INDIVIDUAL SOLUTIONS FOR YOUR MANUFACTURING PROCESS

COMPETENCE IN AUTOMATION

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INDIVIDUAL SOLUTIONS FOR YOUR MANUFACTURING PROCESS
EVERYTHING WE DO.
WE STAND BEHIND EVERYTHING WE DO.

[Image of a group of people]
GOOD INTERACTION BETWEEN ALL PARTNERS GUARANTEES SUCCESS.

Each member of this company fulfills their own personal duties with great dedication and a sense of responsibility. Furthermore we also help each other so that all tasks can be performed as quickly and as well as possible in the interests of and to the benefit of our customers.

Each employee is important and each contributes to the common good with their own personality. The welfare of the team is held above the interests of the individual—this is the only way that the continued existence and continual growth of the company can be assured. Each individual is expected to develop their own personality and to integrate it into the company culture.

We work with friends, for friends and for all who would like to be. We look for solutions where others see problems. We act ourselves, rather than re-acting to the actions of others. We undertake and consistently verify that others can rely on us.

SPINNER automation GmbH is a financially independent company, led by two managing directors Manfred and Dominik Jauch.

Together with the family business of SPINNER Werkzeugmaschinenfabrik GmbH in Sauerlach, we have a strong partner on our side. Their name represents a broad range of precision and universal turning and milling machines.

All machines are produced to German standards of quality at an affordable price. We are seamlessly integrated into the SPINNER sales and service network, which is active worldwide in over 50 countries on 6 continents.

Regardless of whether a fully automated system or a simple machine tool—the SPINNER group offers you the optimum solution for your requirements.

OUR VALUES:
Responsibility
Helpfulness
Durability
Solution-orientation
Reliability
THIS IS WHAT WE DO.

INDIVIDUAL SOLUTIONS FOR YOUR PROCESS

Why automation?
Quality requirements, productivity increases and cost reductions are the key reasons for automation. The reproducibility of processes as well as the validation and strict compliance with limit values are further plus points for automation. The interaction between automation and machine tools is however critical for the optimum complete system. Only someone who understands both processes is able to guarantee this. We are interested in the overall view of your production process as it is from this that we will develop the most economical solution for you. We develop the manufacturing and automation process as a complete entity and thus achieve maximum efficiency.

We have been trusted with the questions on this complex topic for over a decade and have developed solution strategies and approaches with which we are able to assist our customers in finding rapid, functionally capable and cost-optimised processes.
We understand our customers and their technologies, we translate their sector-specific characteristics into system concepts, we provide guidance with the hardware and develop the programs.
We consider the complete system, both machining and automation.
**COMPLEX TASKS REQUIRE FLEXIBLE STRUCTURES**

We manage the implementation of your requirements from an idea through to the finished system. The basis for this is a sophisticated project organisation with clear structures and a high degree of flexibility. Time and again we show an interested public our project organisation in tours through our site and in doing so have gained a great deal of recognition. Thus we can already serve as an example and model to many other businesses. Pay us a visit and see for yourself!

The principle cornerstones of our project organisation are:

**THE TEAM:**

Specialists from the fields of design, electrics, mechanics and programming together form the project team. You - as our customer - are part of the team. With the project manager you have a contact partner for everything.

**THE MILESTONES:**

All important deadlines are immediately available at a glance! This enables us to react quickly to delays.

**THE QUALITY CONTROL:**

Each task is formulated in a result-orientated manner and is dealt with in accordance with the four-eyes principle. Furthermore, the complete system is put through its paces with an internal acceptance review, before the joint acceptance of the system is carried out together with you.

**THE DOCUMENTATION:**

The consistent and pertinent documentation from the complete system down to individual component level offers a critical advantage with the procurement of replacement parts together with repair throughout the whole service life of the system.

**THE PROJECT VEHICLE:**

The most important information is clearly organised and consistently updated-quickly identifiable for all.
A COMPACT COMPLETE SYSTEM
To link machines and automation with one another optimally means space-saving, flexibility and cost-effectiveness.

WHILST OUR COMPETITORS ARE STILL BOLTING TOGETHER, YOU WILL BE PRODUCING ALREADY!
Machines and automation are supplied as a unit. Because the automation and the machines are firmly linked together they need not be aligned to one another. This also enables the system to be moved at a later date without any additional work being required.

ARE THE ROBOT CELLS IN YOUR WAY?
We place great emphasis on ensuring that all machine doors and maintenance hatches are constantly fully accessible.

AND INDIVIDUAL PARTS ARE ALSO MADE QUICKLY!
Despite the adaptation of automation, the system can also be operated manually, just as before. Thus, for example manual loading for individual parts in the daytime and automated operation in the night shift is possible.

SAFETY FOR YOUR COMPLETE SYSTEM
A CE mark for the complete system is critical for you as the operator. Considering machines and robots in isolation is not enough. With us you have everything from a single source.

ONE CONTACT PARTNER FOR EVERYTHING
With us you have a fixed contact partner for machines, processes and automation, right from the start. Together with you we will define the requirements and generate a detailed specification-insofar as this is not already available—whose concept will follow your specific tasks and which will serve as the basis for the successful project implementation.
We guarantee the continuity of the processes and thus achieve the most effective production flow. The advantages for you: Everything from a single source!

AND WHEN YOU NEED A LITTLE HELP?
Then we are there for you. For us a project is not concluded with the delivery of the system. For that reason the project manager is always available to you as a central contact partner, even afterwards: He will be happy to support you if you have questions and will ensure that you receive assistance as quickly as possible in the event of service support being required. Be it the provision of a replacement part by telephone, thanks to our in-house manufacturing we are also able to manufacture this at short notice or through the deployment of a service technician at your premises. Here we profit from the SPINNER group worldwide network, which is also available to us in the event of service support being required.
**ARE YOU STILL TEACHING OR ARE YOU ALREADY MANUFACTURING?**

We think like your machine operators! Our robots can be operated with your knowledge.

