ABB pioneered high-voltage GIS in the mid-1960s and continues to drive technology and innovation, offering a full range product portfolio with voltage levels from 72.5 kV to 1200 kV. As a market leader in high-voltage GIS technology, ABB has a global installed base of more than 30,000 bays.

ABB is a leader in power and automation technologies that enable utility and industry customers to improve their performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 132,000 people.

GIS is a compact metal encapsulated switchgear consisting of high-voltage components such as circuit-breakers and disconnectors, which can be safely operated in confined spaces.

GIS is used where space is limited, such as extensions, in city buildings, on roofs, on offshore platforms, in industrial plants and in harsh environments.

The factory is spread over 10,000 square meters and has been designed on the principles of “Lean Production” techniques to manufacture high-voltage GIS for voltage ranges from 220 kV to 550 kV.

Modern Manufacturing Execution System (MES) Implementing MES for material tracking, quality assurance and digital work instructions enables higher efficiency and productivity throughout the production process.

Incoming goods inspection All materials are thoroughly checked in the incoming good inspections to guarantee 100 percent quality.

Kardex System for automated storage and retrieval of parts The efficient management of standard items in any factory is an integral requirement of assembly lines in a fast and lean manufacturing set up. To achieve this, two Kardex machines are installed for automated storage and retrieval of parts so that the right quantity is supplied by logistics at the right work station at the right time.

• This reduces the non-value added activities in logistics thereby reducing the operational cost
• This allows storage of maximum parts with minimum floor space requirement

Floor integrated rail system Rails are fitted across the shop floor for safe and quick movement of products with set of universal fixtures to adapt various mechanical variants of GIS.
01 Inside view of factory: connecting pieces assembly
02 Inside view of factory: circuit-breaker assembly

Common flow production line with one piece flow and pull concept
The total assembly line including testing and packing is divided into a number of assembly stations, called “takt”. The products move with a fixed takt time from station to station. The work steps are standardized and optimized to reach the highest standards of quality, efficiency, work ergonomics and safety.

Modern process techniques such as lean manufacturing, lean administration, just-in-time, one-piece flow, kaizen and theory of constraints are applied. Use of these new techniques in the factory helps achieve top industry standards such as:
- Shortest delivery times
- Reliable on-time delivery
- Highest quality level
- Rapid response to customer requirements
- Highest cost efficiency
- Best performance

Lean and Continuous Improvement Process (CIP) culture
Shop floor management is achieved using the visual display of various parameters by deploying lean management tools like GEMBA, PDCA and 4Q. This is implemented across all levels of operation, ensuring that all follow a Lean and Continuous Improvement Process (CIP) culture. This helps in achieving:
- Highest quality
- Highest efficiency
- Highest safety

Testing facilities
The testing facility has the capability to do routine testing up to 800 kV for GIS, including partial discharge detection, mechanical tests, leakage tests and high-voltage tests according to IEC 62271-203 and IEC 62271-1 standards.

Factory Acceptance Test (FAT) and Remote Factory Acceptance Test (RFAT)
FAT is the single most important milestone in a GIS installation project where tests are performed to determine that the customer requirements and specifications are met prior to delivery to site.

If customers are not able to join us in the factory, we bring the FAT to them. Via an internet connection, customers can witness the testing of their GIS in our factory via RFAT without actually leaving their office premises.

Installation and commissioning
Fully trained ABB experts provide on-site installation and commissioning for high reliability and optimized life-cycle performance from the first operation. Our facility is fully equipped with tools and test equipment for fast and reliable installation and commissioning.