

Field Service

Know how and availability

Our Customer Service portfolio includes:

■	Field Service
■	Parts and Logistics
■	Training
■	Reconditioning
■	Pre-owned Robots
■	Service Agreements & System Care
■	Process and Application Consulting

ABB Flexible Automation worldwide locations

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ABB Automation

Field Service

At ABB we recognise that production lines are becoming increasingly complex and often involve a high capital investment. To maximise the performance of your robot equipment and extend the life of your production line, we offer a range of services to support you before, during and after the installation period.

These services include:

- Off-line programming and process validation
- Optimisation of installation and technical assistance
- Field service and preventive maintenance.

Off-line programming and process validation

ABB has designed a range of software tools to match the physical capabilities of the robot range. Our off-line programming tools can be used prior to installation to save valuable time during the start-up period.

In addition, process validation checks are performed to ensure that your robot equipment is delivering optimum performance.

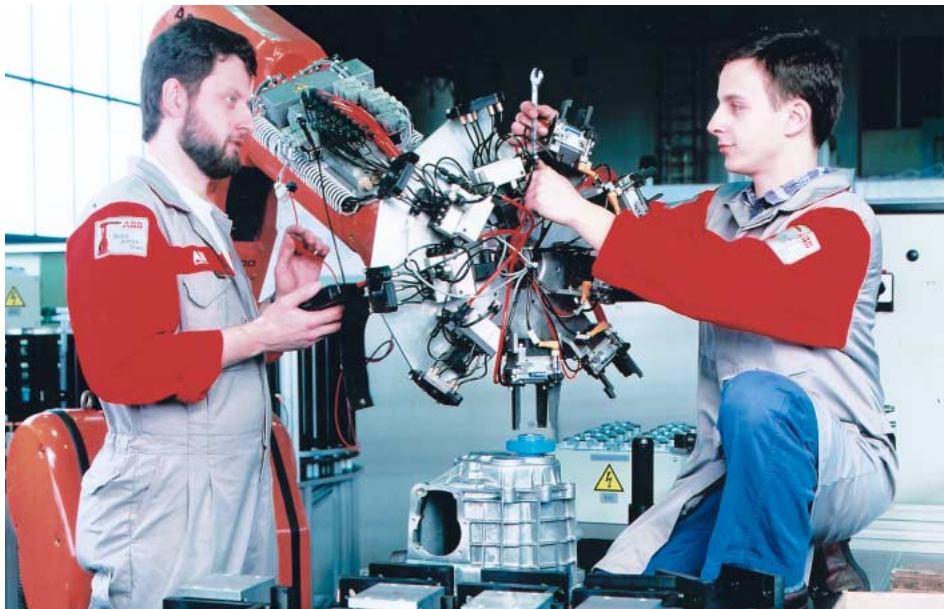


ABB Automation

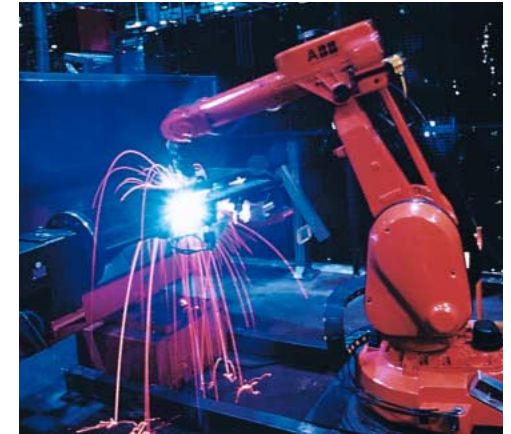
Optimisation of installation and technical assistance

During the installation period, our qualified engineers are available to provide technical and programming assistance. ABB installation engineers are skilled robot programmers with extensive knowledge of key industrial applications (for example arc welding, painting and coating) which allows them to ensure that your installation is optimised for maximum performance.

Field service

Our qualified field service engineers are available to trouble shoot, diagnose and correct any faults in your production equipment and ensure your installation is optimised. Qualified ABB engineers are available for all ABB Flexible Automation systems during production start up as well as post installation.

ABB Automation



Preventive maintenance

During production, ABB engineers can perform regular service and inspection of your robot system and its operational condition. ABB's Preventive Maintenance agreements offer factory trained field service engineers to service your equipment at planned intervals and at mutually convenient times. This service allows you to minimise the risk of equipment failure and expensive production downtime, reduce your resource requirement and ensure that your equipment is kept in optimum condition.



