



FINN-POWER

Night Train FMS®

PUTTING THINGS TOGETHER



KNOW-HOW THROUGH PIONEERING EXPERIENCE

When the history of sheet metal working is written one day, the outstanding technological trend of 1990's will certainly be found to be that towards Flexible Manufacturing. The main proponent of this manufacturing philosophy has been the Finn-Power Group.

This is also why, since the introduction of its first turret punch press in 1983, the company has grown into a leading supplier of Flexible Manufacturing Systems and one of the major machine tool manufacturers in the world.

By mid-eighties FINN-POWER had added automatic loading and unloading to a turret punch press. In 1987 a right angle shear was integrated, and, for subsequent component management, automated systems for sorting and stacking were developed.

During these years also the essential Finn-Power approach to machine tool technology developed. For us, development has never been just laboratory work. It is a combination of work stage management, automated material management and total customer support from the conception of a technical solution to permanent cooperation.

The Flexible Manufacturing Concept had first been introduced into machining: in fact, even on a European scale, FINN-POWER was among the first to adopt it in our own component manufacturing. Knowing the obvious benefits, as well as the rapid development in numerical controls and programming systems, we decided to introduce the concept to sheet metal working.

The world's first modular sheet metal FMS started producing components for Siemens Ohio in 1990, to be soon followed by KONE, one of the biggest lift manufacturers in the world. In 1994, the next generation, Night Train FMS® was introduced.

While manufacturers use the term "Flexible Manufacturing System" in various ways, it is safe to say that when large, factory wide manufacturing systems are in question, Night Train FMS® is the globally leading solution.

FINN-POWER *Night Train FMS®*

PUTTING THINGS TO



The modular FINN-POWER concept means a manufacturing system is specified in cooperation between the customer and us, using the wide range of standard manufacturing cells available. The solutions and optional equipment are chosen as required by the types of components to be produced.

While the majority of cells integrated in Night Train FMS® solutions feature either right angle shearing or laser cutting, this is not the only solution. In many cases overall productivity of the system has been enhanced by including a hydraulic or servo electric turret punch and its automatic loading – unloading function.



GETHER.

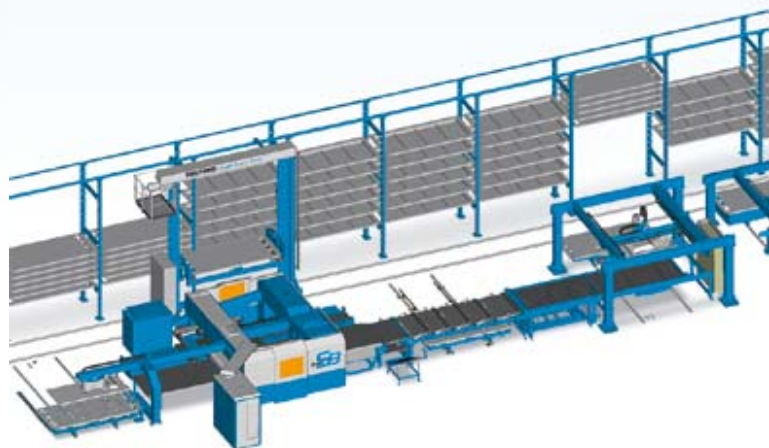
Shear Genius®

Since late 1980's FINN-POWER's integrated Shear Genius® punching / shearing cells have become one of the best known solution in integrated, flexible manufacturing of sheet metal components. Large FINN-POWER Night Train FMS® solutions are operating with five Shear Genius® cells. Sheet size is up to 3000 mm x 1500 mm.



Shear Brilliance®

The latest stage in FINN-POWER's development of integrated shearing is Shear Brilliance® with sheet positioning by linear motors. Thus positioning speed is extremely high. X traverse is 6,400 mm, allowing punching, forming, tapping, bar coding and shearing to be performed on a single machine and without reclamping. With Multi-Tools® the 30-station turret of Shear Brilliance® can house up to 200 tools simultaneously.

