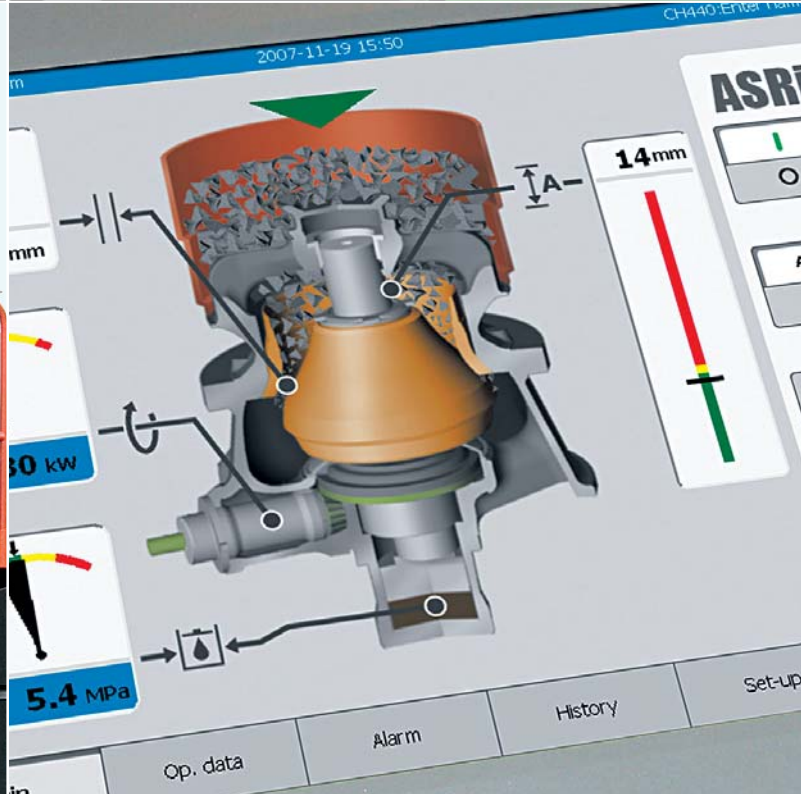


Sandvik crusher

Automatic Setting Regulation





Get to know your crushing equipment

While the basic machinery used in rock processing has remained fundamentally unchanged for 70 years, the industry has nevertheless become considerably more hi-tech. You may not be able to crush a rock with your PC, but you can certainly use advanced technology to ensure that crushers are performing optimally, that your product quality is high and consistent, and that machinery down-time is minimized.

For over 100 years we have been making crushers, and for 30 of those we have been developing crusher control systems to optimize the performance of our crushers. Our very first automation system was introduced to the market in 1967 and we have, to date, delivered over 6,000 units around the world.

We call our crusher control system ASRi (Automated Setting Regulation) the “i” meaning “intelligent”. The reason we call ASRi an “intelligent” crushing system, is that it not only helps you to monitor operations, but over time enables you to become so familiar with your crushing equipment that you can truly optimize its usage while protecting it from damage.

Regardless of whether yours is a simple, one-crusher operation, or a larger, more complex plant, Sandvik ASRi can help you improve results. You decide which system functions to use, how frequently and at what capacity. This makes the system not only intelligent, but supremely flexible.

