

EP patent 1.21.02.14, other patents pending



UNIFEEDER

Press Automation

BINAR 
www.binar.se


OLOFSTRÖM

Press Automation

UniFeeder is a two-axis freely programmable press automation equipment. It is characterized by fast and smooth movements, qualities necessary for keeping a high and steady production rate. The rapid motion originates in light moving weight due to the stationary servomotors. The smoothness of the movements comes from the unique operation control, developed especially for the handling of oil-coated sheet metal.

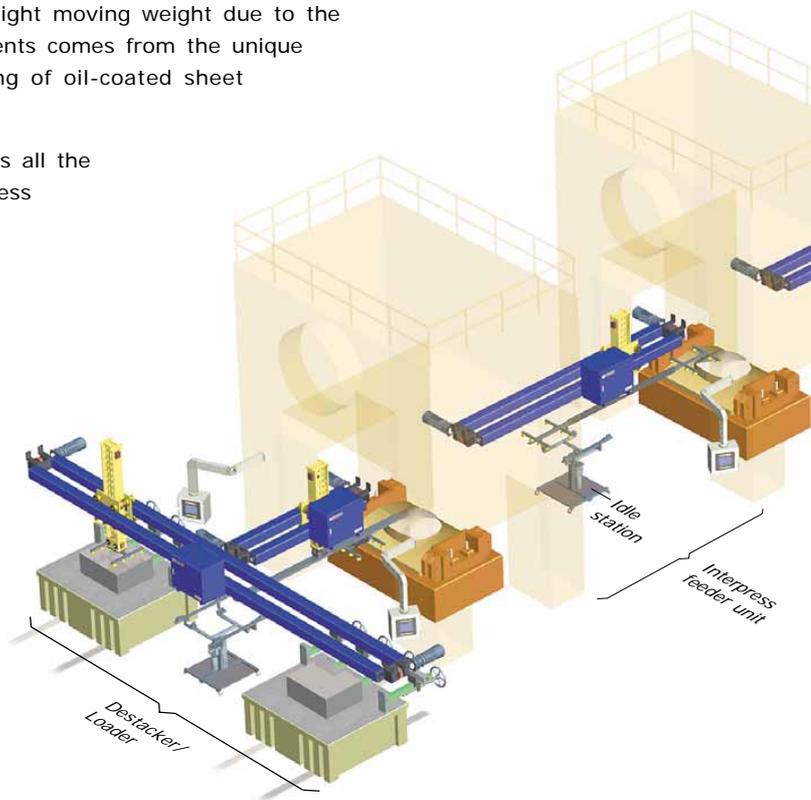
The UniFeeder has a broad field of application and meets all the basic needs of a press line such as destacking, interpress handling, after press handling (stacking), etc. The possibility of using the same type of equipment throughout the entire press line gives obvious advantages when it comes to things like spare parts, maintenance, training and user-friendliness.

Interpress feeder unit

The interpress feeder unit consists of a UniFeeder with a double tool bar together with an idle station placed in between the presses. Compared to traditional solutions with loader, unloader and shuttle, this solution leaves a large free floor space between the presses. This will facilitate setup work, such as tool bar and die changes.

If parts need to be tilted, rotated, splitted or reset, this is done in the idle station. For adjustment to varying heights between the dies, the idle station can be vertically adjusted during operation. When parts need to be turned over, the idle station is replaced by a fixed turn-over unit, which will rotate the part 180° around its own axis.

Because the UniFeeder works as both unloader and loader at the same time, a smooth and harmonious flow of production is achieved, pretty much like the regular flow of a transfer press.

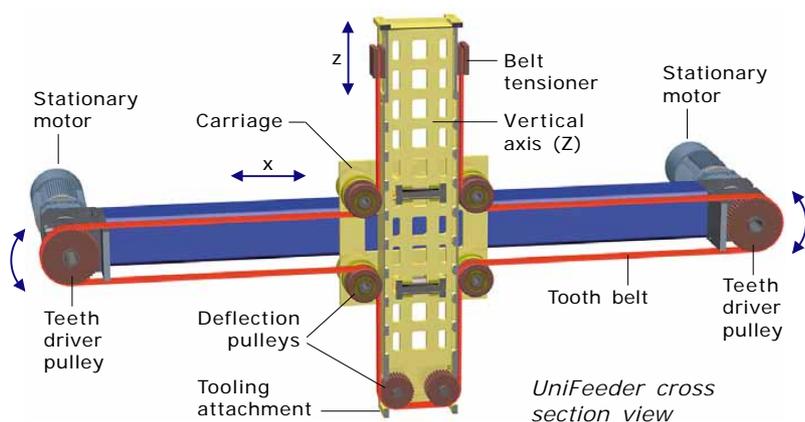


Destacker

The UniFeeder's characteristics with free choice of horizontal stroke (X-axis) and extremely good performance of vertical movement (Z-axis) makes it well suited for destacking applications.

