Large-Scale Storage STOPA COMPACT Series

Greatest Space Utilisation and Highest Efficiency for your Production

»The most important upshot of the changeover is the dramatic increase in our productivity. Thanks to the reduced handling we can run our machines up to 30% longer. Delays which were previously caused by additional time-intensive manual work have been eliminated. Another benefit is provided by the very short access times to the sheet metal storage system.«

Dieter Bohnig, production engineer at WaCo Getränketechnik GmbH, Dresden, Germany

„Save space and optimise performance!“

STOPA COMPACT Series – Space-saving large-scale storage system for industrial requirements

The STOPA COMPACT Series is an automatic sheet metal large-scale storage system for the latest logistics and production strategies. The system is available in two basic variants.

The STOPA COMPACT Series, consisting of the basic system STOPA COMPACT I and the further development of that system STOPA COMPACT II, synchronises the procurement process, provision and machines. The STOPA COMPACT turns your warehouse into a logistics centre, the strategic joker in the pack of components.

Modern production in the sheet metal working industry is unthinkable without a flexible form of sheet metal storage and logistics. The machines must be supplied – smoothly and with perfectly coordinated timing. This is performed by highly efficient, flexible-construction sheet metal storage systems.

Expensive production and assembly lines deliver the best results through round-the-clock operation. Automated sheet metal storage and the associated continuous and safe flow of materials are therefore becoming increasingly more important.

The largest potentials for improving productivity lie not with the processing machines, but with automated sheet metal storage – and this is where optimisation pays off: Intelligent logistics replaces expensive stocks with information, makes available the required sheet metal stocks just in time and adapts the actual production process to these structures.

With the STOP COMPACT Series you benefit from saving and cost-cutting potentials and thereby help your production to achieve unprecedented levels of performance. With its clever logistics the STOP COMPACT Series therefore secures your production success.

Cost-cutting potentials at a glance

All large-scale storage systems from the STOPA COMPACT Series offer a wide range of saving and cost-cutting potentials:

- ✓ **Reduced space and area costs**
- ✓ **Reduced cycle time with the COMPACT II**
- ✓ **Energy saving due to reduced weight with the STOPA COMPACT II**
- ✓ **New energy management (optional with the STOPA COMPACT II)**
- ✓ **Low servicing and maintenance costs**
- ✓ **Increased process reliability**

In machinery-intensive production the focus in modern installation engineering is increasingly on the profitability of production and the payoff of the investment costs. In contrast, personnel costs as a cost centre within the production costs are increasingly being pushed into the background of economic considerations. With the STOPA COMPACT Series you are laying the foundations for efficient, sustained production.

The decision to go with STOPA COMPACT

Like the STOPA UNIVERSAL, the STOPA COMPACT Series is designed for the heightened requirements of industry. The STOPA COMPACT Series is especially suitable for:

- ✓ **Low loading heights**
- ✓ **Maximum requirements with regard to the number of storage locations**
- ✓ **Economic storage systems up to 11 metres in height**
- ✓ **Max. energy efficiency requirements**
- ✓ **Pallet storage turned through 90°**
- ✓ **Different pallet sizes**

Thanks to the wide variety of our storage systems we can guarantee to provide you with the right system for your requirements. We will be pleased to provide further information.

