WANDFLUH
Produktions AG

Quality products
for demanding applications

WAPRO **AUTOMATION**

SOLUTIONS **SINCE 1946**

"We want to inspire our customers around the world with high-quality products and services and get engaged as a valuable partner in the development and manufacturing of technically demanding components and systems."

Hansruedi Wandfluh and Matthias Wandfluh

ABOUT **US**

Since 1946, Wandfluh has been producing and developing high-quality products tailored to various markets. With Wandfluh Produktions AG, our customers have an efficient partner at their side for mechanical manufacturing, mounting of assemblies and customer-specific automation solutions.

WANDFLUH **GROUP**

WANDFLUH AG
Frutigen / CH

WANDFLUH PRODUKTIONS AG
Frutigen / CH

WANDFLUH OF AMERICA, INC.
Gurnee, IL & Charlotte, NC / USA

WANDFLUH GMBH
Emmingen / DE

WANDFLUH SM GMBH
Schweinfurt / DE

WANDFLUH UK LTD
Southam / UK

WANDFLUH SARL
Saint-Priest / FR

WANDFLUH CO. LTD
Shanghai & Beijing / CN

WANDFLUH GMBH
Dornbirn / AT

Hansruedi Wandfluh, Vice Chairman of the Board
Matthias Wandfluh, Group CEO & Chairman of the Board

WORLDWIDE

- Own companies in Europe, North America and Asia
- Distributors in more than 30 countries around the world
- Flexible and solution-oriented handling of customer needs
- High-quality, cost-effective and punctual processing of projects

PARTNER

- A partner for demanding hydraulic projects due to technical specialists in every field
- Design and construction of customer-specific automation solutions
- Manufacturing partner for mechanical components and assemblies

KEY POINTS

- High level of in-house production
- Swiss manufacturer
- Quality products and services
- Fast delivery times from prototype to series production
- ISO 9001 certified, documented quality since 1992
- ISO 13485 for medical devices

WAPRO **AUTOMATION**

Through the manufacturing of individual parts and their mounting into assemblies, Wandfluh Produktions AG has been active for years in the automation of manufacturing processes. With a team of automation specialists with years of practical experience in this field, Wapro develops solutions for its customers, whether as special machines or based on an industrial robot.

BRANCHES AND MARKETS

An automation solution is used wherever monotonous series work can be performed by a machine. Usually, these are individual work steps in an overall process, but require a large number of working hours. For example, an automation system can often also eliminate a bottleneck in a production chain, as such a machine can work in shifts if necessary without causing significant additional costs. Experience in the various industries has shown that the amortisation of a corresponding system can be achieved after a short time.

The customers are active in the following markets:

- Machine industry
- Automotive industry
- Food industry
- Construction industry
- Defence industry

PROJECT SCOPE

Projects for automation systems range from simple mounting aids to fully integrated solutions with several workstations. The planning and construction phase depends strongly on the complexity of the required work steps on the installation. This phase may take up to several months. The implementation time, however, is then only a few weeks to months.

...**process reliability** in precision

SPECIAL MECHANICAL ENGINEERING

AUTOMATED SYSTEMS

Depending on the quantities involved, such systems differ mainly in their degree of automation. This is determined together with the customer to find the most efficient and cost-effective solution for the respective application. The many years of experience in this field and the possibility to design and manufacture the parts required for an automation solution in-house, result in cost-effective systems with short delivery times that are precisely adapted to customer requirements.

Extract from the projects:

- Unloading system to machine tools as own product
- Automatic assembly machines for mechanical assemblies
- Assembly cell for coffee grinders
- Seal press
- Valve assembly and test bench
- Leak tests in vacuum
- Pressure measurement of valves with automated good/bad sorting

ENGINEERING

The automation team accompanies the customer from the feasibility study through planning, design and construction to the implementation of the desired system. Finally, the right package can be put together from the extensive catalogue of services.

The service includes:

- Feasibility study
- Risk analysis
- Pre-project
- Test series with corresponding evaluation
- Design and construction of the special system
- Drawing work on a subcontract basis

For the engineering process, the latest calculation and design tools are used and value is placed on simple and reliable data exchange as well as open and uncomplicated communication with the customer.