Parts and Logistics

The right part at the right time

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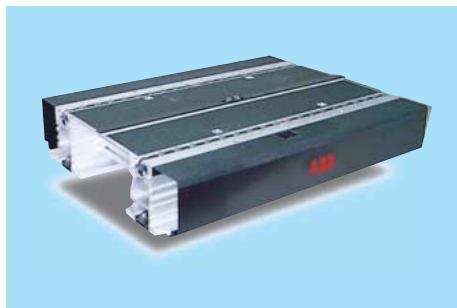


ABB Automation

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Parts and Logistics

Service parts are important in ensuring that your automation equipment operates at maximum efficiency. To provide you with the right part in the fastest possible time we have developed a global logistics network. Our Service Parts stocks are shared by all our manufacturing facilities and all other ABB parts holdings around the world, which means that we can locate the part you need and despatch it to you quickly and efficiently.



New Parts

A comprehensive inventory of critical new parts is held locally at our Customer Service centres. These can be despatched within 24 hours and are also available for door-to-door delivery.

Exchange Parts

In order to provide immediate service and availability of parts, ABB offers an exchange programme. This cost efficient option is available for most ABB parts and delivery is within 24 hours.

Repair Parts

Repair parts are the most cost-effective solution to your parts requirement. These include reconditioned and tested parts that, in most cases, can be delivered in less than three weeks.

Consumables

ABB can supply a range of “process oriented” consumable parts such as arc weld contact tips and paint regulation needles. Our consumables service offers you the benefit of:

- Annual consumption analysis
- Technical advice
- Regular deliveries
- Reduction of inventories
- Progressive invoicing.



Parts Packages

If uptime is critical we can provide you with a Service Parts Package designed to ensure that you have the part you need when you need it. Parts packages include up-grade kits as well as tailored packages to meet your specific needs.

Inventory Management

A consulting service to help you to optimise your inventory in accordance with your production process and capital reduction requirements. Our Inventory Access Program which includes a Return-On-Investment calculation tool, will help you to find the best solution.

Consignment stock can be included as part of our Inventory Management service. These stocks can be held on or off site and consist of flexible content that is reviewed regularly. ABB can offer recommendations on consignment stock holding based on the type of equipment you have.



Training

Promoting effective utilisation

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Training

Professionally trained employees are a valuable asset and play a significant role in reducing production costs within a company. To enable you to optimise the performance of your automation system and realise the full benefits, ABB has developed a range of objective-driven training programmes to:

- Improve the quality and performance of your investment
- Increase system uptime
- Reduce the Mean Time to Repair
- Improve employee skills, confidence and morale
- Ensure the safety of your staff and equipment

ABB Training Centres

ABB Flexible Automation has dedicated Training Centres worldwide, staffed by full-time instructors. From these modern, well-equipped Training Centres we offer hands-on training with a low student to equipment ratio.

Training Plan Consulting

ABB's training needs audits are used to develop a tailor-made training plan to meet the specific needs of your organisation. In addition, we provide recommendations on personal development programmes for your employees to increase their competence and ensure that they are trained to an approved standard.

Standard Robotic Products

Our instructors will teach your personnel to operate, program and maintain your automation equipment at peak efficiency. This

is achieved through a combination of standard scheduled courses and special courses designed to suit your individual needs. Courses range from a basic introduction to robots, including programming and operation, to fully detailed repair and maintenance instruction. Advanced and refresher courses are available for all ABB robots and software.

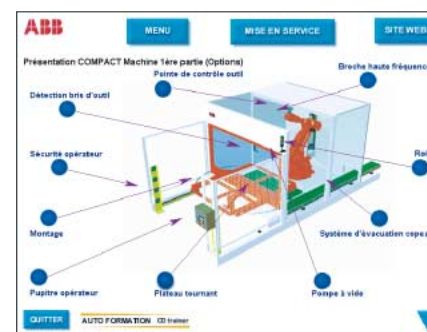
In short, ABB training programmes ensure that your employees are confident about working with flexible automation products and enable you to get the most out of your automation investment.

Process and Applications

In line with our strategy to support both ABB products and key applications we offer a range of process and application courses. These offer a more detailed insight into specific product functionality and provide



a more 'in-depth' understanding of your application. Examples include spot welding, arc welding and paint application.



