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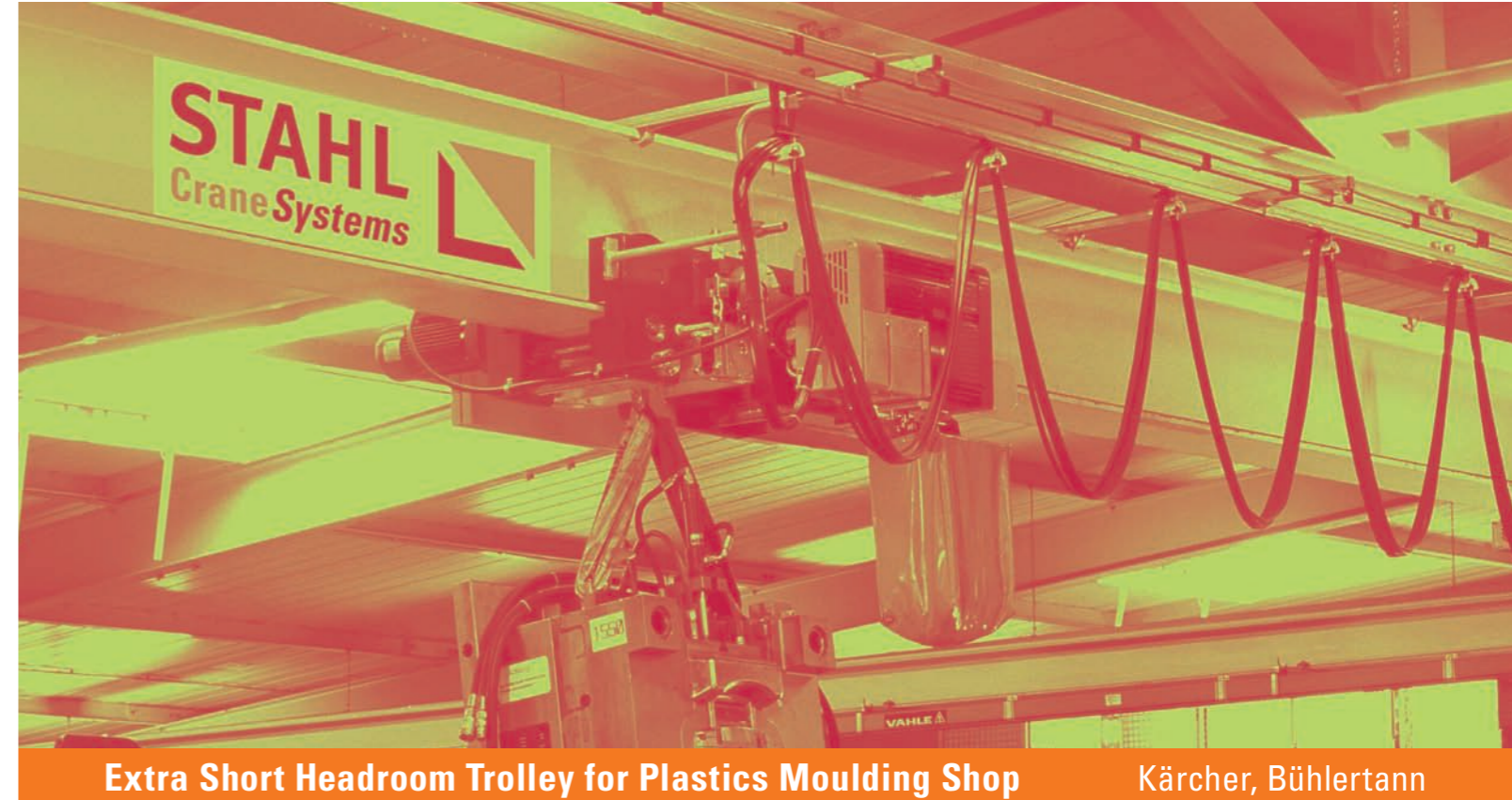
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F-RB-015-EN-05-08-vis visuell.de

STAHL CraneSystems \_ Crane technology made to measure >>>



### Extra Short Headroom Trolley for Plastics Moulding Shop

Kärcher, Bühlertann

**Crane type** Single girder bridge crane \_ **Year of construction** 1997 \_ **S.W.L.** 4,500 kg \_ **Span** 14.0 m \_ **Hoisting speed** 4/1 m/min \_ **Hoist** STK50 extra short headroom trolley \_ **Modification** 2004 \_ **Scope of supply** Modification of existing bridge crane for greater height of lift, maintaining lifting capacity, crane runway and crane bridge