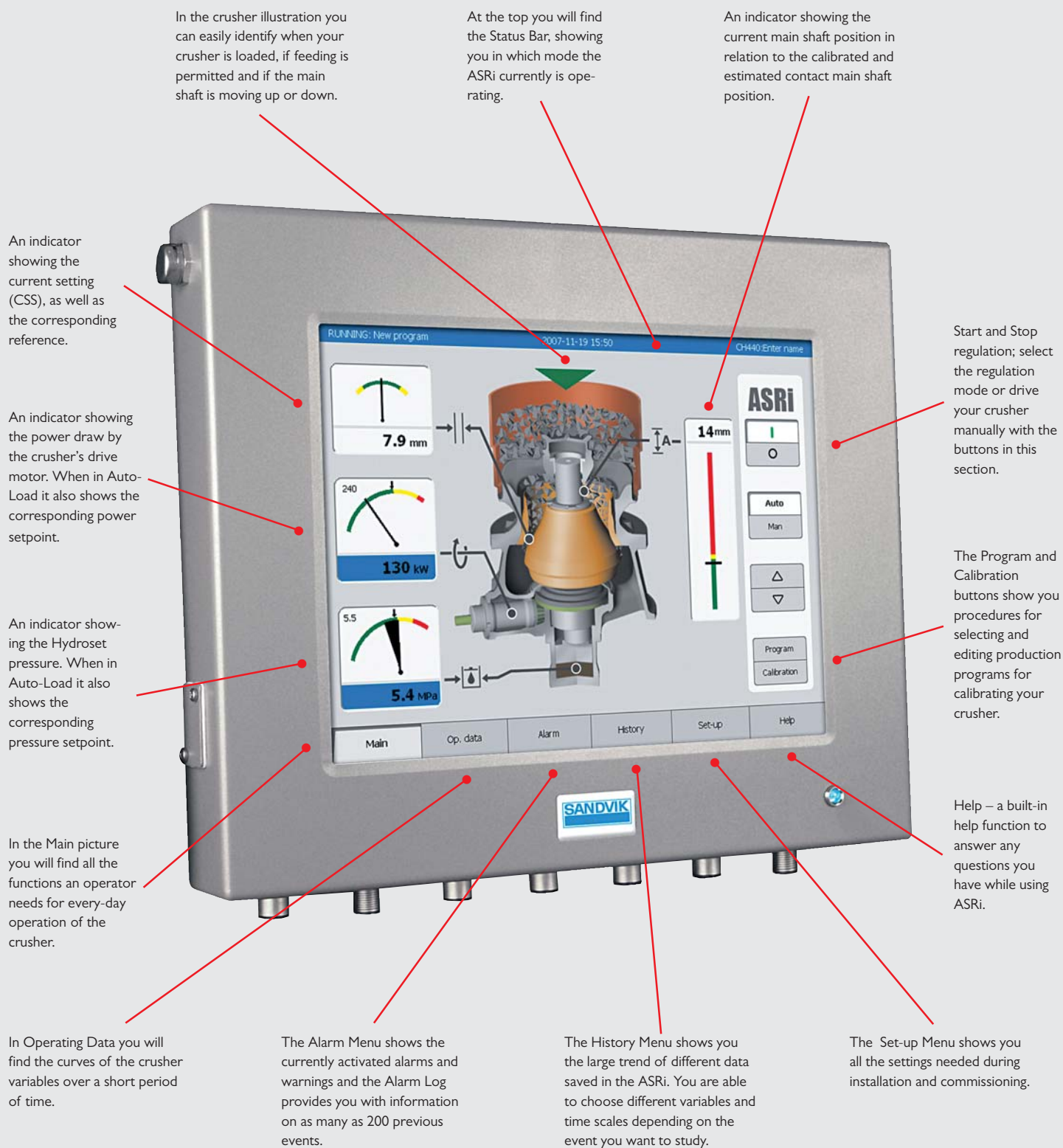
MAXIMUM THROUGHPUT, MAXIMUM PRODUCTIVITY

Sandvik's automatic setting regulation system, ASRi, controls your crusher automatically and protects it from damaging overloads. It helps **increase production**, obtain the highest possible degree of reduction, improve product distribution and achieve better product shapes.

Controlling your crushers with an ASRi system will provide you with an excellent overview of operations at a glance and enable you to act early to prevent damage to the crusher, **maximizing uptime**.

The main characteristic distinguishing Sandvik ASRi from previous generations of crushing systems is its user-friendliness. Once installed, everything from the simple, color graphics and touch-screen interface to the built-in instruction manual and numerous automated functions has been developed with the **user in focus**. Sandvik ASRi helps make your production smoother and more efficient and saves you time and trouble, both now and in the long-run.

Sandvik ASRi increases your ability to meet the industry's tough demands for increased efficiency, better product and reduced cost. Not only can you have **better control** over operations, but, at the same time, you can greatly reduce the need to expose yourself and your employees to potentially dangerous, unhealthy environments.



Productivity at your fingertips

ASRi has a simple touch-screen interface that will provide you with as much or as little information as you choose. In addition to the top-level readings always shown on the main picture, there are five more main menu items. You can click on these for more information on any of the given topics.

ASRi includes three different regulation modes:

Auto-CSS, where the ASRi system aims to maintain the desired CSS.

