

Industrial Solutions

# TITAN<sup>®</sup> double-shaft hammer crushers

The perfect crushers for  
the cement industry



thyssenkrupp





# Our solutions for the hardest jobs

When it comes to the crunch, crushing systems from thyssenkrupp Industrial Solutions offer the ultimate in performance, reliability and cost-effectiveness. With us as your partner, you can expect the optimum, customized solution for even the most demanding of jobs.

Call on our services and you can count on a wealth of experience and constant innovative drive. As a leading manufacturer of machines and plants for the mining, quarrying, aggregate and cement industries, we supply well-engineered crushing systems that have stood the test of time in the hardest service conditions. At the same time, we invest in intensive research and development work to make proven solutions even better and to adapt to changing demands.

Whether a standard or special design thyssenkrupp Industrial Solutions can provide the optimum solution to meet your needs. Our flexibility is a major plus: We act on your specific requirements and adapt our systems to suit the material to be crushed and the product size required, optimizing proven technology according to your specifications. The benefits of our systems are numerous: high throughput coupled with low costs, minimum maintenance, ease of operation and maximum reliability.



From top:

Mobile double-shaft hammer crusher installation on transverse crawler tracks at Holcim, Höver Works, Germany  
**Type** TITAN® 56D75  
**Throughput rate** 500 t/h

Stationary double-shaft hammer crusher installation at Cemex, San Pedro de Macoris, Dominican Republic  
**Type** TITAN® 80D100  
**Throughput rate** 1,300 t/h

Mobile wheeled double-shaft hammer crusher installation at Qassim Cement Company, Buraydah, Saudi Arabia  
**Type** TITAN® 60D160  
**Throughput rate** 900 t/h



# Fields of application and design characteristics

TITAN® double-shaft hammer crushers are the perfect crushers for the cement industry. Typical feed materials are moist limestone, moist marl, clay, chalk, gypsum and similar raw materials.

In a single step, TITAN® double-shaft hammer crushers crush run-of-mine (ROM) material to the required product size for either roller mills or ball mills. TITAN® double-shaft hammer crushers are renowned for their reliability and their state-of-the-art, heavy-duty design that ensures a long service life.

The feed material is fed to the crusher continuously via an apron feeder. First, large lumps of feed material are precrushed between the rotors. Further comminution takes place on the anvil, before the finished product is sized on the discharge grate.

Depending on the job in hand, our TITAN® crushers can achieve throughput rates from 250 t/h to over 3,000 t/h

From left:

Mobile double-shaft hammer crusher installation on transverse crawler tracks at Saudi Cement Company, Ain Dar, Saudi Arabia

**Type** TITAN® 70D160  
**Throughput rate** 1,000 t/h

Mobile double-shaft hammer crusher installation on hydraulic walking mechanism at Riyadh Cement Company, Muzahimiyah, Saudi Arabia

**Type** TITAN® 80D160  
**Throughput rate** 1,300 t/h

Semi-mobile double-shaft hammer crusher installation at HeidelbergCement AG, Burglengenfeld, Germany