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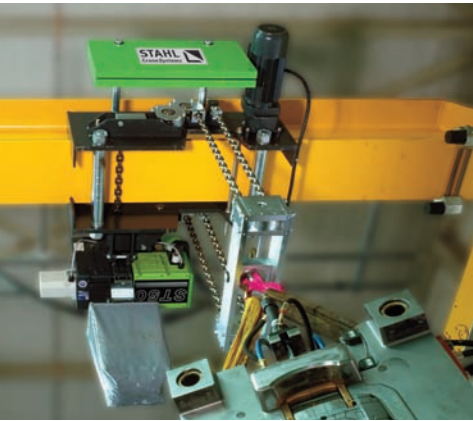
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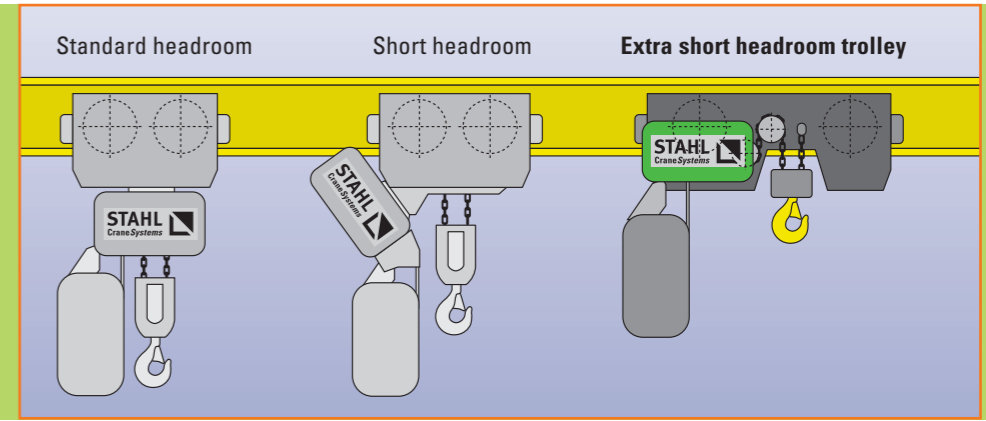
The intelligent chain guide integrated into the trolley side cheeks allows the headroom to be reduced by 60 %.



Only 210 mm high: the extra short headroom trolley makes optimum use of the hook path in the low-ceilinged shop.



It fits! Thanks to the height of lift gained, the big moulding tools can now once more easily be lifted into the machines.



“Simply clean” is the motto of Alfred Kärcher GmbH & Co. KG in Winnenden. Kärcher, world market leader for high pressure cleaners, vacuum and steam cleaners, pumps for house and garden, sweepers and scrubber driers, provides complete solutions for many cleaning tasks. The company has over 6,000 employees in 41 countries. A number of these work in Bühlertann near Schwäbisch Hall where they produce the distinctive yellow plastic housings in a plastics moulding shop.

**Starting situation** Casting the plastic housings requires special moulding tools. There is a different tool for each housing, which, depending on its complexity and size, may weigh several tonnes. As a rule, several series of different housings are cast on a single working day which involves retooling each time. A worker lifts the moulding tool out of the injection moulding machine with the aid of a single girder bridge crane equipped with an SH4010-20 4/1 wire rope hoist from STAHL CraneSystems, sets it down on a pallet and then fits the new tool into the moulding machine. Thanks to its low headroom, the existing system had been

a great success in the low-ceilinged room. Until the day Kärcher received new, taller tools which could no longer be lifted up high enough with the existing system. Crucial centimetres were needed to be able to retool the machines.

**Requirements** Mounting the crane higher was not possible due to the low ceiling, so it immediately became clear: the existing crane must be kept on. But is it possible to optimise the hoist’s design so that the hook can approach up to just a few centimetres from the crane bridge and thus utilise the hook path as fully as possible?

Now was the turn of STAHL CraneSystems’ sales engineers and product managers who enjoyed the challenge presented by this tricky task. Together with the customer, they set about modifying the existing wire rope hoist, or developing a new technical alternative. The goal was to reduce the headroom of the hoist as far as possible – while retaining the high cost-effectiveness and accustomed reliability.

**Realisation** STAHL CraneSystems quickly produced a suitable idea and shortly afterwards was able to present the solution to Kärcher: the basis of the extra short headroom trolley is a field-proven standard hoist, the STD dual chain hoist. An intelligent chain guide integrated into the trolley side cheeks enables the two synchronously running chains to be run separately outside the hoist. This saves a full 330 millimetres, the total headroom is just 210 mm for the 5,000 kg version STK50 or 185 mm for the STK30 with 3,200 kg S.W.L. The dual chain guide in conjunction with different reevings for the two chains avoids any troublesome polygon wobble: the load hook runs up and down smoothly and completely vertically. Three months after the first meeting, STAHL CraneSystems’ engineers installed the new chain hoist in Kärcher’s Bühlertann factory. The existing crane bridge, the crane control including control cables, the power supply along the crane bridge and the existing radio remote control did not have to be modified so that refitting took scarcely half a day and Kärcher was able to continue production seamlessly.

**Result** The new extra short headroom trolley (STK), which was evolved on the basis of field-proven standard components, was supplied in April 2004 and has been in operation since this date. Thanks to close liaison with the customer, STAHL CraneSystems was able to develop an optimised and specifically adapted hoist which since its launch has become an important element in their range of hoists. The extra short headroom trolley is used particularly frequently by customers with restricted space.

The extra short headroom trolley has achieved maximum utilisation of the hook path: you can’t get any shorter! However even on this special hoist, off-standard versions are possible for demanding applications, for example extending the wheelbase for use with spreader beams or widening the track gauge to adapt it to existing crane bridges. Naturally the extra short headroom trolley can be combined with the familiar optional equipment such as frequency-controlled drive or load display and is also available in explosion-protected design.