Prima Power

The Bend
The Combi
The Laser
The Punch
The System
The Software

LPe6f / LPe8f
Premium series punch laser combination

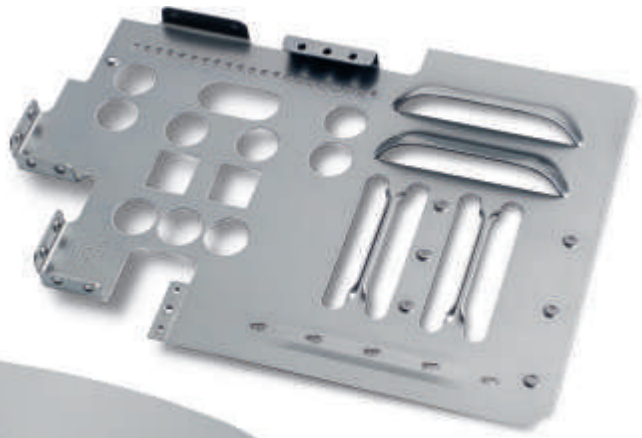
Prima Power LPe6/8f
– the premium series punch laser combination

Prima Power Touch screen operating system.

INCREASED PERFORMANCE

Compared with the previous series, the performance values have reached a new level:

Punching speed	**+ 20 % faster**
Tool rotation speed	**+ 51 % faster**
Tool change time	**+ 25 % faster**
Laser start	**+ 91 % faster**
Average cycle time	**+ 13 % faster**



One + one is more than two

The LPef series combines high end servo-electric punching and state of the art fiber laser technology in a manufacturing solution that offers outstanding flexibility, speed, accuracy and productivity to fabricate the most challenging products.

This Green Means® solution has low energy consumption and low maintenance requirement; thus the components produced are not only accurate, they are always economically manufactured.

There are two machine sizes available, the LPe6f for max. sheet size 3,074 mm x 1,565 mm and the LPe8f (4,300 mm x 1,565 mm).

green means®

Safety equipment is not shown in the illustrations.

WHY PUNCH LASER COMBINATION

Very fast reaction times are expected in modern production. The machines need to be flexible and extremely fast for a quick response to production orders, often for very small quantities. The punch laser combination makes it easy:

With laser cutting there are:

- no burrs
- no nibble marks
- no worries about tonnage
- no tools
- no die clearance
- no sharp corners

… and when you punch you can also:

- tap
- countersink
- form
- rib
- make extrusions
- hem
- make louvers

LPef is unbeatable when it comes to versatility and flexibility, combining multiple operations in one machine. This Lean Manufacturing style reduces cost per part; parts will be made fast, easily and accurately through one machine by one operator using only one operating and programming system.

Modern software

The latest version of Tulus® operating system in new PC-based control makes the machine more productive but also supports the user in many ways. Innovative queue and stacking management informs all possible set-up changes between the programs well in advance. Production planning becomes seamless.

Integrated tool library with NC Express™ programming and servo-electric punching make tool setup and adjustment easy and fast. Laser parameter database and online corrector are a user friendly tool for controlling the laser cutting process. This all together makes the punch laser combination beat two separate systems.

Key data LPe6f / LPe8f

2 kW and 3 kW fiber laser source

Punching speed up to 1,000 hpm / 1 mm
500 hpm / 25 mm

Punching forces up to 30 tons (33 US ton)

Punching and laser cutting capacity up to 8 mm

Sheet positioning speed 150 m/min

Individual clamp movement for full sheet utilization

Tooling capacity up to 384 tools with Multi-Tool® index stations for minimum set up times