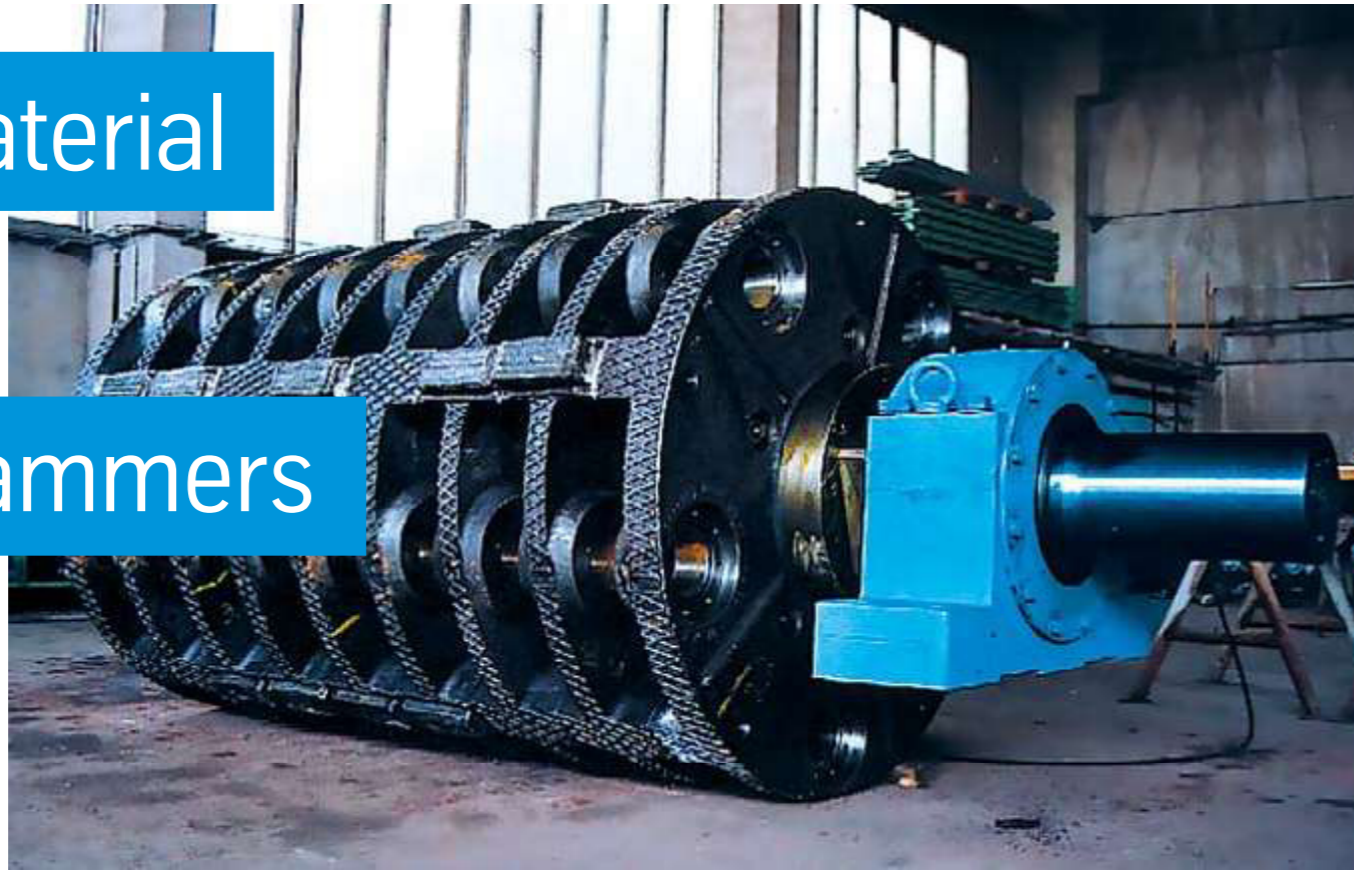
**Type** TITAN® 80D160  
**Throughput rate** 1,600 t/h





# Perfect material thanks to rotating hammers

In double-shaft hammer crushers, the crushing of the feed material is mainly performed by the rotating hammers between the rotors and on the anvil.



It is important to note that the material is not “ground” on the grate baskets. The product size is regulated by different-sized gaps, allowing raw material to be produced for either ball mills (0/25 mm) or roller mills (0/80 mm).

#### Five-axle rotor patented by thyssenkrupp

Based on its long operating experience, thyssenkrupp has developed a new rotor concept for its TITAN® crushers with a hammer circle diameter of 2 meters. The number of hammer axles has been reduced from six to five. This modified design optimizes penetration of the lumps of material into the hammer circle, resulting in a quick, aggressive crushing process. This new system prevents the stones from “gathering” on the rotor and blocking the crusher. In addition, with the new geometry of the pentagonal rotor shafts and the modified discs, it has been possible to increase the weight of the hammers, resulting in greater crushing forces and an optimized wear volume of the hammers. You thus benefit from a higher throughput rate coupled with lower operating and maintenance costs.



From top:

Five-axle rotor for a TITAN® crusher, type 80D160

TITAN® double-shaft hammer crusher with grate basket carrier

Pentagonal rotor shaft for a TITAN® crusher, type 60D160

#### Hammer axle extraction device

To reduce maintenance time, every TITAN® double-shaft hammer crusher is equipped with a hammer axle extraction device that allows the hammers to be changed completely in only one shift. Today, thyssenkrupp TITAN® crushers are equipped with cast or forged hammers that are tailored to the respective job in hand in order to reduce wear and extend their service lives.

