Your Partner for Industrial Matters
RILE Group – competent production & logistic services from one source

OVER 60 YEARS EXPERIENCE FOR OUR CUSTOMERS

- 240 employees
- 35,000 m² production space and assembly area
- Area in total 70,000 m²

YOUR PARTNER FOR INDUSTRIAL MATTERS

Entwicklung & Konstruktion – CNC-Zerspanung & Baugruppenmontage – Maschinenbau & Anlagenbau
Flexible Automation & Robotertechnologie – Carbon-Verarbeitung & Additive Fertigung – Logistikberatung & Logistikschulung

RILE Group - Graflinger Str. 226 - D-94469 Deggendorf - Fon: +49-991-2507-280 Fax: -211 sales@rile-group.com
System integration

Modern factory automation from one source:

- Robot technology incl. Gripper systems
- Machine load
- Concatenation of machinery
- Production island solutions
- Rile flexible manufacturing system (FMS)

- Linear and gantry systems
- Palletizing technology
- Visionsystems (Bin picking)
- Deburring technology

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We support you:

From the design engineering, via modifications to final assembly and acceptance of your specified machine:

**Design:** - *Solid Edge*

**Electrical engineering:** - *EPLAN*

**SPC programming:**
- *Simatic S7*
- *Pro Tool*
- *Step 7 Professional*
- *Win CC Flexible*
Tailor-made solutions for loading and unloading of machine tools
As a systems integrator, we integrate the robot you prefer.

We are able to integrate the following brands:

KUKA  STÄUBLI  ABB  MOTOMAN  FANUC
**Flexible and mobile loading cell**

**Special features:**
- Due to short changeover times, the cell is ideally suited for small to medium series
- The operator can put on new parts or change over during the robot operation
- The loading cell can be used for various CNC machines
- Loaded controller is rotated by robot
- Little space required for installation
- No protective fence necessary
- The cell is mobile, it can be transported quickly and easily from one CNC machine to another with a forklift truck or pallet truck

**Advantages:**
- No robotic downtime during set-up
- By means of flexible attachments and quick set-up on the turntable, it is possible to react more effectively to short-term orders
- The operator can operate multiple loading cells simultaneously
Flexible palett Automation

**Special features:**
- Machines can be loaded from the front and the side
- Handling of the pallets within the plant (less forklift traffic)
- Less operator required / Operatorless layers

**Advantages:**
- Handling of different pallet types
- Buffers for pallets
- Ergonomic setup
- Suitable for heavy and large pallets
- Optimized machine utilization
- Higher productivity
- Higher flexibility
WORK PIECE LOADING

'Robot cell' main module with 6-axis robot

Direct connection to the processing machine!

Compact robot cell including protective housing

- Standard cells in various sizes
- Direct connection to the processing machine
- It may be possible to continue to load the machine manually if desired
- Various robot types can be used
- Cell can be transported using a fork lift track

Flexible workpiece handling for process machines

-> DIRECT WORK PIECE LOADING <-

Pallet module

Supplies workpieces using transport pallets
(Euro-pallets, single-purpose pallets made from steel, aluminium or plastic)

Conveyor belt module

Supplies workpieces using transport pallets and removes pallets on the conveyor belt
(Different size pallets and direct connection to other processes are possible)

Chain conveyor module

Supplies workpieces onto circulating workpiece carriers
(Different size pallets, suitable for small machinery)

Tiered pallet storage

Fully automated storage for part supply
(Brilliantly designed over many hours. Design and retrieval from storage independent of machinery)

Grabber module

All types of grabbing technology
(pneumatic, hydraulic, vacuum, magnetic, servo technology)

Drawer module

Can be used as a testing drawer
for specifically admitting or discharging parts that are defective

Alignment + turning module

Modules for automatic oriented positioning and turning of workpiece

Processing module

Stations for any necessary additional processing, turning, drilling, grinding, brushing, etc.)

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**System integration**

**Pallet loading**

### Modular 'LOADING CELL' for processing machines

**MACHINE PALLETS OR CLAMPING DEVICES ARE LOADED VIA ZERO POINT CLAMPING SYSTEM**

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**'Robot cell' main module with 6-axis robot or palletising robot**

Direct connection to the processing machine!

