

Industrial Solutions

# VERTICAL SHAFT IMPACTOR

Suitable for Producing Concrete  
Aggregates, Manufacturing Sand,  
Road Base Materials, Fine Particles



thyssenkrupp



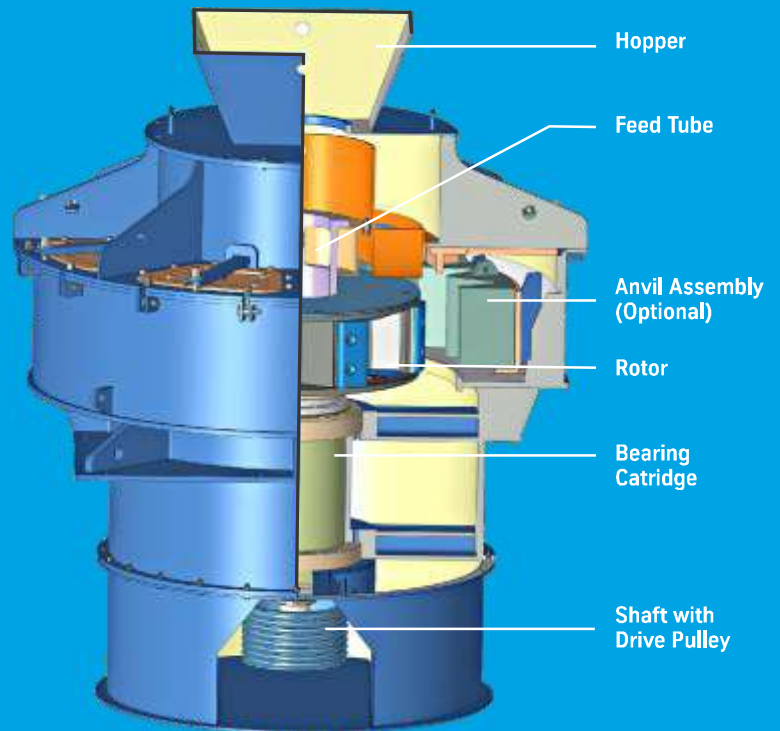
# VERTICAL SHAFT IMPACTOR

## An Ideal Tertiary Machine for

- Concrete Aggregates
- Manufactured Sand
- Asphalt Mixing
- Road Base Materials

## FEATURES

- Easy portability and quick installation with minimum support structures.
- Variable capacity models for tertiary applications.
- Rock-on-Rock technology minimizes wearing of parts, hence minimum operating and wear costs.
- Excellent cubicle shape product.
- Consistent product gradation.
- Low investment.
- Simple maintenance.
- Quicker replacement of worn out parts - lesser downtime.
- Retro-fit for conversion to Rock-on-Steel for less abrasive rocks