Features:

- Development, design and construction of an application-specific automation system
- CE certification on customer request
- Compliance with all laws and regulations applicable in Switzerland in accordance with the Machinery Directive 2006/42/EC and the corresponding standards according to EN/ISO
- Monitoring of the overall project from the specifications to and including acceptance of the plant
- Repair and customer service on site
- Support for any expansion, modification or adaptation projects over many years

CONFORMITY

All automation solutions are developed and built according to current Swiss and EU standards. Other specifications, such as a system with explosion protection certificate, can be implemented on customer request.

SERVICES AND SUPPORT

Wandfluh Produktions AG offers complete solutions from a single source. The development of a customised system is under the same roof as the calculation and design, the manufacture of the required special parts and the assembly and programming of the entire system or individual modules.

The services include:

- Support with the creation of a requirement specification sheet
- Elaboration of the customer's specifications
- Rough and detailed concept with layout drawings
- Realisation with initial acceptance in the factory at Wapro
- Transport to site and commissioning
- Final acceptance at the customer's site
- Operating instructions and declarations of conformity
- Support and service
- Customer service

VALVE **TESTING SYSTEM**

The valve testing system is used as an automatic testing station for various types of pressure valves and their different pressure ranges. Before the test, the correct valve type must be selected via the HMI. A Siemens PLC with integrated HMI has been installed to operate and control the system.

FIELD OF APPLICATION

The test system can be used to test various relief valves (safety valves) between 3 and 16 bar opening pressure. The valves are checked for correct function using air pressure.

FEATURES

- Freely mountable system
- Compact design LxWxH 0.9 m x 0.8 m x 1.4 m
- PLC control from Siemens
- Safety circuit
- Process reliable due to precise pressure measurement with high repeat accuracy

CUSTOMER BENEFITS

- Solution from a single source
- Overall concept, planning of the electronics and pneumatics as well as realisation of the system by Wandfluh
- Compliant solution according to food standards
- Testing of 200 to 300 valves per hour

SEAL **PRESS**

The seal press assembles the receptacle and the seal into a seal set. The two components are conveyed individually by two spiral conveyors over a rail into the pressing area.

FIELD OF APPLICATION

The seal press, designed and realised as a stand-alone solution, is part of an extensive assembly and testing process. The autonomy of at least four hours saves time-consuming manual work.

FEATURES

- Pressing of approx. 360 seals per hour
- Autonomy of around four hours
- Power supply via 400 VAC and 16 A, 50 Hz
- Dimension LxWxH 0.9 m x 0.8 m x 1.4 m

CUSTOMER BENEFITS

- Payback period of less than three years
- PLC, electronics and pneumatics are designed and realised by Wapro
- One point of contact for complete solution
- Space-saving, mobile solution

MOTOR **SUPPLY**

The motor feed system equips a station from the customer with small electric motors. The motors are fed in blisters via a conveyor belt and then placed in an intermediate depot by an 8-fold vacuum gripper. From there, a mechanical gripper is used to individually load motors onto the downstream system, where they are further processed.

FIELD OF APPLICATION

Fully integrated system in a customer's assembly line, where electric motors are mounted in various assemblies from the automotive industry and then tested.

FUNCTION

The feed system equips a fully integrated assembly and test cell with electric motors. 20 motors are fed per minute.

The empty containers/blisters are pushed into an ejection drawer. The system is also equipped with a camera that detects incorrect motor types in the intermediate depot so that these are automatically thrown into the reject container.

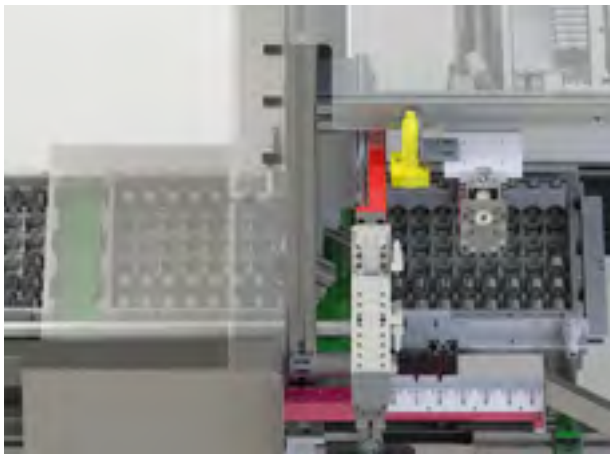
The Siemens control system was integrated into the overall plant via IOs and was designed and realised by Wandfluh.