Multi-CSS, where two different product curves can be combined to give a new desired product.

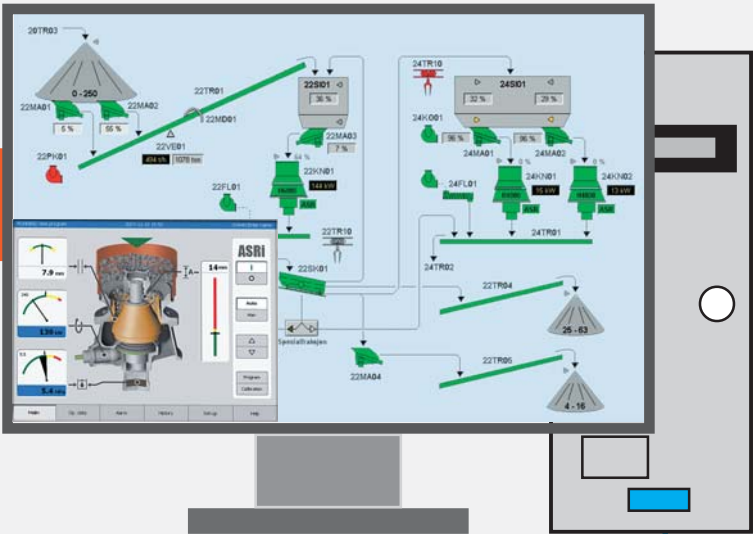
Auto-Load, where the ASRi system regulates the setting so that the crusher operates at a desired load level.

FUNCTIONALITY AND UPGRADES IN ASRi 2.0

If you are currently experiencing the benefits of the Sandvik automatic setting regulation system, you will find even more useful functionality in the latest upgrade - ASRi 2.0.

- **A wear history diagram that shows liner wear with respect to time and energy consumption.**
- **A processor with four times more capacity.**
- **A bright screen with improved temperature variation resistance.**
- **Augmented memory capacity that allows you to save snapshots.**
- **A USB port for easy downloading of historical data and uploading of software updates.**
- **A user friendly screen layout.**

Sandvik ASRi and WINi together with an HMI/SCADA system with an ASRi OPC server.



ASRi - SWITCH

CRUSHING
CONTROL
PLANT



Optimize your entire crushing environment

With Sandvik's **ASRi software package** you can let ASRi communicate with other systems, thus further improving the efficiency of your production plant while saving time.

ASRi-WINi is a graphics package for remote presentation of displays of up to nine ASRi systems. This allows you to operate the ASRi system remotely, such as editing and changing crushing programs, or looking at operating data and alarms. It also provides you with a simple overall picture that shows what is happening with all of the ASRi systems connected to the communication system.

Sandvik's **ASRi-OPC-Server** software program facilitates the transfer of information between ASRi and an external system – a SCADA plant control system, for example. In a remote ASRi system, parameters can be read and written. This makes it possible - with the help of an OPC client in the customer's system - to extract data that is to be displayed in a control picture and to remote control the ASRi system(s).

The **ASRi-Reporter** program can be installed on a PC. It allows you to download historical data on the crusher's operating values for power draw, hydroset pressure and CSS from an ASRi system, for instance. This enables you to send such information elsewhere and to study the data in a convenient place at a convenient time. It is also a way to save historical data onto another computer.

ASRi SIMULATOR

Sandvik offers an ASRi simulation program that can be installed on any computer. This enables you to view a demonstration of the ASRi system in your own crushing environment. Data concerning the crusher, feed material and other decisive factors are entered into the program. You can learn how the system works and have an idea of what it can do for you.

Sandvik is a global industrial group with advanced products and world-leading positions in selected areas – tools for metal cutting, equipment and tools for the mining and construction industries, stainless materials, special alloys, metallic and ceramic resistance materials as well as process systems. In 2009 the Group had about 44,000 employees and representation in 130 countries, with annual sales of nearly SEK 72,000 M.

Sandvik Mining and Construction is a business area within the Sandvik Group and a leading global supplier of equipment, cemented-carbide tools, service and technical solutions for the excavation and sizing of rock and minerals in the mining and construction industries. Annual sales 2009 amounted to about SEK 32,600 M, with approximately 14,400 employees.

