from 1 to 30 mm while with the open rotor it can crush up to 75 mm. The material is fed from above and falls on the center of the rotor that accelerates it against the avils where it fractures by impact. This type of crushing breaks up the rock along the natural lines of fracture and the weakest planse, producing a very cubic shape of the inert and often improving its resistance.
The T-MAV 21 with the new ICM six-doors rotor that has increased fines' production and drastically reduced wear, allows to crush part of the 2-4 mm fraction that is normally found in excess in the 0-40 mm sand, making it the ideal machine in the production process of sand with constant fineness module. If you add to this the possibility of using fine, dry or damp materials in the feed, you can see how versatile this machine is, even in the case of vary restrictive specifications. The great flexibility of use, given both by different configurations of the crushing chamber and by the variation in the rotation speed of the rotor, with the possibility of installing from 120 to 400 kW of power, allow to meet the needs of users in terms of quality or quantity, without ever having to change the impact crusher.
The wear and labour costs of this machine are drastically reduced not only thanks to the small number of parts that make up the rotor and their ease of replacement, but also thanks to the removable anvil ring for quick change of the same. The high quality of the alloys that make up the wear parts is also worth noting.
Other key elements of ICM T-MAV 21 are the robustness of the mill structure, the simplicity of construction, the control of vibrations through a vibroswicht, the control of lubrification to the bearings with a state flow, the generous sizing of the same and the hydraulic opening of the cover.



MAIN FEATURES

FOUR CRUSHING CHAMBERS TECHNOLOGICALLY ADVANCED AND INTERCHANGEABLE

This vertical shaft impact crusher offers four technologically advanced and interchageable crushing chambers. Each chamber can be used at different speeds to obtain a tailor-made crusher for specific applications, for particular materials and product sizes required, including the production of sand or grit, for the correction of material shape, for the recovery of waste materials and for industrial processes. The result is extraordinary versatility and great flexibility of use that allows to meet all the needs of users in terms of quality or quantity, without ever having to change the impact crusher. It shoould be noted that access to the crushing chamber is facilitated by the lid lift. It can be added to all models, even those already on site.

ANVIL ARMOR REPLACEMENT SYSTEM REDUCES MACHINE DOWNTIME

An anvil replacement system is available on request to facilitate the removal of the upper ring with anvils. This arm is attached to the lid's lift. By adding an electric winch, the table, the rotor, the anvil ring or the entire upper part can be lifted with ease. Anvils can also be lifted off the ground, reducing time and effort. An anti-rotation stop prevents the lift unit from rotating. To highlight that the rotation is manual: it raises the group so as to free it from the stop bar.

MAINTENANCE IS EASY WITH QUICK CHANGE OF ANVILS

Quick and easy changes are possibile thanks to the removable upper anvil ring, a patented system. The long and tedious cleaning of the accumulated material is eliminated: the upper ring is simply tipped over by dropping both the accumulated material and the anvils. The new anvils can be mounted on the groung reducing time and effort, as the upper ring allows rotation of the anvils without removing the lid.

WHY CHOOSE A T-MAV-21?

THE ANSWERS TO THIS QUESTION ARE SO MANY...

• Because the T-MAV 21 transforms problems into resources: closing at 2 mm, this mill transforms the classes of excess aggregates into 0-2 mm sand, including the notorious 4-8 mm, the nightmare of all quarry operators, who are able to crush it only by using the bar mill, with exaggregated energy and wear costs in the face of ridiculus production.

• Becouse it produces the grit with the best possible shape: the breakage of the inert occurs along the natural fracture planes and the violence of the impact eliminates the fragile, elongated and angular parts. The cubicity and flattening index of the product of the vertical shaft impact crusher are unattainable by other mills. It produces aggregates with 95% of the surface crushed and reclaims both the material not completely crushed in the previous stages and the fragile one by nature, greatly improving the “Los Angeles”.

• Because this impact crusher can vary its production capacity from 50 ton/h to 300 ton/h simply by increasing the motorization, so that in a second time you can double the flow simply by doubling the installed power.

