



# Requirements and solutions

Automation solutions optimize material flow, improve machine use and increase work and process reliability. The building blocks are modular so that the degree of automation can be adapted at a later date. The solutions range from simple handling to fully automatic operation.

## Automation requirement profile

| Automation system                                                                   |                  | Functionality |         |           |                     |      |         |
|-------------------------------------------------------------------------------------|------------------|---------------|---------|-----------|---------------------|------|---------|
|                                                                                     |                  | Shuttle table | Loading | Unloading | Large parts removal | Sort | Storage |
| Laser cutting system<br>without automation system                                   |                  | ✓             |         |           |                     |      |         |
|    | Byloader         | ✓             | ✓       |           |                     |      |         |
|   | ByTrans          | ✓             | ✓       | ✓         |                     |      |         |
|  | ByTrans Extended | ✓             | ✓       | ✓         | ✓                   |      |         |
|  | ByTrans Modular  | ✓             | ✓       | ✓         | ✓                   |      |         |
|  | BySort*          | ✓             | ✓       | ✓         | ✓                   | ✓    |         |
|  | ByTower Compact  | ✓             | ✓       | ✓         |                     |      | ✓       |
|  | ByTower**        | ✓             | ✓       | ✓         | ✓                   |      | ✓       |

✓ The utilization of the laser cutting system increases with the degree of automation

\* Functionality in combination with ByTrans Modular only. BySoft CAM is recommended.

\*\* Functionality in combination with ByTrans/ByTrans Extended only



## Automation configuration

| Laser cutting system | Automation systems |         |                  |                 |         |           |                 |
|----------------------|--------------------|---------|------------------|-----------------|---------|-----------|-----------------|
|                      | Byloader           | ByTrans | ByTrans Extended | ByTrans Modular | BySort* | ByTower** | ByTower Compact |
| ByStar Fiber 3015    | ✓                  | ✓       | ✓                | ✓               | ✓       | ✓         | ✓               |
| ByStar Fiber 4020    | ✓                  |         | ✓                | ✓               | ✓       |           | ✓               |
| BySmart Fiber 3015   | ✓                  | ✓       | ✓                | ✓               | ✓       | ✓         | ✓               |
| BySmart Fiber 4020   | ✓                  |         | ✓                | ✓               | ✓       |           | ✓               |
| ByCut Star 3015      | ✓                  | ✓       | ✓                | ✓               |         | ✓         |                 |
| ByCut Star 4020      | ✓                  |         | ✓                | ✓               |         |           |                 |
| ByCut Smart 3015     | ✓                  | ✓       | ✓                | ✓               | ✓       | ✓         | ✓               |

✓ Available in combination with the corresponding laser cutting system

\* Functionality in combination with ByTrans Modular only. BySoft CAM is recommended.

\*\* Functionality in combination with ByTrans/ByTrans Extended only



# ByTrans, ByTrans Extended

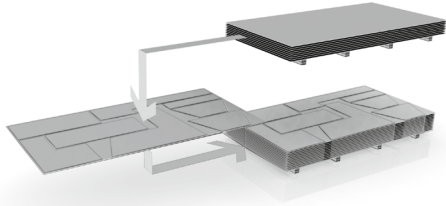
Intelligent solutions for loading and unloading laser cutting systems

## Customer benefits

- Fast job processing because automatic loading and unloading decreases set-up times
- Much higher machine utilization for only a slightly higher investment
- The ByTrans Extended design has not just one but two cassettes, thereby making the machine system even more autonomous
- Flexible use. Not just for storage/return transfer but also for large parts removal as well as the preparation of plastic protective separators, which are placed between the metal sheets by the system (ByTrans Extended)
- Entry into lightly-manned parts production
- ByTrans Extended is optionally available in 3 × 1.5 meter and 4 × 2 meter formats