„Find the best solution!“

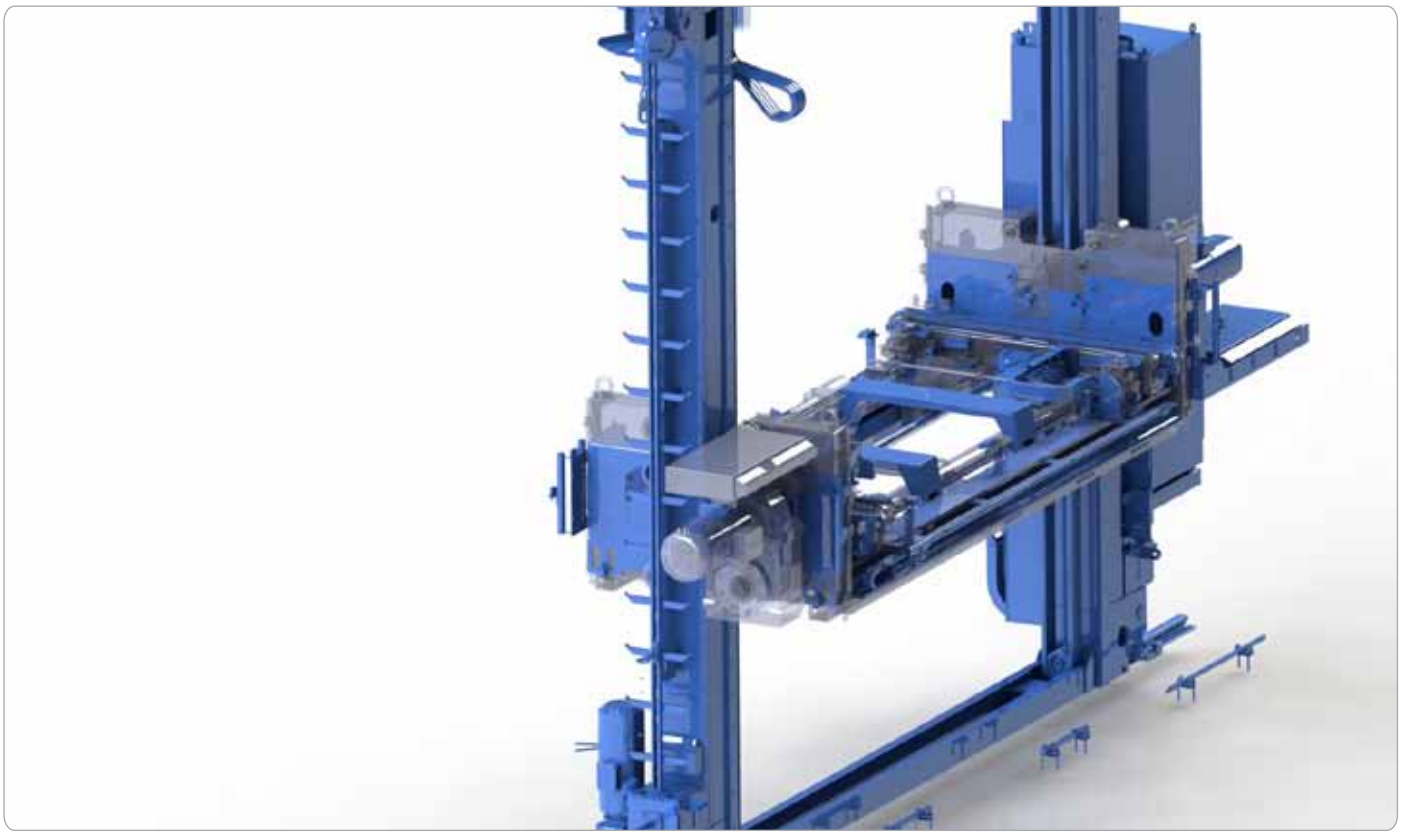
STOPA COMPACT I and II

STOPA COMPACT I and II differ in their design and technical details. Which system is the ideal solution depends on the requirements.

With the STOPA COMPACT II we have further developed our tried-and-tested STOPA COMPACT I model to meet the highest standards. One of the focuses here was on optimising space utilisation even further. Further crucial factors are energy efficiency and even more careful handling.

The potential energy savings of up to 25% are worth it, particularly for large installations which are in continuous operation.

Which solution offers you the greatest benefit depends on the production environment. We provide you with expert advice. For more details on the new features of the STOPA COMPACT II, turn to Pages 5 and 11.



This picture shows the difference between the storage and retrieval unit of the STOPA COMPACT I (grey) and that of the STOPA COMPACT II (blue).

STOPA COMPACT II – Tried-and-tested further development

At the cutting edge of technology, the STOPA COMPACT II offers maximum levels of energy efficiency and careful handling. Further plus points are the reduced maintenance levels and the shorter cycle times.

We also continue to develop along tried-and-trusted lines at STOPA. With the STOPA COMPACT II the STOPA design engineers are aiming towards green production. Hydraulic fluids made from vegetable oil and new low-consumption motor generations – resource and energy efficiency has now become a subject to be taken very seriously in the manufacturing industry.

1. Larger number of bays

For each shelf block up to two bays more with a load of 6 t – we achieve this by reducing the lower and upper approach dimensions.

2. Shortened cycle time

We have integrated the weighing facility by means of weighing cells directly into the pallet running surface of the storage and retrieval unit. To you, this means a reduction in weighing time from 10 to 2 seconds and, to our design department, another patent. The fact that there are no hydraulics means that there is an extra environmental benefit.

3. Energy saving thanks to lower weight

From one make two: there are electrophysical reasons why more power can be delivered by two high-performance, lightweight drive motors than by a single heavy motor. The fact that huge weight savings – including the heavy drive shaft – can be made contributes to a reduction in overall weight of half a ton and an energy saving of up to 4%.