Systems Training

Our systems training offer is designed to increase the uptime of your robot automation system and avoid unnecessary production stops. Systems training is comprised of a number of training modules which can be adapted to meet the needs of your organisation. In addition, we can provide multimedia tools to enhance the learning process.

Training is also available for large systems such as:

- Body-in-White
- Powertrain
- Press Automation

In-customer-plant Training

ABB's on-site training is customised to meet your specific needs. The course content is tailored to your specific process and application and all practical training takes place on your own equipment. On-site training courses include basic skill transfer as well as formal training classes.

Training Support Products

To support our training activities we offer:

- Full reference manuals for each class
- Structured training materials and course guides for consistent delivery
- Quick reference aids; pocket guides, laminated 'line-side' procedure cards
- OEM manuals to support system integration
- Electronic media, video, learning aids



Reconditioning

A new lease of life for your equipment

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ABB Automation

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Reconditioning

ABB offers a range of service products to give a new lease of life to ageing robots. Reconditioning with the latest technological enhancements provides an affordable alternative to our clients, extending not only the life, but also the asset value of your robotic equipment.

Our reconditioning services range from component to complete, factory certified, robot reconditioning programs.

A comprehensive reconditioning program consists of a complete rebuild in which we bring your robot up to its original specification – at a cost that is considerably lower than that of a new robot.

Additional cost savings can be realised as reconditioned units can be integrated quickly (allowing rapid start up times), and additional operator training and programming are not required. ABB's reconditioning services include:

- Robot refurbishment
- Standard exchange
- Associated Services

Robot Refurbishment

Robots undergoing complete reconditioning are disassembled and individual components are inspected and tested. All motors, bearings, cables and other worn parts are replaced with reconditioned or new components. Mechanical and control components are thoroughly cleaned and the system is reassembled per original specifications, using original alignment fixturing and tooling. The complete robot system is repainted and the same comprehensive test used for new robots, is conducted to ensure that the system meets original specifications. All robot systems that have been completely reconditioned carry a full warranty on parts and labour.

Robot Refurbishment allows you to take advantage of current technological advancements that can improve your robot's performance and result in increased productivity.



Standard Exchange of Mechanical Units

To ensure immediate service and availability we can provide a reconditioned robot or component in exchange for your used robot or part. A standard exchange ensures that transfer time is kept to an absolute minimum.

Associated Services

With our robot refurbishment and standard exchange services we can offer the following associated services.

- Flexible renting solutions
- Total Robot Management: full management of installed base over life cycle time

Reconditioning Centre

ABB has recently launched a European Reconditioning Centre.

This dedicated centre has an electronic and mechanical workshop, staffed by process control, project management and logistics teams.

The ABB Reconditioning Centre houses the latest technology and production equipment available for the reconditioning process. As all reconditioning work is carried out at this central location by the original equipment manufacturer, we are able to focus our technology investment, technical experience and expertise to ensure that all reconditioning work is completed efficiently and to a world class standard.



Pre-owned Robots Available for lease or purchase

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Pre-owned Robots

Increasingly we get the opportunity to buy back previously owned equipment, which we offer for sale or lease to our customers. A pre-owned ABB robot offers an affordable alternative for those situations that do not warrant high levels of capital investment. For example, you can lease a pre-owned robot for production peaks or for pre-testing new product launches. Alternatively, you can purchase a pre-owned robot for production situations which require new technology but with a limited investment. The purchase option also offers the opportunity to add the same model to your existing robot



production line and thus retain a homogeneous installed base. This represents significant cost savings as you can use the same fixtures, programs and spare parts stock and additional training can be avoided.

Reconditioning

ABB pre-owned robots undergo a reconditioning process to restore them to their original operating condition. During the reconditioning process we undertake whatever work is necessary and provide all the parts needed to restore the robot to peak operating condition.

The reconditioning process can also include retrofitting or upgrading to take advantage

of current technological advancements. All engineering and software enhancements that have been developed since the machine was first introduced can be added in the reconditioning process. This means you get an efficient, affordable robot with: a full warranty; the latest software releases and upgrades; and certified to the current safety standards.

Service Support

We offer complete training, service and technical support for all ABB robots, both old and new. In addition, we have a full inventory of spare parts for each machine along with engineers for remedial work and to assist you in optimising your existing robotic processes as well as developing new applications.