## One cassette for raw material

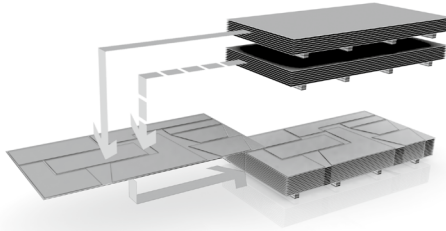


Cassette 1: raw material

Storage: cut sheets

ByTrans 3015

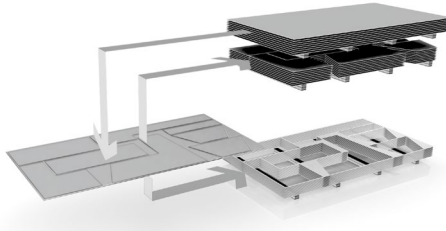
## Two cassettes for raw material



Cassettes 1 and 2: raw material

Storage: cut sheets

## Large parts and sheet skeletons separated



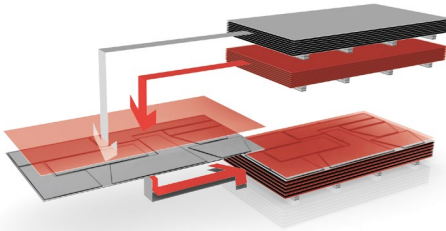
Cassette 1: raw material

Cassette 2: large parts storage

Storage: scrap

ByTrans 3015 / 4020 Extended

## Cut sheets with plastic sheet separators



Cassette 1: raw material

Cassette 2: intermediate storage.

Storage: cut sheets with plastic sheet separators

|                              | ByTrans 3015     | ByTrans 3015<br>Extended | ByTrans 4020<br>Extended |
|------------------------------|------------------|--------------------------|--------------------------|
| Nominal sheet size           | 3,000 × 1,500 mm | 3,000 × 1,500 mm         | 4,000 × 2,000 mm         |
| Load sheet metal thickness   | 0.8–25 mm        | 0.8–25 mm                | 0.8–20 mm                |
| Unload sheet metal thickness | 0.8–25 mm        | 0.8–25 mm                | 0.8–20 mm                |
| Maximum sheet weight         | 890 kg           | 890 kg                   | 1,300 kg                 |
| Number of cassettes          | 1                | 2                        | 2                        |
| Large parts removal          |                  | ■                        | ■                        |
| Insert protective separators |                  | ■                        | ■                        |
| Cassette Changer             |                  |                          | ■                        |



# ByTrans, ByTrans Extended Technical Data





|                                                                                                    | ByTrans 3015                                                           | ByTrans 3015<br>Extended | ByTrans 4020<br>Extended |
|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------|--------------------------|
| Nominal sheet size                                                                                 | 3,000 × 1,500 mm                                                       | 3,000 × 1,500 mm         | 4,000 × 2,000 mm         |
| Maximum sheet metal size                                                                           | 3,048 × 1,524 mm                                                       | 3,048 × 1,524 mm         | 4,064 × 2,080 mm         |
| Sheet metal sizes                                                                                  | 3,000 × 1,500 mm<br>2,500 × 1,250 mm<br>2,000 × 1,000 mm               |                          |                          |
| Variable sheet metal sizes                                                                         |                                                                        | ■                        | ■                        |
| Number of cassettes                                                                                | 1                                                                      | 2                        | 2                        |
| Sheet thickness (loading and unloading)                                                            | 0.8–25 mm                                                              | 0.8–25 mm                | 0.8–20 mm                |
| Maximum sheet weight                                                                               | 890 kg                                                                 | 890 kg                   | 1,300 kg                 |
| Raw material, stacking height max. (incl. pallet)                                                  | 240 mm                                                                 | 240 mm                   | 240 mm                   |
| Raw material, stacking weight max.                                                                 | 3,000 kg                                                               | 3,000 kg                 | 3,000 kg                 |
| Cut sheets, stacking height max. (incl. pallet)                                                    | 350 mm                                                                 | 350 mm                   | 350 mm                   |
| Material                                                                                           | Construction steel, Stainless steel, Aluminum                          |                          |                          |
| Loading                                                                                            | with forklift truck or overhead crane                                  |                          |                          |
| Unloading                                                                                          | with forklift truck                                                    |                          |                          |
| Standard cycle time                                                                                | 60 s                                                                   | 60 s                     | 75 s                     |
| Cycle time for big part removal                                                                    |                                                                        | 140 s                    | 190 s                    |
| Cycle time with insertion of protective material *                                                 |                                                                        | 155 s                    | 210 s                    |
| Operation                                                                                          | Via touch screen of the operating terminal of the laser cutting system |                          |                          |
| Module weight (net)                                                                                | 4,500 kg                                                               | 5,000 kg                 | 7,200 kg                 |
| Maximum electrical consumption ByTrans Cross<br>(supplied via cabinet of the laser cutting system) | 6 kW                                                                   | 6 kW                     | 6 kW                     |
| Compressed air consumption (max)                                                                   | 10 m <sup>3</sup> /h                                                   | 10 m <sup>3</sup> /h     | 10 m <sup>3</sup> /h     |

\* without table change machine; for a normal cutting plan with a cutting time > cycle time.

The right to make changes to dimensions, construction, and equipment is reserved. ISO-9001-certified.

The technical data can vary in the different countries, according to local security rules and configuration of the machine.