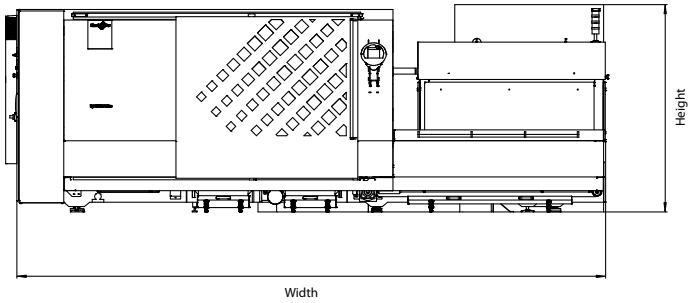
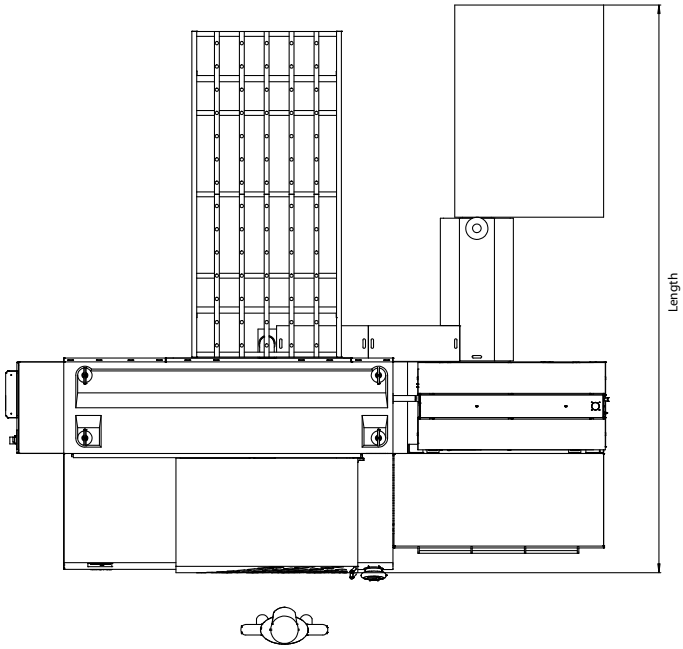
# Technical Data
## ByVention 3015

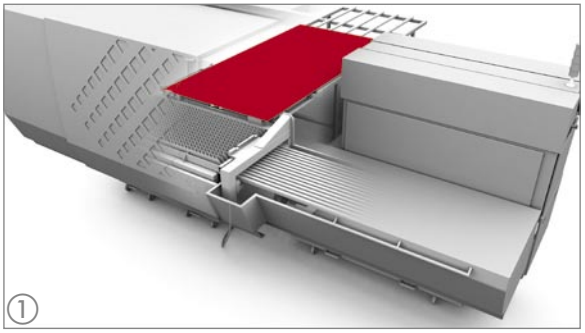


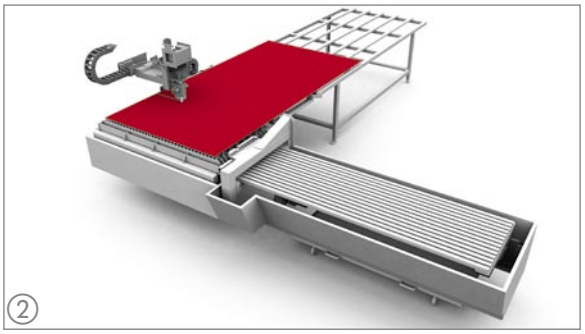

| | ByVention 3015 | |
|---|---|---|
| **Laser power** | 2200 W | 4400 W |
| **Length** | 236 in. | 236 in. |
| **Width** | 236 in. | 252 in. |
| **Height** | 85 in. | 85 in. |

# Innovative material flow concept

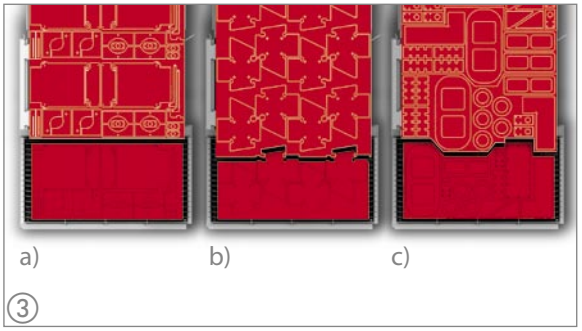
ByVention is the smallest laser cutting machine for standard-sized metal sheets. Thanks to its innovative and clever material flow concept, the finished parts are conveyed continuously and automatically out of the cutting area. They are available to the user even during the cutting process. Removal of the parts is easy and convenient. The removal area is freely accessible.




The metal sheet is placed on the loading table manually and pushed up to the table stop.




The table is fed into the cutting area automatically. The parts in the first segment are cut.



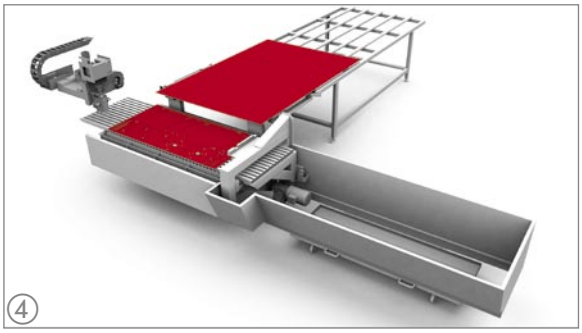

With the ByVention, the sheet is divided up into segments that are processed one after another. This accounts for the **three** different methods that can be used to nest parts on the sheet.

