

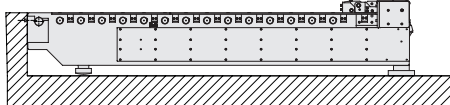
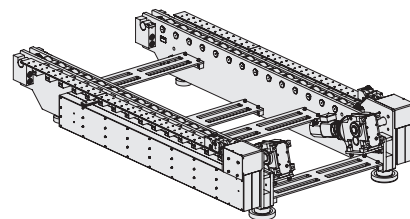


Die Changing Consoles, Electrically Driven with push chain drive, die weight up to 50 tons



Advantages

- Lowest support heights possible
- High load and push force
- Easy insertion of the dies with push chain drive, semi- or fully automatic via roller or ball bars
- Precise positioning and approach of stops with rotary encoder possible
- Insertion of the die to the end position in the press
- Individual system with integration in the press control possible
- Flexible use at several presses
- Customised special solutions for a tailor-made changing system



Console unit with low support height

Application

The push-chain console, designed based on standard die change consoles, is easy and space-saving to install and suitable for retrofitting and new installations.

Depending on the customer's individual requirements, different automation levels can be realised with integration into the press control.

Description

The main components of the die changing console are the manually movable carrying console and an electric push-chain drive.

The die changing station with special push-chain drive makes the handling of dies easier and ensures effort and time-saving change of dies with a maximum weight of 50 tons in places difficult to access.

(Higher loads on request)

Roller and ball bars in the T-slots of the press bed allow easy handling when moving the dies. The carrying console is also equipped with a hydraulic lifting column with a foot lever for easy docking into the hooks. Steering rollers allow easy transport of the complete system from one installation to the next.

Tandem die changes are also possible to optimise set-up times.

Dimensioning and further technical details in the course of the project

Please contact us!

Function

The drive unit and carrying console are hung in hooks manually on the die-changing side of the press and locked in place; no further machining of the machine table is necessary for the use!

The die is deposited on the consoles using a crane or a forklift truck.

Depending on the customer's requirements, the die is coupled to the push chain of the changing unit with a customised die adapter.

The integral chain drive system allows the user automatic die loading and positioning by depressing a push-button on a separate remote control pendant.

Sensors and stops can be integrated into the control system.

The press bed remains free during the changing process, i.e., the push-pull elements do not project over the press bed.

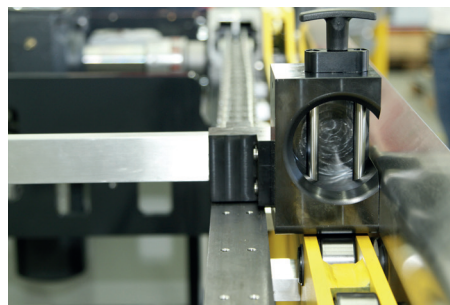
Also, the rear side of the press is completely free. This changing unit is suitable for almost any press, can be easily removed and is easy to handle.



View of pull-push chain and die adapter



Option: The control is directly mounted to the console, console and control can be completely removed.

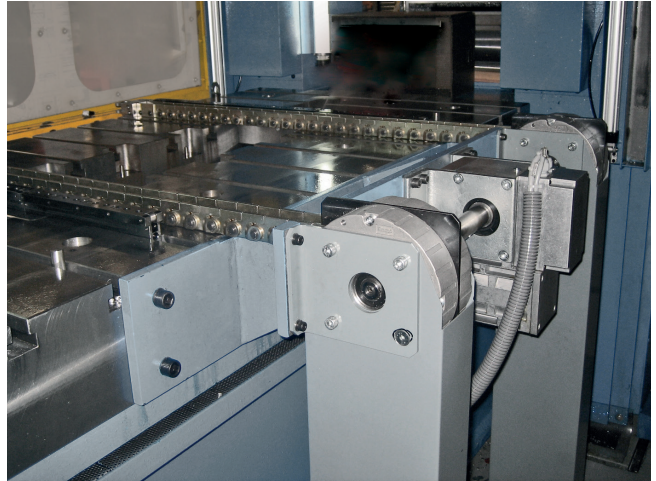
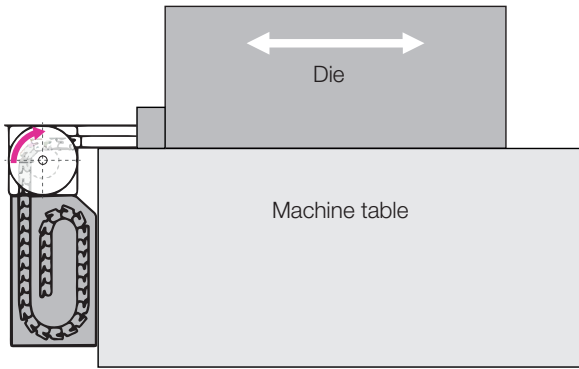