FEATURES

- Integration in assembly line
- PLC control integrated in assembly line
- Cycle time of three seconds
- Integrated Vision System
- Precise motion sequences with high repeatability

CUSTOMER BENEFITS

- Central control over the entire system
- Stackable feeding of the blisters if required
- Integrated detection of missing parts
- Variable cycle time, adapted to main system
- Processing of different types



ASSEMBLY CELL **COFFEE GRINDER**

The automated assembly cell assembles complete coffee grinders from ten individual parts. The finished mills are labelled inside the cell and led out of the plant via a conveyor belt. The design of the system allows four different types of grinders to be mounted on one and the same installation.

FIELD OF APPLICATION

Wapro has been manufacturing coffee grinders for industrial and commercial use for several years. To make the assembly of the approximately 10 individual parts more efficient and to ensure a high level of process reliability, the Wandfluh automation specialists designed and implemented an assembly cell for this purpose. The existing knowledge of manual assembly and testing processes enabled the realisation of a compact and efficient assembly cell as an alternative to manual assembly. The installation is now firmly established in the production process and has already been slightly adapted to the new conditions several times due to design changes at the mill.

FUNCTION

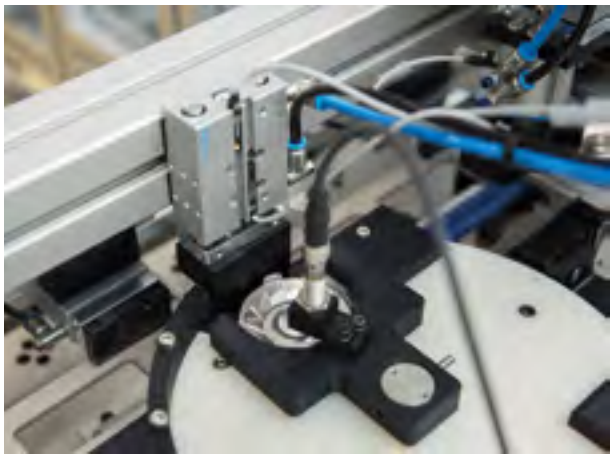
The individual parts are inserted into material depots and fed via accumulation conveyors to the respective assembly stations. There they are assembled step by into the finished coffee grinders and labelled. The finished grinders are then tested and fed out of the machine, where they are packed.

FEATURES

- Adaptable to different product types
- Automated function testing available
- Modular structure
- Dimensions LxWxH 2.5 m x 1.5 m x 2 m
- Autonomy scalable, depending on component depots
- Output of approx. 30 grinders per hour

CUSTOMER BENEFITS

- Four hours of autonomy
- Payback period of less than three years
- Tested product ready for packaging
- Traceability ensured with product label



HANDLING SYSTEM STANDARD

The handling system is a pick-and-place solution from Wandfluh Produktions AG. It was developed as an automation solution to production machines, as no system was available on the market that could satisfactorily cover the existing needs.

FIELD OF APPLICATION

This handling system was developed because no satisfactory solution for the existing task was found on the market. The system is used where the manufactured components are to be protected from surface damage and placed directly into washing grids or transport containers.

The system can be used very flexibly because it is compact, adjustable in height and mobile. The protected working space of the robot also ensures work safety at all times without having to reduce the system speed.

In addition, functions that are not required in every case are available as options, such as visual part recognition, capacity expansion, test part output, part overflow or blowing off the individual parts.

FUNCTION

The system is based on an industrial robot that has an action radius of approx. 600 mm to approx. 1400 mm, depending on the version. The robot picks up the finished parts from the integrated conveyor belt and places them on a prepared grid or in a basket.