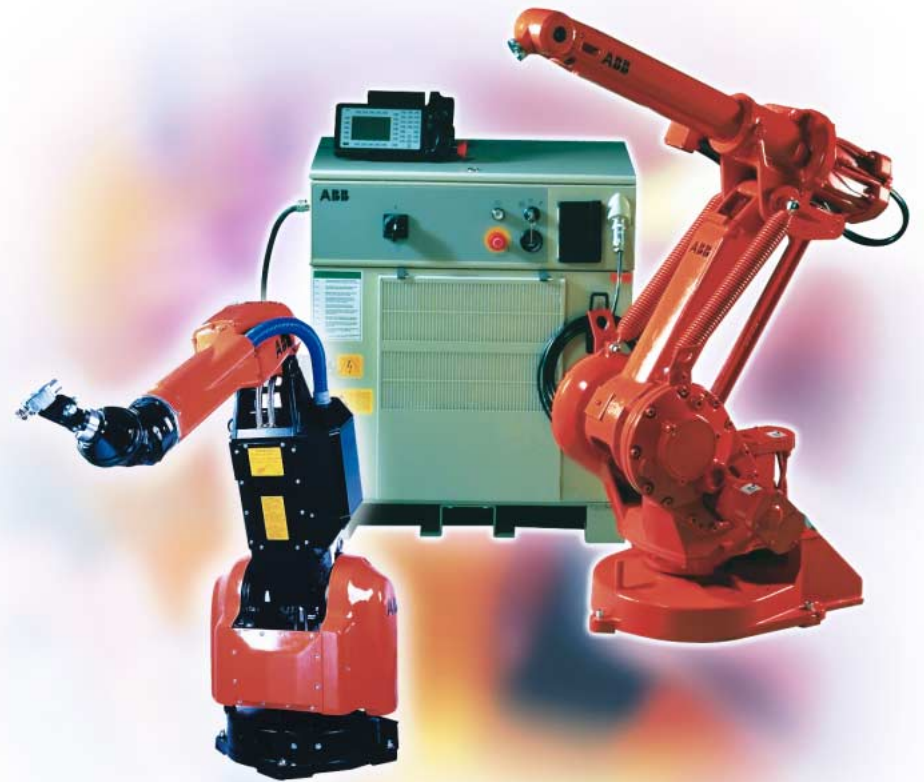
Fast Delivery

A variety of pre-owned robots are kept in stock and are available for fast delivery to any country.

For more information, please contact your local Flexible Automation Centre.

Flexible Automation

ABB offer new and pre-owned robot automation to give you the optimal solution for your production requirements. For more information on our offer, please contact your local Flexible Automation Centre.



Service Agreements and System Care Controlling production costs

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ABB Automation

Service Agreements and System Care

ABB is committed to providing its customers with the highest possible standard of responsive, reliable and quality service. To keep your equipment in optimum condition and help you to budget for your service requirements in advance, ABB has developed a range of service agreements.

Our Service Agreement portfolio includes:

- Preventive maintenance
- Service availability
- Warranty extension
- Technical telephone support
- Full maintenance
- System care

Preventive Maintenance

Preventive Maintenance Agreements provide regular service and inspection of your robot system and its operational condition. Our factory trained field service engineers will service your equipment at planned intervals and at mutually convenient times, allowing you to minimise the risk of equipment failure and expensive production downtime, reduce your resource requirement and ensure that your equipment is kept in optimum condition.

An example of the elements included in a Preventative Maintenance agreement for a robot is:

- Mechanical and electrical inspection
- Position calibration
- Lubrication service
- Cleaning service
- Robot cable inspection
- A written report detailing equipment status, actions taken and further recommendations.

Availability

ABB's Availability Service Agreements offer additional levels of support that you can rely on, when you need it. An Availability Agreement generally includes:

- Priority technical, telephone support 24 hours a day, 7 days a week, 365 days a year.
- A 24-hour response to an engineer call out.
- 24-hour parts despatching service
- Guaranteed response times of 12-hour, 8-hour and 6-hour are also available.

Extended Warranties

Extended Warranties offer flexible, comprehensive protection with multi-year coverage beyond the basic warranty period. These agreements are available for periods up to three years and cover parts and shipping charges, labour costs and preventive maintenance.



Technical Telephone Support

ABB's Technical Telephone Support provides access to a fully qualified ABB engineer who can offer technical assistance, remote diagnostics, despatch a service engineer or replacement parts. This service is available 24 hours a day, 365 days a year.

Full Maintenance

To maintain optimal performance of your system and provide continuous support for your operation, ABB offers a comprehensive Full Maintenance Service Agreement in which we take responsibility for the complete maintenance of your installation.