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**Avoid system shutdowns due to position correction!**

How often are systems at a standstill because the robot did not insert the part correctly? Small cause, large effect: System shutdown!

Our robot control surface is the solution for this! Positional correction is implemented similarly to the entering of offset values, supported graphically. Thus the teaching of positions on the clamping device or on the pallet is completely omitted. Each machine operator can implement corrections without any additional help.

**Simple re-equipping of the part family!**

When equipping a new workpiece, clamping device, gripper or a pallet, our surface will provide you with optimum support. Only the entering of a few parameters is required and the re-equipping is complete. Teaching is omitted completely. A change within the part family is carried out in a few moments. And of course you can save data and call it up again later.
**DO YOU KNOW YOUR WAY AROUND INTERFACES?**

Not necessary.

We take on the responsibility for the interfaces of the complete system. All components, whether machine, robot, measuring or subsidiary process station, communicate optimally with one another. This enables measurement values to be exchanged, programs adapted or machine axes specifically positioned for example. In doing so the focal point is the optimisation of your process. Thanks to the constant communication of all components valuable cycle time can be saved and process reliability gained.

**OUR ANCILLARY PROCESSES—YOUR INDIVIDUALITY**

Our ancillary processes assure your individuality. We have the right supplementary processes to resolve your tasks: Whether measuring, deburring, cleaning or labelling, all work processes will be seamlessly integrated into the system. There are almost no bounds to the creativity and huge adaptability.

- **Possible measuring example:**
  Raw part checking by robot or machine, measurement inside and outside the machine with corresponding feedback of the measured values to the control system

- **Possible deburring example:**
  Outside the machine in the robot’s drive area

- **Possible cleaning example:**
  In the robot’s drive area with air or ultrasonic cleaning

- **Possible labelling example:**
  Implemented as a station, e.g. through laser, dot-peen marker or engraver
We developed a combination of grinding, milling, cleaning and measuring for our customers. Along with the high process accuracy the customer placed very high requirements on the autonomy of the system. An exciting task for which our technicians developed a package of smart solutions:

- Automatic feeding via pallet stacker system
- The blank is screwed into the spindle for machining - incl. torque monitoring
- HF spindles on the linear carriage - one for vertical processes, one for horizontal processes and one for adjustable angle processes
- An additional side milling cutter on the linear carriage, in order to slot the workpiece
- Function of the slots will be monitored: The emergence of cooling lubricant through the slots will be detected via sensors
- Unscrewing of the workpieces
- Air blasting of the workpieces
- Measurement in optical shaft measuring station: The measured values are then transferred to the control system and an adaptation of the program is implemented if necessary
- Parts within tolerance are set down on the pallet, faulty parts in the NOK gate.

The system is also equipped with some additional features for support and for quality assurance:

- The covering of the machine interior with bellows protects the guides from grinding dust and swarf
- The HF spindles are permanently acoustically monitored for wear through a cooling lubricant stream by means of structure-borne noise and trued if necessary
- The external preparation of cooling lubricant via a belt filter assures the quality of the coolant.
Goods insertion grids stipulated by the customer, which are to be used for the feeding of housings. As the grids were too unstable to be automated, a base carrier which acts as a frame was developed. The housings in the customer’s insertion grids can now be fed into the machine via these base carriers. The robot identifies the orientation of the workpieces using a camera. Based on this the machine turns the spindle to the required position. Then the robot places the workpiece into the spindle where it will undergo the turning process.

Bushings are added via the vibration conveyor pot; these are to be pressed into the housings from the insertion grids whilst the force/displacement is monitored. Then the complete workpiece as well as the internal diameter of the bushing undergoes finishing machining. When the bushing is pressed into place the force/displacement characteristics are displayed directly on a screen and saved in a file for statistical purposes. In addition there may be an adaptation of the machining program as the measured values provide an indication of tool wear.

Additional workpieces are fed into a hopper as bulk goods. From this an ascending conveyor transports the raw parts cyclically into an oscillating conveyor. From there the raw parts move onto a rail where they are pre-machined (i.e. drilled) in order to keep the cycle time in the machine as short as possible.

The robot intervenes here: It packs the workpieces, detecting whether the holes in the workpiece are present via a camera, and then feeds the machine with these. The machine has a linear tool design with

- three turning tools
- a pressing mandrel
- a high frequency spindle for milling work

After the workpieces are machined they are cleaned in an ultrasonic bath with an attached blow-off station. After that the internal diameter of the bushing is measured by means of an air measuring probe. The values determined at this point can also be used to carry out an automatic correction of the machining program if required. Additional security is provided by the cyclical calibration of the measurement device in order to compensate out external influences such as temperature fluctuations.
Our specialists have devised a solution for a customer in North Rhine-Westphalia which is as cost-effective as it is space-saving.

The customer’s requirement was a compact system in which honing, turning and grinding processes were to be integrated. Furthermore this system should also be automated. The cost-effective SB with linear tool design was selected for the machining.

**Particular features: Permanent operation!**
- Workpiece changing: Two grippers on the machine carriage provide the feed of parts to the clamping device, as well as the discharge of the parts from the clamping device.
- Workpiece provision: The workpieces are separated and fed to the machine via a rail.
- Expansion of autonomy: A conveyor belt is attached to the machine in order to provide a high degree of autonomy for the system. This can be used to feed the workpieces into the rail if required.

**Particular features: High surface quality and precision!**
- Grinding: High frequency spindle with sealing air
- Sensor polling to avoid collisions
- Compact design of the turning tool
- Honing: Honing stylus for interior surface, held in a sprung floating chuck