#### Grate basket trolleys

It is very easy to change the grate baskets under the rotor of TITAN® crushers as the shells are fitted with side doors which can be opened wide to allow a hydraulically operated grate basket trolley to be used.



From top:

Hammer axle extraction device for TITAN® crusher, type 96D180

TITAN® crusher, type 80D160, with hammer axle extraction device

Grate basket trolley



# Technical data



The given data are intended as a guide.

These data depend on the crushing job (feed characteristics, product requirements) and the crusher configuration. Throughput data for the given crushing job can be defined if required.

To keep pace with technical progress, we reserve the right to make improvements to the various machine types without prior notice.

TITAN® crusher			
Type	Inlet opening	Rotor diameter x width	Average throughput grate opening 30 – 90 mm
	[mm]	[mm]	[t/h]
40 D 50	2,350 x 1,290	1,320 x 1,340	180 – 280
48 D 50	2,350 x 1,510	1,320 x 1,560	220 – 320
56 D 50	2,350 x 1,730	1,320 x 1,780	260 – 370
48 D 75	2,700 x 1,280	1,600 x 1,340	300 – 430
56 D 75	2,700 x 1,480	1,600 x 1,540	350 – 500
64 D 75	2,700 x 1,680	1,600 x 1,740	425 – 650
72 D 75	2,700 x 1,880	1,600 x 1,940	500 – 750
72 D 100	2,850 x 1,970	1,800 x 2,030	600 – 900
80 D 100	2,850 x 2,180	1,800 x 2,240	700 – 1,100
88 D 100	2,850 x 2,390	1,800 x 2,450	800 – 1,200
60 D 160	3,100 x 1,850	2,000 x 1,920	900 – 1,350
70 D 160	3,100 x 2,150	2,000 x 2,220	1,050 – 1,500
80 D 160	3,100 x 2,450	2,000 x 2,520	1,250 – 1,700
90 D 160	3,100 x 2,750	2,000 x 2,820	1,500 – 2,100
100 D 160	3,330 x 3,000	2,000 x 3,120	1,750 – 2,400
96 D 180	3,900 x 2,760	2,400 x 2,840	1,750 – 2,400
108 D 180	3,900 x 3,100	2,400 x 3,180	2,000 – 2,800
70 D 220	3,700 x 2,550	2,200 x 2,520	1,950 – 2,750
80 D 220	3,700 x 2,890	2,200 x 2,860	2,250 – 3,150

# Our services keep things running smoothly!

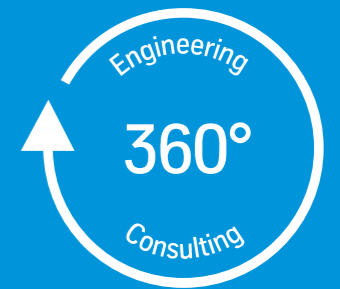
We offer our customers not only optimum, customized technical solutions, but also comprehensive, tailored services ranging from the engineering of a crushing plant to their operation, and modification if needed.

We usually start out by analyzing the storage areas and the feed material. Using state-of-the-art processes we characterize the respective material, which forms the basis for selecting the right crusher and any customer-specific adaptations that may be required.

If you have a crushing system in operation, the maintenance and repair crews from thyssenkrupp Industrial Solutions are on hand whenever you need us to cater to your needs, from specialist advice, inspections and modifications through modernizations and performance enhancement to damage analyses and repairs, which are performed exclusively by our highly qualified assembly personnel using high-quality, certified spare parts. Alternatively, you can opt to have your crushers maintained and repaired at our workshops. You can call on these services not only for crushers from our own production lines, but also for systems manufactured by other suppliers.

Increase the productivity of your machines and plants! Our Services will assist you in doing so.

## One-stop-shop service



-  Asset Management
-  Spare Parts Supply & Management
-  Service Center & Field Services
-  Revamps

From top:

Spare parts store

thyssenkrupp control and diagnostic system

Whether the spare parts are to be collected by the customer or by air freight, we liaise with you to find the quickest and most cost-effective shipping option.

Transporting a TITAN® crusher rotor



**Curious to find out more?  
Contact us:**

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