## HOW IT WORKS

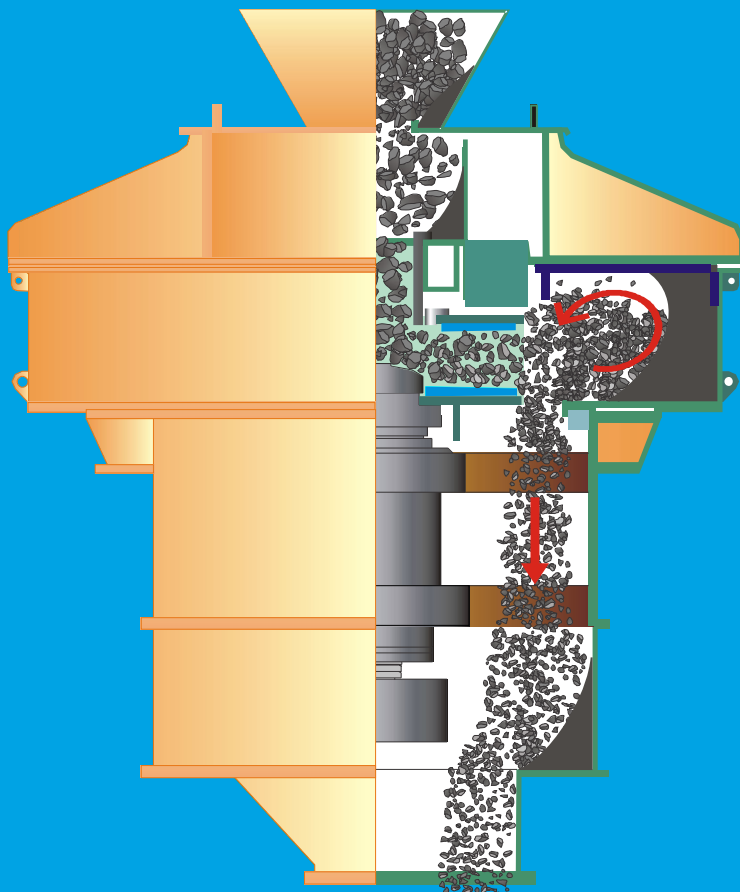
The mechanism involved is very simple. The rock to be crushed is fed through the hopper and a feed tube onto the center of a closed rotor. The rotor spinning at high speed throws the material with a great centrifugal force. When the accelerated rock hits the stationary rock-box, known as Rock-on-Rock High Performance principle, it breaks by impact along the natural fault lines resulting in a cubical shaped product, which falls freely by gravity on to a conveyor belt below.

The Rock-on-Rock principle simulates the nature's way of impact and grinding that occurs in generation of particle shape in natural sand.

The VSI crusher thus comes out a winner as producer of quality aggregates as well as Manufactured Sand, which is very close to the natural sand in particle shape and gradation.

## RETRO-FITS FOR ROCK-ON-STEEL

tkll offers anvil rings and rock box combinations to convert the Rock-on-Rock to Rock-on-Steel models for lesser abrasive rocks to get higher product yield. The retro-fits can be quickly installed in the existing Rock-on-Rock models with minimum changes in the machine, which can be conveniently done at site. The retro-fits give the flexibility to change-over between Rock-on-Rock and Rock-on-Steel applications to meet the differing product needs.





### QUALITY STANDARDS FOR AGGREGATES

The aggregate quality specifications for road building under Ministry of Road Transport & Highways (MORT&H) and NHAI calls for a total combined flakiness and elongation index of <30%. This specification is considered to be world class by crushing equipment manufacturers and quarry operators.

Quality of aggregates produced depends on many factors like: type of stone crushed, reduction ratio, crushing chamber design, choke feeding, comminution properties etc.

The best way to get good shape in aggregate is by allowing the rock to break on its natural cleavages under free impact conditions. This is the principle of crushing in a Vertical Shaft Impact Crusher.

### HIGH PERFORMANCE

tkii VSI is a marvel of solid dynamics with high velocity impact crushing.

The closed rotor is a high technology piece of work to give a greater durability in a high abrasion causing environment of speeding material. The crushing chamber with rock-box is skillfully engineered to provide a high amount of attrition coupled with free impact, and to handle high volumes per kW of power.

### SYSTEM SUPPORT

Our application engineers will analyze your crushing tasks. They develop alternative configurations and assist you in arriving at an economical solution. Using their in-depth knowledge they will select appropriate equipment that would guarantee you the highest quality end product.

The crushers are manufactured to stringent quality standards. Each machine is vigorously tested on the shop floor before shipment to the user.

Our commissioning engineers will help you to a smooth integration of the machine into your plant.

### SPARE PARTS AND SERVICE

Our designers are constantly innovating the methods and metallurgy vis-à-vis different rock characteristics to improve the life of wear components. We are committed to assist all our users to optimise the operating cost per ton of production in their crushing task.

As your long-standing and reliable partner, we guarantee delivery of original quality spare parts. Our service engineers do professional change of parts that are subject to wear and tear. They train your operators on the job. They do periodic inspection of the machine to ensure its high efficiency and output.