**a) Strategy without overlap**

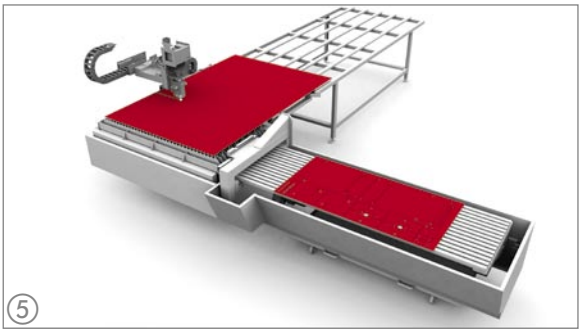
This strategy is suitable for parts that can be nested optimally within a rectangle. Before the parts are cut, the segment is cut off with a straight cut. The maximum depth of the segment corresponds to the cutting area length of 33.4 inches.

**b) Strategy with overlap and partial separation cut**

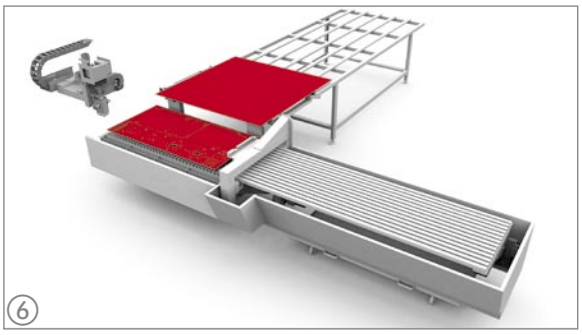
This strategy maximizes sheet usage if the parts cannot be nested optimally within a rectangle. The separation cut sometimes corresponds to the exterior contours of the parts and thus is no longer straight. The segments are interlocked with one another. The parts of a segment are all within the segment area of 33.4 by 61.5 inches.




The finished table segment is placed on the removal table automatically.




The removal table carries the finished table segment automatically from the cutting area to the removal area. At the same time, the sheet is fed into the cutting area so that the next segment can be cut. The cut parts as well as the partly cut sheet are now taken manually from the removal area.




The finished table segment is placed on the removal table automatically. This procedure repeats until the entire sheet has been processed. As soon as the last segment of the table is in the cutting area, a new sheet can be placed on the loading table.

The Bystronic cutting and bending software Bysoft supports the ByVention's processes optimally and, if desired, selects the optimal strategy for segmenting the sheet automatically during programming.

**c) Strategy with overlap and complete separation cut**

This strategy can be used as an alternative to strategy b), especially for sheet thicknesses of 0.12 inches or greater, complex part geometries or if a lot of parts are in the overlap zone. In contrast to strategy b), there is a complete separation cut here, which runs at a defined distance along the parts contours. This has the advantages that

1. it is only necessary to plunge once and thus time is saved with thick sheets, and
2. even with complex parts and nestings and greater sheet thicknesses, maximum process stability is guaranteed.

| Laser cutting machine | ByVention 3015 | |
|---|---|---|
| **Laser power** | 2200 W | 4400 W |
| **Nominal sheet size** (length x width) | 120 x 60 in. | 120 x 60 in. |
| | 96 x 48 in. | 96 x 48 in. |
| | 72 x 40 in. | 72 x 40 in. |
| **Working range** | x = 61.5 in./1562 mm | x = 61.5 in./1562 mm |
| | y = 30.4 in./772 mm | y = 30.4 in./772 mm |
| | z = 3.9 in./100 mm | z = 3.9 in./100 mm |
| **Maximum positioning speed parallel axis x, y** | 3937 in./min | 3937 in./min |
| **Maximum positioning speed simultaneous** | 5511 in./min | 5511 in./min |
| **Positioning accuracy Pa*** | ± 0.004 in. | ± 0.004 in. |
| **Repeatability Ps*** | ± 0.002 in. | ± 0.002 in. |
| **Machine weight**** | 29,700 lbs. | 32,200 lbs. |
| **Base** | normal, reinforced industrial floor according to assembly plan | |
| **Cutting head 5"** | inclusive | inclusive |
| **Cutting head 7.5"** | optional | inclusive |
| **Cutting gas consumption** | dependent on material | |
| **Operation via panel** | control panel with touch screen | |
| **Drives** | USB 1.1 interface on manual control unit | |
| **Network connection** | RJ45 connector 10/100 MBit/s | |
| **ByVision (see separate datasheet for specifications)** | optional | optional |

| $CO_2$ laser source | Bylaser 2200 | ByLaser 4400 |
|---|---|---|
| **Power** | 2200 W | 4400 W |
| **Wavelength** | 10.6 µm | 10.6 µm |
| **Polarization** | circular | circular |
| **Pulse frequency** | 1–2500 Hz | 1–2500 Hz |
| **Maximum sheet thicknesses***** | | |
| **Mild steel** | 0.312 in. | 0.312 in. |
| **Stainless steel** | 0.250 in. | 0.312 in. |
| **Aluminum** | 0.160 in. | 0.312 in. |
| **Maximum electric consumption of the total system******** | 35 kW | 54 kW |

Patent pending, US-2009-0087651-A1

* According to VDI/DGQ 3441 measuring length 1 m. The precision of the sheet metal part depends on the material in question and its previous handling as well as the table size and its warming.

** Complete laser cutting system without combined cooling and filtration unit and automation

*** In order to cut the maximum thicknesses, the following conditions must be met:
– Optimally suspended and set laser cutting system
– The materials must be of the quality demanded by Bystronic (laser materials)

**** Entire system with suction and cooling equipment



# Your contact

**www.bystronic.com**