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**MBO**  
KOMORI Group

Stacking Robot

COBO-STACK



# AUTO- MATED STACKING

## New features:

- + Expanded format range  
95 mm x 148 mm (3 3/4" x 5 7/8") to  
260 mm x 365 mm (10 1/4" x 14 1/4")
- + Depositing two signatures on one  
pallet

Watch video:



CoBo-Stack with A80 delivery.

The MBO CoBo-Stack is a so-called **cobot**, that is, a **collaborative robot** which needs no protective cage. Product stacks, e.g. stacks of folded signatures, are transported from the delivery onto the table of the CoBo-Stack. The cobot picks up the stacks from the table and deposits them on pallets. This is an **enormous physical release** for the operator at the delivery. The pallets can be positioned on both sides of the CoBo-Stack, allowing **uninterrupted** operation. While the MBO CoBo-Stack is filling one pallet, the operator can move the loaded pallet away and prepare the next empty pallet.

An **indicator lamp** lights up in different colours, signalling various operating statuses of the cobot to the operator. For some operating statuses, there is an additional **acoustic signal**. This means that there is no need for the operator to remain directly at the production machine, giving him or her **time to carry out administrative tasks**, for example quality control or preparing the next job.

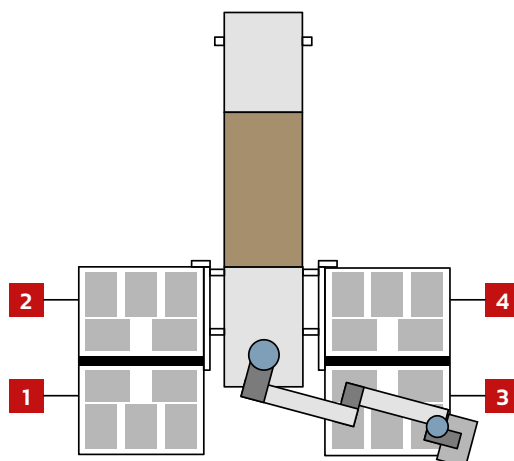


## Who is the MBO CoBo-Stack suitable for?

Designed for maximum flexibility, the MBO CoBo-Stack is suitable for a wide range of firms who process signatures. Like a standard delivery, it can be repositioned within just minutes. In addition to its use on folding machines from a wide variety of manufacturers, it is also designed specifically to work with saddlestitchers and perfect binders. Should the space conditions require it, one of the two pallet spaces can be deactivated.

The maximum pallet height can be extended from 90 cm (35 1/2") to 140 cm (55") as an option. The maximum stack weight can be extended from 6 kg (13 lb) to 8 kg (17 5/8 lb). This means that the CoBo-Stack can be ideally adapted to your individual requirements.

For efficient processing of small runs, two signatures can be deposited per pallet.