Brush tables for low noise, sheet support and avoiding scratches

Average power consumption 11 kW

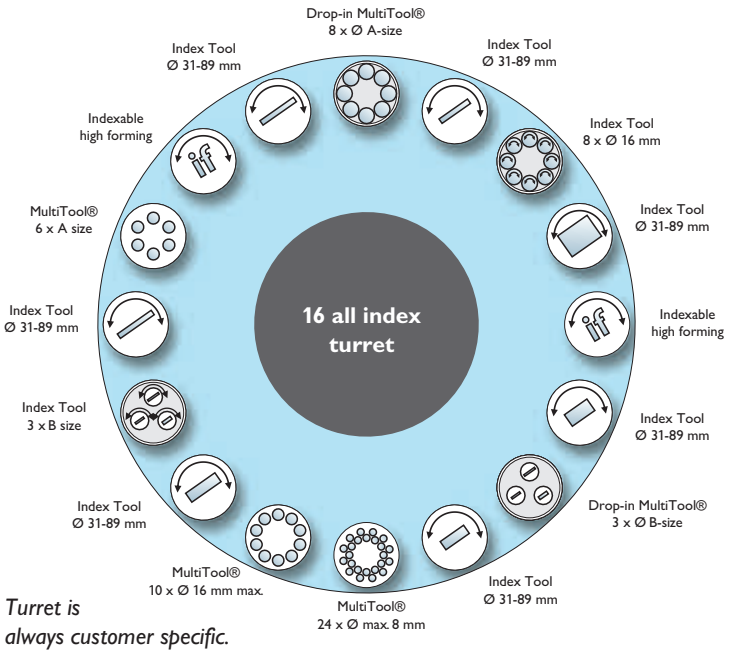
PC-based control

High-performance servo-electric punching

The high-end Premium series turret punch press of the LPef has properties such as automatic tool length measurement, optimization of stroke length and easy adjustment of the punching stroke. These combine with others, adding up to faster set-ups and more ease of operation. The punching speed, tool rotation and tool change time are improved. The punching side is the fastest ever seen in punch laser combination in Prima Power history providing higher capacity.

The punching stroke is NC-controlled and thus, in addition to high-performance punching, outstandingly accurate forming capacity is available. High repeatability facilitates forming, roll forming, marking etc. and shortens set-up times.

The Programmable Clamp Setting function automatically positions sheet clamps according to numerical program, minimizing clamp dead zones. When changing production from full size to small sheets, clamp settings can be made automatically without wasting operator time. With this option the full sheet can be really always utilized.