4. New energy management

It all comes down to “regenerative braking”. Braking, as we know, is negative acceleration which does not consume but rather generates energy. We take advantage of the principle: Whenever in the course of a cycle tons of steel and sheet metal moving forward must be brought to a stop, we convert this energy into electric current. This can be either used by a DC link coupling inside the storage and retrieval unit or fed back to the mains supply. “Regenerative braking” is optional in the STOPA COMPACT II and available for an additional charge (which pays off quickly)..

5. Quieter running of pallets

Not everything thats loud delivers a lot: An angled transfer zone compensates for tolerances and makes the pallets run much more quietly. A quite decisive effect: the reduced shaking of the sheet stacks. Because, from the point of view of an upstream handling system or a processing machine, precision begins with the exact positioning of every single metal sheet.

6. Diagonal measurement of cross-beam height

Put simply, it‘s all about the balanced horizontal position of the centre of gravity for a moving load. Diagonal measurement continuously ensures a compensation of tolerances during storage and retrieval. A more precise approach to the bays is thus possible.

7. Reduced maintenance

Apart from the economic and environmental benefits, we have succeeded in significantly reducing the amount of maintenance with this further development. We only need to mention here as examples the absence of hydraulics, the wear-compensating liftchain tension, more precise lift guide rollers and, in all, a reduction in the range of parts and components.

Optimum space utilisation

Large-scale storage systems from the STOPA COMPACT Series offer, through their space and area concept developed over decades, cost-cutting potential in all dimensions.

Plenty fits into the store. But where does the store fit in? Competitiveness in machinery-intensive production is dominated by the machine-hour rates – the space and area costs are all too often disregarded as a central cost element of the machine workbay.

Space and area requirements are an important and often underestimated cost factor in that they involve a series of further negative influencing factors. Shorter routes mean lower energy consumption and shorter times between machine and store.

Our systems can be flexibly integrated in both existing space layouts and new planned layouts.

Building-supporting constructions are just as possible for the STOPA COMPACT as unusual configurations of storage blocks, storage and retrieval units and storage and retrieval stations. Required operating, servicing, maintenance and safety areas follow an ingenious concept which certainly lives up to the STOPA COMPACT name.

The three deposition frames buffer pallets with sheet stacks and thus ensure that the connected machine is fed. The scissors-type lifting platform can be lowered to pass underneath the pallets.

Storage and retrieval of sheet stacks

We offer a comprehensive range of carts and deposition platforms for manual, semi-automatic and fully automatic connection to machines.

Last but not least, the handling section between store and machine is crucial to the ultimate efficiency of the handling solution.

Storage and retrieval stations can be arranged both along the longitudinal side and at the ends in relation to the shelf blocks. In the case of fully automatic connection, store and machine are connected by interfaces to the storage management software.

The forklift truck places the sheet stack on the deposition plungers of the incoming goods station. The sheet stack can thus be positioned without being damaged and the fork attachment withdrawn again very easily.

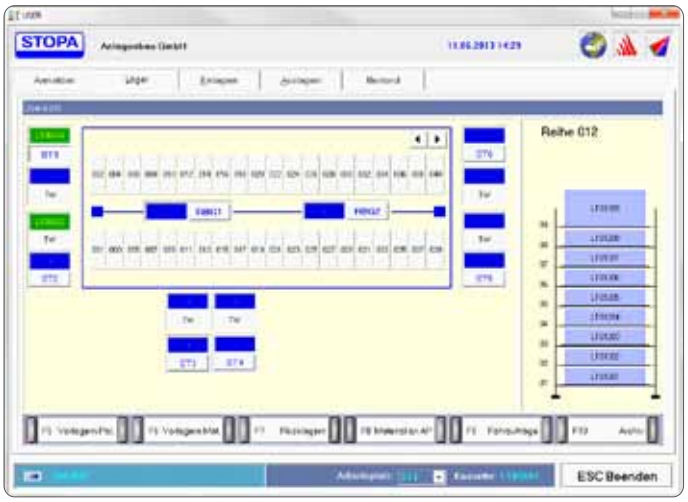
„Strong store seeking close ties.“

Connection in line with demands

The large-scale sheet metal storage systems of the STOPA COMPACT Series are individually geared in line with demands to the existing or planned communication structures.

Every sustainable relationship lives on its ability to communicate. In the interaction and cooperation of manufacturing organisation, warehouse logistics and machines and manufacturing plants, too, communication is a crucial factor in ensuring a smooth automation process.

With the STOPA COMPACT you have all the current and future interfaces at field level, process level and the higher control level.



The clear display provides for easy operation and helps the operator to maintain an overview.

When it comes to storage management we are very particular:

With LVS-Basic, our storage automation module, we offer our customers an innovative and at the same time repeatedly proven link between storage management and processing machines.