### QUICK AND VIBRATION FREE INSTALLATION

A great care has been taken in developing a factory made crusher support frame for quick installation. The dynamically balanced machine is completely shop-assembled on

an integral base-frame with a motor mount. The whole assembly is placed on a sturdily designed steel skid for a vibration free installation and less foundation costs.

### OUR STANDARD SUPPLY

The machine will be delivered as a complete and stand alone unit reducing the burden on the user to look for any add-ons before installation. The standard supply includes:

- Feed Spout
- Discharge chute
- Main machine with integral base-frame
- Motor mount
- Machine pulley, motor pulley and V-belts
- Skid frame
- Electric motor (optional)
- Control panel (optional)

### INFORMATION REQUIRED FOR VSI SELECTION

- Material Type, Abrasive Index, Feed Size and Gradation, Bulk Density and Hardness
- Capacity in TPH
- Product Fractions Required
- Proposed Plant Configuration



Model No.	2503	3003	3503	4003	4503	5003
Max. Size of Feed (mm)	25	40	40	40	40	40
Rotor Size	600	760	900	1000	1000DR	1200
Power (kW)	45/55	90/110	132/185	200/370	370/450	500/800
Capacity (tph)	40 - 50	75 - 110	120-200	200-350	320 - 550	550 - 800

Figures given vary with applications. For final selection, refer your requirements to us. The machines are under continuous development. The parameters are subject to vary. For drives more than 200kW, twin drive is recommended.

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thyssenkrupp

We offer you a comprehensive range of equipment and services. Wherever you do crushing, screening and conveying, either hard rocks or mineral ores, with thyssenkrupp machines and systems, you can rely on our uncompromising quality, workmanship, and unflinching support. You will find thyssenkrupp a competent and reliable partner in all your project tasks.

## PRODUCT RANGE ( PST Services )



### Single Toggle Primary Jaw Crusher

Models PST9060 (36"x24"), PST1108 (44"x32") and PST1209 (50"x38");  
Capacity range: 70-600 TPH

### Secondary Gyrotory Cone Crusher

Model 3000 GLH for secondary crushing, feed opening suitable for coarse and extra coarse crushing; Capacity range: 250-350 TPH



### Roller Bearing Cone Crusher

Model 3000 RBC for secondary & tertiary crushing, feed openings suitable for fine, medium, coarse and extra coarse crushing from 60-200 TPH

### 'DuraCone SRM' Crusher

Models SRM400 and SRM500 for Secondary & Tertiary Crushing, feed opening suitable for fine, medium, coarse and extra coarse crushing from 250-700 TPH of hard stones.



### VSI Crusher

Models NP2503, NP3003, NP3503, NP4003 & NP4503;  
Capacity range: 40-550 TPH

### Vibrating Grizzly Feeder

800 mm, 1000 mm, 1200 mm, 1350 mm and 1500 mm width and different lengths to suit; Capacity range: 50-1000 TPH



### Vibrating Screen

'MaxFlow' & 'HiFlow' series inclined screens and 'Tripleks series horizontal screens of 2-Deck, 3-Deck & 4-Deck Models of varying sizes

### Spiral Classifier

Spiral sizes from 600 to 2100 mm dia for raking capacity from 15 TPH to 300 TPH for washing-classifying-dewatering plants



### Mobile Plants

Tyre-mounted Primary Jaw Stations Model NM7550J, NM9060J, NM1108J and NM1209J; Secondary Cone Stations Model NM3000RBC and NM3000GLH/RBC-TC; Tertiary VSI Station Model NM3003VSI, NM3503VSI, NM4003VSI and NM4503VSI-TD; Capacity range: 90-300 TPH

### Stationary Plants

Turnkey crushing & screening and bulk handling plants from 70-500 TPH for aggregates and mineral ores, and manufactured sand plants



### Belt Conveyors

All sizes and capacities for cement plants, thermal power stations, mining and process plants.

### Concrete Delivery Systems

Belt conveying and placement of concrete in dam projects;  
Capacity range 1000 TPH and above

