

# Cars : big and small

## *Transportation of tools - safe and smooth*

*Any changeover procedure from one product to the next that is performed in a quick and smooth manner, saves time. And as we all now: time is most often the equivalent of money. But a quick and smooth changeover can also increase safety for the personnel involved.*

EAS change systems has a wide range of solutions that help to improve changeovers, according to the SMED philosophy. Using a tool transfer system, your tools are positioned with speed and precision. Even more flexibility is obtained when using mobile change cars. This article covers the tool change car, also known as a mold change trolley. It covers the handling process where the tool is transferred sideways in and out of the machine.

A semi or fully automated system offers higher machine availability, increased operator security and lower production costs. The modular design used by EAS offers multiple configurations and enables optimizing production units by integrating preheating and cooling stations. A fast and hassle-free connection of all the utilities already at hand.

## Effortless

Whether you are working with a small tool - anything up to 500 kilos is considered 'small' - or a very large one, for instance a mold weighing 100 tons, it can be transported to and from the machine by use of a car or trolley and can be transferred sideways in and out of the machine without any effort at all. The type of machine is not important, the weight of the tool determines the choice of the car.

Increasing speed and safety, EAS has completed the full line by introducing new cars for 1- and 2-ton molds, with 1 or 2 stations. So now the full range of tool sizes and weights can be handled. The use of these cars also reduces the risk of damaging a tool when transferred to and from - but also in and out of the machine. As these are often very costly pieces of equipment, taking good care of them is in itself a rewarding initiative that will help keep your tool in excellent condition. A damaged tool will reduce the quality of the product and will have a shorter lifespan.

## Small single cars

The 'starter' model - so to speak, is the small, manually operated mold change car (M-MCC). It is mounted on wheels and allows for fully manual operation. The basic model has one mold station for a maximum load of 500 kg and an other up to 1000kg. It is a very simple and pragmatic model, riding on two fixed and two swivel wheels with a foot brake. This car is available with either a fixed or a manually adjustable height, to offer maximum efficiency and flexibility. Should you always use it for tools on one specific machine, the car with a defined fixed height is perfect for the job.

The version with the adjustable height has a maximum stroke of 240 mm. The required height can be set with a hydraulic hand pump and valve. The lifting movement is performed by robust, reliable and accurate vertical linear guiding technology. To transfer the tool sideways into a machine, the car can be equipped with a non-

driven roller bed. This helps to smoothly transfer the tool in and out of the machine. With a manual slide-out roller bed, the distance between the car and the rollers inside of the machine can be bridged.

To secure the position of the tool, two locking pins keep the roller bed in place during the transfer and the tools is safely guided in and out of the machine. The car itself has a mechanical safety stop on the front and on the back to secure the tool stays in position when the car is driven to and from the machine. The car can be guided along the machine and docked to the machine by means of a guiding/docking rail, fixed on the floor, independent from the machine construction.



## Double Cars

Where production is more or less continuous, your machine needs to change from one product to the next, so from one tool to the next - as quick as possible. One tool transferring out of the machine, and the next one going in. The car best fit to serve this process is therefore equipped with two tool stations.

A double mold change car holds two molds and thus saves valuable space. Like the single model, this car can serve one machine, but it can also alternate between two machines, increasing productivity on both. Both single and double station cars can carry tools up to 500kg's per station.



## Big Cars

For larger tools, we have a range of medium sized and truly big cars. And for a maximum freedom of movement for the heaviest of tools, there are even air cushioned floating cars. Tools up to a weight of 100 tons can be transported in the safest way possible. The bigger the tool, the bigger the risk and the bigger the price tag of the tool. Avoiding damage of any kind therefore increases in importance. Any tool with any weight can be facilitated. The modular way in which the system is built up, help accommodate any need you may have. Adding driven roller beds, push-pull devices, sensors and even tool care stations and inspection units helps you take care of your tools in the best possible way. Pre-heating of the mold will even speed up the changeover process further.



## Manual or fully automated

The options of driving the cars around your production facility are as versatile as the cars themselves. For the smaller cars, they can be either moved around without any guiding, or they can be moved along a rail by using a two ball-bearing roller. They are operated manually and can be used on different machines, for instance alternating between two machines. No interfacing with the machine is needed. The only thing needed in order to allow for a smooth operation is space around the machine to drive position and dock the car.

The larger the tools are, the more the need for automated operation - and changeover arises. The larger cars can be integrated with the controls of the machine, allowing for fully automated changeovers. The car can even be transformed into an AGV and independently find its way through the facility. An AGV - or an automated guided vehicle - is a car equipped with software and reference points allowing it to find its predetermined path around your factory. The cars are electrified, equipped with sensors and the driving and handling of your tools is smooth, secure and safe.

Very large change cars can be multi-wheels that can be remote controlled. A semi or fully automated system offers higher machine availability, increased operator security and lower production costs. Depending on the size of your tools and the number of machines, you can determine the level of automation in the loading process.



## SMED

Besides the cost aspect, safety is a major factor that is heightened by the use of both the manually operated solutions, as well as the fully automated systems. The solutions often require standardization of clamping heights, ensuring safer set-ups, eliminating confusion and improving overall working conditions.

Just imagine how much time is saved when the next tool is instantly available during changeovers. EAS' mold change cars are part of the industry's most complete range of time and money saving changeover solutions – reducing the time it takes to change tools from hours or even days to virtually minutes. With our inhouse production we offer maximum flexibility in design and setup. Including standardized solutions up till a tool weight of 100 tons.

The need to reduce turnaround time is the foremost reason for most companies to implement solutions such as EAS change systems' Quick Die and Mold Change Systems (QDC and QMC). To decimate the costs of non-productivity concerning turnaround time, but equally important, to be more flexible in production volumes. More and more factories work with a high-mix low-volume production. A rapid changeover is key to reducing production lot sizes and improving flow. Lean manufacturing, or Just In Time manufacturing increases the need for flexibility and EAS has just the program to help you fulfill this need and increase your equipment productivity.