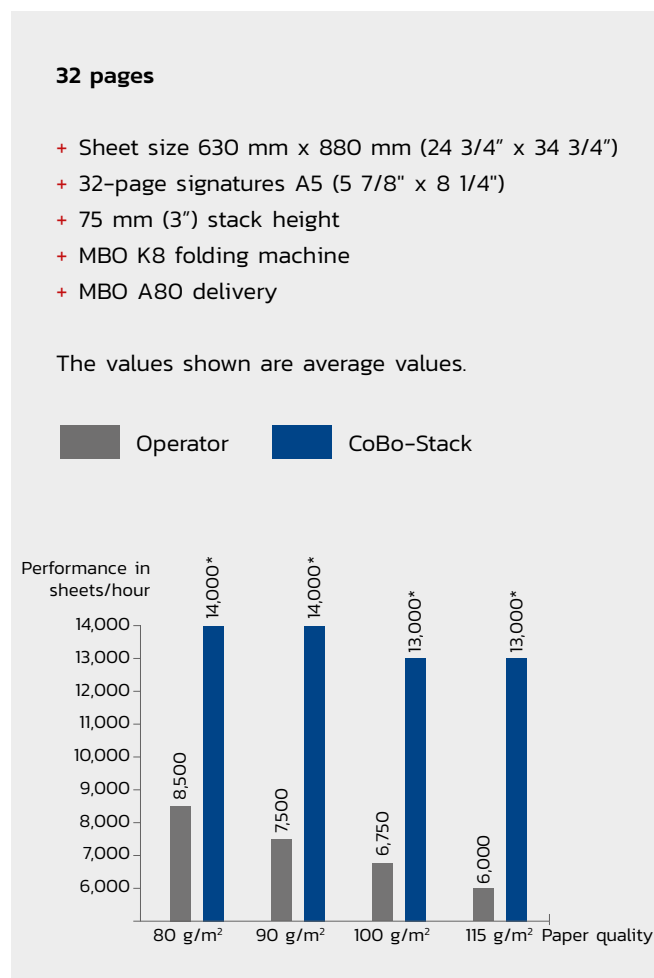
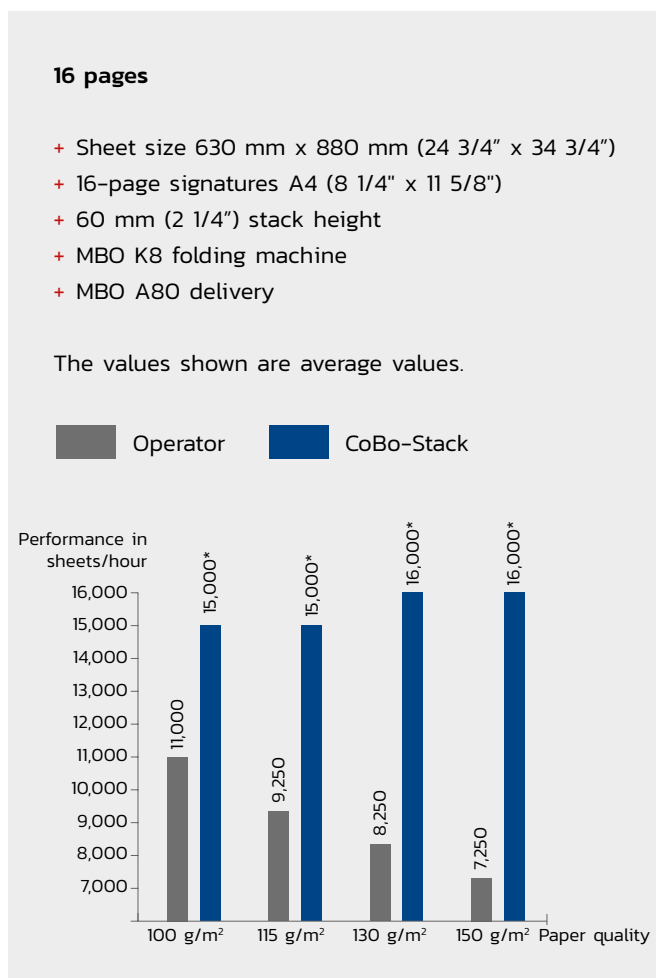


# MAN AND COBO-STACK IN COMPARISON

If you want to exploit the **full performance** of modern folding machines, you need to be moving paper volumes of up to seven tons per shift. An assistant on a conventional delivery could just as easily stack the seven ton load of a twelve-ton HGV onto pallets by hand. However, if that person is also operating the folding machine alongside this, this workload becomes physically impossible.

The CoBo-Stack provides support for the operator and handles the physically demanding stacking work. This means that both the **speed** of the folding machine can be fully utilised, and the **health** of the operator is protected. This not only saves time and money, but also increases the **satisfaction** of the machine operator.

The diagrams illustrate how many sheets per hour an operator can stack from the delivery onto the pallet, in comparison to the collaborating robot CoBo-Stack.