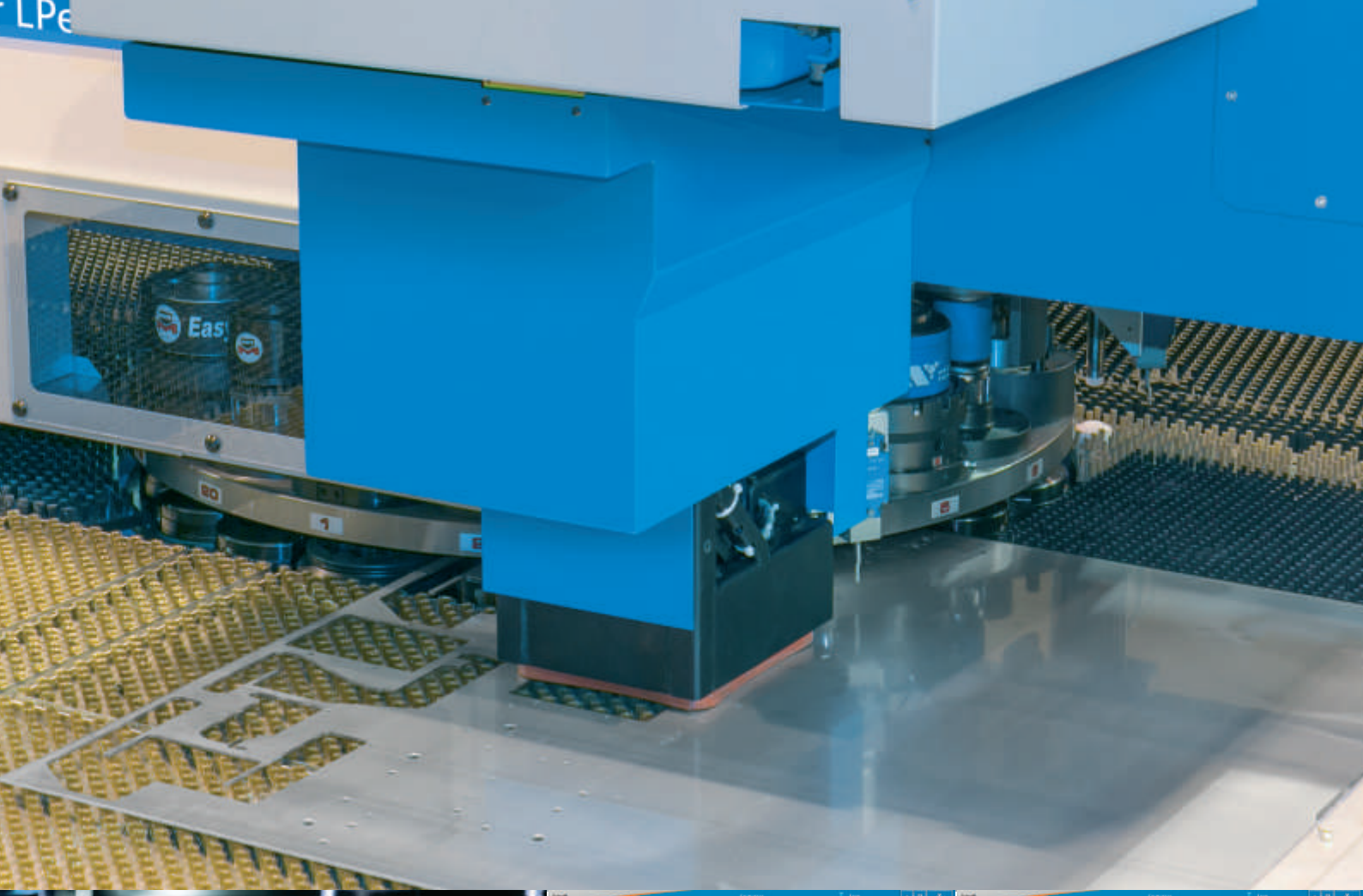


Turret is always customer specific.
In this example, there are 71 tools, of which 20 index tools.

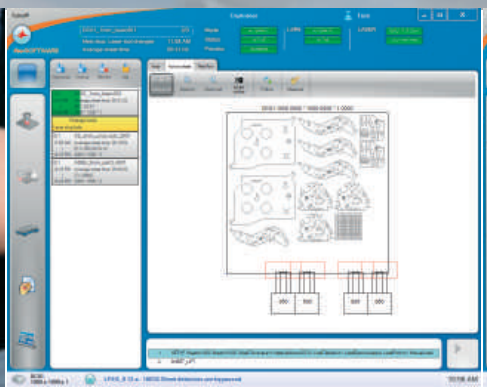
Options

For even more versatility, the turret punch press can be customized using a wide range of options:

- Upforming
- Component marking
- Extra clamp and individual clamp movement
- Multi-Tool® stations
- Lifting brush tables
- Quick Change Die Holder and barcode reader
- Scrap conveyors
- Vacuum system
- Work chute (500 mm x 500 mm) & part sorting
- Tapping tools & 6-head tapping unit



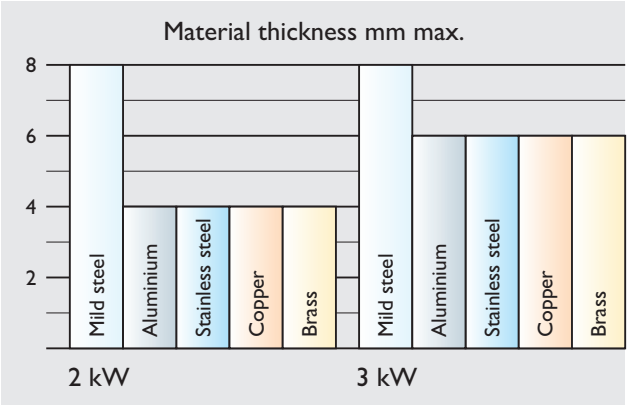
Multi-Tool® 24-8



Adjusting punching and laser parameters is easy with touch screen and visual controls.