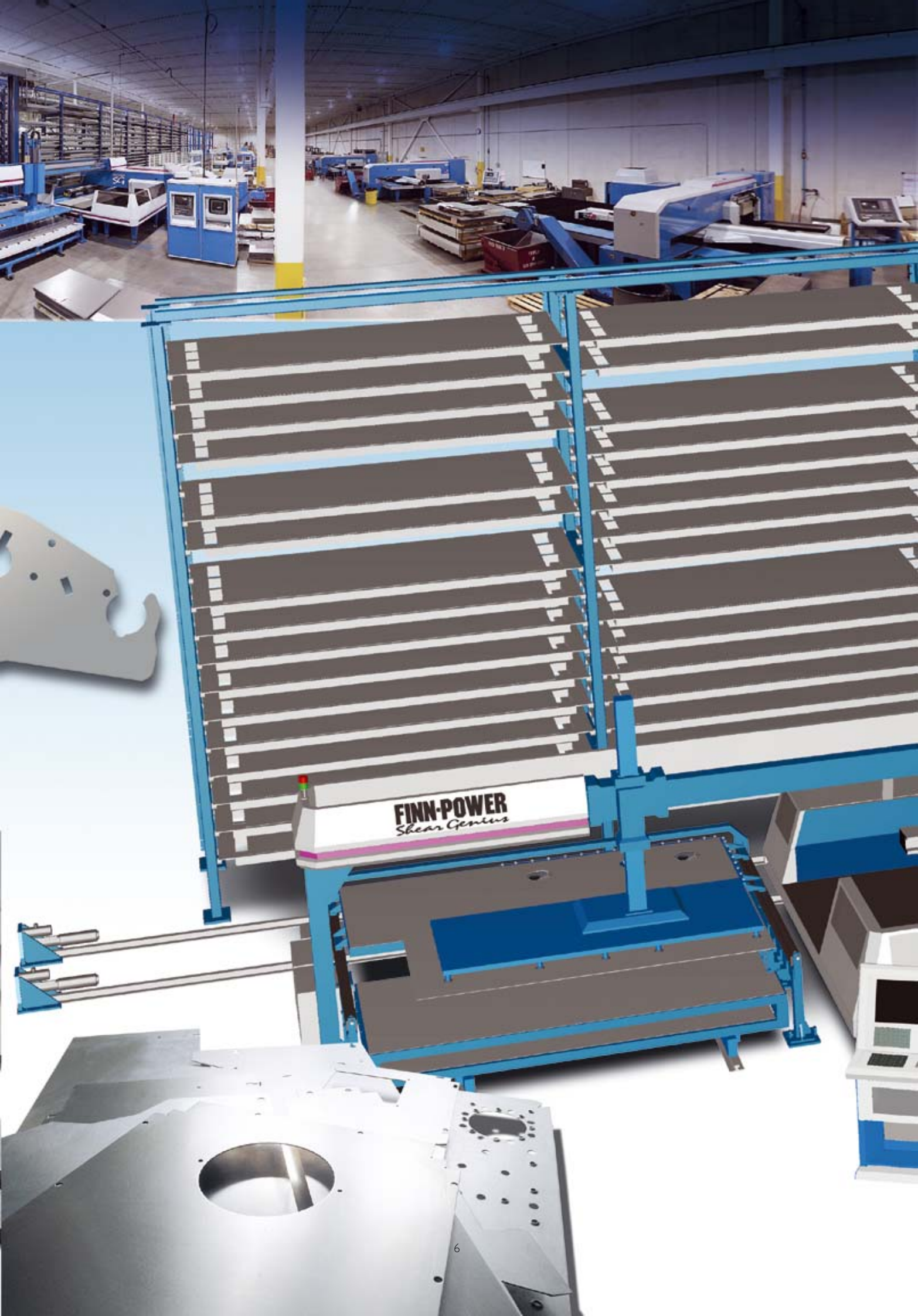




New horizons in productivity

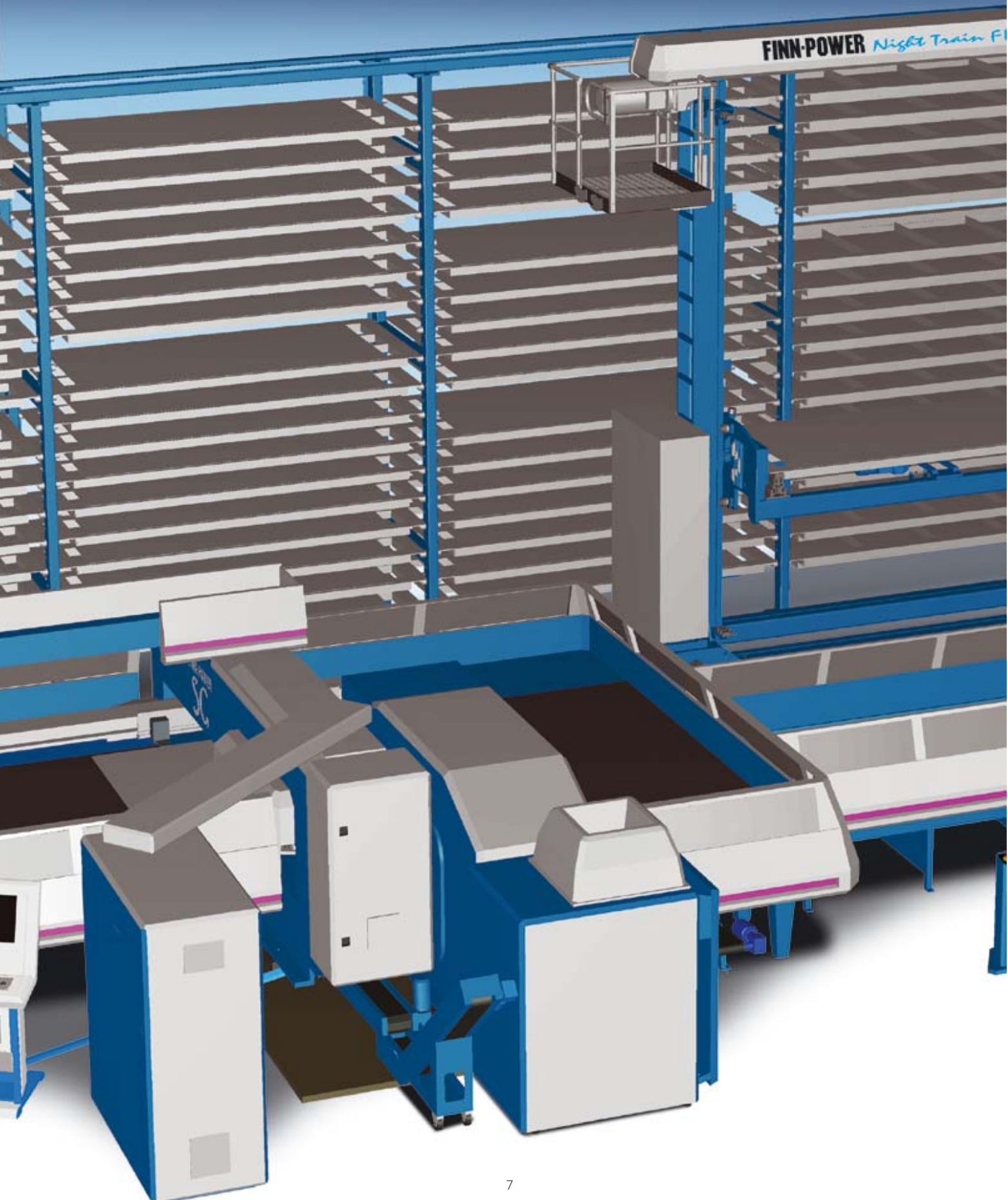
Sophisticated programming and control systems, the versatility of modern machine tools, flexible automation, customized to meet your specific requirements... manufacturing technology that adds to the core of your business.



