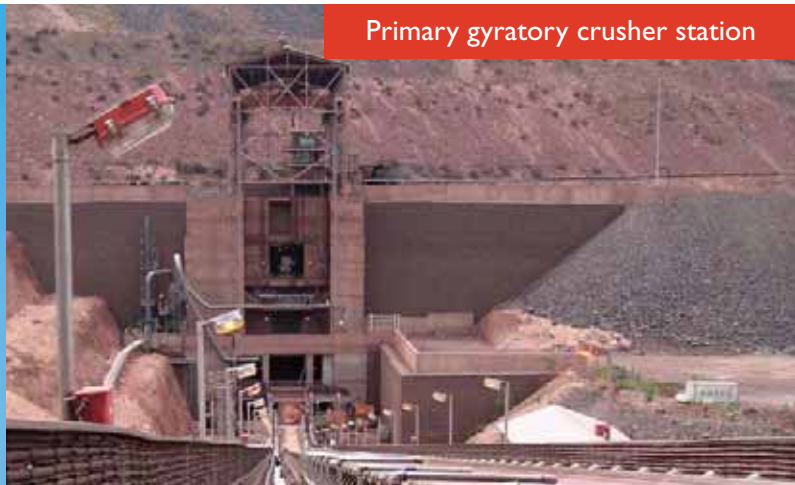


CG series of primary gyratory crushers

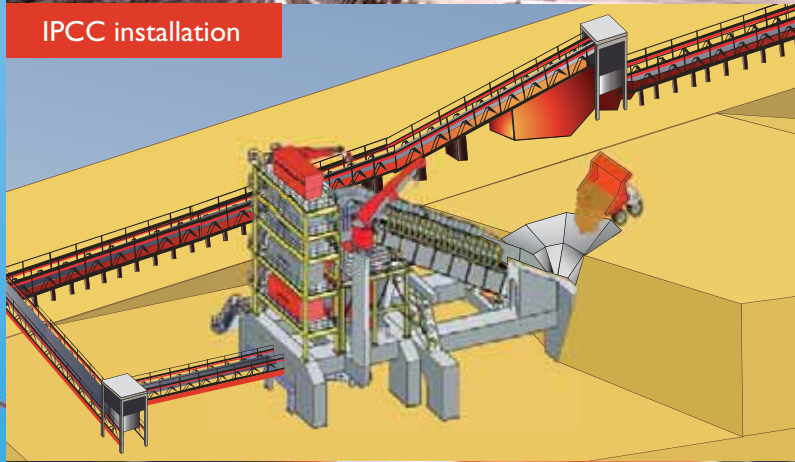




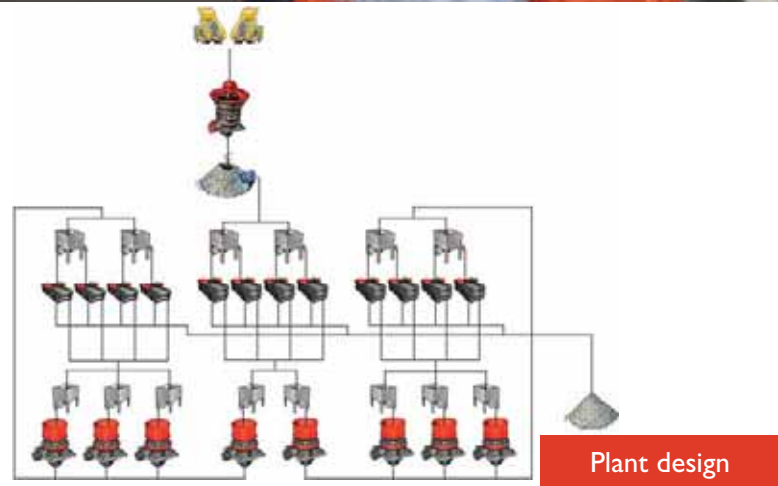
Primary gyratory crusher station



IPCC installation



Mining crushing engineering and expertise



Plant design

Process optimization

experience and innovation

Primary gyratory crushers form a critical transition between the mine or quarry and the plant. Drilling and blasting produce material feed in a broad range of fragmentation, whether it is iron ore, copper ore, limestone or any other material. Most large operations depend on gyratory crushers to reduce the material to a manageable size suitable for the crushing or processing plant. As a key link in the process, these crushers must be chosen to meet capacity and performance requirements. Reliability and service support for years to come are equally important. And with a commercial life of several decades, the technology should also be suitable for future expansions, process changes or variations in feed material.

PROJECT EXPERTISE

Investments in primary gyratory crushers are commonly part of bigger expansion or upgrade projects. As a world leader in Materials Handling Projects and Components, Sandvik has the credentials to design, source, erect and commission the complete processes surrounding a crusher. This applies to turn-key stationary or semi-mobile installations, including the growing application of in-pit crushing and conveying (IPCC).

PROVEN EXPERIENCE

Sandvik Mining and Construction offers a complete range of primary gyratory crushers. Although Sandvik has long in-house experience in the design and manufacture of gyratory crushers, the CG series is a result of a co-operation with EarthTechnica Co., Ltd, Japan, a company owned by Kawasaki Heavy Industries, Ltd. The mechanical designs of these machines have been fine-tuned over many years and the crushers are well proven in operations globally. Numerous successful installations have recently been made throughout Africa, Asia and Australia. Their massive weight alone brings an assurance of long life which sets the CG series apart in the market.

PERFORMANCE INNOVATION

In traditional gyratory crushers, the hydraulic adjustment of the main shaft is used only to compensate for wear. By contrast, Sandvik applies modern control systems to fine-tune throughput and size distribution. A key benefit of Sandvik's renowned cone crushers, the ASRi™ (Automatic Setting Regulation) system is now applied to all gyratory crushers in the CG series. This translates into greater efficiency and flexibility –now and for the future. Having previously been fitted to more than twenty primary gyratory crushers, the benefits are well established. By combining leading mechanical designs and control systems, Sandvik brings performance innovation to gyratory crushing.