Fiber laser cutting

The laser used in the system as its most flexible tool is a 2 kW or 3 kW high brilliance fiber laser. Totally closed cabin design for eye safety and noise reduction is always included with the system.



With the integrated fiber laser a wide range of material can be cut such as copper or brass. A significant reduction in operating cost is achieved because the laser has no maintenance requirements, no laser gas is needed and energy consumption is far smaller compared with other solutions.

Further benefits are

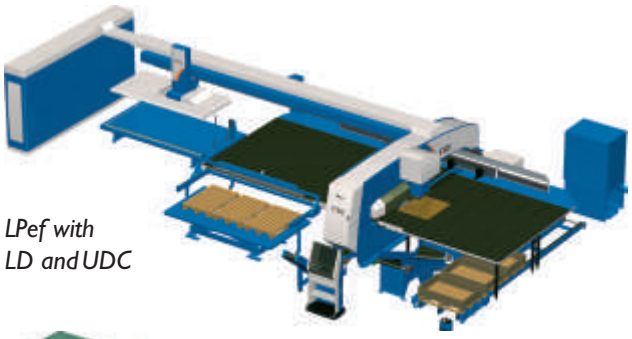
- No expensive beam manipulation is needed to control beam divergence
- Cutting head collision protection
- Long lens and nozzle life
- Efficient dust collection due to fixed cutting point – cleaner working area
- Easy integration of a robust protection device around the cutting head
- Sheet vibration damping when cutting thin material
- Prevention of scattered radiation

Flexible automation

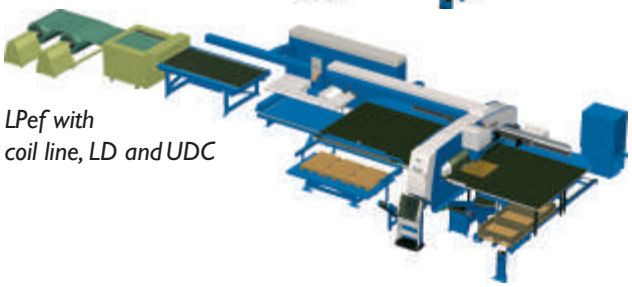
Many factors contribute to productivity; reliable, high performance automation is one of the most important of these.

Compact loading and unloading solutions

Prima Power loading device (LD) can handle sheets up to 4,300 mm x 1,500 mm. One fixed or two moving tables can be chosen. With two wagons, production can be arranged with no interruptions when using additional door and separate safety areas for pallet change. Two moving tables give more capacity and can also be connected to COMBO and Night Train storage system. LD can also feed sheets from separate coil lines to the machine.



LPef with LD and UDC

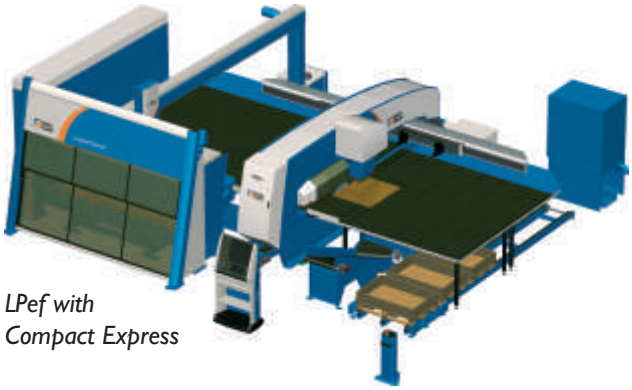


LPef with coil line, LD and UDC

Compact Express

The Compact Express automatic loading / unloading system has one of the smallest footprints available in the market. The system is available for sheet stacks up to 3,000 mm x 1,500 mm and 3,000 kg. Compact Express provides a unique combination of very fast loading cycle time and uninterruptible production process. The cycle is based on simultaneous loading and unloading cycles. A new sheet stack can be added and skeletons removed without interruption.