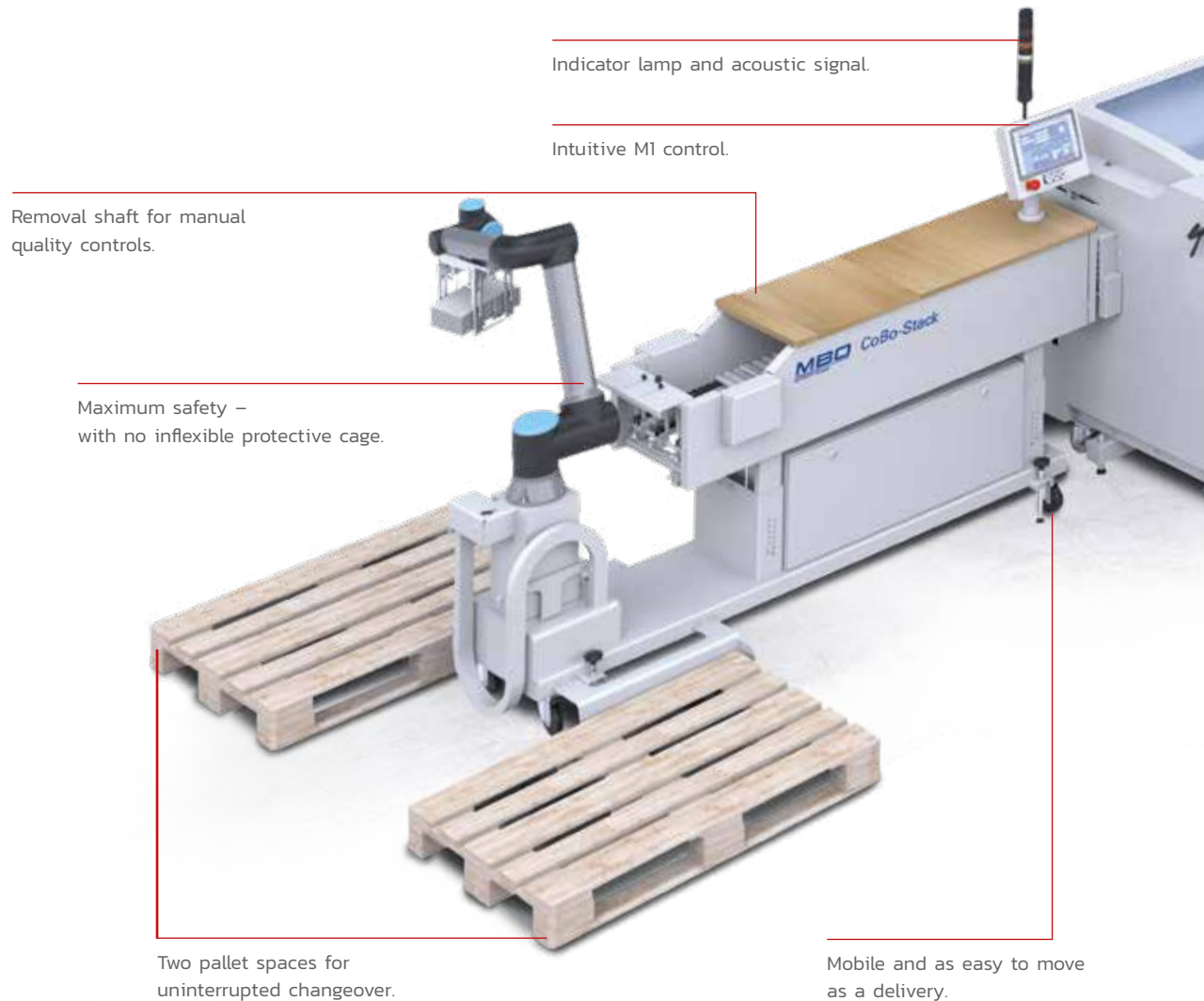


„With the robot, we have doubled our cycle times and considerably reduced the physical workload for our employees. This gives them time for more demanding tasks such as quality control or preparing the next job.“

Jürgen Pipp, CEO of Jürgen Pipp Papierverarbeitung und Versandservice E.K.

\* The specified output levels cannot be guaranteed and are dependent on the type of paper.

# FEATURES



## Standard features:

- + Cobot – collaborative robot which does not need a protective cage
- + Two pallet spaces possible; this allows one pallet to be prepared whilst the other is being loaded
- + Optical and acoustic signals for indicating different operating states
- + Retrofittable to existing delivery systems, for example MBO A500 / A700, MBO A80 as well as to delivery systems from other manufacturers, to saddlestitchers and to perfect binders
- + Receiving the stacks from the left-hand side of the delivery
- + RAS router included; access permission from customer is mandatory

- + Two different signatures can be deposited separately on the same pallet
- + With double stream production, it is possible to deposit on the left-hand and right-hand pallets alternately

## Additional features:

- + Open, electrical interface for third party machines
- + Receiving the stacks from the right-hand side of the delivery
- + Camera from below for depositing two different signatures on the left / right, for example in double stream production

## COMPATIBILITY WITH OTHER UNITS



### Stacking deliveries from a wide range of manufacturers

The CoBo-Stack works **autonomously** and is therefore suitable for use on stack-dispensing delivery units from a **wide range of manufacturers**. The year of construction is also irrelevant. The A80 delivery from MBO was specifically developed for use with the CoBo-Stack. It can be used to optimise the transfer speed of the stacks and allows a comprehensive connection to the folding machine.