**Compact robot cell including protective housing**

- Standard cells in various sizes
  - Direct connection to the processing machine
  - If necessary, the robot can be used for work that cannot be machine loaded
- Cell can be transported using a fork lift truck

### 'Pallet/device supply' extension modules

Flexible adjustment to your application profile!

- **Pallet modul**
  - Supplies machine pallets or devices via transport pallets.
- **Shelf storage module**
  - Machine pallets are supplied in shelf storage.
- **Tiered pallet storage**
  - Fully automatic storage for pallets/devices.

### 'Pallet/device handling' additional modules

Complete automation from one source!

- **Grabber module**
  - Suitable for machine pallets and devices depending on the application case and machine to be loaded.
- **Drawer module**
  - Can be used as a testing drawer for specifically accepting or dispensing parts that are difficult.

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**Tiered-Pallet Storage**

- Fully automatic storage for part supply
- Also suitable for batch manufacturing
- Unmanned manufacturing over many hours
- Deposit and retrieval from storage independent of manufacturing

**Automation sequence with the tiered pallet storage**

- Loading and unloading station: There are separate conveyor belts for admitting and discharging the workpiece carriers.
- Pallet storage: Chain conveyors on multiple levels as storage slots, as well as converters and lifting units for transport within the storage.
- Separation: Combination of chain conveyor, conveyor bolts and lifting unit.
- Control / visualisation: Own PLC with visualisation.
- Manually position the workpiece carrier. Use the command device to inform the RILE STORAGE which workpieces are to be admitted. Workpiece carriers that have been processed completely are discharged on your command.
- The workpiece carriers are transported to free slots and fed to the separation device, as required. Workpiece carriers that have been processed completely are deposited into the storage. On your request, they are discharged.
- The workpiece carriers are supplied on a position-oriented basis. The automation unit removes the individual workpieces and thus loads the appropriate machines. Multiple supply slots ensure that the machining process is not interrupted.
- The RILE STORAGE has its own PLC and is thus independent of other systems. The automation unit can be operated subordinate to the control, meaning that all necessary inputs and outputs for the complete automation process can be performed via the visualisation.

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Automation of work pieces (pallets) and tools
Reduces production lead times – increases flexibility Working area (machine)

X-axis = 1,250 mm  Y-axis = 1,000 mm  Z-axis = 1,000 mm

Pallet size (machine)
800 mm x 800 mm x 125 mm
for work pieces of up to 1,540mm x 1,250mm x 1,200mm
other pallet sizes can be used in the RILE FMS at any time

Dimensions FMS  31m x 17m x 6m     62 pallets    more than 2,000 tools
Automation of work pieces (pallets) and tools
Can also be used as individual modules
**System integration**

**FMS: Rile flexible manufacturing system**

**Automation of work pieces (pallets) and tools**
Reduces production lead times – increases flexibility

**Working area (machine)**

**Benefits of the flexible manufacturing system**
- Increase in customer retention thanks to immediate delivery capability and improved deadline adherence through more optimum forward planning
- Strengthened process discipline thanks to a thought-out process structure
- Reduction in lead time, as the order receives the go-ahead only in the case of tool and part/device/pallet availability
- Reduction in just-in-case stock through order-specific manufacturing
- Improved product quality and lower subsequent processing costs or lower rejection rate thanks to heightened process security
- Cost saving through:
  a) Manufacturing without setup times
  b) Unmanned operation / operation with low staffing level possible
  c) Available machine lead time is increased
  d) Optimum longer spindle lead time
  e) Reduction in machine hourly rates / production costs (manufacturing costs)
- Increase in manufacturing flexibility (also thanks to EMS – Extendable Manufacturing System)

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### Branch of industry

| General machine tool industry | Packing & printing |
| Cars & commercial vehicles | Environmental engineering |
| Agricultural & mining | Solar & photovoltaic |
| Railway & traffic | Food engineering |
| Plastics | Medical engineering |
| Wind power | Naval & shipping |
| Aviation & aerospace | Machine tools |
| Electrical engineering | Robotics |
| Optical data carriers | Tobacco |