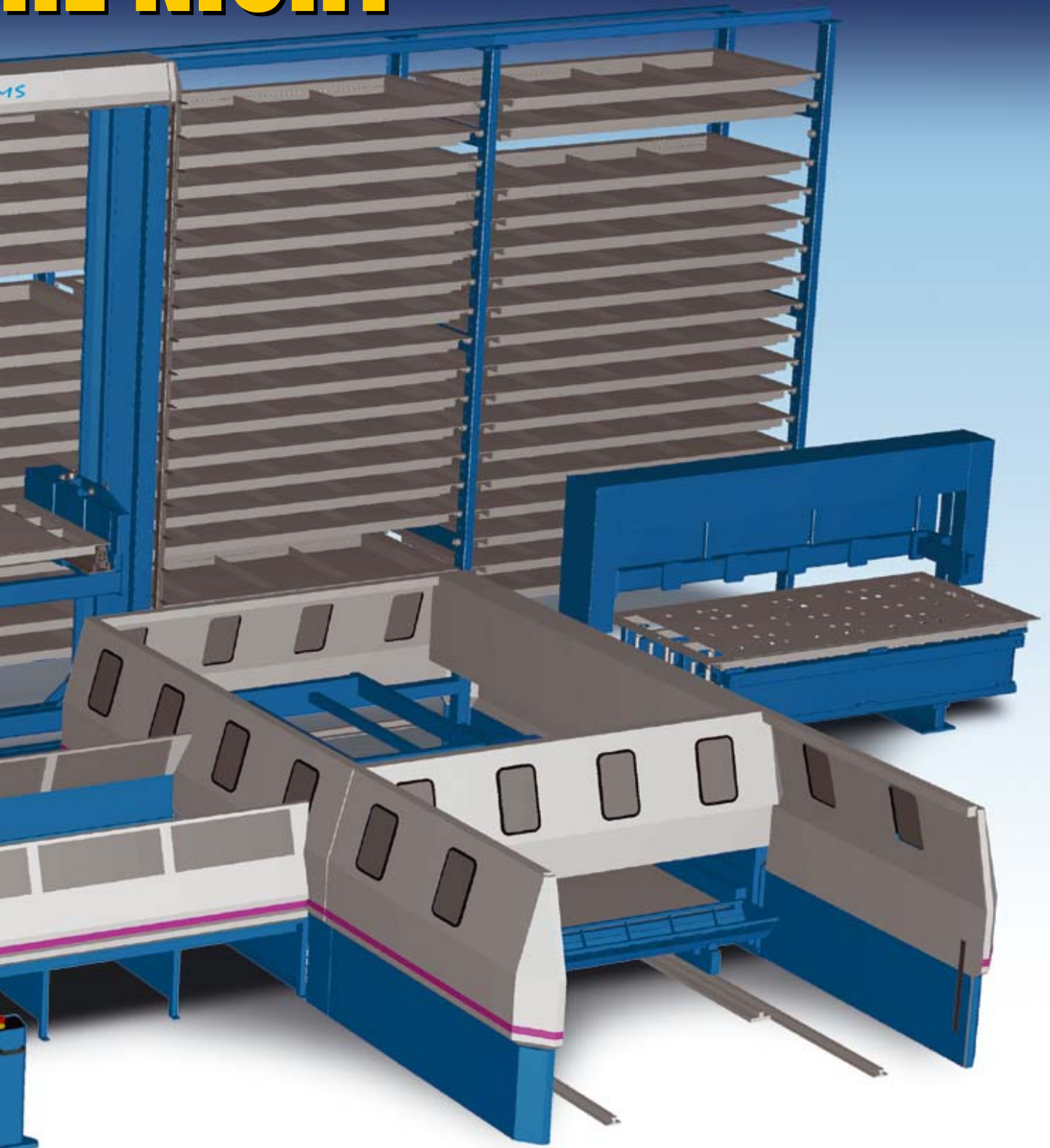


FINN-POWER
Shear Genius

TRAINS DON'T STOP FOR T



THE NIGHT



**– WHY SHOULD
YOUR PRODUCTION?**

LP 6

Finn-Power LP 6 combines high-performance hydraulic punching with up to 3.5 kw integrated laser cutting (Triagon® or SLAB by Rofin-Sinar). Max. sheet size is 3000 mm x 1500 mm. Options such as integrated up-forming and tapping are available for increased versatility.



LPE 5

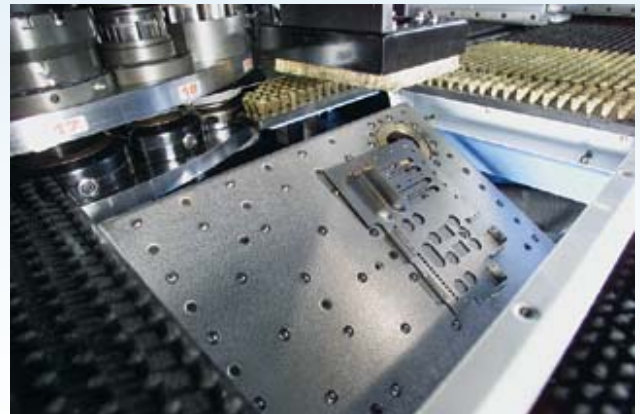
The servo electric work center FINN-POWER E provides 20 kN punching, versatile forming and even bending capacity in a single, compact machine tool. A new 6-station tapping unit increases versatility further still.

This multi-function performance is integrated with a laser cutting machine Rofin-Sinar's Triagon® or Rofin-Sinar DC025 – to constitute a multi-purpose cell. Cutting efficiency is up to 3.5 kW.