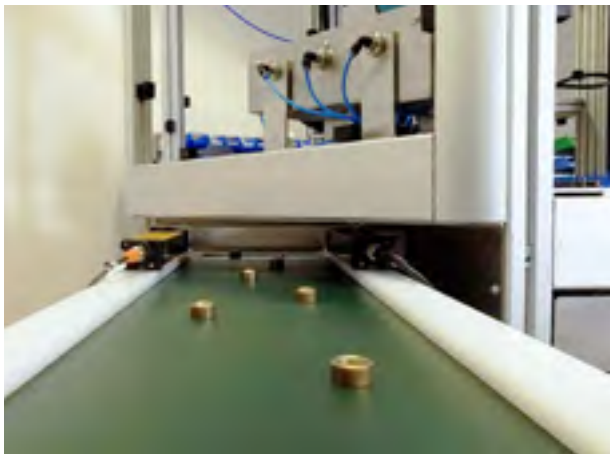
Optionally, random samples can be taken from the manufactured parts, which are kept separate from the rest of the series. Depending on the type of container, these can be stacked in the system, allowing a high degree of autonomy to be achieved. However, this also depends on the size and volume of the parts. Autonomy is part and cycle time dependent.

FEATURES

- Continuously adjustable in height
- Simple and thus cost-effective programming
- Part recognition by means of sensors or Vision System

CUSTOMER BENEFITS

- Cost effective solution
- Cycle time of fifteen seconds possible (depending on parts)
- High autonomy
- Flexible use on different machines
- Various service packages
- Proven and tested concept



HANDLING SYSTEM INDIVIDUAL

Based on the standard handling, customer-specific solutions are also being built which deviate from the standard in terms of size, structure, autonomy or subsequent processes. HORST industrial robots of different sizes are available as pick-up robots for the automation systems, depending on requirements.

FIELD OF APPLICATION

The realised solution is on an Index-Traub MS22-8 lathe in a large mechanical manufacturing company. Turned parts are made of steel with a length of 10 mm and a diameter of 22 mm. Since always the same part has to be produced or removed, optical part recognition was not necessary. Communication with the lathe is kept simple and only involves a stop signal from the handling system to the lathe in case of an error or if the containers are all filled.

FUNCTION

The system is based on an industrial robot with a radius of action of 600 mm. From the ejector of the lathe, the parts are transferred to the conveyor belt of the removal system, from where the robot picks up the components and places them in the waiting washing baskets. Due to the simple process, a cycle time of around 10 seconds could be achieved. With the washing baskets placed in the handling system, this results in an autonomy of approx. 6.5 hours.

FEATURES

- Operation via HMI
- Simple and therefore cost-effective programming using FX software from fruitcore and Siemens PLC.
- Part detection by means of sensors
- Stop function when full containers

CUSTOMER BENEFITS

- Cost effective solution
- Cycle time of 9.7 seconds (depending on parts)
- Autonomy of 4 hours
- Can be used flexibly on machines of the same type (height of the removal point)

RETROFIT OF SYSTEMS

Retrofitting and converting older systems can often be more reasonable and favourable than replacing them with a new system. The advantage for the system operator lies in the modernisation of the system and the associated increase in productivity as well as a functioning spare parts management.

FIELD OF APPLICATION

The modernisation of an existing system must be considered and analysed in the context of the entire value chain. It is often right to replace assemblies for which spare parts are no longer available or to upgrade the automation technology to programmable logic controlls. Retrofitting sensors and digitalisation of the system can also make a valuable contribution to increase efficiency. In complex, integrated overall systems, however, retrofitting subassemblies can also be the wrong way to go.

PROJECT EXAMPLES

Retrofit honing system:

The honing system was electrically and pneumatically brought to the current state of the art. The retrofit was realised together with the customer.

Retrofit screw system:

The operation of the system was modernised with a touch panel, the pneumatic valve system was replaced by a valve terminal, and force-optimised cylinders were used, thus reducing energy consumption at the same time. The customer now also has complete documentation that complies with the standards.

GOALS

- Extending the service life
- Increase in production volume
- Energy saving
- Fulfilment of applicable legal requirements, e.g. occupational safety
- Embedding old equipment in a modern IT environment

ADVANTAGES

- Lower investment than with a new system
- Stable solutions can be adopted
- Low staff training costs
- Short and well plannable interruption of operations
- Current and complete documentation
- Permanent supplier support
- Lived sustainability, acting in an environmentally conscious way

WANDFLUH
Produktions AG

SWITZERLAND
Wandfluh Produktions AG

Parallelstrasse 42
3714 Frutigen
Phone +41 33 672 73 73
wapro@wandfluh.com

SWITZERLAND
Wandfluh AG

Helkenstrasse 13
3714 Frutigen
Phone +41 33 672 72 72
sales@wandfluh.com

FRANCE
Wandfluh SARL

Parc Technologique
Immeuble le Pôle
333, Cours du Troisième Millénaire
69791 Saint-Priest Cedex
Phone +33 4 72 79 01 19
contact@wandfluh.fr

GERMANY
Wandfluh SM GmbH

Silbersteinstrasse 3
97424 Schweinfurt
Phone +49 97 21 77 65 0
info-sm@wandfluh.de

GERMANY
Wandfluh GmbH

Friedrich-Wöhler-Strasse 12
78576 Emmingen
Phone +49 74 65 92 74 0
info@wandfluh.de

CHINA
Wandfluh (Shanghai) Hydraulic System Co. Ltd.

