Team Presentation

TR-Automation

Retrofit your press plant from a single source

Business Unit
TR-Automation

Release notice

We expressly note that the dimensions and tolerances noted in the drawings are non-binding. Technical and design changes are reserved. They serve solely to illustrate the product. Contact our sales team for a specific offer with a binding drawing.

For information and data, see www.tr-automation.com

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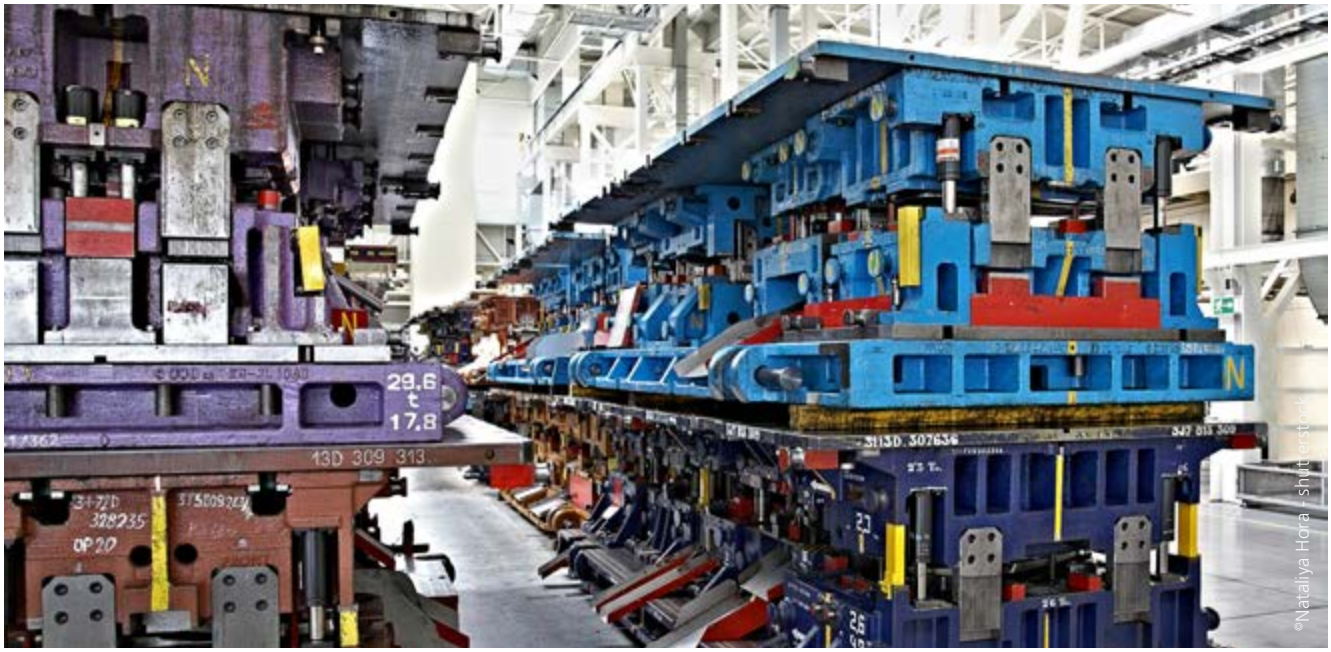
Your press plant at the cutting edge of technology

You would like to upgrade or modernize your press plant in a retrofit project: What you need is comprehensive specialist knowledge and many years of experience renovating and optimizing challenging press plants.
As an expert for retrofit projects, the TR Automation Business Unit of the TR Group is your competent partner for modernizing and overhauling press plants. Use our extensive know-how of hydraulic and mechanical presses, blank loaders and automation systems through to cutting systems and internal high-pressure forming plants (IHU). With your retrofit project, you get to benefit from an all-round carefree package that covers electro-construction, hydraulics & pneumatics, mechanics, programming and service.
The TR-Automation team of experts takes you step-by-step through the retrofit or renovation of individual machines and systems in the press plant or of entire press lines. We guarantee maximum transparency and orient ourselves completely to your specific requirements - from project planning and realization through to starting the system on site and subsequent training of your employees. For top-modern machines and systems in a press plant at the cutting edge of technology offering the best performance and efficiency.



Hydraulic and mechanical presses

_Tryout presses
_Multicurve presses
_Transfer presses
_Press lines
_Single-action and multiple-action draw presses
(ram and ram cushion, die cushion, blank holder)

Blank loaders

The problem-free feeding of blanks is key to the production performance of the forming system. The design of the blank feed is also known as the blank loader. The blank material used, the stack form and range of parts involved influence both the concept design of the blank loader and the production performance of the press. Blank washing systems and blank lubricating systems can be integrated into the plant as required.

