



Systems for Heavy Load Handling



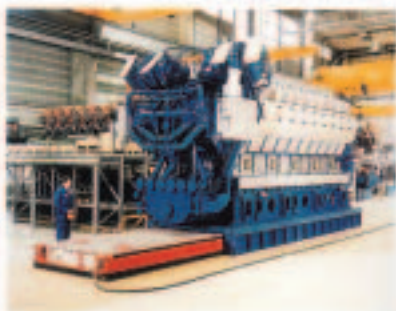
From basic to automated handling systems

Solving is one of the world's leading designers and manufacturers of industrial handling equipment for heavy loads. Our products range from simple, manually operated systems to sophisticated, automated riderless vehicles. Most Solving systems are custom built to suit specific handling needs.

Established in 1977, Solving equipment is now installed in several hundred locations world-wide, handling a wide variety of loads. Most of these installations use Solving's unique 'air bearing' to support the load on a thin film of air. Our extensive experience has established Solving as a market leader, enabling our experienced staff to continually develop new systems to improve our customers' competitiveness.

Many of our customers are from the heavy electrical, engine, steel, paper and graphic industries, where flexibility, safety and innovation are of significant value.

"Combining tried and tested components with our extensive experience, we provide our customers with creative solutions to provide reliable and efficient production."



Internationally familiar companies such as Volvo, Scania, Caterpillar, MAN, Cummins, Airbus, Fincantieri, Nokia, ABB, Siemens, Toshiba and UPM have all chosen Solving as their partner to develop material handling equipment for their production processes.

Our Mission Statement

We aim to create a long-term partnership with our customers to develop solutions that offer significant improvements in efficiency and reductions in cost. We are therefore able to offer our customers an opportunity to enhance their competitiveness. Specialised interface equipment, ergonomic design, and environmental considerations, also contribute to added value for the user.

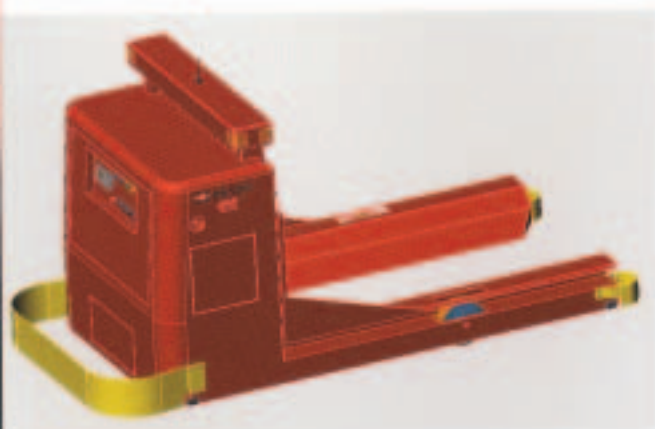
Solving has always considered the quality of our equipment to be of the utmost importance to our customers. We have therefore developed the Solving Quality System 'SQS', which is based on ISO 9001, to ensure that all projects are monitored throughout the entire process, from the initial enquiry to our aftersales service.

A project team is assigned to each contract to maintain continuity and control, and to ensure that the product meets the customer's needs, on time and within budget. Together with our well-established network of suppliers, our design, production, commissioning and aftersales teams ensure that we keep to our promises.

We consider it essential that we provide a high standard of aftersales support to our customers. Our world-wide network of subsidiaries and distributors is trained to provide local support and advice, and spares can always be provided rapidly. An engineering support team can also be mobilised at short notice if necessary.



"We employ the latest technology to constantly improve our products and services, and we place great value on the feedback we receive from our customers"



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Handling Systems

We specialise in providing custom-made handling systems, based either on our unique Solving air bearings or on conventional wheels, incorporating a variety of drive units and controls. Special interface equipment can also be designed to provide safe lifting, tilting and rotation if required.

In partnership and co-operation with our customers our engineering team chooses the technology that is most appropriate to the project. Solving's range of products includes modular air bearing systems, transporter platforms for use with or without separate load pallets, specialised assembly jigs and turntables. A Solving system enables a load of 5 or 5000 tons to be handled with equal ease, precision and safety.