Leadership by design

DURABILITY

The top bearing in gyratory crushers is subject to unbalanced extreme loads. Traditionally, this is a high maintenance item with resulting stoppages in production. The spherical design of the Sandvik spider bearing has completely eliminated the point loading causing such problems. The result –no spherical top bearing has ever required replacement! The shrink fit mainshaft sleeve and threaded collar have eliminated traditional threads prone to fatigue failures on the mainshaft. Also, the metallic contact between the upper mantle area and the mainshaft absorbs forces from crushing big boulders, avoiding damage to the headnut and mainshaft. Durability by design.

PERFORMANCE

Feed materials, from hard and abrasive to soft and sticky, behave differently in the crushing chamber. By optimizing the nip angle and eccentric movement for the actual application, the capacity, output, energy consumption and wear life can be optimized for each individual crusher in the CG series. A correctly designed crushing chamber minimizes slipping or jumping of the main shaft, even with the hardest feed material. Performance by design.

SERVICEABILITY

The concave liners, of manganese steel, literally take a beating. Traditionally, deformation requires trimming with blow torches as the concaves stretch, with total replacement as they eventually come loose. Avoid these costly and unsafe practices. The Sandvik crushers use secured concaves, which are constrained and self tightening between through-bolts and grooves in the shell. Since they are individually replaced and fastened, properly installed concaves cannot detach during maintenance. Serviceability by design.

FLEXIBILITY

A hydraulic cylinder adjusts the main shaft and determines the crusher setting. To utilize the hydraulics beyond wear compensation, Sandvik employs an intelligent control system, ASRi™, which lets you fine-tune the crusher during operation. Change the setting with the push of a button –for every truck load if that is what it takes. Flexibility by design.



Spherical spider bearing



Concave liners



ASRi™ monitor





1. Spherical spider bearing
2. Shrink fit mainshaft sleeve and threaded collar
3. Secured concave liners
4. Hydroset system
5. ASRi positioning sensor



Simultaneous scrubbing



Supported by Sandvik



Coarse feed...



...medium...



...and fine

MODEL	REFERENCE	WEIGHT TONNES	FEED OPENING mm (INCH)	MAXIMUM FEED SIZE mm (INCH)	HORIZONTAL SHAFT, RPM	MOTOR, kW	OPEN SIDE SETTING mm (INCH)	CAPACITY RANGE, TONNES/HOUR
CG650	45-71	181	1150 x 3170 (45 x 125)	800 x 1100 x 1600 (31 x 43 x 63)	460	375	105-190 (4.1 x 7.5)	1140-2430
CG820	54-75	262	1360 x 3350 (54 x 132)	950 x 1300 x 1900 (37 x 51 x 75)	440	450	125-230 (4.9 x 9.1)	1730-3620
CG840	61-96	451	1550 x 4140 (61 x 163)	1050 x 1500 x 2100 (41 x 59 x 83)	430	600	150-260 (5.9 x 10.2)	2750-5420
CG850	61-106	523	1550 x 4140 (61 x 163)	1050 x 1500 x 2100 (41 x 59 x 83)	420	800	180-290 (7.1 x 11.4)	4170-7750
CG880	65-119	748	1650 x 4410 (65 x 174)	1130 x 1600 x 2260 (44 x 63 x 89)	410	1100	200-305 (7.9 x 12.0)	6160-10940

Plant performance and service support

Whatever challenges you face today – or tomorrow – the continued operations of mines or quarries and processing plants depend on the reliable performance of gyratory crushers. As an example of enhanced performance, Sandvik's optional wet system alone allows for simultaneous scrubbing of feed material mixed in with sand or clay. While such individual features can make a significant difference, it is the combined design that sets the CG series apart from other gyratory crushers. From their massive sizes, dimensioned for maximum life, to the intricate details of the control system for optimized performance. And features like secured concaves and spherical spider bearings simply boil down to engineered reliability.

Ultimately, a machine is only as good as the people who operate it and the organization that stands behind it with local service support, availability of parts and wear items and strong global logistics. Sandvik leverages its strength in secondary and tertiary crushing to also give customers outstanding support in primary crushing. Our supplementary strengths in drilling and materials handling also enhance our presence at mine sites and our understanding of the complete process.

CG series crusher range

With five sizes in the complete CG series of primary gyratory crushers, there is one to match your throughput requirements and maximum feed size. The CG650 particularly matches the needs of large scale quarries. The CG800 family covers the broad range of capacities needed in mining. The largest, the CG880, is the most powerful gyratory crusher in the world.

Actual crusher output depends on a number of factors. Consult with a Sandvik expert to estimate output based on crushability and compressive strength of the feed material, the distribution of the feed material and of course the discharge setting for crushed material.

Real life performance depends on how well a crusher can adapt to varying conditions. Whether the feed is coarse, medium or fine, each Sandvik primary gyratory crusher can produce at maximum performance. The settings of CG series crushers can even be fine-tuned for maximum utilization of the downstream secondary and tertiary crushers.

Sandvik is a high-technology engineering group with world-leading positions in selected areas - tools for metal working, advanced materials technology, and mining and construction. We employ more than 47000 people and are represented in 130 countries.

Sandvik Mining and Construction represents one third of the overall Sandvik Group and serves a broad range of customers in construction, mineral exploration, mining and bulk materials handling. Our construction expertise covers quarrying, tunneling, demolition, recycling and other civil engineering applications. Our mining products and services support customers on the surface and underground including coal, iron, copper and gold mining.