A great advantage is that the destacker can be used with trolleys for blank stacks, instead of the hydraulic lift tables normally used.

Function principle

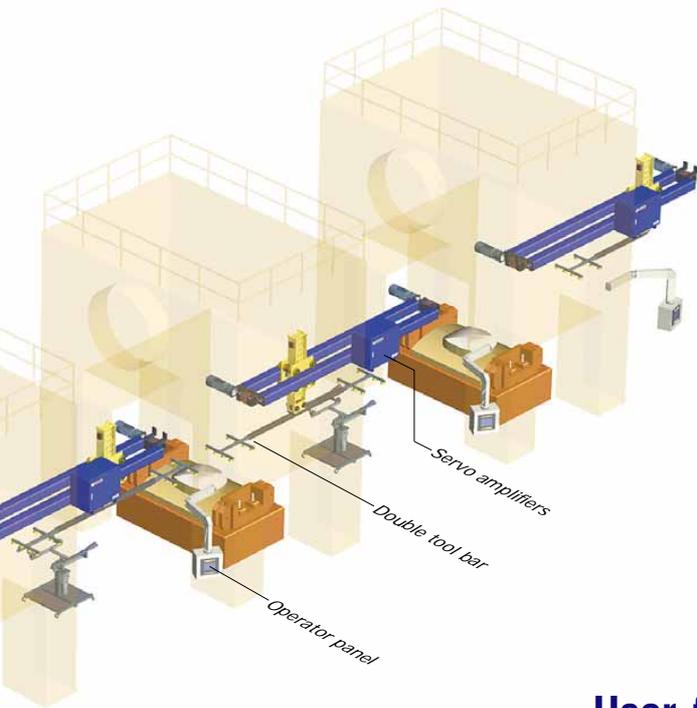


The movement takes place in two directions, horizontally (x) and vertically (z).

In each end of the horizontal beams there is a stationary mounted servomotor. Together the both motors run the tooth belt. By controlling the motor speed it is possible to achieve different movement paths of the carriage and the z-axis.

If both motors rotate at the same speed the resulting movement will be horizontal (x) only. If the motors rotate at different speed the difference in speed will cause both a vertical movement (z) as well as a horizontal one (x).

Technical data / Capacity



Some technical data:

Load (including tooling)	max 200kg
Stroke length horizontal (x-axis)	max 10 m
Stroke speed horizontal (x-axis)	max 6 m/s
Stroke length vertical dip (z-axis)	max 2 m
Stroke speed vertical dip (z-axis)	max 5 m/s

Capacity examples:

Number of strokes/minute continuous.

Horizontal stroke length 3 m. Total load 70 kg.

Vertical dip	Strokes/minute
100 mm	26.8
250 mm	25.5
500 mm	24.0



User friendly interface

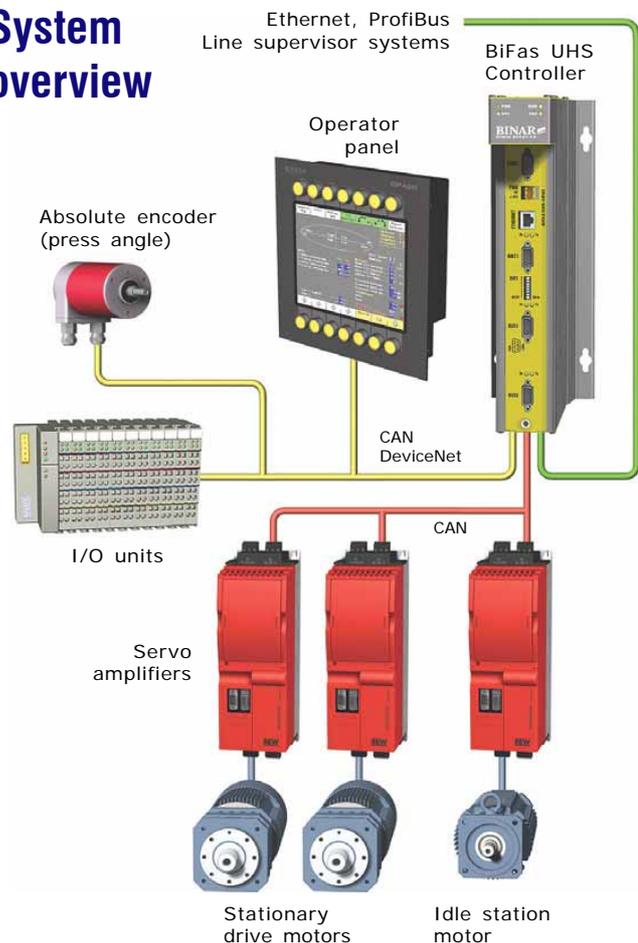
To give the operator a good survey of the process the operator panel of the UniFeeder has a large TFT color screen.