A full maintenance service agreement includes:

- Regular preventive maintenance checks by a designated service engineer
- Parts
- Flexible scheduling
- Detailed preventive maintenance reports
- Guaranteed response time

- Priority 24 hour hot line support
- 24 hour parts despatching service.

Additional options include a full time, on-site service engineer.

Flexible Service Agreements

In addition to our standard Service Agreements, we also offer Flexible Service Agreements. These are customised agreements designed to meet the specific needs of your production process.

System Care

A System Care contract requires a long-term partnership with our customer. With this type of contract, ABB take full maintenance responsibility for the complete flexible automation process including:

- Developing and executing the Maintenance Master Plan
- ABB personnel permanently based on your site
- Continuous improvements
- Performance guarantees on pre-defined metrics



Our Customer Service portfolio includes:

■	Field Service
■	Parts and Logistics
■	Training
■	Reconditioning
■	Pre-owned Robots
■	Service Agreements & System Care
■	Process and Application Consulting



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ABB Automation



Process and Application Consulting

ABB are continually developing new technology and expertise to improve your system application and provide new opportunities for more efficient manufacturing processes and improved product quality. Our Process and Application Consulting service has been developed to help you realise the advantages of these new developments.

Process and Application Consulting comprises a number of services, all aimed at improving the performance of your existing flexible automation systems. By conducting a full review of your existing processes and applications we are able to develop and implement improvement solutions that will:

- Increase production output – by decreasing cycle times and increasing uptime
- Improve production quality
- Decrease production costs such as material, energy and manpower

Productivity Analysis

Today's global business environment demands that you constantly increase productivity, improve efficiency and enhance quality. Productivity Analysis is just one of ABB's creative solutions to help you to implement these required improvements in the most cost-effective way.

Productivity Analysis offers a full review of your current system's performance and the identification of productivity improvement opportunities and is particularly beneficial for systems, which are under production pressure. It typically includes:

- Lab test
- Data Acquisition
- Simulation
- Benchmarking
- Reporting and Recommendations



Process Optimisation

In the course of providing our normal, routine systems and product support to ABB customers, we have developed a wealth of process improvement knowledge. Process Optimisation incorporates all of this knowledge and expertise into one service.

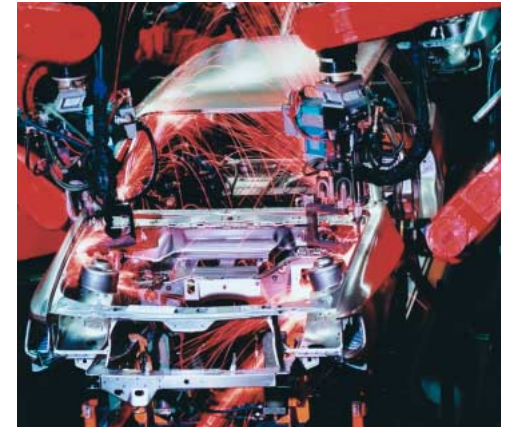
By implementing changes to your process we can optimise your current process capabilities in a way that leads to greater production throughput, improved process efficiency, less downtime and better quality products. A typical process optimisation service includes:

- Parameter adjustments
- Programming
- Documentation
- Defining operating procedures
- Reporting and Recommendations

System Upgrade

System Upgrades allow you to take advantage of the latest ABB technological developments while retaining your current basic hardware configuration.

By introducing enhancements to your current system, we can improve your system's



performance in a way that leads to greater productivity and efficiency and improve the quality of your production process.

A typical System Upgrade service includes:

- Software
- Hardware
- Controls
- Documentation

System Reconfiguration

System Reconfiguration is used to adapt your existing systems to new production requirements and typically includes:

- Lay out changes
- Modifications – driven by new products / materials
- Adaptation to changing safety / environmental requirements

ABB Flexible Automation is a leading supplier of robot based automation solutions. We offer a unique combination of high performance robots, robot systems and software, all supported by our comprehensive Customer Service portfolio.

At ABB Flexible Automation we recognise that our customers' service needs are changing, and while reactive services are still in demand, there is an increasing need for more advanced, proactive services.

To be able to meet these new needs quickly and efficiently, we are constantly adapting, improving and investing in our Customer Service portfolio.

We have made significant investments in:

- R&D to develop high performance diagnostics and remote monitoring capabilities
- Training programs for ABB service engineers to ensure that they are trained to world class standards
- Advanced services such as Service Agreements and Process and Application Consulting.