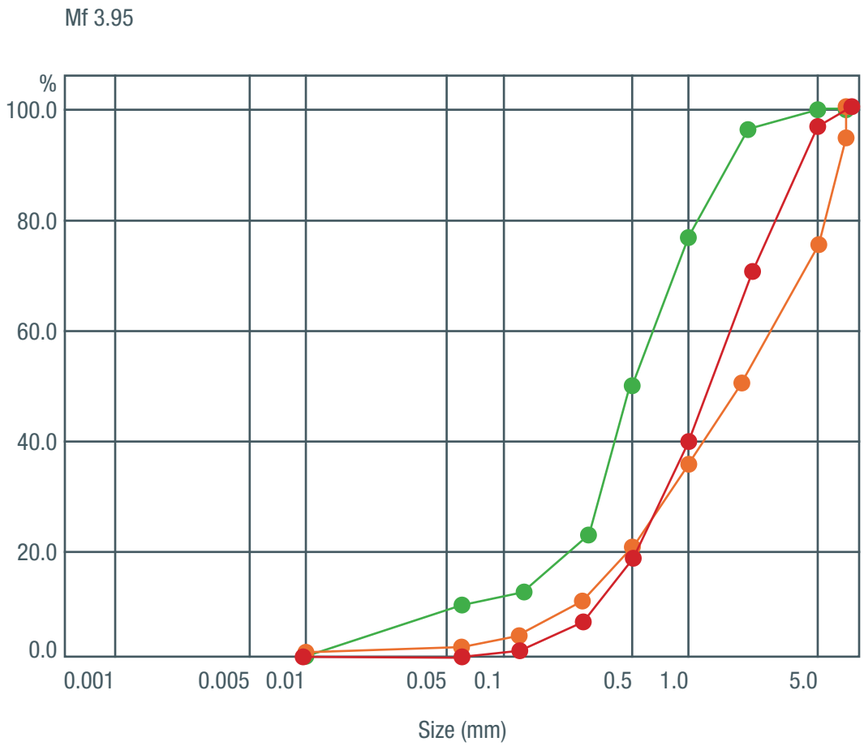
• Becouse the impact crusher works both dry and wet material without packing and clogging, at most it will be necessary to add a little water in the feed to make the material flow better.

• Becouse it allows great energy savings. Due to its characteristics, it can have much higher capacities than traditional mills of the same weight. It is well known that part of the power, made available by the motor, is absorbed by the mill for its no-load operation and the rest is transformed into energy for crushing.
Since each vacuum mill consumes approximately 50 kW, it is clear that, with the same installed power, using only one impact crusher insted of three, the plant has almost 100kW more to use for crushing insted of using them to operate additional vacuum mills.

• Becouse it significantly reduces installation costs. This impact crusher has the ability to take the size form secondary crushing and transform it into sand with very high flow rates. This means that with only three crushing stages the plant closes with sand, reducing the number of crushing stages; moreover, with high flow rates the number of tertiary impact crushers is very low even for high production plants. Reducing the number of crushing stages and the number of machines means reducing the number of conveyor belt, the number of support structures, simplifying the electrical system and so on.