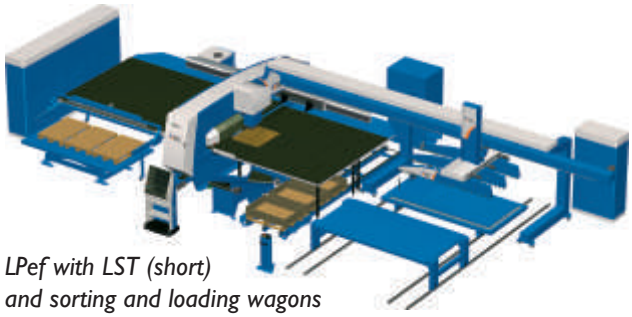
In real production there is very often a need to run one extra part or one sheet of special material, interrupting a big production patch. The placing of the automatic loading and unloading unit makes it possible to use several combinations of automatic and manual loading and unloading cycles. The machine table on the right side is always free for manual loading and unloading operations.



LPef with Compact Express

LST – loading and stacking

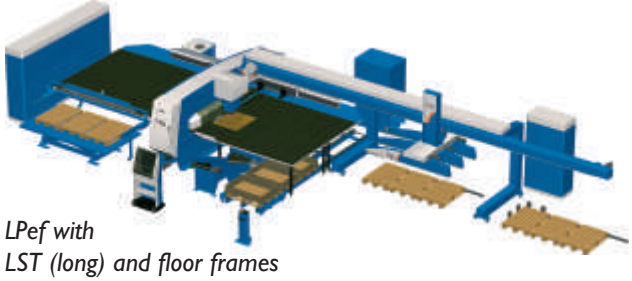
LST is a compact beam type automatic sheet loading and sorting system. LST loads sheets to the machine, picks up parts from the machine and stacks them to the programmed coordinate. Picking is reliable due to the RALC option (robot assisted last cut) which eliminates the risk of parts sticking in the skeleton. Skeletons are unloaded using a moving machine table (UDC), and they can be placed on a skeleton table.



LPef with LST (short) and sorting and loading wagons

LST layout leaves the left side of the machine free for fast and flexible manual use of sheets sometimes needed. All material flow is arranged on the same side of the machine; skeletons are removed with by a new, compact device.

There are short and long versions of the LST. The short one is a solution when floor space is a problem; with the long version the number or tables can be doubled. The second table can be connected to COMBO or Night Train FMS® storage.

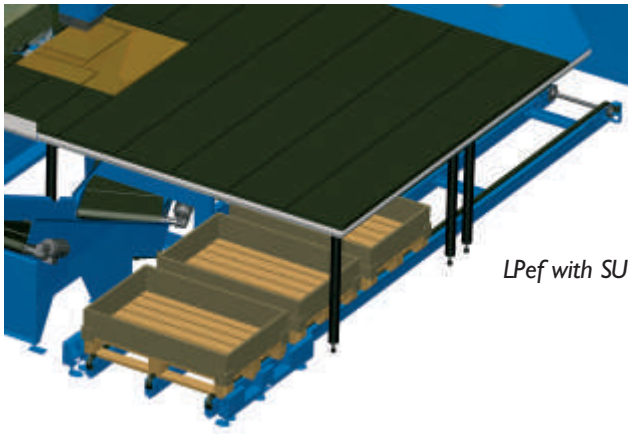


LPef with LST (long) and floor frames

SU – sorting unit

The SU is used for sorting parts coming out from the work chute of the machine. Micro joints can be avoided as pars can be punched or laser cut loose and dropped onto a conveyor through a work chute. SU sorts them directly to different pallets.

The unit consists of a belt conveyer on which three standard EUR-pallets (800 mm x 1,200 mm) are placed. The pallets move sideways under the sorting conveyor extruding from the machine to receive the falling parts. One pallet can be divided into two addresses (800 mm x 600 mm) for max six sorting addresses.