Our customer service portfolio is designed to optimise the performance of your robot based automation system throughout the entire life of the installation, improve your productivity and add value to your business.

Our Customer Service portfolio includes:

- Field Service
- Pre-owned Robots
- Parts and Logistics
- Service Agreements and System Care
- Training
- Process and Application Consulting
- Reconditioning



A global service provider with a strong local presence

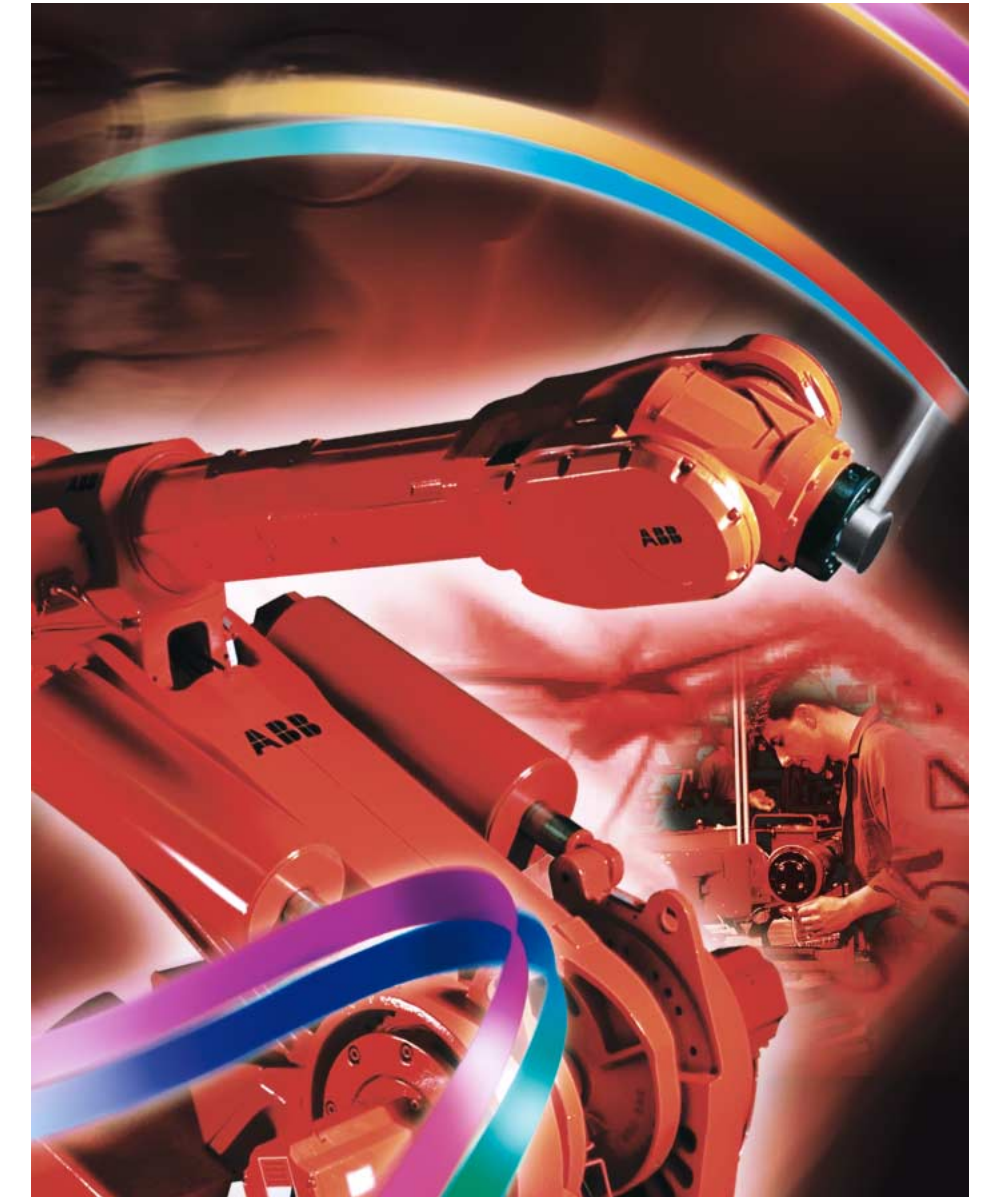


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Customer Service

Tailored support packages for ABB Flexible Automation Customers



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