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Einfluss eines schwenkbaren Fahrersitzes auf die Ergonomie beim Rückwärtsfahren mit Frontgabelstaplern

Abstract:
The introduced results are part of a cooperation of Linde AG, Aschaffenburg and the Institute of Ergonomics at Technical University of Munich concerning the ergonomic forming of the new Linde forklift-truck series 39X with load capacities between 2.0 t and 3.5 t which was assessed with various equipment. For comparison additional test drives with the former model BR 351 were brought in. Tests were done with a collective of drivers which should represent a typical cross section of forklift-truck drivers. The main goal of the evaluations was to analyse the forming of the drivers workplace of the new forklift-truck series. Hereby the armrest of the seat was valued, the drivers posture at reverse driving was estimated using three-dimensional video recording, and the visibility sector at reverse driving was rated. Different variants of operating equipment of the trucks were compared. The main subject of the evaluation was the lately developed turnable seat enabling a swing to the right in order to make reverse driving easier. The divers postures were measured while driving forward and reverse as a basis for a further, CAD-based analysis of the sitting comfort with the software RAMSIS. By use of RAMSIS additional proportions of drivers bodies could be considered, which were not included in the collective of drivers. Essential results are that the rotating seat especially in combination with the Linde-two-pedal-control causes a remarkable reduction of the twisting of torso and head. Particularly the decisive share of relief lies on the lower part of the lumbar spinal column, which is relevant for the origin of lower back pain. Moreover, the legs can take a more convenient posture if the truck is equipped with turnable seat and
two-pedal control, and the visibility is measurably improved by use of the turnable seat.