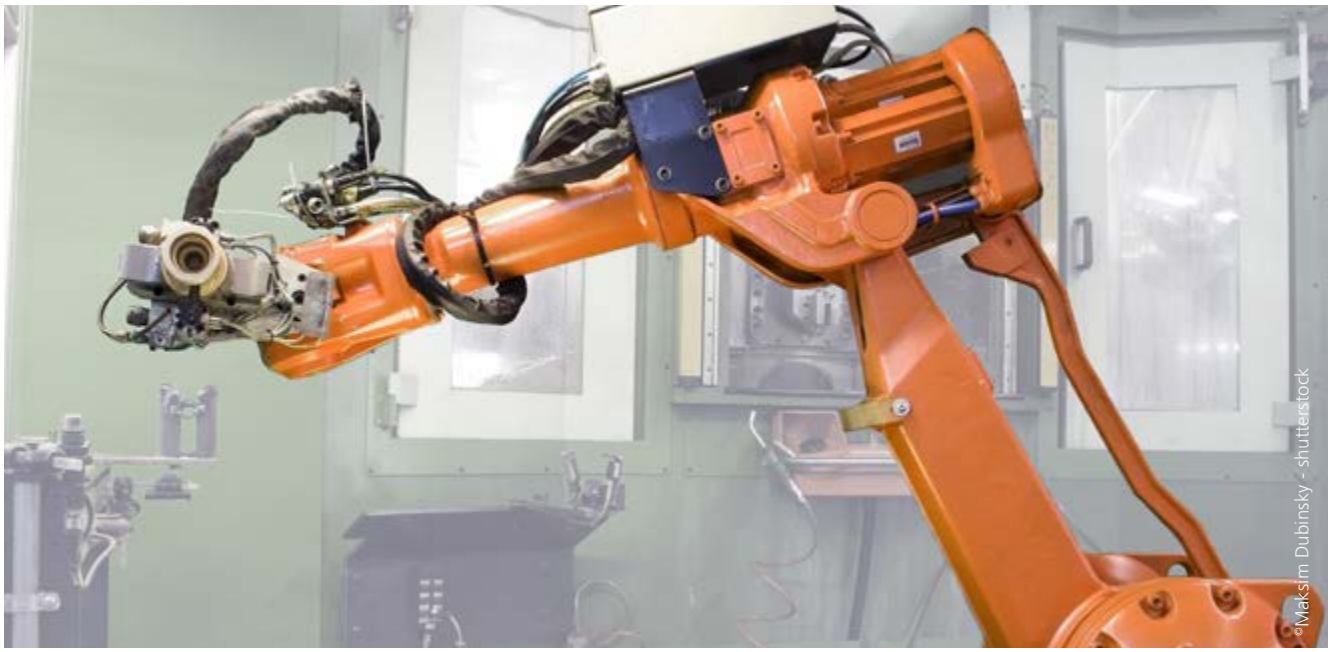
TR-Automation takes over overhauling or the complete redesign of the blank loader in your forming system. We modernize the individual components of the blank loader and ensure smooth interaction - the best foundation for optimal functioning presses and efficient production processes.

Cutting systems

Blank production is the basis for the quality of the subsequent production processes, e.g. in car-body assembly in the automotive industry. The exterior skin parts particularly place high demands on the surface quality of the supplied blanks.

TR-Automation takes over the overhaul or modernization of your coil systems or cutting systems. We update the individual components of the coil system and ensure they work together smoothly. This not only increases the precision and throughput of your cutting systems, but also gives you greater availability at the same level of safety - a perfect basis for trouble-free, highly-efficient production in three-shift operations.