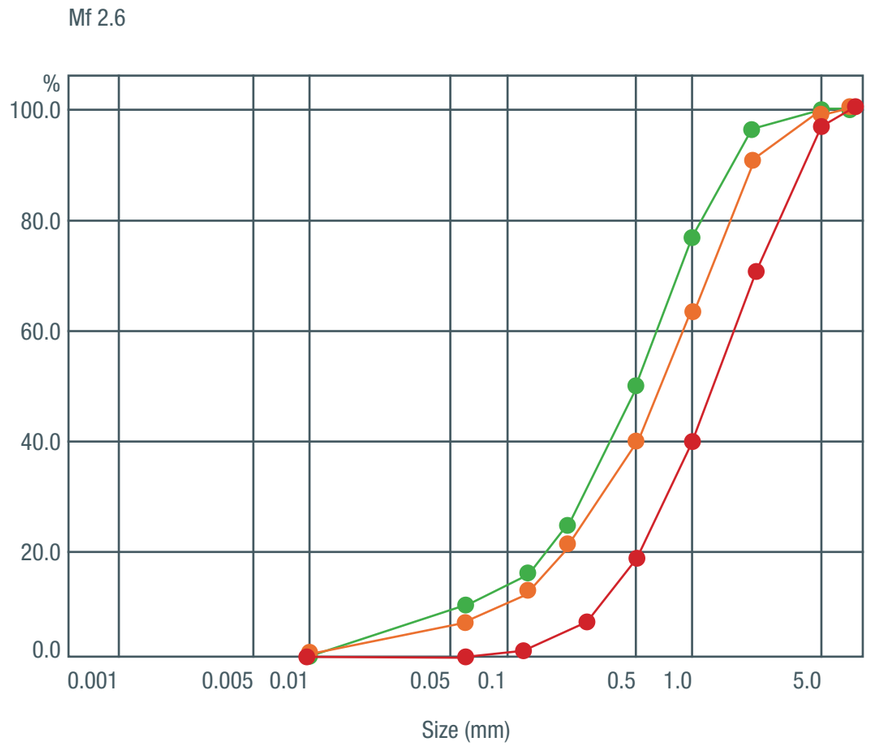
TRADITIONAL CRUSHING

This first graph shows the grain size curve of aggregates processd with an impact crusher. As you can see, while the fine sizes are in line with the ideal curve (minumum/maximum), the large size are quite clearly detached from it.



CRUSHING WITH T-MAV-21

This second graph shows the grain size curve of aggregates processed with T-MAV 21. You can see very clearly how the curve of the material perfectly follows the ideal curve (minimum/maximum), both for fine and large sizes. It is therefore clear how much this impact crusher affects the quality of the material.