Push-pull docking device, customised

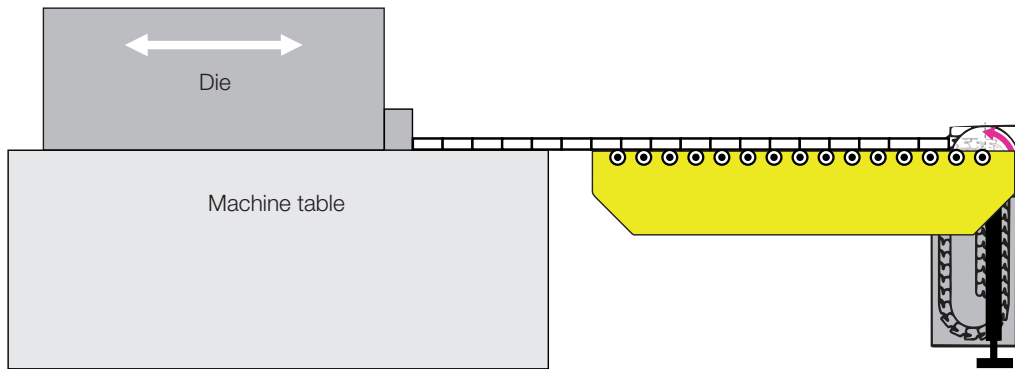
Push chain

Variants • Application examples

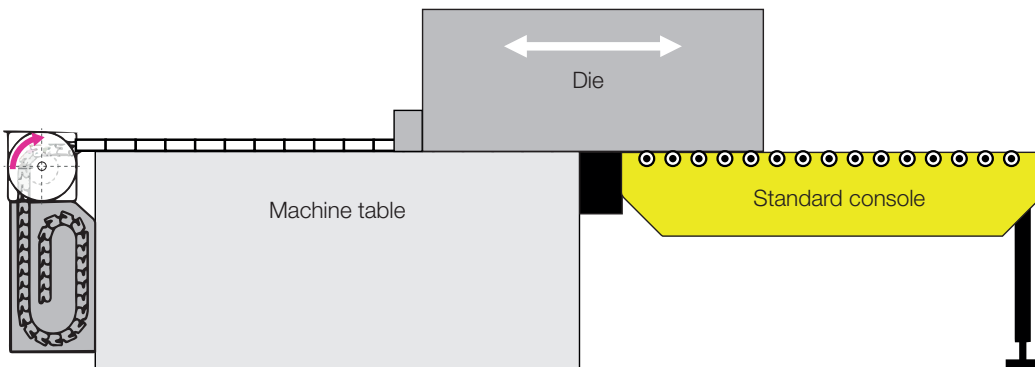
Push chain direct system