Your press plant at the cutting edge of technology



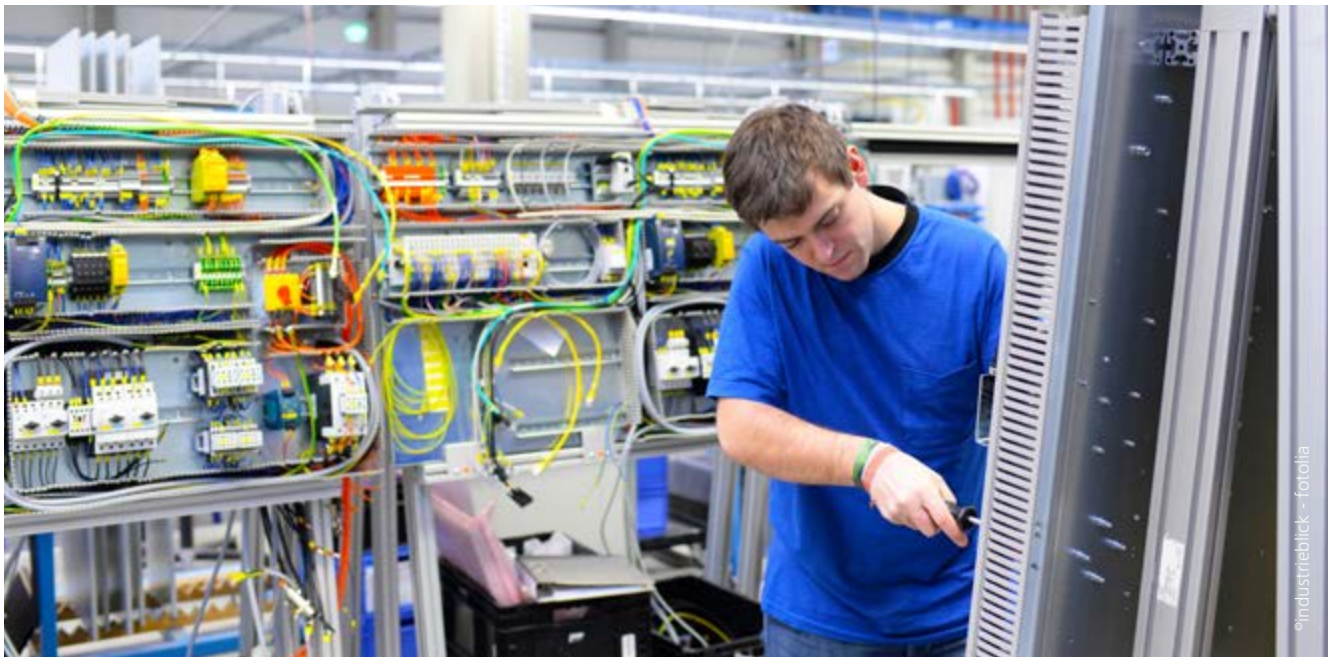
Automation systems

Even automation systems in press plants start to get old at some point in time. With modern transfer systems, feeders, robots, blank loaders, turners and orientation stations, speedbar modules and stacking systems, which are integrated seamlessly into the overall system and tuned to function perfectly together, we ensure that your production processes experience a measurable boost in efficiency. And we can also take over the renovation of individual components or complete automation systems in your presses and press lines.

IHU systems

In Internal-High-Pressure Forming (IHU), metallic tubes or hollow parts are formed in closed forming tools by way of internal pressure. For the production processes to be as efficient as possible and to achieve a high-level of availability and maximum throughput, what you need for these complex techniques is that the individual components of the IHU system are at the state of the art and work together seamlessly. TR-Automation modernizes your existing IHU systems to include cutting edge technology and coordinates each module to work perfectly in tune with the system as a whole.

Range of services of machine & system retrofits



_Consulting
_Recording and analysis of the actual condition
_Process optimization

_Project management
  _Specifications management
  _Development of specifications
  _Project planning
  _Risk and hazard analysis

_Construction and development of the different areas
  _Electro
  _Hydraulics/Pneumatics
  _Mechanics
  _Programming

_On-site assembly and installation
_On-site commissioning
  _System-specific documentation
  _Training of your operating and maintenance personnel during the handover phase
_CE marking

_Service
  _Training
  _Production supervision
  _Support
  _Remote maintenance

Retrofit-services

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For presses and press lines, blank loaders, automation systems, coil systems or IHU systems: to ensure smooth production processes, you need optimal-functioning electrics with control systems, sensors and actuators, convenient visualization solutions and comprehensive safety systems. TR-Automation analyzes your electrics system in the press plant to reveal any weaknesses and by modernizing specific areas ensures that the control of all of the systems functions as simply, trouble-free and efficiently as possible.