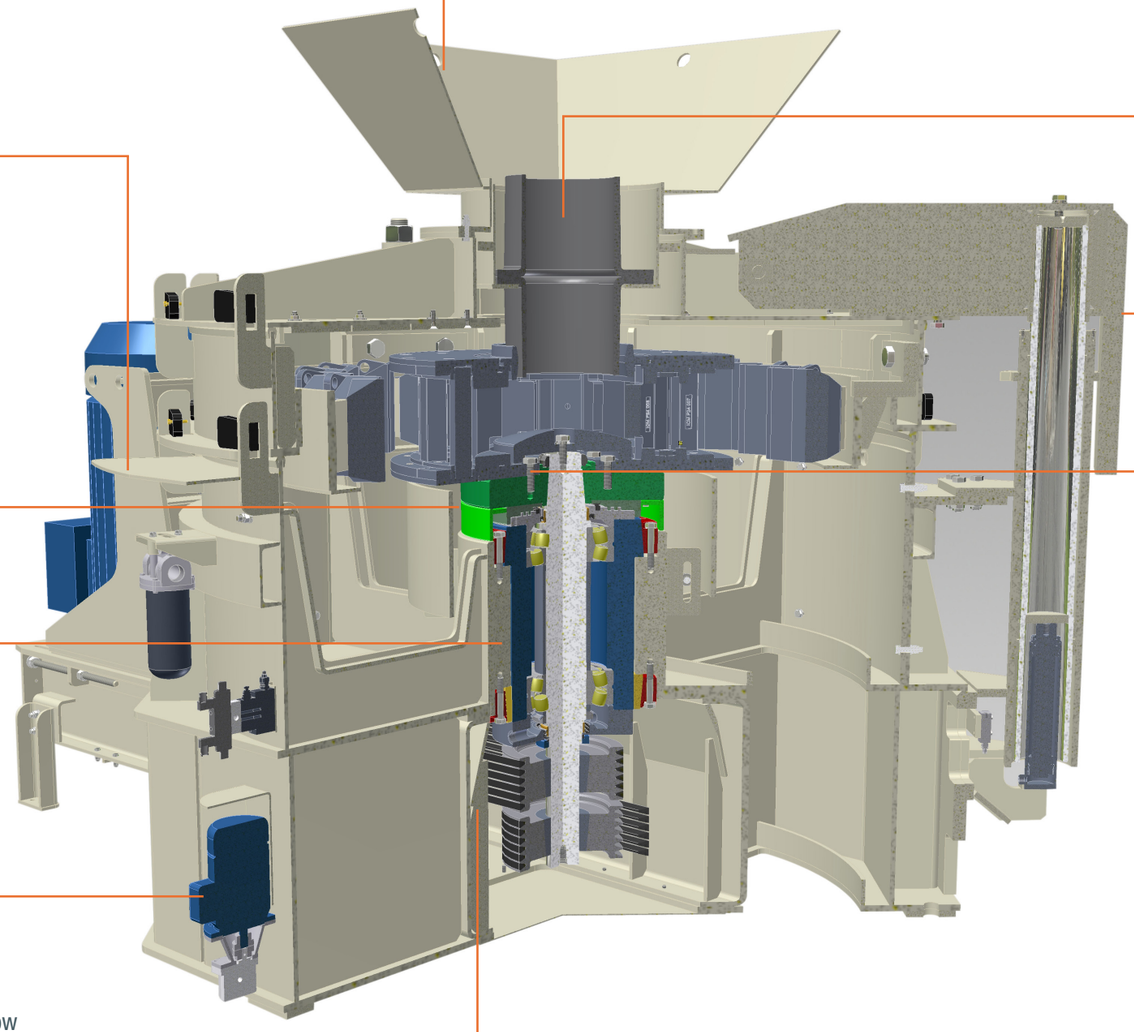


LATEST GENERATION TECHNOLOGY

IN THE T-MAV 21 NO DETAILS ARE LEFT TO CHANCE

A large symmetrical hopper can receive material from all sides.

Patented dissassembly of the upper ring for easy armor replacement eliminates manual cleaning of the crushing chamber. The simple rotation of the entire ring evens out the wear of the armor. Quick change of chrome alloy ejectors on the table for long life.



Adjustable feed tube for wear.

The stepped support allows the armor to be positioned at different heights for uniform wear.