Push-chain console



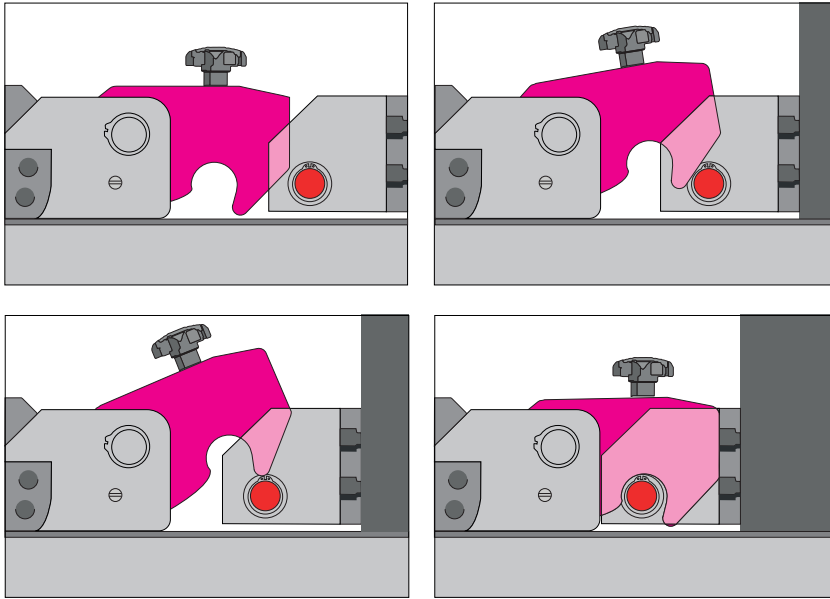
Push chain direct system with console



Die adapter

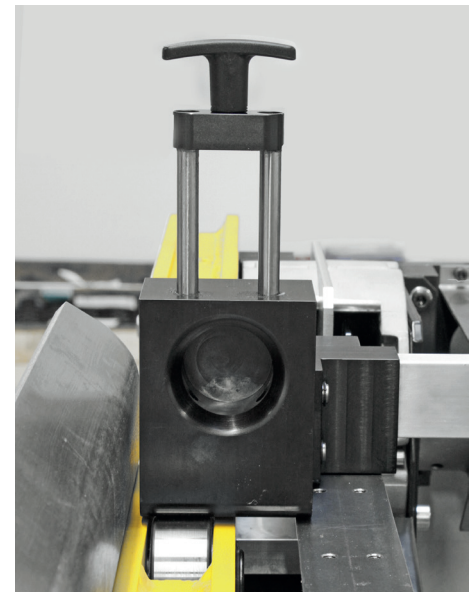
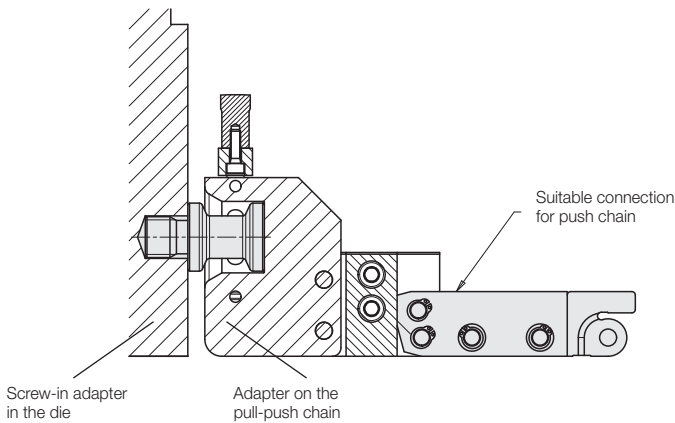
Standard:

