

ANALYSIS OF THE OPTIMAL CONDITIONS FOR PLACING ATTACHMENTS ON A TRACTOR SELF-PROPELLED CHASSIS

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When redistributing the load on a tractor self-propelled chassis (TSC), its drive wheels, within the load capacity of the installed tyres, provide an increase in traction efficiency. When calculating the movement of a TSC with a mounted implement in the calculation zone, as a way to redistribute the load on the TSC drive wheels, it is preferable, from the point of view of improving traction, to place the implement on the side of the drive wheels. Such a position of the unit on the TSC satisfies both the principles of rational construction of the machine-tractor unit (MTU) and the best use of its traction and coupling qualities and is a solution to its optimisation.

To expand the hitching area, it is necessary to reduce the weight of the TSC, which will further increase the towing weight of the MTU.

In the case when the hitching area is shifted to the axis of the TSC guide wheels due to the design features of the machine, it is advisable to optimise the traction and coupling properties by reconstructing the machine. In this case, optimisation is achieved by moving the machine to the axis of the TSC drive wheels within the limits allowed by the design and agrotechnical features of the machine. The movement is also limited by the need to maintain the view of the working bodies of the TSC. Changing the track of the TSC can affect the position of the machine if its movement reduces the stability of the MTU. Together with the change in the height of the centre of gravity of the mounted unit, determining its optimal position is a task of variational calculation, for which it is advisable to use a computer.

During the calculations, it is necessary to take into account:

- if the optimal position of the unit does not differ significantly from the requirements, it is necessary to specify the longitudinal stability of the MTU;
- in the case of placing the unit in the centreline zone, the limit values of the design coordinates are limited by the size of the MTU.