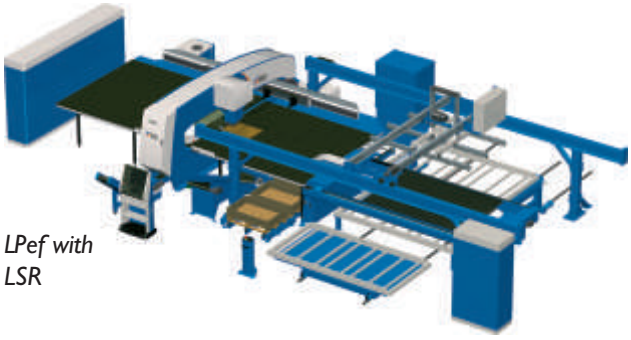
LPef with SU

LSR – loading and stacking robot

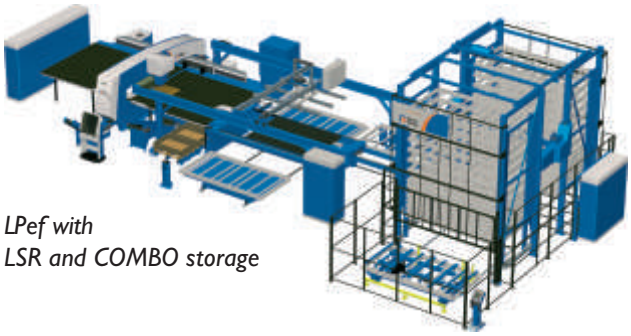
The high-performance portal type loading, unloading and stacking robot LSR can be integrated into the Premium series Combi laser. The LSR loads sheets and stacks finished work pieces onto stacking pallets.

The robot is extremely flexible in use because it allows the gripper to move freely inside the robot frame in all directions adding flexibility in part picking and stacking. Picking is reliable due to the RALC option (robot assisted last cut) which eliminates the risk of parts sticking in the skeleton. Due to the servo drive motion system of the LSR stacking is very accurate and fast.

The LSR gripper has a sufficient number of programmable suction areas. Each can be controlled separately. In the programming system vacuum areas are selected, and values are generated to Combi laser and LSR robot automatically.



LPef with LSR



LPef with LSR and COMBO storage

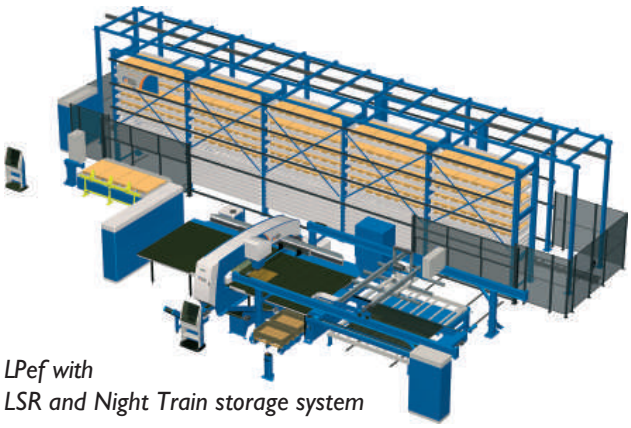
COMBO or NightTrain storage systems

When two material tables is not enough, capacity can be added with storage systems.

COMBO storage systems are equipped with a lifting carriage and lifting equipment. The lifting carriage handles cassettes by means of a chain transfer device. The device can move cassettes to both sides of the lifting carriage; thus COMBO can be one or double sided.

The Night Train is a larger automatic logistic system where multiple shelving units can be connected to each other. In this storage the carriage moves also sideways. Cassettes can be moved flexibly from one machine to another within the system, making production flow efficient and reducing WIP.

COMBO and Night Train have automatic storage inventory and book keeping function for parts. Input and output stations are used for easy material loading and unloading of parts.



LPef with LSR and Night Train storage system

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