- Couples the die automatically
- Uncoupling by hand

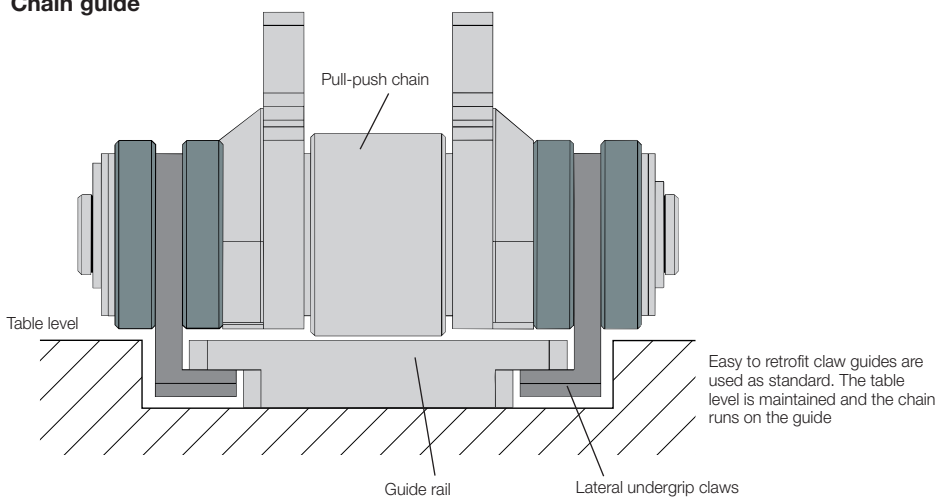


Die adapter

customised



Chain guide



Chain guide

A chain guide is necessary to realise long chain strokes and to prevent a lateral break-out of the push chain. Avoid side loads acting on the push chain. The maximum force of the pull-push chain is possible with a guide also over longer distances. The running surface of the push chain must be at table level. The length to which a push chain can be loaded without a guide depends on the friction factor, the die weight and the push length.

Design of a pull-push chain system

The following parameters are required for the design of a pull-push chain system:

Die weight [kN]

Friction factor (rolling friction or sliding friction ; 7% when using ball/roller bars)

Table height [mm]

Displacement length / stroke of chain [mm]

Guide (A = die guided B = push chain guided)

Displacement speed (standard = 33 mm/s)

Cycle number [cycles/day]

Special operating conditions (please describe: e.g. dirt, temperature ...)

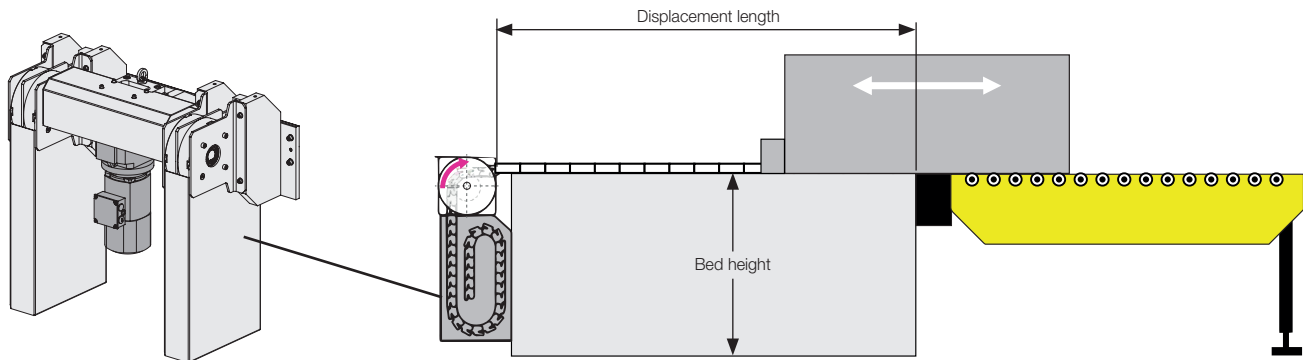
Sketch or drawing of the press bed (show interfering objects in sketch)

Position control above (D = absolute value rotary encoder N = incremental value - cam switch)

Control (yes/no)

Construction (1, 2 or 3)

- 1 = two push chains, left and right, **motor arranged laterally** (one motor per push chain)
- 2 = two push chains, left and right, **motor arranged in the middle**
- 3 = special versions see attached sketch



Option: Control



Delivery with or without control (option)

The pull-push chain can be controlled via an existing machine control. However, we also offer a separate control as an option.

For an optimal design of the pull-push chain, we recommend the following minimum control requirements:

- Integration in the emergency stop circuit (terminal strip)
- Two speeds: creep speed/normal speed with frequency converter for precise positioning
- Change-over switch: forward / reverse, emergency stop button
- Wired remote control with two-hand operation
- LED display FAILURE for temperature switch motor or overload protection

Our recommendations for possible options are:

- A start ramp for a smooth motor start and positioning with millimetre accuracy
- Interface and signal processing in the press control:
 - Query of the chain and die end positions by rotary encoder or cam switch
 - Press in setting mode, top dead centre and ball bars lifted