Programming

- Programmable safety control (PPS)
- Storage-programmable control (SPS)
- Visualization
- Operation and preselection panel (BVT), two-hand operating points, panel PC, touch-panel
- Controller
  - Ram position control
  - Ram pressure regulator
  - Ram force regulator
  - Ram speed control
  - Ram parallel control, Ram synchronizer
  - Intelligent pre-control of ram
  - Limitation control of ram
  - Ram cushion position control
  - Ram cushion pressure regulator
  - Die cushion position control
  - Die cushion pressure control
  - Blank holder pressure control, blank holder fine adjustment
  - Intelligent pump control
  - Electrical drive control in automation systems
  - Path control
  - Individual control and regulation algorithms
  - Individually adjustable number of axes
  - Setpoint selection
  - NC controls
    - Continuous path control systems
    - Path generators

Electro

_ Programmable safety control (PPS)
_ Storage-programmable control (SPS)
_ Cabinets and boxes:
Control cabinet, engine cabinet, terminal box, industry PC, control lines, power cable, bus lines: Safetybus p, ProfiSafe, Profinet, EtherCAT, Ethernet, Profibus
_ Visualization
Operation and pre-selection panel (BVT), two-hand operating points, panel PC, visualization, touch-panel, operating panel, keyboard
_ Sensors and actuators
Sensor signals: pressure, speed, path, position, force, valve position, rotary encoder, actuator signals: valve, hydraulic valve, proportional valve, servo-valve, motor, electric motor
_ Controller
_ Machines and personal protection
Protective casing, doors, gates, lift gates, light barriers, emergency off switches, emergency stop

Hydraulics / Pneumatics

_ Sealing valves
_ Sealing cylinders
_ Checking/ overhauling storage
_ Replacing valves and units
_ Redesign of valve blocks and other components

Mechanics

In order to achieve powerful, efficient, highly available and safe production processes in the press area, you need reliable mechanical components in your production systems.

We take over retrofitting your mechanical systems - for example the cams, guides and head pieces. In addition, we help you with the complete relocation or the set-up and dismounting of systems and machines. This minimizes downtimes and we can give you the security that your production systems will be functioning optimally immediately after re-installation.

Range of services

A retrofit serves as a replacement for components that are no longer available. A process optimization can also be carried out, i.e. productivity is increased. In comparison to purchasing a new system a cost optimization also takes place, as the existing system is only upgraded and retrofitted. In many cases the machine can be used more flexibly after a retrofit. The retrofit of a machine has a higher internal acceptance, as the machines and systems are generally well known.

TR-Electronic projects at a glance

_ Adaptive control, ZIM-project
_ Continuous path control for feeder automation
_ Care and maintenance of Müller-Weingarten control systems
_ Blank holder fine adjustment to mechanical production presses
_ Brake test stand
_ Casing jack for offshore installations
_ Diecasting machines
_ Hydraulic presses for toolmaking
_ Hydraulic production presses
_ IHU systems
_ Mechanical presses
_ Multicurve presses
_ Blank loaders - destacking feeders, conveyor belts, washers, lubrication units, centering station
_ Press with parallelism control
_ Press with accumulator supply
_ Robot automation / coupling and integration into system control
_ Cutting systems – belt conveyor, press, stacking system
_ Stretch forming presses
_ Transfer presses
_ Die cushion pre-acceleration
_ Die cushion pressure control

Overview of TR-Automation references

_Airbus Deutschland GmbH, Nordenham-Einswarden
_Allgaier AEF S.à.r.l, France
_Allgaier Werke GmbH, Uhingen
_Audi AG, Neckarsulm
_BMW AG, Munich Dingolfing
_Erdöl-Erdgas Workover GmbH, Salzwedel
_G. Siempelkamp GmbH & Co. KG, Krefeld
_GEDIA Gebrüder Dingerkus GmbH, Attendorn
_Hörnlein Umformtechnik GmbH & Co., Schwäbisch Gmünd
_Knorr-Bremse AG, Munich
_Läpple Automotive GmbH, Teublitz
_Magna Drive Automotive Industries of America Inc., USA
_Magna International Stanztech GmbH, Heilbad Heiligenstadt
_Magna Sonora Forming Technology, Mexico
_Magnetto Automotive Deutschland GmbH, Treuen
_Opel AG, Rüsselsheim
_Schuler SMG GmbH & Co. KG, Esslingen
_SMF GmbH & Co. KG, Ahlen
_Strothmann Machines & Handling GmbH, Schloß Holte Stukenbrock
_ThyssenKrupp System Engineering GmbH, Wadern-Lockweiler
_Tower Automotive, Zwickau
_TU Dresden, IFD
_University of Stuttgart IFU
_VDL Nedcar, The Netherlands
_Volkswagen AG, Wolfsburg
_Werkzeugbau Leipzig GmbH, Leipzig

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