

Basic structure

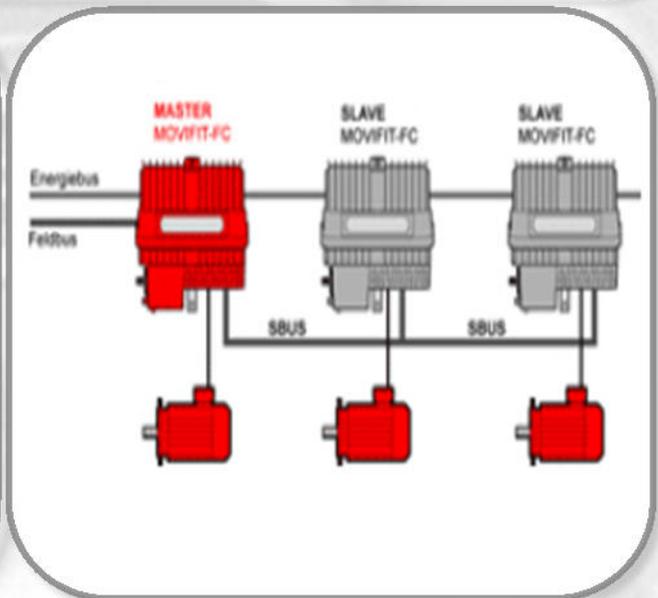
- Milled steel side plates with welded steel intermediate elements
- Rollers featuring steel core and corresponding coating.
- Highly rigid basic frame due to corresponding number of intermediate elements.

Mechanical structure

- Lower pull-off roller operated via servo-bevel gear motor, pneumatically lifted upper pull-off roller (not motorised).
- Drive motors available in different power levels.
- In case of multiple pull-off rollers, the upper rollers may be activated individually.
- In case of multiple pull-off rollers, a support block is also included in addition to the base plates, which also transfers the pull-off force to the floor.
- The rollers are supported by high-performance bearings.

Electrical technology

- The electrical technology is housed either in its own switching cabinet on the machine or in a collective switching cabinet with components for additional machines in the extrusion line.
- One important criterion of the pull-off rollers, especially for multiple pull-off rollers, is the exact regulation and maintenance of the pull-off speed and pull-off force. Because each drive roller is operated by its own motor and associated frequency inverter, the option of technical controller communication with the FI is critical to the function of the machine. Thanks to our cooperation with different frequency inverter manufacturers and the associated suppliers, we've been able to complete these tasks successfully.
- Outline detection: Thanks to the speed and torque monitoring of the FI, the outline of a plate can be detected during production.



Technical data:

X= Number of roller pairs:	AZM(x)-1250	AZM(x)-1600	AZM(x)-2000	AZM(x)-3000
Pull-off force (per roller pair)	10 kN	10 kN	12 kN	15 kN
Extrusion speed	Up to 10 m/min	Up to 10 m/min	Up to 8 m/min	Up to 5 m/min
Roller width	1500 mm	1800 mm	2300 mm	3400 mm
Roller diameter	260 mm	260 mm	260 mm	300 mm
Pressing force (controllable)	Up to 20 kN	Up to 20 kN	Up to 20 kN	Up to 32 kN

Equipment / options / additional equipment:

The following is a selection of different properties/options/additional equipment for this machine:

Adjustment of pressing force and regulation of the material contour

The upper pull-off roller moves vertically via one pneumatic cylinder on the end of each roller. The pneumatic force produces the pressing force between the rollers and the plate extrudant. There are two important requirements for the pressing force of the pull-off rollers:

- The pressing force must be great enough to avoid slipping between the and therefore abrasion of the roller coating and irregularities in the conveyor speed.
- The feed of the plate extrudant must be controllable within a certain range, i.e. the extrudant may not deviate to the side or sway to the side.

The level of the pressing force is specified according to the selection of the corresponding rubber coating across the dimensions of the pneumatic cylinders. To regulate the material feed, the pressing force for each of the cylinders of a roller may be set via a precision pressure controller. An exact pressure setting enables the path of the plate extrudant to be controlled.



Selection of materials for roller coating

The coating selection (rubber) for the pull-off rollers is naturally an important criterion for the functionality of the machine. A poor coating selection will lead to slipping (slipping through), increased wear, and even damage to the product. The coating that is selected is significantly dependent on the surface properties and characteristics of the product.

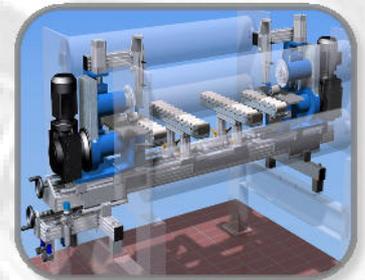
Normally, selection takes place according to our experience and the know-how of the manufacturers of these coatings; naturally, this also takes place together with our customers.



Multiple pull-offs

Multiple pull-off rollers featuring up to ten roller pairs have already been developed. In principle, there is no upper limit.

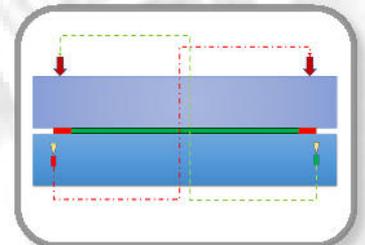
Single pull-off rollers featuring a modular design for combination are also available. Expansion of the number of rollers with this variation in case of changes in terms of production requirements is low-cost and easy. Double pull-off rollers featuring the option to install devices or machines between the roller pairs may also be required. This application is also easy to implement using a modular design.



Automatic material feed regulation

If very precise plate extrudant feed is required, an automatic feed controller may be implemented. In this case, the feed of the extrudant is detected via corresponding sensors and compensated in case of deviations using controllable pressure control valves for the pressing force of the upper rollers.

This function is able to be activated and deactivated so that it does not disturb the start-up process of the system.



Product surface embossing

Pull-off rollers with only one pair of rollers may also be used as an embossing machine with corresponding embossing rollers to add a texture to the surface of the product. Embossing may be transferred to one product surface or both surfaces. Because embossing requires the embossing depth to be kept constant, the machine is equipped with its own fine-adjustable end stops for the upper embossing or lower pressing roller. In case of multiple pull-off rollers, one of the roller pairs may be designed as an embossing unit.