The LVS extended module also manages all the characteristic data of the production machines and the flat goods and bills of materials. The software module uses computer-managed customer orders and production bills of materials to supply the connected production machines and equipment with sheet metal material to be processed, in both low-man and manless operation.

We can integrate the module into already existing storage man-agement systems. Here we are committed to your performance and solution ideas alone.

Our own in-house control and automation department can refer here to its experiences gained from over 600 connections of large-scale storage systems in a whole host of different IT environments – irrespective of the suppliers and manufacturers of the software and hardware.

	Type	Option
PLC controller	Siemens S7	STOPA TelePresence Portal
		LVS interface and processing machine
Storage management (LVS)		ERP interface
		Interface, connected machines

For the record only

In the STOPA COMPACT we base the communication protocols on popular transport and network protocols such as TCP and IP. In this way the store can be optimally integrated into your production and communication infrastructure.


TRUMPF


SheetMaster

Tried and tested in use

The STOPA COMPACT has proven itself hundreds of times in use. Worldwide since 1987 over 200 large-scale storage systems of this type have been installed and successfully integrated in all manner of production landscapes.

The STOPA COMPACT optimises area utilisation and reduces the transport, route and non-productive times to connected machines. This saves time and contributes to careful material handling. The sheet metal sizes and the dimensioning of the storage system are matched to the specific needs and wishes of the customer.

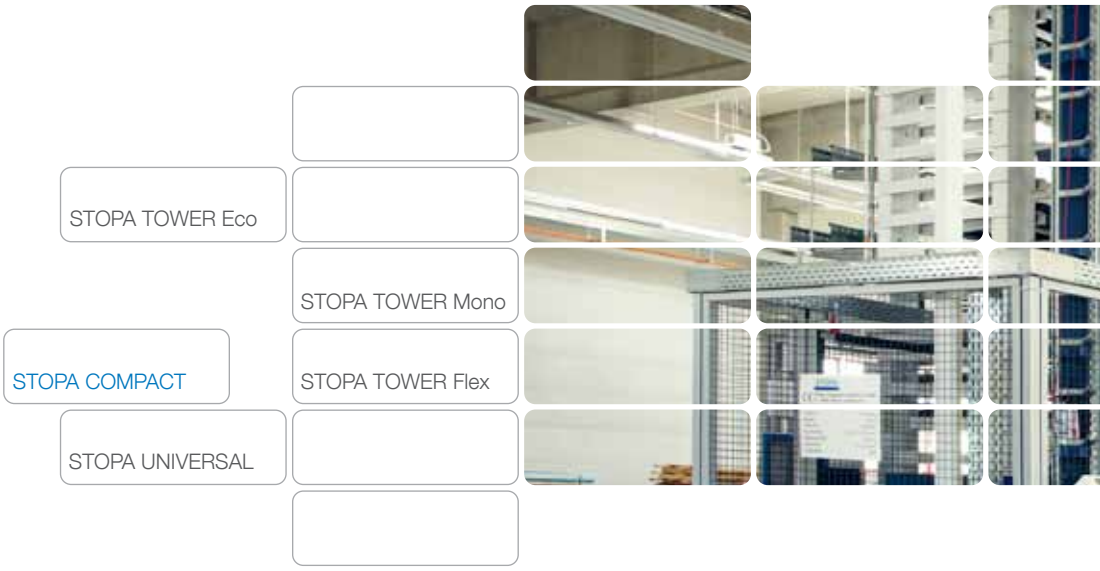
Benefits at a glance

- ✓ **Clear, space-saving storage**
- ✓ **Less damage to materials**
- ✓ **Dimensioning in line with demands**
- ✓ **Automatic connection to processing machines**
- ✓ **Permanent inventory control by means of the storage management software (LVS)**
- ✓ **Green production**
- ✓ **Energy efficiency**

Technical data

STOPA COMPACT Series	STOPA COMPACT I	STOPA COMPACT II
Pallet size	MF, XF, SF, GF	GF
Effective load per storage location [kg]	3000 / 5000	3000
Max. system height [m] *	11	11
Max. lifting speed [m/min]	30	30
No. of storage locations	> 100	> 100
Building-supporting construction	optional	optional
Full integration, sheet metal processing machine	yes	yes
Stations	Travelling longitudinally/at ends	Travelling longitudinally/at ends
Quick change station	optional	optional
Tandem stations	optional	optional
Storage management (LVS)	optional	optional
ERP connection	optional	optional
Energy recovery to the mains supply	no	optional
DC link coupling	no	yes

* further system heights on request



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Updated 09/13, subject to changes