### Saddlestitchers and perfect binders

To the CoBo-Stack, a stack is a stack. Many of our customers also use the cobot directly behind the outlet of their **saddlestitcher** or **perfect binder**. Once work is complete, the CoBo-Stack can be easily and quickly repositioned behind the delivery of a folding machine.



### Autonomous Production

The CoBo-Stack is an important step towards **autonomous print finishing**. In conjunction with the VT50 **fold quality control** and the Autopilot, MBO ensures that you maintain your leading position in the marketplace.

Using two cameras, the VT50 measures the **folding tolerances** of the finished, folded sheets. Misfolded or out of tolerance sheets are ejected. This guarantees that only perfectly folded sheets are deposited on the pallet.

The **Autopilot** ensures automatic job and signature changes. If the folding machine feeder detects a new signature or a new job, the CoBo-Stack is notified. Production continues automatically and the CoBo-Stack places the new sheets on a new pallet or another area on the same pallet, depending on the setting made in advance.

„The advantage of the CoBo-Stack is that it is so incredibly flexible. It hardly takes up any more space than if an employee were standing there. And as it doesn't need a cage, you can intervene quickly at any time. It runs the full two shifts every day.“

Hannes Sandler, Managing Director of Johann Sandler GesmbH & Co KG



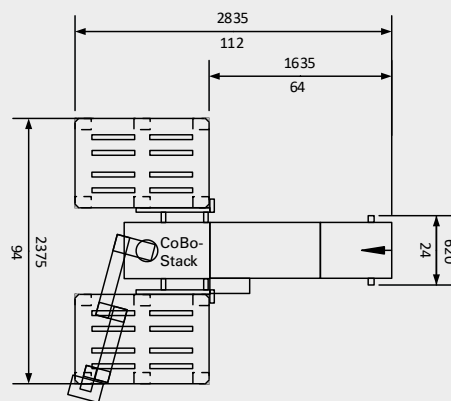
# TECHNICAL SPECIFICATIONS

		CoBo-Stack
Infeed height		<ul style="list-style-type: none"> <li>+ Standard height: 793 mm – 923 mm (31 1/4" – 36 1/4"), adjustable in 10 mm (3/8") steps</li> <li>+ Optional special height, suitable for example for Horizon PSX-56: 734 mm – 864 mm (28 3/4" – 34"), adjustable in 10 mm (3/8") steps, the maximum pallet height is reduced by 60 mm (2 3/8")</li> </ul>
Gripper XS – product format (W x L)	min.	95 mm x 148 mm (3 3/4" x 5 7/8")
	max.	160 mm x 280 mm (6 1/4" x 11")
Gripper S – product format (W x L)	min.	95 mm x 210 mm (3 3/4" x 8 1/4")
	max.	160 mm x 365 mm (6 1/4" x 14 1/4")
Gripper M – product format (W x L)	min.	155 mm x 210 mm (6 1/8" x 8 1/4")
	max.	235 mm x 365 mm (9 1/4" x 14 1/4")
Gripper L – product format (W x L)	min.	180 mm x 210 mm (7" x 8 1/4")
	max.	260 mm x 365 mm (10 1/4" x 14 1/4")
Stack height	min.	60 mm (2 3/8")
	max.	150 mm (6") (with gripper XS, the max. stack height is limited to 125 mm (4 7/8"))
Stack weight	max.	6 kg (13 lb); optional 8 kg (17 5/8 lb)
Stacks per hour	max.	300 (at up to 6 kg (13 lb) stack weight); 260 (at up to 8 kg (17 5/8 lb) stack weight)
Pallet height	max.	900 mm (35 1/2"); optional 1,400 mm (55")
Pallet format	min.	300 mm x 300 mm (11 3/4" x 11 3/4")
	max.	EPAL 800 mm x 1,200 mm (31 1/2" x 47 1/4")



The CoBo-Stack can process many different formats. DIN long formats can also be deposited with ease.

Floorplan CoBo-Stack



Measurements in  $\frac{\text{mm}}{\text{inch}}$

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