



Multi-Function-Shuttering-Robot (MFSR)

Multi functions:

- | Demoulding of all shutterings (including opening of magnets)
- | Demoulding of additional magnets
- | Measuring of the pallet
- | Marking/drawing and plotting of insert parts; attaching of labels
- | Drawing of shuttering rest lenghts
- | Oiling of contact surfaces: only the surfaces to be cast on are oiled
- | Spraying of retarder
- | Placing of additional magnets
- | Placing of insert parts (polystyrene; sockets; joining elements, form-fit shutterings)
- | Placing of shutterings
- | Activation of magnets with simultaneous alignment of shuttering elements in X-Y axis
- | Rebuilding functions with the use of the SMS (Shuttering Module System)
- | Managment of shuttering magazine



The functioning principle of the MFSR combined

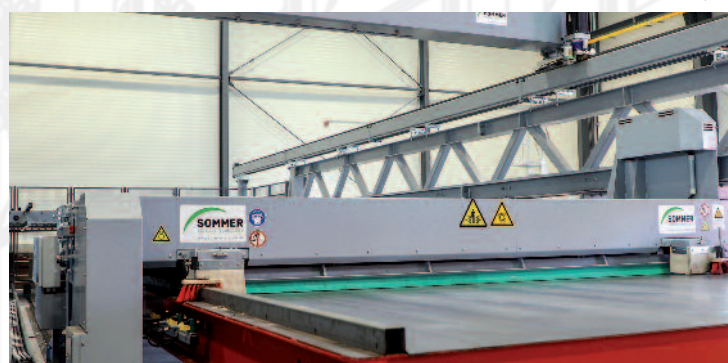
performs all necessary demoulding and shuttering functions of a pallet circulation plant. This solution is designed for plants with a performance of up to 100 m²/hour. This compact design enables installation in existing plants also and is an alternative investment for plotter, cleaning, plotting and oiling machines. With this state of the art solution quality and productivity will be improved and staff does not have to do exhausting and dangerous work, anymore. With a production rate of 800 m² about 10,000 kg shutterings are transported. The perfect task for the MFSR.

The shutterings lie unarranged with open or closed magnetic units on the pallet.

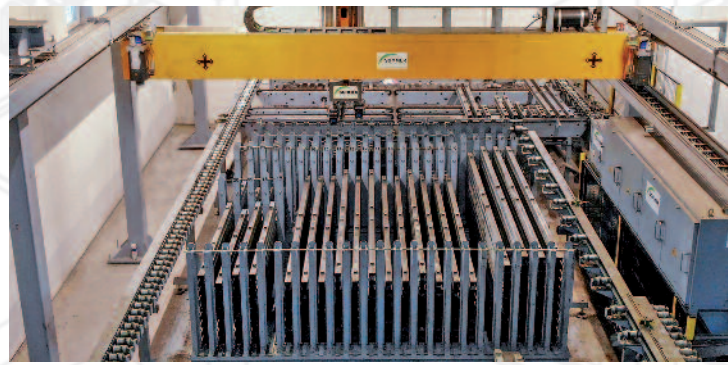
MFSR scans the pallet. The position data of each shuttering are calculated.

MFSR gripping unit grasps shutterings and transfers them to the shuttering transport and cleaning unit.

After all shutterings have been taken away the pallet is cleaned with a driveable cleaning machine.



During that period the MFSR manages the shutterings in the active and passive magazine.



Oiling of shuttering area to be cast on.



Drawing (plotting) of shutterings and insert parts not to be placed automatically.



Placing of shutterings, aligning them, activating of magnets.



Advantages of this patented technology:

- | Highest accuracy of the products
- | Reducing of costs for staff
- | Staff has not to do exhausting and dangerous work anymore
- | Avoiding of risks of accidents
- | Smooth handling of shutterings
- | Reduction of investments
- | High acceptance with members of staff
- | Saving of form oil

The MFSR can be used for slabs-, double wall-, massive wall-, and sandwich wall plants.

The systems are adapted in modules according to requirements. Corresponding to defined sample pallets the cycle times can already be simulated in the planning stage of the project. From these calculations the configuration of the plant is done.

Cycling times

The highly dynamic system enables movement and acceleration times to meet all requirements.

All functions of the MFSR in an overview

Fully automated shuttering function

- | Measuring of pallet on the side shuttering
- | Shuttering and magnet calculation
- | Picking up of shuttering profiles from active and passive magazine and accumulating conveyor
- | Placing of longitudinal and cross shutterings with integrated magnets and activating of magnets
- | Automatic gap optimization and aligning of shutterings on the push edges

Fully automated demoulding function

- | Scanning of the pallet
- | Recognizing and calculating of shutterings profiles and magnets
- | Opening of the integrated magnetic fixing system in shuttering profiles and magnetic boxes
- | Automated pick-up of dirty shutterings and magnets with feeding to cleaning machine afterwards

Placing and loosening single magnets

- | Placing of additional magnets for insert parts or frames (standard magnets, insert part magnets, and magnetic boxes)

Plotting function

- | Plotting of outlines and recesses and symbols

Oiling function

- | Oiling of pallet surface to be casted
- | Per element the surrounding ashlar is calculated, enlarged by a side distance and driven in curves

Labelling function

- | The roboter takes the labeling unit from the magazine and performs the attaching of labels in one process

Placing of additional shuttering elements

- | The robot can place all additional elements to be fed automatically on the corresponding positions Magazine function/storage management
- | Management of shutterings in passive magazines

Additional components

All required additional components for the trouble-free and automated operation are adapted in modules according to the requirements of the customer. Shuttering transport lines, cleaning devices, active magazine as chain or step conveyor and passive magazine with rebuilding stations have improved in use and guarantee an economic production as do all Sommer products.



MFSR I with shuttering and demoulding function for plants with an hourly performance of 100 m²



MFSR II shuttering robot and separate demoulding robot for hourly performances up to 200 m²



MFSR III redundant arrangement of 2 shuttering robots for an hourly performance of more than 200 m²



MFSR IV shuttering robot with rebuilding function in use of the Shuttering-Module-System