Manual systems

Our range of manual handling systems includes standard and customised products.

Solving's standard system incorporates air bearing modules or beams, enabling occasional moves to be made with ease on a film of air, virtually eliminating friction.

For more frequent use, Solving will provide customised equipment incorporating air bearings or wheels. Used in continuous production line operations, Solving equipment provides greater flexibility, better ergonomics and working conditions, more efficient group assembly and improved productivity.

Using Solving's unique air bearings, loads can be moved and positioned easily by hand.

"Floating on a thin film of air the load can be moved and positioned by hand in any direction, providing a degree of manoeuvrability superior to any other manual material handling method"



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Direct-controlled systems

Solving's direct-controlled systems provide the operator with a fixed console or handlebar attached to the transporter platform. From here, one is able to activate the air bearings, single or multiple drive units and lifting, tilting or rotating devices. These features combine to provide a safe and accurate load handling system for heavy components, and enable a comfortable working height to be achieved for assembly activities.



One of Solving's specialities is the development of handling solutions for paper rolls.

Specialised handling and lifting devices from Solving facilitate assembly.

"Drive units enable a single operator to control the accurate movement of heavy loads"



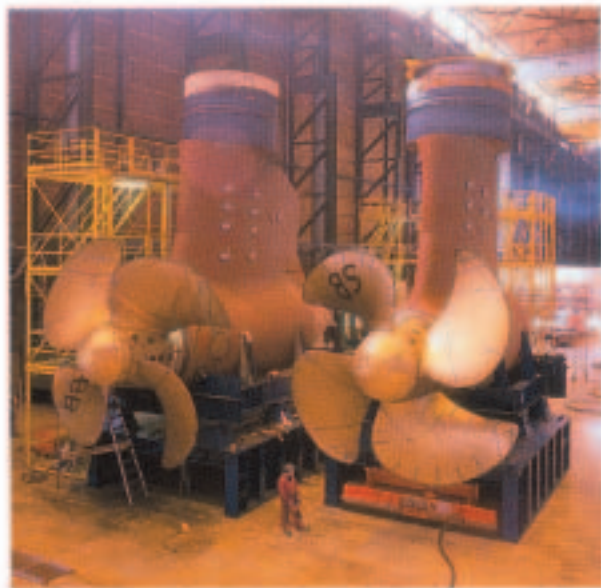
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Remote-controlled systems

Solving's remote-controlled systems assist the handling of larger, bulky loads, such as transformers, engines, vehicles and cable drums, etc., that might obstruct a clear view of the movement path. Using either an umbilical

cable connection or radio control, the operator can move freely around the load to obtain the clearest view ahead. For the largest loads, multiple platforms and drives can be operated from a single remote-control position.

Solving's remote-controlled systems allow large loads to be moved and precisely positioned during assembly.



Just one Solving transporter can be used to move a variety of loads on pallets.

"Remote controls enable the operator to move freely around a large load to ensure safe and accurate movement"



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Automatically controlled systems

Solving's automatically controlled systems or automated guided vehicles (AGVs) are riderless devices designed for repetitive and continuous handling requirements. Depending on the application, laser, inductive or mechanical guidance can be employed, and in every case the vehicle is fitted with integral safety systems to avoid collision or injury.

Our AGV project team is able to provide a cost-effective, customised solution based on their extensive experience in creating handling systems tailored to the customer's needs. Exceptional flexibility and precision has been achieved using Solving AGVs in engine manufacture, paper and cable factories, and even shipyards.

In addition to traditional wheeled AGV solutions, air-film based alternatives are also available for specialist applications. In either case, Solving AGVs are designed for 24-hour, constant and reliable operation.



AGVs can be guided either by floor devices or flexible laser navigation.

Solving's automated systems are designed for reliable operation in tough industrial environments.



"To ensure constant reliability, AGV users are trained during commissioning and our engineers remain available for assistance at any time"



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When an artist captivates the audience with his skill, it is easy to forget the discipline and years of training that exist behind a seemingly effortless performance.

The same applies to a successful company; to achieve a quality product, years of development, dedication and enthusiasm are required.

Similarly, the artist and the company are united by their desire to repeatedly offer the audience, their customers, the very best.



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Creating Movement

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