FPL

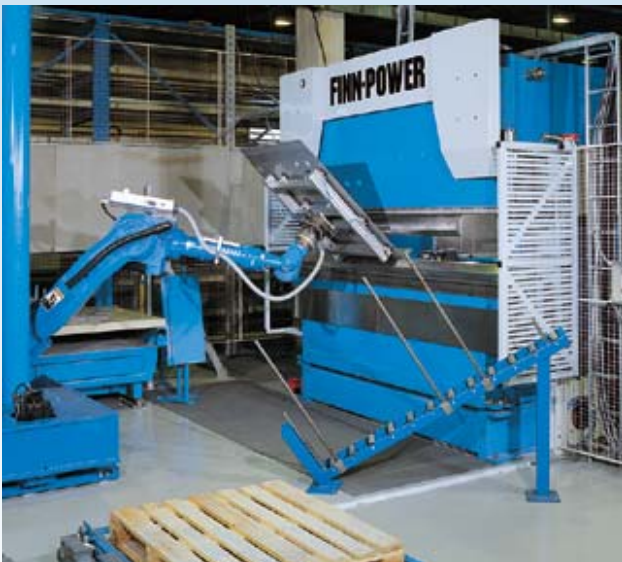
Introduced in 1999, FINN-POWER's 3.5 kW flying optics laser FPL features linear motor drive for cutting head positioning. Maximum positioning speed is 300 m/min simultaneously, and acceleration is over 2G! FINN-POWER FPL has a working area of 3000 mm X axis, 1500 mm Y axis and 100 mm Z axis.



FPB press brake and bending robot

The FINN-POWER press brake line now features also Delem controls as an alternative to Cybelec. Models are available for 50 to 160 tons and working lengths 2,550 mm to 4,100 mm. With the new FPB press brake the approaching speed of the ram as well as speed of the back gauge axes have been significantly increased. The new press brake also utilizes programmable safety logic. Standard machine includes total of four fingers equipped with hinges for back gauges. The completely new 6-axis back gauge construction is designed for precision sheet metal bending.

A standard standard industrial robot is utilized for upgrading the press brake into a bending cell for integration into Night Train FMS®. Flat component dimensions are up to 1,250 mm x 2,500 mm.



Automatic bending cell EB

Finn-Power's EB bending cell can be integrated to constitute the final work stage in a Night Train FMS®. Especially for large panels it provides an attractive alternative to the press brake cell. Maximum bending length is 1,650 mm ... 3,250 mm, and maximum material thickness 3 mm.



On-Line User Support

FINN-POWER is actively developing new methods for on-line user support. For example, it is possible for FINN-POWER service engineers to monitor machine performance from photographs or live video via telephone network or internet.

Night Train FMS®: automatic, versatile manufacturing cells + cell material management (loading, scrap removal, sorting, stacking) + system material management (sheet stack loading, component stack buffering, cell-to-cell transfer, bent component removal).



WE PUT THINGS TOGETHER THROUGH CUSTOMER SUPPORT

Custom design engineering means using a wide, modular range best to meet specific production requirements and targets. As part of the process, careful installation planning and project back-up ensure on-time commissioning of new technology, which very often entails a major change in the entire manufacturing strategy for a new level of productivity.

Having shipped and erected a large number of Flexible Manufacturing Systems in all continents we have valuable experience of the logistic processes required, as well as of the skill enhancement which secures early availability of the entire capacity. Training can be arranged in the country of installation or in Finland, and is supported by operator guidance during the installation phase. And using modern telecommunication technology, real-time information on machine performance can be made available regardless of geographic distance (teleservice).

Modularity means a Flexible Manufacturing System can be expanded through the addition of more central storage capacity, new manufacturing cells, new options etc. Thus Night Train FMS® offers practically unlimited possibilities of reacting to changes in your business environment.



FINN-POWER in brief



By far the largest machine tool manufacturer in Scandinavia, the FINN-POWER Group was established in 1969. The group employs 1,100 people.

Following the introduction of its first hydraulic turret punch press in 1983 FINN-POWER has developed a modular product range for punching, integrated shearing and laser cutting, automated bending and the entire material management of the sheet metal working process. The products are manufactured in six manufacturing plants in Finland and one, specializing in bending automation, in northern Italy.

FINN-POWER products are available through a world-wide network of subsidiaries and representatives.

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