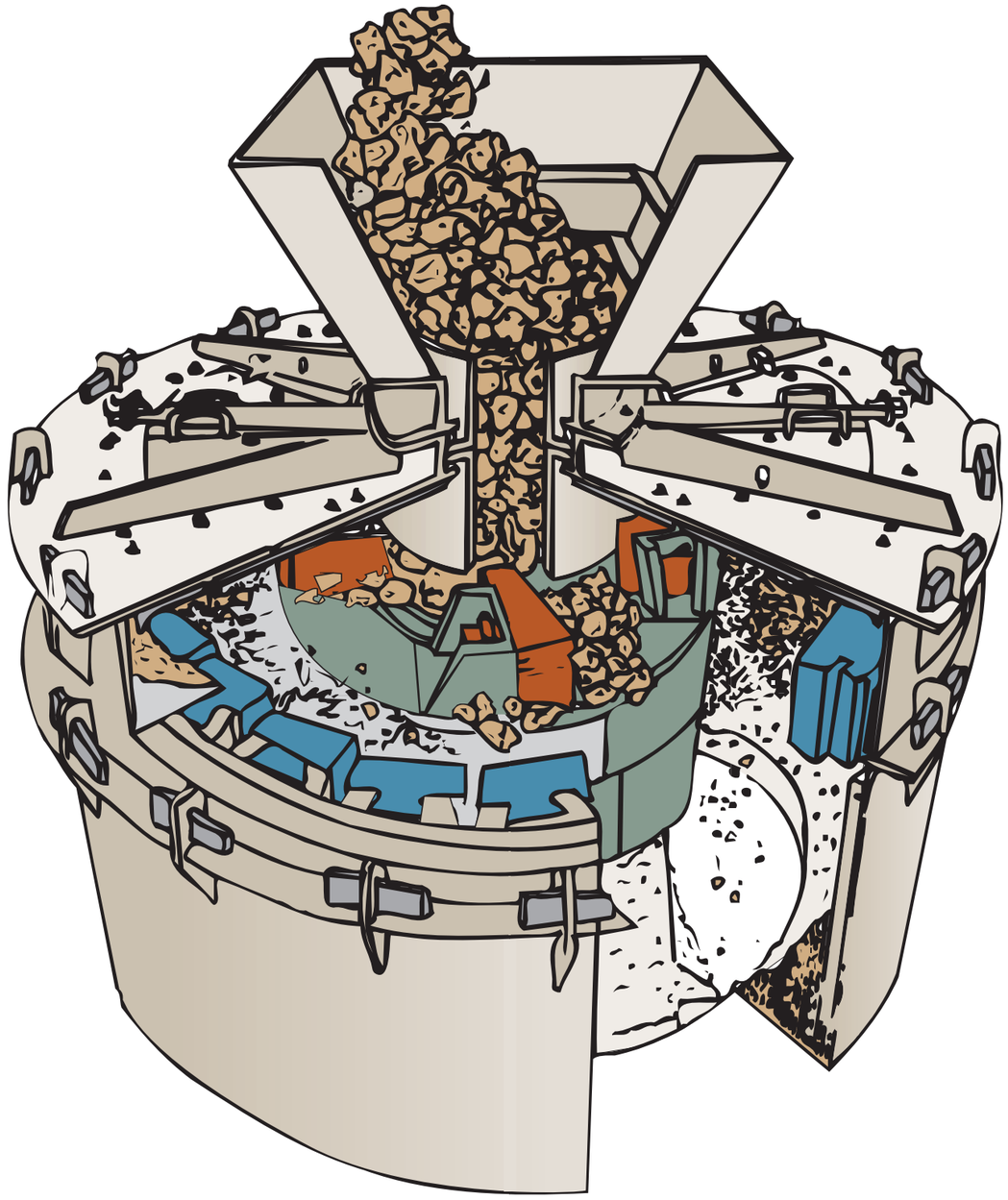
A massive flywheel guarantees vibration-free action. The table and the rotor, which are interchangeable, are bolted to the flywheel.

The inner chember of the crusher is protected by stone case armors to ensure a long protection to the machine.

Choice of four interchangeable crushing chambers.

The lubrication unit consists of a flow switch, a filter and a sample take-up unit.

The transmission is completely enclosed in the base of the crusher for better protection.



THE AUTONOMOUS LUBRICATION SYSTEM PROTECTS VITAL COMPONENTS

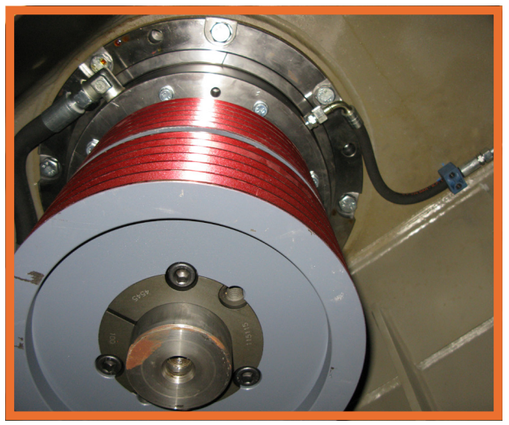
The lubrication system sends a rain of oil to the vertical and pinion bearings. The lubrication system includes standard: oil filter, oil pump with electric motor, thermometer, socket for the samples and heating elements. The flowmeter sounds a siren in case of insufficient flow and opens a switch that automatically stops the crusher. A vibration detector can be connected to stop the crusher in unbalanced conditions.

BEARINGS AND SHAFT FOR HIGH LOADS INCREASE THE PERFORMANCE

The bearings, which are sized for heavy loads and mounted on a very strong shaft, withstand axial and unbalanced loads ensuring excellent performance even in the worst conditions. The splash lubrification of the shaft and bearings ensures a long service life. The oil flow is controlled by a flow switch which, in the event of fault, triggers a siren to reduce the possibility of serius faults.