No. 450 Beihengshahe Road
Minhang District
Shanghai 201 108
Phone +86 21 67 68 12 16
sales@wandfluh.com.cn

USA
Wandfluh of America, Inc.

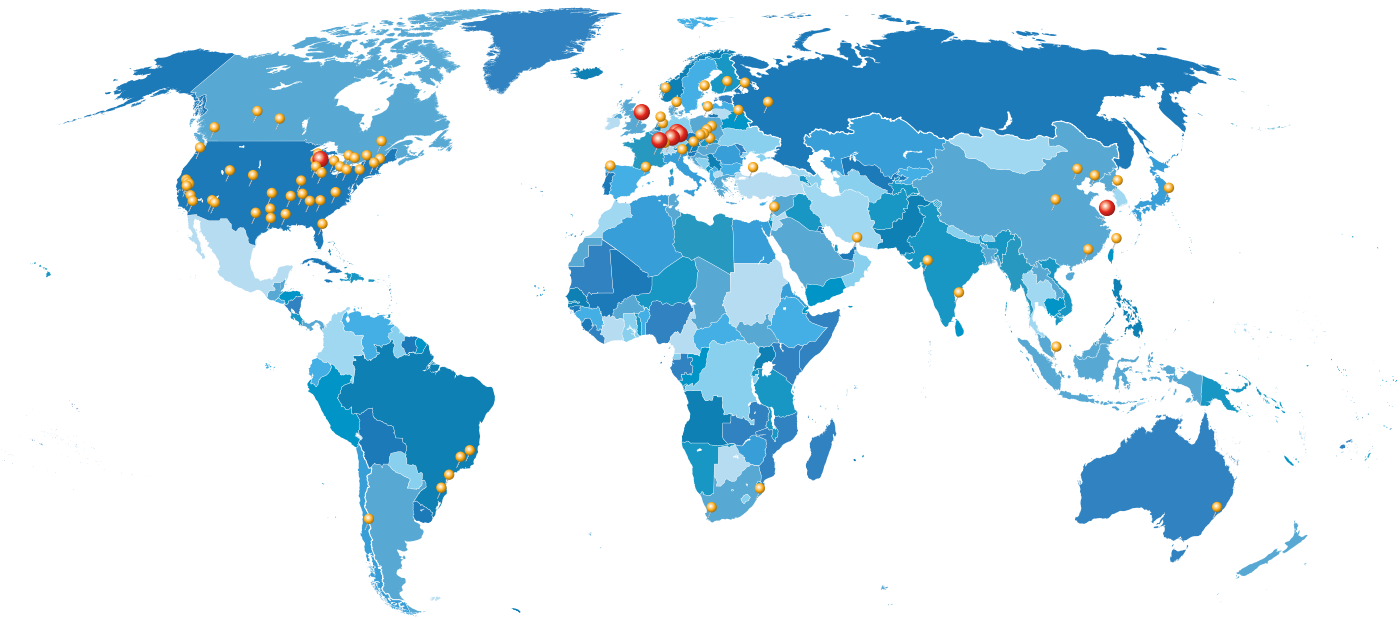
8200 Arrowridge Boulevard, Suite-D
Charlotte, NC 28273
Tel. +1 847 566 57 00
sales@wandfluh-us.com

UNITED KINGDOM
Wandfluh UK Ltd.

Northfield Road
Southam CV47 0FG
Phone +44 1 926 81 00 81
sales@wandfluh.co.uk

AUSTRIA
Wandfluh GmbH

Färbergasse 15
6850 Dornbirn
Phone +43 55 72 38 62 72 0
office-at@wandfluh.com



SOLUTIONS **SINCE 1946**

ID0521E