All handling and programming (teach-in) is done through 14 rugged buttons. This makes the panel easy to operate, even if the operator is wearing gloves.

UniFeeder Highlights

- Unique algorithms for path planning give fast and smooth movements. This allows higher speed of motion, increased production rate and less need for mechanical maintenance.
- No moving motor cables due to fixed mounted motors. Light moving weight increases performance and efficiency.
- Simple and rugged construction.
- No sensitive mechanical parts such as linear units or similar.
- No lubricating points. All bearings are permanently lubricated.
- The UniFeeder meets all the basic needs of a press line. Because of its excellent performance it can be used both for interpress handling, destacking, after press handling, etc.
- Binars' of many years' experience from industrial controllers and press automation contributes to user-friendliness and high productivity.
- Simulation systems for educational training and optimization of production.

System overview





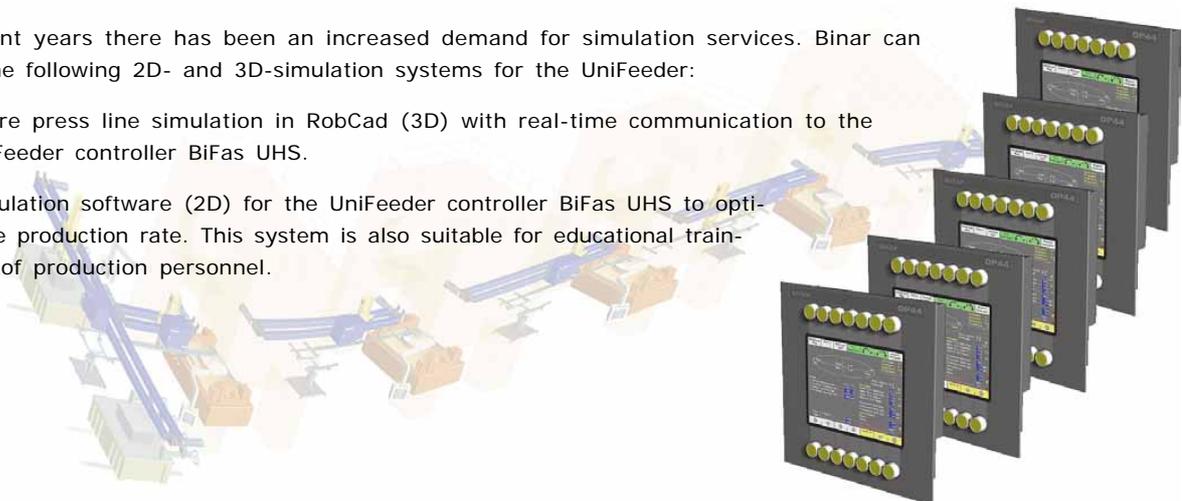
The picture shows a UniFeeder used as an interpress feeder unit installed in a 108" press line. The distance between the presses is 7500 mm. In this press line the die change is done with a moving bolster system. The

UniFeeder remains in the same position for manual tooling change as for the production. Notice the large free floor space between the presses, which facilitates all kind of setup works, such as tool bar and die changes.

Simulation

In recent years there has been an increased demand for simulation services. Binar can offer the following 2D- and 3D-simulation systems for the UniFeeder:

- Entire press line simulation in RobCad (3D) with real-time communication to the UniFeeder controller BiFas UHS.
- Simulation software (2D) for the UniFeeder controller BiFas UHS to optimize production rate. This system is also suitable for educational training of production personnel.



2004-07-12 eng 1.09