MOVABLE UPPER RING FOR SIMPLE MAINTENANCE

The modular construction of the T-MAV 21 allows easy removal of the top for anvil replacement, while the anvil ring is height-adjustable for uniform consumption of the entire anvil.

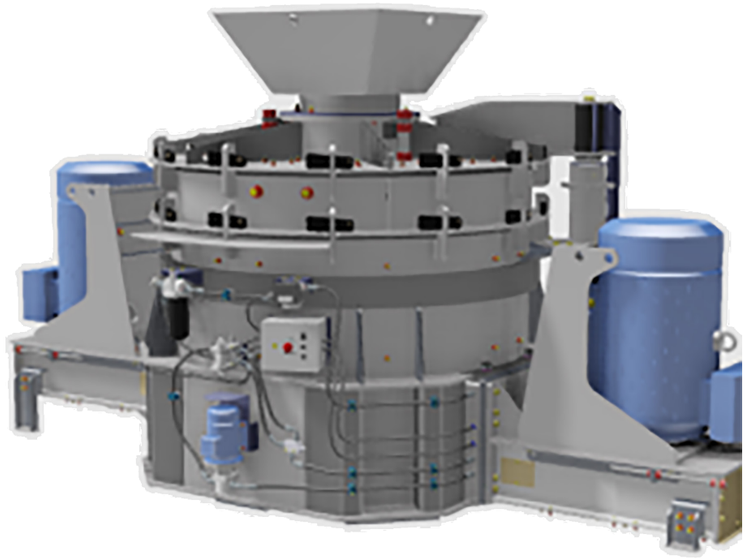


TRANSMISSION GROUP

The T-MAV 21's transmission unit includes a shaft, bearing and pulley unit, housed and protected in a well-dimensioned transmission case and splined to the machine's cantilevered 0 structure, thus minimising vibration. In addiction, the clamped fastening system simplifies disassembly.

CHOICE OF FOUR CRUSHING ROOMS TECHNOLOGICALLY ADVACED AND ECHANGEABLE

ICM offers a range of interchangeable crushing chambers for its vertical axis crusher.
Each chamber can be used with different speeds to obtaind a tailored crusher for specific uses, for particular materials and product sizes required, including the production of sand or grit, for material shape correction, for the recovery of waste materials and for industrial processes.



STONE BOX ROTOR

This configuration minimizes wear costs. The material fed into the rotor impacts other material reducing wear and improving both the shape and resistance of the aggregates produced. This choice is excellent for abrasive materials. This configuration provides an excellent reduction and finds its best application with flow rates of 60/100% of the maximum. Special carbide coatings on the rotor eliminate the need for welding coatings and allow the use of anvil-armour.

ROTOR WITH ARMORS- ANVILS

This configuration combines the reduced wear of the closed motor with the increased reduction of the ring with the anvil armour. The material reduction is similar or better than that of the open rotor and anvils. Chrome steel armour protects the outside of the rotor from material bouncing off the anvils and is easy to replace. The full flow of material through the rotor gives improved efficiency and less anvil waste. This choice allows you to easily switch to the rotor/stone box configuration and easily withstands flow rate variations.

SIX-ELEMENT CLOSED TABLE WITH ANVIL-ARMORINGS

This choice increases the reduction ratios, simplifies maintenance and easily absorbs changes in flow rate. With the same power and speed, the production of grit increases. The low power requirement and the long service life of both ejectors and anvils reduce operating costs. A high production option is available upon request.

OPEN TABLE AND ARMORED ANVILS

This configuration is available with the variant of three, four or five ejectors (materials) and anvils. It is the one that allows the highest reduction ratios, the highest flow rate and the largest size in feed. This requires less power, is the easiest to maintain and works with large variations in both flow rate and feed size. More ejectors improve their life at a constant speed and produce a finer material.

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